

IHMA PATENT NEWSLETTER

Limited circulation patent news bulletin for the Holography Industry

FEBRUARY 2023 – 75 PATENTS

Published and granted patents

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is exclusively dedicated to IHMA MEMBERS.**

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Please note that:

- 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).
- IHMA Patent Newsletter is forwarded at the end of each month and corresponds to the patents appearing during the previous month. If at any time, you do not receive your newsletter in the usual time span, please contact us, as an electronic transmission problem is always possible.

Even though the greatest care is taken in the preparation of this patent surveillance newsletter, some errors or oversights could have occurred. We are committed to making all reasonable efforts to ensure the reliability and a content of information as complete as possible without nevertheless being able to guarantee the exactitude or exhaustive character of the data used. We collect data from official or private sources of the best quality which themselves do not guarantee that the information provided is complete, up-to-date, pertinent, well-referenced ... Please also accept our apologies for the poor quality translations of Asian abstracts which are machine translation.

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P36064

SECURITY & OPTICAL EFFECTS' COLUMN

BANKNOTE – PASSPORT – THREAD – RELIEF – MICROLENS – WATERMARK

WO202323453

CRANE

Inventor(s):

DARROCH MICHAEL | HASSETT DANIEL

Application Nber / Date:

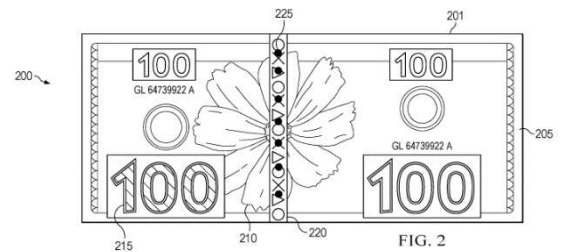
WOUS2022/074636 2022-08-05

Priority Nber / Date / Country:

US63/233,621P 2021-08-16

MICRO-OPTIC SECURITY DEVICE WITH ENHANCED WET-HARVEST RESISTANCE

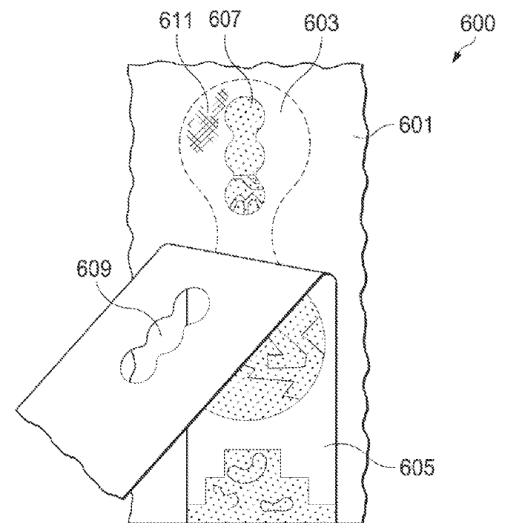
A method includes embossing a section of a micro-optic security thread (500) at a predetermined pressure in an embossing die having a male half (501) and a female half (503), the micro-optic security thread comprising a polymeric substrate (300) having a first side and a second side, forming a web of a substrate (350) in a paper making machine, wherein the web comprises a length of cellulosic material formed at a wet end of the paper making machine and maintained under tension between the wet end of the paper making machine and a dryer section of the paper making machine, forming a watermark feature (210) in the substrate, and adhering the micro-optic security thread by positioning the embossed section such that the layer of icon elements contacts at least a portion of the web comprising the watermark feature.



DISPOSITIF DE SÉCURITÉ MICRO-OPTIQUE À RÉSISTANCE AMÉLIORÉE À LA RÉCOLTE MARQUÉE PAR L'HUMIDITÉ

L'invention concerne un procédé comprenant le gaufrage d'une section d'un fil de sécurité micro-optique (500) à une pression prédéterminée dans une matrice de gaufrage ayant une moitié mâle (501) et une moitié femelle (503), le fil de sécurité micro-optique comprenant un substrat polymère (300) ayant un premier côté et un second côté, formant une bande d'un substrat (350) dans une machine à papier, la bande comprenant une longueur de matériau cellulosique formée à une extrémité humide de la machine à papier et maintenue sous tension entre l'extrémité humide de la machine à papier et une section de séchage de la machine à papier, la formation d'une caractéristique de filigrane (210) dans le substrat, et l'adhésion du fil de sécurité micro-optique en positionnant la section gaufrée de telle sorte que la couche d'éléments d'icône entre en contact avec au moins une partie de la bande comprenant la caractéristique de filigrane.

CLAIM 1. A method for providing a wet harvest indicating security document, the method comprising: embossing a section of a micro-optic security thread (500) at a predetermined pressure in an embossing die having a male half (501) and a female half (503), the micro-optic security thread comprising a polymeric substrate (300) having a first side and a second side, wherein a layer of icon elements (320) is disposed on the first side of the polymeric substrate, and a layer of micro-optic focusing elements (305) is disposed on the second side of the polymeric substrate; forming a web of a substrate (350) in a paper making machine, wherein the web comprises a length of cellulosic material formed at a wet end of the paper making machine and maintained under tension between the wet end of the paper making machine and a dryer section of the paper making machine; forming a watermark feature (210) in the substrate at the wet end of the paper making machine; adhering the micro-optic security thread by positioning the embossed section such that the layer of icon elements contacts at least a portion of the web comprising the watermark feature; and passing the portion of the web comprising the watermark feature and the adhered micro-optic security thread to the dryer section of the paper making machine.



No equivalent

Status: Pending

Research Report:

INTERNATIONAL SEARCH REPORT		International application No. PCT/US2022/074636
A. CLASSIFICATION OF SUBJECT MATTER		
IPC(B) - INV. - B42D 25/355; B42D 25/333; B42D 25/29; B42D 25/425; D21F 1/44 (2022.01) ADD. - D21F 2/00 (2022.01)		
CPC - INV. - B42D 25/355; B42D 25/29; B42D 25/333; B42D 25/425; D21F 1/44; D21H 21/42; G02B 3/0006 (2022.08) ADD. - D21F 2/00 (2022.08)		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) See Search History document		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched See Search History document		
Electronic database consulted during the international search (name of database and, where practicable, search terms used) See Search History document		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2013/0050819 A1 (HOLMES) 28 February 2013 (28.02.2013) entire document	8
Y		13
A		1-7, 9-12, 14-20
Y	US 2014/0245910 A1 (CANADIAN BANK NOTE COMPANY LIMITED) 04 September 2014 (04.09.2014) entire document	13
A	US 2006/0055169 A1 (REINHART) 16 March 2006 (16.03.2006) entire document	1-7
A	US 5,248,544 A (KAULE) 28 September 1993 (28.09.1993) entire document	1-7, 14-20
A	KR 2016/0082826 A (KOREA SECURITY PRINTING & MINTING) 11 July 2016 (11.07.2016) see machine translation	1-20
A	WO 2020/055892 A1 (CRANE & CO. INC.) 19 March 2020 (19.03.2020) entire document	1-20

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

P36082

BRAND PROTECTION

WO202305208

SVG TECHNOLOGY GROUP

Priority Date: 29/07/2021

DEEP-GRAIN PATTERN TRANSFER FILM, TRANSFER MATERIAL, AND PREPARATION METHOD THEREFOR

A deep-grain pattern transfer film, a transfer material, and a preparation method therefor. The deep-grain pattern transfer film comprises a base film (1), a UV resin coating (3), and a chemical layer (2) located between the base film and the UV resin coating. The chemical layer (2) is made of one or more of a water-based polyurethane system, a water-based polyester system, a water-based epoxy system, and a water-based acrylic system; the thickness of the UV resin coating (3) is 1-50 μm , and is 5-15 times of the thickness of the chemical layer (2); and the curing shrinkage rate of a UV resin used in the UV resin coating (3) is 1-10%. According to the deep-grain pattern transfer film, the transfer material, and the preparation method therefor, the problem of the magnitude of a bonding force between the UV resin coating and the base film or a mold is solved, the process is simple and convenient, and the cost is low; and a micro-nano structure of a prepared deep-grain pattern transfer material has a large depth, thereby achieving extremely strong expressiveness and anti-counterfeiting degree.

FILM DE TRANSFERT DE MOTIF À GRAIN PROFOND, MATÉRIAU DE TRANSFERT ET PROCÉDÉ DE PRÉPARATION S'Y RAPPORTANT

Film de transfert de motif à grain profond, matériau de transfert et procédé de préparation s'y rapportant. Le film de transfert de motif à grain profond comprend un film de base (1), un revêtement de résine UV (3) et une couche chimique (2) située entre le film de base et le revêtement de résine UV. La couche chimique (2) est constituée d'un ou de plusieurs éléments parmi un système de polyuréthane à base d'eau, un système de polyester à base d'eau, un système époxy à base d'eau et un système acrylique à base d'eau ; l'épaisseur du revêtement de résine UV (3) est de 1 à 50 μm , et est de 5 à 15 fois l'épaisseur de la couche chimique (2) ; et le taux de rétrécissement au durcissement d'une résine UV utilisée dans le revêtement de résine UV (3) est de 1 à 10 %. Selon le film de transfert de motif à grain profond, le matériau de transfert et le procédé de préparation s'y rapportant, le problème de l'amplitude d'une force de liaison entre le revêtement de résine UV et le film de base ou un moule est résolu, le procédé est simple et pratique et le coût est faible ; et une structure micro-nano d'un matériau de transfert de motif à grain profond préparé présente une grande profondeur, ce qui permet d'obtenir une expressivité et un degré anti-contrefaçon extrêmement forts.



CLAIM 1. A deep tattoo pattern transfer film comprising a base film, a UV resin coating, and a chemical layer disposed between the base film and the UV resin coating, the UV resin coating having a thickness of 1 to 50 μm , which is 5 to 15 times the thickness of the chemical layer, the UV resin coating using a UV resin cure shrinkage of 1 to 10%.

P36104

BANKNOTE

EP4138053

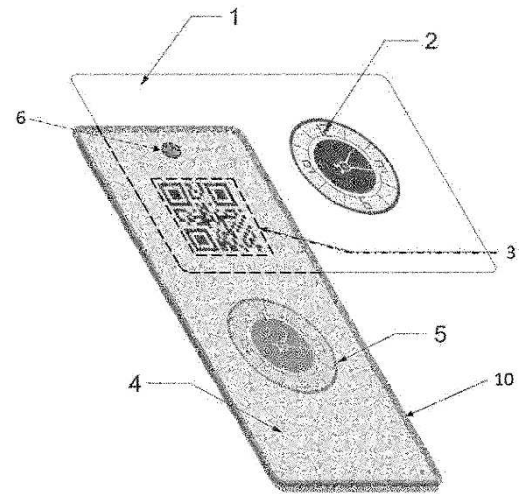
ANDREWS & WYKEHAM

Priority Date: 20/08/2021

OPTICAL AUTHENTICATION STRUCTURE WITH AUGMENTED REALITY FEATURE

Authenticating system in which an authenticating apparatus reads a machine-readable security feature (3) provided on an optical authentication structure, which causes a display of the system to show at least part of the optical authentication structure and augmented reality imagery, which augmented reality imagery at least in part allows the optical authentication structure to be authenticated.

CLAIM 1. Machine-executable instructions arranged to be executed by a processor of an authenticating apparatus, and the instructions configured to read a machine-readable security feature provided on or which is part of the optical authentication structure, and to thereby cause a display of the apparatus to show at least part of the optical authentication structure and augmented reality imagery, which augmented reality imagery at least in part allows the optical authentication structure to be authenticated.



P36114

PRINTING – BRAND PROTECTION

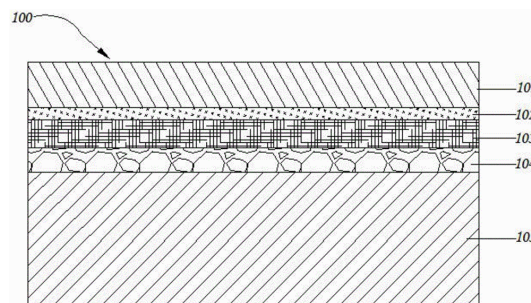
CN218505568U

WUHAN HUAGONG IMAGE TECHNOLOGY & DEVELOPMENT

Priority Date: 01/06/2021

GILDING FILM AND WATER TRANSFER PRINTING PAPER

The utility model relates to a gold stamping film, including the basic film layer of range upon range of setting, from type layer, chromatograph, cladding material and glue film, be formed with the fretwork dot matrix on the cladding material, the fretwork dot matrix is arranged and is demonstrate picture and text information. Still provide a water transfer printing stained paper in addition, including base stock, gilt layer and the inoxidizing coating of range upon range of setting, gilt layer includes chromatograph, cladding and glue film, the glue film is folded and is located on the base stock, the protection is folded and is located on the chromatograph, be formed with the fretwork dot matrix on the cladding, the fretwork dot matrix is arranged and is demonstrate picture and text information. The utility model discloses a form the fretwork dot matrix on cladding material, arrange and demonstrate picture and text information correspondingly through the density of fretwork dot matrix for gilt film and water transfer printing paper that have this cladding material have recessive anti-fake effect, improve correspondingly and forge the degree of difficulty.



CLAIM 1. The utility model provides a water transfer printing stained paper, is including base stock, gilt layer and the inoxidizing coating of range upon range of setting, gilt layer includes chromatograph, cladding and glue film, the glue film is folded and is located on the base stock, the protection is range upon range of to be located on the chromatograph, its characterized in that: the plating layer is formed with a hollow lattice which is arranged to present image-text information.

P36115

PRINTING – THERMOCHROMISM

CN218505546U

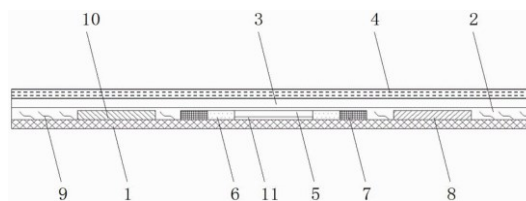
SHANGHAI YAOMAO NEW MATERIAL TECHNOLOGY

Priority Date: 19/10/2022

ANTI-COUNTERFEITING WATER DECAL PAPER

The utility model discloses an anti-counterfeiting water decal paper, which relates to the field of water decal paper and comprises base paper, wherein an anti-counterfeiting structure is arranged on the base paper, a protective gloss oil printing layer is arranged on the anti-counterfeiting structure, a hot-pressing film layer is arranged on the protective gloss oil printing layer, and a tearable film layer is arranged on the hot-pressing film layer; the anti-counterfeiting structure comprises a holographic anti-counterfeiting hot stamping film, a temperature-variable ink printing layer, a light-variable ink printing layer, four primary color ink printing, a fiber silk layer and a homothetic different-image pattern layer. The utility model discloses a set up base paper, protection gloss oil printing layer, hot pressing rete, can tear film layer and anti-fake structure, guarantee anti-fake diversified, be difficult to the imitation, and protect the complete show of anti-fake water paste stained paper surface anti-fake pattern, anti-fake effect is effective.

CLAIM 1. An anti-counterfeiting water decal paper is characterized in that: the anti-counterfeiting paper comprises base paper (1), wherein an anti-counterfeiting structure is arranged on the base paper (1), a protective gloss oil printing layer (2) is arranged on the anti-counterfeiting structure, a hot-pressing film layer (3) is arranged on the protective gloss oil printing layer (2), and a tearable film layer (4) is arranged on the hot-pressing film layer (3); the anti-counterfeiting structure comprises a holographic anti-counterfeiting hot stamping film (5), a temperature change ink printing layer (6), a light change ink printing layer (7), four primary color ink printing (8), a fiber silk layer (9) and a homothetic different-image pattern layer (10).



P36121

BRAND PROTECTION

CN218447062U

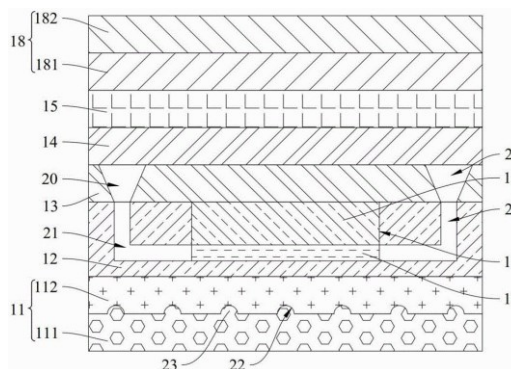
SHENZHEN KUN HONG TECHNOLOGY

Priority Date: 02/09/2022

HOLOGRAPHIC ANTI-COUNTERFEITING FILM AND ANTI-COUNTERFEITING PACKAGING BOX

The utility model discloses a holographic anti-fake membrane and anti-fake packing carton, this holographic anti-fake membrane includes by the lower supreme substrate layer that sets gradually, first imaging layer, transparent medium layer, first water-soluble dielectric layer and plating layer, the recess has been seted up to the top on first imaging layer, the bottom surface of recess covers there is second water-soluble dielectric layer, holographic anti-fake membrane still includes second imaging layer, the top on second water-soluble dielectric layer is provided with second imaging layer, first imaging layer and the concatenation of second imaging layer form complete image, first through-hole has been seted up to transparent medium layer, the second through-hole of the bottom of first through-hole of intercommunication and recess respectively is seted up to the top surface on first imaging layer. First water-soluble dielectric layer meets solution and dissolves, and solution can flow to the recess bottom through first through-hole and second through-hole, dissolves second water-soluble dielectric layer for second formation of image layer can the invagination, so that anti-counterfeit marking is incomplete, and then reaches the effect that can't duplicate anti-counterfeit marking.

CLAIM 1. The holographic anti-counterfeiting film is characterized by comprising a base material layer, a first imaging layer, a transparent medium layer, a first water-soluble medium layer and an electroplated layer which are sequentially arranged from bottom to top, wherein a groove is formed above the first imaging layer, a second water-soluble medium layer covers the bottom surface of the groove, the holographic anti-counterfeiting film further comprises a second imaging layer, a second imaging layer is arranged above the second water-soluble medium layer, the upper surface of the first imaging layer is flush with the upper surface of the second imaging layer, the outer side wall of the second imaging layer is abutted to the inner wall of the groove, so that the first imaging layer and the second imaging layer are spliced to form a complete image, a first through hole is formed in the transparent medium layer, and a second through hole which is respectively communicated with the first through hole and the bottom of the groove is formed in the top surface of the first imaging layer.



P36125

PRINTING

CN218430629U

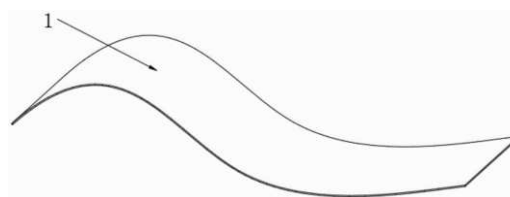
Priority Date: 06/07/2022

GUANGZHOU KULUO FUMO NEW MATERIAL TECHNOLOGY

NOVEL DEALUMINIZATION-FREE HOLLOW-OUT GOLD STAMPING FILM

The utility model discloses a novel exempt from to dealuminate fretwork gilt membrane, including gilt membrane body, gilt membrane body includes substrate layer, information layer, aluminize layer, gum layer, the substrate layer is located the top, the top of substrate layer is equipped with the wearing layer, the wearing layer is wear-resisting transparent silica gel material, be equipped with first type layer from between wearing layer and the substrate layer, first type layer from the up end be connected with the lower terminal surface of wearing layer, first type layer from the lower terminal surface of type layer is connected with the up end of substrate layer, the information level is in the below of substrate layer, the aluminize layer is located the below of information layer. The utility model discloses beneficial effect: through setting up wearing layer and first type layer for the device accessible is first from the type layer and is convenient for be connected substrate layer and wearing layer together, and the wearing layer can effectually protect the substrate layer, avoids the substrate layer to be scraped to bump and scrapes the flower, makes the relatively poor problem of visual effect of gilt membrane.

CLAIM 1. The utility model provides a novel exempt from to take off aluminium fretwork gilding membrane, includes gilding membrane body (1), its characterized in that: the hot stamping film body (1) comprises a base material layer (102), an information layer (103), an aluminum coated layer (104), a back glue layer (105), the base material layer (102) is located on the top, the top of the base material layer (102) is provided with a wear-resistant layer (2), the wear-resistant layer (2) is made of wear-resistant transparent silica gel, a first release layer (3) is arranged between the wear-resistant layer (2) and the base material layer (102), the upper end face of the first release layer (3) is connected with the lower end face of the wear-resistant layer (2), the lower end face of the first release layer (3) is connected with the upper end face of the base material layer (102), the information layer (103) is located below the base material layer (102), the aluminum coated layer (104) is located below the information layer (103), the back glue layer (105) is located below the aluminum coated layer (104), and the upper end face of the back glue layer (105) is connected with the lower end face of the aluminum coated layer (104).



P36127

LABEL

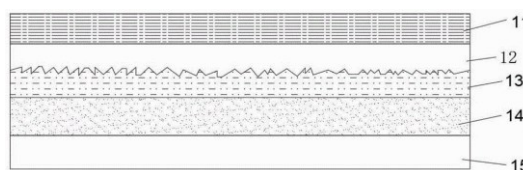
CN115691299

Priority Date: 11/11/2022

SHENZHEN SHENDA AURORA TECHNOLOGY

HOLOGRAPHIC ANTI-COUNTERFEIT LABEL WITH INCOHERENT LIGHT FOR REPRODUCING MULTIPLE DEPTH IMAGES AND MANUFACTURING METHOD THEREOF

The invention provides a holographic anti-counterfeiting label with incoherent light reappearing multiple depth images and a manufacturing method thereof. The holographic anti-counterfeiting label prepared by the method can be reproduced by a daily non-dry light source, has clear reproduced image imaging, high brightness, easy identification and strong ornamental and anti-counterfeiting performance, and is suitable for public anti-counterfeiting, and has an encrypted image structure of multiple depth images. The method uses the micro-nano processing and mould pressing method to manufacture the hologram into the encrypted holographic anti-counterfeiting label which can be reproduced by a non-dry light source and has multiple depth images, can carry out quantitative production by using the traditional mould pressing mode, does not need a complex processing technology, has high yield, and has great advantages in the aspects of technology, equipment, cost and the like.



CLAIM 1. A method for manufacturing a holographic anti-counterfeiting label with incoherent light for reproducing multiple depth images is characterized by comprising the following steps: s1, designing two object images as diffraction surfaces by using drawing software; s2, respectively calculating the light field complex amplitude distribution of the two object images to an observation surface according to a Fresnel diffraction integral formula; s3, respectively extracting complex amplitude U of light field on the observation screen A And U B Phase information P of A And P B Superposing the two phase matrixes to obtain a target phase hologram P AB =P A +P B A 1 is to P AB Quantizing to 256 gray scales; s4, using micro-nano processing equipment to quantize P AB Making a relief-type micro-nano structure master plate by using a gray scale image; and S5, preparing the multi-depth Fresnel holographic anti-counterfeiting label through the processes of mould pressing replication, chemical coating, film plating and film coating.

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P36064

PATENT OF THE MONTH

BANKNOTE – PASSPORT – THREAD – RELIEF – MICROLENS – WATERMARK

WO202323453

Priority Date: 16/08/2021

CRANE

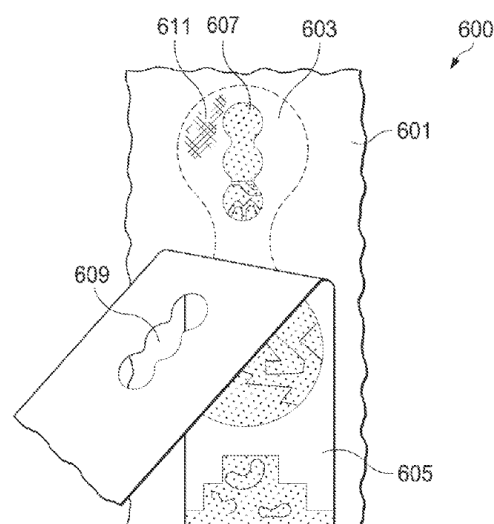
MICRO-OPTIC SECURITY DEVICE WITH ENHANCED WET-HARVEST RESISTANCE

A method includes embossing a section of a micro-optic security thread (500) at a predetermined pressure in an embossing die having a male half (501) and a female half (503), the micro-optic security thread comprising a polymeric substrate (300) having a first side and a second side, forming a web of a substrate (350) in a paper making machine, wherein the web comprises a length of cellulosic material formed at a wet end of the paper making machine and maintained under tension between the wet end of the paper making machine and a dryer section of the paper making machine, forming a watermark feature (210) in the substrate, and adhering the micro-optic security thread by positioning the embossed section such that the layer of icon elements contacts at least a portion of the web comprising the watermark feature.

