

37) Family number: 67746380 (US2017353657A)

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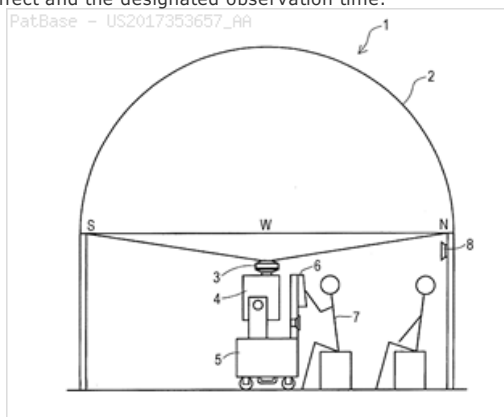
Title: SPACE FLIGHT SIMULATOR, PLANETARIUM HAVING THE SAME, AND SPACE FLIGHT SIMULATING PROGRAM

Abstract: A space flight simulator includes: a celestial-body-position output unit configured to output three-dimensional positions of extragalactic celestial bodies in space; an observation-position designation unit configured to allow an operator to designate a three-dimensional position and a posture of an observer in extragalactic space; a celestial-body-image arrangement unit configured to determine, based on the output from the celestial-body-position output unit, arrangement of an image of each extragalactic celestial body in a star field seen from the designated three-dimensional position and posture of the observer, and generate a star field image; a cosmic-expansion selection unit configured to allow the operator to perform selection as to whether a cosmic expansion effect is taken into account; a time designation unit configured to designate an observation time; and a cosmic-expansion correction unit configured to correct the three-dimensional position of each extragalactic celestial body based on the cosmic expansion effect and the designated observation time.

Classifications:

International (IPC 8-9): B64G7/00 G09B27/00 G09B27/02 G09B9/30 H04N5/232 H04N9/31 (Advanced/Invention)

CPC: H04N9/3179 G09B27/00 B64G7/00 G09B9/30 G09B27/02

**Family:**

Publication number	Publication date	Application number	Application date
JP2017219593 A2	20171214	JP20160112213	20160603
US2017353657 AA	20171207	US20170612351	20170602
US10189585 BB	20190129	US20170612351	20170602

Priority:

JP20160112213 20160603

Probable Assignee: KONICA MINOLTA HOLDINGS INC**Assignee(s):** (std): KONICA MINOLTA HOLDINGS INC ; KONICA MINOLTA INC ; KONICA MINOLTA PLANETARIUM CO LTD**Assignee(s):** KONICA MINOLTA PLANETARIUM CO**Inventor(s):** (std): ISHIMAKI NOBUHIRO ; OOTANI KENICHI ; OTANI KENICHI ; TAKEUCHI KAZUHIRO**Agent(s):** COSMOS PATENT OFFICE; COSMOS INT PATENT AND TRADEMARK OFFICE; BUCHANAN INGERSOLL AND ROONEY PC**38) Family number: 29772662** (US2003227657A)

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Title: Synchrotron-based EUV lithography illuminator simulator

Abstract: A lithographic illuminator to illuminate a reticle to be imaged with a range of angles is provided. The illumination can be employed to generate a pattern in the pupil of the imaging system, where spatial coordinates in the pupil plane correspond to illumination angles in the reticle plane. In particular, a coherent synchrotron beamline is used along with a potentially decoherentizing holographic optical element (HOE), as an experimental EUV illuminator simulation station. The pupil fill is completely defined by a single HOE, thus the system can be easily modified to model a variety of illuminator fill patterns. Also the HOE allows the generated pupil fill pattern to be arbitrary. Because a HOE can be designed to generate any desired angular spectrum such a device can serve as the basis for an arbitrary illuminator simulator. In one embodiment of the illuminator, which is used for an optical image processing system, wherein the image processing system includes an optical system that employs an arbitrary pupil fill pattern, the illuminator device includes: (i) a source of coherent or partially coherent radiation, (ii) a holographic optical element (HOE) having a surface that receives incident radiation from said source, and (iii) a condenser optic that re-images a surface of the holographic optical element to the entrance of said image processing system. The device can be employed to generate an arbitrary pupil fill pattern in the entrance of an image processing system that includes the steps of: (a) directing incident radiation onto a surface of a holographic optical element (HOE) wherein the radiation is coherent or partially coherent radiation, and (ii) (b) re-imaging the surface of the HOE to the entrance of the image process system.

