

IHMA PATENT NEWSLETTER

Limited circulation patent news bulletin for the Holography Industry

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Published and granted patents

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- IHMA Patent Newsletter covers the requests for worldwide patents (WO, US, EP, FR, GB, DE, JP, CN, KR, RU...).
- Some patents can be indexed in several categories.
- Some old patents are sometimes introduced in the databases if they have not been included in the previous update.
- The full patent information is in the tables at the end of this document (See TABLES WITH REFERENCES).
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P33892

**SECURITY & OPTICAL EFFECTS' COLUMN
PRINTING – BRAND PROTECTION – RELIEF – MICROLENS**

WO2021180737

BIC

Inventor:

THIEC FRÉDÉRIC

Application Nber / Date:

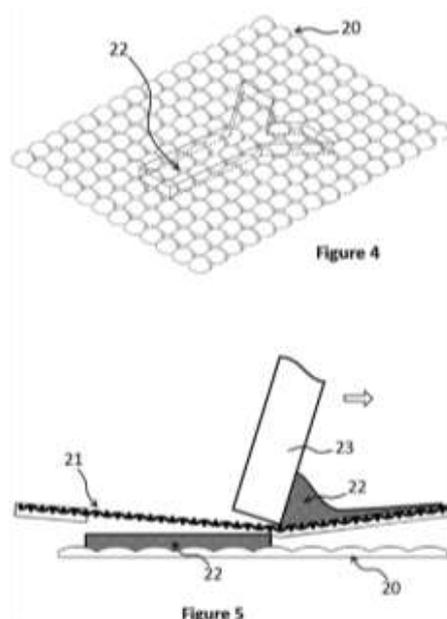
WOEP2021/055945 2021-03-09

Priority Nber / Date / Country:

FR2002313 2020-03-09

METHOD FOR MANUFACTURING A VISUAL DISPLAY ASSEMBLY, VISUAL DISPLAY ASSEMBLY, AND LIGHTER COMPRISING SUCH AN ASSEMBLY

A method for manufacturing a visual display assembly, comprising: providing a film (20) of transparent material comprising a first surface and a second surface opposite the first surface, said first surface comprising an array of lenses comprising information that is arranged so as to be capable of providing multiple images when said images are viewed from different predetermined angles through the lenses; placing a screen-printing fabric (21) in proximity to the first surface in order to form a pattern or printed image; applying a layer of ink or varnish (22) to the screen-printing fabric (21) allowing the ink or varnish (22) to pass through for placement on a portion of the first surface; wiping the ink or varnish (22) by means of a squeegee (23) over the screen-printing fabric (21).



PROCÉDÉ DE FABRICATION D'UN ENSEMBLE DE VISUALISATION, ENSEMBLE DE VISUALISATION ET BRIQUET COMPRENANT UN TEL ENSEMBLE

La présente invention concerne un procédé de fabrication d'un ensemble de visualisation comprenant : l'utilisation d'un film (20) de matériau transparent comprenant une première surface et une seconde surface opposée à la première surface, ladite première surface comprenant un réseau de lentilles comprenant des informations qui sont agencées de manière à pouvoir créer de multiples images lorsque lesdites images sont visualisées à partir de différents angles prédéterminés à travers les lentilles ; la mise en place d'un tissu d'impression sérigraphique (21) à proximité de la première surface afin de former un motif ou une image imprimée ; l'application d'une couche d'encre ou de vernis (22) au tissu d'impression sérigraphique (21) permettant à l'encre ou au vernis (22) de passer au travers pour permettre la mise en place sur une partie de la première surface ; l'essuyage de l'encre ou du vernis (22) à l'aide d'une raclette (23) sur le tissu d'impression sérigraphique (21).

CLAIM 1. A method for manufacturing a visual display assembly, characterized in that said method comprises: - providing a film (20) of transparent material comprising a first surface and a second surface opposite the first surface, said first surface comprising an array of lenses comprising information that is arranged so as to be capable of providing multiple images when said images are viewed from different predetermined angles through the lenses; - placing a screen-printing fabric (21) in proximity to the first surface; - applying a layer of ink or varnish (22) to the screen-printing fabric (21) that allows passage of the ink or varnish (22) for placement on a portion of the first surface in order to form a pattern or a printed image; - wiping the ink or varnish (22) by means of a squeegee (23) over the screen-printing fabric (21).

No equivalent

Status: Pending

Research Report:

C DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indications, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2013/030782 A1 (ARJOWIGGINS SECURITY [FR]; DOUBLET PIERRE [FR]; CANYS MICHEL [FR]) 7 March 2013 (2013-03-07)	1-16
Y	page 7, line 13 - page 8, line 6; figure 1 page 4, line 26 - line 32	1,16
Y	Helmut Klopphan: "Handbook of Print Media", 2000, Springer, Berlin Heidelberg New York, XPO02890571, ISBN: 3-540-66941-0 pages 56-59	1
Y	US 6 422 859 B1 (DEMETZ WERNER [CH]) 23 July 2002 (2002-07-23) column 1, line 6 - line 11	16

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PATENT REFERENCE – See the table at the end of this document

P33891

PRINTING – CARD – LUMINESCENCE – LIQUID CRYSTALS

WO2021181423

ARROW GREENTECH

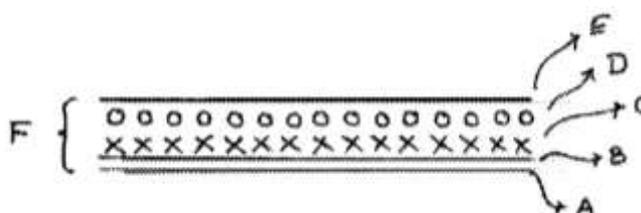
Priority Date: 12/03/2020

SECURE LAMINATES TO SECURE DOCUMENTS AND METHOD OF MANUFACTURING THE SAME

The present invention relates to security laminates and method of manufacturing the same, so as to laminate/protect data pages or data cards of documents such as passport, ID card from tampering or alteration. The present invention discloses various combination to incorporate the security elements as disclosed in the present invention, to provide an enhanced security of data pages/data cards, wherein said security elements makes it difficult to counterfeit. Further the present invention provides a security laminate which is transparent, inexpensive to manufacture, difficult to imitate by counterfeiters, readily evidences tampering, and is sufficiently durable to use on identification cards. The security laminate can comprise a carrier liner (A), a layer of release coat (B), a layer of holographic embossed structure (C), a security element (D), and a layer of heat sensitive or pressure sensitive adhesive (E). The security element can be a LCD strip, a black print, a metal coat, a translucent white heat seal which can be fluorescent.

STRATIFIÉS SÉCURISÉS POUR SÉCURISER DES DOCUMENTS ET LEUR PROCÉDÉ DE FABRICATION

La présente invention concerne des stratifiés de sécurité et leur procédé de fabrication, destinés à stratifier/protéger des pages de données ou des cartes de données de documents tels qu'un passeport, une carte d'identité contre une falsification ou une altération. La présente invention divulgue diverses combinaisons visant à incorporer les éléments de sécurité selon la présente invention, pour fournir une sécurité améliorée de pages de données/cartes de données, lesdits éléments de sécurité les rendant difficiles à contrefaire. En outre, la présente invention concerne un stratifié de sécurité qui est transparent, peu coûteux à fabriquer, difficile à imiter par des contrefacteurs, met facilement en évidence une falsification, et est suffisamment durable pour être utilisé sur des cartes d'identification. Le stratifié de sécurité peut comprendre un revêtement de support (A), une couche de revêtement pelable (B), une couche de structure gaufrée holographique (C), un élément de sécurité (D) et une couche d'adhésif sensible à la chaleur ou sensible à la pression (E). L'élément de sécurité peut être une bande LCD, une impression noire, une couche métallique, ou un joint thermique blanc translucide qui peut être fluorescent.



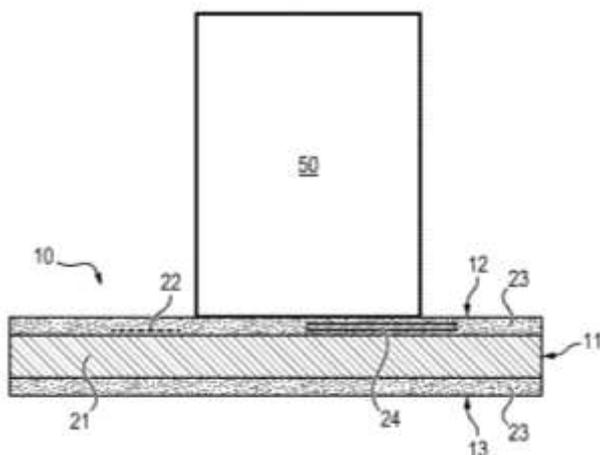
CLAIM 1. A security laminate(F) to secure document comprises of: At least a carrier liner (A) that forms the base of the security laminates; At least a layer of release coat (B) coated over the carrier liner (A); At least a layer of holographic embossed structure (C) or security elements embossed over the release coat (B); Characterized in that; At least a layer of plurality of security elements (D) coated over the holographic embossed structure (C), wherein said security elements (D)is further coated with at least a layer of heat sensitive coat or pressure sensitive adhesive coat (E), in order to provide an enhanced security of the laminate film used for data pages or data cards.

METHOD FOR MANUFACTURING A BANKNOTE

The invention relates to a method for manufacturing a laminated banknote (10) comprising a substrate (11), a first film of polymer material (12) and a second film of polymer material (13), the method comprising steps of: - adding to the substrate (11) a first authentication feature (24), - covering a first face of the substrate (11) with a first film (12) comprising a first layer of polymer material and covering a second face of the substrate (11) with a second film (13) comprising a second layer of polymer material, at least one from the first film (12) and the second film (13) comprising a second authentication feature (23).

PROCEDE DE FABRICATION D'UN BILLET DE BANQUE

L'invention concerne un procédé de fabrication d'un billet de banque (10) stratifié comprenant un substrat (11), un premier film en matériau polymère (12) et un deuxième film en matériau polymère (13), le procédé comprenant des étapes de : - ajouter au substrat (11) une première caractéristique d'authentification (24), - recouvrir une première face du substrat (11) avec un premier film (12) comprenant une première couche en matériau polymère et recouvrir une deuxième face du substrat (11) avec un deuxième film (13) comprenant une deuxième couche en matériau polymère, au moins l'un du premier film (12) et du deuxième film (13) comprenant une deuxième caractéristique d'authentification (23)



CLAIM 1. A method of manufacturing a banknote (10), from a standard or composite substrate (11) comprising a first face, a second face, opposite the first face, and a first authentication feature (24), the method comprising steps of: a - adding an identification feature (22) on the first side and/or on the second side of the substrate (11), and b - covering the first side of the substrate (11) with a first film (12) comprising a first layer of polymeric material and covering the second side of the substrate (11) with a second film (13) comprising a second layer of polymeric material, so as to obtain a multilayer assembly formed of the substrate (11), the first film (12) and the second film (13), c - cutting the multilayer assembly into a plurality of individual banknotes (10), wherein before step b, at least one of the first film (12) and the second film (13) comprises a second authentication feature (23), and wherein no identification feature or authentication feature is added between step b and step c.

P33914

BANKNOTE – CARD

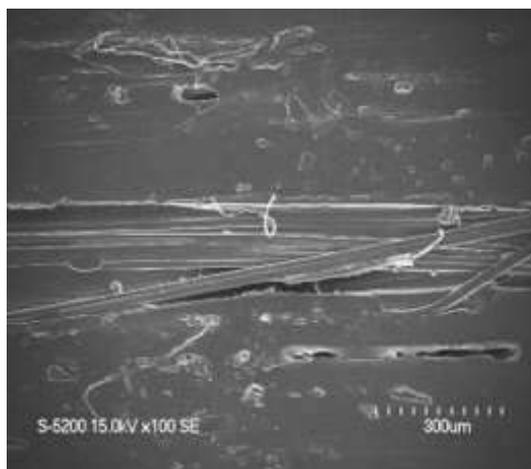
KR102293378

DANKOOK UNIVERSITY IACF

Priority Date: 20/03/2020

ANTI-COUNTERFEIT FILM AND METHOD FOR PRODUCING THE SAME

The present invention provides an anti-counterfeit film, an anti-counterfeit article including a name, and a method of manufacturing the anti-counterfeit film, wherein the anti-counterfeit film includes a fabric including a polyolefin-based polymer matrix portion and a synthetic polymer pattern portion, and the fabric is a unidirectional fabric.



CLAIM 1. An anti-counterfeit film comprising a fabric comprising a polyolefin-based polymer matrix portion and a synthetic polymer pattern portion, Wherein only the polyolefin-based polymer melts at a temperature above the melting point of the polyolefin-based polymer but below the melting point of the synthetic polymer to form a matrix of the film and the synthetic polymer forms a pattern in the film, and wherein the fabric is a unidirectional fabric.

P33953

PRINTING – LABEL – LUMINESCENCE

CN214175528U

WUXI NEW LIGHT IMPRESSION PREVENTING FAISE TECHNIQUE

Priority Date: 15/01/2021

HOLOGRAPHIC FLUORESCENT ANTI-COUNTERFEITING LABEL WITH FRAGILE FUNCTION

The utility model relates to a holographic fluorescence false proof mark subsides with breakable function. In particular to a holographic fluorescent anti-counterfeiting label which is destroyed after the cover is opened and has a fragile function. The paper comprises a bottom paper layer, wherein a silicon oil layer, a glue layer, a printing layer and an OPP transparent thin film layer are sequentially arranged on the bottom paper layer. The method is characterized in that: a holographic metal film layer and a fragile paper layer are sequentially arranged between the glue layer and the printing layer. The label has multiple anti-counterfeiting functions, high manufacturing difficulty, difficult imitation and good anti-counterfeiting effect. It is suitable for anti-fake of high-grade goods such as famous cigarette and famous wine.

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CLAIM 1. The holographic fluorescent anti-counterfeiting label with the fragile function comprises a bottom paper layer (7), wherein a silicone oil layer (6), a glue layer (5), a printing layer (2) and an OPP transparent thin film layer (1) are sequentially arranged on the bottom paper layer (7); the method is characterized in that: a holographic metal film layer (4) and a fragile paper layer (3) are sequentially arranged between the glue layer (5) and the printing layer (2).

P33954

LABEL – INKJET PRINTING

CN214175526U

Priority Date: 15/01/2021

WUXI NEW LIGHT IMPRESSION PREVENTING FAISE TECHNIQUE

TWO-DIMENSIONAL CODE ANTI-COUNTERFEITING LABEL WITH HOLOGRAPHIC SCRAPING VERIFICATION FUNCTION

The utility model relates to a two-dimensional code false proof mark subsides with verify function is scraped in holography. In particular to a two-dimensional code anti-counterfeiting label with holographic scraping verification function, wherein the scraping layer is a holographic scraping silver film. The ink-jet printing ink is formed by compounding a bottom paper layer, a silicon oil layer, a glue layer, a supporting layer, a printing layer, a gloss oil layer, a two-dimensional code, a verification code layer and a scratch-off layer from inside to outside in sequence; the method is characterized in that: the scratch-off layer is a holographic scratch-off silver layer. The label has wide application range and good anti-counterfeiting effect. It is suitable for anti-fake of valuable commodities such as famous cigarette and famous wine.

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CLAIM 1. The two-dimensional code anti-counterfeiting label with the holographic scraping verification function is formed by compounding a bottom paper layer (8), a silicon oil layer (7), a glue layer (6), a supporting layer (5), a printing layer (4), a gloss oil layer (3), a two-dimensional code and verification code layer (2) and a scraping layer (1) from inside to outside in sequence; the method is characterized in that: the scratch-off layer (1) is a holographic silver scratch-off layer.

P33961

PRINTING – LABEL

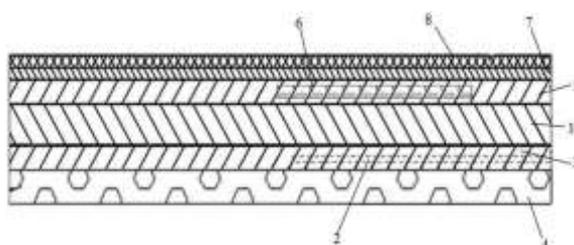
CN214123317U

Priority Date: 31/12/2020

GUANGDONG DERUI NEW MATERIAL TECHNOLOGY

LASER ANTI-COUNTERFEITING IN-MOLD LABEL

The utility model discloses a laser anti-counterfeiting in-mold label, which comprises a basal layer; one side of the substrate layer is provided with a first transparent medium layer, the other side of the first transparent medium layer is provided with a transparent protective layer, and an anti-counterfeiting pattern layer is embedded in the first transparent medium layer; the laser anti-counterfeiting label is characterized in that a second transparent medium layer is arranged on the other side of the substrate layer, a printing layer and a bonding layer are sequentially arranged on the other side of the second transparent medium layer, and a laser anti-counterfeiting strip is embedded in the second transparent medium layer. The utility model adopts the double anti-counterfeiting measures of the anti-counterfeiting pattern layer and the laser anti-counterfeiting strip to provide anti-counterfeiting effect, and simultaneously uses the acrylic transparent medium layer to protect anti-counterfeiting, thereby effectively avoiding the direct contact between the anti-counterfeiting information pattern and other layers; regard as the basement with PET, effectively improve the utility model discloses radium-shine antifalsification membrane temperature resistant pressure resistance has guaranteed radium-shine anti-fake information's stability ability.



CLAIM 1. A laser anti-counterfeiting in-mold label is characterized by comprising a substrate layer; the anti-counterfeiting printing paper comprises a base layer, a transparent protective layer and an anti-counterfeiting pattern layer, wherein one surface of the base layer is provided with the first transparent medium layer, the other surface of the first transparent medium layer is provided with the transparent protective layer, and the anti-counterfeiting pattern layer is embedded in the first transparent medium layer; the laser anti-counterfeiting label is characterized in that a second transparent medium layer is arranged on the other side of the substrate layer, a printing layer and a bonding layer are sequentially arranged on the other side of the second transparent medium layer, and a laser anti-counterfeiting strip is embedded in the second transparent medium layer.

P33969

PRINTING – LABEL

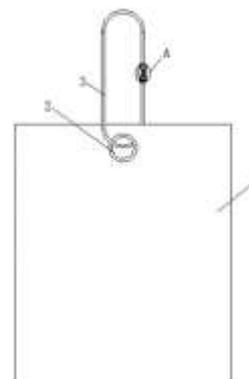
CN214068166U

BEIJING XINGHAN SPECIAL PRINTING

Priority Date: 30/12/2020

CLOTHING TAG WITH HOLOGRAPHIC TRANSFER TECHNOLOGY

The utility model discloses a clothing drop with holographic transfer technique, including the drop body, install the connection rope on the drop body, the drop body includes the drop surface course, drop surface course top is provided with holographic anti-fake transfer layer, holographic anti-fake transfer layer top is provided with the printing layer, the printing layer top is provided with the transparent plastic layer, directly uses anti-fake element on the printing paper of clothing drop through advanced and most advanced professional holographic rendition anti-fake technique in advance, forms the anti-fake paper that has holographic anti-fake element, and the normal printing in clothing drop later stage, the characters of printing and pattern information directly fuse together with the holographic anti-fake effect of preparation completion in advance, have more from duplicating and imitative the counterfeiting. The clothing hang tag is simultaneously provided with anti-counterfeiting plate lines, two-dimensional code query, telephone query, website query and twenty-bit variable code query technologies, and simultaneously, the holographic transfer anti-counterfeiting technology is applied.



CLAIM 1. Clothing drop with holographic transfer technique, including drop body (1), its characterized in that: install on drop body (1) and connect rope (3), drop body (1) includes drop surface course (7), drop surface course (7) top is provided with holographic anti-fake transfer layer (4), holographic anti-fake transfer layer (4) top is provided with printing layer (5), printing layer (5) top is provided with transparent plastic layer (6).

P33970

BRAND PROTECTION

CN214061073U

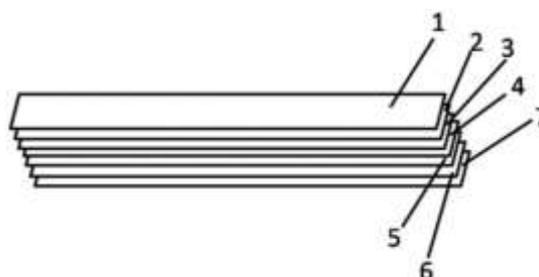
SHANGHAI SHUN HAO NEW MATERIALS POLYTRON TECHNOLOGIES

Priority Date: 09/11/2020

LIGHT-TRANSMITTING VISIBLE ANTI-COUNTERFEITING PACKAGING PAPER

The utility model discloses a transparent visual anti-counterfeiting packaging paper, which comprises a surface coating layer, a base film layer, a micro-structure layer, an anti-counterfeiting information layer, a bonding layer, a base paper layer and a back coating layer; the back coating is arranged on the lower surface of the base paper layer; the base paper layer is arranged on the lower surface of the bonding layer; the bonding layer is arranged on the lower surface of the anti-counterfeiting information layer; the anti-counterfeiting information layer is arranged on the lower surface of the microstructure layer; the microstructure layer is arranged on the lower surface of the base film layer; the base film layer is arranged on the lower surface of the top coating layer; the microstructure layer is composed of acrylic resin copied with one or more combined microstructure patterns of holographic light column, holographic plain surface, holographic crushed ice, holographic star cluster and holographic photoetching; the anti-counterfeiting information layer is a hollow aluminum layer formed by dot-shaped arranged unit dots. The utility model discloses a cooperation of anti-fake information layer and micro-structure layer effectively promotes anti-counterfeit performance, and the cooperation of top-coat layer and basic rete promotes follow-up printing adaptability, causes the damage to anti-fake information layer and micro-structure layer when avoiding printing ink printing.

CLAIM 1. The light-transmitting visual anti-counterfeiting packaging paper is characterized by comprising a surface coating layer, a base film layer, a microstructure layer, an anti-counterfeiting information layer, an adhesive layer, a base paper layer and a back coating layer; the back coating is arranged on the lower surface of the base paper layer; the base paper layer is arranged on the lower surface of the bonding layer; the bonding layer is arranged on the lower surface of the anti-counterfeiting information layer; the anti-counterfeiting information layer is arranged on the lower surface of the microstructure layer; the microstructure layer is arranged on the lower surface of the base film layer; the base film layer is arranged on the lower surface of the top coating layer; the microstructure layer is composed of acrylic resin copied with one or more combined microstructure patterns of holographic light columns, holographic plain surfaces, holographic crushed ice, holographic star clusters and holographic photoetching; the thickness of the anti-counterfeiting information layer is 25-35nm, and the anti-counterfeiting information layer is a hollow aluminum layer formed by a plurality of unit points arranged in a dotted manner.



P33972

BRAND PROTECTION

CN214058530U

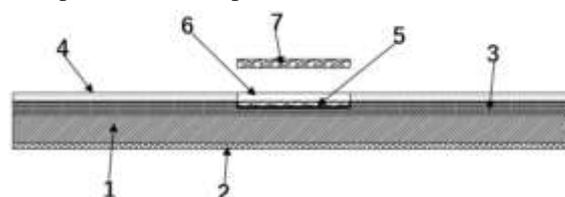
SHENZHEN JINSHENGCAI PACKAGING MATERIAL

Priority Date: 04/12/2020

HOLOGRAPHIC RECORDING PHOTSENSITIVE ANTI-COUNTERFEITING POLYMER PACKAGING FILM

The utility model relates to the technical field of packaging films, in particular to a holographic recording photosensitive anti-counterfeiting polymer packaging film, which comprises a substrate layer, wherein the bottom surface of the substrate layer is provided with an adhesive layer, the top surface of the substrate layer is bonded with an identification layer, the middle part of the top surface of the identification layer is provided with a groove, a first holographic recording anti-counterfeiting layer is bonded in the groove, and a second holographic recording anti-counterfeiting layer matched with the stripping opening is also arranged in the stripping opening; the utility model discloses a be equipped with the anti-fake picture layer of first holographic recording and the anti-fake picture layer of second holographic recording, when verifying the true and false, the top surface side that need arrange the anti-fake picture layer of second holographic recording in the anti-fake picture layer of first holographic recording can make anti-fake pattern clear, if lawless persons duplicate the anti-fake picture layer of first holographic recording, do not have the overlapping on the anti-fake picture layer of second holographic recording, can not obtain the true information of product, prevent effectively that lawless persons from utilizing lawless persons and duplicate reuse with its anti-fake information, and then ensured consumer and trade company's interests.

CLAIM 1. Holographic recording photosensitive anti-counterfeiting polymer packaging film is characterized in that: it includes substrate layer (1), adhesive linkage (2), identification layer (3) and protective layer (4), the bottom surface of substrate layer (1) is provided with adhesive linkage (2), the top surface of substrate layer (1) bonds and has identification layer (3), the top surface middle part of identification layer (3) is provided with the recess, it has the anti-fake picture layer of first holographic record (5) to bond in the recess, the top surface of identification layer (3) bonds and has protective layer (4), the middle part of protective layer (4) just is provided with corresponding mouth of peeling off to the anti-fake picture layer of first holographic record (5) department, it has peel off layer (6) to bond in the mouth of peeling off, it still is provided with the anti-fake picture layer of second holographic record (7) rather than the adaptation to peel off in the mouth.



P33973

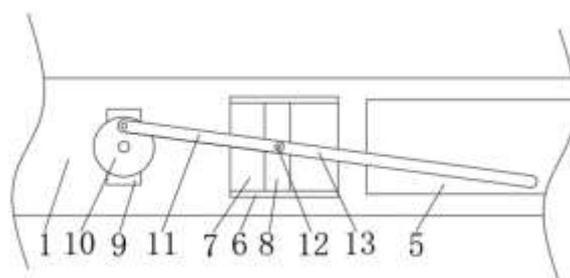
CN214057016U

SHENZHEN YANRUN TECHNOLOGY

Priority Date: 14/12/2020

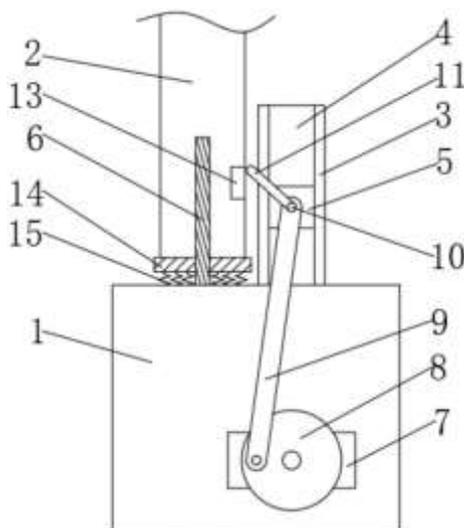
PRODUCTION EQUIPMENT WITH MICRO-TEXT LASER HOLOGRAPHIC ANTI-COUNTERFEITING FILM

The utility model discloses a production facility with holographic anti-counterfeiting membrane of miniature characters laser, including box and water pipe, still include the shower nozzle, the end fixing intercommunication of water pipe has the hose, the upper end fixing intercommunication of shower nozzle has the spray tube, the surface of box is seted up and is used for the opening that the spray tube removed, the surface fixing connection of box has the supporting shoe, the surface of supporting shoe has seted up the spout, the supporting shoe passes through the spout sliding connection slider, the surface of box is provided with actuating mechanism; the sprayer is characterized by further comprising a first transmission mechanism and a second transmission mechanism, wherein the first transmission mechanism and the second transmission mechanism are operated through the driving mechanism, the sliding block is enabled to move transversely under the action of the first transmission mechanism, and the sprayer is enabled to move transversely and swing under the action of the second transmission mechanism through the transverse movement of the sliding block. The water spraying device has the effect of spraying water in a reciprocating swinging mode while enabling the spray head to move transversely in a reciprocating mode.



HOLOGRAPHIC ANTI-COUNTERFEITING POSITIONING HOT STAMPING DETECTION EQUIPMENT

The utility model discloses a holographic anti-counterfeiting positioning hot stamping detection device, which comprises a hot stamping machine and a stand column, wherein the upper surface of the hot stamping machine is fixedly connected with a supporting block, the surface of the supporting block is provided with a chute, the supporting block is connected with a sliding block through the chute in a sliding way, the upper surface of the hot stamping machine is fixedly connected with a limiting rod, the lower end of the stand column is provided with an opening for the limiting rod to penetrate and slide, and the side surface of the hot stamping machine is provided with a driving mechanism; the vertical column unlocking mechanism comprises a driving mechanism I, a driving mechanism II and a resetting mechanism, wherein the driving mechanism is driven to operate, the sliding block is driven to vertically move under the action of the driving mechanism I, the vertical column is locked under the action of the driving mechanism II through the vertical movement of the sliding block, and the resetting mechanism is driven to operate to unlock the vertical column. The auxiliary effect of cooperation and spring through between fixture block and the draw-in groove has been possessed, carries out high-efficient and convenient detachable effect to CCD detection device.



CLAIM 1. The utility model provides a holographic anti-fake location scalds check out test set, includes thermoprinting machine (1) and stand (2), its characterized in that: the upper surface of the hot stamping machine is fixedly connected with a supporting block (3), the surface of the supporting block (3) is provided with a sliding groove (4), the supporting block (3) is connected with a sliding block (5) in a sliding manner through the sliding groove (4), the upper surface of the hot stamping machine (1) is fixedly connected with a limiting rod (6), the lower end of the upright post (2) is provided with an opening through which the limiting rod (6) penetrates and slides, and the side surface of the hot stamping machine (1) is provided with a driving mechanism; the vertical column unlocking mechanism comprises a driving mechanism I, a driving mechanism II and a resetting mechanism, the sliding block (5) is vertically moved under the action of the driving mechanism I through the operation of the driving mechanism, the vertical column (2) is locked under the action of the driving mechanism II through the vertical movement of the sliding block (5), and the vertical column (2) is unlocked through the operation of the resetting mechanism.

P33975

MANUFACTURING PROCESS

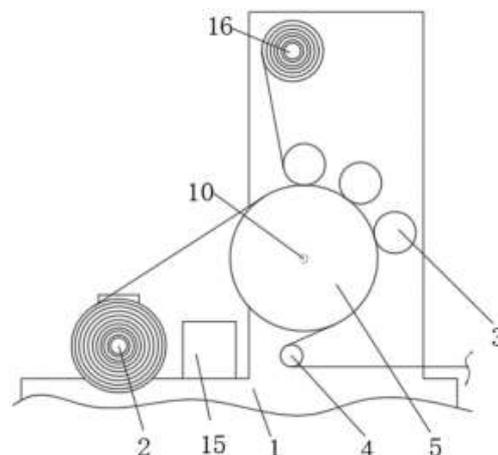
CN214056865U

SHENZHEN YANRUN TECHNOLOGY

Priority Date: 14/12/2020

DEVICE FOR TRANSFERRING LASER HOLOGRAPHIC ANTI-COUNTERFEITING PATTERN

The utility model discloses a device for transferring laser holographic anti-counterfeiting patterns, which comprises a fixed seat, a printing film unreeling shaft, a compression roller and a transition roller, heating steel roller and transfer foil unreel axle, still including carousel and pivot, carousel fixed connection is on the surface of pivot, the pivot rotates the surface of connecting at the fixing base, heating steel roller fixed connection is on the surface of carousel, the surface of carousel is provided with four concave type pieces that are annular array and distribute, the surface of carousel is provided with four boards that are annular array and distribute, the spout has all been set up on the surface of four boards, still including being used for driving carousel intermittent type pivoted actuating mechanism, actuating mechanism is including rotating the driving source, the segment, spliced pole and traveller, it is on the surface of fixing base to rotate driving source fixed connection, the surface of rotating the driving source drive shaft is connected with the fixed surface of segment, the utility model provides a traditional hot pressing can not make the good adhesive problem of aluminizing foil and hot melt adhesive.