DISPOSITIF DE SÉCURITÉ MICRO-OPTIQUE À RÉSISTANCE AMÉLIORÉE À LA RÉCOLTE MARQUÉE PAR L'HUMIDITÉ

L'invention concerne un procédé comprenant le gaufrage d'une section d'un fil de sécurité micro-optique (500) à une pression prédéterminée dans une matrice de gaufrage ayant une moitié mâle (501) et une moitié femelle (503), le fil de sécurité micro-optique comprenant un substrat polymère (300) ayant un premier côté et un second côté, formant une bande d'un substrat (350) dans une machine à papier, la bande comprenant une longueur de matériau cellulosique formée à une extrémité humide de la machine à papier et maintenue sous tension entre l'extrémité humide de la machine à papier et une section de séchage de la machine à papier, la formation d'une caractéristique de filigrane (210) dans le substrat, et l'adhésion du fil de sécurité micro-optique en positionnant la section gaufrée de telle sorte que la couche d'éléments d'icône entre en contact avec au moins une partie de la bande comprenant la caractéristique de filigrane.

CLAIM 1. A method for providing a wet harvest indicating security document, the method comprising: embossing a section of a micro-optic security thread (500) at a predetermined pressure in an embossing die having a male half (501) and a female half (503), the micro-optic security thread comprising a polymeric substrate (300) having a first side and a second side, wherein a layer of icon elements (320) is disposed on the first side of the polymeric substrate, and a layer of micro-optic focusing elements (305) is disposed on the second side of the polymeric substrate; forming a web of a substrate (350) in a paper making machine, wherein the web comprises a length of cellulosic material formed at a wet end of the paper making machine and maintained under tension between the wet end of the paper making machine and a dryer section of the paper making machine; forming a watermark feature (210) in the substrate at the wet end of the paper making machine; adhering the micro-optic security thread by positioning the embossed section such that the layer of icon elements contacts at least a portion of the web comprising the watermark feature; and passing the portion of the web comprising the watermark feature and the adhered micro-optic security thread to the dryer section of the paper making machine.

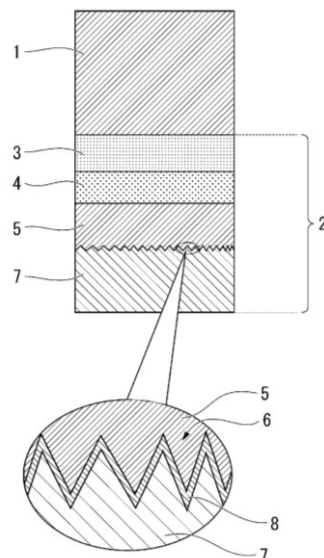


RELIEF STRUCTURE-BEARING TRANSFER FOIL

The transfer foil, which is separably supported on a support, has a first resin layer, a second resin layer, and a relief-forming layer in the indicated sequence from the support side. The first resin layer is composed of an acrylic resin having a glass transition temperature T_g of at least 95°C . The second resin layer and the relief-forming layer are composed of mixtures of an acrylic resin with a cellulose ester resin in which a portion of the hydroxyl groups are urethane crosslinked. The melting point of the second resin layer is higher than the melting point of the relief-forming layer.

FEUILLE DE TRANSFERT PORTANT UNE STRUCTURE EN RELIEF

L'invention concerne une feuille de transfert, qui est supportée de façon séparable sur un support, a une première couche de résine, une seconde couche de résine et une couche de formation de relief dans la séquence indiquée à partir du côté support. La première couche de résine est composée d'une résine acrylique ayant une température de transition vitreuse T_g d'au moins 95°C . La seconde couche de résine et la couche de formation de relief sont composées de mélanges d'une résine acrylique avec une résine d'ester de cellulose dans laquelle une partie des groupes hydroxyle est réticulée par uréthane. Le point de fusion de la seconde couche de résine est supérieur au point de fusion de la couche de formation de relief.



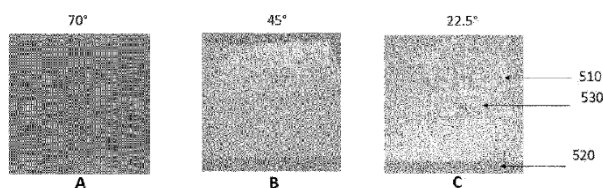
CLAIM 1. A transfer foil detachably supported by a supporting body, the transfer foil comprising a first resin layer, a second resin layer, and a relief-forming layer in that order from the supporting body side, the first resin layer being formed from an acrylic resin having a glass transition temperature T_g of 95°C or higher; The second resin layer and the relief-forming layer are formed from a mixture of the acrylic resin and a cellulose ester resin in which a part of a hydroxyl group is urethane-crosslinked, and a melting point of the second resin layer is higher than a melting point of the relief-forming layer.

METHODS FOR PRODUCING SECURITY FEATURES EXHIBITING ONE OR MORE INDICIA

The present invention relates to the field of methods for producing eye-catching overt security features exhibiting one or more indicia as anti-counterfeit means on security documents or security articles as well as decorative purposes. In particular, the present invention provides methods for producing security features that can be easily, directly and unambiguously authenticated by the human without any external device or tool, wherein said security features comprised a cured UV-Vis radiation curable cationically or hybrid curable coating composition and cured one or more indicia, said composition comprising an ink vehicle and pigments comprising a flake-shaped non-metallic or metallic substrate comprising one or more at least partial coating layers, an at least partial surface treatment layer made of one or more surface modifiers based on perfluoropolyethers.

PROCÉDÉS PERMETTANT DE PRODUIRE DES CARACTÉRISTIQUES DE SÉCURITÉ PRÉSENTANT UN OU PLUSIEURS INDICES

La présente invention se rapporte au domaine des procédés permettant de produire des caractéristiques de sécurité manifestes qui attirent le regard présentant un ou plusieurs indices en tant que moyens anticounterfaçon sur des documents de sécurité ou des articles de sécurité ainsi qu'à des fins décoratives. En particulier, la présente invention concerne des procédés permettant de produire des caractéristiques de sécurité qui peuvent être facilement, directement et de manière non ambiguë, authentifiées par l'être humain sans dispositif ou outil externe, lesdites caractéristiques de sécurité étant constituées d'une composition de revêtement durcissable cationiquement ou hybride par un rayonnement UV-Vis durci et d'un ou de plusieurs indices durcis, ladite composition comprenant un véhicule à encre et des pigments comprenant un substrat non métallique ou métallique en forme de flocon comprenant une ou plusieurs couches de revêtement au moins partielles, une couche de traitement de surface au moins partielle constituée d'un ou de plusieurs modificateurs de surface à base de perfluoropolyéthers.



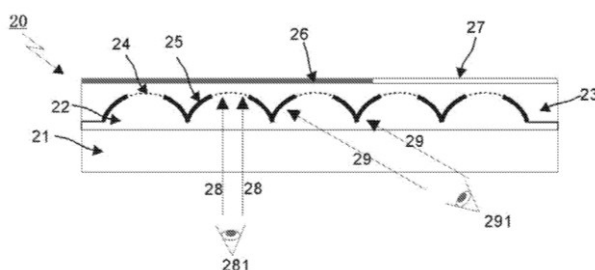
CLAIM 1. A method for producing a security feature exhibiting one or more indicia (x30) on a substrate (x20) comprising: a step a) of applying on a substrate (x20) surface a UV-Vis radiation curable coating composition, said UV-Vis radiation curable coating composition being in a first, liquid state so as to form a coating layer (x10), said UV-Vis radiation curable coating composition comprising: i) from about 75 wt-% to about 99 wt-% of an ink vehicle having a viscosity between about 100 and about 2000 mPas at 25°C and comprising: a) a1) from about 45 wt-% to about 75 wt-% of one or more cycloaliphatic epoxides and a2) from about 2 wt-% to about 15 wt-% of one or more cationic photoinitiators being onium salts, preferably being selected from the group consisting of oxonium salts, iodonium salts, sulfonium salts and mixtures thereof, or b) b1) from about 45 wt-% to about 75 wt-% of a mixture comprising one or more cycloaliphatic epoxides and one or more radically curable compounds selected from the group consisting of tri(meth)acrylates, tetra(meth)acrylates and mixtures thereof and b2) from about 2 wt-% to about 15 wt-% of a mixture of one or more cationic photoinitiators being onium salts, preferably being selected from the group consisting of oxonium salts, iodonium salts, sulfonium salts and mixtures thereof and one or more free radical photoinitiators, preferably selected from the group consisting of alpha-hydroxyketones, benzyl ketals, benzoin ethers, phosphine oxides, phenylglyoxylates and mixtures thereof, more preferably selected from the group consisting of alpha- hydroxyketones, c) the weight percents of a) and b) being based on the total weight of the ink vehicle; and ii) from about 1 wt-% to about 25 wt-% of pigments comprising a flake-shaped non-metallic or metallic substrate, wherein said non-metallic or metallic substrate comprises one or more at least partial coating layers independently made of one or more metal oxides, one or more metal oxide hydrates, one or more metal suboxides or mixtures of these materials and comprises an at least partial surface treatment layer facing the environment, being in direct contact with the top layer of the one or more at least partial coating layers and made of one or more surface modifiers selected from perfluoropolyethers, said perfluoropolyethers being functionalized with one or more phosphor (P) containing groups or one or more silicon (Si) containing groups, the weight percent of i) and ii) being based on the total weight of the UV-Vis radiation curable coating composition; 52 subsequently to the step a), a step b) of applying by a contactless fluid microdispensing technology a top coating composition at least partially on top of the coating layer (x10), wherein said top coating composition is applied in the form of one or more indicia (x30), wherein said one or more indicia (x30) have an ink deposit of at least 5 g/m²; subsequently to step b), a step c) of curing the coating layer (x10) and the one or more indicia (x30) with one or more curing units (x50), wherein the time between steps b) and c) is less than 30 seconds.

ANTI-COUNTERFEITING IMAGE ELEMENT AND ANTI-COUNTERFEITING PRODUCT

Embodiments of the present application provide an anti-counterfeiting image element and an anti-counterfeiting product, and belong to the technical field of anti-counterfeiting. The anti-counterfeiting image element comprises: a light-transmissive substrate layer, which comprises a first surface and a second surface that are opposite one another; a microstructure layer, which is located on the first surface, the microstructure layer comprising a plurality of microstructures, each microstructure comprising a flat region and/or a non-flat region, the pitch angles of the microstructures comprising the flat regions being smaller than the pitch angles of the microstructures comprising the non-flat regions; a reflective structure layer, which is located on the microstructure layer, the reflective structure layer covering at least a portion of the non-flat regions; and an anti-counterfeiting image layer, which is provided with an anti-counterfeiting image, the anti-counterfeiting image being located on the reflective structure layer or on the second surface. According to the embodiments of the present application, an anti-counterfeiting image can appear during front observation and a dynamic feature can appear during side observation, thus the technical problem that existing anti-counterfeiting products are easily forged can be solved.

ÉLÉMENT D'IMAGE ANTI-CONTREFAÇON ET PRODUIT ANTI-CONTREFAÇON

Des modes de réalisation de la présente invention concernent un élément d'image anti-contrefaçon et un produit anti-contrefaçon, et se rapportent au domaine technique de l'anti-contrefaçon. L'élément d'image anti-contrefaçon comprend : une couche de substrat transmettant la lumière, qui comprend une première surface et une seconde surface qui sont opposées l'une à l'autre ; une couche de microstructure, qui est située sur la première surface, la couche de microstructure comprenant une pluralité de microstructures, chaque microstructure comprenant une région plate et/ou une région non plate, les angles de pas des microstructures comprenant les régions plates étant plus petits que les angles de pas des microstructures comprenant les régions non plates ; une couche de structure réfléchissante, qui est située sur la couche de microstructure, la couche de structure réfléchissante recouvrant au moins une partie des régions non plates ; et une couche d'image anti-contrefaçon, qui est pourvue d'une image anti-contrefaçon, l'image anti-contrefaçon étant située sur la couche de structure réfléchissante ou sur la seconde surface. Selon les modes de réalisation de la présente demande, une image anti-contrefaçon peut apparaître pendant une observation avant et une caractéristique dynamique peut apparaître pendant une observation latérale, ce qui permet de résoudre le problème technique selon lequel des produits anti-contrefaçon existants sont facilement falsifiés.



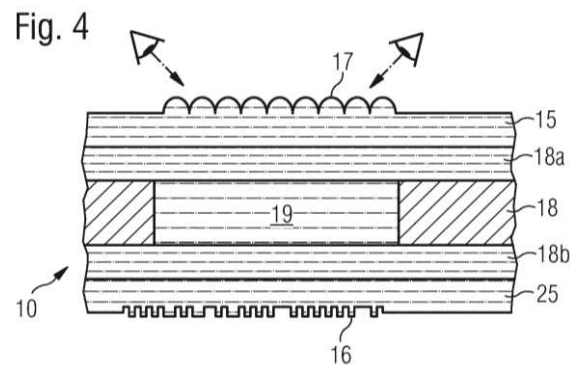
CLAIM 1. A security image element comprising: a substrate; A light-transmissive substrate layer comprising an opposing first surface and a second surface; A microstructured layer on said first surface, said microstructured layer comprising a plurality of microstructures, each of said microstructures comprising a flattened region and/or a non-flattened region, said microstructures of said flattened region having a pitch angle less than a pitch angle of said microstructures of said non-flattened region; A reflective structural layer on the microstructured layer, the reflective structural layer covering at least a portion of the non-smooth region; A security image layer provided with a security image, said security image layer being located on said reflective structure layer or on said second surface.

METHOD FOR THE PRODUCTION OF A SECURITY FEATURE, SECURITY FEATURE FOR A DATA MEDIUM, DATA MEDIUM, AND LAMINATION SHEET

Proposed is a method for producing a security feature (11) for a data medium (1), involving the steps of: - providing a molding means having a molding structure (23) of a representation (16) of the security feature (11); - introducing the representation (16) into a substrate (10) by molding the molding structure (23); and - disposing a diffractive or refractive structure (17) on the substrate (10).

PROCÉDÉ DE PRODUCTION D'UN ÉLÉMENT DE SÉCURITÉ, ÉLÉMENT DE SÉCURITÉ POUR UN SUPPORT DE DONNÉES, SUPPORT DE DONNÉES ET FEUILLE DE STRATIFICATION

L'invention concerne un procédé de production d'un élément de sécurité (11) pour un support de données (1), comprenant les étapes consistant à : - fournir un moyen de moulage ayant une structure de moulage (23) d'une représentation (16) de l'élément de sécurité (11) ; - introduire la représentation (16) dans un substrat (10) par moulage de la structure de moulage (23) ; et - disposer une structure de diffraction ou de réfraction (17) sur le substrat (10).



CLAIM 1. A method for producing a security feature (11) for a data carrier (1), comprising the steps:

- Providing a substrate (10) that is transparent or partially transparent in the visible spectral range;
- Providing a moulding means having a moulding structure (23) which forms an image of a representation (16) which together with a light-diffracting or light-refracting structure (17) produces an optically variable image;
- Introducing the representation (16) into one side of the substrate (10) by moulding the mould structure (23); and
- forming a diffractive or refractive structure (17) on the opposite side of the substrate (10).

P36073

BANKNOTE – CARD

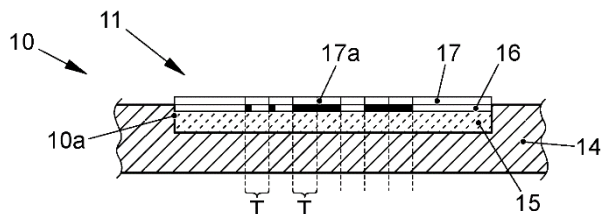
WO202316668

GIESECKE & DEVRIENT MOBILE SECURITY

Priority Date: 11/08/2021

SECURITY FEATURE FOR A DATA MEDIUM, AND DATA MEDIUM

The invention relates to a security feature (11) for a data medium (10), comprising a substrate (15), an encrypted representation (16) of the safety feature (11), said encrypted representation (16) being disposed in or on the substrate (15) and containing multiple individual representations, said multiple representations being disposed in a pitch (T) over a dimension of the security feature (11), the security feature (11) further comprising a decoder (17) with a grid (17a), a grid spacing in the grid (17a) corresponding to the pitch (T), an integer multiple of the pitch (T) or a binary fraction of the pitch (T).



ÉLÉMENT DE SÉCURITÉ POUR UN SUPPORT DE DONNÉES ET SUPPORT DE DONNÉES

L'invention concerne un élément de sécurité (11) pour un support de données (10), comprenant un substrat (15), une représentation chiffrée (16) de l'élément de sécurité (11), ladite représentation chiffrée (16) étant disposée dans ou sur le substrat (15) et contenant de multiples représentations individuelles, lesdites multiples représentations étant disposées selon un pas (T) sur une dimension de l'élément de sécurité (11), l'élément de sécurité (11) comprenant en outre un décodeur (17) avec une grille (17a), un espacement de grille dans la grille (17a) correspondant au pas (T), à un multiple du pas (T) entier ou à une fraction binaire du pas (T).

CLAIM 1. A security feature (11) for a data carrier (10), comprising a substrate (15), a coded representation (16) of the security feature (11) arranged in or on the substrate (15), wherein a plurality of individual representations are contained in the coded representation (16) and wherein the plurality of individual representations are arranged in a division (T) over a dimension of the security feature (11), and a decoder (17) having a grid (17 a), wherein a grid spacing of the grid (17 a) of the pitch (T) corresponds to an integer multiple of the pitch (T) or half of the pitch (T).

P36078

PRINTING – INK – BANKNOTE – MAGNETISM

WO202311757

GIESECKE & DEVRIENT CURRENCY TECHNOLOGY

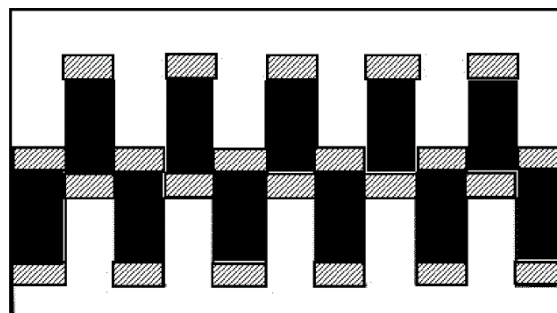
Priority Date: 04/08/2021

EFFECT PIGMENT, MANUFACTURING METHOD, VALUABLE DOCUMENT AND PRINTING INK

The invention relates to a platelet-shaped magnetic effect pigment for use in a printing ink, comprising a layered structure with a magnetic layer and at least one optical functional layer, wherein the magnetic layer is based on elongate nanomagnets that do not touch one another and have a substantially uniform preferred magnetic direction perpendicular to the platelet plane of the effect pigment.

PIGMENT À EFFETS, PROCÉDÉ DE FABRICATION, DOCUMENT DE VALEUR ET ENCRE D'IMPRIMERIE

L'invention se rapporte à un pigment à effets magnétiques lamellaires destiné à être utilisé dans une encre d'imprimerie, comprenant une structure stratifiée comportant une couche magnétique et au moins une couche fonctionnelle optique, la couche magnétique se fondant sur des nanoaimants allongés qui ne se touchent pas les uns les autres et ont une direction magnétique préférée sensiblement uniforme, perpendiculaire au plan des lamelles du pigment à effets.



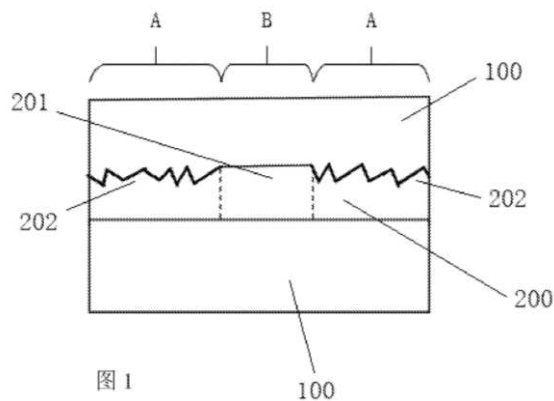
CLAIM 1. Platelet-shaped magnetic effect pigment for use in a printing ink, comprising a layer structure having a magnetic layer and at least one optical functional layer, wherein the magnetic layer is based on elongate nanomagnets which do not touch one another and have a substantially uniform preferred magnetic direction arranged perpendicular to the platelet plane of the effect pigment.

ANTI-COUNTERFEITING ELEMENT, PRODUCT, AND METHOD FOR MANUFACTURING ANTI-COUNTERFEITING ELEMENT

Disclosed are an anti-counterfeiting element, a product, and a method for manufacturing an anti-counterfeiting element. The anti-counterfeiting element comprises: a translucent substrate (100); and an image layer (200), which is located on a surface of the substrate or located in the substrate, wherein the image layer includes a transparent region (201) and opaque regions (202) for visible light; the reflection property of the opaque regions is the same as or similar to the reflection property of the substrate; and the image layer is invisible during reflection observation, and is visible during transmission observation. Since the image layer comprises a transparent region with higher light transmittance and opaque regions with lower light transmittance, the anti-counterfeiting element may present a high-contrast image during transmission observation. Since the reflection property of the opaque regions is the same as or similar to the reflection property of the substrate, the image layer can be hidden well during reflection observation. The anti-counterfeiting element has a better degree of identification and better reliability.

ÉLÉMENT ANTI-CONTREFAÇON, PRODUIT ET PROCÉDÉ DE FABRICATION D'UN ÉLÉMENT ANTI-CONTREFAÇON

La présente invention concerne un élément anti-contrefaçon, un produit et un procédé de fabrication d'un élément anti-contrefaçon. L'élément anti-contrefaçon comprend : un substrat translucide (100) ; et une couche d'image (200), qui est située sur une surface du substrat ou située dans le substrat, la couche d'image comportant une région transparente (201) et des régions opaques (202) pour la lumière visible ; la propriété de réflexion des régions opaques est identique ou similaire à la propriété de réflexion du substrat ; et la couche d'image est invisible pendant l'observation de la réflexion et est visible pendant l'observation de la transmission. Comme la couche d'image comprend une région transparente présentant une transmittance de lumière supérieure et des régions opaques présentant une transmittance de lumière inférieure, l'élément anti-contrefaçon peut présenter une image à fort contraste pendant l'observation de la transmission. Comme la propriété de réflexion des régions opaques est identique ou similaire à la propriété de réflexion du substrat, la couche d'image peut être bien cachée pendant l'observation de la réflexion. L'élément anti-contrefaçon présente un meilleur degré d'identification et une meilleure fiabilité.



CLAIM 1. A security element comprising: a substrate; Translucent substrate; An image layer located on a surface of or within said translucent substrate, said image layer comprising transparent regions and opaque regions for visible light, said opaque regions having the same or similar reflective properties as said translucent substrate, said image layer being invisible when viewed in reflection and visible when viewed in transmission.

P36081

PRINTING – BANKNOTE – CARD – RELIEF – MICROLENS

WO202305996

CHINA BANKNOTE PRINTING & MINTING | ZHONGCHAO SPECIAL SECURITY TECHNOLOGY

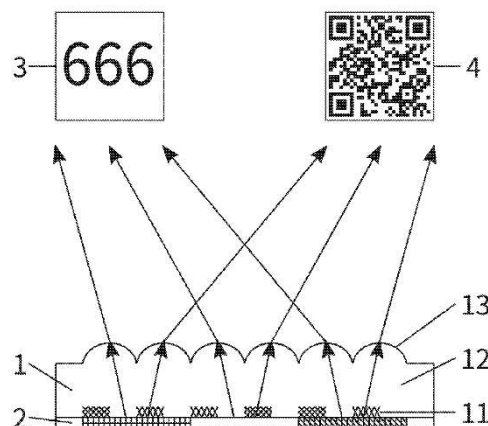
Priority Date: 28/07/2021

CUSTOMIZABLE ANTI-COUNTERFEITING ELEMENT AND ANTI-COUNTERFEITING PRODUCT

Provided are a customizable anti-counterfeiting element and an anti-counterfeiting product. The anti-counterfeiting element comprises a graphic-text layer (2) and a shielding layer (1); the shielding layer (1) comprises micro masks (11) and a sampling system (13); the micro masks (11) are used for shielding the graphic-text layer (2); and the sampling system (13) can perform sampling and synthesis on the shielded graphic-text layer (2) to form a reproduced image, and the reproduced images presented at different observation positions are different. The anti-counterfeiting element uses a micro structure to achieve directional shielding, so that a customizable graphic-text has an optically variable anti-counterfeiting feature, thereby improving the anti-counterfeiting capability.

ÉLÉMENT PERSONNALISABLE DE LUTTE CONTRE LA CONTREFAÇON ET PRODUIT DE LUTTE CONTRE LA CONTREFAÇON

L'invention concerne un élément personnalisable de lutte contre la contrefaçon et un produit de lutte contre la contrefaçon. L'élément de lutte contre la contrefaçon comprend une couche de texte graphique (2) et une couche de protection (1) ; la couche de protection (1) comprend des micro-masques (11) et un système d'échantillonnage (13) ; les micro-masques (11) sont utilisés pour protéger la couche de texte graphique (2) ; et le système d'échantillonnage (13) peut effectuer un échantillonnage et une synthèse sur la couche de texte graphique (2) protégée pour former une image reproduite, et les images reproduites présentées à différentes positions d'observation sont différentes. L'élément de lutte contre la contrefaçon utilise une micro-structure pour obtenir une protection directionnelle, de telle sorte qu'un texte graphique personnalisable a une caractéristique de lutte contre la contrefaçon optiquement variable, ce qui permet d'améliorer la capacité de lutte contre la contrefaçon.