Classifications:

International (IPC 8-9): G02B13/14 G02B13/26 G02B5/32

G03F7/20 (Advanced/Invention);

G02B13/14 G02B13/24 G02B5/32 G03F7/20 (Core/Invention)

International (IPC 1-7): G02B5/32

CPC: G02B5/32 G02B13/143 G02B13/26 G03F7/70108 G03F7/70141

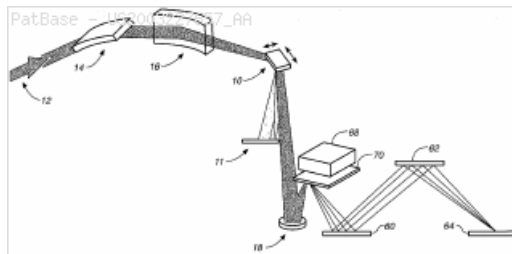
G03F7/70158 G03F7/70591

European: G02B13/14B G02B13/26 G02B5/32 G03F7/20T14

G03F7/20T22 G03F7/70D14 G03F7/70D16B G03F7/70D8D

G03F7/70L6

US: 359/15 359/15P 359/27 359/27S 359/351 359/571 378/34



Family:

Publication number	Publication date	Application number	Application date
US2003227657 AA	20031211	US20020163479	20020605
US6768567 BB	20040727	US20020163479	20020605

Priority:

US20020163479 20020605

Probable Assignee: EUV LLC

Assignee(s): (std): EUV LLC

Assignee(s): NAULLEAU PATRICK P ; OFCALIFORNIA UNIV ; UNIV ; UNIVERSITY ; US DEPARMTENT OF ENERGY ; US DEPARMTENT OF ENERGY PO BOX

Inventor(s): (std): NAULLEAU PATRICK P

39) Family number: 33130352 (JP2006139003A)

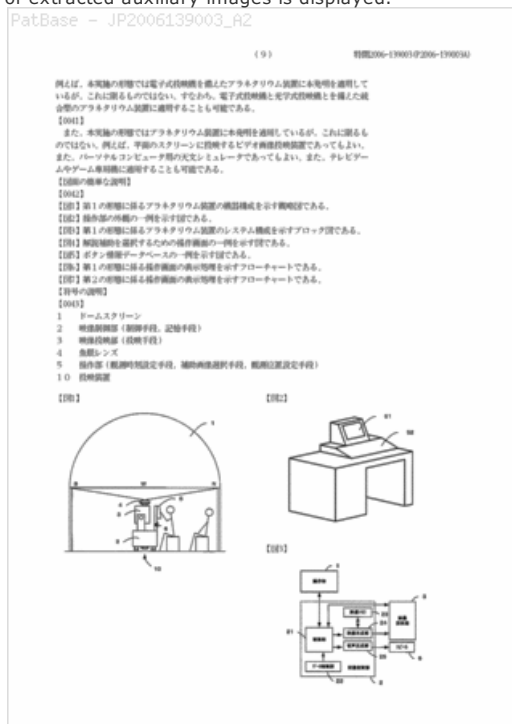
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Title: PLANETARIUM SYSTEM AND PROGRAM FOR ASTRONOMICAL SIMULATOR

Abstract: PROBLEM TO BE SOLVED: To provide a planetarium system having an operation section enabling even an inexperienced operator to easily select an auxiliary image for explanation. SOLUTION: The planetarium system is equipped with a dome screen 1 and a projector 10 for projecting a star field on the dome screen 1. The projector 10 includes a video control section 2, video projecting section 3, and an operation section 5. The video control section 2 controls video images to be projected on the dome screen 1, and creates an operation picture to be displayed on the operation section 5. For carrying out the control on the operation screen: first, the observation time and the observation spot of the star field currently projected are acquired; then, a data storage section is referred to, and auxiliary images suitable for projection at the observation time and the observation point of the star field currently projected are extracted out of some auxiliary images in storage; and an operation picture showing buttons enabling selection of extracted auxiliary images is displayed.