CLAIM 1. The utility model provides a device of holographic anti-fake pattern of rendition laser, includes that fixing base (1), printing film put spool (2), compression roller (3), transition roller (4), heating steel roller (5) and transfer foil put spool (16), its characterized in that: the heating device is characterized by further comprising a rotary table (6) and a rotary shaft (10), wherein the rotary table (6) is fixedly connected to the surface of the rotary shaft (10), the rotary shaft (10) is rotatably connected to the surface of the fixed seat (1), the heating steel roller (5) is fixedly connected to the surface of the rotary table (6), four concave blocks (14) distributed in an annular array are arranged on the surface of the rotary table (6), four plates (7) distributed in an annular array are arranged on the surface of the rotary table (6), and sliding grooves (8) are formed in the surfaces of the four plates (7); the device also comprises a driving mechanism for driving the turntable (6) to rotate intermittently.

P33980

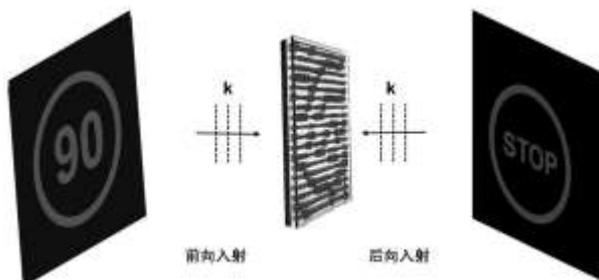
CN113406729

WUHAN UNIVERSITY

Priority Date: 30/06/2021

BIDIRECTIONAL HOLOGRAPHIC MODULATION METHOD BASED ON BROADBAND VISIBLE LIGHT NANOMETER SUPER SURFACE AND APPLICATION

The invention discloses a bidirectional holographic modulation method based on a broadband visible light nanometer super surface and application thereof. The super surface is formed by periodically arranging a plurality of unit structures, and each unit structure comprises a substrate and nano bricks arranged on the substrate. The method can realize bidirectional holographic image display of a single-layer nano structure in a broadband visible light range by designing the size parameters of the unit structure to construct the super surface. The single nano brick has independent freedom degrees in length and width, has different responses to two different linearly polarized light respectively, and realizes the display of two different images under different polarizations. The invention has small structure scale and easy integration, and can be used as a device for enhancing anti-counterfeiting application of nonreciprocal information processing, optical metering and encryption/decryption security.



P33984

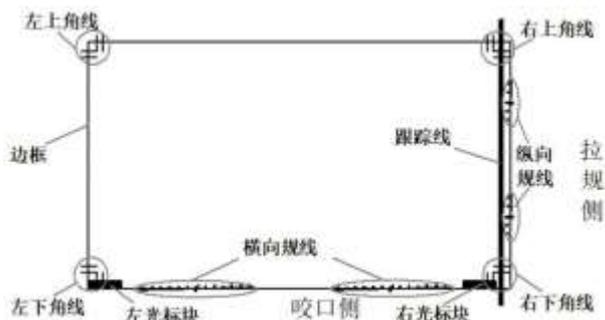
CN113400826

Priority Date: 30/06/2021

HUBEI HUAGONG IMAGE TECHNOLOGY DEVELOPMENT

POSITIONING FRAME OF ANTI-COUNTERFEITING HOLOGRAPHIC POSITIONING PAPER, PREPARATION METHOD AND DETECTION METHOD

The invention provides a positioning frame of anti-counterfeiting holographic positioning paper, a preparation method and a detection method, belonging to the technical field of anti-counterfeiting package printing, wherein the positioning frame comprises the following components: the device comprises a rectangular frame, cursor blocks, tracking lines, corner lines and gauge lines; the rectangular frame is used for judging whether the anti-counterfeiting holographic positioning paper deforms or not; the cursor block is used for positioning the rectangular frame and changing the deformation of the anti-counterfeiting holographic positioning paper; the corner lines are positioned on the upper surface of the rectangular frame and used for positioning the image position and detecting the deviation values of the upper transverse, the lower transverse, the left longitudinal and the right longitudinal of the image; the tracking line is used for performing deviation rectifying tracking on the anti-counterfeiting holographic positioning paper to ensure that the anti-counterfeiting holographic positioning paper is in the same horizontal position; the length of the tracking line is greater than the side length of the rectangular frame; the gauge lines are positioned on the cursor block side and the tracking line side of the rectangular frame and arranged in a ladder shape and used for evaluating the squareness of a transverse cutting process in the preparation of the anti-counterfeiting holographic positioning paper. The invention improves the detection efficiency and the manufacturing precision of the anti-counterfeiting holographic positioning paper.



CLAIM 1. A positioning frame of anti-counterfeiting holographic positioning paper is characterized in that the positioning frame is arranged on a nickel plate and transferred onto the anti-counterfeiting holographic positioning paper in a mould pressing mode, and comprises a rectangular frame, cursor blocks, tracking lines, corner lines and gauge lines; the rectangular frame is used for judging whether four corners of the anti-counterfeiting holographic positioning paper are right angles or not, and if not, judging that the anti-counterfeiting holographic positioning paper is deformed; the cursor blocks are distributed on two sides of the same side of the rectangular frame and used for positioning the rectangular frame and changing deformation of the anti-counterfeiting holographic positioning paper; the corner lines are positioned on the upper surface of the rectangular frame and correspond to four corners of the rectangular frame, each corner line comprises a single mark or a plurality of marks and is used for positioning the laser holographic pattern and detecting deviation values of the upper transverse, the lower transverse, the left longitudinal and the right longitudinal of the laser holographic pattern; the tracking line is positioned on one side of the rectangular frame, the side of the tracking line is intersected with one side with the cursor block, and the tracking line is used for performing deviation rectifying tracking on the anti-counterfeiting holographic positioning paper and ensuring that the anti-counterfeiting holographic positioning paper is positioned at the same horizontal position; the length of the tracking line is greater than the side length of the rectangular frame; the gauge lines are positioned on the cursor block side and the tracking line side of the rectangular frame and are arranged in a step shape, the gauge line positioned in the middle of each set of gauge lines is overlapped with the rectangular frame, and the rest gauge lines are parallel to the rectangular frame; the method is used for evaluating the squareness of the transverse cutting process in the preparation of the anti-counterfeiting holographic positioning paper.

P33983

BRAND PROTECTION

CN113400827

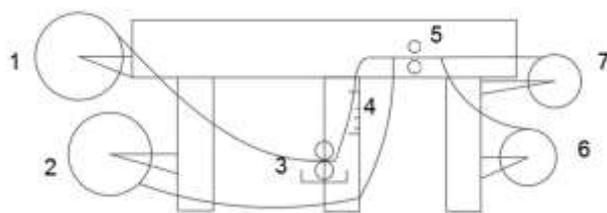
Priority Date: 30/06/2021

HUBEI HUAGONG IMAGE TECHNOLOGY DEVELOPMENT

DEVICE AND METHOD FOR MANUFACTURING MULTI-COATING AND MULTI-LASER-EFFECT ANTI-COUNTERFEITING PAPER

The invention belongs to the field of holographic laser anti-counterfeiting packaging paper, and particularly relates to a device and a method for manufacturing multi-coating multi-laser-effect anti-counterfeiting paper. The anti-counterfeiting paper has the advantages that the existing printing rewinding machine is additionally provided with the unwinding, the winding, the gluing seat and the drying tunnel, the initial film rolls with different laser effects and coatings are matched, at least one of the film rolls is specially designed to be a transfer film, so that the anti-counterfeiting paper with different laser effects and different coatings on the same page can be simply, conveniently and efficiently obtained, and the increasing requirements on the anti-counterfeiting and attractive effects of the anti-counterfeiting paper in the market are met.

CLAIM 1. The utility model provides a device for making many cladding materials, radium-shine effect anti-counterfeit paper, a serial communication port, unreel seat, rubberizing seat, drying tunnel, compression roller, first rolling seat and second rolling seat including first unreeling seat, second, wherein: the first unwinding seat is used for unwinding a first laser effect dielectric film, and the second unwinding seat is used for unwinding a second laser effect aluminizer; the second laser effect aluminizer is a transfer film; a glue groove and a glue applying roller with patterns are arranged in the glue applying base and used for applying glue to the first laser effect dielectric film; during gluing, the gluing roller dips the glue in the glue groove and acts on the surface of the first laser effect dielectric film, so that the position, corresponding to the pattern position on the gluing roller, on the surface of the first laser effect dielectric film is glued, and other positions are not glued, so that the glued first laser effect dielectric film at the specific position is obtained; the drying tunnel is used for heating the glued first laser effect dielectric film at the specific position, so that the solvent in the glue material at the glued position is volatilized and removed, and the glued first laser effect dielectric film at the specific position is obtained; the pressing roller is used for extruding and attaching the first laser effect dielectric film glued at the specific position after treatment and the second laser effect aluminizer, and after separation, the aluminum surface of the second laser effect aluminizer at the position corresponding to the glued position on the first laser effect dielectric film is peeled off and adhered to the surface of the first laser effect dielectric film; respectively obtaining a second laser effect aluminizer with a partially stripped aluminum surface and a first laser effect dielectric film with an aluminum surface adhered to the gluing position; the first rolling seat is used for rolling the second laser effect aluminizer of the partially peeled aluminum surface; and the second rolling seat is used for rolling the first laser effect dielectric film with the aluminum surface adhered to the gluing part.



P34000

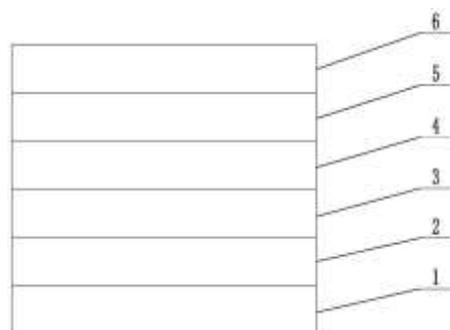
CN113314021

Priority Date: 11/06/2021

SHANDONG TAIBAO INFORMATION TECHNOLOGY GROUP

DROP-MOLDING TRANSFER-PREVENTION VARIABLE INFORMATION HOLOGRAPHIC ANTI-COUNTERFEITING GASKET AND PREPARATION METHOD THEREOF

The invention relates to a holographic anti-counterfeiting gasket, in particular to a plastic dripping type transfer-preventing variable information holographic anti-counterfeiting gasket and a preparation method thereof. The plastic dripping type transfer-preventing variable information holographic anti-counterfeiting gasket comprises a plastic dropping layer, a front variable information layer, a holographic film layer, a foaming material layer, a back variable information layer and a PET film layer which are sequentially arranged from top to bottom; the front variable information layer is partially covered above the holographic film layer; the front variable information layer and the back variable information layer have a position corresponding relationship and a data information corresponding relationship. The invention combines the plastic dripping process of the bottle cap, realizes the effect of tearing off and damaging the gasket, can prevent transfer, increases the anti-counterfeiting performance of the gasket and has good anti-counterfeiting effect; the preparation method is scientific, reasonable, simple and feasible.



Click on the title to return to table of contents

PATENT REFERENCE – See the table at the end of this document

P33888

BANKNOTE – THREAD

WO2021185729

HUECK FOLIEN

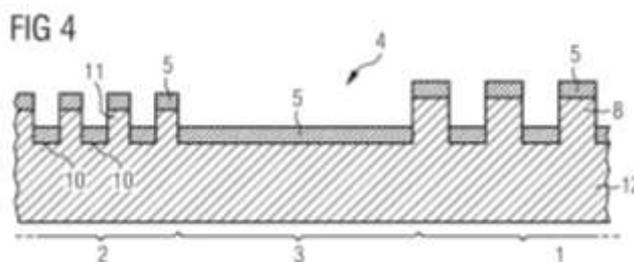
Priority Date: 16/03/2020

FLAT SECURITY ELEMENT WITH OPTICAL SECURITY FEATURES

The invention relates to a flat security element (4) with optical security features, comprising at least one first surface region (1) with a first sub-wavelength structure, the structure elements that define the first sub-wavelength structure repeating themselves periodically in the plane of the security element (4). In order to portray an easy-to-produce motif with higher protection against forgery by means of at least two different colour impressions, according to the invention the first sub-wavelength structure of at least a partial region of the first surface region (1) is additionally provided with an interference coating (5) to create a colour shift effect.

ÉLÉMENT DE SÉCURITÉ PLAT PRÉSENTANT DES CARACTÉRISTIQUES DE SÉCURITÉ OPTIQUE

La présente invention concerne un élément de sécurité plat (4) présentant des caractéristiques de sécurité optique, comprenant au moins une première zone de surface (1) comportant une première structure de sous-longueur d'onde, les éléments de structure qui définissent la première structure de sous-longueur d'onde se répétant eux-mêmes périodiquement dans le plan de l'élément de sécurité (4). L'invention vise à mettre au point un motif facile à produire présentant une meilleure protection contre la falsification au moyen d'au moins deux empreintes de couleur différentes. Selon l'invention, la première structure de sous-longueur d'onde d'au moins une zone partielle de la première zone de surface (1) est en outre pourvue d'un revêtement d'interférence (5) pour créer un effet de changement de couleur.



CLAIM 1. A planar security element (4) having optical security features, comprising at least one first surface region (1) having a first sub-wavelength structure, wherein the structural elements which define the first sub-wavelength structure are arranged, periodically repeat in the plane of the security element (4), characterized in that the first sub-wavelength structure of at least a partial region of the first surface region (1) is additionally provided with an interference coating (5) for generating a color shift effect.

WO2021180737

BIC

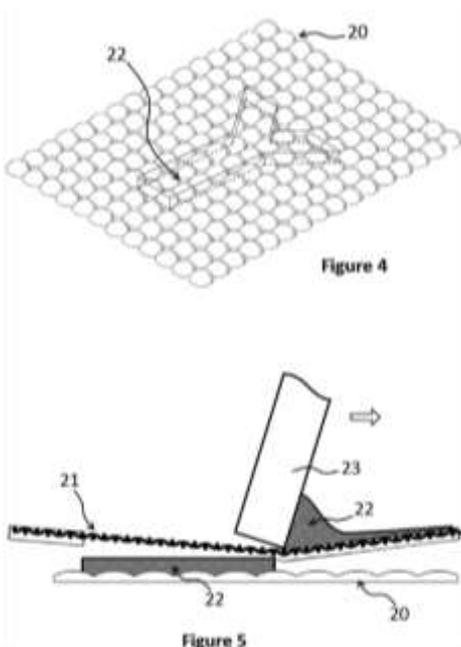
Priority Date: 09/03/2020

METHOD FOR MANUFACTURING A VISUAL DISPLAY ASSEMBLY, VISUAL DISPLAY ASSEMBLY, AND LIGHTER COMPRISING SUCH AN ASSEMBLY

A method for manufacturing a visual display assembly, comprising: providing a film (20) of transparent material comprising a first surface and a second surface opposite the first surface, said first surface comprising an array of lenses comprising information that is arranged so as to be capable of providing multiple images when said images are viewed from different predetermined angles through the lenses; placing a screen-printing fabric (21) in proximity to the first surface in order to form a pattern or printed image; applying a layer of ink or varnish (22) to the screen-printing fabric (21) allowing the ink or varnish (22) to pass through for placement on a portion of the first surface; wiping the ink or varnish (22) by means of a squeegee (23) over the screen-printing fabric (21).

PROCÉDÉ DE FABRICATION D'UN ENSEMBLE DE VISUALISATION, ENSEMBLE DE VISUALISATION ET BRIQUET COMPRENANT UN TEL ENSEMBLE

La présente invention concerne un procédé de fabrication d'un ensemble de visualisation comprenant : l'utilisation d'un film (20) de matériau transparent comprenant une première surface et une seconde surface opposée à la première surface, ladite première surface comprenant un réseau de lentilles comprenant des informations qui sont agencées de manière à pouvoir créer de multiples images lorsque lesdites images sont visualisées à partir de différents angles prédéterminés à travers les lentilles ; la mise en place d'un tissu d'impression sérigraphique (21) à proximité de la première surface afin de former un motif ou une image imprimée ; l'application d'une couche d'encre ou de vernis (22) au tissu d'impression sérigraphique (21) permettant à l'encre ou au vernis (22) de passer au travers pour permettre la mise en place sur une partie de la première surface ; l'essuyage de l'encre ou du vernis (22) à l'aide d'une raclette (23) sur le tissu d'impression sérigraphique (21).



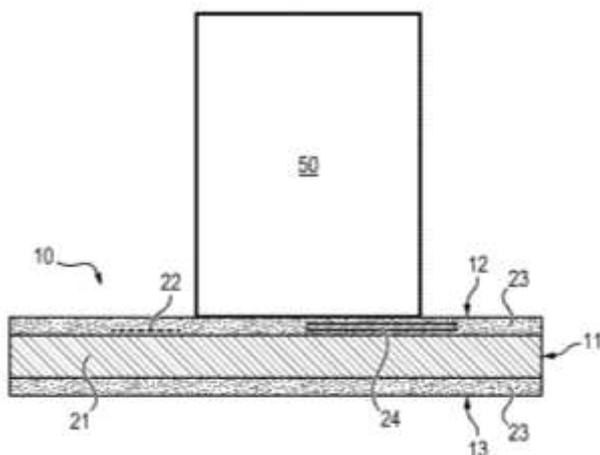
CLAIM 1. A method for manufacturing a visual display assembly, characterized in that said method comprises: - providing a film (20) of transparent material comprising a first surface and a second surface opposite the first surface, said first surface comprising an array of lenses comprising information that is arranged so as to be capable of providing multiple images when said images are viewed from different predetermined angles through the lenses; - placing a screen-printing fabric (21) in proximity to the first surface; - applying a layer of ink or varnish (22) to the screen-printing fabric (21) that allows passage of the ink or varnish (22) for placement on a portion of the first surface in order to form a pattern or a printed image; - wiping the ink or varnish (22) by means of a squeegee (23) over the screen-printing fabric (21).

METHOD FOR MANUFACTURING A BANKNOTE

The invention relates to a method for manufacturing a laminated banknote (10) comprising a substrate (11), a first film of polymer material (12) and a second film of polymer material (13), the method comprising steps of: - adding to the substrate (11) a first authentication feature (24), - covering a first face of the substrate (11) with a first film (12) comprising a first layer of polymer material and covering a second face of the substrate (11) with a second film (13) comprising a second layer of polymer material, at least one from the first film (12) and the second film (13) comprising a second authentication feature (23).

PROCEDE DE FABRICATION D'UN BILLET DE BANQUE

L'invention concerne un procédé de fabrication d'un billet de banque (10) stratifié comprenant un substrat (11), un premier film en matériau polymère (12) et un deuxième film en matériau polymère (13), le procédé comprenant des étapes de : - ajouter au substrat (11) une première caractéristique d'authentification (24), - recouvrir une première face du substrat (11) avec un premier film (12) comprenant une première couche en matériau polymère et recouvrir une deuxième face du substrat (11) avec un deuxième film (13) comprenant une deuxième couche en matériau polymère, au moins l'un du premier film (12) et du deuxième film (13) comprenant une deuxième caractéristique d'authentification (23)



CLAIM 1. A method of manufacturing a banknote (10), from a standard or composite substrate (11) comprising a first face, a second face, opposite the first face, and a first authentication feature (24), the method comprising steps of: a - adding an identification feature (22) on the first side and/or on the second side of the substrate (11), and b - covering the first side of the substrate (11) with a first film (12) comprising a first layer of polymeric material and covering the second side of the substrate (11) with a second film (13) comprising a second layer of polymeric material, so as to obtain a multilayer assembly formed of the substrate (11), the first film (12) and the second film (13), c - cutting the multilayer assembly into a plurality of individual banknotes (10), wherein before step b, at least one of the first film (12) and the second film (13) comprises a second authentication feature (23), and wherein no identification feature or authentication feature is added between step b and step c.

P33917

PRINTING – CARD – INFRARED – TRACK & TRACE

JP2021138053

KOBAYASHI CREATE

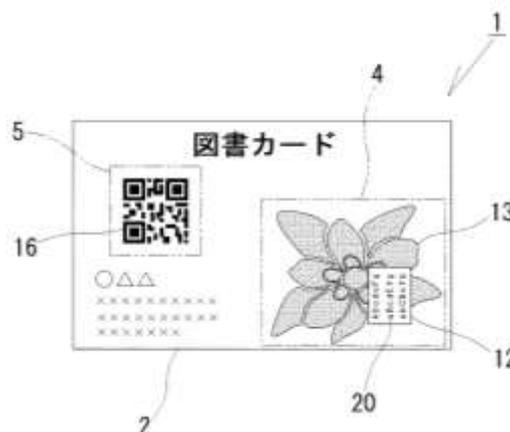
Priority Date: 05/03/2020

OPTICALLY READ FORM AND OPTICALLY READ FORM INFORMATION MANAGEMENT METHOD

TOPIC: To propose a high-cost reading form that can easily determine whether or not it is unused and that can prevent counterfeiting by a copying machine.

INVENTION: An information processing device, comprising: a required information storage unit 5 in which a transparent or pale colored first information optical code provided so as to be readable by light in the infrared range and not readable by light in the visible range, and a second information optical code 16 provided so as to be unreadable by light in the infrared range and readable by light in the visible range, are layered on a surface of a sheet-like base material 2; and An authorization information storage unit 4 provided with an authorization optical code that stores authorization information that enables the necessary information read from the first information optical code and/or the second information optical code 16 to be read is provided; and a scratch layer 12 that covers the authorization optical code. According to such a configuration, it is possible to determine whether or not the optical code for first information and the optical code for permission are unused by the scratch layer 12, and counterfeiting can be suppressed by failing to copy the optical code for first information and the optical code for permission.

CLAIM 1. A first information optical code that is transparent or light-colored and that is optically readable by light in the infrared range and that is optically unreadable by light in the visible range, and that stores first necessary information; A second information optical code that is provided so as to be optically unreadable by light in the infrared range and to be optically readable by light in the visible range, and that stores second necessary information that is different from the first necessary information; An authorization optical code storing authorization information for validating the first necessary information and/or the second necessary information is provided at a location different from the necessary information storage section on the front surface of the sheet-form substrate, An permission information storage unit provided so as to be optically readable; and further comprising a colored scratch layer that does not transmit light in the infrared region, provided so as to cover all or a part of the permission optical code.



P33918

CARD

JP2021137981

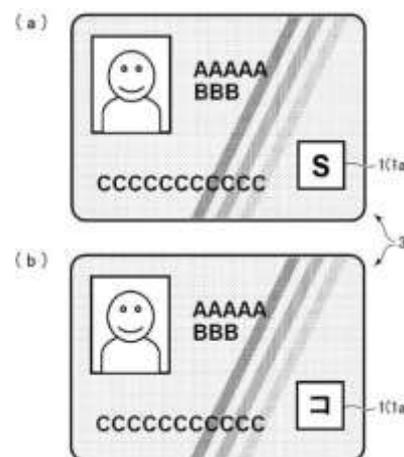
DAI NIPPON PRINTING

Priority Date: 02/03/2020

REFLECTOR WITH LATENT IMAGE

TOPIC: To provide a reflector having a reflective surface in which a plurality of types of latent images that at least partially overlap can be embedded in the same reflective surface, and by changing the reflection angle of the reflective surface, each of the plurality of types of latent images can be made to appear and recognized according to the reflection angle.

INVENTION: a reflector includes: a background region in which a first region defined by first parallel lines and a second region defined by second parallel lines formed at an angle different from the first parallel lines overlap; The third line parallel to reveal the first latent image formed in the background region of the reflecting surface at an angle intersecting both the first line parallel to the second line parallel to each other and in a state where an intersecting angle between the third line parallel to the first line parallel to the second line parallel to each other is set to be larger than an intersecting angle between the third line parallel to the second line parallel to each other; A fourth line parallel to reveal the second latent image formed in the background region of the reflective surface, at an angle intersecting all of the first to third line parallel to each other, and in a state where an intersection angle between the fourth line parallel to the second line parallel to each other is set to be greater than an intersection angle between the fourth line parallel to the first line parallel to each other.



P33933

RELIEF

JP2021124602

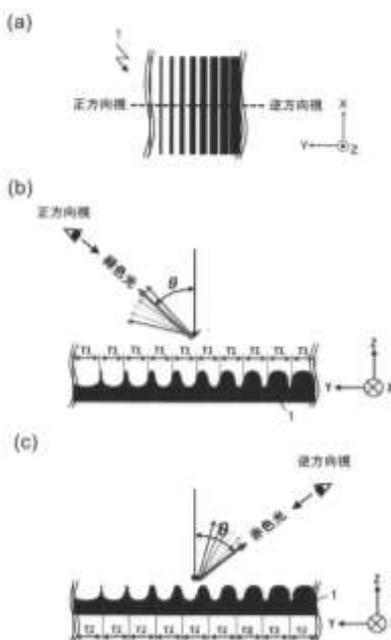
TOPPAN PRINTING

Priority Date: 05/02/2020

COLOR SHIFTING DEVICE

TOPIC: To provide a color shift device that can not only change color, but also change saturation, hue, number of colors, and graphics when rotated 180° around a normal line.

INVENTION: a display panel including a plurality of relief structures, the relief structure including a plurality of relief structures, the relief structure extending in a first direction parallel to a display surface, and arranged in a second direction perpendicular to the first direction, The recessing and protruding structure includes a wave-shaped reflection surface including first inclined surfaces and second inclined surfaces. the first inclined surfaces and the second inclined surfaces are alternately arranged in a second direction. the first inclined surface is inclined at a positive angle with respect to a reference plane perpendicular to the display surface and parallel to the first direction. Wherein the second inclined surfaces are also inclined at a negative angle, and wherein the two or more relief structures comprise: a first diffraction grating in which an array of the first inclined surfaces or an array of the second inclined surfaces have a first lattice constant d_1 ; Or a second diffraction grating having a second lattice constant d_2 greater than d_1 , wherein at least one of the first lattice constant d_1 and the second lattice constant d_2 is different.



CLAIM 1. A color shifting device comprising a plurality of relief structures, each of the plurality of relief structures including a relief structure extending in a first direction parallel to a display surface of the color shifting device and arranged in a second direction perpendicular to the first direction, the relief structure comprising: A reflection surface having a wave shape and including a first inclined surface and a second inclined surface, wherein the first inclined surface and the second inclined surface are alternately arranged in the second direction, the first inclined surface is inclined at a positive angle with respect to a reference plane perpendicular to the display surface and parallel to the first direction, and the second inclined surface is inclined at a negative angle with respect to the reference plane, and Wherein two or more relief structures of the plurality of relief structures comprise a first diffraction grating, wherein the first array of inclined surfaces or the second array of inclined surfaces has a first lattice constant d_1 in a range from 700 nm to 1100 nm, Or a second diffraction grating having a second lattice constant d_2 greater than the first lattice constant d_1 and in a range from 800 nm to 1200 nm, Wherein at least one of the first lattice constant d_1 or the second lattice constant d_2 of at least two relief structures of the plurality of relief structures are different.

P33937

PRINTING – BANKNOTE – RELIEF – MICROLENS

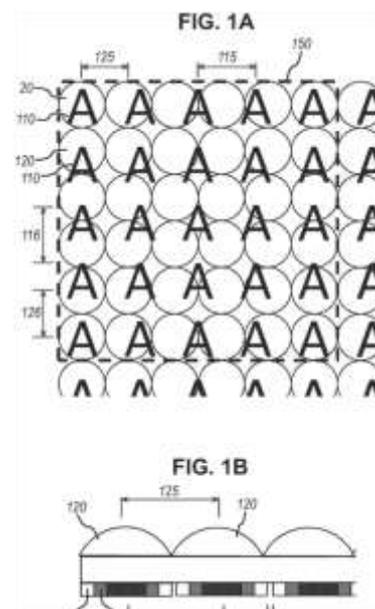
GB2592719

KOENIG BAUER BANKNOTE SOLUTIONS

Priority Date: 15/12/2020

METHODS FOR DESIGNING AND PRODUCING A SECURITY FEATURE

A method of designing a security feature that comprises an array of optical elements overlaying the printed image. The method comprises designing an icon matrix comprising rows and columns of pixels having pixel values representing an icon to be viewed by a user of the security feature; determining a desired gap size to provide a desired magnification of the icon; generating an array of two dimensional matrices of pixels of a first and second type, and wherein the first number, second number, first size, and second size are selected such that, the mean size of each matrix within the set deviates from the modal matrix size by the desired gap size. When viewed through the optical elements the image of the first and second type may appear to float at different apparent depths. A printed image for a security feature is also provided.



P33958

RELIEF – MICROLENS

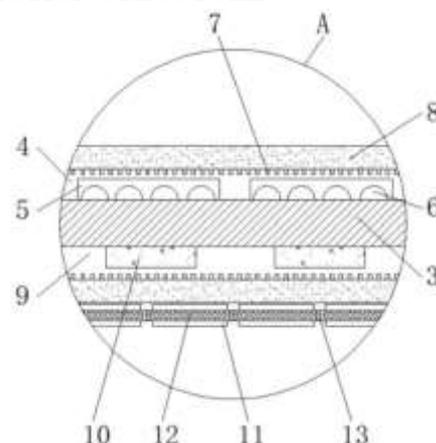
CN214143056U

QINGDAO RONGXIN INDUSTRY & TRADE

Priority Date: 22/12/2020

WATER-BASED COATED PAPER WITH ANTI-COUNTERFEITING PROTECTION STRUCTURE

The utility model discloses a waterborne coated paper with anti-fake protection architecture, including paper main part, basic ply, anti-fake layer and protection film down, paper main part inboard is provided with a roll paper section of thick bamboo, the fixed intermediate position that sets up in the paper main part of basic ply, go up anti-fake layer upper surface and seted up the fixed orifices, anti-fake layer sets up the lower surface at basic ply down, the protection film sets up the surface outside the coating layer in the below. This waterborne coated paper with anti-fake protection architecture adopts neotype structural design, has increased salient point and magnetic block respectively at the front and the reverse side of coated paper, makes the front of coated paper can feel inside protruding piece when pressing, and the reverse side of coated paper has certain magnetism, can be used to distinguish genuine coated paper and forged coated paper, when the coated paper rolling, the end can tear the protection film, utilizes inside to paste the layer and paste end department, prevents to appear loose the condition at the in-process of depositing.