CLAIM 1. A customizable security element, comprising: a substrate; A graphic layer and a barrier layer, the barrier layer comprising a micromask and a sampling system; The graphical layer is customizable; The micromask includes a light transmissive region and an opaque region; The micromask serves to block the picture layer, and the sampling system is capable of sampling the blocked picture layer to form a reproduced image which is presented differently at different viewing locations.

P36091

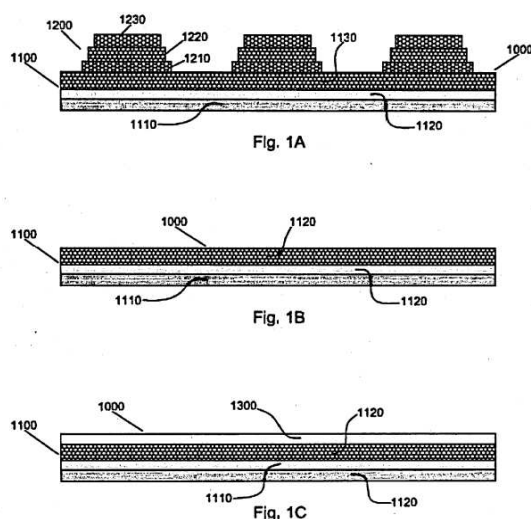
MX2019007094

EDUARDO DIAZ LOPEZ

Priority Date: 14/06/2019

POLYMERIC REFLECTIVE SAFETY FILM WITH AN INVULNERABILITY ELEMENT WITH SUPERIMPOSED SELF-AUTHENTICATION SYMBOLS.

The present invention relates to a security film with an invulnerability element and at least two superimposed authentication symbols. It consists of a backing layer, an adhesive layer applied therein, a reflective vinyl layer formed by a glass microsphere structure, and at least two authentication symbols engraved one on top of the other. Also, it includes glass microspheres and aluminum micas, applied therein with at least two authentication symbols thermo-integrated with each other by heat fusion.



P36100

PRINTING – CARD – PASSPORT

JP2023014430

Priority Date: 07/07/2022

NATIONAL PRINTING BUREAU

READING APPARATUS, READING METHOD, AND READING SOFTWARE FOR LATENT IMAGE PRINTED MATERIAL

TOPIC: To provide a reading apparatus, a reading method, and reading software for a latent image printed material having a full-color latent pattern for which concealment is ensured, that can easily and reliably read the latent pattern, and can also perform advanced authenticity determination and personal authentication by using a passport, a face pattern of an identification card, or the like. INVENTION: a method of manufacturing a latent image printed material including a plurality of units arranged at a predetermined interval, the plurality of units including any one of two latent image lines formed corresponding to at least two different color component patterns, wherein the latent image lines in the units have equal area ratios, and the angles and/or shapes at which the units are arranged differ from each other, the method comprising: A method for reading a latent image printed material for reading a latent image pattern using a determination tool, the method comprising the steps of: detecting latent image lines arranged on the latent image printed material; and generating a latent image pattern by replacing units having the detected latent image lines with color component patterns, synthesizing the units, and displaying the units.

CLAIM 1. A printed pattern with a latent pattern on at least a portion of a substrate, wherein the latent pattern has at least a first color component pattern and a second color component pattern, and the printed pattern includes a first latent image line formed corresponding to the first color component pattern, A plurality of units each including any one of second latent image lines formed corresponding to the second color component pattern are arranged at predetermined intervals, and the first latent image line and the second latent image line have the same area ratio within the units and are mutually different in angle and/or shape at which the first latent image line and the second latent image line are arranged. A method for reading a latent image printed material for reading the latent image pattern using a determination tool, the method comprising the steps of: detecting the first latent image line and the second latent image line included in each of the units disposed on the latent image printed material; Replacing the unit having the detected first latent image line with the first color component pattern, replacing the unit having the detected second latent image line with the second color component pattern, synthesizing, and displaying the synthesized unit to generate the latent image pattern.

P36101

PRINTING – CARD – PASSPORT

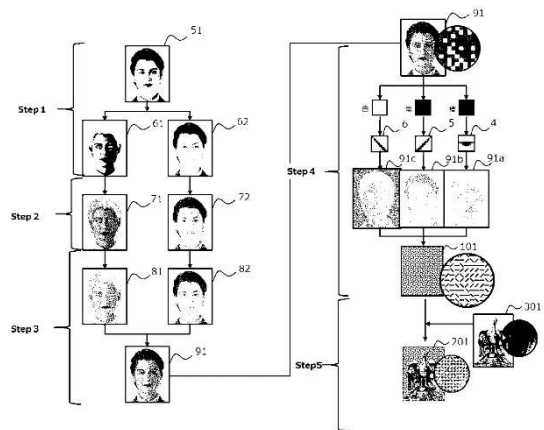
JP2023014429

Priority Date: 07/07/2022

NATIONAL PRINTING BUREAU

LATENT IMAGE PRINTED MATERIAL, METHOD FOR PRODUCING SAME, AND SOFTWARE FOR PRODUCING SAME

TOPIC: To provide a latent image printed material that ensures concealment of a latent image pattern even when printing conditions change and enables full color pattern expression, thereby enabling a high degree of authenticity determination and personal authentication based on a passport, a face pattern of an identification card, or the like, a method for creating the latent image printed material, and software for creating the latent image printed material. INVENTION: The present invention provides a printed area for forming a latent image pattern on at least a portion of a substrate, wherein the latent image pattern includes at least a first color component pattern and a second color component pattern, and the printed area includes first latent image lines formed corresponding to the first color component pattern, A plurality of units each including any one of second latent image lines formed corresponding to the second color component pattern are arranged at predetermined intervals, and the first latent image line and the second latent image line have the same area ratio within the units, and are different from each other in the angles and/or shapes at which the first latent image line and the second latent image line are arranged.



CLAIM 1. A printed pattern with a latent pattern on at least a portion of a substrate, wherein the latent pattern has at least a first color component pattern and a second color component pattern, and the printed pattern includes a first latent image line formed corresponding to the first color component pattern, A plurality of units each including any one of second latent image lines formed corresponding to the second color component pattern being arranged at a predetermined interval, wherein the first latent image line and the second latent image line have the same area ratio within the units and are different from each other in terms of angles and/or shapes at which the first latent image line and the second latent image line are arranged.

P36102

BANKNOTE – THREAD – LIQUID CRYSTALS

IN202331007154

Priority Date: 03/02/2023

AMITY UNIVERSITY KOLKATA | AMITY UNIVERSITY PUNJAB

ANISOTROPIC OPTICAL DEVICE

An ANISOTROPIC OPTICAL DEVICE relates to a new optical component comprising an anisotropic diffuser with patterned anisotropy; and means for providing a color shift observable upon 5 changing viewing angle and/or changing the angle of incident light. It also relates to methods for making such an optical component and uses of such optical components as security elements with a very high level of security.

CLAIM 1. Optical component for a light which is incident on the layered structure, the color of the light transmitted or reflected by the layered structure appears in different colors depending on the viewing angle or angle of incidence. The anisotropic diffuser and the multilayer structure are either behind or partially merged when viewed in the viewing direction. The anisotropy of the picture fluctuates locally, preferably in pixelated materials.

P36108

BANKNOTE – THREAD – RELIEF – LIQUID CRYSTALS – WINDOW

EP4129709

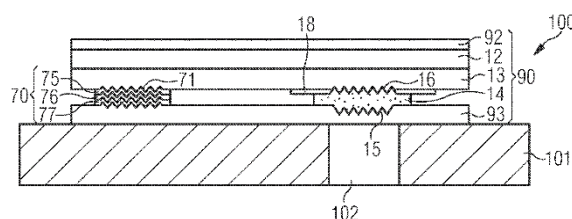
Priority Date: 04/08/2021

ALISE DEVICES | GIESECKE & DEVRIENT CURRENCY TECHNOLOGY

SEMI-FINISHED PRODUCT, SECURITY ELEMENT, METHODS OF PRODUCING THEM AND DOCUMENT OF VALUE

A method of producing a semi-finished product with at least one liquid crystal security feature comprises the steps of unrolling and transporting a continuous film (12) in a transporting direction and providing on the continuous film (12) a liquid crystal layer (14) containing at least one substance whose absorption of polarized light depends on its orientation, such as a dichroic dye. The method further comprises at least one of (A) prior to providing the liquid crystal layer (14), arranging a lacquer layer (13) on the continuous film (12), embossing the lacquer layer (13) to provide a first alignment structure, and at least partly covering the embossed lacquer layer (13) with the liquid crystal layer (14), wherein the first alignment structure is arranged to cause liquid crystal molecules of the liquid crystal layer (14) to align only in a first direction in first regions (41) and only in a second direction, which is essentially orthogonal to the first direction, in second regions (43), and (B) embossing the liquid crystal layer (14) while the liquid crystal layer is in an uncured state to provide a second alignment structure, wherein the second alignment structure is arranged to cause liquid crystal molecules to align only in a third direction in third regions (51) and only in a fourth direction, which is essentially orthogonal to the third direction, in fourth regions (53). At least one of the first direction and the third direction is arranged to deviate from the transporting direction by an angle of between 20° and 70°, preferably between 30° and 60°, especially preferably 45°.

CLAIM 1. A method of producing a semi-finished product with at least one liquid crystal security feature, comprising the steps of: - unrolling and transporting a continuous film (12) in a transporting direction, and - providing on the continuous film (12) a liquid crystal layer (14) containing at least one substance whose absorption of polarized light depends on its orientation, such as a dichroic dye, wherein the method further comprises at least one of: A: - prior to providing the liquid crystal layer (14), arranging a lacquer layer (13) on the continuous film (12), - embossing the lacquer layer (13) to provide a first alignment structure, - at least partly covering the embossed lacquer layer (13) with the liquid crystal layer (14), wherein the first alignment structure is arranged to cause liquid crystal molecules of the liquid crystal layer (14) to align only in a first direction in first regions (41) and only in a second direction, which is essentially orthogonal to the first direction, in second regions (43), and B: - embossing the liquid crystal layer (14) while the liquid crystal layer is in an uncured state to provide a second alignment structure, wherein the second alignment structure is arranged to cause liquid crystal molecules to align only in a third direction in third regions (51) and only in a fourth direction, which is essentially orthogonal to the third direction, in fourth regions (53), characterized in that at least one of the first direction and the third direction is arranged to deviate from the transporting direction by an angle of between 20° and 70°, preferably between 30° and 60°, especially preferably 45°.



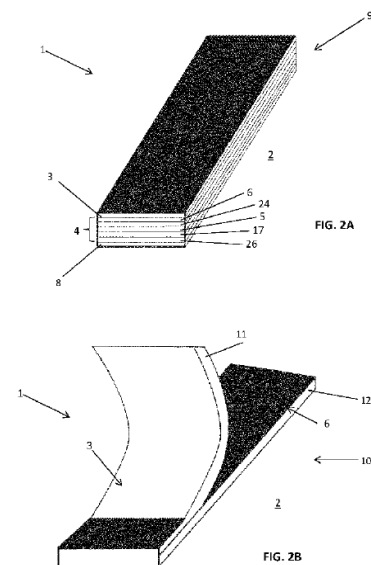
FLAT SEALING ELEMENT

The present invention relates to a planar sealing element (1) for being applied to a substrate (2), comprising a backing layer (3) and a plurality of functional layers (4), wherein the functional layers (4) comprise at least one colour display layer (5) and an adhesion control layer (6), wherein the sealing element (1) further has an adhesive layer (8) for attachment to the substrate (2), wherein the functional layers (4) are arranged between the backing layer (3) and the adhesive layer (8), wherein the backing layer (3) can be at least partially detached from the functional layers (4) in order to bring the sealing element (1) from a first state (9) into a second state (10), wherein the second state (10) cannot be transferred into the first state (9), wherein, in the second state (10), the sealing element (1) comprises a peeled-off layer (11), comprising at least the at least partially detached backing layer (3), and a residue (12), comprising at least the adhesive layer (8) and at least parts of the at least one colour display layer (5), wherein the backing layer (3) is made from paper, wherein, according to the invention, the backing layer (3) is translucent such that, when the peeled-off layer (11) is arranged congruently on the residue (12), the peeled-off layer (11) has a different colour impression in at least one region compared with the same region of the backing layer (3) in the first state (9) when viewed in the direction of the backing layer (3).

ÉLÉMENT D'ÉTANCHÉITÉ PLAT

La présente invention concerne un élément d'étanchéité plan (1) destiné à être appliqué sur un substrat (2), celui-ci comprenant une couche de support (3) et une pluralité de couches fonctionnelles (4), les couches fonctionnelles (4) comprenant au moins une couche d'affichage couleur (5) et une couche de contrôle d'adhérence (6), l'élément d'étanchéité (1) comprenant en outre une couche adhésive (8) destinée à être fixée au substrat (2), les couches fonctionnelles (4) étant disposées entre la couche de support (3) et la couche adhésive (8), la couche de support (3) pouvant être au moins partiellement détachée des couches fonctionnelles (4) afin de faire passer l'élément d'étanchéité (1) d'un premier état (9) à un second état (10), et le second état (10) ne pouvant pas transitionner vers le premier état (9). Dans le second état (10), l'élément d'étanchéité (1) comprend une couche pelable (11), qui comprend au moins la couche de support au moins partiellement détachée (3), et un résidu (12) qui comprend au moins la couche adhésive (8) et au moins des parties de la ou des couches d'affichage couleur (5), la couche de support (3) étant en papier. Selon l'invention, la couche de support (3) est translucide de telle sorte que, lorsque la couche pelable (11) est disposée sur le résidu (12) de manière à coïncider avec lui, la couche pelable (11) présente un effet de couleur différent dans au moins une région par rapport à la même région de la couche de support (3) dans le premier état (9) lorsqu'elle est vue dans la direction de la couche de support (3).

CLAIM 1. Planar sealing element (1) for application to a substrate (2), comprising a carrier layer (3) and a plurality of functional layers (4), wherein the functional layers (4) comprise at least one colour representation layer (5) and an adhesion-controlling layer (6), wherein the sealing element (1) further comprises an adhesive layer (8) for attachment to the substrate (2), wherein the functional layers (4) are arranged between the carrier layer (3) and the adhesive layer (8), wherein the carrier layer (3) can be at least partially detached from the functional layers (4) in order to bring the sealing element (1) from a first state (9) into a second state (10), wherein the second state (10) cannot be transferred into the first state (9), wherein the sealing element (1) in the second state (10) comprises a peeled off layer (11) comprising at least the at least partially detached carrier layer (3) and a residue (12) comprising at least the adhesive layer (8) and at least parts of the at least one color representation layer (5), characterized in that the carrier layer (3) is made of paper.



P36118

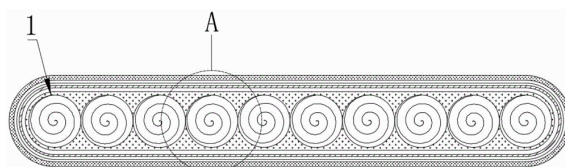
CN218466207U

Priority Date: 22/10/2022

DONGGUAN XINRUIYUAN ANTI COUNTERFEITING TECHNOLOGY

HIGH-STRENGTH LASER TRANSFER PAPER

The utility model discloses a radium-shine transfer paper of high strength, relate to radium-shine transfer paper technical field, including the stratum basale, the bond line of setting at the stratum basale surface, the aluminium coating layer of setting at the bond line surface, the setting is at the radium-shine layer of aluminium coating layer surface, the coating layer of setting at radium-shine layer surface, the stratum basale includes many twisting base paper, and be used for carrying out the adhesive linkage that bonds with many twisting base paper, and many twisting base paper are flat bonding, through twisting the back with base paper, make the stratum basale can resist great side direction torsion and can bear great pulling force, under this radium-shine transfer paper of high strength has radium-shine anti-fake effect's prerequisite, can be applied to some great use scenes of intensity requirement, if the handle as the container bag that has radium-shine anti-fake effect.



CLAIM 1. A high-strength laser transfer paper is characterized by comprising a substrate layer, an adhesive layer arranged on the outer surface of the substrate layer, an aluminum plating layer arranged on the outer surface of the adhesive layer, a laser layer arranged on the outer surface of the aluminum plating layer and a coating layer arranged on the outer surface of the laser layer; the base layer comprises a plurality of pieces of twisted base paper and an adhesive layer for adhering the twisted base paper, and the twisted base paper is adhered in a flat plate manner.

P36124

PRINTING

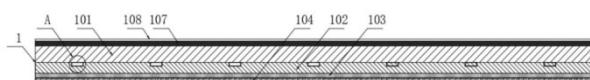
CN218430632U

Priority Date: 21/10/2022

SUZHOU SHILES ELECTRICAL MATERIALS

VARIABLE THERMOPRINTING FILM

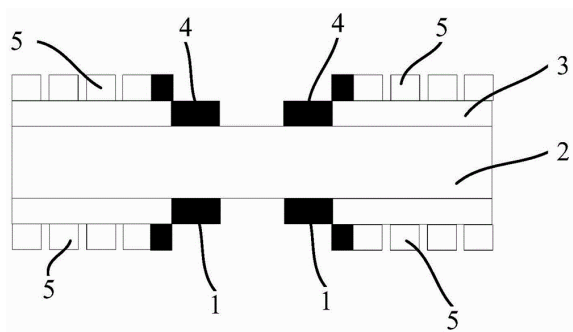
The utility model discloses a variable thermoprint membrane relates to novel variable thermoprint membrane field, including the membrane body, the membrane body is including the formation of image layer, the lower fixed surface on formation of image layer is connected with the display layer, the lower fixed surface on display layer is connected with from the type layer, the lower fixed surface from the type layer is connected with anticorrosive printing opacity film, the lower surface degree on shaping layer has the changeable colour metal, the last fixed surface on formation of image layer is connected with the waterproof layer, the upper surface paste of waterproof layer has the viscose, the upper surface of waterproof layer is pasted through the viscose and is had anticorrosive pad pasting. The utility model discloses can protect its surface when the thermoprint membrane is deposited for a long time and is used, prevent that the external world from corroding the thermoprint membrane and leading to the pattern of thermoprint membrane printing to fade and appear, improved the effect and the practicality that the thermoprint membrane used.



CLAIM 1. The variable hot stamping film comprises a film body (1) and is characterized in that: the film body (1) comprises an imaging layer (101), a display layer (102) is fixedly connected to the lower surface of the imaging layer (101), a release layer (103) is fixedly connected to the lower surface of the display layer (102), and an anti-corrosion light-transmitting thin film (104) is fixedly connected to the lower surface of the release layer (103); the lower surface degree of the forming layer has the color-changeable metal, the upper surface of the imaging layer (101) is fixedly connected with a waterproof layer (107), the upper surface of the waterproof layer (107) is pasted with an adhesive, and the upper surface of the waterproof layer (107) is pasted with an anti-corrosion adhesive film (2) through the adhesive.

SECURITY DEVICE AND SECURITY DOCUMENT

The invention provides a security device and a security document, the security device comprising: a plastic substrate; the first ink layer is arranged on the front side of the plastic substrate to form front-side pictures and texts; the second ink layer is arranged on the back of the plastic substrate to form back graphics and texts; front-side and back-side printing of the front-side image-text and the back-side image-text, wherein the front-side and back-side printing comprises front-side and back-side complementary printing and front-side and back-side complete printing; the first ink layer comprises the angle-dependent color-changing ink and/or the metal effect ink, and the second ink layer comprises the angle-dependent color-changing ink and/or the metal effect ink.



CLAIM 1. A security device, comprising: a plastic substrate; the first ink layer is arranged on the front side of the plastic substrate to form front side pictures and texts; the second ink layer is arranged on the back surface of the plastic substrate to form back surface pictures and texts; the front face image-text and the back face image-text are printed in a front-back mode, and the front-back printing comprises front-back complementary printing and front-back complete printing; the first ink layer comprises the flip-flop ink and/or the metal effect ink, and the second ink layer comprises the flip-flop ink and/or the metal effect ink.

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

N9205

KR20230022075

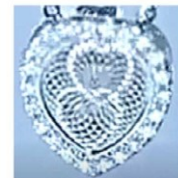
Priority Date: 25/10/2021

GOLD AVENUE

JEWELRY PENDANT GENERATING HOLOGRAPHIC PATTERN AND MANUFACTURING METHOD THEREOF

Provided are a Joule pendant capable of stimulating a purchase desire of a demand by cutting the Joule pendant with a predetermined rule and forming a hologram pattern that moves according to a time point, and a method of manufacturing the same. The method of manufacturing a journal pendant includes: manufacturing a pendant body having a shape; performing a first cutting process of forming a plurality of circles arranged along a contour of the shape so as to be in contact with the contour of the shape; and performing a second cutting process of forming a plurality of curves on the pendant body.

CLAIM 1. A method of manufacturing a journal pendant for generating a hologram pattern, comprising: manufacturing a pendant body in which a shape is formed; performing a first cutting process of forming a plurality of circles arranged along a contour of the shape so as to be in contact with the contour of the shape; and performing a second cutting process of forming a plurality of curves on the pendant body.



시점에 따라 이동하는 홀로그램 패턴

N9215

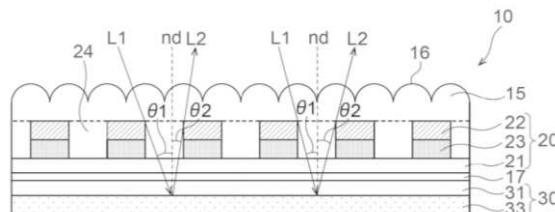
JP2023020420

Priority Date: 30/07/2021

DAI NIPPON PRINTING

HOLOGRAM SHEET WITH DECORATIVE, DISPLAY DEVICE WITH DECORATIVE, MEMBER FOR MOVING BODY, AND EXTERNAL INFORMATION DISPLAY SYSTEM

TOPIC: To display information so as to be easily noticeable. INVENTION: a hologram sheet 10 including a decorative sheet 20 that transmits a portion of light, and a hologram sheet 30 layered on the decorative sheet 20. The hologram sheet 30 connects the image 35 to a position separated from the decorative sheet 20.



CLAIM 1. A hologram sheet with a decoration, the hologram sheet comprising: a decorative sheet configured to transmit a part of light; and a hologram sheet laminated on the decorative sheet, wherein the hologram sheet connects an image to a position away from the decorative sheet.

Click on the title to return to table of contents

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

N9186

WO202321795

FUJIFILM

Priority Date: 17/08/2021

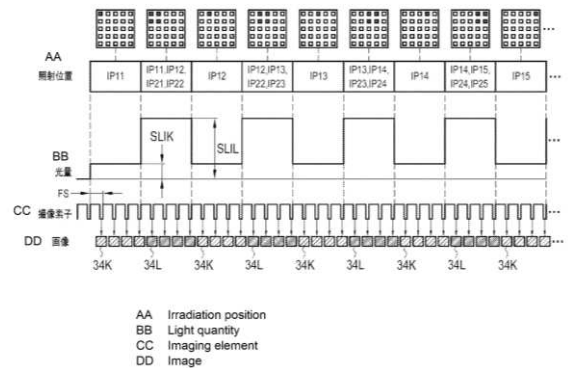
LIGHT SOURCE CONTROL DEVICE, OPERATION METHOD FOR LIGHT SOURCE CONTROL DEVICE, OPERATION PROGRAM FOR LIGHT SOURCE CONTROL DEVICE, AND DIGITAL HOLOGRAPHY SYSTEM

Provided is a light source control device that controls the action of a light source configured such that a plurality of light-emitting units of illumination light are aligned at a plurality of irradiation positions, the light source generating an interference fringe of an object to be observed by irradiating the object to be observed with the illumination light, the light source control device comprising a processor, and, in order to obtain a plurality of interference fringe images that serve as a basis for a super-resolution interference fringe image exceeding the resolution of an imaging element for imaging the interference fringe, the processor performing control of irradiating, with illumination light of a first set light quantity, every one location from the plurality of irradiation positions, and performing control of setting a light quantity of the illumination light to a second set light quantity differing from the first set light quantity during switching from a current irradiation position to a next irradiation position, and/or performing control of irradiating, with the illumination light, a separated irradiation position, which is separated by at least one irradiation position from both the current irradiation position and the next irradiation position during switching from the current irradiation position to the next irradiation position.

