

FP:(WayRay)

15 results Offices all Languages en Stemming true Single Family Member false

Sort: Relevance

Per page: 200

View: All

1 / 1

Machine translation

1. [20190155028](#) HOLOGRAPHIC HEADS UP DISPLAY

US - 23.05.2019

Int.Class [G02B 27/01](#) Appl.No 16137407 Applicant WayRay SA Inventor Mikhail Svarichevsky

Apparatuses and systems associated with holographic heads up display design for vehicles are disclosed herein. In embodiments, an apparatus may include projection mechanism to produce an arrangement of light and project the arrangement of light on a first side of a combiner. The combiner may include a holographic transmissive combiner that receives the arrangement of light on the first side of the combiner and produces an image on a second side of the combiner that is directed to an observer. Other embodiments may be described and/or claimed.

2. [20170329143](#) HEADS-UP DISPLAY WITH VARIABLE FOCAL PLANE

US - 16.11.2017

Int.Class [G02B 27/01](#) Appl.No 15588555 Applicant WAYRAY AG Inventor Mikhail Svarichevsky

A heads up display system with a variable focal plane includes a projection device to generate light representative of at least one virtual graphic, an imaging matrix to project the light representative of the at least one virtual graphic on at least one image plane, a display device to display the at least one virtual graphic on the at least one image plane, and a translation device to dynamically change a position of the imaging matrix relative to the display device based, at least in part, on a predetermined operational parameter to dynamically vary a focal distance between the display device and the at least one image plane.

3. [3696597](#) HEADS-UP DISPLAY WITH VARIABLE IMAGE PLANE

EP - 19.08.2020

Int.Class [G02B 27/01](#) Appl.No 20166743 Applicant WAYRAY AG Inventor SVARICHEVSKY MIKHAIL

A heads up display system with a variable focal plane includes a projection device to generate light representative of at least one virtual graphic, an imaging matrix to project the light representative of the at least one virtual graphic on at least one image plane, a display device to display the at least one virtual graphic on the at least one image plane, and a translation device to dynamically change a position of the imaging matrix relative to the display device based, at least in part, on a predetermined operational parameter to dynamically vary a focal distance between the display device and the at least one image plane.

4. [1020190038408](#) LAMINATED HOLOGRAPHIC DISPLAY AND MANUFACTURE THEREOF

KR - 08.04.2019

Int.Class [G03H 1/00](#) Appl.No 1020180115686 Applicant 웨이레이 에스에이 Inventor VERA YA POPKOVAVERA YA POPKOVA

The present invention relates to a method [200] for manufacturing a laminated holographic display [100], comprising: a step [201] of providing a display precursor [100-1]; a step [203] of laminating the display precursor [100-1] to obtain a display laminate [100-2]; and a step [205] of recording a hologram [111] in the display laminate [100-2] by applying a light beam to unrecorded photopolymer film layers [117, 117-1] of the display laminate [100-2] to obtain recorded photopolymer film layers [117, 117-2] comprising the hologram [111]. The hologram displayed by the recorded photopolymer film layers exhibits superior optical properties, such as high optical resolution, advanced optical diffraction properties, defined wavelength, true color properties, and/or the absence of an orange peel effect in the hologram. COPYRIGHT KIPO 2019

5. [20190101865](#) LAMINATED HOLOGRAPHIC DISPLAY AND MANUFACTURING THEREOF

US - 04.04.2019

Int.Class [G03H 1/02](#) Appl.No 16127881 Applicant Vera Ya. Popkova Inventor Vera Ya. Popkova

The present disclosure refers to a method [200] for producing a laminated holographic display [100] comprising the following steps; providing [201] a display precursor [100-1], wherein the display precursor [100-1] comprises a first glass layer [113], a second glass layer [115], an unrecorded photopolymer film layer [117, 117-1], which is arranged between the first glass layer [113] and the second glass layer [115], and a polymer film layer [119], which is arranged between the unrecorded photopolymer film layer [117, 117-1] and the second glass layer [115], wherein the providing step [201] is performed in the absence of ambient light; laminating [203] the display precursor [100-1] to obtain a display laminate [100-2], wherein the laminating step [203] is performed in the absence of ambient light; and recording [205] a hologram [111] in the display laminate [100-2] by applying a light beam to the unrecorded photopolymer film layer [117, 117-1] of the display laminate [100-2] to obtain a recorded photopolymer film layer [117, 117-2] comprising the hologram [111], wherein the recording step [205] is performed in the absence of ambient light.