CLAIM 1. The utility model provides a waterborne coated paper with anti-fake protection architecture, includes paper main part (1), base paper layer (3), lower anti-fake layer (9) and protection film (11), its characterized in that: a paper winding cylinder (2) is arranged on the inner side of the paper main body (1), the base paper layer (3) is fixedly arranged at the middle position in the paper main body (1), an upper anti-counterfeiting layer (4) is arranged above the base paper layer (3), a hollow groove (5) is arranged in the upper anti-counterfeiting layer (4), a convex point (6) is fixedly arranged in the hollow groove (5), a fixing hole (7) is arranged on the upper surface of the upper anti-counterfeiting layer (4), and the outer side of the fixing hole (7) is fixedly provided with a coating layer (8), the lower anti-counterfeiting layer (9) is arranged on the lower surface of the base paper layer (3), a magnetic block (10) is fixedly arranged in the lower anti-counterfeiting layer (9), the protective film (11) is arranged on the outer side surface of the lower coating layer (8), and the inner side of the protective film (11) is fixedly provided with an adhesive layer (12), and easy-tearing holes (13) are arranged between the adhesive layers (12).

P33976

PRINTING – INK – BANKNOTE – MAGNETISM

CN113416450

Priority Date: 05/07/2021

CHINA BANKNOTE PRINTING & MINT - CHINA BANKNOTE PRINTING TECHNOLOGY RESEARCH INSTITUTE

ANTI-COUNTERFEITING INK AND PREPARATION METHOD THEREOF, ANTI-COUNTERFEITING LAYER AND PREPARATION METHOD THEREOF

The invention provides anti-counterfeiting ink and a preparation method thereof, and an anti-counterfeiting layer and a preparation method thereof. The anti-counterfeiting ink comprises magnetic photonic crystals and a curable composition, wherein the magnetic photonic crystals are uniformly dispersed in the curable composition, and the anti-counterfeiting ink is prepared by adopting the following method: dispersing the magnetic photonic crystals in the liquid of the curable composition to obtain a mixed liquid; and stirring the mixed solution to obtain the anti-counterfeiting ink. According to the anti-counterfeiting ink, the magnetic photonic crystals are uniformly dispersed in the curable composition, so that the anti-counterfeiting ink can show the color change and the light rolling and dynamic effects in a magnetic field through the magnetic photonic crystals, and the anti-counterfeiting effect is enhanced.



图2a



图2b



图2c

CLAIM 1. The anti-counterfeiting ink is characterized by comprising magnetic photonic crystals and a curable composition, wherein the magnetic photonic crystals are uniformly dispersed in the curable composition, and the anti-counterfeiting ink is prepared by adopting the following method: dispersing the magnetic photonic crystals in the liquid of the curable composition to obtain a mixed liquid; and stirring the mixed solution to obtain the anti-counterfeiting ink.

P33986

PRINTING – MAGNETISM

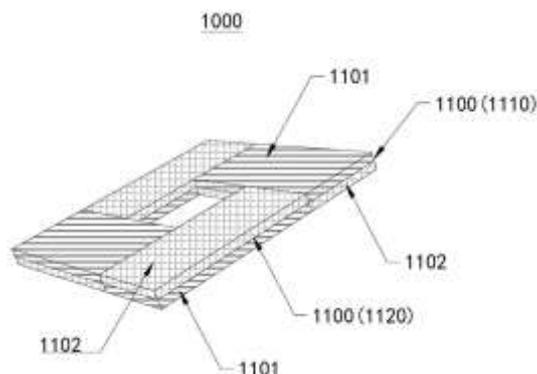
CN113400782

Priority Date: 29/04/2021

HUIZHOU HUAYANG OPTICAL TECHNOLOGY

FIXED MAGNETIC ASSEMBLY AND PRINTING DEVICE

The application discloses decide magnetic component and printing device, should decide magnetic component and include magnet, magnet include two opposite magnetic poles of magnetism, the quantity of magnet be a plurality of and even a plurality of, a plurality of magnet are identical, a plurality of magnet enclose and establish into a symmetrical structure, the cross-section that is on a parallel with a plurality of magnet arrangement direction of symmetrical structure is central symmetry figure, and the magnetic axis of a plurality of magnet is parallel to each other, wherein, the magnetic pole opposite direction of arbitrary adjacent two magnet in a plurality of magnet. The magnetism fixing assembly is simple in structure and capable of conducting centrosymmetric drawing on magnetic ink on the premise that only one specification of magnet is used.



CLAIM 1. The fixed magnetic component is characterized in that the fixed magnetic component comprises magnets, the magnets comprise two magnetic poles with opposite magnetism, the number of the magnets is multiple and even, the magnets are identical, the magnets are enclosed into a symmetrical structure, the section of the symmetrical structure parallel to the arrangement direction of the magnets is in a central symmetrical pattern, the magnetic axes of the magnets are parallel to each other, and the magnetic pole directions of any two adjacent magnets in the magnets are opposite.

P33987

PRINTING – RELIEF – MICROLENS

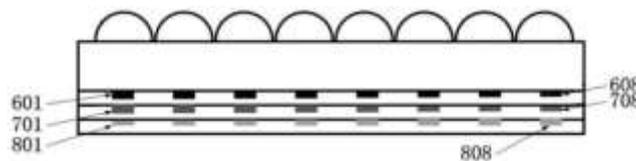
CN113386454

Priority Date: 28/05/2021

ANHUI ANTAI NEW STYLE PACKAGING MATERIALS – SHENZHEN JINJIA

PRINTING EQUIPMENT, PRINTING METHOD AND PRINTED MATTER OF COLOR IMAGE-TEXT MICRO-NANO STRUCTURE

The invention discloses a printing device, a printing method and a printed matter of a color image-text micro-nano structure. The printing equipment for the color image-text micro-nano structure comprises an unreeling device, a transfer device, a turning device, a mould pressing device and a reeling device, wherein the unreeling device unreels an unprinted base film, the transfer device transfers micro image-text information to one side of the base film, the base film is turned over through the turning device, the mould pressing device presses a micro lens unit to the other side of the base film, and finally the reeling device rolls the printed base film. According to the invention, the micro-image-text information is transferred on one side of the base film for multiple times through the transfer device to form a plurality of micro-image-text layers, ink is filled in the micro-grooves in a blade coating or printing mode, the color ink amount filled in the micro-grooves is controlled by regulating the depth of the micro-grooves, and the image-text amplified by the micro-lens layers is colored through superposition of a plurality of layers of micro-image-text information according to the pigment color reduction method principle, so that the printing effect is more colorful.



CLAIM 1. A printing device for color image-text micro-nano structure is characterized by comprising The unwinding device is used for unwinding the unprinted base film; a transfer device for transferring the microimage-text information on one side of the base film for multiple times to form multiple microimage-text layers; the overturning device is used for overturning the base film transferred with the micro image-text information to enable the other side of the base film to be a molded surface; a mold pressing device for molding the microlens unit on the other side of the base film to form a microlens layer; the winding device is used for winding the printed base film; the unwinding device, the transfer device, the turnover device, the die pressing device and the winding device are sequentially arranged.

P34005

LABEL

AT-523393

Priority Date: 06/04/2020

HUECK FOLIEN

PROCESS FOR THE PRODUCTION OF A SECURITY ELEMENT WITH A COLORED MICROSTRUCTURE

The invention relates to a method for producing a security element with a colored microstructure, comprising the following steps: a) providing a carrier substrate (6) b) applying an embossing lacquer layer (3) to the carrier substrate (6) c) introducing microchannels (2) in an area of the embossing lacquer layer (3) provided for the colored microstructure d) curing of the embossing lacquer layer (3) e) application of a colored lacquer (4), which exclusively wets and fills the microchannels (2), onto the cured embossing lacquer layer (3) f) if necessary Application of a functional layer or a protective lacquer layer (5) after drying and / or hardening of the colored lacquer (4). This avoids the formation of a toning film, so that maximum contrast can be achieved in the colored microstructures.

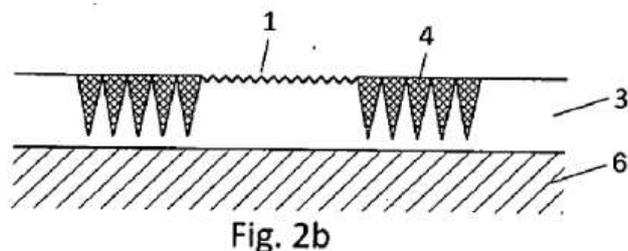


Fig. 2b

PATENTANSPRÜCHE

1. Verfahren zur Herstellung eines Sicherheitselements mit einer farbigen Mikrostruktur, umfassend die folgenden Schritte:
 - a) Bereitstellen eines Trägersubstrats (6)
 - b) Aufbringen einer Prägelackschicht (3) auf das Trägersubstrat (6)
 - c) Einbringen von Mikrokanälen (2) in einen für die farbige Mikrostruktur vorgesehenen Bereich der Prägelackschicht (3)
 - d) Aushärten der Prägelackschicht (3)
 - e) Aufbringen eines Farblacks (4), der ausschließlich die Mikrokanäle (2) benetzt und füllt, auf die ausgehärtete Prägelackschicht (3)
 - f) gegebenenfalls Aufbringen einer funktionellen Schicht oder einer Schutzlackschicht (5) nach Trocknen und/oder Aushärten des Farblacks (4).

Click on the title to return to table of contents

PATENT REFERENCE – See the table at the end of this document

N8084

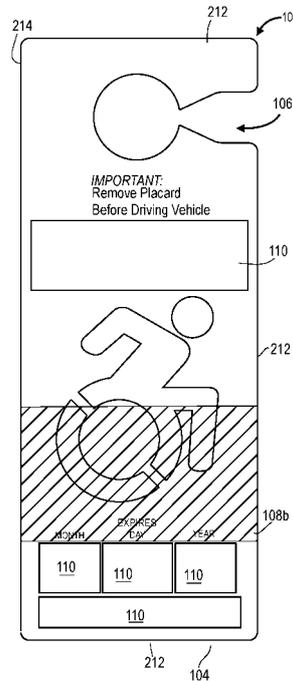
US20210283940

Priority Date: 11/03/2020

R R DONNELLEY & SONS

SECURE PLACARD AND METHOD FOR PRODUCING SAME

A secure placard and a method of producing the secure placard are disclosed. A substrate includes a first portion and a second portion. The first portion of a substrate has varnish applied thereto and a holographic pattern is formed in the varnish. The substrate also includes a second portion that is free of the varnish. The second portion of the substrate is adapted to be printed on using a heat-based process without damage to the holographic pattern.



CLAIM 1. A secure placard, comprising: a substrate; a first portion of the substrate having a varnish layer disposed thereon, wherein the varnish layer has a holographic pattern formed therein; and a second portion of the substrate free of the varnish; wherein the second portion is adapted to be printed on using a heat-based process without damage to the holographic pattern.

Click on the title to return to table of contents

PATENT REFERENCE – See the table at the end of this document

N8079

WO2021186112

Priority Date: 19/03/2020

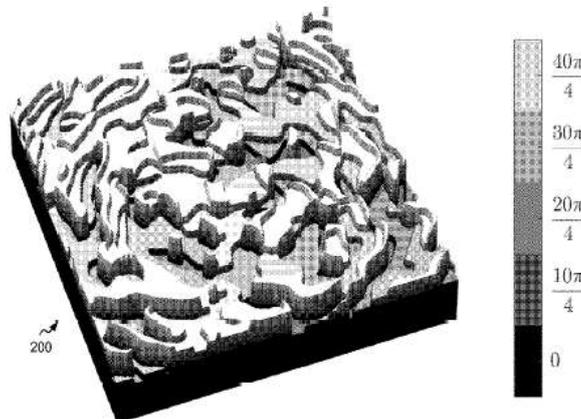
AALTO UNIVERSITY FOUNDATION SR

A HOLOGRAM ELEMENT FOR BROADBAND SHAPING OF ELECTROMAGNETIC WAVES AND A RELATED SYSTEM

A hologram element (200) for broadband shaping of electromagnetic waves and a related system are disclosed. The hologram element has a dispersive surface with a surface height profile that is configured to spatially modulate at least one of an amplitude or a phase of transmitted electromagnetic waves having a bandwidth defined by a start frequency f_1 and a stop frequency f_2 . The surface height profile is further configured to maximize a rate of one of a phase shift or a delay variation at said bandwidth via steps comprised in the dispersive surface, each step having a step height the electrical length of which is a multiple of $N+q$ wavelengths at the start frequency f_1 and M multiple of wavelengths at the stop frequency f_2 .

ÉLÉMENT D'HOLOGRAMME POUR LA MISE EN FORME À LARGE BANDE D'ONDES ÉLECTROMAGNÉTIQUES ET SYSTÈME ASSOCIÉ

L'invention concerne un élément d'hologramme (200) pour la mise en forme à large bande d'ondes électromagnétiques et un système associé. L'élément d'hologramme comprend une surface dispersive ayant un profil de hauteur de surface qui est configuré pour moduler spatialement une amplitude et/ou une phase d'ondes électromagnétiques émises ayant une largeur de bande définie par une fréquence de départ f_1 et une fréquence d'arrêt f_2 . Le profil de hauteur de surface est en outre configuré pour maximiser un taux d'un déphasage et/ou d'une variation de retard au niveau de ladite largeur de bande par l'intermédiaire d'étages inclus dans la surface dispersive, chaque étage ayant une hauteur d'étage dont la longueur électrique est un multiple de $N + q$ longueurs d'onde à la fréquence de départ et M multiples de longueurs d'onde à la fréquence d'arrêt f_2 .



CLAIM 1. A hologram element (200) for broadband shaping of electromagnetic waves, characterized in the hologram element (200) having a dispersive surface (210) with a surface height profile configured to spatially modulate at least one of an amplitude or a phase of transmitted electromagnetic waves having a bandwidth defined by a start frequency f_y and a stop frequency f , wherein the surface height profile is further configured to maximize a rate of one of a phase shift or a delay variation at said bandwidth via steps (211i, 2112, ..., 211x) comprised in the dispersive surface (210), each step (211i, 2112, ..., 211x) having a step height (h_i, h_2, \dots, h_x) the electrical length of which is a multiple of $N+q$ wavelengths at the start frequency h_i and M multiple of wavelengths at the stop frequency f , such that: $M = (2//)(iV + q) = 2\{N + q\}, 3\{iV + q\}, \{N + q\} \dots$ in which q is a rational number representing a quantization step, and N is an integer.

N8081

WO2021172135

Priority Date: 27/02/2020

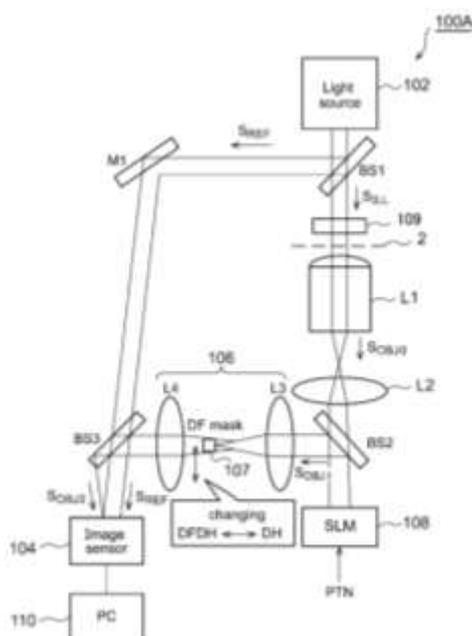
UNIVERSITY OF TOKYO

PHASE IMAGING DEVICE AND PHASE IMAGING METHOD

A spatial light modulator 8 is provided on a plane conjugate to a sample plane on which a sample 2 is disposed, and spatially modulates illumination light SILL which illuminates the sample 2 or object light SOBJ which the sample 2 transmits or reflects. A dark field optical system 6 removes non-scattered light components of first object light SOBJ1 influenced by the spatial light modulator 8 and generates second object light SOBJ2. An image sensor 104 records a hologram based on the second object light SOBJ2. A calculation processing device combines complex amplitude information based on a modulation pattern PTN applied to a spatial light modulator 108 with complex amplitude information based on the hologram for the second object light SOBJ2 to obtain a phase distribution due to the sample 2.

DISPOSITIF D'IMAGERIE DE PHASE ET PROCÉDÉ D'IMAGERIE DE PHASE

Selon l'invention, un modulateur spatial de lumière 8 est ménagé sur un plan conjugué à un plan d'échantillon sur lequel un échantillon 2 est disposé, et module spatialement une lumière d'éclairage SILL qui éclaire l'échantillon 2 ou une lumière d'objet SOBJ que l'échantillon 2 transmet ou réfléchit. Un système optique à fond noir 6 élimine des composantes de lumière non diffusée d'une première lumière d'objet SOBJ1 influencée par le modulateur spatial de lumière 8 et génère une seconde lumière d'objet SOBJ2. Un capteur d'image 104 enregistre un hologramme sur la base de la seconde lumière d'objet SOBJ2. Un dispositif de traitement de calcul combine des informations d'amplitude complexe basées sur un motif de modulation PTN appliqué à un modulateur spatial de lumière 108 avec des informations d'amplitude complexe basées sur l'hologramme pour la seconde lumière d'objet SOBJ2 pour obtenir une distribution de phase due à l'échantillon 2.



CLAIM 1. A spatial light modulator provided on a plane conjugated to a sample surface on which a sample is placed, the spatial light modulator being capable of spatially modulating illumination light with which the sample is irradiated or object light transmitted through or reflected by the sample; a dark field optical system that removes unscattered light components contained in first object light affected by the spatial light modulator and generates second object light; An image sensor that records a hologram for the second object light; and an arithmetic processing device that synthesizes complex amplitude information based on a modulation pattern provided to the spatial light modulator and complex amplitude information based on a hologram for the second object light, and acquires a phase distribution derived from the sample.

N8083

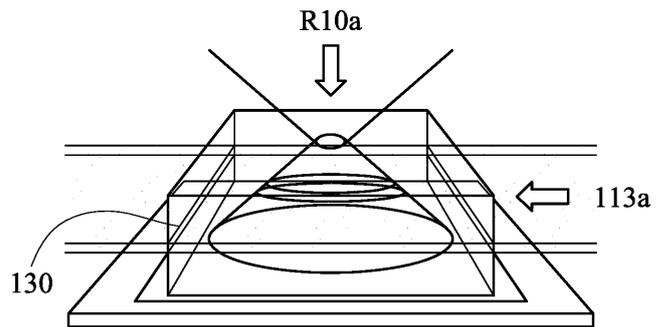
US20210294265
Priority Date: 18/03/2020

NATIONAL CENTRAL UNIVERSITY

LENSSLESS HOLOGRAPHIC IMAGING SYSTEM USING HOLOGRAPHIC OPTICAL ELEMENT

A lensless holographic imaging system having a holographic optical element includes: a coherent light source for outputting a first light beam and a second light beam, wherein the first light beam irradiates a first inspection plane to form first object-diffracted light; a light modulator for modulating the second light beam into reading light having a specific wavefront; a multiplexed holographic optical element, wherein the first object-diffracted light passes through the multiplexed holographic optical element, and the reading light is input into the multiplexed holographic optical element to generate a diffracted light beam as system reference light; and an image capture device for reading at least one interference signal generated by interference between the first object-diffracted light and the system reference light. The lensless holographic imaging system has a relatively small volume and relatively high diffraction efficiency.

CLAIM 1. A lensless holographic imaging system having a holographic optical element, comprising: a first partially coherent light source for outputting a first light beam and a second light beam partially coherent with respect to the first light beam, the first light beam being used to irradiate a first inspection plane of an object under inspection so as to form first object-diffracted light; a light modulator for receiving the second light beam and modulating the second light beam into at least one beam of reading light having a specific wavefront; a first multiplexed holographic optical element, the first object-diffracted light entering the first multiplexed holographic optical element through a first surface thereof, passing through the first multiplexed holographic optical element, and exiting the first multiplexed holographic optical element through a second surface thereof, the at least one beam of reading light being input into the first multiplexed holographic optical element to generate at least one diffracted light beam as at least one beam of first system reference light; and an image capture device adjacent to the second surface and configured to read at least one first interference signal generated by interference between the first object-diffracted light and the at least one beam of first system reference light.



N8085

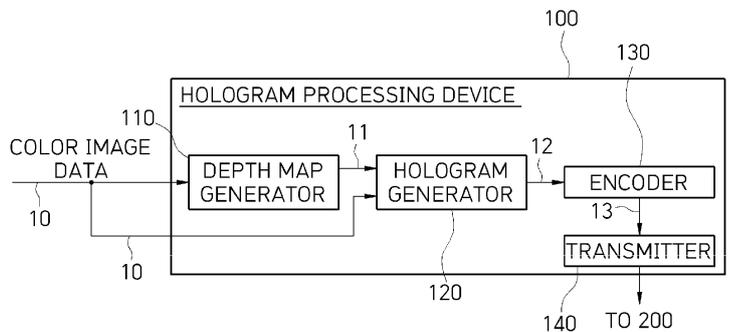
US20210279951
Priority Date: 05/03/2020

ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE

METHOD AND APPARATUS FOR PROCESSING HOLOGRAPHIC IMAGE

A method of generating hologram data in a holographic display apparatus, including a hologram processing device generating hologram data and a display terminal reconstructing a hologram image in a three-dimensional (3D) space on the basis of the generated hologram data, includes generating depth map image data from input image data by using a deep learning engine for generating a depth map and calculating a complex value hologram on the basis of the depth map image data and the input image data to generate the hologram data.

CLAIM 1. A method of generating hologram data in a holographic display apparatus including a hologram processing device generating hologram data and a display terminal reconstructing a hologram image in a three-dimensional (3D) space on the basis of the generated hologram data, the method comprising: generating depth map image data from input image data by using a deep learning engine for generating a depth map; and calculating a complex value hologram on the basis of the depth map image data and the input image data to generate the hologram data.



N8098

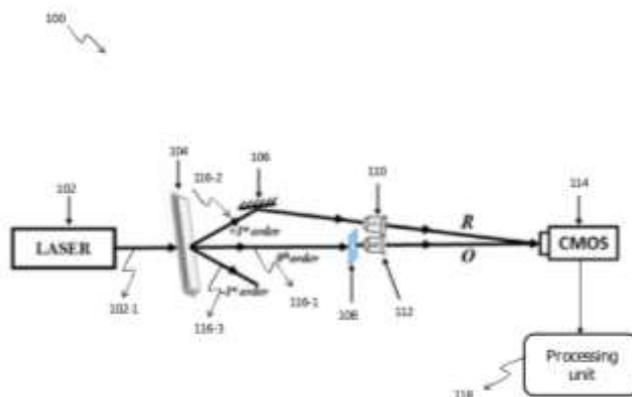
IN201911030117

Priority Date: 25/07/2019

INDIAN INSTITUTE OF TECHNOLOGY DELHI

AN IMPROVED DIGITAL HOLOGRAPHIC INTERFEROMETER FOR QUANTITATIVE PHASE IMAGING

A digital holographic interferometric system is disclosed. The digital holographic interferometric system comprises a laser-source, a volume phase holographic grating (VPHG) for diffracting the emitted beam from laser-source into a zero-order and first order beams. The digital holographic interferometric system further comprises a sample stage adapted for being irradiated through the zero-order beam, a first objective lens receiving first order beam at front focal plane makes reference beam R; and a second objective lens for receiving the zero order beam through the sample at front focal plane makes an object beam O.



CLAIM 1. A digital holographic interferometric system comprising: a laser-source (102) for emitting a light beam; a volume phase holographic grating (VPHG) (104) for diffracting the emitted light beam from the laser-source into a zero-order and first order beams; a sample stage (108) adapted for being irradiated through the zero-order beam (116-1); a first objective lens (110) for receiving the first order beam (116-2) at front focal plane makes reference beam R; and a second objective lens (112) for receiving zero order beam (116-1) through the sample at front focal plane makes an object beam O.

N8099

RECORDING & MEMORY

DE102020202799

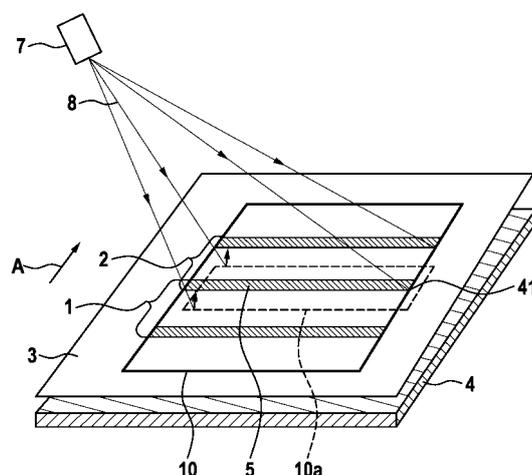
Priority Date: 05/03/2020

ROBERT BOSCH

METHOD FOR PRODUCING HOLOGRAPHIC OPTICAL ELEMENTS

The invention relates to a method for producing holographic optical elements (10), wherein at least one first sub-hologram (1) and one second sub-hologram (2) are successively exposed into a holographic film (3), wherein the first sub-hologram (1) and the second sub-hologram (2) overlap, wherein the exposure of the second sub-hologram (2) begins within a predefined time period after the exposure of the first sub-hologram (1), and wherein the predefined time period is dimensioned in such a way as to restrict a saliency of the first sub-hologram (1) in the overlapping region (5).

CLAIM 1. Method for producing holographic optical elements (10), - wherein at least a first sub-hologram (1) and a second sub-hologram (2) are successively exposed into a holographic film (3), - wherein the first sub-hologram (1) and the second sub-hologram (2) overlap in an overlapping region (5), - wherein the exposure of the second sub-hologram (2) begins within a predefined period of time after the exposure of the first sub-hologram (1), and - wherein the predefined period of time is dimensioned in such a way as to restrict a saliency of the first sub-hologram (1) in the overlapping region (5).



N8115

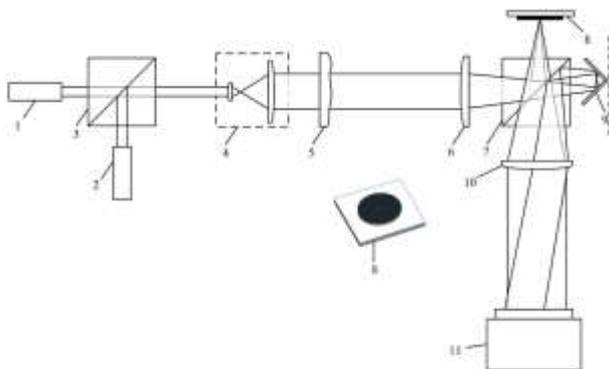
CN214095900U

Priority Date: 11/12/2020

HEILONGJIANG UNIVERSITY

DOUBLE-CARRIER-FREQUENCY DOUBLE-WAVELENGTH DIGITAL HOLOGRAPHIC DETECTION DEVICE BASED ON REFLECTION TYPE POINT DIFFRACTION

The utility model provides a dual carrier frequency dual wavelength digital holographic detection device based on reflection type point diffraction, detection device includes: wavelength of λ_1 Light source of wavelength λ_2 The device comprises a light source, a first non-polarization beam splitter prism, a collimation and beam expansion system, a first lens, a second non-polarization beam splitter prism, a small-hole reflector, a corner reflector, a second lens and an image sensor; combining two wavelength light beams into one beam by using a first non-polarization beam splitter prism; after the light beam is collimated and expanded Irradiating an object to be detected; the second non-polarization beam splitter prism splits the light beam focused by the first lens into reference light and object light; the reference light irradiates on the aperture reflector and is reflected; the object light is irradiated on the angle reflecting mirror with the transverse offset and is reflected; the reflected reference light and the object light are converged by the second non-polarization beam splitter prism again, and form a dual-carrier-frequency dual-wavelength hologram through the second lens, and the hologram is collected into a computer by the image sensor; and calculating to obtain the phase distribution of the object to be measured.



CLAIM 1. A dual-carrier-frequency dual-wavelength digital holographic detection device based on reflection type point diffraction is characterized in that: the detection device includes: wavelength of λ_1 Light source (1) of wavelength λ_2 The device comprises a light source (2), a first non-polarization beam splitting prism (3), a collimation and beam expansion system (4), a first lens (6), a second non-polarization beam splitting prism (7), a small-hole reflector (8), an angle reflector (9), a second lens (10) and an image sensor (11); the wavelengths of the two light sources satisfy $\lambda_1 > \lambda_2$ Beams emitted by the two light sources are converged into a beam by the first non-polarizing beam splitter prism (3), the beam sequentially passes through the collimation and beam expansion system (4) and the object to be detected (5) and then is incident to the first lens (6), and the beam focused by the first lens (6) is divided into an object beam and a reference beam by the second non-polarizing beam splitter prism (7); the object light irradiates on the corner reflector (9), and the reference light irradiates on the pinhole reflector (8); the reflected object light and the reference light are converged into a beam of light after passing through a second non-polarizing beam splitter prism (7) again, and then a dual-carrier-frequency dual-wavelength hologram is generated after passing through a second lens (10), and simultaneously the reflected object light and the reference light are imaged The sensor (11) is collected in a computer.

N8116

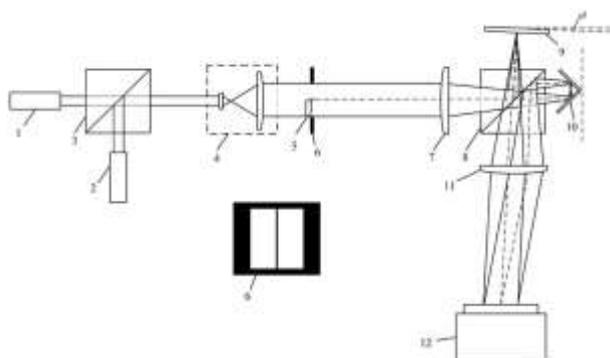
CN214095899U

Priority Date: 11/12/2020

HEILONGJIANG UNIVERSITY

DOUBLE-CARRIER-FREQUENCY DOUBLE-WAVELENGTH DIGITAL HOLOGRAPHIC DETECTION DEVICE BASED ON OVERTURNING INTERFERENCE

The utility model provides a dual carrier frequency dual wavelength digital holographic detection device based on upset is interfered, and detection device includes that wavelength is λ_a respectively λ_b . The device comprises a light source, a first non-polarization beam splitter prism, a collimation and beam expansion system, a rectangular diaphragm, a first lens, a second non-polarization beam splitter prism, a plane reflector, an angle reflector, a second lens and an image sensor; the method guarantees the anti-interference capability and the detection real-time performance, and simultaneously gives consideration to the measurement real-time performance and the system recovery. The device has the advantages of complexity, flexibility in operation, no need of special optical elements such as a polarizing element and a spatial filter, simple structure and low cost.