DISPOSITIF DE COMMANDE DE SOURCE DE LUMIÈRE, PROCÉDÉ DE FONCTIONNEMENT POUR UN DISPOSITIF DE COMMANDE DE SOURCE DE LUMIÈRE, PROGRAMME DE FONCTIONNEMENT POUR UN DISPOSITIF DE COMMANDE DE SOURCE DE LUMIÈRE ET SYSTÈME D'HOLOGRAPHIE NUMÉRIQUE

La présente invention concerne un dispositif de commande de source de lumière qui commande l'action d'une source de lumière configurée de telle sorte qu'une pluralité d'unités électroluminescentes de lumière d'éclairage soient alignées à une pluralité de positions d'irradiation, la source de lumière générant une frange d'interférence d'un objet à observer en irradiant l'objet à observer avec la lumière d'éclairage, le dispositif de commande de source de lumière comprenant un processeur, et, afin d'obtenir une pluralité d'images de frange d'interférence qui servent de base pour une image de frange d'interférence de super résolution dépassant la résolution d'un élément d'imagerie pour imager la frange d'interférence, le processeur effectuant une commande d'irradiation, avec une lumière d'éclairage d'une première quantité de lumière réglée, à chaque emplacement parmi la pluralité de positions d'irradiation, et effectuant une commande de réglage d'une quantité de lumière de la lumière d'éclairage à une seconde quantité de lumière réglée différente de la première quantité de lumière réglée pendant la commutation d'une position d'irradiation actuelle à une position d'irradiation suivante, et/ou réalisant une commande d'irradiation, avec la lumière d'éclairage, à une position d'irradiation séparée, qui est séparée par au moins une position d'irradiation à la fois de la position d'irradiation actuelle et de la position d'irradiation suivante pendant la commutation de la position d'irradiation actuelle à la position d'irradiation suivante.

CLAIM 1. A light source control device configured to control an operation of a light source configured to cause interference fringes of an observation target object by irradiating the observation target object with illumination light, the light source having a configuration in which a plurality of light emitters configured to emit illumination light are arranged at a plurality of irradiation positions, the light source control device comprising: The processor performs control for causing the illumination light of a first set amount of light to be emitted from the plurality of irradiation positions one at a time in order to obtain a plurality of interference fringe images serving as sources of super-resolution interference fringe images exceeding a resolution of an image capturing device configured to capture an image of the interference fringe; and Control for setting an amount of the illumination light to a second set amount of light different from the first set amount of light during switching from the current irradiation position to the next irradiation position, and Control for causing the illumination light to be emitted at an irradiation position separated by at least one irradiation position from both the current irradiation position and the next irradiation position.



N9187

WO202319196

Priority Date: 11/08/2021

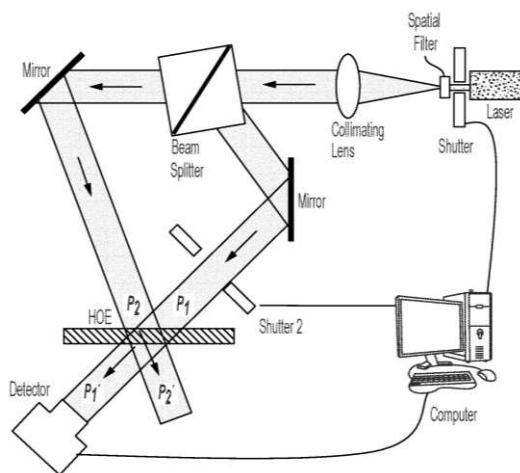
UNIVERSITY OF ARIZONA

CONTROL OF PROBE BEAM DURATION IN SINGLE WAVELENGTH MONITORING OF HOLOGRAM DIFFRACTION EFFICIENCY

Methods, devices and systems are described that enable monitoring the diffraction efficiency of holographic material in real-time while they are being formed. One example method includes directing a reference beam and an object beam toward a holographic material for formation of a diffraction grating and blocking one of the beams for at least a portion of time during which the diffraction grating is being formed. The method further includes, upon blockage of one of the beams, based on power level measurements, determining whether or not a first diffraction efficiency is reached. If the first diffraction efficiency is reached, one of the reference or the object beams is disabled or blocked while the other beam illuminates the holographic material with a particular duty cycle. Further measurements of the diffraction efficiency are made until the final diffraction efficiency is reached.

COMMANDE DE DURÉE DE FAISCEAU DE SONDÉ DANS UNE SURVEILLANCE DE LONGUEUR D'ONDE UNIQUE D'EFFICACITÉ DE DIFFRACTION D'HOLOGRAMME

L'invention concerne des procédés, des dispositifs et des systèmes qui permettent de surveiller l'efficacité de diffraction d'un matériau holographique en temps réel pendant sa formation. Un procédé donné à titre d'exemple consiste à diriger un faisceau de référence et un faisceau objet vers un matériau holographique pour la formation d'un réseau de diffraction et à bloquer l'un des faisceaux pendant au moins une partie du temps pendant laquelle le réseau de diffraction est formé. Le procédé consiste en outre, lors du blocage de l'un des faisceaux, sur la base de mesures de niveau de puissance, à déterminer si une première efficacité de diffraction est obtenue ou non. Si la première efficacité de diffraction est obtenue, l'un parmi le faisceau de référence et le faisceau d'objet est désactivé ou bloqué pendant que l'autre faisceau éclaire le matériau holographique avec un cycle de service particulier. D'autres mesures de l'efficacité de diffraction sont effectuées jusqu'à ce que l'efficacité de diffraction finale soit obtenue.



CLAIM 1. A method for production and real-time measurement of a hologram, comprising: directing a reference beam and an object beam toward a holographic material for formation of a diffraction grating in the holographic material; blocking the reference beam or the object beam to prevent the corresponding beam to reach the holographic material for at least a portion of time during which the diffraction grating is being formed; upon blockage of one of the reference or object beams, measuring a power level of a diffracted beam associated with the reference or the object beam that is not being blocked; determining whether or not a first diffraction efficiency that is different from a final diffraction efficiency is reached based on the measured power level, upon a determination that the first diffraction efficiency is reached, blocking or otherwise disabling one of the reference or the object beams while allowing the other of the reference or the object beams to illuminate the holographic material with a particular duty cycle to enable further measurements of diffraction efficiency, and conducting the further measurements of the diffraction efficiency using the reference or the object beam that is not blocked or otherwise disabled until the final diffraction efficiency is reached.

N9188

WO202316832

Priority Date: 13/08/2021

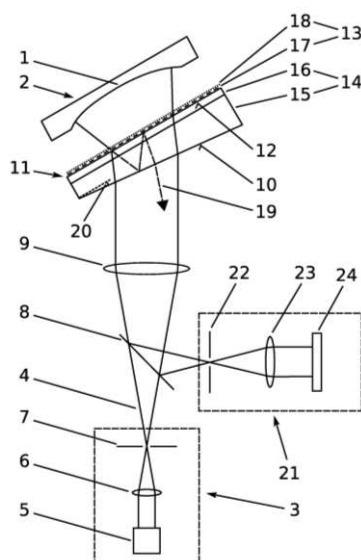
CARL ZEISS SMT

DIFFRACTIVE OPTICAL ELEMENT FOR GENERATING A TEST WAVE

The invention relates to a diffractive optical element (11) for generating a test wave from an input wave, the diffractive optical element (11) comprising a substrate (14) having a first side (10) and a second side (12) opposite the first side (10), a diffractive structure (13) embodied as a computer-generated hologram being arranged on the second side (12) of the substrate (14), the first side (10) of the substrate (14) being arranged at a distance from the second side (12) of the substrate (14), the distance between the first side (10) and the second side (12) of the substrate (14) varying in a positionally dependent manner, and the diffractive optical element (11) being configured to generate a reference wave from the input wave.

ÉLÉMENT OPTIQUE DIFFRACTIF ET GÉNÉRATEUR D'UNE ONDE DE TEST

L'invention concerne un élément optique diffractif (11) permettant de générer une onde de test à partir d'une onde d'entrée et comprenant : un substrat (14) comportant un premier côté (10) et un second côté (12), opposé au premier côté (10) ; et une structure de diffraction (13), réalisée sous forme d'hologramme généré informatiquement et disposé sur le second côté (12) du substrat (14). Le premier côté (10) du substrat (14) est disposé à une certaine distance du second côté (12) du substrat (14). La distance entre le premier côté (10) et le second côté (12) du substrat (14) varie selon la position. Et l'élément optique diffractif (11) est conçu pour générer une onde de référence à partir de l'onde d'entrée.



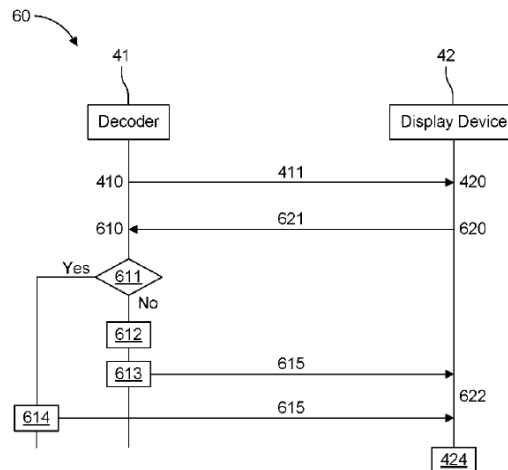
CLAIM 1. Diffractive optical element for generating a test wave from an input wave, - the diffractive optical element (11) has a substrate (14) with a first side (10) and a second side (12) opposite the first side (10), - a diffractive structure (13) is arranged on the second side (12) of the substrate (14), which diffractive structure (13) is formed as a computer-generated hologram, - the first side (10) of the substrate (14) is arranged at a distance from the second side (12) of the substrate (14), - the distance between the first side (10) and the second side (12) of the substrate (14) varies as a function of location, and wherein the diffractive optical element (11) is configured to generate a reference wave from the input wave.

HOLOGRAPHIC DECODING AND DISPLAYING METHODS AND DEVICES FOR EXCHANGING CONFIGURATION DATA

A holographic display device accepts different configurations for rendering a Computer Generated Hologram. The decoder which prepares the CGH may not have the required memory and processing resources to provide the holographic display device with CGH generated in the nominal preferred configuration. According to the present principles, messages are exchanged between the holographic decoder and the holographic display device to select a configuration that the holographic display device accept and that fit the memory and processing resources of the holographic decoder.

PROCÉDÉS ET DISPOSITIFS DE DÉCODAGE ET D’AFFICHAGE HOLOGRAPHIQUES POUR ÉCHANGER DES DONNÉES DE CONFIGURATION

Dispositif d’affichage holographique qui accepte différentes configurations pour effectuer le rendu d’un hologramme généré par ordinateur. Le décodeur qui prépare le CGH peut ne pas disposer des ressources mémoire et de traitement requises pour fournir au dispositif d’affichage holographique un CGH généré dans la configuration nominale préférée. Selon les présents principes, des messages sont échangés entre le décodeur holographique et le dispositif d’affichage holographique pour sélectionner une configuration que le dispositif d’affichage holographique accepte et qui convient aux ressources mémoire et de traitement du décodeur holographique.



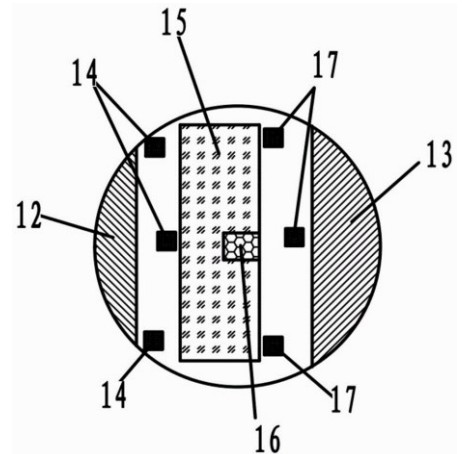
CLAIM 1. Holographic decoder (41) configured for connection to a holographic display device (42), the holographic decoder comprising a memory associated with a processor configured to:

- receive a message from the holographic display device comprising at least a first configuration accepted by the holographic display device;
- select a second configuration accepted by the holographic decoder according to the at least a first configuration; and
- generate a Computer Generated Hologram (415, 514, 615) in a data format determined according to the second configuration and send the computer generated hologram to the holographic display device.

OFF-AXIS THREE-MIRROR OPTICAL SYSTEM COMMON-REFERENCE DEBUGGING METHOD AND DEVICE BASED ON COMPUTER GENERATED HOLOGRAPHY

The invention discloses a common-reference debugging method and a common-reference debugging device for off-axis three-mirror optical systems based on computer generated holography, which belong to the technical field of optical debugging, and realize the alignment of the relative positions of an interferometer and a computer generated holography element by aligning a diffraction region with the interferometer; the primary positioning and detection of the primary mirror are realized by utilizing the primary mirror detection diffraction zone and the primary mirror mark point diffraction zone; the three-mirror detection diffraction area and the three-mirror mark point diffraction area are utilized to realize the initial positioning and detection of the three mirrors; leading out the optical axes of the main three mirrors to a transition plane mirror through an optical axis diffraction region; adjusting the optical axis of the interferometer and the optical axis of the collimation plane mirror to be consistent with the transition plane mirror, and realizing the on-axis view field installation and adjustment of the off-axis three-mirror optical system; and adjusting the position of the secondary mirror through the off-axis three-mirror optical system wave aberration detected by the interferometer. The decoupling of each adjusting freedom degree is carried out by adopting the computer holographic element, the reference transmission precision of the main three mirrors is converted into the processing precision of the computer holographic element, and the adjusting efficiency and the adjusting precision are greatly improved.

CLAIM 1. An off-axis three-mirror optical system common-reference debugging device based on computer generated holography is characterized by comprising: calculating a holographic element, an interferometer, a transition plane mirror, a collimation plane mirror and a theodolite; the computer holographic element is provided with a primary mirror detection diffraction area, a three-mirror detection diffraction area, a primary mirror mark point diffraction area, a three-mirror mark point diffraction area, an interferometer alignment diffraction area and an optical axis diffraction area; measuring beams emitted by the interferometer return to the interferometer through the interferometer alignment diffraction area, and when the interferometer forms zero fringes, the interferometer and the computer-generated hologram element are aligned, and are not adjusted; the measuring light beam emitted by the interferometer returns to the interferometer after passing through the primary mirror detection diffraction zone and the primary mirror, and the primary mirror is adjusted to enable the detected wave aberration of the primary mirror to meet the requirement and form zero fringes on the interferometer, and the primary mirror is installed and adjusted at the moment; the measuring beam emitted by the interferometer returns to the interferometer after passing through the three-mirror detection diffraction zone and the three mirrors, and the three mirrors are adjusted, so that the wave aberration of the three mirrors obtained by detection meets the requirement and zero fringes are formed on the interferometer, and the three mirrors are adjusted at the moment; measuring beams emitted by the interferometer return to the interferometer through the optical axis diffraction zone and the transition plane mirror, the transition plane mirror is adjusted to form zero fringes on the interferometer, and the optical axes of the main mirror and the three mirrors are led out to the transition plane mirror; removing a calculation holographic element, preliminarily placing an interferometer, a secondary mirror and a collimation plane mirror to enable a measuring beam emitted by the interferometer to pass through the primary mirror, the secondary mirror, the three mirrors and the collimation plane mirror without light cutting, adjusting the optical axis of the collimation plane mirror to be consistent with that of a transition plane mirror by using a theodolite, adjusting the angle of the interferometer to enable the measuring beam emitted by the interferometer to pass through the transition plane mirror to return to form zero stripes, and at the moment, the measuring beam emitted by the interferometer is on-axis light of an off-axis three-reflection optical system; and adjusting the position of the secondary mirror through the wave aberration of the off-axis three-mirror optical system detected by the interferometer until the wave aberration of the off-axis three-mirror optical system meets the technical requirements, and adjusting all the reflectors of the off-axis three-mirror optical system.



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

N9224

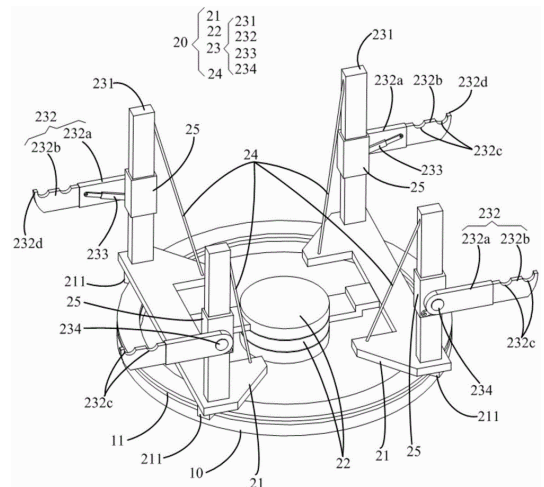
CN218434031U

Priority Date: 01/09/2022

SHENZHEN KUNHONG PRINTING

HOLOGRAPHIC THERMOPRINTING COMPOSITE EQUIPMENT

The utility model discloses a holographic thermoprint equipment complex, which comprises a frame, the thermoprint compounding machine, the paper material rolling machine, the scroll machine of unreeling, combination formula drying tunnel and handling device, handling device includes the carrier, first drive assembly and two lifting assembly, the carrier drive is connected in first drive assembly and can rotate in the frame, so that lifting assembly can be at the rolling station and unreel the converting position between the station, lifting assembly is including two support columns of locating the carrier, two lifting arm and two second drive assembly, lifting arm includes the fixed arm section, flexible arm section and third driving piece, fixed arm section drive connection can be followed upper and lower direction and moved connection in the support column in second drive assembly, flexible arm section drive connection is in third driving piece and sliding connection in the fixed arm section, the side of going up of flexible arm section is equipped with the support groove, the support groove is used for the bearing spool. The technical scheme of the utility model transfer efficiency and production efficiency that can improve paper wood.



N9231

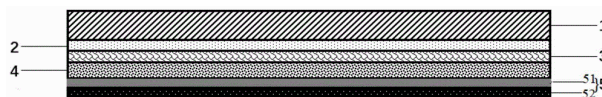
CN115674943

Priority Date: 28/07/2021

SHENZHEN YUTONG PACKAGING SCIENCE & TECHNOLOGY

TRANSFER FILM AND METHOD FOR MANUFACTURING SAME

The application relates to a transfer film and a manufacturing method thereof, the transfer film provided by the embodiment of the application comprises a carrier layer, a release layer, a holographic layer, a photonic crystal layer and a light transmission layer which are sequentially arranged from top to bottom, wherein the photonic crystal layer is used for reflecting light with different wavelengths. Through setting up reasonable transfer membrane structure, simplified manufacturing process, the phenomenon that can not appear hazing and skinning moreover when the thermoprint.



CLAIM 1. A transfer film, comprising: a carrier layer; the release layer is stacked on one side surface of the carrier layer; the holographic layer is arranged on the surface of the release layer, which is far away from the carrier layer; the photonic crystal layer is arranged on the surface of the holographic layer far away from the release layer and is used for reflecting light with various wavelengths; and the light transmitting layer is arranged on the surface of the photonic crystal layer far away from the holographic layer.

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

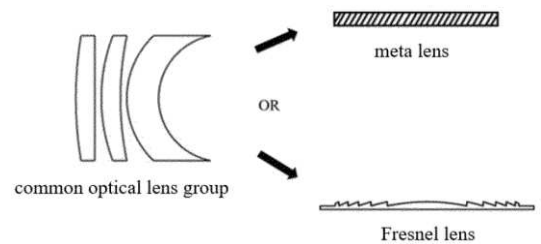
N9196

US20230047873
 Priority Date: 12/08/2021

AMETHYSTUM STORAGE TECHNOLOGY

OPTICAL SYSTEM FOR HOLOGRAPHIC STORAGE AND DESIGN METHOD FOR FRESNEL LENS AND META LENS THEREOF

An optical system for holographic storage includes a reference light path, a signal light path, a servo light path and a reproduction light path. The reference light path and the signal light path contain a first Fourier lens and a second Fourier lens for transmitting reference light and signal light carrying data information, and adjusting the incident position and angle of the reference light and the signal light on a storage medium. The optical system includes a reference light objective lens for converging the reference light, a third Fourier lens for performing Fourier transformation on a signal light field, and a fourth Fourier lens for performing Fourier transformation on a reproduced signal light field to read the data information. The first Fourier lens, the second Fourier lens, the third Fourier lens, the fourth Fourier lens and the reference light objective lens is respectively a Fresnel lens or a meta lens.



CLAIM 1. An optical system for holographic storage, comprising a reference light path, a signal light path, a servo light path and a reproduction light path, wherein the reference light path and the signal light path both contains a first Fourier lens and a second Fourier lens for transmitting a reference light and a signal light carrying data information, and adjusting an incident position and angle of the reference light and the signal light on a storage medium, wherein the optical system further comprises: a reference light objective lens for converging the reference light; a third Fourier lens for performing Fourier transformation on a signal light field; and a fourth Fourier lens for performing Fourier transformation on a reproduced signal light field to read the data information, and wherein the first Fourier lens, the second Fourier lens, the third Fourier lens, the fourth Fourier lens and the reference light objective lens is respectively composed of a Fresnel lens or a meta lens.

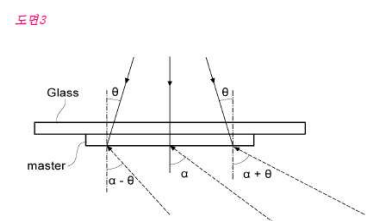
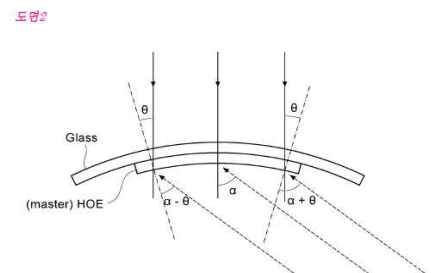
N9206

KR20230020646
 Priority Date: 04/08/2021

LG CHEM

METHOD FOR REPLICATING HOE AND HOE REPLICATED THEREBY

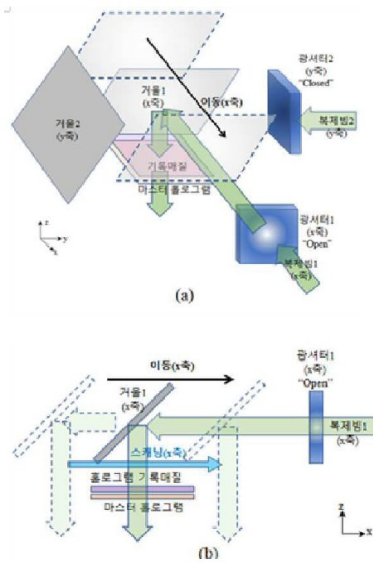
The present invention provides a method for replicating hoe and hoe replicated thereby. According to one embodiment of the present invention, there is provided a method of manufacturing a holographic optical element (hoe) in which an interference pattern operating on a curved surface is recorded; disposing the holographic optical element (hoe) on one surface of a covering medium including a photopolymer resin; And irradiating the other surface facing the one surface of the covering medium with reference light diverging at a first angle, wherein an interference pattern of the master hoe is replicated on the covering medium by interference between reproduction light diffracted by the master hoe and the irradiated reference light.



CLAIM 1. A method of manufacturing a display device, comprising: preparing master holographic optical elements (hoe) in which an interference pattern operating on a curved surface is recorded; disposing the master hoe on one surface of a covering medium comprising a photopolymer resin; and irradiating the other surface facing the one surface of the covering medium with reference light diverging at a first angle, And the interference pattern of the master hoe is replicated on the medium for coating by interference between the irradiated reference light and the reproduced light diffracted from the master hoe.

HOLOGRAM REPLICATION METHOD AND SYSTEM USING BIAXIAL (XY) SCANNING

The present invention relates to a hologram replication system using two-axis (XY) scanning, comprising: a laser (11), a mirror (13), a lens (15), and an optical shutter (16, 17). A light source unit 10; A first mirror moving unit 20 including a first mirror 21 for advancing a replica beam, which is a reference beam, to a lower hologram replica 40, and a first motor-driven stage (x-axis 22) for moving the mirror 21; a second mirror 31 for advancing the replica beam, A second mirror moving unit 30 including a second motor-driven stage 32 for moving the mirror 31; a hologram replicating unit 40 including a hologram recording medium 41 and a master hologram 42; And a control unit for manipulating the optical shutter (16), the first motor-driven moving stage (22) and the second motor-driven moving stage (32), wherein a replica beam, which is a reference beam, is incident through the two 1 and 2 mirrors (21, 31), Characterized in that the two mirrors (21, 31) are linearly shifted in X-axis and Y-axis directions, respectively, so that the replica beams sequentially perform two-axis scanning (XY). The invention relates to a hologram replication method using biaxial (XY) scanning, wherein a recording medium is closely superimposed on a master hologram and placed horizontally, and a mirror 1 (21) and a mirror 2 (31) are installed, a mirror 1 (21) and a mirror 2 (31) are installed, at the same time that an optical shutter 1 is opened, Performing scanning on the hologram recording medium along the x-axis; closing the optical shutter 1 when the x-axis scanning is completed; opening the mirror 2 starts moving in the y-axis direction at the same time as the optical shutter 2 is opened, and performing scanning on the hologram recording medium along the y-axis; Closing the optical shutter 2 when the y-axis scanning is completed, wherein the method and system for replicating a hologram using two-axis (XY) scanning of the present invention fixes a hologram recording medium and enters a reference beam (replicating beam) while moving, thereby avoiding the risk of being directly exposed to vibration of a motor stage, The hologram can be uniformly replicated since one replication is performed by sequentially scanning the replicated beams two-axis (x-axis, y-axis) as the two mirrors linearly move in X-axis and Y-axis directions, respectively, and at the same time, the hologram replication time is short. The present invention describes reflective hologram replication as a center, and it is equally applicable to replication of a transmissive master hologram by changing the position of the master hologram and the recording medium.