Classifications:

International (IPC 8-9): G03B21/00 G09B27/00 (Advanced/Invention); G03B21/00 G09B27/00 (Core/Invention)



Family:

Publication number	Publication date	Application number	Application date
JP2006139003 A2	20060601	JP20040327676	20041111

Priority:

JP20040327676 20041111

Probable Assignee: KONICA MINOLTA HOLDINGS INC

Assignee(s): (std): KONICA MINOLTA HOLDINGS INC ; KONICA MINOLTA PLANETARIUM CO

Assignee(s): KONICA MINOLTA PLANETARIUM CO LTD

Inventor(s): (std): NISHIGAKI JUNJI ; SUDA MASAKI

Agent(s): COSMOS PATENT OFFICE; COSMOS INT PATENT AND TRADEMARK OFFICE

Title: SYSTEM AND METHOD OF IMAGE DISPLAY SIMULATION

Abstract: Systems and methods for demonstrating displays and image capture devices are presented. Such systems and methods are typically provided in a retail environment. Customers may efficiently and easily compare disparate displays and image capture devices at a single location using the systems and methods disclosed herein.

Classifications:

International (IPC 8-9): G06Q30/00 G06Q99/00 G09B25/00

G09G5/00 (Advanced/Invention);

G06Q99/00 (Core/Invention)

CPC: H04N17/02 H04N17/04 G06Q20/20 G06Q30/0643 G06Q99/00

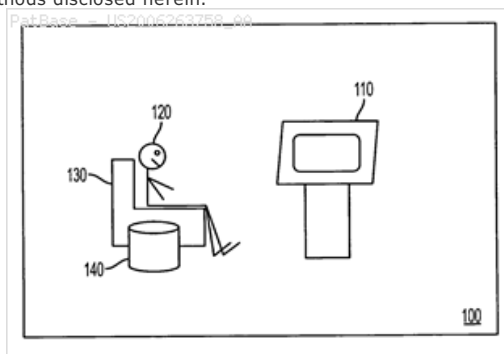
European: G06Q20/20 G06Q30/0643 G06Q99/00 H04N17/02

H04N17/04

US: 345/581 348/E17.004 348/E17.004S 348/E17.005 348/E17.005S

434/367 434/367P 703/21 705/1 705/1.1 705/1.100S 705/16 705/26

705/27 705/27.2 705/500



Family:

Publication number	Publication date	Application number	Application date
US2006263758 AA	20061123	US20050123239	20050506
US7487118 BB	20090203	US20050123239	20050506

Priority:

US20050123239 20050506

Probable Assignee: CRUTCHFIELD CORP

Assignee(s): (std): CRUTCHFIELD CORP

Inventor(s): (std): WRIGHT RICHARD INNES ; WRIGHT RICHARD I ; JOHNSON MARTY ; CRUTCHFIELD WILLIAM G JR ; CRUTCHFIELD JR WILLIAM G ; CARNEAL JAMES P

Inventor(s): CRUTCHFIELD ; CRUTCHFIELD WILLIAM GJR ; WILLIAM G ; CARNEAL JAMES ; CRUTCHFIELD WILLIAM ; WRIGHT RICHARD

Agent(s): HUNTON AND WILLIAMS LLP INTELLECTUAL PROPERTY DEPARTMENT; GOODWIN PROCTER LLP

Title: Vorrichtung zur Simulation der Sonnenbewegungen, wie sie von der Erde aus beobachtbar sind