6. [3461636](#) WINDSHIELD AND PROCESS FOR MANUFACTURING WINDSHIELD WITH INTERGRATED PHOTOPOLYMERS

EP - 03.04.2019

Int.Class [B32B 17/10](#) Appl.No 17194079 Applicant WAYRAY SA Inventor POPKOVA VERA YA

The present disclosure refers to a method [200] for producing a laminated holographic display [100] comprising the following steps; providing [201] a display precursor [100-1], wherein the display precursor [100-1] comprises a first glass layer [113], a second glass layer [115], an unrecorded photopolymer film layer [117, 117-1], which is arranged between the first glass layer [113] and the second glass layer [115], and a polymer film layer [119], which is arranged

between the unrecorded photopolymer film layer [117, 117-1] and the second glass layer [115], wherein the providing step [201] is performed in the absence of ambient light; laminating [203] the display precursor [100-1] to obtain a display laminate [100-2], wherein the laminating step [203] is performed in the absence of ambient light; and recording [205] a hologram [111] in the display laminate [100-2] by applying a light beam to the unrecorded photopolymer film layer [117, 117-1] of the display laminate [100-2] to obtain a recorded photopolymer film layer [117, 117-2] comprising the hologram [111], wherein the recording step [205] is performed in the absence of ambient light.

7. **2019066844** LAMINATE HOLOGRAPHIC DISPLAY MANUFACTURING METHOD, AND LAMINATE HOLOGRAPHIC DISPLAY JP - 25.04.2019

Int.Class G03H 1/02 Appl.No 2018180554 Applicant WAYRAY SA Inventor VERA YA POPKOVA

PROBLEM TO BE SOLVED: To provide a laminate holographic display which displays a hologram having advantageous optical characteristics.

SOLUTION: A laminate holographic display manufacturing method includes the steps of: providing a display preliminary body 100 including a first glass layer 113, a second glass layer 115, an unrecorded photopolymer film layer 117 placed between the first glass layer 113 and the second glass layer 115, and a polymer film layer 119 placed between the unrecorded photopolymer film layer 117 and the second glass layer 115; laminating the display preliminary body 100 under the absence of ambient light in order to obtain a display laminate; and recording a hologram in the display preliminary body 100 by irradiating the unrecorded photopolymer film layer 117 with a light beam in order to obtain a recorded photopolymer film layer 117 including the hologram.

SELECTED DRAWING: Figure 2

COPYRIGHT: (C)2019,JP06INPIT

8. **109581659** LAMINATED HOLOGRAPHIC DISPLAY AND METHOD FOR MANUFACTURING THEREOF CN - 05.04.2019

Int.Class G02B 27/01 Appl.No 20181128383.5 Applicant WAYRAY SA Inventor POPKOVA VERA YA

The present disclosure refers to a laminated holographic display and a method for manufacturing thereof mainly by: providing [201] a display precursor [100-1], wherein the display precursor [100-1] comprises a first glass layer [113], a second glass layer [115], an unrecorded photopolymer film layer [117, 117-1], which is arranged between the first glass layer [113] and the second glass layer [115], and a polymer film layer [119], which is arranged between the unrecorded photopolymer film layer [117, 117-1] and the second glass layer [115], wherein the providing step [201] is performed in the absence of ambient light; laminating [203] the display precursor [100-1] to obtain a display laminate [100-2], wherein the laminating step [203] is performed in the absence of ambient light; and recording [205] a hologram [111] in the display laminate [100-2] by applying a light beam to the unrecorded photopolymer film layer [117, 117-1] of the display laminate [100-2] to obtain a recorded photopolymer film layer [117, 117-2] comprising the hologram [111], wherein the recording step [205] is performed in the absence of ambient light.

9. **20200183177** TORSION SPRING SPECKLE DIFFUSER US - 11.06.2020

Int.Class G02B 27/48 Appl.No 16604520 Applicant WAYRAY SA Inventor Aleksandr BOBRYSEV

Devices for applying vibration and/or sliding motion to speckle diffusers are provided. A speckle diffusion device comprises at least one speckle diffuser element, one free form torsion spring with an axis of rotation, and at least one actuator. One end of the torsion spring includes an interaction element to interact with the actuator. The actuator actuates motion of the speckle diffusion element via the interaction element attached to the spring. The spring may also limit motion of the speckle diffuser element. The speckle diffusion device may be implemented or employed in various optical systems/devices. The speckle diffusion device may be easily adapted to accommodate various systems with various dimensions and geometry. Other embodiments may be disclosed and/or claimed.

10. **3679409** TORSION SPRING SPECKLE DIFFUSER EP - 15.07.2020

Int.Class G02B 5/02 Appl.No 18807397 Applicant WAYRAY AG Inventor BOBRYSEV ALEKSANDR

Devices for applying vibration and/or sliding motion to speckle diffusers are provided. A speckle diffusion device comprises at least one speckle diffuser element, one free form torsion spring with an axis of rotation, and at least one actuator. One end of the torsion spring includes an interaction element to interact with the actuator. The actuator actuates motion of the speckle diffusion element via the interaction element attached to the spring. The spring may also limit motion of the speckle diffuser element. The speckle diffusion device may be implemented or employed in various optical systems/devices. The speckle diffusion device may be easily adapted to accommodate various systems with various dimensions and geometry. Other embodiments may be disclosed and/or claimed.

11. **106233184** METHOD OF DISPLAYING INFORMATION THROUGH AUTOMOBILE WINDSHIELD, AND DEVICE FOR IMPLEMENTING SAME CN - 14.12.2016

Int.Class G02B 27/01 Appl.No 201480077680.5 Applicant LTD LIABILITY COMPANY WAYRAY Inventor PONOMAREV VITALIJ ANDREEVICH

The invention relates to the field of indication systems for drivers of vehicles and automobiles. The essence of the invention consists in proposing to unite two optical systems for displaying information: a virtual image display system and a real image display system. In order to provide the maximum amount of information and safety while driving, the present invention proposes controlling the amount of and content of information displayed to a vehicle driver on the basis of the speed of the vehicle, and also proposes selecting an optical system for displaying information in order to minimize the risk of an accident. The proposed invention solves problems related to simultaneously providing high image quality and safety while driving by means of uniting two systems and by means of controlling the amount of information displayed. The technical result of the claimed invention consists in providing for safe automobile driving and high quality of displayed information by means of the combined use of systems on the basis of the speed of the vehicle, and also consists in providing the driver of a vehicle with the maximum possible amount of information with the minimum risk of an accident occurring.

12. **20170102550** METHOD OF DATA DISPLAY THROUGH THE VEHICLE WINDSCREEN AND DEVICE FOR ITS UP - 13.04.2017

IMPLEMENTATION

Int.Class [G09G 5/00](#) Appl.No 15128928 Applicant WAYRAY AG Inventor Vitaly Andreevich Ponomarev

Indication systems for the drivers of vehicles and cars include a data display device that combines two optical systems of the image display—the virtual image display system and the real image display system. The display device may be configured to provide a maximum of displayed information and to ensure safe driving, by controlling the level of details and the content of the data displayed for the vehicle driver, depending on the speed, and by choosing the optical system of data display to minimize the accident risk. Image quality and safe driving may be improved due to the combination of two systems and control of the level of detail of displayed data.

13. [3455667](#) HEADS-UP DISPLAY WITH VARIABLE IMAGE PLANE

EP - 20.03.2019

Int.Class [G02B 27/01](#) Appl.No 17729191 Applicant WAYRAY SA Inventor SVARICHEVSKY MIKHAIL

A heads-up display system with a variable image plane includes a projection device to project light representative of at least one virtual graphic, an imaging matrix to distribute and/or propagate the light representative of the at least one virtual graphic to a display device to display the at least one virtual graphic such that the at least one virtual graphic appears to be located at at least one image plane, and a translation device to dynamically change a position of the imaging matrix relative to the display device based, at least in part, on a predetermined operational parameter to dynamically vary a distance between the display device and the at least one image plane.

14. [109477967](#) HEADS-UP DISPLAY WITH VARIABLE FOCAL PLANE

CN - 15.03.2019

Int.Class [G02B 27/01](#) Appl.No 201780028987.X Applicant WAYRAY SA Inventor SVARICHEVSKY MIKHAIL

A heads up display system with a variable focal plane includes a projection device to generate light representative of at least one virtual graphic, an imaging matrix to project the light representative of the at least one virtual graphic on at least one image plane, a display device to display the at least one virtual graphic on the at least one image plane, and a translation device to dynamically change a position of the imaging matrix relative to the display device based, at least in part, on a predetermined operational parameter to dynamically vary a focal distance between the display device and the at least one image plane.

15. [WO/2017/195026](#) HEADS-UP DISPLAY WITH VARIABLE IMAGE PLANE

WO - 16.11.2017

Int.Class [G02B 27/01](#) Appl.No PCT/IB2017/000602 Applicant WAYRAY SA Inventor SVARICHEVSKY, Mikhail

A heads-up display system with a variable image plane includes a projection device to project light representative of at least one virtual graphic, an imaging matrix to distribute and/or propagate the light representative of the at least one virtual graphic to a display device to display the at least one virtual graphic such that the at least one virtual graphic appears to be located at at least one image plane, and a translation device to dynamically change a position of the imaging matrix relative to the display device based, at least in part, on a predetermined operational parameter to dynamically vary a distance between the display device and the at least one image plane.