CLAIM 1. A laser (11), a mirror (13), a lens (15), and optical shutters (16, 17). A light source unit 10; A first mirror moving unit 20 including a first mirror 21 for advancing a replica beam, which is a reference beam, to a lower hologram replica 40, and a first motor-driven stage (x-axis 22) for moving the mirror 21; a second mirror 31 for advancing the replica beam, A second mirror moving unit 30 including a second motor-driven stage 32 for moving the mirror 31; a hologram replicating unit 40 including a hologram recording medium 41 and a master hologram 42; And a control unit for manipulating the optical shutter (16), the first motor-driven moving stage (22) and the second motor-driven moving stage (32), wherein a replica beam, which is a reference beam, is incident through the two 1 and 2 mirrors (21, 31), And the two mirrors (21, 31) are linearly shifted in X-axis and Y-axis directions, respectively, so that the replicated beams sequentially perform two-axis (XY) scanning.

N9211

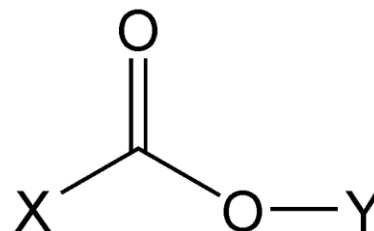
KR20230012778

Priority Date: 16/07/2021

LG CHEM

METHOD FOR PRODUCING ADDITIVE FOR PHOTOPOLYMER, METHOD FOR PRODUCING PHOTOPOLYMER COMPOSITION, AND HOLOGRAPHIC RECORDING METHOD

The present invention provides a method for producing a photopolymer additive capable of obtaining a photopolymer additive with high yield, a method for producing a photopolymer composition capable of more efficiently and easily providing a photopolymer layer capable of realizing a higher refractive index modulation value even in a thin thickness range, and a holographic recording method.



CLAIM 1. A method for producing an additive for a photopolymer, comprising reacting an alkylene oxide comprising a perfluoro alkylene group and a compound of formula (1): Wherein x is halogen, an alkoxy group having 1 to 10 carbon atoms, or an amide group, and y is a linear or branched alkyl group having 1 to 20 carbon atoms, a linear or branched alkyl group having 1 to 10 carbon atoms bonded thereto, or a linear or branched alkyl group having 2 to 10 carbon atoms bonded thereto containing at least one oxygen.

N9219

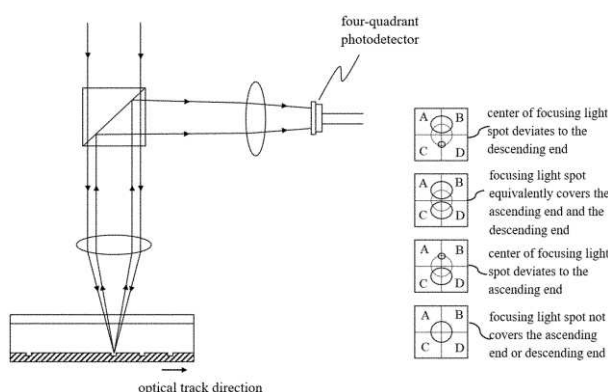
EP4138077

Priority Date: 12/08/2021

AMETHYSTUM STORAGE TECHNOLOGY

OPTICAL TRACK FORMAT FOR HOLOGRAPHIC STORAGE OPTICAL DISC AND ENCODING METHOD THEREOF

An optical track format of a holographic storage optical disc includes a lead-in area, a data area and a lead-out area. The data area is provided with data holographic positioning marks for marking reading/writing position of data holograms on the optical track and start positioning marks for marking position on the optical track where data holograms start to be recorded. The start positioning marks may also contain address encoding information. Such optical track can be encoded by performing binary encoding by length of the optical track between two consecutive notches, or performing binary encoding by high and low levels of a level signal.



CLAIM 1. An optical track format for a holographic storage optical disc, comprising a lead-in area, which is configured for storing characteristic information, product information, and reading/writing parameters of the holographic storage optical disc, and calibration holograms for calibrating an incident light; a data area, which is configured for recording data holograms loaded with data; and a lead-out area, which is configured for storing sealing information of the holographic storage optical disc, wherein the data area is provided with two kinds of marks including data holographic positioning marks for marking reading/writing position of the data holograms on an optical track, and start positioning marks for marking position on the optical track where the data holograms start to be recorded, each start positioning mark includes address encoding information, the lead-in area is provided with calibration holographic positioning marks for marking position of the calibration holograms on the optical track, and the data holographic positioning marks, start positioning marks, and calibration holographic positioning marks on the optical track are capable of being positioned or read information therein by the incident light.

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

N9185

WO202322270

PRAZEN

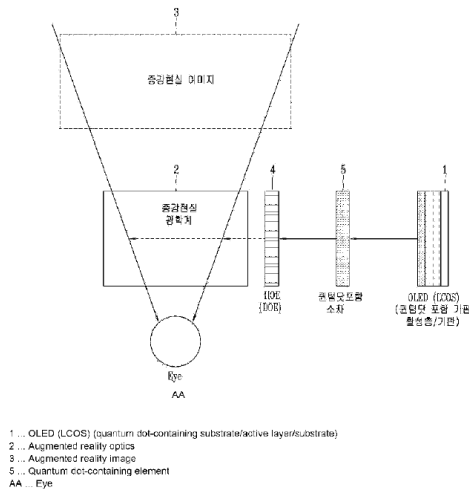
Priority Date: 20/08/2021

AUGMENTED REALITY DEVICE

An augmented reality device comprises: a micro display; transmitting optics by which light from the micro display is transmitted along a predetermined path; and a diffractive optical element and/or holographic optical element, wherein a quantum dot-containing element is disposed at one position on the path of image light incident from the micro display to the diffractive optical element and/or holographic optical element.

DISPOSITIF DE RÉALITÉ AUGMENTÉE

L'invention concerne un dispositif de réalité augmentée comprenant : un micro-affichage ; une optique de transmission au moyen de laquelle la lumière provenant du micro-affichage est transmise le long d'un trajet prédéterminé ; et un élément optique diffractif et/ou un élément optique holographique, un élément contenant des points quantiques étant disposé à un emplacement sur le trajet de la lumière d'image incidente du micro-affichage à l'élément optique diffractif et/ou à l'élément optique holographique.



CLAIM 1. An augmented reality device comprising a microdisplay, a transmission optical system for transmitting light from the microdisplay to a predetermined path, a diffractive optical element and/or a holographic optical element, And an element including quantum dots is disposed in one of the paths of the image light entering the diffractive optical element and/or the holographic optical element from the microdisplay.

N9189

WO202316254

Priority Date: 12/08/2021

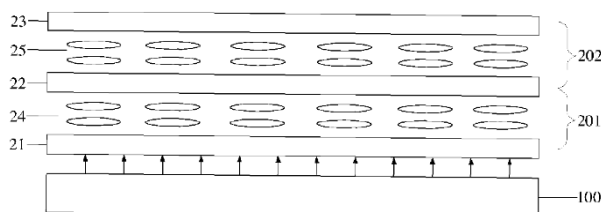
BOE TECHNOLOGY GROUP

HOLOGRAPHIC DISPLAY DEVICE AND DISPLAY METHOD THEREOF

A holographic display device and a display method thereof. The holographic display device comprises a backlight module (100) and two liquid crystal modules (201, 202). The backlight module (100) is used for providing coherent light; the two liquid crystal modules (201, 202) are located on the light exit side of the backlight module (100), and the two liquid crystal modules (201, 202) are stacked; one of the two liquid crystal modules (201, 202) is used for performing amplitude modulation on incident light, and the other one is used for performing phase modulation on incident light. In this way, the complex amplitude of exit light is adjusted, and the quality of a reconstructed image is improved.

DISPOSITIF D’AFFICHAGE HOLOGRAPHIQUE ET PROCÉDÉ D’AFFICHAGE ASSOCIÉ

L’invention concerne un dispositif d’affichage holographique et un procédé d’affichage associé. Le dispositif d’affichage holographique comprend un module de rétroéclairage (100) et deux modules à cristaux liquides (201, 202). Le module de rétroéclairage (100) sert à fournir de la lumière cohérente ; les deux modules à cristaux liquides (201, 202) sont situés sur le côté de sortie de lumière du module de rétroéclairage (100), et les deux modules à cristaux liquides (201, 202) sont empilés ; l’un des deux modules à cristaux liquides (201, 202) est utilisé pour effectuer une modulation d’amplitude sur la lumière incidente, et l’autre est utilisé pour effectuer une modulation de phase sur la lumière incidente. De cette manière, l’amplitude complexe de la lumière de sortie est ajustée, et la qualité d’une image reconstruite est améliorée.



CLAIM 1. A holographic display device comprising: a substrate; A backlight module for providing coherent light; Two liquid crystal modules, located on the exit side of the backlight module, the two liquid crystal modules being stacked, wherein one of the two liquid crystal modules is used for amplitude modulation of incident light and the other of the liquid crystal modules is used for phase modulation of incident light.

N9191

WO202308576

Priority Date: 30/07/2021

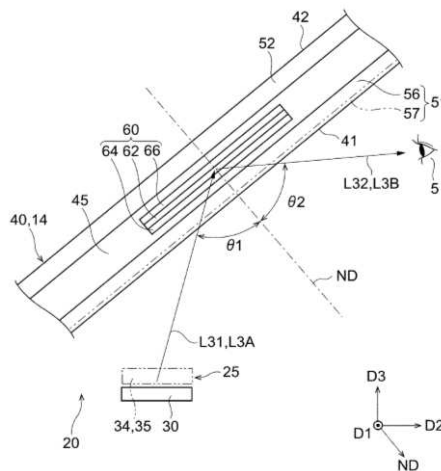
DAI NIPPON PRINTING

COMBINER, HEAD-UP DISPLAY, MOBILE BODY, AND AUTOMOBILE

A combiner 40 is used for a head-up display 20 and receives image light projected thereto. The combiner 40 has: a first substrate 51 that includes a first surface 41 serving as an incident surface for image light; a second substrate 52 that includes a second surface 42; a bonding layer 45 that bonds the first substrate 51 and the second substrate 52; and a holographic element 60 located between the first substrate 51 and the second substrate 52. The holographic element 60 diffracts image light: in a direction of positive reflection relative to the direction of incidence of the image light upon the combiner 40; or in a direction inclined at an angle of 5° or less to the direction of positive reflection. A distance LX between the holographic element 60 and a display position PX of an imaginary image 80 that is caused by the image light diffracted by the holographic element 60 is four or more times greater than a distance LY between the holographic element 60 and a display position PY of a ghost image 81 that is caused by the image light reflected by the first surface 41 or the second surface 42.

COMBINA TEUR, AFFICHAGE TÊTE HAUTE, CORPS MOBILE ET AUTOMOBILE

L'invention concerne un combinateur 40 qui est utilisé pour un affichage tête haute 20 et reçoit une lumière d'image projetée sur celui-ci. Le combinateur 40 comprend : un premier substrat 51 qui comprend une première surface 41 servant de surface d'incidence pour la lumière d'image ; un second substrat 52 qui comprend une seconde surface 42 ; une couche de liaison 45 qui lie le premier substrat 51 et le second substrat 52 ; et un élément holographique 60 situé entre le premier substrat 51 et le second substrat 52. L'élément holographique 60 diffracte la lumière d'image : dans une direction de réflexion positive par rapport à la direction d'incidence de la lumière d'image sur le combinateur 40 ; ou dans une direction inclinée selon un angle de 5° ou moins par rapport à la direction de réflexion positive. Une distance LX entre l'élément holographique 60 et une position d'affichage PX d'une image imaginaire 80 qui est provoquée par la lumière d'image diffractée par l'élément holographique 60 est au moins quatre fois supérieure à une distance LY entre l'élément holographique 60 et une position d'affichage PY d'une image fantôme 81 qui est provoquée par la lumière d'image réfléchi e par la première surface 41 ou la seconde surface 42.



CLAIM 1. A combiner for a heads-up display configured to project image light, the combiner comprising: a first substrate including a first surface serving as an incident surface for the image light; a second substrate including a second surface opposite the first surface; a bonding layer configured to bond the first substrate and the second substrate; and a hologram element located between the first substrate and the second substrate, wherein the hologram element includes: The image light is diffracted in a specular reflection direction with respect to an incident direction of the image light to the combiner or in a direction inclined at an angle of 25° or less in the specular reflection direction, and a distance between a display position of an image formed by the image light diffracted by the hologram element and the hologram element satisfies a relationship such that: A distance of four or more times a distance between the hologram element and a display position of an image formed by the imaging light reflected by the first surface or the second surface.

N9192

WO202307230

WAYRAY

Priority Date: 30/07/2021

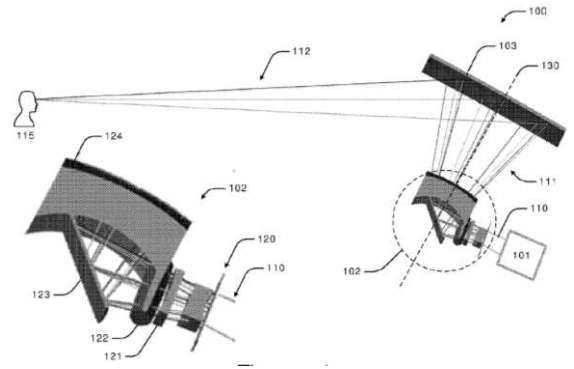
COMPACT HOLOGRAPHIC HEAD-UP DISPLAY DEVICE

Disclosed embodiments are related to a compact holographic head-up display (hHUD) system comprising a holographic optical element (HOE) with optical power and corrective optical elements that allow the optical elements of the compact hHUD system to be reduced in size and/or volume in comparison to optical elements used in conventional head-up display and hHUD systems.

DISPOSITIF D’AFFICHAGE TÊTE HAUTE HOLOGRAPHIQUE COMPACT

Des modes de réalisation de l'invention concernent un système d'affichage tête haute holographique (hHUD) compact comprenant un élément optique holographique (HOE) avec une puissance optique et des éléments optiques correctifs qui permettent aux éléments optiques du système hHUD compact d'être réduits en taille et/ou en volume par rapport à des éléments optiques utilisés dans des systèmes d'affichage tête haute et des systèmes hHUD classiques.

CLAIM 1. A compact holographic head-up display (hHUD) device, comprising: a picture generation unit (PGU), a combiner comprising a holographic optical element (HOE) with an optical power between 1,1 - 6,6 diopters; and a correction optics assembly, disposed between the PGU and the combiner, the correction optics assembly comprising at least one optical element with at least two refractive surfaces.



N9193

US20230059372

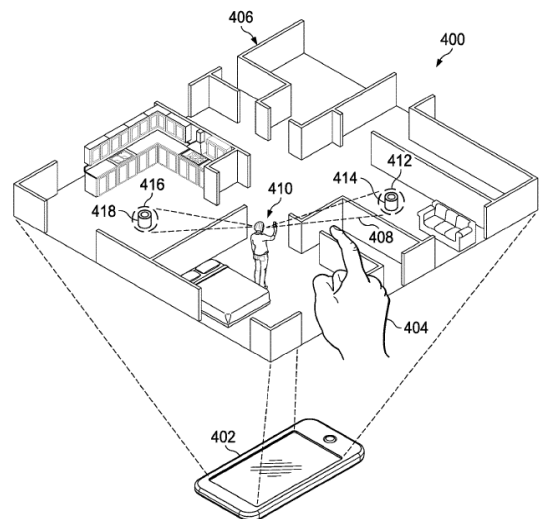
IBM

Priority Date: 17/08/2021

HOLOGRAPHIC INTERFACE FOR VOICE COMMANDS

A computer implemented method, computer system, and computer program product for executing a voice command. A number of processor units displays a view of a location with voice command devices in response to detecting the voice command from a user. The number of processor units displays a voice command direction for the voice command in the view of the location. The number of processor units changes the voice command direction in response to a user input. The number of processor units identifies a voice command device from the voice command devices in the location based on the voice command direction to form a selected voice command device. The number of processor units executes the voice command using the selected voice command device.

CLAIM 1. A computer implemented method for executing a voice command, the method comprising: displaying, by a number of processor units, a view of a location with voice command devices in response to detecting the voice command from a user; displaying, by the number of processor units, a voice command direction for the voice command in the view of the location; changing, by the number of processor units, the voice command direction in response to a user input; and identifying, the number of processor units, a voice command device from the voice command devices in the location based on the voice command direction to form a selected voice command device; and executing, by the number of processor units, the voice command using the selected voice command device.



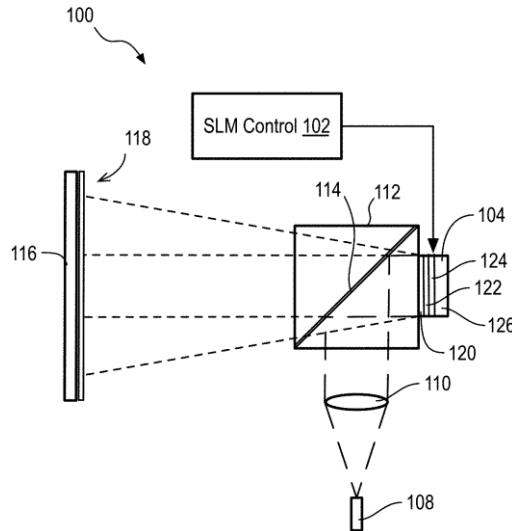
N9197

US20230043791
Priority Date: 05/10/2022

INTEL

HOLOGRAPHIC IMAGE PROCESSING WITH PHASE ERROR COMPENSATION

A method and system of holographic image processing includes phase error compensation.



CLAIM 1. A method for generating holographic images comprising: projecting a diffraction pattern image displayed at a spatial light modulator (SLM) using diffraction pattern data and at multiple focal lengths; generating model images of the multiple focal lengths comprising using the diffraction pattern data; and generating a phase error map comprising applying a gradient descent-type of operation that considers both a version of the model images and a version of captured images capturing the projection of the diffraction pattern image to the multiple focal lengths.

N9199

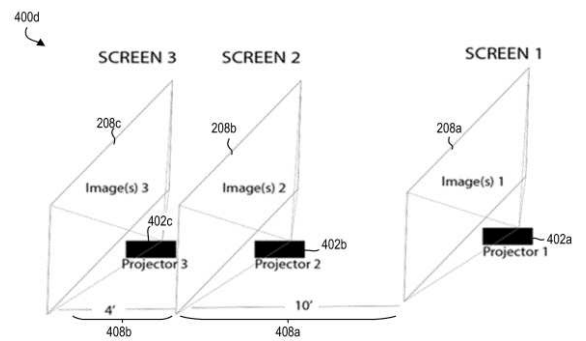
US20230036418
Priority Date: 27/07/2021

DIMENSIONAL HOLO IMAGING

SYSTEMS AND METHODS FOR GENERATING MULTI-LAYER HOLOGRAM PROJECTIONS

Systems and methods for generating multi-layer hologram projections are described. For example, a system generally comprises at least two projection layers in a spaced-apart arrangement; at least one layer-specific projector device associated with each of the at least two projection layers, each layer-specific projector device being configured to project one or more images on an associated projection layer; and a processor coupled to each of the at least one layer-specific projector device, the processor being configured to control each layer-specific projector device to project one or more images on the corresponding projection layer.

CLAIM 1. A system for multi-layer hologram projections, the system comprising: at least two projection layers in a spaced-apart arrangement; at least one layer-specific projector device associated with each of the at least two projection layers, each layer-specific projector device being configured to project one or more images on an associated projection layer; and a processor coupled to each of the at least one layer-specific projector device, the processor being configured to control each layer-specific projector device to project one or more images on the corresponding projection layer.



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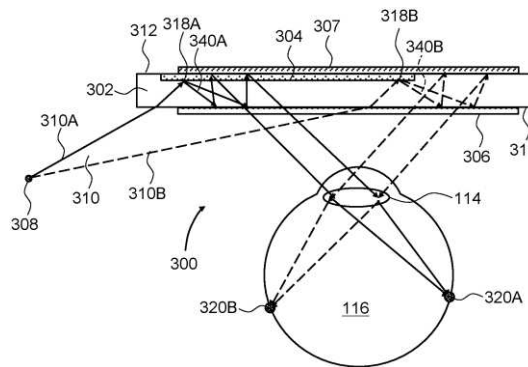
US11579450

Priority Date: 13/08/2020

META PLATFORMS TECHNOLOGIES

HOLOGRAPHIC DIFFUSER DISPLAY

A display uses a projector to project an image onto a holographic diffuser. The holographic diffuser scatters light of the projected image to at least one holographic element having optical power, which forms an image in angular domain for a direct observation by a user. The holographic diffuser and the holographic optical element, such as a freeform lens or a reflector, may be disposed on a transparent substrate in which the image light propagates. The architecture that immerses a display (HOE diffuser) and the eyepiece lens into the substrate may reduce the form factor of the system compared to the VR headset architecture, while being suitable for operation in AR configuration.



CLAIM 1. A display comprising: a substrate transparent for visible light, the substrate having first and second opposed surfaces; a holographic diffuser at the second surface of the substrate; a projector for projecting an image onto the holographic diffuser through the first surface of the substrate, wherein the holographic diffuser is configured to scatter light of the image projected thereon back to the first surface within a pre-defined range of angles; and a holographic lens disposed at the first surface of the substrate and configured to receive the light scattered by the holographic diffuser for forming a corresponding image in angular domain at a distance from the holographic lens.

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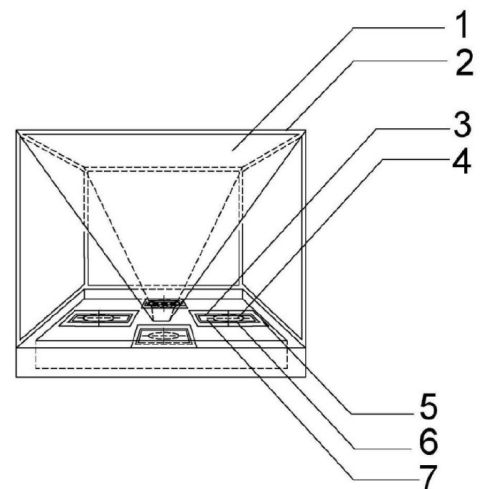
TR2022006643

Priority Date: 24/04/2022

BATMAN MERKEZ MESLEKI VE TEKNİK ANADOLU LİSESİ
CUMHURİYET | HAMZA DAYAN

HOLOGRAPHIC SCREEN DESIGN THAT PROVIDES EXPERIENCE OF AUGMENTED REALITY ON DISASTER RISK MAPS

This hologram screen consists of map images printed on transparent acetate papers, which we will call the hologram transparent acetate (7), placed on the PVC transparent plate (5) of the world globe, two-dimensional maps showing the locations of the disaster risk areas in the geography course textbooks. It is possible to obtain mirror images by manually rotating these images on the surface to be reflected as desired, and by reflecting them with a 12-24 Volt LED light (4) placed on the pvc reflective plates (6) and a fresnel lens (3) that will come under the images. The pyramid, which we will use as the pvc holographic screen (1), is supported by a pvc pipe (2), and the surface on which the image will be reflected will be made of transparent material that transmits light.



CLAIM 1. The invention is a holographic screen design, and its feature is;
- hologram transparent acetate (7) placed on the PVC transparent plate (5) of the two-dimensional maps,
- pvc reflective plates (6) on which these parts are placed, 12-24 Volt led light (4),
- a fresnel lens (3) through which images containing these parts are projected,
- The pyramid that we will use as the pvc holographic screen (1) reflecting the hologram images consists of a pvc pipe (2) placed as a support around it.

N9204

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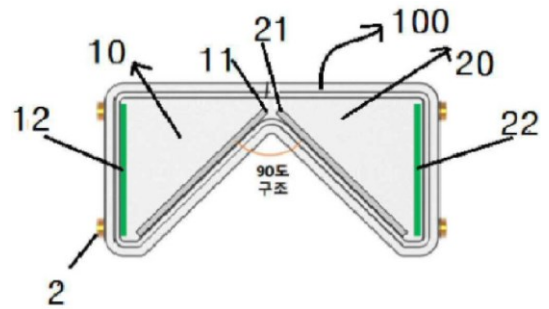
Priority Date: 11/08/2021

QMIIX

DIRECT VIEW REAL HOLOGRAM 3 D DISPLAY SYSTEM

The present invention relates to a direct view real hologram 3 D display system. the direct view real hologram 3 D display system includes left and right side display panels and left and right side mirror plates 11, 21 respectively corresponding to the left and right side display panels inside a case 100 in which the hologram system is embedded, 21), and the present invention has a significant effect of optimizing content viewing ranges by simple structures of calibration and direct-view structures of both contents by left and right mirror plates, and obtaining sharp real holograms. In addition, it is possible to provide a user with a practical content and an image, have a direct view structure, may have a quality greater than or equal to an existing 3 D image because of a large viewing angle, and may have directionality such as landscape, portrait format, and the like in one product, and thus there is a remarkable effect that the presentation of the content is free.