Abstract: Source: DE102006059196B4 [DE] Vorrichtung zur Simulation der Sonnenbewegungen, wie sie sich bezüglich eines beliebigen Simulationsstandorts auf der Erdoberfläche, im Folgenden Simulationsstandort genannt, darstellen, in Form eines Sonnenbewegungsanzeigers, wobei der Sonnenbewegungsanzeiger einen Zeiger 1 hat, der einen gedachten Zeigerstrahl A anzeigt, und der auf einem Zeigerträger 2 gelagert ist, welcher seinerseits in einem Rahmen 3 um ausschliesslich eine Zeigerträgerachse B drehbar gelagert ist; der Zeigerträger 2 derart im Rahmen 3 gelagert ist, dass die Zeigerträgerachse B in der bezüglich des Simulationsstandorts senkrechten, Nord/Süd ausgerichteten Ebene liegt und geneueber der Horizontalen des Simulationsstandorts um einen Breitengradwinkel alpha geneigt ist, wobei der Breitengradwinkel alpha dem Breitengrad des Simulationsstandorts entspricht; der Zeiger 1 auf dem Zeigerträger 2 derart beweglich gelagert ist, dass sich der Zeigerstrahl A mit der Zeigerträgerachse B immer in einem Fixpunkt C der Zeigerträgerachse B schneidet, wobei der Zeigerstrahl A sich innerhalb einer Ebene bewegt, die die Zeigerträgerachse B beinhaltet und die sich mit dem Zeigerträger 2 mit dreht, und wobei der Zeigerstrahl A mit der Zeigerträgerachse B Jahreswinkel beta mindestens im Bereich von 90 degrees plus/minus Ekliptikwinkel gamma (90 degrees plus/minus 23,45 degrees) analog der jahreszeitlichen Deklinationänderung bilden kann; bei jeder beliebigen Einstellung des Jahreswinkel beta mindestens im Bereich von 90 degrees plus/minus Ekliptikwinkel gamma der Zeigerträger 2 sich frei um 360 degrees um die Zeigerträgerachse B drehen kann, ohne dass er oder der Zeiger 1 durch irgendein Element des Sonnenbewegungsanzeigers in seiner Bewegung behindert wird; mit dem Ergebnis, dass der Zeigerstrahl A bei Drehung des Zeigerträgers 2 um 360 degrees die Sonnenbewegungen fuer den per Jahreswinkel beta eingestellten, zu simulierenden Tag des Jahres und den per Breitengradwinkel alpha eingestellten Simulationsstandort simuliert, indem er ausgehend vom Fixpunkt C mit seiner Spitze immer in die Richtung des zu simulierenden Sonnenstands zeigt, und wobei die zu simulierende Uhrzeit durch den Drehwinkel des Zeigerträgers 2 entsprechend 4 Minuten pro 1 degrees angegeben wird, dadurch gekennzeichnet, dass ein Antrieb, der eine konstante Winkelgeschwindigkeit aufweist, den Zeiger 1 ueber ein Getriebe so bewegt, dass der Zeiger 1 die Sonnenbewegungen fuer einen vollstaendigen Jahreszyklus in Echtzeit sowie bei hoeherer Winkelgeschwindigkeit im Zeitraffer simuliert.

Classifications:

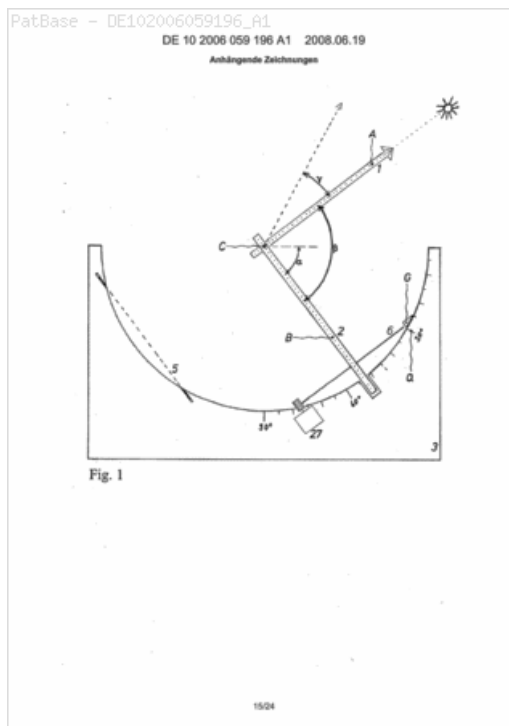
International (IPC 8-9): G09B1/00 G09B23/04 G09B23/06

G09B27/00 (Advanced/Invention);

G09B1/00 G09B23/00 (Core/Invention)

CPC: G09B23/04 G09B23/06 G09B27/00

European: G09B23/04 G09B23/06 G09B27/00



Family:

Publication number	Publication date	Application number	Application date
DE102006059196 A1	20080619	DE200610059196	20061215
DE102006059196 B4	20160324	DE200610059196	20061215

Priority:

DE200610059196 20061215

Probable Assignee:

ZARTH MARTIN

Assignee(s): (std):

ZARTH MARTIN

Inventor(s): (std):

ZARTH MARTIN

42) Family number: 51585780 (CN102589607A)

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Title: SPLIT LARGE SCREEN-BASED MULTI-TARGET OPTICAL FIBER POSITIONING SIMULATION CALIBRATION METHOD AND EQUIPMENT