CLAIM 1. The utility model provides a dual carrier frequency dual wavelength digital holographic detection device based on upset is interfered which characterized in that: the detection device includes: wavelength of λ_a Light source (1) of wavelength λ_b . The device comprises a light source (2), a first non-polarization beam splitting prism (3), a collimation and beam expansion system (4), a rectangular diaphragm (6), a first lens (7), a second non-polarization beam splitting prism (8), a plane reflector (9), an angle reflector (10), a second lens (11) and an image sensor (12); the wavelengths of the two light sources satisfy $\lambda_a > \lambda_b$. Beams emitted by the two light sources are converged into a beam by the first non-polarization beam splitter prism (3), and then sequentially pass through the collimation beam expanding system (4) and the object to be detected (5) and then are incident to the rectangular diaphragm (6) to form object light and reference light; the object light and the reference light are focused by the first lens (7) to form a light beam, and the light beam is divided into two beams by the second non-polarization beam splitter prism (8); a first beam of the two beams of light irradiates on the corner reflector (10) and is reflected, and the relative positions of the object light and the reference light in the first beam of light are reversed; the second light of the two beams of light irradiates the plane reflector (9) and is reflected; the two reflected beams of light converge after passing through the second non-polarizing beam splitter prism (8) again, interfere with each other after passing through the second lens (11) to generate two mirror-symmetric dual-carrier-frequency dual-wavelength holograms, and are collected into a computer by an image sensor (12).

N8117

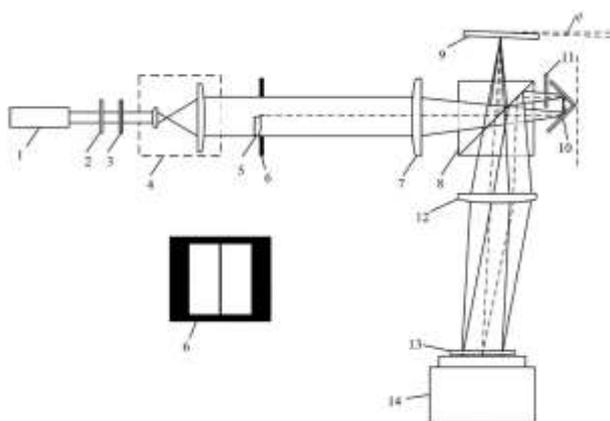
CN214095898U

Priority Date: 11/12/2020

HEILONGJIANG UNIVERSITY

LIGHT OFF-AXIS FLIP INTERFERENCE DIGITAL HOLOGRAPHIC DETECTION DEVICE BASED ON POLARIZATION SYNCHRONOUS PHASE SHIFT

The utility model provides a holographic detection device of light off-axis upset interference digit based on polarization synchronous phase shift, this detection device includes: the utility model discloses a two holograms that once exposure was gathered, alright completion phase place resumes to light source, first linear polaroid, lambda/4 wave plate, collimation beam expanding system, rectangular diaphragm, first lens, non-polarization beam splitting prism, plane mirror, corner mirror, second linear polaroid, second lens, polarizing plate group and image sensor; the device has good measurement real-time performance while ensuring the stability of the system; meanwhile, the acquisition of the hologram can be completed only by one image sensor, special optical elements such as a spatial filter, a grating and the like are not needed, the structure is simple, and the cost is low; after the positions of the corner reflector and the plane reflector are determined, no mechanical movement is needed in the detection process, and the operation is simple and easy.



CLAIM 1. The utility model provides a light off-axis upset interference digital holographic detection device based on polarization synchronization phase shift which characterized in that: the detection device includes: the device comprises a light source (1), a first linear polarizer (2), a lambda/4 wave plate (3), a collimation and beam expansion system (4), a rectangular diaphragm (6), a first lens (7), a non-polarization beam splitter prism (8), a plane mirror (9), an angle mirror (10), a second linear polarizer (11), a second lens (12), a linear polarizer group (13) and an image sensor (14); light beams emitted by a light source (1) are modulated by a first linear polarizer (2) and a lambda/4 wave plate (3) to form circularly polarized light beams, and then the circularly polarized light beams are incident to a rectangular diaphragm (6) after sequentially passing through a collimation and beam expansion system (4) and an object to be detected (5) to form object light and reference light; the object light and the reference light are focused by the first lens (7) to form a light beam, and the light beam is divided into two beams by the non-polarization beam splitter prism (8); a first beam of the two beams of light irradiates on the corner reflector (10) and is reflected, the relative positions of the object light and the reference light in the first beam of light are reversed, and then the first beam of light passes through a second linear polarizer (11) to form a linear polarized light beam; the second light of the two beams irradiates on a plane reflector (9) and is reflected; the reflected light of the first light beam and the reflected light of the second light beam are converged after passing through the non-polarization beam splitter prism (8) again, and are incident to the linear polarizer group (13) after passing through the second lens (12), and the light beams emitted by the linear polarizer group (13) are interfered with each other to generate two different phase shift holograms, and are collected into a computer by the image sensor (14).

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PATENT REFERENCE – See the table at the end of this document

P33974

SECURITY HOLOGRAM

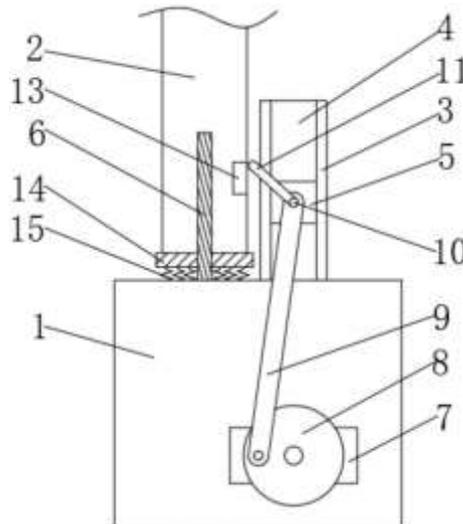
CN214056938U

SHENZHEN YANRUN TECHNOLOGY

Priority Date: 14/12/2020

HOLOGRAPHIC ANTI-COUNTERFEITING POSITIONING HOT STAMPING DETECTION EQUIPMENT

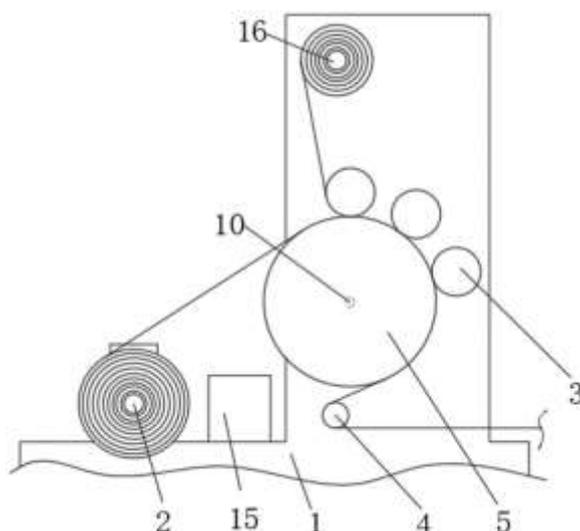
The utility model discloses a holographic anti-counterfeiting positioning hot stamping detection device, which comprises a hot stamping machine and a stand column, wherein the upper surface of the hot stamping machine is fixedly connected with a supporting block, the surface of the supporting block is provided with a chute, the supporting block is connected with a sliding block through the chute in a sliding way, the upper surface of the hot stamping machine is fixedly connected with a limiting rod, the lower end of the stand column is provided with an opening for the limiting rod to penetrate and slide, and the side surface of the hot stamping machine is provided with a driving mechanism; the vertical column unlocking mechanism comprises a driving mechanism I, a driving mechanism II and a resetting mechanism, wherein the driving mechanism is driven to operate, the sliding block is driven to vertically move under the action of the driving mechanism I, the vertical column is locked under the action of the driving mechanism II through the vertical movement of the sliding block, and the resetting mechanism is driven to operate to unlock the vertical column. The auxiliary effect of cooperation and spring through between fixture block and the draw-in groove has been possessed, carries out high-efficient and convenient detachable effect to CCD detection device.



CLAIM 1. The utility model provides a holographic anti-fake location scalds check out test set, includes thermoprinting machine (1) and stand (2), its characterized in that: the upper surface of the hot stamping machine is fixedly connected with a supporting block (3), the surface of the supporting block (3) is provided with a sliding groove (4), the supporting block (3) is connected with a sliding block (5) in a sliding manner through the sliding groove (4), the upper surface of the hot stamping machine (1) is fixedly connected with a limiting rod (6), the lower end of the upright post (2) is provided with an opening through which the limiting rod (6) penetrates and slides, and the side surface of the hot stamping machine (1) is provided with a driving mechanism; the vertical column unlocking mechanism comprises a driving mechanism I, a driving mechanism II and a resetting mechanism, the sliding block (5) is vertically moved under the action of the driving mechanism I through the operation of the driving mechanism, the vertical column (2) is locked under the action of the driving mechanism II through the vertical movement of the sliding block (5), and the vertical column (2) is unlocked through the operation of the resetting mechanism.

DEVICE FOR TRANSFERRING LASER HOLOGRAPHIC ANTI-COUNTERFEITING PATTERN

The utility model discloses a device for transferring laser holographic anti-counterfeiting patterns, which comprises a fixed seat, a printing film unreeling shaft, a compression roller and a transition roller, heating steel roller and transfer foil unreel axle, still including carousel and pivot, carousel fixed connection is on the surface of pivot, the pivot rotates the surface of connecting at the fixing base, heating steel roller fixed connection is on the surface of carousel, the surface of carousel is provided with four concave type pieces that are annular array and distribute, the surface of carousel is provided with four boards that are annular array and distribute, the spout has all been seted up on the surface of four boards, still including being used for driving carousel intermittent type pivoted actuating mechanism, actuating mechanism is including rotating the driving source, the segment, spliced pole and traveller, it is on the surface of fixing base to rotate driving source fixed connection, the surface of rotating the driving source drive shaft is connected with the fixed surface of segment, the utility model provides a traditional hot pressing can not make the good adhesive problem of aluminizing foil and hot melt adhesive.



CLAIM 1. The utility model provides a device of holographic anti-fake pattern of rendition laser, includes that fixing base (1), printing film put spool (2), compression roller (3), transition roller (4), heating steel roller (5) and transfer foil put spool (16), its characterized in that: the heating device is characterized by further comprising a rotary table (6) and a rotary shaft (10), wherein the rotary table (6) is fixedly connected to the surface of the rotary shaft (10), the rotary shaft (10) is rotatably connected to the surface of the fixed seat (1), the heating steel roller (5) is fixedly connected to the surface of the rotary table (6), four concave blocks (14) distributed in an annular array are arranged on the surface of the rotary table (6), four plates (7) distributed in an annular array are arranged on the surface of the rotary table (6), and sliding grooves (8) are formed in the surfaces of the four plates (7); the device also comprises a driving mechanism for driving the turntable (6) to rotate intermittently.

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PATENT REFERENCE – See the table at the end of this document

N8095

JP2021140018

Priority Date: 04/03/2020

JAPAN BROADCASTING

IMAGE PROCESSING DEVICE AND HOLOGRAM RECORDING/REPRODUCTION DEVICE

TOPIC: To provide an image processor and a hologram recording/reproduction device capable of accurately acquiring variation in amplitude or phase modulation in a page data plane from a small number of samples.

INVENTION: An image processing device configured to process page data reproduced by hologram reproduction means, the image processing device comprising: a known symbol extraction unit configured to extract a symbol having a known amplitude value or phase value from the page data that is reproduced, and to output the amplitude value or phase value that is reproduced of the symbol that is extracted; and a known symbol extraction unit configured to, from the amplitude value or phase value of the symbol that is extracted, A page data noise estimation unit that estimates noise of amplitude or phase superimposed on the entire page data by obtaining a frequency component or a wavefront aberration component of the page data by an optimization problem using compression sensing.



CLAIM 1. An image processing device configured to process page data reproduced by a hologram reproduction unit, the image processing device comprising: a known symbol extraction unit configured to extract a symbol having a known amplitude value or phase value from the page data that is reproduced, and to output a reproduced amplitude value or phase value of the extracted symbol; A page data noise estimation unit configured to estimate noise of amplitude or phase superimposed on the entire page data from the extracted amplitude values or phase values of the symbols by image enlargement processing using interpolation or extrapolation.

N8096

JP2021135417

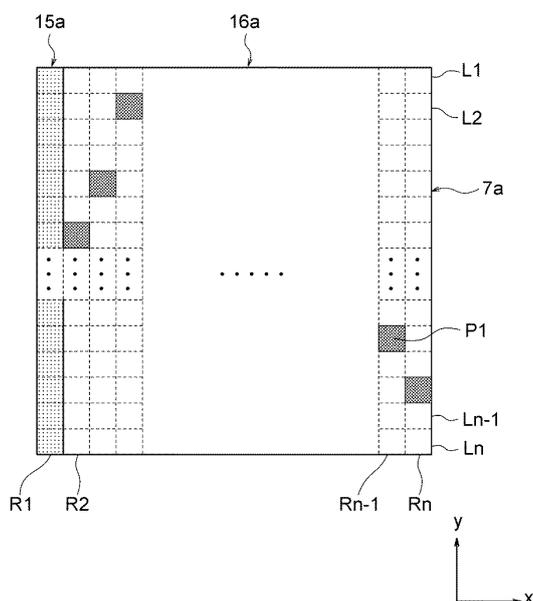
Priority Date: 27/02/2020

UNIVERSITY OF TOKYO

HOLOGRAM DESIGN METHOD, HOLOGRAM REPRODUCTION DEVICE, AND HOLOGRAM RECORDING MEDIUM

TOPIC: To provide a method for designing a hologram, a hologram reproduction device, and a hologram recording medium capable of improving a signal-to-noise ratio of a reproduction signal and improving the multiplicity of holograms.

INVENTION: In designing a hologram, a signal light region 15 a for forming a signal pattern is arranged in a pixel row R1 located in one end row of a modulation surface 7 a, and a reference light region 16 a for forming a reference pattern is arranged in a pixel row R2,..., Rn located in a region other than the signal light region 15 a of the modulation surface 7 a. Then, in the reference light region 16 a, the reference light setting point P1 from which light is emitted is set to only one pixel for each column, and the position of the reference light setting point P1 is randomly set for each column.



CLAIM 1. A method for designing a hologram recorded by forming recesses and protrusions on a surface of a hologram recording medium, the method comprising: virtually setting a modulation surface of a spatial light modulator, the modulation surface including a plurality of pixels spatially divided into an array; and performing a method for performing emission and shielding of light from the modulation surface, And a phase for each of the pixels and designing a hologram based on the recording light obtained by interfering with the signal light and the reference light arranged on the same optical axis, wherein in the designing of the hologram, at least one end row out of both end rows of the modulating surface includes: A signal light region for forming a signal pattern is disposed, a reference light region for forming a reference pattern in which a reference light set point at which the light is emitted is only one pixel per row is disposed in a region other than the signal light region on the modulation surface, and the reference light region includes: Setting a position of the reference light setting point at a position at which noise due to overlap of gratings generated by diffracted light is eliminated in a reproduction signal reproduced when the hologram recording medium recording the hologram is irradiated with the reference light.

N8099

HOLOGRAPHY TECHNIQUE

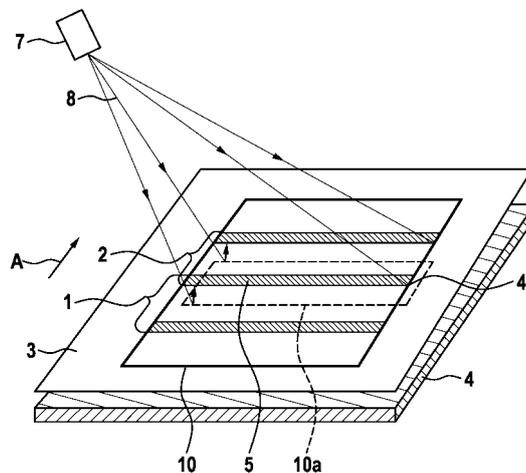
DE102020202799

ROBERT BOSCH

Priority Date: 05/03/2020

METHOD FOR PRODUCING HOLOGRAPHIC OPTICAL ELEMENTS

The invention relates to a method for producing holographic optical elements (10), wherein at least one first sub-hologram (1) and one second sub-hologram (2) are successively exposed into a holographic film (3), wherein the first sub-hologram (1) and the second sub-hologram (2) overlap, wherein the exposure of the second sub-hologram (2) begins within a predefined time period after the exposure of the first sub-hologram (1), and wherein the predefined time period is dimensioned in such a way as to restrict a saliency of the first sub-hologram (1) in the overlapping region (5).



CLAIM 1. Method for producing holographic optical elements (10), - wherein at least a first sub-hologram (1) and a second sub-hologram (2) are successively exposed into a holographic film (3), - wherein the first sub-hologram (1) and the second sub-hologram (2) overlap in an overlapping region (5), - wherein the exposure of the second sub-hologram (2) begins within a predefined period of time after the exposure of the first sub-hologram (1), and - wherein the predefined period of time is dimensioned in such a way as to restrict a saliency of the first sub-hologram (1) in the overlapping region (5).

N8105

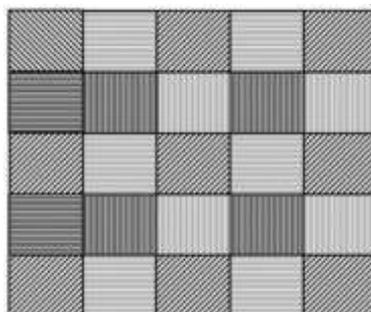
SHENZHEN HUYNEW TECHNOLOGY

CN214225472U

Priority Date: 26/01/2021

VOLUME HOLOGRAPHIC GRATING AND PREPARATION SYSTEM, REPLICATION PROCESSING STRUCTURE AND WAVEGUIDE STRUCTURE THEREOF

The utility model discloses a volume holographic grating and preparation system, duplication processing structure, waveguide structure thereof, wherein, volume holographic grating includes: a photosensitive material and a plurality of continuous grating regions arranged in a two-dimensional array form recorded on the photosensitive material; the grating vector of the grating area is discretely graded along the row direction and the column direction of the array. The technical scheme of the utility model the volume holographic grating of discrete variable K vector that provides for the grating area array who uses two-dimensional array form to arrange, can reach great angle bandwidth, and the diffraction rate is comparatively all, is convenient for simultaneously process and duplicate, and the preparation cost is low, is favorable to extensive volume production.



CLAIM 1. A volume holographic grating, comprising: a photosensitive material and a plurality of continuous grating regions arranged in a two-dimensional array form recorded on the photosensitive material; the grating vector of the grating area is discretely graded along the row direction and the column direction of the array.

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PATENT REFERENCE – See the table at the end of this document

N8080

WO2021178445

Priority Date: 02/03/2020

PRANOS

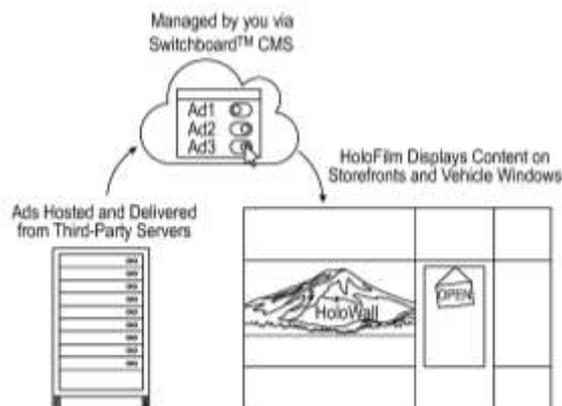
TARGETED CONTENT DELIVERY VIA HOLOGRAPHIC AND TRANSPARENT DISPLAYS

In an embodiment, a method includes receiving, by one or more computing systems, a request to display a digital content item at a display endpoint communicatively coupled with a local content server. The display endpoint includes an external vehicle-mounted display. The method includes selecting a digital content item from a collection of digital content items hosted by a remote content server. The method includes causing the digital content item to be transferred to the local content server and providing instructions to cause the digital content item to be displayed. The method includes receiving a confirmation that the digital content item was displayed by the display endpoint. The confirmation includes a time and a location associated with the vehicle. The method includes calculating, based on the time and the location associated with the vehicle, a number of content impressions of the digital content item attributable to the display endpoint.

DISTRIBUTION CIBLÉE DE CONTENU PAR L'INTERMÉDIAIRE D'ÉCRANS HOLOGRAPHIQUES ET TRANSPARENTS

Dans un mode de réalisation, la présente invention concerne un procédé qui consiste à recevoir, en provenance d'un ou de plusieurs systèmes informatiques, une demande d'affichage d'un élément de contenu numérique au niveau d'un point d'extrémité d'affichage couplé à un serveur de contenu local de façon à communiquer avec lui. Le point d'extrémité d'affichage comprend un dispositif d'affichage externe monté sur un véhicule. Le procédé comprend la sélection d'un élément de contenu numérique à partir d'une collection d'éléments de contenu numérique hébergés par un serveur de contenu à distance. Le procédé consiste à amener l'élément de contenu numérique à être transféré au serveur de contenu local et à fournir des instructions destinées à amener l'élément de contenu numérique à être affiché. Le procédé consiste à recevoir une confirmation que l'élément de contenu numérique a été affiché par le point d'extrémité d'affichage. La confirmation comprend un temps et un emplacement associés au véhicule. Le procédé consiste à calculer, sur la base du temps et de l'emplacement associés au véhicule, un certain nombre d'impressions de contenu de l'élément de contenu numérique qui sont attribuables au point d'extrémité d'affichage.

CLAIM 1. A method comprising: receiving, by one or more computing systems, a request to display a digital content item at a first display endpoint of a plurality of display endpoints, wherein each display endpoint is communicatively coupled with a local content server, wherein the first display endpoint comprises an external vehicle-mounted display; accessing, by the one or more computing systems, a remote content server hosting a plurality of digital content items; selecting, by the one or more computing systems from the plurality of digital content items hosted by the remote content server, a first digital content item based on contextual information included with the request, the contextual information comprising a first time, a first location associated with the vehicle, and a location of the external vehicle-mounted display on the vehicle; causing, by the one or more computing systems, the first digital content item to be transferred to the local content server; providing, by the one or more computing systems, instructions to the first display endpoint and local content server to cause the first digital content item to be displayed; receiving, by the one or more computing systems, a confirmation that the first digital content item was displayed by the first display endpoint, the confirmation including a second time and a second location associated with the vehicle; and calculating, by the one or more computing systems and based on the second time and the second location associated with the vehicle, a number of content impressions of the first digital content item attributable to the first display endpoint.

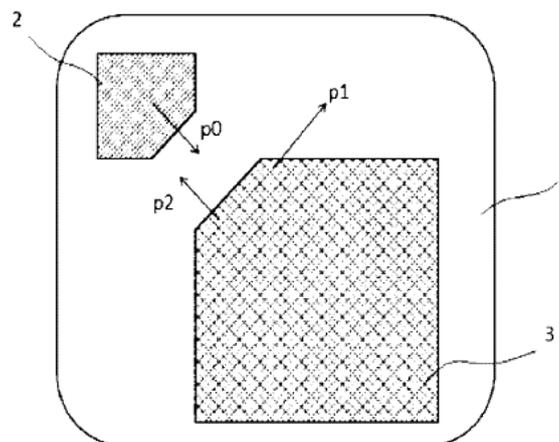


HOLOGRAPHIC OPTICAL WAVEGUIDE LENS AND AUGMENTED REALITY DISPLAY DEVICE

A holographic optical waveguide lens and an augmented reality display device. The holographic optical waveguide lens comprises: a waveguide (1); and a functional region that is located on the upper or lower surface of the waveguide (1) and that is provided with an optical diffraction function, wherein the functional region comprises: an incident functional region (2), which is internally provided with a one-dimensional grating that couples external image light to the waveguide (1); and an exit functional region (3), which is internally provided with a two-dimensional grating that couples image light transmitted in the waveguide (1) out of the waveguide (1) and achieves the expansion of the image light. Only two functional regions, i.e., the incident functional region (2) and the exit functional region (3), need to be provided, which reduces the area requirements of the waveguide (1) and is suitable for a micro display system. On the basis of multi-directional diffraction, the two-dimensional grating in the exit functional region (3) achieves the two-dimensional expansion of light, which improves the degree of contrast of an image and ensures the imaging effect.

LENTILLE DE GUIDE D'ONDES OPTIQUE HOLOGRAPHIQUE ET DISPOSITIF D'AFFICHAGE À RÉALITÉ AUGMENTÉE

L'invention concerne une lentille de guide d'ondes optique holographique et un dispositif d'affichage à réalité augmentée. La lentille de guide d'ondes optique holographique comprend : un guide d'ondes (1) ; et une région fonctionnelle qui est située sur la surface supérieure ou inférieure du guide d'ondes (1) et qui est pourvu d'une fonction de diffraction optique, la région fonctionnelle comprenant : une région fonctionnelle incidente (2), qui est pourvue à l'intérieur d'un réseau unidimensionnel qui couple la lumière d'image externe au guide d'ondes (1) ; et une région fonctionnelle de sortie (3), qui est pourvue à l'intérieur d'un réseau bidimensionnel qui couple la lumière d'image transmise dans le guide d'ondes (1) hors du guide d'ondes (1) et réalise l'expansion de la lumière d'image. Seules deux régions fonctionnelles, c'est-à-dire la région fonctionnelle incidente (2) et la région fonctionnelle de sortie (3), doivent être pourvues, ce qui réduit les exigences de surface du guide d'ondes (1) et est approprié pour un système de micro-affichage. Sur la base d'une diffraction multidirectionnelle, le réseau bidimensionnel dans la région fonctionnelle de sortie (3) réalise l'expansion bidimensionnelle de la lumière, ce qui améliore le degré de contraste d'une image et assure l'effet d'imagerie.



CLAIM 1. A holographic optical waveguide lens comprising: a substrate having a first surface and a second surface; A waveguide; A functional region having an optical diffraction function located on an upper surface or a lower surface of a waveguide, said functional region comprising: a substrate; An incident functional region within which a one-dimensional grating optically coupling an external image to a waveguide is disposed; An exit functional region provided with a two-dimensional grating for coupling image light transmitted within the waveguide out of the waveguide and effecting image light expansion.

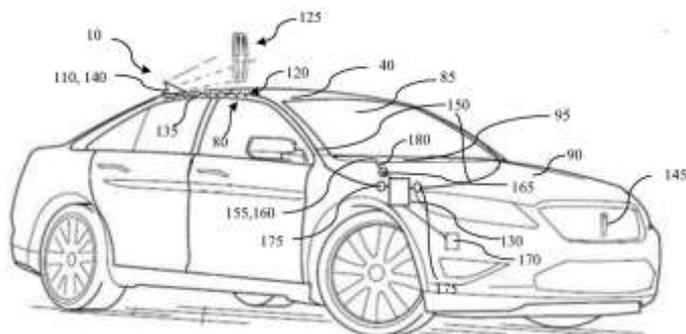
N8087

US20210268959
Priority Date: 27/02/2020

FORD GLOBAL TECHNOLOGIES

HOLOGRAPHIC PROJECTION SYSTEM AND METHOD FOR VEHICLE

The present invention provides a holographic projection system and method for a vehicle, the system comprising: a projection device provided on a vehicle; a water mist generating device arranged on the vehicle for generating water mist; and a controller in communication with the projection device and the fog generating device, respectively, the controller configured to detect a signal related to proximity of the vehicle and activate the fog generating device and the projection device, respectively, based on the detected signal, such that the projection device projects an image onto the fog. In addition, the invention also provides a vehicle comprising the system. By means of the system and the method, particularly in cloudy days, at night or in other conditions of insufficient light, vehicle passengers can be helped to find own vehicles without difficulty, and deep impression can be given to people, and interaction between the vehicle passengers and the vehicles is increased.



CLAIM 1. A holographic projection system for a vehicle, comprising: a projection device provided on the vehicle; a water mist generating device provided on the vehicle for generating water mist; and a controller in communication with the projection device and the mist generating device, respectively, the controller configured to detect a signal related to vehicle proximity and activate the mist generating device and the projection device, respectively, based on the detected signal, such that the projection device projects an image onto the mist.

N8088

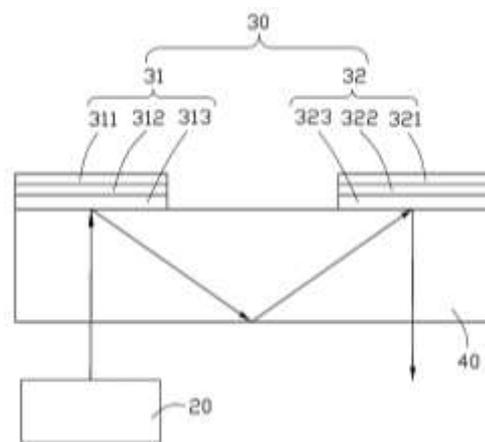
TWI738356
Priority Date: 22/05/2020

HON HAI PRECISION INDUSTRY

HOLOGRAPHIC DISPLAY DEVICE

The present invention provides a holographic display device comprising: a display module for emitting at least a first color light and a second color light, the first color light having a luminous efficiency higher than the luminous efficiency of the second color light; The diffraction module is disposed on an exit path of the first color light and the second color light for diffusing the first color light with a first diffraction efficiency and diffusing the second color light with a second diffraction efficiency to produce a holographic image, wherein the first diffraction efficiency is less than the second diffraction efficiency.

CLAIM 1. A holographic display device, the improvement comprising: a display module for emitting at least a first color light and a second color light, the first color light having a luminous efficiency higher than the luminous efficiency of the second color light; And irradiating said second color light with a second diffraction efficiency to produce a holographic image, wherein said first diffraction efficiency is less than said second diffraction efficiency, said display module comprising: a complex light emitting assembly for emitting said first color light, and a color conversion layer disposed on an exit path of said first color light for converting a portion of said first color light to at least said second color light.