CLAIM 1. Left and right side display panels (12, 22) and left and right side mirror plates (11, 21) corresponding to the left and right side display panels (12, 22), respectively, are provided inside a case (100) in which a hologram system is housed, 21), a case (100) includes a left side portion (10) on which a left display panel (12) and a left mirror plate (11) are installed, and a right side portion (20) on which a right display panel (22) and a right mirror plate (21) are installed, A direct view real hologram 3 D display system in which a hologram of an object appears on the left mirror plate (11) and the right mirror plate (21), wherein the left and right mirror plates (11, 21) Produces one 3 D content image through two independent display panels, and each image of the left and right mirror plates 11, 21 displays half of the 3 D content image.



N9208

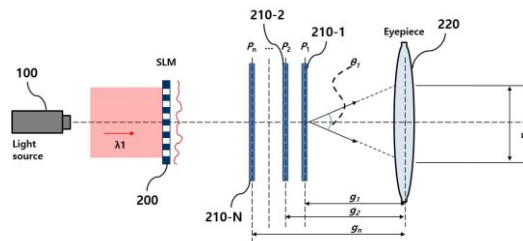
KR20230018787

Priority Date: 30/07/2021

KOREA ELECTRONICS TECHNOLOGY INSTITUTE

VARIABLE DEPTH HOLOGRAPHIC DISPLAY DEVICE PROVIDING EXTENDED EYEBOX

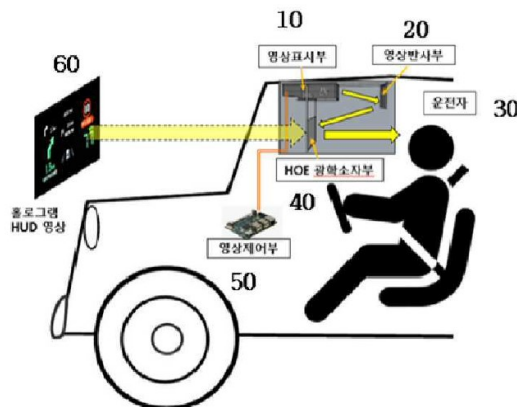
A variable depth holographic display device providing an extended eyebox is provided. A holographic display device includes a plurality of light sources configured to emit light of a plurality of wavelengths, and a spatial light modulator configured to serve as a panel of the holographic display using the light emitted from the plurality of light sources, In order to provide an extended eyebox having a wider size than previously existing, a plurality of scattering layers may be positioned at target depths of different depths such that the divergence angle of individual holographic pixels may be enlarged than if the scattering layer were positioned at target depths of a single depth. As a result, it is possible to observe holographic contents of a user within a wider range by increasing the eyebox capable of observing holographic contents.



CLAIM 1. A holographic display device, comprising: a plurality of light sources that emit light of a plurality of wavelengths; and a spatial light modulator that serves as a panel of a holographic display using the light emitted from the plurality of light sources, wherein the spatial light modulator is configured to provide an extended eyebox having an extended size greater than that of an existing eyebox, Wherein the plurality of scattering layers are positioned at target depths of different depths such that the divergence angle of the individual holographic pixels is greater than when the scattering layers are positioned at target depths of a single depth.

METHOD AND SYSTEM FOR MANUFACTURING A SUNVISOR HOLOGRAPHIC HEAD-UP DISPLAY

The present invention relates to a sunvisor holographic head-up display system. the sunvisor holographic head-up display system includes: an image control unit receiving information from a vehicle and transmitting the information to a beam projector; a beam projector module receiving the information from the image control unit and displaying an image; an image display unit including a screen, a housing, and an accessory; A mirror reflecting an image formed on the screen of the image display unit to the hoe device unit; an image reflecting unit including accessories; and an hoe optical device unit converting the image reflected from the image reflecting unit into a hologram shade image and including a holographic optical device (hoe) and accessories. And a sunvisor type holographic head-up display method, in which three laser beams are merged into one beam through several mirrors, divided into a reference beam, a signal beam, and two beams through a beam splitter (BS), the beam enters the hoe recording medium in a spherical form by splitting the signal beam and the reference beam from one laser light source into a specific direction, an incident angle and a distance of the reference beam with respect to the hologram recording medium are matched to an angle at which the light of the laser projection module enters the hoe from the screen and a distance travelled to the hoe, and an incident angle and a distance of the signal beam with respect to the hologram recording medium are matched to a main observation angle and a projection distance of the herd image observed through the hoe, respectively. Therefore, the method and system for manufacturing a sunvisor holographic head-up display of the present invention can provide a wide viewing area (Eyebox), can provide a large area of a waist image, can provide a waist image of a long projection distance, Product miniaturization can be achieved, high reflectance and high transmittance can be satisfied simultaneously, the use of a flat reflector, the design of a product structure friendly at the time of front viewing can be achieved, and the product structure can be simplified and convenient for use in the attachment and detachment forms can be achieved.



CLAIM 1. An image control unit 50 for receiving information from the vehicle and transmitting the information to a beam project; a laser projection module 6 for receiving the information from the image control unit 50 and displaying an image; an image display unit 10 including a screen, a housing, and an accessory; a mirror 4 for reflecting the image formed on the screen of the image display unit to the hoe device unit; An image reflecting unit 20 including accessories, and an hoe optical element unit 40 converting the image reflected by the image reflecting unit 20 into a hologram hue image and including hoe, 70.

N9210

KR20230015799

Priority Date: 23/07/2021

KWAK MI-JIN

METHOD OF PROVIDING MOVABLE HOLOGRAM CONTENTS IN VEHICLE SUCH AS A BUS AND A SYSTEM THEREOF

A 3 D interactive hologram content providing system for fusing virtual reality content (first content) using a hologram and augmented reality content (second content) using a hologram of a real object in a vehicle such as a bus includes: a hologram display device for projecting virtual reality content (first content) using a hologram stored in a content storage device and displaying the projected virtual reality content (first content) using a hologram on a screen; A first content display controller configured to receive first time information according to reproduction of the first content displayed on the screen; a real object image capturing device configured to capture an image of a real object; an augmented reality content converting device configured to convert the captured image of the real object into augmented reality content (second content) using a hologram; a content transmitting device configured to transmit the second content to a content displaying device; A second content display control unit configured to receive second time information corresponding to reproduction of the second content displayed on the content display unit, and a content fusion unit configured to synchronize the second content displayed on the content display unit with the first content displayed on the screen using the first time information and the second time information; The content transfer apparatus is connected to a mobile device by wireless or wired communication, the content display apparatus is configured as an HMD (Head-Mounted Display) apparatus disposed for each of the vehicle seats, and the HMD apparatus is configured to wirelessly communicate with the mobile device and is configured to communicate with the content transfer apparatus connected wirelessly or wired.

CLAIM 1. A 3 D interactive hologram content providing method for fusing virtual reality content (first content) using a hologram and augmented reality content (second content) using a hologram of a real object in a vehicle such as a bus, the method comprising: a step in which a hologram display device projects virtual reality content (first content) using a hologram stored in a content storage device and displays the virtual reality content (first content) on a screen, Receiving, by a first content display control unit, first time information according to reproduction of the first content displayed on the screen, capturing, by a real object image capturing apparatus, an image of a real object, Converting, by an augmented reality content conversion unit, an image of the captured real object into augmented reality content (second content) using a hologram, transmitting, by a content transmission device, the second content to a content display device, Receiving, by a second content display control unit, second time information according to reproduction of the second content displayed on the content display device, And synchronizing, by a content fusion apparatus, second content displayed on a content display apparatus with the first content displayed on the screen by using the first time information and the second time information, wherein the content transfer apparatus is connected to a mobile device by wireless or wired communication, Wherein the content display apparatus is configured as an HMD (Head-Mounted Display) apparatus disposed for each vehicle seat, and the HMD apparatus is configured to be wirelessly connected to the mobile device and to be communicable with the content transmission apparatus wirelessly or wiredly connected thereto.

N9212

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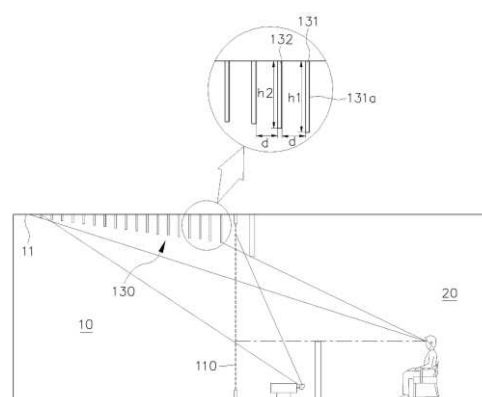
Priority Date: 15/07/2021

EUNWOJUNG

QUASI-HOLOGRAM PLEXUS SYSTEM

The present invention relates to a projection type quasi-hologram plexus system capable of improving floating effect by removing an afterimage transmitted in a room. the projection type hologram plexus system includes: a chassis screen (110) vertically installed in front of the scene and projecting a hologram image; A projector (120) provided in front of the chaemic screen to project an image onto the chaemic screen; and a plurality of panels (130) projected from the projector and disposed rearward of a band on a ceiling surface where an afterimage transmitted through the chaemic screen is imaged.

CLAIM 1. A quasi-hologram municipal system, comprising: a chafood screen vertically installed in front of the chafood screen to project a hologram image onto the chafood screen; a projector installed in front of the chafood screen to project the image onto the chafood screen; and a plurality of panels arranged behind the chafood on a ceiling surface where an afood projected by the projector and transmitted through the chafood screen is imaged.



N9213

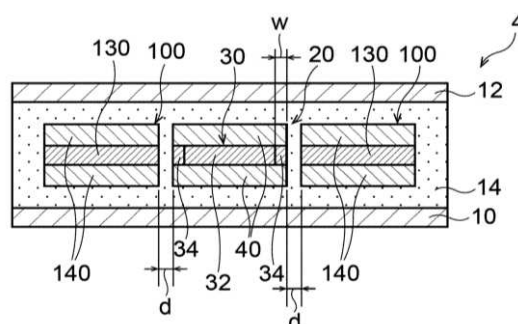
JP2023020742

Priority Date: 30/07/2021

DAI NIPPON PRINTING

COMBINER, HEADS-UP DISPLAY, AND MOVING BODY

TOPIC: To suppress an outer contour of a hologram element from appearing noticeable. INVENTION: a combiner for a heads-up display includes a first substrate, a second substrate facing the first substrate, a bonding material disposed between the first substrate and the second substrate and bonding the first substrate and the second substrate to each other, and a hologram element disposed between the first substrate and the second substrate and including a hologram layer in which interference fringes are recorded. Further, the combiner includes a dummy member disposed adjacent to the hologram element between the first substrate and the second substrate.



CLAIM 1. A combiner for a heads-up display, comprising: a first substrate; a second substrate facing the first substrate; a bonding material disposed between the first substrate and the second substrate and bonding the first substrate and the second substrate to each other; A hologram element disposed between the first substrate and the second substrate and including a hologram layer in which interference fringes are recorded; and a dummy member disposed adjacent to the hologram element between the first substrate and the second substrate.

N9214

JP2023020741

Priority Date: 30/07/2021

DAI NIPPON PRINTING

HOLOGRAM SHEET, COMBINER, HEADS-UP DISPLAY, AND MOVING BODY

TOPIC: To provide a hologram sheet in which discoloration of a hologram layer is suppressed. INVENTION: a hologram sheet including a hologram layer and a barrier layer located on at least one surface of the hologram layer, wherein the barrier layer includes: A hologram sheet being a cured film including: a structure derived from a vinyl alcohol-based polymer including a side chain including a reactive functional group; and a crosslinked structure formed by bonding the reactive functional groups to each other via a crosslinking agent.

CLAIM 1. A hologram sheet comprising a hologram layer and a barrier layer located on at least one surface of the hologram layer, the barrier layer comprising: A hologram sheet comprising: a structure derived from a vinyl alcohol-based polymer including a side chain containing a reactive functional group; and a crosslinked structure formed by bonding the reactive functional groups to each other via a crosslinking agent.

N9216

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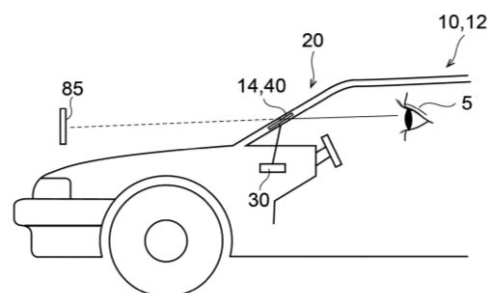
Priority Date: 30/07/2021

DAI NIPPON PRINTING

COMBINER, HEADS-UP DISPLAY, AND MOVING BODY

TOPIC: To suppress distortion of a reproduced image in a combiner for a heads-up display. INVENTION: a combiner for a heads-up display including a substrate, a hologram element including a hologram recording layer, and a base sheet bonded to at least one surface of the hologram recording layer, and a bonding layer bonding the substrate and the hologram element. a distance between the substrate and the hologram recording layer is 120 μm or less.

CLAIM 1. A combiner for a heads-up display, comprising: a substrate; a hologram element including a hologram recording layer and a substrate sheet bonded to at least one surface of the hologram recording layer; and a bonding layer bonding the substrate and the hologram element, wherein a distance between the substrate and the hologram recording layer is 120 μm or less.



N9217

JP2023020220

Priority Date: 30/07/2021

DAI NIPPON PRINTING

COMBINER, HEADS-UP DISPLAY, AND MOVING BODY

TOPIC: To provide a combiner, a heads-up display, and a moving body, in which an outline of a hologram element is less likely to be visually recognized by a user. INVENTION: a combiner for a heads-up display including a first substrate, a second substrate, a bonding layer bonding the first substrate and the second substrate, and a hologram element located between the first substrate and the second substrate, wherein the hologram element includes a first surface facing the first substrate, a second surface facing the second substrate, and a side surface coupling the first surface and the second surface, The combiner includes a first light transmittance that is a transmittance of light transmitted through the combiner along a normal direction of the hologram element in a region where the hologram element is located and not including a side surface; A second light transmittance that is a transmittance of light transmitted through the combiner along the normal direction in a region including the side surface, wherein the second light transmittance is greater than the first light transmittance.

CLAIM 1. A combiner for a heads-up display, the combiner comprising: a first substrate; a second substrate; a bonding layer bonding the first substrate and the second substrate; and a hologram element located between the first substrate and the second substrate, the combiner comprising: The device according to claim 1, wherein the hologram element includes a first surface facing the first substrate, a second surface facing the second substrate, and a side surface connecting the first surface and the second surface, and the combiner includes: A first light transmittance that is a transmittance of light transmitted through the combiner along a normal direction of the hologram element in a region where the hologram element is located and not including the side surface; and A second optical transmittance that is a transmittance of light transmitted through the combiner along the normal direction in a region including the side surface, wherein the second optical transmittance is greater than the first optical transmittance.

N9221

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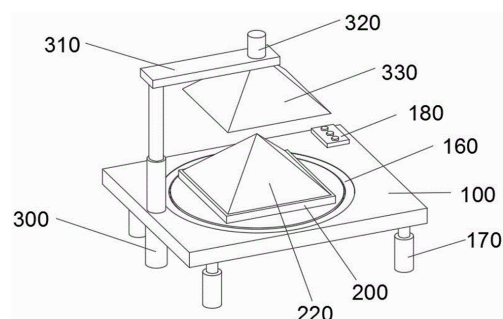
Priority Date: 11/07/2022

ANHUI FANGMENG SOFTWARE TECHNOLOGY

REAL ESTATE THREE-DIMENSIONAL HOLOGRAPHIC INTERACTIVE DISPLAY DEVICE

The utility model discloses a belong to display device technical field, specifically be a three-dimensional holographic interactive display device of real estate, including mounting table, bottom plate and multisection electric putter, the circular shape mounting groove has been seted up to mount table roof indent, the diapire rotates in the mounting groove and is provided with discoid revolving stage. According to the utility model, the house buyer can drive the gear to rotate by starting the driving motor through the controller, so as to drive the rotary table to rotate together with the bottom plate and the projection plate, so that the house buyer can automatically adjust the position of the projection plate in situ, the virtual three-dimensional images of the building can be conveniently checked from different angles, and the display height can be conveniently adjusted through the lifting electric rod, so that the interaction performance between the house buyer and the device is improved; when the projection board is not used for displaying, the projection board is stored in the inner cavity of the storage frame by starting the multi-section electric push rod to descend the storage frame, so that the projection board is protected, the projection board is prevented from being damaged by collision of foreign objects, and the coverage of dust is reduced.

CLAIM 1. A real estate three-dimensional holographic interactive display device, comprising: the mounting table (100), a circular mounting groove (110) is concavely formed in the top wall of the mounting table (100), a disc-shaped rotary table (120) is rotatably arranged on the bottom wall in the mounting groove (110), and a controller (180) is arranged on one side of the top of the mounting table (100); the bottom plate (200) is arranged at the center of the top of the rotary table (120), four video transmitters (210) are arranged at the center of the top of the bottom plate (200), image data of a building are stored in the video transmitters (210), a projection plate (220) is arranged above the four video transmitters (210) at the top of the bottom plate (200), and the projection plate (220) is a hollow cone with an open bottom wall; the cleaning brush comprises a multi-section electric push rod (300), wherein the multi-section electric push rod (300) is arranged on one side of the bottom wall of the multi-section electric push rod (300), the output end of the multi-section electric push rod (300) penetrates through the top wall of an installation table (100) and is provided with a transverse plate (310), a servo motor (320) is arranged at the top of the other end of the transverse plate (310), a storage frame (330) is arranged at the bottom of an output shaft of the servo motor (320), and elastic cleaning bristles (340) are uniformly arranged on the periphery of the inner side wall of the storage frame (330).



N9222

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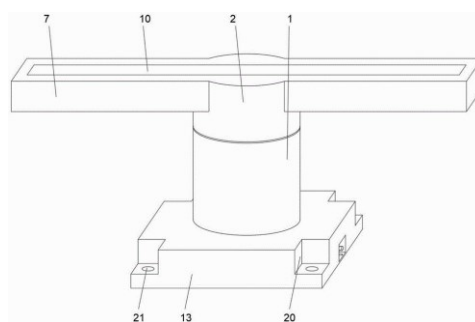
Priority Date: 21/10/2022

NO 12 DIVISION MIDDLE SCHOOL OF THE XINJIANG PRODUCTION & CONSTRUCTION CORPS

HOLOGRAPHIC PROJECTOR FOR ILLUMINATION

The utility model discloses a holographic projector that can be used to illumination, which comprises a frame, the one end of frame is provided with the aircraft nose, and is provided with the motor in the frame, the output and the aircraft nose center department fixed connection of motor, be provided with the battery in the frame, be provided with the standing groove in the aircraft nose, install control scheme board in the standing groove, fixedly connected with rotating turret on the aircraft nose, the top of rotating turret is provided with the recess, be provided with the LED lighting fixture in the recess, the bottom fixedly connected with installation piece of frame. The utility model discloses in, through the setting of mounting bracket, installation notch, mounting hole structure, can be convenient stable with the mounting bracket pre-install wall body or auxiliary stand on, the cooperation of cooperation installation piece, mounting groove, stopper, spacing groove, dwang, fly leaf isotructure sets up, can realize the firm location installation of stabilizing of whole frame, also can convenient dismantlement simultaneously, convenient clearance or maintenance.

CLAIM 1. A holographic projector usable for illumination, comprising a frame (1), characterized in that: the automatic welding machine is characterized in that a machine head (2) is arranged at one end of the machine frame (1), a motor (3) is arranged in the machine frame (1), the output end of the motor (3) is fixedly connected with the center of the machine head (2), a storage battery (4) is arranged in the machine frame (1), a placing groove (5) is arranged in the machine head (2), a control circuit board (6) is arranged in the placing groove (5), a rotating frame (7) is fixedly connected onto the machine head (2), a groove (8) is formed in the top of the rotating frame (7), an LED lamp holder (9) is arranged in the groove (8), an installation block (11) is fixedly connected to the bottom end of the machine frame (1), a limiting groove (12) is formed in the installation block (11), an installation frame (13) is arranged below the machine frame (1), a movable groove (14) is formed in the installation frame (13), a movable plate (15) is arranged in the movable groove (14), a limiting block (16) is fixedly connected onto the movable plate (15), a rotating rod (17) is rotatably connected into the installation frame (13), an external thread (18) is arranged on the rotating rod (17), an external thread (18) is embedded connection between the movable plate (15), and the top of the installation frame (19) is arranged on the installation frame (13), and an operation notch (22) is formed in the mounting frame (13), an operation wheel (23) is arranged on the rotating rod (17) and is located in the operation notch (22), and an operation rod (24) is arranged on the operation wheel (23).



N9223

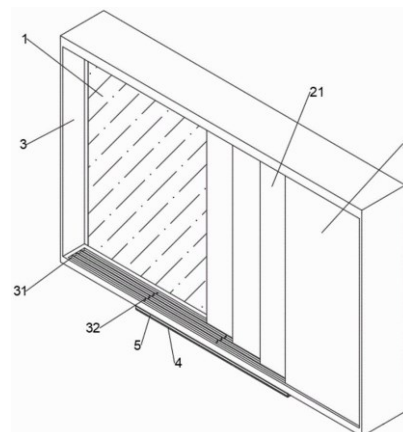
CN218446641U

Priority Date: 31/10/2022

SHENZHEN YUXUAN PHOTOELECTRIC TECHNOLOGY

CAPACITIVE ELECTROMAGNETIC HOLOGRAPHIC PROJECTION TOUCH SCREEN

The utility model relates to a touch-sensitive screen, specifically speaking relates to a holographic projection touch-sensitive screen of electric capacity electromagnetic type. The novel multifunctional screen comprises a screen, wherein an outer bin is arranged on the outer side of the screen, an outer cover assembly is arranged in the outer bin in a sliding mode, the outer cover assembly is composed of four outer cover leaves, the outer cover leaves are made of transparent materials, and the bottom of each outer cover leaf slides in a sliding groove formed in the bottom of an inner cavity of the outer bin. The utility model discloses an utilize the outer storehouse that the screen outside was equipped with, the messenger has the dustcoat subassembly of guard action to the outer wall of screen and can slide in the inside in outer storehouse, slide in the sliding tray of setting up outside storehouse inner chamber bottom through four dustcoat pages in utilizing the dustcoat subassembly, it is more firm to make the dustcoat subassembly outside storehouse inside gliding, utilize four dustcoat pages to extend comprehensively, make dustcoat subassembly and screen surface looks adaptation, when reaching comprehensive protection screen, also can directly scribble on the surface of dustcoat subassembly, be convenient for revise the filling to the content of showing on the screen.



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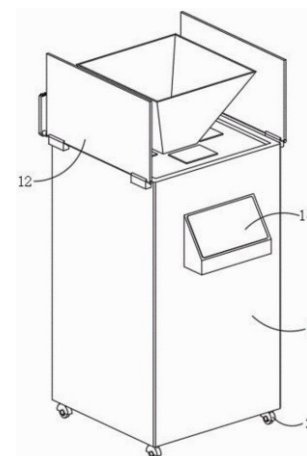
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Priority Date: 13/10/2022

XISHUO SHANGHAI ELECTRONIC TECHNOLOGY

360 HOLOGRAPHIC SHOW CUPBOARD OF DEGREE

The utility model discloses a 360 degree holographic show cupboard relates to projection equipment technical field, the intelligent cabinet temperature adjusting device comprises a cabinet body, the motor is installed to the interior bottom of the cabinet body, the output shaft of motor and the bottom rigid coupling of elevating screw, elevating screw's top helical drive is connected in elevating sleeve, elevating sleeve's top and the bottom rigid coupling of fly leaf, the surface of fly leaf is inlaid and is equipped with four display screens, the surface of fly leaf still bonds there is holographic projection board, holographic projection board is in between four display screens, holographic projection board is the back taper, the back of the cabinet body is provided with two sets of flip subassemblies, two sets of flip subassemblies are close to the one corner rigid coupling of the cabinet body with two top caps respectively, this 360 degree holographic show cupboard, be different from prior art, the accessible fly leaf is accommodate holographic projection board to the internal portion of cabinet, in order to form the protection to display screen and holographic projection board, the protectiveness is better, can form the linkage with the lift of fly leaf, possess automatic uncapping, close the lid function, it is more convenient during the use.



CLAIM 1. The utility model provides a 360 degrees holographic show cupboard, includes the cabinet body (1), its characterized in that: the intelligent cabinet is characterized in that a motor (3) is mounted at the inner bottom of the cabinet body (1), an output shaft of the motor (3) is fixedly connected with the bottom end of a lifting screw rod (4), the top end of the lifting screw rod (4) is in spiral transmission connection with a lifting sleeve (5), the top end of the lifting sleeve (5) is fixedly connected with the bottom of a movable plate (6), four display screens (7) are embedded in the surface of the movable plate (6), a holographic projection plate (8) is further bonded on the surface of the movable plate (6), the holographic projection plate (8) is located among the four display screens (7), and the holographic projection plate (8) is in an inverted cone shape; the back of the cabinet body (1) is provided with two sets of flip components (11), two sets of flip components (11) are respectively close to one corner rigid coupling of the cabinet body (1) with two top caps (12), and two top caps (12) are all rotated through two articulated blocks (13) and are connected in the both sides at the top of the cabinet body (1).

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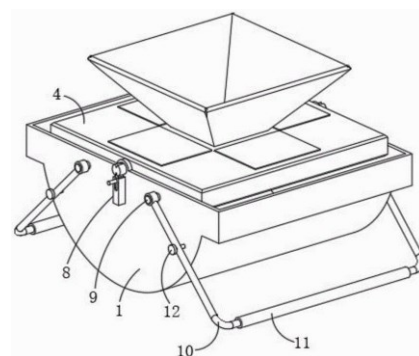
Priority Date: 13/10/2022

XISHUO SHANGHAI ELECTRONIC TECHNOLOGY

PORTABLE HOLOGRAPHIC PROJECTION DEVICE

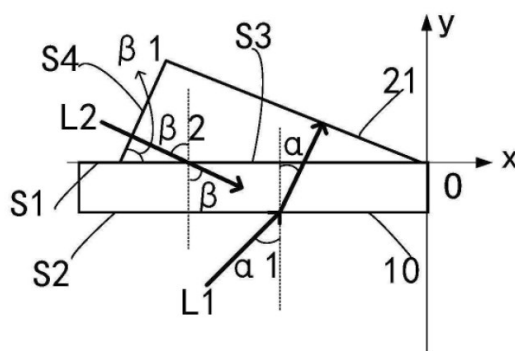
The utility model discloses a portable holographic projection arrangement relates to projection equipment technical field, including the receiver, it is connected with the pivot all to rotate on the both sides wall at receiver top, set up the constant head tank of two "V" shapes on the outer wall of pivot, the rigid coupling has the fly leaf between two pivots, the surface of fly leaf inlays and is equipped with four display screens, the surface of fly leaf still bonds there is holographic projection board, holographic projection board is in between four display screens, holographic projection board is the back taper, this portable holographic projection arrangement, be different from prior art, it is in the storage cavity to overturn the fly leaf to holographic projection board, thereby can enough avoid projection board to be infected with the dust easily, influence the problem of projection effect, there is the protectiveness that can improve the projection board, when the both sides of receiver below under the dwang rotation, thereby can provide the supporting role, avoid wholly producing when using and rocking, improve stability, if when the dwang is rotatory to the receiver top, can act as the handle use, conveniently carry.

CLAIM 1. The utility model provides a portable holographic projection arrangement, includes receiver (1), its characterized in that: the two side walls of the top of the storage box (1) are rotatably connected with rotating shafts (2), the outer wall of each rotating shaft (2) is provided with two V-shaped positioning grooves (3), a movable plate (4) is fixedly connected between the two rotating shafts (2), four display screens (5) are embedded in the surface of each movable plate (4), a holographic projection plate (6) is further bonded on the surface of each movable plate (4), each holographic projection plate (6) is located between the four display screens (5), and each holographic projection plate (6) is in an inverted cone shape; a positioning component (8) is fixedly arranged at the position of the side wall of the storage box (1) below the rotating shaft (2); the two sides of the storage box (1) are rotatably connected with a U-shaped rotating rod (10) through a connecting shaft (9).



VOLUME HOLOGRAPHIC GRATING AND EXPOSURE ANGLE DETERMINING METHOD, MANUFACTURING METHOD AND SYSTEM THEREOF

The invention provides a volume holographic grating and an exposure angle determination method, a manufacturing method and a system thereof, wherein the exposure angle determination method comprises the steps of obtaining first light ray information of exposure light rays, second light ray information of target light rays, a reflection angle of the target light rays during total reflection propagation in the volume holographic grating and a direction angle of the target light rays, wherein the exposure light rays comprise first light rays and second light rays which can generate interference, and the direction angle of the target light rays is an angle when the target light rays are coupled into the volume holographic grating or an angle when the target light rays are coupled out through the volume holographic grating; and determining a first refraction angle and a second refraction angle according to the first light ray information, the second light ray information, the reflection angle and the direction angle of the target light ray. After the exposure parameters are obtained by the method, the volume holographic grating which correspondingly diffracts the light with different wavelengths can be manufactured by utilizing the exposure light with one wavelength subsequently, and the system complexity and the manufacturing difficulty for manufacturing the volume holographic grating which correspondingly diffracts the light with different wavelengths are reduced.



CLAIM 1. An exposure angle determining method of a volume hologram grating, the exposure angle including a first refraction angle at which a first light ray propagates to a photosensitive material and a second refraction angle at which a second light ray propagates to the photosensitive material, the exposure angle determining method comprising: acquiring first light information of exposure light, second light information of target light, a reflection angle of the target light when the target light is totally reflected and transmitted in the volume holographic grating, and a direction angle of the target light, wherein the exposure light comprises first light and second light which can generate interference, and the direction angle of the target light is an angle when the target light is coupled into the volume holographic grating, or the direction angle of the target light is an angle when the target light is coupled out through the volume holographic grating; and determining the first refraction angle and the second refraction angle according to the first light ray information, the second light ray information, the reflection angle and the direction angle of the target light ray.

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

N9220

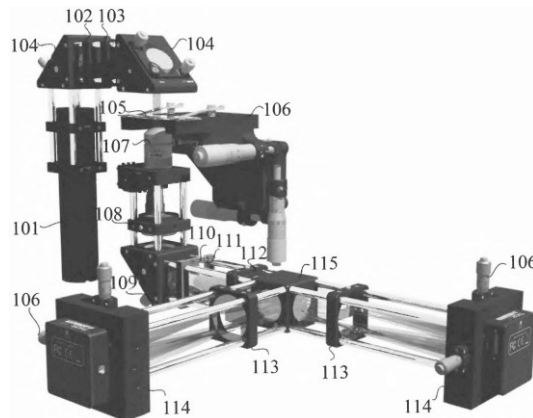
DE102021004043

Priority Date: 05/08/2021

**TECHNISCHE UNIVERSITÄT MÜNCHEN KOERPERSCHAFT DES
OEFFENTLICHEN RECHTS**

APPARATUS FOR MULTIBEAM INTERFEROMETRIC ARRAY MICROSCOPY

Digital holography microscope (DHM) for examining a sample, wherein the DHM is constructed in common path technology, wherein diffraction orders for interferometric multi-beam array microscopy (MAIM) are provided by spatial filters.



CLAIM 1. Digital holography microscope (DHM) for examining a sample, - wherein the DHM is constructed in Common Path technology, i.e. with a common beam path in only a single interference arm, - comprising a monochromatic laser light source arranged along an optical axis, - comprising a beam-shaping device arranged downstream of the laser light source on the optical axis-as viewed in the beam propagation direction, which comprises a beam expansion means and a collimator, - comprising a sample arranged downstream of the beam shaping device on the optical axis - as viewed in the beam propagation direction - in the operating state of the DHM, - comprising an imaging device arranged downstream of the sample on the optical axis - as viewed in the beam propagation direction, in particular an objective with a first lens-viewed in the beam propagation direction - arranged downstream of the objective, - comprising a diffraction device - viewed in the beam propagation direction - arranged downstream of the imaging device on the optical axis, - wherein the diffraction device comprises two diffraction gratings which are aligned with respect to one another, - comprising a second lens which is arranged downstream of the diffraction device on the optical axis-as viewed in the beam propagation direction, - comprising a spatial filter arranged in the focal plane of the second lens on the optical axis with circular openings centred on diffraction orders of the diffraction device, wherein a first circular opening is arranged and designed to filter out a reference beam and second openings are arranged and designed to filter out diffracted beams.

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

N9198

US20230037261

Priority Date: 29/07/2021

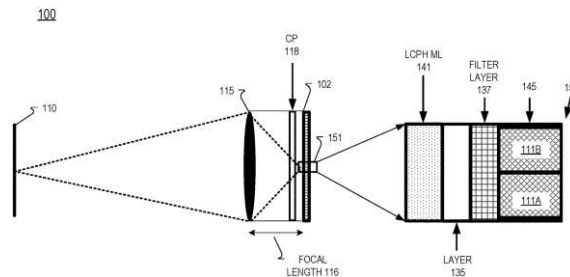
META PLATFORMS TECHNOLOGIES

SENSING WITH LIQUID CRYSTAL POLARIZATION HOLOGRAMS AND METASURFACE

Imaging systems, cameras, and image sensors of this disclosure include imaging pixels that include subpixels. Diffractive optical elements such as a metasurface lens layers or a liquid crystal polarization hologram (LCPH) are configured to focus image light to the subpixels of the imaging pixels.

DÉTECTION PAR HOLOGRAMMES DE POLARISATION À CRISTAUX LIQUIDES ET MÉTASURFACE

Des systèmes d'imagerie, des dispositifs de prise de vues et des capteurs d'image de la présente divulgation comprennent des pixels d'imagerie qui comprennent des sous-pixels. Des éléments optiques de diffraction, tels qu'une couche de lentille de métasurface ou un hologramme de polarisation de cristaux liquides (LCPH), sont conçus pour focaliser la lumière d'image sur les sous-pixels des pixels d'imagerie.



CLAIM 1. An image sensor comprising: imaging pixels including a first subpixel configured to sense image light and a second subpixel configured to sense the image light; and a patterned liquid crystal polarization hologram (LCPH) layer having microlens regions disposed over the imaging pixels, wherein the microlens regions are configured to focus the image light to the first subpixel and the second subpixel of the imaging pixels.

N9202

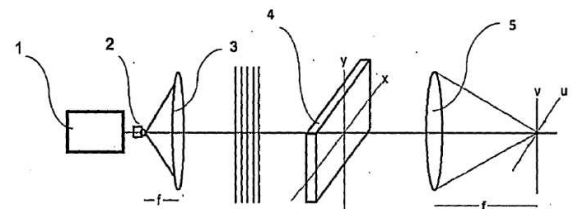
MX2019007937

Priority Date: 28/06/2019

INSTITUTO NAC DE ASTROFISICA OPTICA & ELECTRONICA STAR

HOLOGRAPHIC ENCRYPTION SYSTEM AND METHOD.

The present invention relates to the encryption of images using computational holography, creating primary key holograms in a light spatial modular (liquid crystal display) for data protection, formed by the sum of different objects for encryption. Also, it creates a secondary key hologram formed by the objects used in the primary key, except for the object deciphered to obtain the desired information, making it an efficient and safe method. It consists of a light source (1), microscope objective (2), collimating lens (3), SLM spatial light modulator (4), and lens concentrator (5). The light source is a laser (1), which emits a quasi-monochromatic light and has temporal coherence properties (monochromatic). Further, it comprises a) Reading of the object to be encrypted, b) creation of the hologram, c) construction of the primary holographic key (HP (6)), d) selection of the object to be encrypted, e) construction of the key secondary holographic (HS (7)), and f) information retrieval.



N9203

MX2019007936

Priority Date: 28/06/2019

INSTITUTO NAC DE ASTROFISICA OPTICA & ELECTRONICA STAR

OPTICAL SYSTEM FOR THE RECOVERY OF FLAT AND THREE-DIMENSIONAL OBJECTS THROUGH THE SUPERPOSITION OF WAVEFRONTS FROM PROPAGATED OBJECTS.

The present invention relates to an optical system for the recovery of flat and three-dimensional objects through the superposition of wavefronts from propagates objects. Herein, computer-generated holograms are useful to retrieve elements of a certain depth from a three-dimensional object presented



by many 2D planes with specific depth. The superposition of many wavefronts and their recovery by reconstructing the individual codes information is essential to produce a holographic device of high potential. Also, is useful for hybrid physical and digital systems as a complement to electronic security devices, viable as well as an information storage element.

N9218

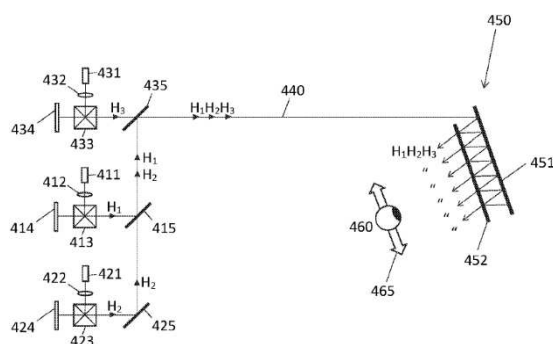
GB2609679

Priority Date: 10/12/2021

ENVISICS

COLOUR OPTIMISATION FOR DIRECT VIEW

A holographic projection system is arranged to receive 510 a colour image for projection, wherein the colour image comprises a first colour component and a second colour component. A first hologram of the first colour component and a second hologram of the second colour component are calculated, wherein the system is arranged to add 540 content of the second colour component to the first colour component before calculating the first hologram. The first hologram thus contains information of the first colour component and information of a portion of the second colour component. First and second holographic reconstructions are formed by respectively illuminating the first and second holograms with first and second colour light substantially at the same time 580. The first holographic reconstruction thus changes the chromaticity of the portion of the second colour component which was added to the first colour component. The system and associated method enable the power of more energetic colour components (e.g. blue light components) to be reduced by transferring some of the higher energy colour content into another, less energetic, colour channel (e.g. green) without being visually perceptible to the viewer. This enables the overall laser power output of the combined holographic projection to be reduced below a maximum permissible exposure, for viewer eye safety purposes.



CLAIM 1. A projection system arranged to:

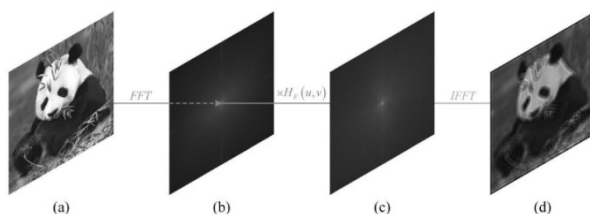
receive an image for projection, wherein the image is a colour image comprising a first colour component and a second colour component;

calculate a first hologram of the first colour component and a second hologram of the second colour component;

add content of the second colour component to the first colour component before calculating the first hologram such that the first hologram contains information of the first colour component and information of at least a portion of the second colour component; and form a first holographic reconstruction by illuminating the first hologram with first colour light and form a second holographic reconstruction by illuminating the second hologram with second colour light, wherein the first holographic reconstruction and second holographic reconstruction are formed at substantially the same time such that the first holographic reconstruction changes the chromaticity of the at least a portion of the second colour component.

HOLOGRAM RECONSTRUCTION METHOD AND SYSTEM BASED ON CONVOLUTIONAL NEURAL NETWORK

The invention relates to a hologram reconstruction method and a system based on a convolutional neural network, belonging to the field of image processing, wherein the method comprises the following steps: calculating a diffraction field of the target image in the backward propagation direction; constructing a convolutional neural network model; inputting the diffraction field into a convolution neural network model to obtain a pure phase hologram; calculating a reconstructed image at a (0 th, 1st) diffraction level of the phase-only hologram by adopting a high diffraction level angular spectrum method; determining a loss function based on amplitude information of the phase-only hologram reconstructed image and amplitude information of the target image; reversely propagating the loss function to update parameters of the convolutional neural network model; acquiring a training set; training a convolutional neural network model by adopting a training set; repeating the steps until the whole loss function is not reduced, and obtaining an updated convolutional neural network model; and inputting the image to be processed into the updated convolutional neural network model to obtain the pure phase hologram. The method can improve the reconstruction quality of the hologram.



CLAIM 1. A hologram reconstruction method based on a convolutional neural network, the reconstruction method comprising: calculating a diffraction field of the target image in the backward propagation direction; constructing a convolutional neural network model; inputting the diffraction field into the convolution neural network model to obtain a pure phase hologram; computing a reconstructed image at the (0 th, 1st) diffraction level of the phase-only hologram using a high diffraction level angular spectrum method; acquiring amplitude information of a reconstructed image of the phase-only hologram and amplitude information of a target image; determining a loss function based on the amplitude information of the phase-only hologram reconstructed image and the amplitude information of the target image; back propagating the loss function to update parameters of the convolutional neural network model; acquiring a training set; training the convolutional neural network model by adopting the training set; repeating the steps until the loss function is not reduced any more, and obtaining an updated convolutional neural network model; and inputting the image to be processed into the updated convolutional neural network model to obtain the pure phase hologram.

N9230

CN115678573

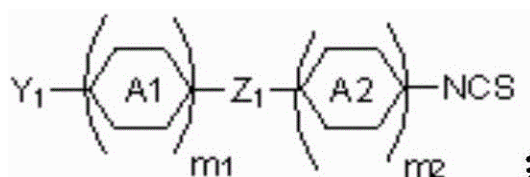
Priority Date: 10/11/2022

LIANCHUANG ELECTRONIC TECHNOLOGY

LIQUID CRYSTAL COMPOSITION AND HOLOGRAPHIC POLYMER DISPERSED LIQUID CRYSTAL GRATING

The invention discloses a liquid crystal composition, which comprises at least one of compounds in a general formula I, at least one of compounds in a general formula II and at least one of compounds in a general formula III. The invention also discloses a holographic polymer dispersed liquid crystal grating, which comprises a free radical photopolymerization compound, a cationic photopolymerization compound, a photoinitiator composition, a liquid crystal composition and an additive; wherein the photoinitiator composition comprises a photoinitiator and a photosensitizer, and the photoinitiator can simultaneously generate free radicals and cations and initiate corresponding polymer reaction under the irradiation of light. The liquid crystal composition with the liquid crystal phase being smectic phase and having larger birefringence and good stability is adopted, so that the liquid crystal and polymer phase separation efficiency can be promoted to be higher, and the diffraction efficiency and the light transmittance of the grating are improved.

CLAIM 1. A liquid crystal composition, comprising: at least one compound of the general formula I; and at least one compound of the general formula II; and at least one compound of formula III; the compound of the general formula I is: the compound of the general formula II is: the compound of the general formula III is: wherein, Y 1 Selected from alkyl and alkoxy with 3-9 carbon atoms, alkenyl, alkenyloxy and alkoxyalkyl with 3-9 carbon atoms, and one or more CH 2 A group may be replaced, or wherein one or more H atoms may be replaced by F atoms; y is 2 And Y 3 Each independently selected from the group consisting of alkyl and alkoxy groups having 3 to 9 carbon atoms, alkenyl, alkenyloxy and alkoxyalkyl groups having 3 to 9 carbon atoms, -F, -OCF 3 Any of -CN, and wherein one or more CH 2 -a group may be replaced, or wherein one or more H atoms may be replaced by F atoms; y is 4 And Y 5 Each independently selected from any one of alkyl and alkoxy with 3-9 carbon atoms, -F, -CN; m is a unit of 1 And m 2 Each or both represent 0, 1, 2 or 3, and m 1 +m 2 ≠0;m 3 And m 4 Independently or simultaneously represent 1 or 2; m is 5 Represents 2, 3 or 4; are each independently selected from Any one of the above; are each independently selected from Any one of the above; z 1 Is selected from-, and-COO-.



N9232

CN115661321

Priority Date: 07/12/2022

COAL SCIENTIFIC RESEARCH GENERAL INSTITUTE

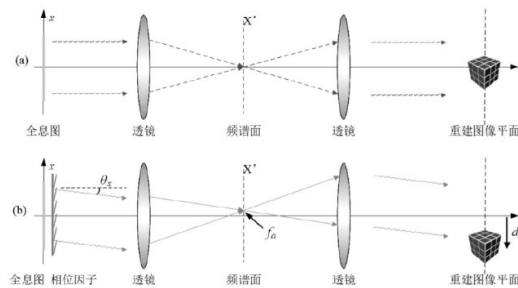
METHOD AND DEVICE FOR ACQUIRING HOLOGRAM, ELECTRONIC DEVICE AND MEDIUM

The application provides a method, a device, an electronic device and a medium for acquiring a hologram, wherein the method comprises the following steps: acquiring initial multi-source three-dimensional composition data of a target area, and acquiring a target three-dimensional image of the target area according to the initial multi-source three-dimensional composition data; acquiring N layer images of a target three-dimensional image and amplitude distribution of the layer images; acquiring a phase adjustment value of the layer image, and obtaining a first complex amplitude of the layer image according to the amplitude distribution and the phase adjustment value; and acquiring an initial hologram of the bedding image according to the first complex amplitude, and acquiring a target hologram of the target three-dimensional image based on all the initial holograms of the N bedding images. According to the method and the device, the experience of workers in the process of acquiring the related information of the target area is optimized, the error degree between the acquired related information of the target area and the actual scene of the target area is reduced, the noise of the hologram is reduced, and the quality of the hologram obtained based on the three-dimensional image is improved.

CLAIM 1. A method for obtaining a hologram, the method comprising: acquiring initial multi-source three-dimensional composition data of a target area, and acquiring a target three-dimensional image of the target area according to the initial multi-source three-dimensional composition data; acquiring N layer images of the target three-dimensional image and the amplitude distribution of the layer images; obtaining a phase adjustment value of the bedding surface image, and obtaining a first complex amplitude of the bedding surface image according to the amplitude distribution and the phase adjustment value; and acquiring the initial hologram of the layer image according to the first complex amplitude, and acquiring a target hologram of the target three-dimensional image based on all the initial holograms of the N layer images.

HOLOGRAM FREQUENCY SPECTRUM MANIPULATION METHOD BASED ON FREQUENCY SHIFT AND IMAGE SHIFT MULTIPLEXING

A hologram frequency spectrum manipulation method based on frequency shift and image shift multiplexing relates to the technical field of information optics. First, an image shift preprocessing operation is performed on a 3D input image, and an image shift hologram is solved. And secondly, carrying out frequency shift operation on the shift hologram to enable the hologram frequency spectrum of the 3D input image to realize any frequency shift in a frequency domain space. Meanwhile, the frequency shift operation also causes the displacement change of the space position of the reproduced image, and the space displacement of the reproduced image can be solved through the frequency shift amount and the recording distance of the 3D input image, so that the space displacement of the reproduced image can be matched with the displacement of the image shift preprocessing operation, and the change of the space position of the reproduced 3D image caused by the frequency shift operation can be compensated. By utilizing the image shift preprocessing operation and frequency shift operation multiplexing method, the random displacement operation of the hologram frequency spectrum on the Fourier plane is realized, and the spatial position of the 3D reproduced image corresponding to the hologram is not changed.



CLAIM 1. A method for hologram spectral manipulation based on frequency shift and image shift multiplexing, characterized by: and (3) carrying out frequency shift operation on the hologram, namely multiplying the original hologram point by a frequency shift phase factor, wherein the frequency shift operation process is represented by the following formula: $h_{fs}(x,y) = h_{ori}(x,y) \cdot \exp[-j2\pi(f_a x + f_b y)]$. wherein $h_{ori}(x,y)$ and $h_{fs}(x,y)$ are each representing the original hologram and its frequency shifted hologram, j represents the imaginary unit, f_a and f_b respectively representing the frequency shift quantity X and the longitudinal direction on the frequency domain; the frequency-shifted hologram spectrum is then represented as: $H_{fs}(f_x', f_y') = F\{h_{ori}(x,y) \cdot \exp[-j2\pi(f_a x + f_b y)]\} = H_{ori}(f_x + f_a, f_y + f_b)$. in the formula, H_{ori} and H_{fs} the frequency spectra of the original hologram and the frequency-shifted hologram are represented separately, the frequency spectrum of the original hologram being represented as $H_{ori}(f_x, f_y) = F\{h_{ori}(x,y)\}$; and f_a and f_b respectively representing the spatial frequency distribution of the frequency shift hologram and the original hologram in the X and Y directions on a Fourier plane, and converting the corresponding frequency shift amount into the spatial displacement amount of the Fourier plane, thereby determining the spatial displacement size of a frequency spectrum caused by frequency shift on the Fourier plane, and deriving the spatial displacement size by an Abbe imaging formula: $F_x = f_a \cdot L/\lambda, F_y = f_b \cdot L/\lambda$. wherein, F_x, F_y respectively represents different frequency shift f in x and y directions on a Fourier plane a, f_b the corresponding spatial distance, and L and λ represent the focal length of the fourier lens and the wavelength of the light source, respectively; solving the problem of the spatial dislocation of the reconstructed image caused by the change of the diffraction direction by utilizing image motion precompensation; wherein the diffraction direction changes by an angle θ_x, θ_y A reproduction distance z and a spatial displacement d_x, d_y The relationship between them is: according to the derivation of the grating diffraction formula, the phase factor and the frequency shift f_a, f_b and diffraction angle θ_x, θ_y The relationship between them is: wherein, P_x, P_y Phase factors representing frequency shifts in the X and Y directions, respectively; the method combines two formulas to obtain: therefore, a corresponding relationship between the frequency shift amount and the image shift precompensation offset is constructed: $d_x = f_a \lambda z, d_y = f_b \lambda z$. the image shift preprocessing operation needs to reversely compensate the 3D image space displacement caused by the frequency shift operation back to the original position, and the specific operation process is as follows: $h_{is}(x',y') = h_{ori}(x-d_x, y-d_y)$. wherein the image shift operation is embodied on the hologram spectrum as: $F\{h_{ori}(x-d_x, y-d_y)\} = F\{h_{ori}(x,y)\} \exp[-j2\pi(f_a' x + f_b' y)] = H_{ori}(f_x, f_y) \exp[-j2\pi(f_a' x + f_b' y)]$. wherein $h_{ori}(x,y)$ and $H_{ori}(f_x, f_y)$ respectively representing the original hologram and its spectral distribution, d_x and d_y representing the pre-compensated offset in the x and y directions, respectively, in the plane of the spatial domain hologram, f_a' and f_b' respectively, indicates that the image shift operation results in an influence of the hologram in the spectral space.

N9234

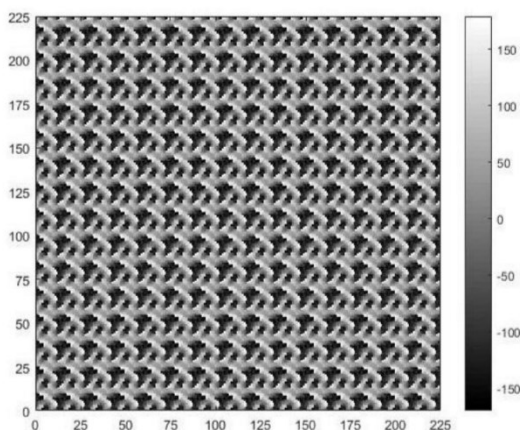
CN115657301

Priority Date: 12/08/2022

CHINA JILIANG UNIVERSITY

SUPER-SURFACE HOLOGRAPHIC GRATING FOR COMPUTED TOMOGRAPHY SPECTROMETER AND DESIGN METHOD THEREOF

The invention relates to a super-surface holographic grating for a computed tomography spectrometer and a design method thereof. Firstly, selecting a diffraction pattern, a system focal length and a detector target surface to determine initial structure parameters of the super-surface holographic grating, then obtaining phase compensation distribution according to the initial structure parameters, then simulating a small-period unit of the super-surface holographic grating by using simulation software to obtain a relational expression of the phase compensation and the surface unit structure diameter, and finally converting the phase distribution into a super-surface holographic grating array structure through the relational expression. The super-surface holographic grating designed by the method can realize the microminiaturization of the spectrometer and generate better diffraction effect. The design method utilizes a phase optimization algorithm to convert the discrete phase distribution of the super-surface holographic grating into continuous phase distribution, and improves the accuracy of simulating the far-field response of the super-surface holographic grating.



CLAIM 1. The design method of the super-surface holographic grating for the computed tomography spectrometer is characterized by comprising the following steps of: s1: selecting a diffraction pattern, a system focal length and a detector target surface to determine initial structure parameters of the super-surface holographic grating; s2: obtaining phase compensation distribution according to the initial structure parameters, a transmission phase principle and a phase hologram optimization algorithm; s3: simulating the small-period unit of the super-surface holographic grating by using simulation software according to the initial structure parameters to obtain a relational expression of phase compensation and surface unit structure diameter; s4: and converting the phase distribution into a super-surface holographic grating array structure according to a relational expression of the phase compensation and the surface unit structure diameter.

IHMA - FEBRUARY 2023 - 75 ISSUED PATENTS - PAGE 1

HOLOGRAMS - 7 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P36082	WO	202305208	02/02/2023	SVG TECHNOLOGY GROUP	CN	29/07/2021	CN2021000864986	WO202305208 CN115674924	DEEP-GRAIN PATTERN TRANSFER FILM, TRANSFER MATERIAL, AND PREPARATION METHOD THEREFOR	
P36104	EP	4138053	22/02/2023	ANDREWS & WYKEHAM	GB	20/08/2021	GB2021000011974	EP4138053 US20230056232 GB202111974 GB202212138	OPTICAL AUTHENTICATION STRUCTURE WITH AUGMENTED REALITY FEATURE	
P36114	CN	218505568	21/02/2023	WUHAN HUAGONG IMAGE TECHNOLOGY & DEVELOPMENT	CN	01/06/2021	CN2021001211690	CN218505568U	GILDING FILM AND WATER TRANSFER PRINTING PAPER	
P36115	CN	218505546	21/02/2023	SHANGHAI YAOMAO NEW MATERIAL TECHNOLOGY	CN	19/10/2022	CN2022002754480	CN218505546U	ANTI-COUNTERFEITING WATER DECAL PAPER	
P36121	CN	218447062	03/02/2023	SHENZHEN KUN HONG TECHNOLOGY	CN	02/09/2022	CN2022002345009	CN218447062U	HOLOGRAPHIC ANTI-COUNTERFEITING FILM AND ANTI-COUNTERFEITING PACKAGING BOX	
P36125	CN	218430629	03/02/2023	GUANGZHOU KULUO FUMO NEW MATERIAL TECHNOLOGY	CN	06/07/2022	CN2022001723702	CN218430629U	NOVEL DEALUMINIZATION-FREE HOLLOW-OUT GOLD STAMPING FILM	
P36127	CN	115691299	03/02/2023	SHENZHEN SHENDA AURORA TECHNOLOGY	CN	11/11/2022	CN2022001410505	CN115691299	HOLOGRAPHIC ANTI-COUNTERFEIT LABEL WITH INCOHERENT LIGHT FOR REPRODUCING MULTIPLE DEPTH IMAGES AND MANUFACTURING METHOD THEREOF	

VARIOUS OPTICAL EFFECTS - 18 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P36064	WO	202323453	23/02/2023	CRANE	US	16/08/2021	US2021063233621	WO202323453	MICRO-OPTIC SECURITY DEVICE WITH ENHANCED WET-HARVEST RESISTANCE	Passport - Microlens - Watermark
P36065	WO	202322201	23/02/2023	TOPPAN PRINTING	JP	19/08/2021	JP2021000133833	WO202322201	RELIEF STRUCTURE-BEARING TRANSFER FOIL	Passport
P36066	WO	202321128	23/02/2023	SICPA	EP	19/08/2021	EP2021000192247	WO202321128	METHODS FOR PRODUCING SECURITY FEATURES EXHIBITING ONE OR MORE INDICIA	
P36069	WO	202320480	23/02/2023	CHINA BANKNOTE PRINTING & MINTING ZHONGCHAO SPECIAL SECURITY TECHNOLOGY	CN	19/08/2021	CN2021000956860	WO202320480	ANTI-COUNTERFEITING IMAGE ELEMENT AND ANTI-COUNTERFEITING PRODUCT	Microlens
P36072	WO	202316670	16/02/2023	GIESECKE & DEVRIENT MOBILE SECURITY	DE	11/08/2021	DE202110004131	WO202316670	METHOD FOR THE PRODUCTION OF A SECURITY FEATURE, SECURITY FEATURE FOR A DATA MEDIUM, DATA MEDIUM, AND LAMINATION SHEET	Microlens
P36073	WO	202316668	16/02/2023	GIESECKE & DEVRIENT MOBILE SECURITY	DE	11/08/2021	DE202110004132	WO202316668 DE102021004132	SECURITY FEATURE FOR A DATA MEDIUM, AND DATA MEDIUM	
P36078	WO	202311757	09/02/2023	GIESECKE & DEVRIENT CURRENCY TECHNOLOGY	DE	04/08/2021	DE202110004024	WO202311757 DE102021004024	EFFECT PIGMENT, MANUFACTURING METHOD, VALUABLE DOCUMENT AND PRINTING INK	
P36080	WO	202305997	02/02/2023	CHINA BANKNOTE PRINTING & MINTING ZHONGCHAO SPECIAL SECURITY TECHNOLOGY	CN	28/07/2021	CN2021000859283	WO202305997 CN115674932	ANTI-COUNTERFEITING ELEMENT, PRODUCT, AND METHOD FOR MANUFACTURING ANTI-COUNTERFEITING ELEMENT	
P36081	WO	202305996	02/02/2023	CHINA BANKNOTE PRINTING & MINTING ZHONGCHAO SPECIAL SECURITY TECHNOLOGY	CN	28/07/2021	CN2021000859642	WO202305996 CN115674933	CUSTOMIZABLE ANTI-COUNTERFEITING ELEMENT AND ANTI-COUNTERFEITING PRODUCT	Microlens
P36091	MX	2019007094	15/12/2020	EDUARDO DIAZ LOPEZ	MX	14/06/2019	MX2019000007094	MX2019007094	POLYMERIC REFLECTIVE SAFETY FILM WITH AN INVULNERABILITY ELEMENT WITH SUPERIMPOSED SELF-AUTHENTICATION SYMBOLS.	
P36100	JP	2023014430	27/01/2023	NATIONAL PRINTING BUREAU	JP	07/07/2022	JP2022000109400	JP2023014430	READING APPARATUS, READING METHOD, AND READING SOFTWARE FOR LATENT IMAGE PRINTED MATERIAL	Passport
P36101	JP	2023014429	27/01/2023	NATIONAL PRINTING BUREAU	JP	07/07/2022	JP2022000109399	JP2023014429	LATENT IMAGE PRINTED MATERIAL, METHOD FOR PRODUCING SAME, AND SOFTWARE FOR PRODUCING SAME	Passport
P36102	IN	202331007154	10/02/2023	AMITY UNIVERSITY KOLKATA AMITY UNIVERSITY PUNJAB	IN	03/02/2023	IN2023031007154	IN202331007154	ANISOTROPIC OPTICAL DEVICE	

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VARIOUS OPTICAL EFFECTS - 18 PATENTS (continuation)

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P36108	EP	4129709	08/02/2023	ALISE DEVICES GIESECKE & DEVRIENT CURRENCY TECHNOLOGY	EP	04/08/2021	EP2021000189708	EP4129709 US20230038961	SEMI-FINISHED PRODUCT, SECURITY ELEMENT, METHODS OF PRODUCING THEM AND DOCUMENT OF VALUE	
P36109	EP	4125077	01/02/2023	SECURIKETT ULRICH & HORN	EP	26/07/2021	EP2021000187818	EP4125077 WO202306752	FLAT SEALING ELEMENT	
P36118	CN	218466207	10/02/2023	DONGGUAN XINRUIYUAN ANTI COUNTERFEITING TECHNOLOGY	CN	22/10/2022	CN2022002810276	CN218466207U	HIGH-STRENGTH LASER TRANSFER PAPER	
P36124	CN	218430632	03/02/2023	SUZHOU SHILES ELECTRICAL MATERIALS	CN	21/10/2022	CN2022002788191	CN218430632U	VARIABLE THERMOPRINTING FILM	
P36135	CN	115648832	31/01/2023	CHINA BANKNOTE PRINTING & MINT CHINA BANKNOTE SECURITY PRINTING TECHNOLOGY RESEARCH INSTITUTE	CN	02/11/2022	CN2022001360874	CN115648832	SECURITY DEVICE AND SECURITY DOCUMENT	

NON SECURITY HOLOGRAMS - 50 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
N9185	WO	202322270	23/02/2023	PRAZEN	WO	20/08/2021	WO2021110000138	WO202322270	AUGMENTED REALITY DEVICE	
N9186	WO	202321795	23/02/2023	FUJIFILM	JP	17/08/2021	JP2021000132920	WO202321795	LIGHT SOURCE CONTROL DEVICE, OPERATION METHOD FOR LIGHT SOURCE CONTROL DEVICE, OPERATION PROGRAM FOR LIGHT SOURCE CONTROL DEVICE, AND DIGITAL HOLOGRAPHY SYSTEM	
N9187	WO	202319196	16/02/2023	UNIVERSITY OF ARIZONA	US	11/08/2021	US2021063231996	WO202319196	CONTROL OF PROBE BEAM DURATION IN SINGLE WAVELENGTH MONITORING OF HOLOGRAM DIFFRACTION EFFICIENCY	
N9188	WO	202316832	16/02/2023	CARL ZEISS SMT	DE	13/08/2021	DE202110208880	WO202316832 DE102021208880	DIFFRACTIVE OPTICAL ELEMENT FOR GENERATING A TEST WAVE	
N9189	WO	202316254	16/02/2023	BOE TECHNOLOGY GROUP	CN	12/08/2021	CN2021000924489	WO202316254 CN115705006	HOLOGRAPHIC DISPLAY DEVICE AND DISPLAY METHOD THEREOF	
N9190	WO	202311825	09/02/2023	INTERDIGITAL PATENT HOLDINGS	EP	03/08/2021	EP2021000306081	WO202311825	HOLOGRAPHIC DECODING AND DISPLAYING METHODS AND DEVICES FOR EXCHANGING CONFIGURATION DATA	
N9191	WO	202308576	02/02/2023	DAI NIPPON PRINTING	JP	30/07/2021	JP2021000126278	WO202308576 JP2023020886	COMBINER, HEAD-UP DISPLAY, MOBILE BODY, AND AUTOMOBILE	
N9192	WO	202307230	02/02/2023	WAYRAY	WO	30/07/2021	WO2021560000977	WO202307230	COMPACT HOLOGRAPHIC HEAD-UP DISPLAY DEVICE	
N9193	US	20230059372	23/02/2023	IBM	US	17/08/2021	US2021017445288	US20230059372	HOLOGRAPHIC INTERFACE FOR VOICE COMMANDS	
N9194	US	20230051631	16/02/2023	GM GLOBAL TECHNOLOGY OPERATIONS	US	11/08/2021	US2021017400075	US20230051631 DE10202110602	HOLOGRAPHIC DISPLAY SYSTEM	
N9195	US	20230050636	16/02/2023	MEDIVIEW XR	US	11/08/2021	US2021063231866	US20230050636 WO202318871	AUGMENTED REALITY SYSTEM AND METHODS FOR STEREOSCOPIC PROJECTION AND CROSS-REFERENCING OF LIVE X-RAY FLUOROSCOPIC AND COMPUTED TOMOGRAPHIC C-ARM IMAGING DURING SURGERY	
N9196	US	20230047873	16/02/2023	AMETHYSTUM STORAGE TECHNOLOGY	CN	12/08/2021	CN2021000924740	US20230047873	OPTICAL SYSTEM FOR HOLOGRAPHIC STORAGE AND DESIGN METHOD FOR FRESNEL LENS AND META LENS THEREOF	
N9197	US	20230043791	09/02/2023	INTEL	US	05/10/2022	US2022017960663	US20230043791	HOLOGRAPHIC IMAGE PROCESSING WITH PHASE ERROR COMPENSATION	
N9198	US	20230037261	02/02/2023	META PLATFORMS TECHNOLOGIES	US	29/07/2021	US2021063226916	US20230037261 WO202309838 TW202307523	SENSING WITH LIQUID CRYSTAL POLARIZATION HOLOGRAMS AND METASURFACE	
N9199	US	20230036418	02/02/2023	DIMENSIONAL HOLO IMAGING	US	27/07/2021	US2021063226073	US20230036418 CA3169285	SYSTEMS AND METHODS FOR GENERATING MULTI-LAYER HOLOGRAM PROJECTIONS	

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N9200	US	11579450	14/02/2023	META PLATFORMS TECHNOLOGIES	US	13/08/2020	US2020016992791	US11579450	HOLOGRAPHIC DIFFUSER DISPLAY	
N9201	TR	2022006643	23/05/2022	BATMAN MERKEZ MESLEKI VE TEKNİK ANADOLU LİSESİ CUMHURİYET HAMZA DAYAN	TR	24/04/2022	TR2022000006643	TR2022006643	HOLOGRAPHIC SCREEN DESIGN THAT PROVIDES EXPERIENCE OF AUGMENTED REALITY ON DISASTER RISK MAPS	
N9202	MX	2019007937	29/12/2020	INSTITUTO NAC DE ASTROFISICA OPTICA & ELECTRONICA STAR	MX	28/06/2019	MX2019000007937	MX2019007937	HOLOGRAPHIC ENCRYPTION SYSTEM AND METHOD.	
N9203	MX	2019007936	29/12/2020	INSTITUTO NAC DE ASTROFISICA OPTICA & ELECTRONICA STAR	MX	28/06/2019	MX2019000007936	MX2019007936	OPTICAL SYSTEM FOR THE RECOVERY OF FLAT AND THREE-DIMENSIONAL OBJECTS THROUGH THE SUPERPOSITION OF WAVEFRONTS FROM PROPAGATED OBJECTS.	
N9204	KR	20230023938	20/02/2023	QMHX	KR	11/08/2021	KR2021000105837	KR20230023938	DIRECT VIEW REAL HOLOGRAM 3 D DISPLAY SYSTEM	
N9205	KR	20230022075	14/02/2023	GOLD AVENUE	KR	25/10/2021	KR2021000142797	KR20230022075	JEWELRY PENDANT GENERATING HOLOGRAPHIC PATTERN AND MANUFACTURING METHOD THEREOF	
N9206	KR	20230020646	13/02/2023	LG CHEM	KR	04/08/2021	KR2021000102285	KR20230020646	METHOD FOR REPLICATING HOE AND HOE REPLICATED THEREBY	
N9207	KR	20230018834	07/02/2023	HOLOLAB	KR	30/07/2021	KR2021000100801	KR20230018834	HOLOGRAM REPLICATION METHOD AND SYSTEM USING BIAxIAL (XY) SCANNING	
N9208	KR	20230018787	07/02/2023	KOREA ELECTRONICS TECHNOLOGY INSTITUTE	KR	30/07/2021	KR2021000100715	KR20230018787	VARIABLE DEPTH HOLOGRAPHIC DISPLAY DEVICE PROVIDING EXTENDED EYEBOX	
N9209	KR	20230018786	07/02/2023	HOLOLAB	KR	30/07/2021	KR2021000100712	KR20230018786	METHOD AND SYSTEM FOR MANUFACTURING A SUNVISOR HOLOGRAPHIC HEAD-UP DISPLAY	
N9210	KR	20230015799	31/01/2023	KWAK MI-JIN	KR	23/07/2021	KR2021000097399	KR20230015799	METHOD OF PROVIDING MOVABLE HOLOGRAM CONTENTS IN VEHICLE SUCH AS A BUS AND A SYSTEM THEREOF	
N9211	KR	20230012778	26/01/2023	LG CHEM	KR	16/07/2021	KR2021000093468	KR20230012778	METHOD FOR PRODUCING ADDITIVE FOR PHOTOPOLYMER, METHOD FOR PRODUCING PHOTOPOLYMER COMPOSITION, AND HOLOGRAPHIC RECORDING METHOD	
N9212	KR	20230012157	26/01/2023	EUNWOOJUNG	KR	15/07/2021	KR2021000092592	KR20230012157	QUASI-HOLOGRAM PLEXUS SYSTEM	
N9213	JP	2023020742	09/02/2023	DAI NIPPON PRINTING	JP	30/07/2021	JP2021000126277	JP2023020742	COMBINER, HEADS-UP DISPLAY, AND MOVING BODY	
N9214	JP	2023020741	09/02/2023	DAI NIPPON PRINTING	JP	30/07/2021	JP2021000126276	JP2023020741	HOLOGRAM SHEET, COMBINER, HEADS-UP DISPLAY, AND MOVING BODY	
N9215	JP	2023020420	09/02/2023	DAI NIPPON PRINTING	JP	30/07/2021	JP2021000125777	JP2023020420	HOLOGRAM SHEET WITH DECORATIVE, DISPLAY DEVICE WITH DECORATIVE, MEMBER FOR MOVING BODY, AND EXTERNAL INFORMATION DISPLAY SYSTEM	
N9216	JP	2023020411	09/02/2023	DAI NIPPON PRINTING	JP	30/07/2021	JP2021000125761	JP2023020411	COMBINER, HEADS-UP DISPLAY, AND MOVING BODY	
N9217	JP	2023020220	09/02/2023	DAI NIPPON PRINTING	JP	30/07/2021	JP2021000125477	JP2023020220	COMBINER, HEADS-UP DISPLAY, AND MOVING BODY	
N9218	GB	2609679	15/02/2023	ENVISICS	GB	10/12/2021	GB2021000017867	GB202117867 GB2609679	COLOUR OPTIMISATION FOR DIRECT VIEW	
N9219	EP	4138077	22/02/2023	AMETHYSTUM STORAGE TECHNOLOGY	CN	12/08/2021	CN2021000923861	EP4138077 US20230051058	OPTICAL TRACK FORMAT FOR HOLOGRAPHIC STORAGE OPTICAL DISC AND ENCODING METHOD THEREOF	
N9220	DE	102021004043	09/02/2023	TECHNISCHE UNIVERSITÄT MÜNCHEN KOERPERSCHAFT DES OEFFENTLICHEN RECHTS	DE	05/08/2021	DE202110004043	DE102021004043	APPARATUS FOR MULTIBEAM INTERFEROMETRIC ARRAY MICROSCOPY	
N9221	CN	218497763	17/02/2023	ANHUI FANGMENG SOFTWARE TECHNOLOGY	CN	11/07/2022	CN2022001767087	CN218497763U	REAL ESTATE THREE-DIMENSIONAL HOLOGRAPHIC INTERACTIVE DISPLAY DEVICE	
N9222	CN	218455835	07/02/2023	NO 12 DIVISION MIDDLE SCHOOL OF THE XINJIANG PRODUCTION & CONSTRUCTION CORPS	CN	21/10/2022	CN2022002774430	CN218455835U	HOLOGRAPHIC PROJECTOR FOR ILLUMINATION	
N9223	CN	218446641	03/02/2023	SHENZHEN YUXUAN PHOTOELECTRIC TECHNOLOGY	CN	31/10/2022	CN2022002887241	CN218446641U	CAPACITIVE ELECTROMAGNETIC HOLOGRAPHIC PROJECTION TOUCH SCREEN	

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N9224	CN	218434031	03/02/2023	SHENZHEN KUNHONG PRINTING	CN	01/09/2022	CN2022002334094	CN218434031U	HOLOGRAPHIC THERMOPRINTING COMPOSITE EQUIPMENT	
N9225	CN	218413220	31/01/2023	XISHUO SHANGHAI ELECTRONIC TECHNOLOGY	CN	13/10/2022	CN2022002692750	CN218413220U	360 HOLOGRAPHIC SHOW CUPBOARD OF DEGREE	
N9226	CN	218413219	31/01/2023	XISHUO SHANGHAI ELECTRONIC TECHNOLOGY	CN	13/10/2022	CN2022002692740	CN218413219U	PORTABLE HOLOGRAPHIC PROJECTION DEVICE	
N9227	CN	115700407	07/02/2023	HUBEI JIUZHIYANG INFRARED SYSTEM	CN	17/11/2022	CN2022001440674	CN115700407	OFF-AXIS THREE-MIRROR OPTICAL SYSTEM COMMON-REFERENCE DEBUGGING METHOD AND DEVICE BASED ON COMPUTER GENERATED HOLOGRAPHY	
N9228	CN	115690252	03/02/2023	CHINESE PEOPLE S LIBERATION GROUND FORCE ARMORED TROOP ACADEMY	CN	15/11/2022	CN2022001429236	CN115690252	HOLOGRAM RECONSTRUCTION METHOD AND SYSTEM BASED ON CONVOLUTIONAL NEURAL NETWORK	
N9229	CN	115685696	03/02/2023	SHENZHEN LOCHN OPTICS HI TECHNOLOGY	CN	10/11/2022	CN2022001406460	CN115685696	VOLUME HOLOGRAPHIC GRATING AND EXPOSURE ANGLE DETERMINING METHOD, MANUFACTURING METHOD AND SYSTEM THEREOF	
N9230	CN	115678573	03/02/2023	LIANCHUANG ELECTRONIC TECHNOLOGY	CN	10/11/2022	CN2022001405471	CN115678573	LIQUID CRYSTAL COMPOSITION AND HOLOGRAPHIC POLYMER DISPERSED LIQUID CRYSTAL GRATING	
N9231	CN	115674943	03/02/2023	SHENZHEN YUTONG PACKAGING SCIENCE & TECHNOLOGY	CN	28/07/2021	CN2021000860195	CN115674943	TRANSFER FILM AND METHOD FOR MANUFACTURING SAME	
N9232	CN	115661321	31/01/2023	COAL SCIENTIFIC RESEARCH GENERAL INSTITUTE	CN	07/12/2022	CN2022001566809	CN115661321	METHOD AND DEVICE FOR ACQUIRING HOLOGRAM, ELECTRONIC DEVICE AND MEDIUM	
N9233	CN	115657434	31/01/2023	BEIJING UNIVERSITY OF TECHNOLOGY	CN	31/10/2022	CN2022001349772	CN115657434	HOLOGRAM FREQUENCY SPECTRUM MANIPULATION METHOD BASED ON FREQUENCY SHIFT AND IMAGE SHIFT MULTIPLEXING	
N9234	CN	115657301	31/01/2023	CHINA JILIANG UNIVERSITY	CN	12/08/2022	CN2022000971825	CN115657301	SUPER-SURFACE HOLOGRAPHIC GRATING FOR COMPUTED TOMOGRAPHY SPECTROMETER AND DESIGN METHOD THEREOF	