Abstract: The invention discloses a split large screen-based multi-target optical fiber positioning simulation calibration method and equipment. The method comprises the following steps of: (1) setting a split large screen in front of a multi-target optical fiber positioning system; (2) directly measuring the overall large screen, and calibrating the mutual spatial position coordinates of each display unit in a large-screen coordinate system; (3) simulating and generating an astronomical spectrum observation target corresponding to an optical fiber on the large screen, and ordering the optical fiber positioning system to realize positioning according to the geometric transformation relation between the large screen and a focal plane position; and (4) performing two-dimensional alignment scanning positioning by using an optical fiber positioning movement mechanism and a simulated astronomical spectrum observation target source, exposing and acquiring integral optical fiber spectrum energy by using a camera, and precisely calibrating the ideal position of an optical fiber positioning unit and positioning the movement precision by using the optical fiber positioning movement mechanism by acquiring the analogue Gaussian fitting of discrete energy and the position data and performing interpolation processing. The equipment is simple in structure and low in cost. The performance and precision of multi-target optical fiber positioning are improved and guaranteed in real time.

Classifications:

International (IPC 8-9): G01D18/00 (Advanced/Invention)

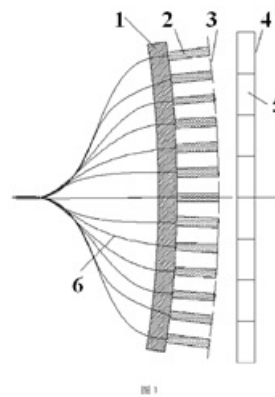


图 1

Family:

Publication number	Publication date	Application number	Application date
CN102589607 A	20120718	CN201210066073	20120314
CN102589607 B	20140528	CN201210066073	20120314

Priority:

CN201210066073 20120314

Probable Assignee: NANJING INST ASTRONOMICAL OPTICS AND TECHNOLOGY NAT ASTRONOMICAL OBSERVATORIES CAS

Assignee(s): (std): NANJING INST ASTRONOMICAL OPTICS AND TECHNOLOGY NAT ASTRONOMICAL OBSERVATORIES CAS ; NANJING INST OF ASTRONOMICAL OPTICS AND TECHNOLOGY NAT ASTRONOMICAL OBSERVATORIES CAS

Assignee(s): NANJING INST OF ASTRONOMICAL OPTICS AND TECHNOLOGY NATIONAL ASTRONOMICAL OBSERVATORIES CAS ; NANJING INSTITUTE OF ASTRONOMICAL OPTICS AND TECHNOLOGY NATIONAL ASTRONOMICAL OBSERVATORIES CAS

Inventor(s): (std): LI YEPING ; YEPING LI ; YONG ZHANG ; ZHANG YONG

43) Family number: 531720 (US3723718A)

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Title: SIMULATION THROUGH ROTATING COORDINATE TRANSFORMATION

Abstract: There is disclosed herein novel simulation of power system components, and particularly the simulation of a rotating electrical machine, such as a synchronous alternator, through utilization of a rotating coordinate transformation. A new form of rotating coordinate transformer is disclosed for calculating the transformation of coordinates between a primary and a secondary reference frame which rotate relative to each other and at least one of which rotates with respect to a fixed reference frame. A new method for simulating the dynamic electromechanical behavioral characteristics of a rotating electrical machine, such as an alternator, a synchronous motor, induction machine, and the like, is disclosed, as well as a new use of a phase-locked-loop in simulating such characteristics of a rotating machine. The behavioral characteristics are the electromechanical response of the machine as a function of electrical and mechanical inputs thereto and the parameters of the machine. An exemplary simulation is disclosed employing a coordinate transformer in the form of a modulated oscillator circuit, such as a voltage controlled oscillator, and a demodulator circuit, such as a phase detector. Feedback may be employed with these circuits to form one or more phase-locked-loops. A new simulation system is disclosed, as well as a method for simulating the rotation of the rotor of an electrical machine. Also a method for simulating the reference of a stator electrical variable of the machine to the rotor thereof or visa versa is disclosed. Additionally, an extensive analysis of alternators and the characteristics thereof from a mathematical standpoint are disclosed.