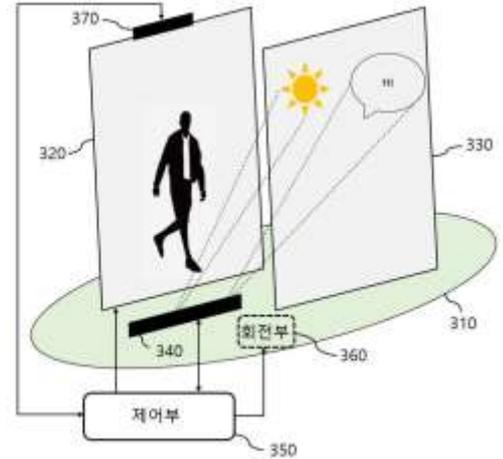
N8089

KR20210112655
Priority Date: 05/03/2020

LG UPLUS

SIMILAR HOLOGRAPHIC DISPLAY DEVICE AND METHOD WITH BEAM PROJECTOR

The present disclosure relates to a pseudo hologram display apparatus having a beam projector and a method thereof. the pseudo hologram display apparatus having a beam projector includes: a plate; a two-dimensional (2 D) display apparatus installed on the plate and configured to display a 2 D image; a light source installed on the plate, A half mirror module which reflects and transmits the two-dimensional image displayed on the two-dimensional display apparatus; a beam projector which displays additional information necessary for the two-dimensional image on the half mirror module; and a control unit which drives and controls the two-dimensional display apparatus and the beam projector. According to the present invention, it is possible to provide a more immersive experience by displaying additional information to a user without simply outputting a display screen when displaying a pseudo-hologram. In addition, it is possible to provide a user with an interactive experience in displaying similar holograms, and the user can control reproduction of content by a simple method, thereby increasing utilization in various fields such as smart learning and games in the future.



CLAIM 1. A two-dimensional (2 D) display apparatus, comprising: a plate; a 2 D display apparatus installed on the plate and displaying a 2 D image; a half-mirror module installed on the plate and reflecting and transmitting the 2 D image displayed on the 2 D display apparatus; A beam projector that displays additional information necessary for the two-dimensional image on the half-mirror module; and a control unit that drives and controls the two-dimensional display device and the beam projector.

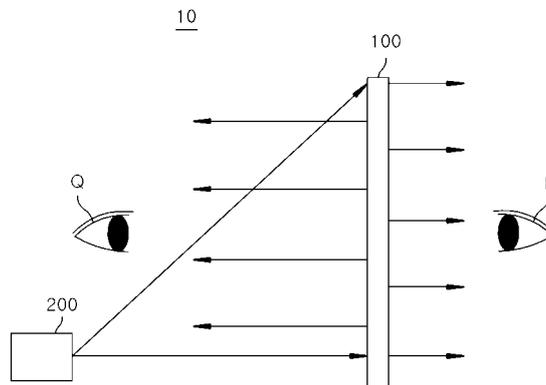
N8090

KR20210111729
Priority Date: 31/08/2021

SK TELECOM

IMAGE OUTPUT SCREEN AND HOLOGRAM DEVICE INCLUDING THE SAME

The hologram apparatus includes a projection optical system configured to project an image onto an image projection area of a screen and not to project the image onto a background area of the screen, and an illumination optical system including a UV light source configured to irradiate the image projection area with UV light and not to irradiate the background area with the UV light so as to improve visibility of the image projected onto the image projection area.



CLAIM 1. A hologram apparatus comprising: a projection optical system configured to project an image to an image projection area of a screen and not to project the image to a background area of the screen; and an illumination optical system including a UV light source configured to irradiate the image projection area with UV light so as to improve visibility of the image projected to the image projection area and not to irradiate the background area with the UV light.

N8091

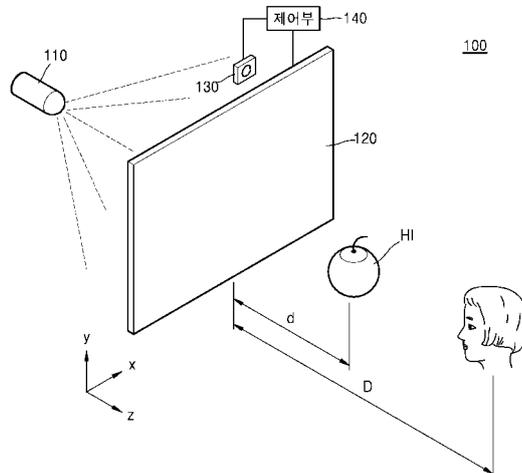
KR20210107604
Priority Date: 26/08/2021

SAMSUNG ELECTRONICS

HOLOGRAPHIC DISPLAY DEVICE AND HOLOGRAPHIC DISPLAY METHOD PROVIDING IMPROVED IMAGE QUALITY

A holographic display apparatus and a holographic display method are provided. The holographic display apparatus sequentially reproduces hologram images of a plurality of frames in an axial method, and horizontally moves a periodic diffraction pattern for adjusting a position of a hologram image to be reproduced for each frame.

CLAIM 1. A hologram reproducing apparatus comprising: a light source providing a reference light; a spatial light modulator reproducing a hologram image by modulating amplitude of the reference light; and a controller extracting an amplitude modulation value from hologram data of the hologram image to be reproduced and providing the amplitude modulation value to the spatial light modulator, A portion where the amplitude is positive in the real part of the hologram data represented by the complex number and a portion where the amplitude is negative in the real part of the hologram data represented by the complex number, processes the real part of the unselected hologram data to zero, and provides an absolute value of the real part of the selected hologram data as an amplitude modulation value to the spatial light modulator.



N8092

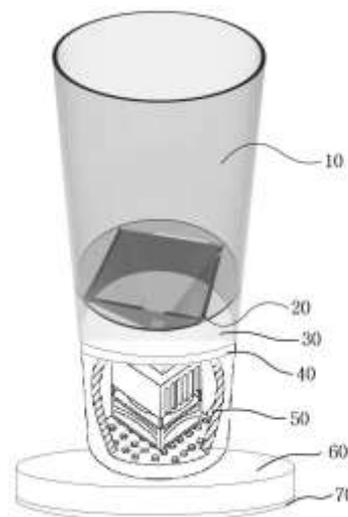
KR20210106803
Priority Date: 21/02/2020

KIM BAE HYUN

HEATING AND COOLING FUNCTION CUP WITH HOLOGRAM FUNCTION

Disclosed herein is a cold and hot cup having a hologram function. the cold and hot cup includes a cup body having an open upper surface, a closed lower portion, and an accommodation space formed therein to accommodate a beverage, A polygonal pyramidal panel portion formed such that a plurality of panels having an inverted triangular shape with a wide upper end and a narrow lower portion are obliquely inclined to meet each other at a lower portion; a cup support portion formed to extend along an outer circumferential surface of a lower end of the cup body in a state where the lower portion is opened and formed to correspond to upper and lower lengths of the panel portion; An image output unit coupled to a lower end of the cup support unit to generate a hologram effect, the image output unit including a heat transfer medium; a thermoelectric semiconductor installed on a lower surface of the image output unit to heat or cool a beverage contained in the cup body; a display unit installed on a lower portion of the thermoelectric semiconductor to display a hologram generated through the image output unit; and an anti-slip unit provided at a lower end of the display unit.

CLAIM 1. A beverage container, comprising: a cup body (10) having an open upper surface and a closed lower portion, the cup body (10) having an accommodation space formed therein, the accommodation space being capable of accommodating a beverage; a container body (30) having an upper end coupled to a bottom portion of the cup body (10), A polygonal pyramid shaped panel unit (20) formed such that a plurality of panels having an inverted triangular shape with a wide upper end and a narrow lower portion are obliquely inclined to meet each other at the lower portion; a cup support unit (30) formed to extend in a state where the lower portion is opened along an outer peripheral surface of the lower portion of the cup body and formed to correspond to upper and lower lengths of the panel unit; An image output unit 40 coupled to a lower end of the cup support unit 30 to generate a hologram effect, the image output unit 40 being formed of a heat transfer medium; a thermoelectric semiconductor 50 installed on a lower surface of the image output unit 40 to heat or cool a beverage contained in the cup body 10; A display unit 60 mounted on a lower portion of the thermoelectric semiconductor 50 to display the hologram displayed through the image output unit 40; and a slippage preventing unit 70 provided at a lower end of the display unit 60.



N8093

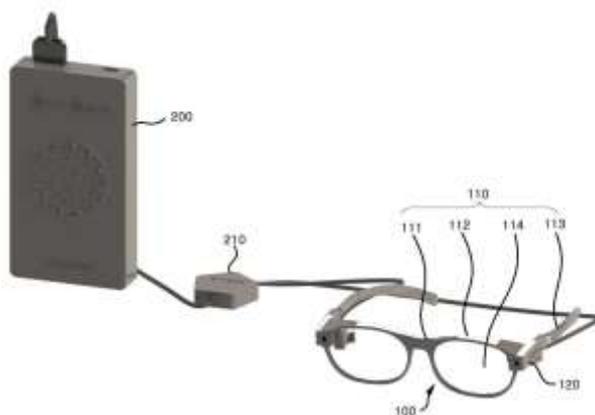
KR20210105055

Priority Date: 18/02/2020

PANACEA

SMART GLASS DEVICE USING HOLOGRAPHIC OPTICAL ELEMENT

The present invention relates to a smart glass device using a hologram optical element, and more particularly, to a smart glass device manufactured in a see-through type capable of acquiring an image while securing an external field of view. In a state where a hoe image display unit including a wavelength selective transparent reflector manufactured in a film form by recording a hologram optical element (hoe) so as to perform asymmetric reflection in which only a predefined wavelength is aligned with a center of an eye is disposed in parallel with the eye, an image represented by an incident light signal is enlarged by a predetermined reflection angle and displayed as a converged image so as to be viewable by the eye. The output light of the three laser diodes, which are disposed to output blue light, is collected by a collection viscosifier and then mixed with a flat light induction mixer (PLC). A point light source emission unit is used as a light source for emitting the incident light signal, the point light source emission unit allowing one point light source to be combined at an end portion along an optical waveguide inside a lane Lightguide Combiner, and then the one point light source combined through a condenser lens to be output to a parallel point light source having a constant size at any distance without an angle of spreading. According to the present invention, when the hoe image display unit is formed of a wavelength selective transparent reflector manufactured in a film form by laminating or adhering the hoe image display unit on an aspherical lens using a hologram optical element (hoe). When a user looks outside through the hoe image display unit, all light input from the surroundings is transmitted to increase the transparency, so that the user can look outside very clearly. In particular, according to the present disclosure, it is possible to minimize light loss by shortening a light passing path through which output lights of three laser diodes, which are arranged to output red light, green light, and blue light, respectively, pass through a condensing tapered portion and then pass along an optical waveguide inside a flat light guide mixer.



CLAIM 1. An image display device comprising: a main body frame 110 manufactured in a form that a user can view an image while ensuring an external view through a hoe image display unit 160; light source cases 120 disposed on both sides of the main body frame 110 that connect an eye part and an ear part of the user; A point light source emission unit 130 which is accommodated in the light source case 120 and emits a point light source made of a point image signal when the point image signal for displaying an image on the hoe image display unit 160 is input from the glass device controller 200; A mirror unit 140 which is accommodated in the light source case 120, reflects the point light source output from the point light source emitting unit 130, and transmits the reflected point light source to the point light source scanning unit 150; a light guide plate 140 which is accommodated in the light source case 120, A point light source scanning unit 150 which scans the point light source transmitted through the mirror unit 140 and emits an optical signal obtained by scanning the point light source to the hoe image display unit 160 so that a plane image is displayed on the hoe image display unit 160; And a wavelength selective transparent reflector in the form of a film stacked on or adhered to an aspheric lens 114 fixed to a rim 112 of the main body frame 110, the wavelength selective transparent reflector comprising: An hoe image display unit (160) which records the hologram optical element (hologram optical element) so as to perform asymmetric reflection in which only a predefined wavelength is aligned with the center of the eye, enlarges an image represented by the incident optical signal to a size corresponding to a predetermined reflection angle, and displays the enlarged image as a converged image so that the image can be viewed by the eye; And a hologram optical element disposed on a surface of the smart glass device, wherein the smart glass device is made to be of a see-through type capable of displaying an image while ensuring an external field of view of a user.

N8100

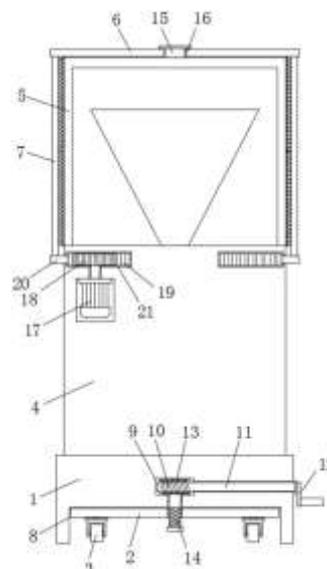
CN214253815U

Priority Date: 22/01/2021

WALNUT INTELLIGENT TECHNOLOGY

HOLOGRAPHIC PROJECTION SHOWCASE WITH DUSTPROOF FUNCTION

The utility model discloses a holographic projection showcase with dustproof function, the on-line screen storage device comprises a base, base lower extreme sliding connection has the extension board, be equipped with manual mechanism in the base, extension board lower extreme fixed mounting has a plurality of universal wheels, base upper end fixedly connected with showcase main part, showcase main part upper end is equipped with the show window, the show window upper end is rotated and is connected with the plectane, two cleaning brushes of plectane lower extreme fixedly connected with, be equipped with electric mechanism in the showcase main part. The utility model discloses a set up plectane, cleaning brush, pivot, cylinder groove and electric mechanism, make the cleaning brush constantly touch the surface of show window, avoided the adhesion and the persistence of dust, realized the dustproof function of show window surface, improved the practicality of device, simultaneously through setting up extension board, universal wheel, rectangle recess and manual mechanism, utilize the extension board to drive the universal wheel downstream to propping up the base, made things convenient for the steady removal of device, improved the convenience of device.



CLAIM 1. The utility model provides a holographic projection showcase with dustproof function, includes base (1), its characterized in that: base (1) lower extreme sliding connection has extension board (2) that the level set up, be equipped with the manual mechanism that is used for driving extension board (2) to remove in base (1), extension board (2) lower extreme fixed mounting has universal wheel (3) that a plurality of symmetries set up, base (1) upper end fixedly connected with showcase main part (4), showcase main part (4) upper end is equipped with show window (5), show window (5) upper end is rotated and is connected with plectane (6), cleaning brush (7) that two vertical symmetries of plectane (6) lower extreme fixedly connected with set up, be equipped with in showcase main part (4) and be used for driving cleaning brush (7) pivoted electric mechanism, cleaning brush (7) laminating show window (5) lateral wall sets up.

N8101

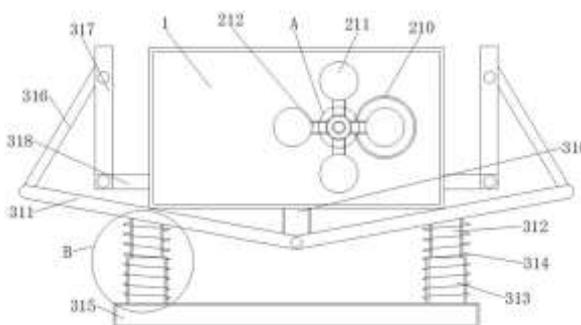
CN214252900U

Priority Date: 22/01/2021

WALNUT INTELLIGENT TECHNOLOGY

CAN REPLACE HOLOGRAPHIC PROJECTION EQUIPMENT OF FOUR REFLECTION OF LIGHT GLASSES

The utility model discloses a can replace four reflection of light glass's holographic projection equipment, including the projecting apparatus main part, the inside replacement device that is provided with of projecting apparatus main part, the embedded groove has been seted up to projecting apparatus main part inside, the embedded groove is inside to be embedded to have replacement reflection of light glass, projecting apparatus main part bottom is provided with buffering clamping device. The utility model discloses when needing replacement reflection of light glass, through making motor work, the motor output end rotates and drives the output shaft and rotate, the output shaft rotates and drives the carousel and rotate, the carousel rotates and drives the connecting rod and rotates, the connecting rod rotates and drives replacement reflection of light glass and rotate, replacement reflection of light glass rotates and changes the inside replacement reflection of light glass of embedded groove simultaneously, avoid the staff inconvenient to change replacement reflection of light glass according to the in service behavior of projecting apparatus main part, avoid simultaneously need unpack apart the projecting apparatus main part and change, it is simple and convenient to make the replacement reflection of light glass change, thereby the convenience of device has been improved.



CLAIM 1. A holographic projection device capable of replacing four pieces of reflective glass comprises a projector main body (1), and is characterized in that: the inside replacement device that is provided with of projecting apparatus main part (1), embedded groove (210) have been seted up to projecting apparatus main part (1) inside, embedded groove (210) are inside to be embedded to have replacement reflection of light glass (211), projecting apparatus main part (1) bottom is provided with buffering clamping device.

N8102

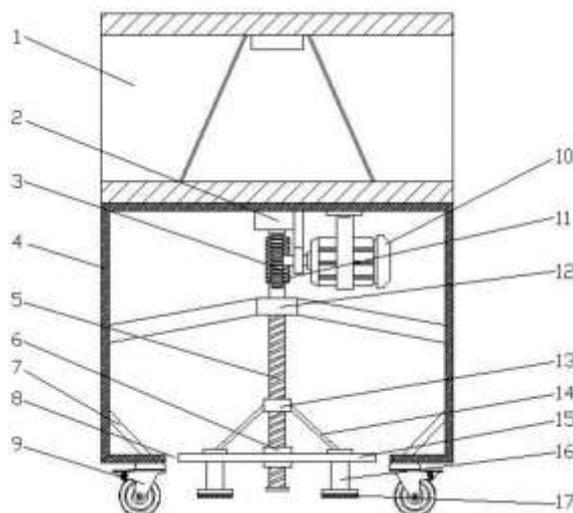
CN214226475U

Priority Date: 21/01/2021

JIANGSU LEISPIDER LASER TECHNOLOGY

PROJECTION DISPLAY CABINET FOR THREE-DIMENSIONAL HOLOGRAPHIC IMAGE

The utility model discloses a projection display cabinet for three-dimensional holographic image, which comprises a holographic projection display cabinet, wherein the bottom of the holographic projection display cabinet is provided with a moving mechanism, the moving mechanism comprises a cabinet body, a screw rod is arranged in the cabinet body, a fixed bearing is fixed at the top end of the screw rod, the fixed bearing is fixed in the cabinet body, one side of a rod body of the screw rod is provided with a first ball nut piece, the bottom of the first ball nut piece is provided with a second ball nut piece, the first ball nut piece is connected with the second ball nut piece and the screw rod through threads, the outer ring of the first ball nut piece is fixed with a fixed rod, one end of the fixed rod is averagely fixed on the outer ring of the first ball nut piece, the outer ring of the second ball nut piece is fixed with a fixed plate, the fixed rod is far away from one end of the first ball nut piece and is fixed on the surface of the fixed plate, and the bottom of the fixed plate is fixedly provided with a supporting leg.



CLAIM 1. The projection display cabinet for the three-dimensional holographic image is characterized by comprising a holographic projection display cabinet (1), wherein a moving mechanism is arranged at the bottom of the holographic projection display cabinet (1), the moving mechanism comprises a cabinet body (4), a screw rod (5) is arranged in the cabinet body (4), a fixed bearing (2) is fixed at the top end of the screw rod (5), the fixed bearing (2) is fixed in the cabinet body (4), a first ball nut piece (13) is arranged on one side of a rod body of the screw rod (5), a second ball nut piece (6) is arranged at the bottom of the first ball nut piece (13), the first ball nut piece (13) is connected with the second ball nut piece (6) and the screw rod (5) through threads, a fixing rod (14) is fixed on the outer ring of the first ball nut piece (13), one end of the fixing rod (14) is averagely fixed on the outer ring of the first ball nut piece (13), a fixed plate (15) is fixed on the outer ring of the second ball nut piece (6), one end of the fixed rod (14) far away from the first ball nut piece (13) is fixed on the surface of the fixed plate (15), the bottom of the fixed plate (15) is fixed with a supporting leg (16), the center of the bottom of the cabinet body (4) is provided with a lifting hole site (8), the lifting hole site (8) and the fixing plate (15) are arranged in a collinear way, universal wheels (9) with brakes are arranged on two sides of the lifting hole site (8), the universal wheel (9) with a brake is fixed at the bottom of the cabinet body (4), the top of the first ball nut piece (13) is provided with a support bearing (12), the inner ring of the support bearing (12) is fixed on the rod body of the screw rod (5), the outer ring of the support bearing (12) is fixed inside the cabinet body (4), and a driving mechanism is arranged on one side of the rod body of the screw rod (5).

N8104

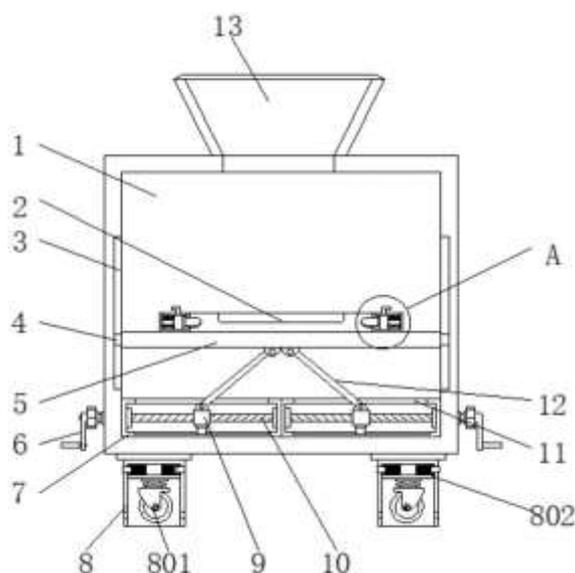
CN214225667U

Priority Date: 10/03/2021

SOUTHWEST PETROLEUM UNIVERSITY

HOLOGRAPHIC PROJECTION EQUIPMENT OF ANIMATION DESIGN GAME MODEL

The utility model discloses a holographic projection equipment of animation design recreation model, including box and fixed box, still including the height adjustment structure that can go up and down, be convenient for remove and the removal structure of accomodating and the dismantlement structure of being convenient for place different recreation models, fixed box is all installed to the both sides of the inside bottom of box, and removes the both sides of structural installation in the box bottom, height adjustment structural installation is in the inside of fixed box, the intermediate position department on box top installs the projection layer, lower extreme sliding connection between the inside both sides of box has the fly leaf, and the intermediate position department on fly leaf top installs and places the layer, and dismantles structural installation in the both sides of placing the layer. The utility model discloses an install the fixed slot and place the layer, through exerting thrust to the driving lever, make the coupling spring atress of driving lever one side and shorten length, the fixed block is driven the inside that breaks away from the fixed slot after that to will place the layer and take out and change, increase the suitability when using.



CLAIM 1. The utility model provides a holographic projection equipment of animation design game model, includes box (1) and fixed box (7), its characterized in that: the game machine also comprises a height adjusting structure capable of lifting, a moving structure (8) convenient to move and store, and a disassembling structure (14) convenient to place different game models; the two sides of the bottom end in the box body (1) are respectively provided with a fixed box (7), and the moving structures (8) are arranged on the two sides of the bottom end of the box body (1); the height adjusting structure is arranged in the fixed box (7); the projection layer (13) is installed at the middle position on the top end of the box body (1), the movable plate (5) is connected to the lower end between the two sides inside the box body (1) in a sliding mode, the placement layer (2) is installed at the middle position on the top end of the movable plate (5), and the dismantling structures (14) are installed on the two sides of the placement layer (2).

N8106

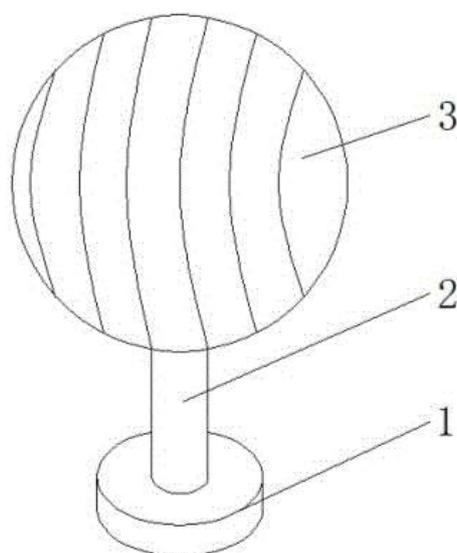
CN214202997U

Priority Date: 20/01/2021

SHENZHEN YUXINXU OPTOELECTRONICS

NOVEL HOLOGRAPHIC INTERACTIVE LED SPHERICAL DISPLAY SCREEN

The utility model discloses a novel holographic interactive LED spherical display screen, the on-line screen storage device comprises a base, base top outer wall passes through the bolt fastening and has the heel post, heel post arc outer wall middle part symmetry has two spliced poles, two through the bolt fastening, two the spliced pole is all through the bolt fastening from the lateral wall all there is a mounting bracket, two spliced pole arc outer wall is linear along its length direction equidistance and all rotates and be connected with two mount pads, four mount pad arc outer wall is circular along its all equidistance in the direction all there are four supports, four through the bolt fastening the inside clutching mechanism that all is provided with of mount pad. The utility model discloses a motor, gear roller and the mount pad that set up, when the display screen breaks down, can drive the gear roller through control motor and rotate, rotate the display screen of eminence to relatively lower position for maintenance personal need not to carry out maintenance work at the eminence, and the very big degree has less maintenance accident's emergence probability.



CLAIM 1. A novel holographic interactive LED spherical display screen comprises a base (1) and is characterized in that a bearing column (2) is fixed on the outer wall of the top of the base (1) through bolts, two connecting columns (5) are symmetrically fixed in the middle of the arc-shaped outer wall of the bearing column (2) through bolts, two connecting columns (5) are separated from the side wall and are fixed with a mounting frame (9) through bolts, two connecting columns (5) are linearly and rotationally connected with two mounting seats (6) at equal intervals along the length direction, four mounting seats (6) are circularly and are rotationally fixed with four brackets (4) through bolts at equal intervals along the circumference direction, a clutch mechanism is arranged inside each of the four mounting seats (6), power components for driving the mounting seats (6) to rotate are arranged inside the two connecting columns (5), each power component comprises a gear roller (7) which is rotationally connected to the inner wall of one side of the connecting columns (5), gear roller (7) are close to heel post (2) one end and have first conical gear (13) through the bolt fastening, heel post (2) are close to spliced pole (5) department and have set up the rectangular channel, rectangular channel bottom inner wall has motor (8) through the bolt fastening, motor (8) output shaft cover is equipped with second conical gear (14), and first conical gear (13) and second conical gear (14) arc meshing.

N8107

CN214175654U

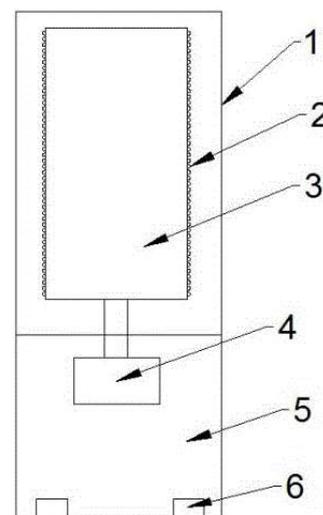
Priority Date: 19/08/2020

NINGBO DIYANG ELECTRONIC TECHNOLOGY

CYLINDER WITH HOLOGRAPHIC ADVERTISEMENT FUNCTION

The utility model discloses a take cylinder of holographic advertisement function, including printing opacity cover, base and rotator, the printing opacity cover sets up on the base, the rotator sets up in the printing opacity cover, be equipped with at least one light emitting component on the rotator, be equipped with on the base and be used for driving the rotatory motor of rotator, and be used for control the controlling means of light emitting component formation of image, the utility model discloses a set up the motor outside the rotator, solved the equipment complicacy, maintenance difficulty, the inconvenient scheduling problem of installation, saved manufacturing cost, realized the remote control of rotator through setting up wireless transmission module, through setting up the device of making a sound and can play the advertisement audio frequency when the rotator shows the advertisement, make the advertisement more lively, attract people's attention more.

CLAIM 1. The utility model provides a take cylinder of holographic advertisement function, its characterized in that, includes printing opacity cover (1), base (5) and rotator (3), printing opacity cover (1) sets up on base (5), rotator (3) set up in printing opacity cover (1), be equipped with at least one light emitting component (2) on rotator (3), be equipped with on base (5) and be used for driving rotatory motor (4) of rotator (3) to and be used for control the controlling means of light emitting component (2) formation of image.



N8108

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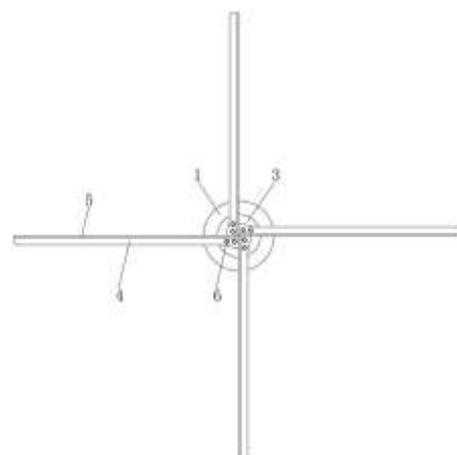
Priority Date: 28/01/2021

GUANGDONG YIJING SPACE ENGINEERING TECHNOLOGY

HOLOGRAPHIC PROJECTION IMAGING DEVICE

The utility model discloses a holographic projection imaging device, including the motor fixing base, the front surface of motor fixing base rotates and installs rotatory axostylus axostyle, the front end fixed surface of rotatory axostylus axostyle installs the blade fixing base, the front surface of blade fixing base is provided with four rotor blade, rotor blade's outside fixed mounting has projection lamp strip, rotor blade's inboard fixed mounting has a plurality of cotton pieces of buffering, data jack and electrical socket have been set up in the outside of motor fixing base, the data jack is located electrical socket's top position, the rear surface fixed mounting of motor fixing base has the installation fixed plate. A holographic projection imaging device, can carry out quick installation to the device and fix, make things convenient for the use under the different occasions, can bump the time when taking place the mistake, cushion through the elastic deformation of buffering cotton piece, reduce the impact that the mistake bumped when, improve the security of device.

CLAIM 1. A holographic projection imaging apparatus, characterized by: including motor fixing base (1), the front surface of motor fixing base (1) is rotated and is installed rotatory axostylus axostyle (2), the front end external surface fixed mounting of rotatory axostylus axostyle (2) has blade fixing base (3), the front surface of blade fixing base (3) is provided with four rotating vane (4), the outside fixed mounting of rotating vane (4) has projection lamp strip (5), the inboard fixed mounting of rotating vane (4) has a plurality of cotton pieces of buffering (7), data jack (8) and power jack (9) have been set up in the outside of motor fixing base (1), data jack (8) are located the top position of power jack (9), the rear surface fixed mounting of motor fixing base (1) has installation fixed plate (10), the rear surface of installation fixed plate (10) is provided with connecting screw (11), connecting screw (11) are kept away from the one end fixed mounting of installation fixed plate (10) and are pressed from both sides tight mounting panel (12) to have) The inner side of the clamping mounting panel (12) is provided with a clamping screw (13) in a threaded manner, and the outer surface of one end of the clamping screw (13) is fixedly provided with a clamping handle (14).



N8110

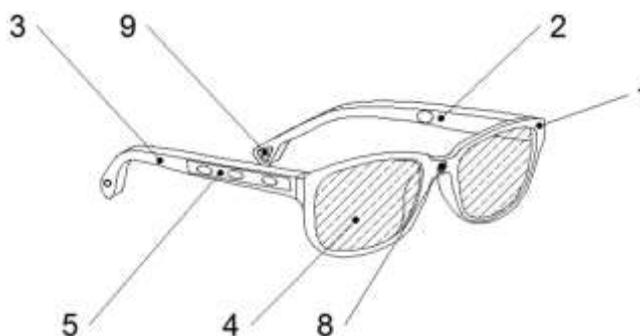
CN214151249U

XI AN DREAM WORLD INFORMATION TECHNOLOGY

Priority Date: 08/01/2021

INTELLIGENT GLASSES BASED ON HOLOGRAPHIC OPTICAL WAVEGUIDE ELEMENT

The utility model discloses an intelligent glasses based on holographic optical waveguide component, which comprises a glasses frame, wherein one end of the glasses frame is rotatably connected with a first glasses leg, the other end of the glasses frame is rotatably connected with a second glasses leg, the middle part of the glasses frame is fixedly provided with a display lens, the outer side of the second glasses leg is fixedly provided with a touch pad, the inner part of the first glasses leg is fixedly provided with a component mounting groove, the middle part of the front side of the glasses frame is fixedly provided with a camera module, the inner sides of the end parts of the first glasses leg and the second glasses leg are fixedly provided with a bone microphone, the inner part of the power supply groove is fixedly provided with a power supply module, the inner part of the component mounting groove is fixedly provided with an intelligent glasses processor, the intelligent glasses processor is connected with a signal conversion module, and the intelligent glasses based on holographic optical waveguide component have simple and reasonable structure and novel design, the sound transmission mode of bone conduction sound is adopted, and the requirement of normal use in a high-noise environment can be met.



CLAIM 1. The utility model provides an intelligent glasses based on holographic optical waveguide component, includes spectacle-frame (1), its characterized in that, the one end of spectacle-frame (1) is rotated and is connected first spectacle leg (2), the other end of spectacle-frame (1) is rotated and is connected second spectacle leg (3), the fixed display lens (4) that is equipped with in middle part of spectacle-frame (1), the fixed touch pad (5) that is equipped with in outside of second spectacle leg (3), the fixed power supply groove (6) that is equipped with in inside of second spectacle leg (3), the fixed components and parts mounting groove (7) that are equipped with in inside of first spectacle leg (2), the fixed camera module (8) that is equipped with in front middle part of spectacle-frame (1), the fixed bone sound conduction earphone (9) that is equipped with in the tip inboard of first spectacle leg (2) and second spectacle leg (3), the fixed power module that is equipped with in inside of power supply groove (6), the bottom of second glasses leg (3) is located the fixed power source that is equipped with in bottom of power supply groove (6), the inside of components and parts mounting groove (7) is fixed and is equipped with intelligent glasses treater (10), intelligent glasses treater (10) signal connection conversion module (11).

N8112

CN214123207U

SHAANXI HONGXING SHANSHAN NETWORK TECHNOLOGY

Priority Date: 31/12/2020

LEARNING SYSTEM BASED ON HOLOGRAPHIC IMAGE

The utility model discloses a learning system based on holographic image, include: the system comprises a holographic image acquisition component, a cloud data processing platform and a plurality of holographic image imaging terminals; the cloud data processing platform is respectively connected with the holographic image acquisition assembly and the plurality of holographic image imaging terminals in a wired communication mode or a wireless communication mode; the method comprises the following steps that a holographic image acquisition component acquires holographic image data of a preset target and transmits the holographic image data to a cloud data processing platform; the cloud data processing platform receives video data transmitted by the holographic image acquisition component and transmits the video data to the plurality of holographic image imaging terminals; the holographic image imaging terminal receives the holographic image data and displays images. The teaching video is obtained by adopting the holographic image, and is transmitted to the cloud data processing platform through the network and then is transmitted to each holographic image imaging terminal, so that students can obtain the teaching video in a holographic image mode, the learning interest of the students is improved, and the learning effect of on-line teaching are improved.

CLAIM 1. A holographic-based learning system, comprising: the system comprises a holographic image acquisition component, a cloud data processing platform and a plurality of holographic image imaging terminals; the cloud data processing platform is respectively connected with the holographic image acquisition assembly and the plurality of holographic image imaging terminals in a wired communication mode or a wireless communication mode; the holographic image acquisition component acquires holographic image data of a preset target and transmits the holographic image data to the cloud data processing platform; the cloud data processing platform receives the video data transmitted by the holographic image acquisition component and transmits the video data to the plurality of holographic image imaging terminals; and the holographic image imaging terminal receives the holographic image data and displays imaging.

N8113

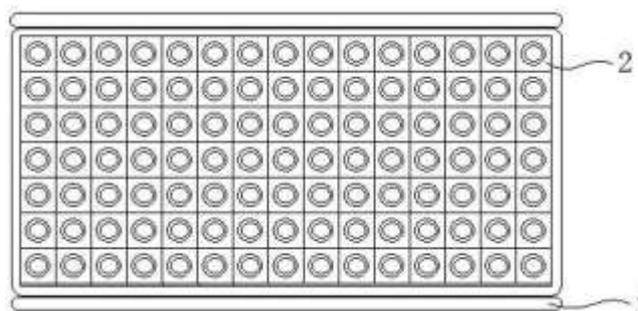
CN214105801U

SHAANXI HONGXING SHANSHAN NETWORK TECHNOLOGY

Priority Date: 27/07/2020

OMNIDIRECTIONAL RUNNING EQUIPMENT FOR HOLOGRAPHIC PROJECTION

The utility model relates to a holographic image and exerciser field especially relate to an omnidirectional running equipment for holographic projection. Including main body frame, treater and a plurality of full angle rotation module, a plurality of full angle rotation module become matrix arrangement and set up inside main body frame, are provided with the sensing module on every full angle rotation module, treater and full angle rotation module signal connection, sensing module and treater signal connection. The sensing module detects motion action information data of an experiencer, sends the information data to the processor for processing, controls the full-angle rotation module to adjust parameters after the information data is analyzed



and calculated by the processor so as to match the action of the experiencer, greatly improves the use comfort level, and realizes omnidirectional walking through the adjustment of the full-angle rotation module; because the omnidirectional running equipment of this application has a plurality of full angle to rotate the module concatenation and form, can carry out full angle to the operating space and rotate module quantity setting to match corresponding service environment.

CLAIM 1. An omnidirectional running device for holographic projection, characterized in that: including main body frame (1), treater and a plurality of full angle rotation module (2), it is a plurality of full angle rotation module (2) becomes the matrix arrangement and sets up inside main body frame (1), every be provided with sensing module (3) on full angle rotation module (2), the treater with full angle rotation module (2) signal connection, sensing module (3) with treater signal connection.

N8118

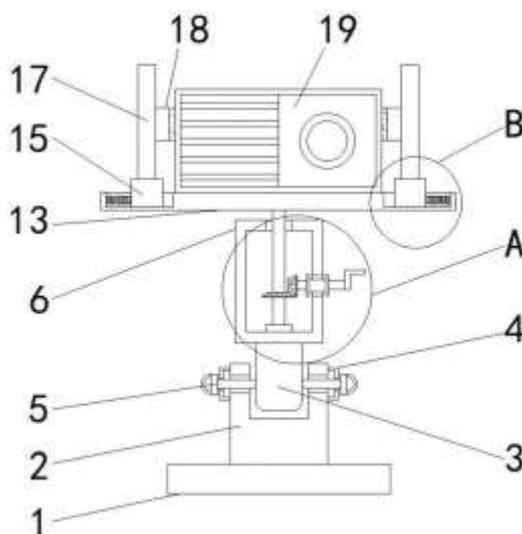
CN214093693U

Priority Date: 09/12/2020

BEIJING ZHONGSHI LIGHT SHADOW LIGHTING DESIGN

IMMERSIVE LIVE-ACTION OPTICAL-MOVIE-PLAY HOLOGRAPHIC PROJECTION EQUIPMENT BASED ON FOLDING EFFECT

The utility model relates to a projection equipment technical field just discloses an immersive reality light and image drama holographically projected equipment based on folding effect, the on-line screen storage device comprises a base, the top fixed mounting of base has concave type pole, the slide bar has been cup jointed to the inside of concave type pole, the equal fixed mounting in the left and right sides of concave type pole has the fixed block, one side movable mounting that the fixed block carried on the back mutually has one end to extend to the inside threaded rod that just contacts with the slide bar of concave type pole, the top fixed mounting of slide bar has the box, the inside movable mounting of box has the pivot that one end runs through and extends to the box top. This immersive live action shadow drama holographic projection equipment based on folding effect, through concave type pole, slide bar and the threaded rod that sets up, the user can twist the threaded rod when using, makes it keep away from the slide bar, slides the slide bar and to the target position after, twists the threaded rod and makes it hug closely the inner wall of slide bar, so realized the regulation in the equipment height.



CLAIM 1. An immersive live-action optical drama holographic projection device based on folding effect comprises a base (1), and is characterized in that: the top fixed mounting of base (1) has concave type pole (2), slide bar (3) have been cup jointed to the inside of concave type pole (2), the equal fixed mounting in both sides has fixed block (4) about concave type pole (2), one side movable mounting that fixed block (4) were carried on the back mutually has one end to extend to the inside threaded rod (5) that concave type pole (2) and contacted with slide bar (3), the top fixed mounting of slide bar (3) has box (6), the inside movable mounting of box (6) has pivot (7) that one end runs through and extend to box (6) top, the right side movable mounting of box (6) has one end to run through and extend to the inside rotation sleeve (8) of box (6), the right side fixed mounting of rotation sleeve (8) has one end to extend to left dwang (9) of sleeve (8), the right side fixed mounting of dwang (9) has rocker (10), the left side of the rotating rod (9) is fixedly provided with a driving bevel gear (11), the outer side of the rotating shaft (7) is fixedly provided with a driven bevel gear (12) meshed with the driving bevel gear (11), a transverse plate (13) is fixedly arranged at the top of the rotating shaft (7), two sliding grooves (14) are arranged at the top of the transverse plate (13), a slide block (15) with one end extending to the upper part of the transverse plate (13) is movably arranged in the chute (14), a spring telescopic rod (16) with one end fixedly connected with the inner wall of the sliding chute (14) is fixedly arranged on one side of the sliding block (15) opposite to the other side, a clamping plate (17) is fixedly arranged at the top of the sliding block (15), a clamping block (18) is fixedly arranged at one side opposite to the clamping plate (17), and a projection equipment body (19) is arranged on the top of the transverse plate (13) and between the clamping blocks (18).

N8120

CN214084771U

Priority Date: 14/01/2021

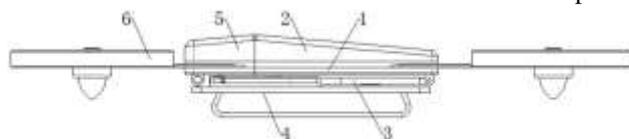
JIYAN FUJIAN INFORMATION TECHNOLOGY

CAN MAKE UP HOLOGRAPHIC 3D PROJECTION UNMANNED AERIAL VEHICLE OF BORE HOLE

The utility model discloses a combinable naked eye holographic 3d projection unmanned aerial vehicle, which comprises a frame and a machine body, wherein the machine body is arranged at the top of the frame, a fan screen is arranged at the bottom of the frame, and a bottom plate is arranged below the fan screen; the fan screen is characterized in that a rotating seat is arranged on one side of the bottom of the machine base, a rotating shaft is arranged on one side, close to the rotating seat, of the fan screen, the rotating shaft longitudinally penetrates into the rotating seat, and the fan screen is in running fit with the rotating seat through the rotating shaft. Has the advantages that: the utility model discloses a set up fan screen holographic projection structure in the unmanned aerial vehicle bottom, through setting up the fan screen that the collapsible packing up of unmanned aerial vehicle below throws advertisement information to fly up through unmanned aerial vehicle and increase the visual scope of advertisement, and increase the three-dimensional clear effect of demonstration of advertisement image through fan screen holographic projection, and the flight of accessible multiunit unmanned aerial vehicle formation is in order to improve advertisement information volume, and the practicality is strong.

CLAIM 1. The utility model provides a can make up holographic 3d projection unmanned aerial vehicle of bore hole which characterized in that: the fan comprises a base (1) and a machine

body (2), wherein the machine body (2) is arranged at the top of the base (1), a fan screen (3) is arranged at the bottom of the base (1), and a bottom plate (4) is arranged below the fan screen (3); frame (1) bottom one side is provided with rotates seat (101), fan screen (3) are close to rotate seat (101) one side and be provided with pivot (301), pivot (301) vertically penetrate rotate in seat (101), just fan screen (3) through this pivot (301) with rotate seat (101) normal running fit, frame (1) bottom is kept away from rotate seat (101) one side and transversely be provided with storage tank (102), articulated in this storage tank (102) have electric telescopic handle (103), just electric telescopic handle (103) flexible end downwardly extending to fan screen (3) top surface, keep away from fan screen (3) top pivot (301) one side is provided with mounting bracket (302), fan screen (3) through this mounting bracket (302) with electric telescopic handle (103) flexible end is articulated.



N8121

CN214084014U

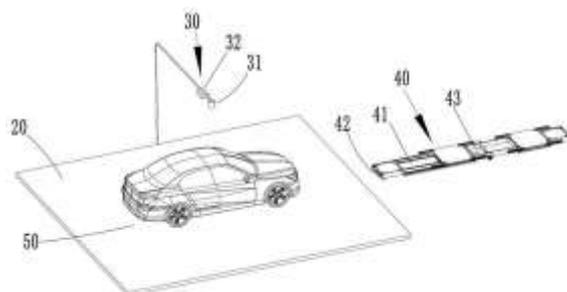
Priority Date: 27/11/2020

SHENZHEN INFORMATION INFRASTRUCTURE INVESTMENT DEVELOPMENT

HOLOGRAPHIC PARKING DRIVING AUXILIARY SYSTEM

The application discloses a holographic parking driving auxiliary system, which comprises a control center, a parking buffer area, an image processing device and an AGV vehicle transporter, wherein the image processing device and the AGV vehicle transporter are connected with the control center; the image processing device is arranged right above the parking buffer area, is used for roughly estimating the position and the posture information of the vehicle in the parking buffer area and comprises a global camera and an image processor; the AGV vehicle carrier is provided with a three-dimensional laser radar and an ANT positioning module, and is used for accurately positioning the position of a vehicle, adjusting the self pose and accurately moving to the lower part of the vehicle under the control of a control center to carry and carry the vehicle; this application need not the gesture of centering device adjustment vehicle, avoids the wearing and tearing of centering process to the vehicle, improves the intellectuality in garage.

CLAIM 1. The holographic parking driving auxiliary system is characterized by comprising a control center, a parking buffer area, an image processing device and an AGV vehicle carrier, wherein the image processing device and the AGV vehicle carrier are connected with the control center; the image processing device is arranged above the parking buffer area and is used for collecting and processing the position and posture information of the parked vehicle in the parking buffer area and transmitting the position and posture information to the control center; AGV vehicle carrier is in move under control center's control extremely park the buffer, according to the position, the gesture information of vehicle, control center control AGV vehicle carrier moves extremely the vehicle bottom bears the weight of, carries the vehicle, AGV vehicle carrier includes the AGV automobile body, set up in the three-dimensional laser radar and the ANT orientation module of AGV automobile body.



N8122

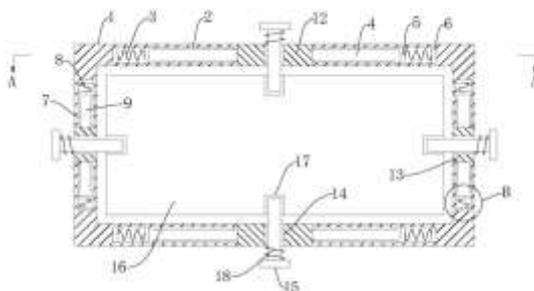
CN214067564U

Priority Date: 17/12/2020

SONG XIAOLONG

HOLOGRAPHIC PROJECTION EQUIPMENT FIXED FRAME

The utility model belongs to the technical field of the holographic projection technique and specifically relates to a holographic projection equipment fixed frame, including L type fixed plate, two bisymmetry settings of L type fixed plate, first spout has been seted up to the horizontal relative one end symmetry of L type fixed plate, the even welding of one side of first spout has first spring, the one end welding of first spring has first slide, integrated into one piece has first connecting plate between the first slide, the second spout has been seted up to the vertical relative one end symmetry of L type fixed plate, the even welding of one side of second spout has the second spring, the one end welding of second spring has the second slide, integrated into one piece has the second connecting plate between the second slide. The utility model discloses can conveniently adapt to not unidimensional projecting apparatus to avoid the fixed frame of a size can only adapt to the condition of the projecting apparatus of a size, avoid extravagant resource.



CLAIM 1. A holographic projection equipment fixing frame comprises an L-shaped fixing plate (1) and is characterized in that the L-shaped fixing plate (1) is arranged in a pairwise symmetrical mode, first sliding grooves (2) are symmetrically formed in one transversely opposite ends of the L-shaped fixing plate (1), first springs (3) are uniformly welded on one sides of the first sliding grooves (2), first sliding plates (4) are welded at one ends of the first springs (3), first connecting plates (12) are integrally formed between the first sliding plates (4), first magnets (5) are welded between the first springs (3) on one sides of the first sliding grooves (2), second magnets (6) attracted to the first magnets (5) in an opposite-attraction mode are welded on one sides of the first sliding plates (4), second sliding grooves (7) are symmetrically formed in one vertically opposite ends of the L-shaped fixing plate (1), second springs (8) are uniformly welded on one sides of the second sliding grooves (7), the one end welding of second spring (8) has second slide (9), integrated into one piece has second connecting plate (13) between second slide (9), one side of second spout (7) is located all welding between second spring (8) and has third magnet (10), one side welding of second slide (9) has fourth magnet (11) that inhale mutually with first magnet (5) opposite sex, projecting apparatus (16) have been placed between L type fixed plate (1), first connecting plate (12) and second connecting plate (13) middle part all are provided with projecting apparatus fixed establishment, the top of first connecting plate (12) is provided with ventilation mechanism.

N8127

CN113382225

Priority Date: 27/05/2021

SHENZHEN REALIS MULTIMEDIA TECHNOLOGY – SHENZHEN RUILISHI INTELLIGENT TECHNOLOGY

BINOCULAR HOLOGRAPHIC DISPLAY METHOD AND DEVICE BASED ON HOLOGRAPHIC SAND TABLE

The application discloses a binocular holographic display method and device based on a holographic sand table, and a related holographic display system comprises: the system comprises a display processing device, a sand table type display device and customized dual-view-point radio frequency stereoscopic supporting glasses. The display processing equipment is electrically connected with the sand table type display device, and the display processing equipment is connected with the stereoscopic glasses in a radio frequency mode. For each customized dual-view-enabled radio-frequency stereoscopic eyewear, a viewpoint of the customized dual-view-enabled radio-frequency stereoscopic eyewear is determined. Generating a first display signal corresponding to the viewpoint according to the customized viewpoint supporting the dual-viewpoint radio frequency stereo glasses; and the first display signal corresponding to the viewpoint is used for generating the holographic image viewed under the viewpoint. And outputting the first display signals corresponding to the viewpoints to a sand table type display device. And generating a synchronizing signal corresponding to each customized dual-viewpoint-supporting radio frequency stereo glasses, and sending the synchronizing signal to the customized dual-viewpoint-supporting radio frequency stereo glasses.

N8133

CN113345354

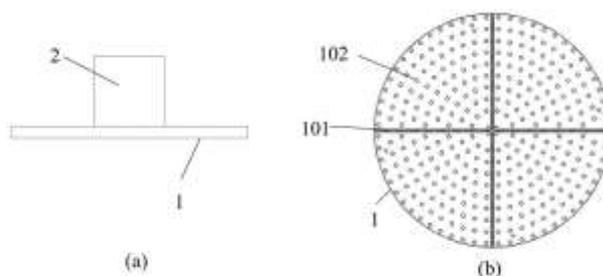
Priority Date: 25/05/2021

ZHAI JUNMING

HOLOGRAPHIC PROJECTION DEVICE CAPABLE OF BEING USED FOR ILLUMINATION

The present disclosure provides a holographic projection device usable for illumination, comprising: a lamp panel and a 3D holographic drive motor; the lamp panel is connected with the 3D holographic driving motor; the 3D holographic driving motor is configured to drive the lamp panel to rotate so as to realize holographic projection; the surface of the lamp panel plate is provided with a holographic LED lamp bar and an LED lamp bead for illumination; when holographic projection is carried out, the LED lamp bar for holography and the 3D holographic driving motor work, and the LED lamp bead for illumination does not work; when lighting, the LED lamp beads for lighting work, and the LED lamp strips for holography and the 3D holographic driving motor do not work. The utility model discloses use lamp panel formula structure to replace current fan formula structure for holographic projection arrangement can be provided with holographic LED lamp strip and for the illumination LED lamp pearl simultaneously, when not carrying out holographic projection but carrying out conventional illumination, holographic LED lamp strip outage for, LED lamp pearl for the illumination circular telegram for sufficient, the even and resources are saved of light of luminance when carrying out conventional illumination of holographic projection arrangement.

CLAIM 1. A holographic projection device usable for illumination, comprising: a lamp panel and a 3D holographic drive motor; the lamp panel is connected with the 3D holographic driving motor; the 3D holographic driving motor is configured to drive the lamp panel to rotate to realize holographic projection; the surface of the lamp panel plate is provided with a holographic LED lamp bar and an LED lamp bead for illumination; when holographic projection is carried out, the LED lamp bar for holography and the 3D holographic driving motor work, and the LED lamp bead for illumination does not work; when lighting, the LED lamp beads for lighting work, the LED lamp strips for holography and the 3D holographic driving motor do not work.



N8135

CN113315885

Priority Date: 15/06/2021

DAAI HOLOGRAM BEIJING TECHNOLOGY

HOLOGRAPHIC STUDIO AND SYSTEM FOR REMOTE INTERACTION

The invention relates to a holographic studio and a system for remote interaction, wherein the holographic studio system comprises a video and audio acquisition system, a data processing system, a data transmission system and a video playing system, wherein the video and audio acquisition system acquires a video image of a host demonstration/interaction action with depth information and audio information of the host in real time; the data processing system generates a demonstration/interactive holographic video; the data transmission system sends the demonstration/interactive holographic video to a demonstration interactive system in a different-place demonstration area and receives a real-time field video from the demonstration interactive system; the video playing system plays holographic videos of exhibits, demonstration/interactive holographic videos and real-time live videos of a plurality of different-place demonstration areas. The invention can simultaneously perform demonstration and interaction in a plurality of places, and has vivid and visual effect.

CLAIM 1. A holographic studio system for remote interaction, comprising: a video and audio acquisition system configured to acquire video images of presenter-demonstrated/interactive actions with depth information and presenter's audio information in real-time; the data processing system is connected with the video and audio acquisition system and is configured to generate a first/second holographic video representing the host demonstration/interactive action by utilizing a video image of the host demonstration/interactive action with depth information and generate a demonstration/interactive holographic video by fusing the video image with the exhibit holographic video and the audio information of the host; the data transmission system is connected with the data processing system, is configured to send the demonstration/interactive holographic video to a demonstration interactive system of a different-place demonstration area, and receives a real-time live video from the demonstration interactive system; and the video playing system comprises a plurality of display screens and a playing control module, wherein the playing control module is at least respectively connected with the data processing system and the data transmission system and is configured to play showpiece holographic videos, demonstration/interactive holographic videos and real-time live videos of a plurality of different-place demonstration areas on the display screens.

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PATENT REFERENCE – See the table at the end of this document

N8086

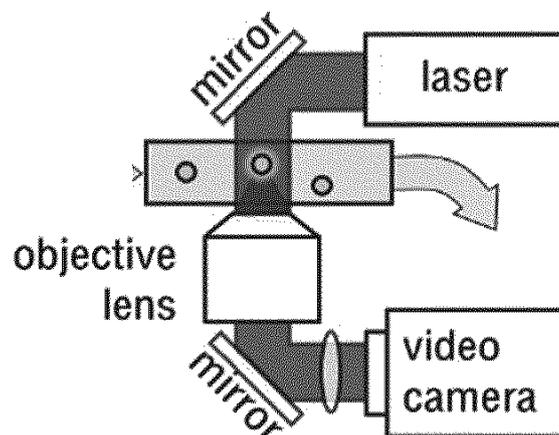
US20210279876

Priority Date: 09/03/2020

NEW YORK UNIVERSITY

AUTOMATED HOLOGRAPHIC VIDEO MICROSCOPY ASSAY

An in-line holographic microscope can be used to analyze a video stream to track individual colloidal particles' three-dimensional motions. The system and method can provide real time nanometer resolution, and simultaneously measure particle sizes and refractive indexes. An assay using the holographic microscope for holographic particle characterization directly detect viruses, antibodies and related targets binding to the surfaces of specifically functionalized micrometer-scale colloidal probe beads. The system detects binding of targets by directly measuring associated changes in the bead's diameter without the need for downstream labeling and analysis.



CLAIM 1. A method of characterizing a parameter of a viral protein by holographic microscopy, comprising the steps of: receiving holographic image data having an a set of concentric bright and dark rings associated with a functionalized probe bead; determining by Lorenz-Mie analysis an effective sphere estimate of each of the functionalized probe bead's effective sphere diameter, and effective sphere refractive index; and determining a diameter difference between the effective sphere diameter with a predetermined diameter for unbound functionalized probe beads, with diameter difference representing the result of material bound to the bead and medium within the effective sphere estimate, wherein the effective sphere diameter (d_p) is equal to $d_p = d_0 + 2 f t$ wherein d_p is the effective sphere diameter, d_0 is the predetermined diameter for unbound functionalized probe beads, t is effective optical thickness of a complete layer of the viral protein, and f is the fraction of binding sites on the functionalized probe bead.

N8123

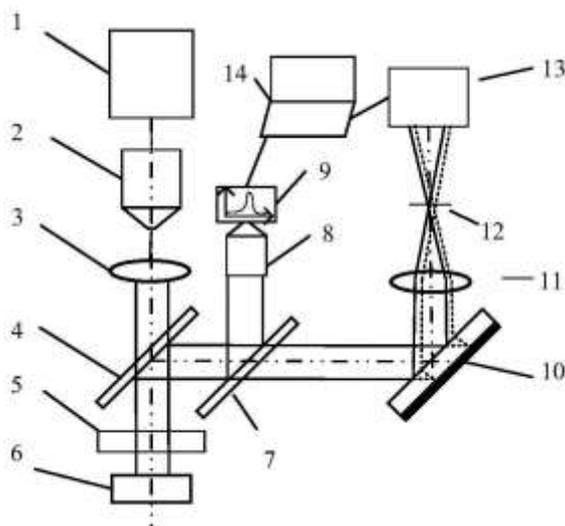
CN113418470

Priority Date: 08/07/2021

XI AN UNIVERSITY OF TECHNOLOGY

SPECTRUM SCANNING CONFOCAL SINGLE-EXPOSURE DIGITAL HOLOGRAPHIC MEASUREMENT SYSTEM AND MEASUREMENT METHOD

The invention discloses a spectral scanning confocal single-exposure digital holographic measurement system and a measurement method, which overcome the defects that the rapid measurement of a three-dimensional structure cannot be realized aiming at the upper surface, the lower surface and the inner part of an object to be measured in the prior art, and the high-precision, non-contact and synchronous three-dimensional shape measurement of the micro-shape of each layered interface of a transparent object is realized. The invention comprises a measuring system body, wherein the measuring system body comprises a multispectral light source, a microobjective, a lens, a spectroscopy I, a focusing dispersion lens and an object to be measured which are sequentially arranged, a spectroscopy II is arranged behind the spectroscopy I, an achromatic microobjective and a fiber optic spectrometer are sequentially arranged in front of the spectroscopy II, a plane flat crystal is arranged behind the spectroscopy II, a converging lens and a filter are sequentially arranged in front of the plane flat crystal, the filter is arranged at a converging focus of reflected light on the front surface of the plane flat crystal, an image sensor is arranged in front of the filter, and the fiber optic spectrometer and the image sensor are respectively connected with a computer.



CLAIM 1. The utility model provides a confocal single exposure digital holographic measurement system of spectral scanning which characterized in that: the device comprises a measuring system body, wherein the measuring system body comprises a multispectral light source (1), a microscope objective (2), a lens (3), a spectroscopy I (4), a focusing dispersion lens (5) and an object to be measured (6) which are sequentially arranged, a spectroscopy II (7) is arranged behind the spectroscopy I (4), an achromatic microscope objective (8) and a fiber optic spectrometer (9) are sequentially arranged in front of the spectroscopy II (7), a plane flat crystal (10) is arranged behind the spectroscopy II (7), a converging lens (11) and a filter (12) are sequentially arranged in front of the plane flat crystal (10), the filter (12) is arranged at a converging focus of reflected light on the front surface of the plane flat crystal (10), an image sensor (13) is arranged in front of the filter (12), and the fiber optic spectrometer (9) and the image sensor (13) are respectively connected with a computer (14).

N8124

CN113418469

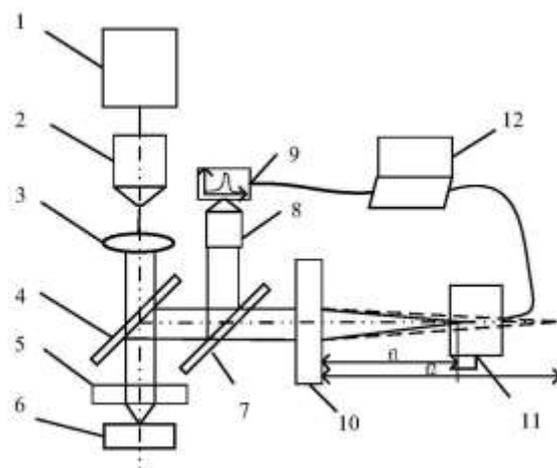
Priority Date: 08/07/2021

XI AN UNIVERSITY OF TECHNOLOGY

SPECTRUM CONFOCAL SCANNING COMMON-PATH DIGITAL HOLOGRAPHIC MEASUREMENT SYSTEM AND MEASUREMENT METHOD

The invention discloses a spectral confocal scanning common-path digital holographic measurement system and a measurement method, which overcome the defect that the prior art is only suitable for measuring the phase change formed by the reflection or transmission of the surface of an object to be measured and cannot realize the high-precision, non-contact and synchronous three-dimensional shape measurement of the micro-shape of each layered interface of a transparent object. The device comprises a multispectral light source, a microscope objective, a lens, a first spectroscop, a focusing dispersion lens and an object to be measured, wherein the multispectral light source, the microscope objective, the lens, the first spectroscop, the focusing dispersion lens and the object to be measured are sequentially arranged, the object to be measured is positioned in a focusing range of a focusing dispersion element, a second spectroscop is arranged behind the first spectroscop, an achromatic microscope objective and a fiber optic spectrometer are sequentially arranged in front of the second spectroscop, a bifocal diffractive element is arranged behind the second spectroscop, an image sensor is arranged behind the bifocal diffractive element, the image sensor is arranged in a small focal distance behind the bifocal diffractive element, and the fiber optic spectrometer and the image sensor are respectively connected with a computer.

CLAIM 1. The utility model provides a confocal scanning common path digital holographic measurement system of spectrum which characterized in that: the device comprises a measuring system body, wherein the measuring system body comprises a multispectral light source (1), a microscope objective (2), a lens (3), a first spectroscop (4), a focusing dispersion lens (5) and an object to be measured (6) which are sequentially arranged, the object to be measured (6) is positioned in a focusing range of the focusing dispersion element (5), a second spectroscop (7) is arranged behind the first spectroscop (4), an achromatic microscope objective (8) and a fiber optic spectrometer (9) are sequentially arranged in front of the second spectroscop (7), a bifocal diffractive element (10) is arranged behind the second spectroscop (7), an image sensor (11) is arranged behind the bifocal diffractive element (10), the image sensor (11) is arranged within a small focal length behind the bifocal diffractive element (10), and the fiber optic spectrometer (9) and the image sensor (11) are respectively connected with a computer (12).



N8126

CN113393472

Priority Date: 29/05/2021

NANJING UNIVERSITY OF SCIENCE & TECHNOLOGY

ZONING COMPOSITE PHASE UNWRAPPING METHOD BASED ON DIGITAL HOLOGRAPHIC MICROSCOPIC IMAGING

The invention provides a zoning composite phase unwrapping method based on digital holographic microscopic imaging, which comprises the following steps of: collecting an original holographic image of a tested sample; extracting a holographic phase diagram; carrying out phase dephasing on the holographic phase diagram by adopting a PCA principal component analysis method to obtain the holographic phase diagram of the sample after dephasing; calculating phase derivative variance based on path transmission unwrapping to obtain a quality map; dividing the distribution of the quality map according to the quality factor of the quality map, unwrapping different quality areas by adopting different phase unwrapping algorithms, and fusing and splicing the quality areas to obtain unwrapped phases. The invention maintains the accuracy of the unwrapped phase obtained by resolving the high-quality area and strengthens the accuracy of the phase obtained by resolving the low-quality area.

N8129

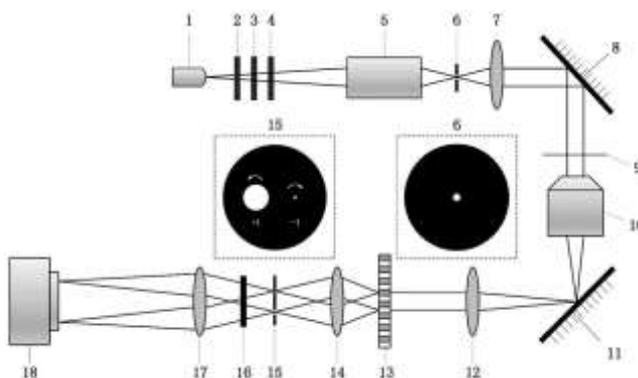
CN113376992

Priority Date: 31/05/2021

XIDIAN UNIVERSITY

MINIATURIZED POLARIZATION POINT DIFFRACTION DIGITAL HOLOGRAPHIC MICROSCOPIC DEVICE BASED ON LED ILLUMINATION

The invention discloses a miniaturized polarization point diffraction digital holographic microscopy device based on LED illumination, which comprises a partially coherent light generation and regulation module, an optical size control module, a telescope system, an object reference light separation module and an image acquisition module which are sequentially arranged along the direction of an optical path, wherein the partially coherent light generation and regulation module is used for generating partially coherent light and regulating and controlling the polarization characteristic of the partially coherent light; the light size control module is used for scaling the size of the polarized light and generating uniform illumination light waves; the telescope system is used for carrying out amplification imaging on the sample to form light field distribution with sample information; the object reference light separation module is used for diffracting the light with the sample information to generate object light and reference light; the image acquisition module is used for acquiring the hologram generated by the object light and the reference light. Because the object light and the reference light pass through the same optical element, the invention has very good immunity to environmental disturbance; meanwhile, due to the fact that the low-coherence LED is adopted for illumination, the image quality is greatly improved.



CLAIM 1. A miniaturized polarization point diffraction digital holographic microscopic device based on LED illumination is characterized by comprising a partial coherent light generation and regulation module, an optical size control module, a telescope system, an object reference light separation module and an image acquisition module which are sequentially arranged along the direction of an optical path, wherein a sample to be detected is arranged between the polarized light generation module and the optical size control module, the partial coherent light generation and regulation module is used for emitting partial coherent LED light and regulating and controlling the polarization characteristic of the partial coherent LED light, and finally the contrast of the stripes is adjustable; the LED light is modulated into polarized light; the light size control module is used for scaling the size of the polarized light and generating uniform plane waves; the telescope system is used for collecting and amplifying the scattering signals of the sample to obtain the optical field distribution with sample information; the object reference light separation module is used for diffracting the light with the sample information from the telescope system to generate object light and reference light with opposite polarization directions; the image acquisition module is used for acquiring the hologram generated by the object light and the reference light.

N8137

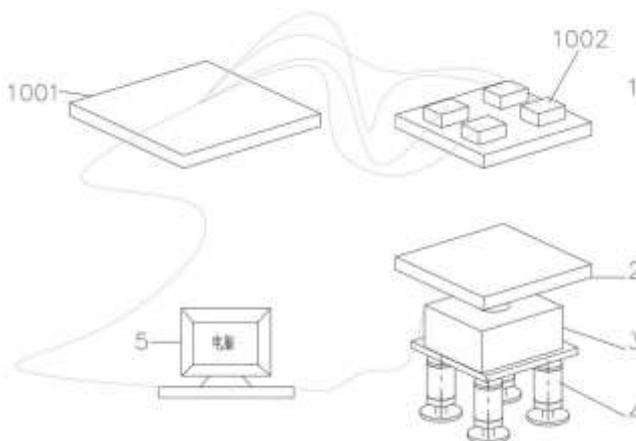
CN113311682

Priority Date: 08/05/2021

JIANGSU UNIVERSITY

LENS-FREE COAXIAL DIGITAL HOLOGRAPHIC MICROPARTICLE IMAGING SYSTEM AND METHOD

The invention discloses a lens-free coaxial digital holographic microparticle imaging system and a method, wherein the system comprises: the device comprises a light source module (1), a sample plane (2), a camera device (3), a three-dimensional displacement platform module (4) and an image processing and signal control module (5); the signal control module (5) sends a signal to control the three-dimensional displacement platform module, so that the distance from the sample plane to the camera device is changed, a series of low-resolution holograms are obtained and recorded by the camera device, and finally the super-resolution reconstruction algorithm is used for reconstructing the low-resolution holograms by using the image processing module (5), so that an image with high resolution can be obtained. Meanwhile, the imaging system disclosed by the invention adopts lens-free coaxial digital holography, and effectively overcomes the defects of heavy equipment and complex optical path of the traditional off-axis digital holography system.



CLAIM 1. A lens-free coaxial digital holographic microparticle imaging system is characterized in that a light source module (1), a sample plane (2), a camera device (3), a three-dimensional displacement control platform (4) and an image processing and signal control module (5) are sequentially arranged along the direction of a light path; the light source module comprises a light source driving assembly (1001) and an array light source assembly (1002); the camera device (3) is connected with the image processing and signal control module (5) through a cable; the light source driving assembly (1001) and the three-dimensional displacement control platform (4) are connected with the image processing and signal control module (5) through control lines; the image processing and signal control module sends out signals to control the three-dimensional displacement control platform so as to change the distance from the sample plane (2) to the camera device (3), obtain a series of low-resolution holograms, record the low-resolution holograms by the camera device (3), and finally, the image processing and signal control module is utilized to realize the reconstruction of the low-resolution holograms by a super-resolution reconstruction algorithm.

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PATENT REFERENCE – See the table at the end of this document

N8094

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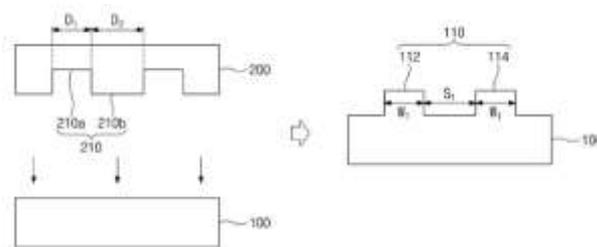
Priority Date: 25/02/2020

PUKYONG NATIONAL UNIVERSITY INDUSTRY- ACADEMIC COOPERATION FOUNDATION

HOLOGRAM FILM AND METHOD FOR PRODUCING THE SAME

A hologram film is provided. Wherein the hologram film comprises a first region comprising a first base pattern having a first line width and a second base pattern spaced apart from the first base pattern by a first distance and having the first line width, And a second region including a third base pattern having a second line width, and a fourth base pattern spaced apart from the third base pattern by a second distance and having the second line width.

CLAIM 1. A semiconductor device, comprising: a base substrate comprising: a first region comprising a first base pattern having a first line width and a second base pattern spaced apart from the first base pattern by a first distance and having the first line width; and a second region comprising a third base pattern having a second line width and a fourth base pattern spaced apart from the third base pattern by a second distance and having the second line width, When the first line width and the second line width are 0.25 μ m, the first distance and the second distance have an optically active range of 1 μ m or more and 2 μ m or less, and when the first distance and the second distance are 0.25 μ m, the first line width and the second line width have an optically active range of 1 μ m or more and 2 μ m or less.



N8097

JP2021131457

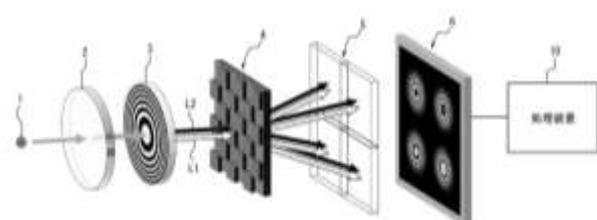
Priority Date: 19/02/2020

JAPAN BROADCASTING

HOLOGRAM IMAGING DEVICE AND IMAGE RECONSTRUCTION SYSTEM

TOPIC: To provide a hologram imaging device and an image reconstruction system that are less likely to be affected by disturbances such as air disturbance and vibration, have high spatial resolution, and allow free selection of an imaging element. **INVENTION:** a hologram image capturing apparatus splits an incoherent light wave into first split beams and second split beams, imparts phase distributions different from each other to phase distributions of the two light waves, and then causes the first split beams and the second split beams to interfere with each other to form a hologram and capture the hologram. A hologram imaging device includes a polarizer 2 that converts incoherent light waves into linearly polarized light, a polarized light diffraction optical element 3 that generates the first split beams and the second split beams from the linearly polarized light, and A checkerboard phase plate 4 that splits the first split beams and the second split beams in a plurality of directions; and a region-splitting polarizer 5 that imparts different phase differences to the first split beams and the second split beams for each region.

CLAIM 1. A hologram imaging device that splits an incoherent light wave into first split beams and second split beams, imparts mutually different phase distributions to phase distributions of the two light waves, and causes the first split beams and the second split beams to interfere with each other to form a hologram, the device comprising: a polarizer that linearly polarizes the incoherent light wave; A polarized light diffraction optical element configured to generate the first split beams and the second split beams from the linearly polarized light; a checkerboard phase plate configured to split the first split beams and the second split beams in a plurality of directions; and a region-split polarizer configured to impart different phase differences to the first split beams and the second split beams for each region, wherein the device constitutes an optical system having a single optical path.



N8103

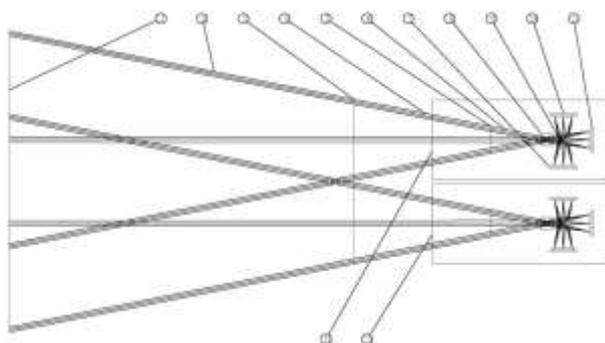
CN214225686U

Priority Date: 30/12/2020

SONG JIANMING

HOLOGRAPHIC THREE-DIMENSIONAL SPACE IMAGING DEVICE AND SYSTEM

The utility model belongs to the technical field of the imaging technique and specifically relates to a holographic three-dimensional space imaging device and system, it is including the long distance target, well distance target, low coverage target, formation of image objective and the three fens optical prism that arrange in proper order, three fens optical prism is located the light-emitting side of formation of image objective, be provided with long distance sensor, well distance sensor and low coverage sensor around three fens optical prism, three fens optical prism will mix and refract respectively to long distance target, well distance target, the produced image of low coverage target on long distance sensor, well distance sensor and the low coverage sensor. The utility model discloses utilize three fens light prisms of formation of image objective cooperation, to the simultaneous imaging of the different distances of same observation environment target range, make through the sensor can record the whole space pattern information of shooting, can reappear the different distance in the shooting environment, the picture and the image of the arbitrary angle of different angles make arbitrary observation distance all true and clear in the whole observation range, break shooting person's shooting distance and angle restriction.



CLAIM 1. A holographic three-dimensional space imaging device is characterized in that: it comprises a long-distance target, a middle-distance target, a short-distance target, an imaging objective lens and a three-split prism which are sequentially arranged, the three-beam splitter prism is positioned at the light emergent side of the imaging objective lens, one side of the three-beam splitter prism is provided with a remote sensor, the other side of the three-beam splitter prism is provided with a middle distance sensor, the third side of the three-beam splitter prism is provided with a short distance sensor, the imaging objective lens acquires remote object light of a remote target and images the remote object light to the light emergent side of the imaging objective lens, the imaging objective lens acquires intermediate object light of an intermediate target and images the intermediate object light to the light emergent side of the imaging objective lens, the imaging objective lens obtains near object light of a near target and images the near object light to the light emitting side of the imaging objective lens, and the three-beam splitter prism refracts images formed by a long-distance target, a middle-distance target and a near target which are mixed with the short-distance target to the long-distance sensor, the middle-distance sensor and the near sensor respectively.

N8109

CN214174824U

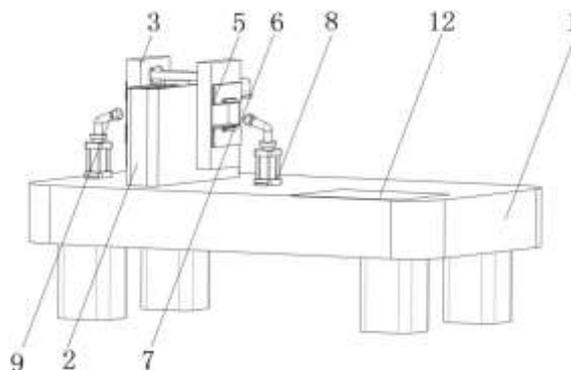
Priority Date: 12/03/2021

HUBEI GEDIAN DEVELOPMENT REGION CHENGUANG INDUSTRIAL

LASER DOUBLE-BEAM HOLOGRAPHIC PLATE MAKING INSTRUMENT

The utility model provides a holographic platemaking appearance of two light beams of laser relates to platemaking machine technical field, comprises a workbench, the workstation top surface is equipped with the mobile device, the mobile device both sides all are equipped with the installation frame, and install the frame and be located the workstation top, all the array is equipped with the extrusion spring in the recess of installation frame side, extrusion spring one end is equipped with L type clamp plate, and L type clamp plate is fixed with extrusion spring one end, L type clamp plate one side is equipped with the skid resistant course, and skid resistant course and L type clamp plate one side bonding, L type clamp plate one side is equipped with the pulling handle, and pulling handle and L type clamp plate bolted connection adopt extrusion spring and cylinder, and it is fixed to have realized that the staff of being convenient for treats the processing product, is convenient for to equipment fixing and dismantlement portable, has improved work efficiency.

CLAIM 1. The utility model provides a holographic platemaking appearance of laser two-beam, includes workstation (1), its characterized in that: workstation (1) top surface is equipped with mobile device (2), mobile device (2) both sides all are equipped with installation frame (3), and installation frame (3) are located workstation (1) top, all the array is equipped with extrusion spring (4) in installation frame (3) side recess, extrusion spring (4) one end is equipped with L type clamp plate (5), and L type clamp plate (5) are fixed with extrusion spring (4) one end, L type clamp plate (5) one side is equipped with skid resistant course (6), and skid resistant course (6) and L type clamp plate (5) one side bonding, L type clamp plate (5) one side is equipped with pulling handle (7), and pulling handle (7) and L type clamp plate (5) bolted connection.



N8111

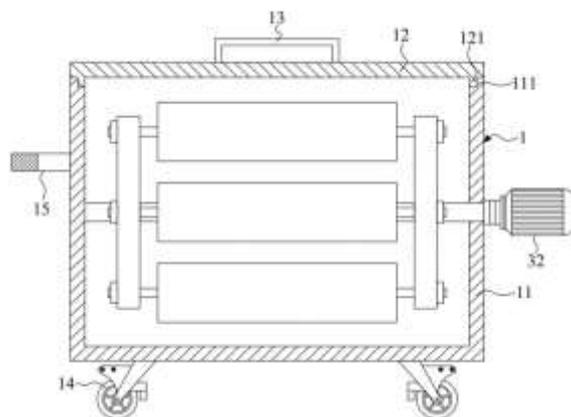
CN214141043U

Priority Date: 19/10/2020

SHENZHEN KUN HONG TECHNOLOGY

STORAGE DEVICE FOR LASER HOLOGRAPHIC FILM

The utility model provides a storage device for laser holographic membrane, including depositing case, two and placing dish and rotating device, it includes box and lid, two to deposit case and bag place the dish and set up respectively both sides in the box, place and be provided with a plurality of holes of placing that run through on the dish, rotating device includes live-rollers and power device. The utility model discloses a case is deposited in the setting, places the holographic membrane of laser after the rolling and deposits the incasement to realized that the light-resistant of the holographic membrane of laser is stored, avoided the holographic membrane of laser to receive the damage, and place dish and power device through the setting, be convenient for deposit and take of the holographic membrane of laser, can place more product, through setting up stop device, carry out effectual spacing fixed, simple structure, convenient and practical to the holographic membrane of laser.



CLAIM 1. The utility model provides a storage device for laser holographic membrane which characterized in that: including depositing case (1), two and placing dish (2) and rotating device (3), deposit case (1) including box (11) and lid (12), two place dish (2) and set up respectively both sides in box (11), it is provided with a plurality of holes (21) of placing that run through on dish (2) to place, rotating device (3) are including live-rollers (31) and power device (32), live-rollers (31) pass and fixed connection two place dish (2), the one end of live-rollers (31) is rotated and is connected one side lateral wall of box (11), the other end of live-rollers (31) passes the lateral wall of box (11) extends to the outside of box (11), power device (32) are connected the other end of box (11).

N8114

CN214097990U

Priority Date: 18/12/2020

SHENZHEN BERXEL OPTOELECTRONICS TECHNOLOGY

HOLOGRAPHIC LASER TRANSMITTER

The application discloses holographic laser transmitter, this holographic laser transmitter includes: the laser emission module comprises a first substrate and a light-emitting functional film layer arranged on the first substrate; the volume holographic grating module is arranged in a light-transmitting area on one side, far away from the first substrate, of the light-emitting function film layer. The holographic laser transmitter can emit high-power laser light with a specific polarization mode and a specific wavelength at a smaller angle.



CLAIM 1. A holographic laser transmitter, comprising: the laser emission module comprises a first substrate and a light-emitting functional film layer arranged on the first substrate; and the volume holographic grating module is arranged in a light transmission area on one side of the first substrate, far away from the light-emitting function film layer.

N8119

CN214087193U

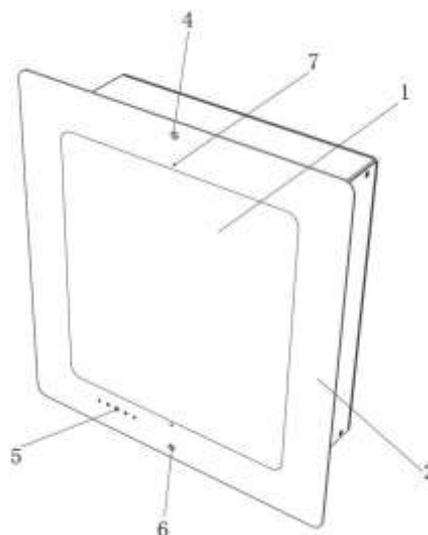
Priority Date: 13/01/2021

YESAR ELECTRONIC TECHNOLOGY

HOLOGRAPHIC CONTACT-FREE OPERATION ELEVATOR CONTROL BOX CAPABLE OF BEING CONTROLLED BY VOICE

The utility model discloses a voice-controlled holographic contact-free operation elevator control box, which comprises a first cover plate, a shell, a second cover plate, a mounting fixing hole, a loudspeaker, a power supply button, a microphone, a connecting wire, a radiating hole, a USB interface, a holographic main control liner, a gesture sensor, a display screen, an optical film, a second fixing bracket, a mainboard, a switching plate, a radiating fan and a power supply control panel, wherein the first cover plate is fixedly connected on the outer wall of one side of the shell through a double-faced adhesive tape, and the second cover plate is fixed on the outer wall of one side of the shell through a bolt, not only is convenient to use, but also can effectively prevent cross infection and reduce the transmission path of viruses.

CLAIM 1. The utility model provides a holographic elevator control box of contact operation of exempting from that can speech control, including first apron (1), shell (2), second apron (3), installation fixed orifices (4), loudspeaker (5), power button (6), microphone (7), connecting wire (8), louvre (9), USB interface (10), optical lens glass (11), holographic master control inner bag (12), gesture sensor (13), display screen (14), blooming (15), first fixed bolster (16), second fixed bolster (17), mainboard (18), keysets (19), radiator fan (20) and power control panel (21), its characterized in that: a holographic main control inner container (12) is fixed on the inner wall of one side of the shell (2) through a bolt, a first fixing support (16) is fixed on the outer wall of the top end of the holographic main control inner container (12) through a bolt, a display screen (14) is fixedly connected to the outer wall of one side of the first fixing support (16), the display screen (14) is sleeved in the inner wall of one side of the holographic main control inner container (12), an optical film (15) is fixedly connected to the outer wall of one side of the display screen (14), optical lens glass (11) is arranged on one side of the optical film (15), the optical lens glass (11) is fixedly connected to the outer wall of one side of the holographic main control inner container (12), a second fixing support (17) is fixed on the outer wall of one side of the holographic main control inner container (12) through a bolt, and an adapter plate (19) is fixed on the outer wall of one side of the second fixing support (17) through a bolt, fixedly connected with connecting wire (8) on one side outer wall of keysets (19), fixedly connected with mainboard (18) on one side inner wall of holographic master control inner bag (12), and keysets (19) and mainboard (18) pass through signal line and are connected.



N8125

CN113406664

Priority Date: 19/08/2021

TSINGHUA UNIVERSITY

TCSPC-BASED HOLOGRAPHIC RADAR THREE-DIMENSIONAL IMAGING METHOD AND DEVICE

The application provides a holographic radar three-dimensional imaging method and device based on TCSPC, and the method comprises the following steps: emitting laser to a detection scene, irradiating a beam of laser to the detection scene after beam expansion and beam splitting, and irradiating a beam of laser as reference light to a detector; laser irradiating to a detection scene is reflected by the scene and then is received by a detector as object light, and the object light and the reference light are interfered at the detector; counting the photon distribution condition after interference by using a time-dependent photon counter to generate a holographic time photon counting histogram; sequentially slicing the photon counting histogram of the holographic time according to different time to obtain holograms at different distances; reconstructing the holograms at different distances in sequence to obtain distance slice holographic three-dimensional reconstruction results of the detected object at different distances; and analyzing and displaying or superposing the distance slice results at different distances according to specific requirements to obtain an integral holographic three-dimensional reconstruction result. The method and the device ensure high-precision information measurement and improve the ability of the automatic driving technology to sense the surrounding environment.

CLAIM 1. A holographic radar three-dimensional imaging method based on TCSPC is characterized by comprising the following steps: using a laser transmitter to transmit laser to a detection scene, and respectively expanding and splitting the laser by a beam expanding lens and a beam splitting lens, wherein one laser irradiates to the detection scene, and the other laser irradiates to a detector as reference light; laser irradiating to a detection scene is reflected by the scene and then is received by a detector as object light, and the object light and the reference light are interfered at the detector; counting photon distribution conditions after interference by using a time-dependent photon counter to generate a holographic time photon counting histogram, wherein the time-dependent photon counter is connected with the detector; sequentially slicing all the photon counting histograms in the holographic time according to different time to obtain holograms at different time, namely different distances; sequentially reproducing the holograms at different distances by using a hologram reproduction method to obtain distance slice holographic three-dimensional reconstruction results of the detected object at different distances; and analyzing and displaying the distance slice results of the holographic three-dimensional reconstruction results at different distances according to specific requirements or superposing the results to obtain the overall holographic three-dimensional reconstruction result.

N8128

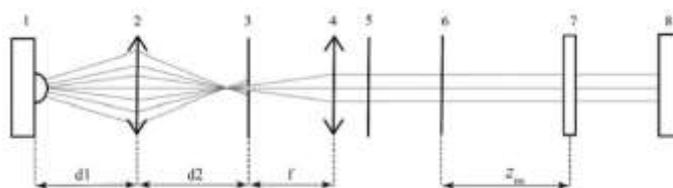
CN113376993

Priority Date: 18/06/2021

HARBIN UNIVERSITY OF SCIENCE & TECHNOLOGY

VIRTUAL POINT SPREAD FUNCTION RECORDING METHOD FOR CODED APERTURE CORRELATION HOLOGRAPHY

A virtual point spread function recording method of coded aperture correlation holography belongs to the field of computational imaging and coded imaging. When recording the point spread function of coded aperture correlation holography, the imaging distance and spatial resolution are limited due to the limitation of the size and power of the point light source. The invention simulates the wave front of a point light source through a wave front modulation device and records the corresponding intensity distribution, and the intensity distribution is called as a virtual point spread function. The virtual point spread function and the real point spread function have approximate intensity distribution modes, and can replace the real point spread function to reconstruct images. Compared with the classical coded aperture correlation holography, the method has higher spatial resolution capability and longer reconstruction distance.



N8130

CN113376653

Priority Date: 12/08/2021

TSINGHUA UNIVERSITY

PHOTON COUNTING-BASED THREE-DIMENSIONAL IMAGING METHOD AND DEVICE FOR COMPUTER-GENERATED HOLOGRAPHIC RADAR

The application provides a method and a device for computing holographic radar three-dimensional imaging based on photon counting, comprising the following steps: counting according to the distribution condition of the collected echo photons to obtain a time-dependent photon counting histogram of each single photon detector unit; selecting a detection distance to calculate the flight time of photons; finding out the corresponding photon number at the photon flight time in each time-dependent photon counting histogram according to the calculated photon flight time; sequentially calculating the complex amplitude distribution of the target detected by each single-photon detector unit on the holographic surface; superposing the complex amplitude distribution corresponding to each single-photon detector unit to obtain the total complex amplitude distribution of the detection scene; constructing reference light; adding the total complex amplitude distribution and the reference light to obtain the total complex amplitude on the holographic surface; the total complex amplitude on the hologram surface is calculated using a hologram reconstruction algorithm to find the final hologram image. The depth information measuring method and device are high in depth information measuring accuracy and capable of rapidly detecting the target in a large scene.

N8131

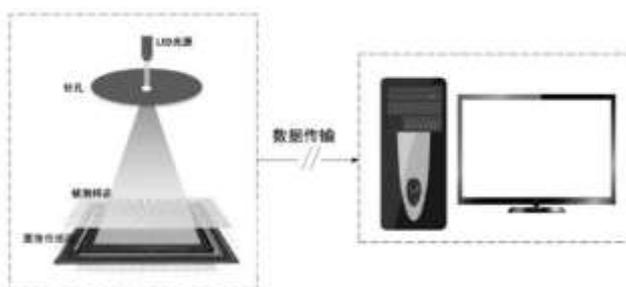
CN113359403

Priority Date: 21/05/2021

DALIAN MARITIME UNIVERSITY

AUTOMATIC FOCUSING METHOD FOR LENS-FREE DIGITAL HOLOGRAPHIC IMAGING

The invention provides an automatic focusing method for lensless digital holographic imaging, which comprises the following steps: carrying out reverse propagation on the holographic image to obtain a holographic reconstruction image; using the guide filtering as a blurred image function, and calculating a direction information difference value between a reconstructed image and the blurred image by adopting a gradient vector square function to obtain an evaluation function of the holographic reconstructed image; and combining a golden section search method with an evaluation function to determine the optimal defocus amount to obtain the optimal reconstructed image. The invention adopts a guiding filter to blur the reconstructed holographic image and respectively extracts the information of the reconstructed image and the blurred image in different directions. And determining the optimal defocus amount by comparing the change conditions of the direction information of the reconstructed image and the blurred reconstructed image, wherein the smaller the difference of the direction information is, the clearer the image is, and otherwise, the more diffraction stripes are. The invention combines image filtering and edge extraction, eliminates the interference of diffraction fringes on a target object, and enables an evaluation function to accurately calculate the correct focusing position.



CLAIM 1. An autofocus method for lensless digital holographic imaging, comprising: s1, reversely propagating the collected holographic image to obtain holographic reconstruction images at different defocusing amounts; s2, using the guide filtering as a blurred image function, and calculating a direction information difference value between the reconstructed image and the blurred image by adopting a gradient vector square function to obtain an evaluation function of the holographic reconstructed image; and S3, combining the golden section search method with the evaluation function obtained in the step S2, determining the optimal defocus amount, and obtaining the optimal reconstructed image.

N8132

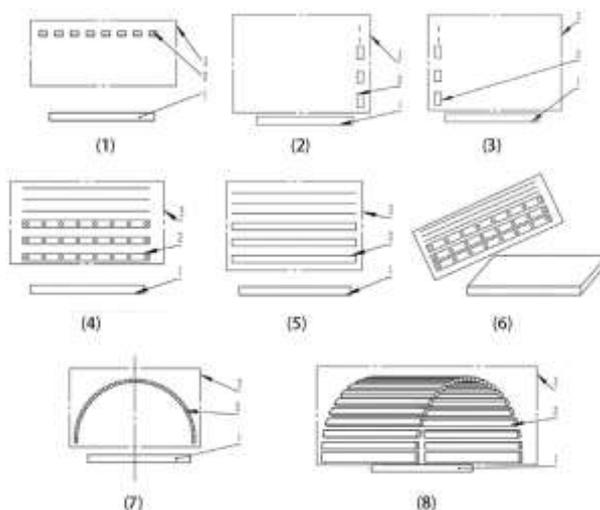
CN113347340

Priority Date: 07/06/2021

SHENYANG BOXING YADA TECHNOLOGY

HOLOGRAPHIC IMAGING DETECTION DEVICE AND SYSTEM AND IMAGE ACQUISITION AND ANALYSIS METHOD

The invention discloses a holographic imaging detection device, a system and an image acquisition and analysis method, wherein the holographic imaging detection device comprises: each group of detection light sources comprises at least one lamp bead, and the detection light sources are used for emitting detection illumination light and realizing gradual change of illumination angles of the detection illumination light on an imaging object according to a sequence; and the image sensor is used for receiving the light projected by the imaging object irradiated by the detection light source and obtaining image data formed by light interference. The holographic imaging detection system comprises: the laser holographic imaging detection device and the data processing and storage device connected with the laser holographic imaging detection device. The holographic imaging detection device, the holographic imaging detection system and the image acquisition and analysis method can provide more dimensionality detection light source equipment combinations according to different laser holographic films aiming at laser holographic patterns printed on different layouts, not only achieve the overall observation effect of the full layout, but also make up for the difference requirements of the laser holographic images of different printing modes.



CLAIM 1. A holographic imaging detection device, characterized by: the method comprises the following steps: each group of detection light sources comprises at least one lamp bead, and the detection light sources are used for emitting detection illumination light and realizing gradual change of illumination angles of the detection illumination light on an imaging object according to a sequence; and the image sensor is used for receiving the light projected by the imaging object irradiated by the detection light source and obtaining image data formed by light interference.

N8134

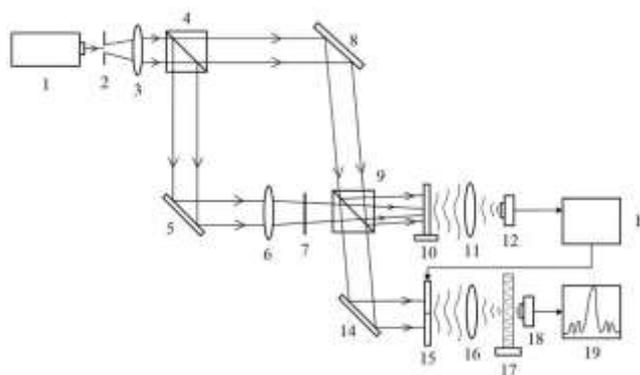
CN113325683

Priority Date: 11/05/2021

KUNMING UNIVERSITY OF SCIENCE & TECHNOLOGY

OFF-AXIS SCANNING HOLOGRAPHIC THREE-DIMENSIONAL TARGET REAL-TIME JOINT TRANSFORMATION RECOGNITION SYSTEM AND METHOD

The invention discloses a real-time joint transformation recognition system and method for an off-axis scanning holographic three-dimensional object, and belongs to the technical field of real-time recognition of an optical scanning holographic three-dimensional object. The identification system comprises a laser, a spatial filter, a first lens, a first beam splitter, a first reflector, a second lens, a shutter, a second reflector, a second beam splitter, a first objective table, a third lens, a first photoelectric detector, a computer, a third reflector, a spatial light modulator, a fourth lens, a second objective table, a second photoelectric detector and a real-time display; the invention adopts off-axis scanning holography to record the information of the three-dimensional object, omits a complex electrical signal processing unit in the traditional optical scanning holography, simplifies the light path of the system and improves the identification efficiency of the three-dimensional target object of the system. The invention realizes the identification of the three-dimensional object hologram by utilizing the optical joint transformation, has no problem of matching with an accurate positioning point in the relevant filtering identification, has flexible structure and is easy to realize the relevant operation.



The invention realizes the identification of the three-dimensional object hologram by utilizing the optical joint transformation, has no problem of matching with an accurate positioning point in the relevant filtering identification, has flexible structure and is easy to realize the relevant operation.

N8136

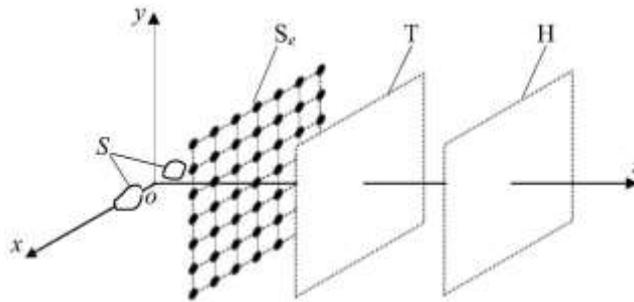
CN113312841

Priority Date: 28/05/2021

HEFEI UNIVERSITY OF TECHNOLOGY

VARIABLE NORM EQUIVALENT SOURCE NEAR-FIELD ACOUSTIC HOLOGRAPHY ALGORITHM WITH ACOUSTIC SOURCE SPARSITY ADAPTIVITY

The invention discloses a variable norm equivalent source near-field acoustic holography algorithm with acoustic source sparsity adaptivity, which is to arrange a holographic surface in an acoustic source near-field radiation area and measure to obtain sound pressure P on the holographic surface; (ii) Arranging an equivalent source surface on one side of the target reconstruction surface, which is far away from the holographic surface; establishing a relation between the sound pressure and the equivalent source by utilizing a sound pressure transfer matrix between the equivalent source and the holographic surface; solving the equivalent source intensity by adopting an iterative regularization algorithm with a self-adaptive norm constraint penalty term, and then obtaining the equivalent source intensity by calculating the obtained source intensity and a transfer matrix between the equivalent source and a target reconstruction surface. The invention adaptively changes l in the regularization solving process. The p value in the norm punishment item enables the sparsity of the equivalent source intensity obtained by solving to be more consistent with the actual sparsity of the sound source, and the accurate solving can be realized for a spatial sparsity type sound source, a spatial continuous type sound source or a sound source with the source intensity sparsity between full sparsity and continuity.



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HOLOGRAMS - 16 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P33891	WO	2021181423	16/09/2021	ARROW GREENTECH	IN	12/03/2020	IN2019021051625	WO2021181423	SECURE LAMINATES TO SECURE DOCUMENTS AND METHOD OF MANUFACTURING THE SAME	
P33899	WO	2021170964	02/09/2021	BANQUE DE FRANCE	FR	26/02/2020	FR2020000001906	WO2021170964 FR3107470	METHOD FOR MANUFACTURING A BANKNOTE	OVD
P33914	KR	102293378	25/08/2021	DANKOOK UNIVERSITY IACF	KR	20/03/2020	KR2020000034566	KR102293378	ANTI-COUNTERFEIT FILM AND METHOD FOR PRODUCING THE SAME	
P33953	CN	214175528	10/09/2021	WUXI NEW LIGHT IMPRESSION PREVENTING FAISE TECHNIQUE	CN	15/01/2021	CN2021000095819	CN214175528U	HOLOGRAPHIC FLUORESCENT ANTI-COUNTERFEITING LABEL WITH FRAGILE FUNCTION	
P33954	CN	214175526	10/09/2021	WUXI NEW LIGHT IMPRESSION PREVENTING FAISE TECHNIQUE	CN	15/01/2021	CN2021000094798	CN214175526U	TWO-DIMENSIONAL CODE ANTI-COUNTERFEITING LABEL WITH HOLOGRAPHIC SCRAPING VERIFICATION FUNCTION	
P33961	CN	214123317	03/09/2021	GUANGDONG DERUI NEW MATERIAL TECHNOLOGY	CN	31/12/2020	CN2020003307563	CN214123317U	LASER ANTI-COUNTERFEITING IN-MOLD LABEL	
P33969	CN	214068166	27/08/2021	BEIJING XINGHAN SPECIAL PRINTING	CN	30/12/2020	CN2020003292235	CN214068166U	CLOTHING TAG WITH HOLOGRAPHIC TRANSFER TECHNOLOGY	
P33970	CN	214061073	27/08/2021	SHANGHAI SHUN HAO NEW MATERIALS POLYTRON TECHNOLOGIES	CN	09/11/2020	CN2020002566589	CN214061073U	LIGHT-TRANSMITTING VISIBLE ANTI-COUNTERFEITING PACKAGING PAPER	
P33972	CN	214058530	27/08/2021	SHENZHEN JINSHENGCAI PACKAGING MATERIAL	CN	04/12/2020	CN2020002903713	CN214058530U	HOLOGRAPHIC RECORDING PHOTSENSITIVE ANTI-COUNTERFEITING POLYMER PACKAGING FILM	
P33973	CN	214057016	27/08/2021	SHENZHEN YANRUN TECHNOLOGY	CN	14/12/2020	CN2020002994098	CN214057016U	PRODUCTION EQUIPMENT WITH MICRO-TEXT LASER HOLOGRAPHIC ANTI-COUNTERFEITING FILM	
P33974	CN	214056938	27/08/2021	SHENZHEN YANRUN TECHNOLOGY	CN	14/12/2020	CN2020002992701	CN214056938U	HOLOGRAPHIC ANTI-COUNTERFEITING POSITIONING HOT STAMPING DETECTION EQUIPMENT	Holography process
P33975	CN	214056865	27/08/2021	SHENZHEN YANRUN TECHNOLOGY	CN	14/12/2020	CN2020002992684	CN214056865U	DEVICE FOR TRANSFERRING LASER HOLOGRAPHIC ANTI-COUNTERFEITING PATTERN	Holography process
P33980	CN	113406729	17/09/2021	WUHAN UNIVERSITY	CN	30/06/2021	CN2021000732897	CN113406729	BIDIRECTIONAL HOLOGRAPHIC MODULATION METHOD BASED ON BROADBAND VISIBLE LIGHT NANOMETER SUPER SURFACE AND APPLICATION	
P33983	CN	113400827	17/09/2021	HUBEI HUAGONG IMAGE TECHNOLOGY DEVELOPMENT	CN	30/06/2021	CN2021000743633	CN113400827	DEVICE AND METHOD FOR MANUFACTURING MULTI-COATING AND MULTI-LASER-EFFECT ANTI-COUNTERFEITING PAPER	
P33984	CN	113400826	17/09/2021	HUBEI HUAGONG IMAGE TECHNOLOGY DEVELOPMENT	CN	30/06/2021	CN2021000743634	CN113400826	POSITIONING FRAME OF ANTI-COUNTERFEITING HOLOGRAPHIC POSITIONING PAPER, PREPARATION METHOD AND DETECTION METHOD	
P34000	CN	113314021	27/08/2021	SHANDONG TAIBAO INFORMATION TECHNOLOGY GROUP	CN	11/06/2021	CN2021000656240	CN113314021	DROP-MOLDING TRANSFER-PREVENTION VARIABLE INFORMATION HOLOGRAPHIC ANTI-COUNTERFEITING GASKET AND PREPARATION METHOD THEREOF	

VARIOUS OPTICAL EFFECTS - 12 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P33888	WO	2021185729	23/09/2021	HUECK FOLIEN	AT	16/03/2020	AT2020000050225	WO2021185729	FLAT SECURITY ELEMENT WITH OPTICAL SECURITY FEATURES	
P33892	WO	2021180737	16/09/2021	BIC	FR	09/03/2020	FR2020000002313	WO2021180737	METHOD FOR MANUFACTURING A VISUAL DISPLAY ASSEMBLY, VISUAL DISPLAY ASSEMBLY, AND LIGHTER COMPRISING SUCH AN ASSEMBLY	MicroLens
P33899	WO	2021170964	02/09/2021	BANQUE DE FRANCE	FR	26/02/2020	FR2020000001906	WO2021170964 FR3107470	METHOD FOR MANUFACTURING A BANKNOTE	Hologram
P33917	JP	2021138053	16/09/2021	KOBAYASHI CREATE	JP	05/03/2020	JP2020000037892	JP2021138053	OPTICALLY READ FORM AND OPTICALLY READ FORM INFORMATION MANAGEMENT METHOD	
P33918	JP	2021137981	16/09/2021	DAI NIPPON PRINTING	JP	02/03/2020	JP2020000035063	JP2021137981	REFLECTOR WITH LATENT IMAGE	

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REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P33933	JP	2021124602	30/08/2021	TOPPAN PRINTING	JP	05/02/2020	JP2020000017971	JP2021124602	COLOR SHIFTING DEVICE	
P33937	GB	2592719	08/09/2021	KOENIG BAUER BANKNOTE SOLUTIONS	GB	15/12/2020	GB2020000019780	GB202019780 GB2592719	METHODS FOR DESIGNING AND PRODUCING A SECURITY FEATURE	Micro lens
P33958	CN	214143056	07/09/2021	QINGDAO RONGXIN INDUSTRY & TRADE	CN	22/12/2020	CN2020003112667	CN214143056U	WATER-BASED COATED PAPER WITH ANTI-COUNTERFEITING PROTECTION STRUCTURE	Micro lens
P33976	CN	113416450	21/09/2021	CHINA BANKNOTE PRINTING & MINT - CHINA BANKNOTE PRINTING TECHNOLOGY RESEARCH INSTITUTE	CN	05/07/2021	CN2021000758796	CN113416450	ANTI-COUNTERFEITING INK AND PREPARATION METHOD THEREOF, ANTI-COUNTERFEITING LAYER AND PREPARATION METHOD THEREOF	
P33986	CN	113400782	17/09/2021	HUIZHOU HUAYANG OPTICAL TECHNOLOGY	CN	29/04/2021	CN2021000473983	CN113400782	FIXED MAGNETIC ASSEMBLY AND PRINTING DEVICE	
P33987	CN	113386454	14/09/2021	ANHUI ANTAI NEW STYLE PACKAGING MATERIALS - SHENZHEN JINJIA	CN	28/05/2021	CN2021000593642	CN113386454	PRINTING EQUIPMENT, PRINTING METHOD AND PRINTED MATTER OF COLOR IMAGE-TEXT MICRO-NANO STRUCTURE	Micro lens
P34005	AT	523393	15/08/2021	HUECK FOLIEN	AT	06/04/2020	AT2020000050291	AT-523393 AT-523393	VERFAHREN ZUR HERSTELLUNG EINES SICHERHEITSELEMENTS MIT EINER FARBIGEN MIKROSTRUKTUR	

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REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
N8079	WO	2021186112	23/09/2021	AALTO UNIVERSITY FOUNDATION SR	FI	19/03/2020	FI2020000005284	WO2021186112	A HOLOGRAM ELEMENT FOR BROADBAND SHAPING OF ELECTROMAGNETIC WAVES AND A RELATED SYSTEM	
N8080	WO	2021178445	10/09/2021	PRANOS	US	02/03/2020	US2020062983996	WO2021178445	TARGETED CONTENT DELIVERY VIA HOLOGRAPHIC AND TRANSPARENT DISPLAYS	
N8081	WO	2021172135	02/09/2021	UNIVERSITY OF TOKYO	JP	27/02/2020	JP2020000032168	WO2021172135 JP2021135409	PHASE IMAGING DEVICE AND PHASE IMAGING METHOD	
N8082	WO	2021169406	02/09/2021	SVG TECHNOLOGY	CN	28/02/2020	CN2020000130229	WO2021169406 CN113325506	HOLOGRAPHIC OPTICAL WAVEGUIDE LENS AND AUGMENTED REALITY DISPLAY DEVICE	
N8083	US	20210294265	23/09/2021	NATIONAL CENTRAL UNIVERSITY	US	18/03/2020	US2020062991211	US20210294265	LENSLESS HOLOGRAPHIC IMAGING SYSTEM USING HOLOGRAPHIC OPTICAL ELEMENT	
N8084	US	20210283940	16/09/2021	R R DONNELLEY & SONS	US	11/03/2020	US2020062988234	US20210283940	SECURE PLACARD AND METHOD FOR PRODUCING SAME	
N8085	US	20210279951	09/09/2021	ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE	KR	05/03/2020	KR2020000027664	US20210279951 KR20210113053	METHOD AND APPARATUS FOR PROCESSING HOLOGRAPHIC IMAGE	
N8086	US	20210279876	09/09/2021	NEW YORK UNIVERSITY	US	09/03/2020	US2020062987223	US20210279876	AUTOMATED HOLOGRAPHIC VIDEO MICROSCOPY ASSAY	
N8087	US	20210268959	02/09/2021	FORD GLOBAL TECHNOLOGIES	CN	27/02/2020	CN2020000123678	CN113311648 US20210268959	HOLOGRAPHIC PROJECTION SYSTEM AND METHOD FOR VEHICLE	
N8088	TW	738356	01/09/2021	HON HAI PRECISION INDUSTRY	TW	22/05/2020	TW2020000117269	TWI738356	HOLOGRAPHIC DISPLAY DEVICE	
N8089	KR	20210112655	15/09/2021	LG UPLUS	KR	05/03/2020	KR2020000027927	KR20210112655	SIMILAR HOLOGRAPHIC DISPLAY DEVICE AND METHOD WITH BEAM PROJECTOR	
N8090	KR	20210111729	13/09/2021	SK TELECOM	KR	31/08/2021	KR2021000115716	KR20210111729	IMAGE OUTPUT SCREEN AND HOLOGRAM DEVICE INCLUDING THE SAME	
N8091	KR	20210107604	01/09/2021	SAMSUNG ELECTRONICS	KR	26/08/2021	KR2021000113402	KR20210107604	HOLOGRAPHIC DISPLAY DEVICE AND HOLOGRAPHIC DISPLAY METHOD PROVIDING IMPROVED IMAGE QUALITY	

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N8092	KR	20210106803	31/08/2021	KIM BAE HYUN	KR	21/02/2020	KR2020000021776	KR20210106803	HEATING AND COOLING FUNCTION CUP WITH HOLOGRAM FUNCTION	
N8093	KR	20210105055	26/08/2021	PANACEA	KR	18/02/2020	KR2020000019535	KR20210105055	SMART GLASS DEVICE USING HOLOGRAPHIC OPTICAL ELEMENT	
N8094	KR	102294068	25/08/2021	PUKYONG NATIONAL UNIVERSITY INDUSTRY- ACADEMIC COOPERATION FOUNDATION	KR	25/02/2020	KR2020000022738	KR102294068	HOLOGRAM FILM AND METHOD FOR PRODUCING THE SAME	
N8095	JP	2021140018	16/09/2021	JAPAN BROADCASTING	JP	04/03/2020	JP2020000037214	JP2021140018	IMAGE PROCESSING DEVICE AND HOLOGRAM RECORDING/REPRODUCTION DEVICE	
N8096	JP	2021135417	13/09/2021	UNIVERSITY OF TOKYO	JP	27/02/2020	JP2020000032351	JP2021135417	HOLOGRAM DESIGN METHOD, HOLOGRAM REPRODUCTION DEVICE, AND HOLOGRAM RECORDING MEDIUM	
N8097	JP	2021131457	09/09/2021	JAPAN BROADCASTING	JP	19/02/2020	JP2020000026554	JP2021131457	HOLOGRAM IMAGING DEVICE AND IMAGE RECONSTRUCTION SYSTEM	
N8098	IN	201911030117	27/08/2021	INDIAN INSTITUTE OF TECHNOLOGY DELHI	IN	25/07/2019	IN2019011030117	IN201911030117	AN IMPROVED DIGITAL HOLOGRAPHIC INTERFEROMETER FOR QUANTITATIVE PHASE IMAGING	
N8099	DE	102020202799	09/09/2021	ROBERT BOSCH	DE	05/03/2020	DE202010202799	DE102020202799	METHOD FOR PRODUCING HOLOGRAPHIC OPTICAL ELEMENTS	
N8100	CN	214253815	21/09/2021	WALNUT INTELLIGENT TECHNOLOGY	CN	22/01/2021	CN2021000180767	CN214253815U	HOLOGRAPHIC PROJECTION SHOWCASE WITH DUSTPROOF FUNCTION	
N8101	CN	214252900	21/09/2021	WALNUT INTELLIGENT TECHNOLOGY	CN	22/01/2021	CN2021000180718	CN214252900U	CAN REPLACE HOLOGRAPHIC PROJECTION EQUIPMENT OF FOUR REFLECTION OF LIGHT GLASSES	
N8102	CN	214226475	17/09/2021	JIANGSU LEISPIDER LASER TECHNOLOGY	CN	21/01/2021	CN2021000165048	CN214226475U	PROJECTION DISPLAY CABINET FOR THREE-DIMENSIONAL HOLOGRAPHIC IMAGE	
N8103	CN	214225686	17/09/2021	SONG JIANMING	CN	30/12/2020	CN2020003291974	CN214225686U	HOLOGRAPHIC THREE-DIMENSIONAL SPACE IMAGING DEVICE AND SYSTEM	
N8104	CN	214225667	17/09/2021	SOUTHWEST PETROLEUM UNIVERSITY	CN	10/03/2021	CN2021000516347	CN214225667U	HOLOGRAPHIC PROJECTION EQUIPMENT OF ANIMATION DESIGN GAME MODEL	
N8105	CN	214225472	17/09/2021	SHENZHEN HUYNEW TECHNOLOGY	CN	26/01/2021	CN2021000223896	CN214225472U	VOLUME HOLOGRAPHIC GRATING AND PREPARATION SYSTEM, REPLICATION PROCESSING STRUCTURE AND WAVEGUIDE STRUCTURE THEREOF	
N8106	CN	214202997	14/09/2021	SHENZHEN YUXINXU OPTOELECTRONICS	CN	20/01/2021	CN2021000152230	CN214202997U	NOVEL HOLOGRAPHIC INTERACTIVE LED SPHERICAL DISPLAY SCREEN	
N8107	CN	214175654	10/09/2021	NINGBO DIYANG ELECTRONIC TECHNOLOGY	CN	19/08/2020	CN2020001737704	CN214175654U	CYLINDER WITH HOLOGRAPHIC ADVERTISEMENT FUNCTION	
N8108	CN	214175607	10/09/2021	GUANGDONG YIJING SPACE ENGINEERING TECHNOLOGY	CN	28/01/2021	CN2021000242548	CN214175607U	HOLOGRAPHIC PROJECTION IMAGING DEVICE	
N8109	CN	214174824	10/09/2021	HUBEI GEDIAN DEVELOPMENT REGION CHENGUANG INDUSTRIAL	CN	12/03/2021	CN2021000527330	CN214174824U	LASER DOUBLE-BEAM HOLOGRAPHIC PLATE MAKING INSTRUMENT	
N8110	CN	214151249	07/09/2021	XI AN DREAM WORLD INFORMATION TECHNOLOGY	CN	08/01/2021	CN2021000047673	CN214151249U	INTELLIGENT GLASSES BASED ON HOLOGRAPHIC OPTICAL WAVEGUIDE ELEMENT	
N8111	CN	214141043	07/09/2021	SHENZHEN KUN HONG TECHNOLOGY	CN	19/10/2020	CN2020002344814	CN214141043U	STORAGE DEVICE FOR LASER HOLOGRAPHIC FILM	
N8112	CN	214123207	03/09/2021	SHAANXI HONGXING SHANSHAN NETWORK TECHNOLOGY	CN	31/12/2020	CN2020003334365	CN214123207U	LEARNING SYSTEM BASED ON HOLOGRAPHIC IMAGE	
N8113	CN	214105801	03/09/2021	SHAANXI HONGXING SHANSHAN NETWORK TECHNOLOGY	CN	27/07/2020	CN2020001499349	CN214105801U	OMNIDIRECTIONAL RUNNING EQUIPMENT FOR HOLOGRAPHIC PROJECTION	
N8114	CN	214097990	31/08/2021	SHENZHEN BERXEL OPTOELECTRONICS TECHNOLOGY	CN	18/12/2020	CN2020003073765	CN214097990U	HOLOGRAPHIC LASER TRANSMITTER	

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N8115	CN	214095900	31/08/2021	HEILONGJIANG UNIVERSITY	CN	11/12/2020	CN2020002965012	CN214095900U	DOUBLE-CARRIER-FREQUENCY DOUBLE-WAVELENGTH DIGITAL HOLOGRAPHIC DETECTION DEVICE BASED ON REFLECTION TYPE POINT DIFFRACTION	
N8116	CN	214095899	31/08/2021	HEILONGJIANG UNIVERSITY	CN	11/12/2020	CN2020002965011	CN214095899U	DOUBLE-CARRIER-FREQUENCY DOUBLE-WAVELENGTH DIGITAL HOLOGRAPHIC DETECTION DEVICE BASED ON OVERTURNING INTERFERENCE	
N8117	CN	214095898	31/08/2021	HEILONGJIANG UNIVERSITY	CN	11/12/2020	CN2020002956627	CN214095898U	LIGHT OFF-AXIS FLIP INTERFERENCE DIGITAL HOLOGRAPHIC DETECTION DEVICE BASED ON POLARIZATION SYNCHRONOUS PHASE SHIFT	
N8118	CN	214093693	31/08/2021	BELJING ZHONGSHI LIGHT SHADOW LIGHTING DESIGN	CN	09/12/2020	CN2020002959508	CN214093693U	IMMERSIVE LIVE-ACTION OPTICAL-MOVIE-PLAY HOLOGRAPHIC PROJECTION EQUIPMENT BASED ON FOLDING EFFECT	
N8119	CN	214087193	31/08/2021	YESAR ELECTRONIC TECHNOLOGY	CN	13/01/2021	CN2021000079782	CN214087193U	HOLOGRAPHIC CONTACT-FREE OPERATION ELEVATOR CONTROL BOX CAPABLE OF BEING CONTROLLED BY VOICE	
N8120	CN	214084771	31/08/2021	JIYAN FUJIAN INFORMATION TECHNOLOGY	CN	14/01/2021	CN2021000091070	CN214084771U	CAN MAKE UP HOLOGRAPHIC 3D PROJECTION UNMANNED AERIAL VEHICLE OF BORE HOLE	
N8121	CN	214084014	31/08/2021	SHENZHEN INFORMATION INFRASTRUCTURE INVESTMENT DEVELOPMENT	CN	27/11/2020	CN2020002789188	CN214084014U	HOLOGRAPHIC PARKING DRIVING AUXILIARY SYSTEM	
N8122	CN	214067564	27/08/2021	SONG XIAOLONG	CN	17/12/2020	CN2020003079897	CN214067564U	HOLOGRAPHIC PROJECTION EQUIPMENT FIXED FRAME	
N8123	CN	113418470	21/09/2021	XI AN UNIVERSITY OF TECHNOLOGY	CN	08/07/2021	CN2021000772728	CN113418470	SPECTRUM SCANNING CONFOCAL SINGLE-EXPOSURE DIGITAL HOLOGRAPHIC MEASUREMENT SYSTEM AND MEASUREMENT METHOD	
N8124	CN	113418469	21/09/2021	XI AN UNIVERSITY OF TECHNOLOGY	CN	08/07/2021	CN2021000772709	CN113418469	SPECTRUM CONFOCAL SCANNING COMMON-PATH DIGITAL HOLOGRAPHIC MEASUREMENT SYSTEM AND MEASUREMENT METHOD	
N8125	CN	113406664	17/09/2021	TSINGHUA UNIVERSITY	CN	19/08/2021	CN2021000957635	CN113406664	TCSPC-BASED HOLOGRAPHIC RADAR THREE-DIMENSIONAL IMAGING METHOD AND DEVICE	
N8126	CN	113393472	14/09/2021	NANJING UNIVERSITY OF SCIENCE & TECHNOLOGY	CN	29/05/2021	CN2021000595634	CN113393472	ZONING COMPOSITE PHASE UNWRAPPING METHOD BASED ON DIGITAL HOLOGRAPHIC MICROSCOPIC IMAGING	
N8127	CN	113382225	10/09/2021	SHENZHEN REALIS MULTIMEDIA TECHNOLOGY - SHENZHEN RULISHI INTELLIGENT TECHNOLOGY	CN	27/05/2021	CN2021000588135	CN113382225	BINOCULAR HOLOGRAPHIC DISPLAY METHOD AND DEVICE BASED ON HOLOGRAPHIC SAND TABLE	
N8128	CN	113376993	10/09/2021	HARBIN UNIVERSITY OF SCIENCE & TECHNOLOGY	CN	18/06/2021	CN2021000679095	CN113376993	VIRTUAL POINT SPREAD FUNCTION RECORDING METHOD FOR CODED APERTURE CORRELATION HOLOGRAPHY	
N8129	CN	113376992	10/09/2021	XIDIAN UNIVERSITY	CN	31/05/2021	CN2021000604390	CN113376992	MINIATURIZED POLARIZATION POINT DIFFRACTION DIGITAL HOLOGRAPHIC MICROSCOPIC DEVICE BASED ON LED ILLUMINATION	
N8130	CN	113376653	10/09/2021	TSINGHUA UNIVERSITY	CN	12/08/2021	CN2021000927187	CN113376653	PHOTON COUNTING-BASED THREE-DIMENSIONAL IMAGING METHOD AND DEVICE FOR COMPUTER-GENERATED HOLOGRAPHIC RADAR	
N8131	CN	113359403	07/09/2021	DALIAN MARITIME UNIVERSITY	CN	21/05/2021	CN2021000558459	CN113359403	AUTOMATIC FOCUSING METHOD FOR LENS-FREE DIGITAL HOLOGRAPHIC IMAGING	
N8132	CN	113347340	03/09/2021	SHENYANG BOXING YADA TECHNOLOGY	CN	07/06/2021	CN2021000631439	CN113347340	HOLOGRAPHIC IMAGING DETECTION DEVICE AND SYSTEM AND IMAGE ACQUISITION AND ANALYSIS METHOD	
N8133	CN	113345354	03/09/2021	ZHAI JUNMING	CN	25/05/2021	CN2021000573896	CN113345354	HOLOGRAPHIC PROJECTION DEVICE CAPABLE OF BEING USED FOR ILLUMINATION	
N8134	CN	113325683	31/08/2021	KUNMING UNIVERSITY OF SCIENCE & TECHNOLOGY	CN	11/05/2021	CN2021000508767	CN113325683	OFF-AXIS SCANNING HOLOGRAPHIC THREE-DIMENSIONAL TARGET REAL-TIME JOINT TRANSFORMATION RECOGNITION SYSTEM AND METHOD	
N8135	CN	113315885	27/08/2021	DAAI HOLOGRAM BEIJING TECHNOLOGY	CN	15/06/2021	CN2021000658209	CN113315885	HOLOGRAPHIC STUDIO AND SYSTEM FOR REMOTE INTERACTION	
N8136	CN	113312841	27/08/2021	HEFEI UNIVERSITY OF TECHNOLOGY	CN	28/05/2021	CN2021000588945	CN113312841	VARIABLE NORM EQUIVALENT SOURCE NEAR-FIELD ACOUSTIC HOLOGRAPHY ALGORITHM WITH ACOUSTIC SOURCE SPARSITY ADAPTIVITY	
N8137	CN	113311682	27/08/2021	JIANGSU UNIVERSITY	CN	08/05/2021	CN2021000501054	CN113311682	LENS-FREE COAXIAL DIGITAL HOLOGRAPHIC MICROPARTICLE IMAGING SYSTEM AND METHOD	