Classifications:

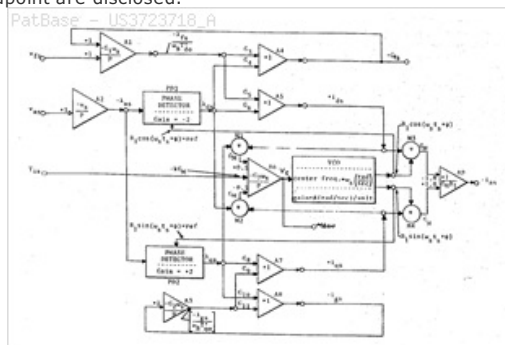
International (IPC 8-9): G06G7/62 G06G7/63 (Advanced/Invention); G06G7/00 (Core/Invention)

International (IPC 1-7): G06G7/22 G06G7/62 G06G7/63 G09B25/00 H02J3/00 H02K24/00

CPC: G06G7/63

European: G06G7/63

US: 235/185 327/156 327/2 329/325 331/23 331/25 703/4 708/809

**Family:**

Publication number	Publication date	Application number	Application date
CA972461 A1	19750805	CA19710127165	19711108

CH546984 A	19740315	CH19710016293	19711109
DE2155586 A1	19720518	DE19712155586	19711109
FR2113701 A5	19720623	FR19710040074	19711109
GB1361037 A	19740724	GB19710051741	19711108
JP47010321 A2	19720524	JP19710089348	19711109
JP54021531 B4	19790731	JP19710089348	19711109
US3723718 A	19730327	US19700087931	19701109

Priority:

US19700087931 19701109

Probable Assignee: UNISYS CORP

Assignee(s): (std): SYST DE CORP ; SYSTEM DEV CORP

Assignee(s): UNISYS CORP ; SYSTEM DEVELOPMENT CORP ; UNISYS A CORP OF DE CORP ; UNISYS BURROUGHS PLACE DETROIT MICHIGAN A CORP OF ; SYST DE CORP US ; JAFFE RICHARD M ; PARENTE ROBERT B

Inventor(s): (std): JAFFE R ; PARENTE R ; PARENTE ROBERT B ; JAFFE RICHARD M

Inventor(s): JAFFE R US ; PARENTE R US

44) Family number: 56393054 (WO14068549A3)

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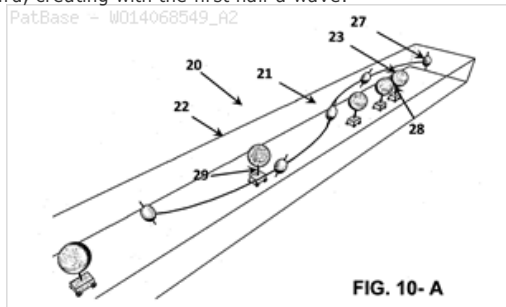
Title: PLANETARY WAVY ORBIT SIMULATOR

Abstract: To provide a machine (20) to simulate the actual wavy motion of the Earth (27) around the Sun (23), The simulator machine (20) consists of a fluid basin (22), containing a motorized cart (28) providing the Sun's forward movement, and carrying it at the top via a rotatable shaft (29). The fluid is transmitting the rotation of the Sun (23) toward the Earth (27), the forward movement and rotation of the Sun (23), rotates the fluid around the Sun (23) and decreases its pressure, the high pressure static fluid from behind the Earth (27) pushes it toward the Sun (23) due to the pressure difference, while the rotated fluid around the Earth (27) pushes it vertically outward. The resultant pushes of the two pressures pushes the Earth (27) tangent to the first elliptic track around the Sun (23), but as the Sun (23) is moving forward, the 2nd half of elliptic followed by the Earth (27), will be shifted forward, creating with the first half a wave.

Classifications:

International (IPC 8-9): G09B23/08 G09B27/02 (Advanced/Invention)

CPC: G09B23/08 G09B27/02 G09B27/06 G09B27/08



Family:

Publication number	Publication date	Application number	Application date
WO14068549 A2	20140508	WO2014IB00305	20140311
WO14068549 A3	20150122	WO2014IB00305	20140311

Priority:

WO2014IB00305 20140311

Probable Assignee: ALMUHAIRBI EIDA

Assignee(s): (std): ALMUHAIRBI EIDA ; ALSHDAIFAT WASFI ; KASSAB FARAH AFIF

Inventor(s): (std): ALSHDAIFAT WASFI

Agent(s): ALSHDAIFAT WASFI

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW