



New connection on: : 15-09-2020 : 23:44:37 - Last disconnection on: : 15-09-2020 : 23:44:32

V 4.0.0.44803(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201820)) (RPM D201820)

## Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 41] system and lighting and (structure or assembly ) and drill+

Results in EPODOC 26

[SS 42] ..li



1/26 © EPODOC / EPO

PN - [US2020011496](#) A1 20200109

PR - US201916571527  
20190916; US201816138723  
20180921; US201816009032  
20180614; US201862643663P  
20180315

AP - [US201916571527](#) 20190916

DT - \*\*

CCI - [F21S8/088](#) ; [F21V21/116](#)

CCA - [F21W2131/1005](#)

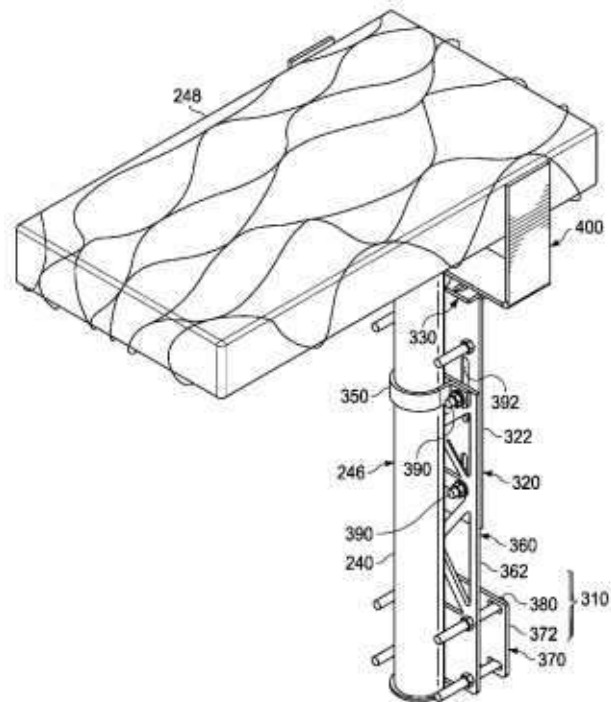
CI - E21B41/00 (US)  
- F21S8/088 (EP, US)  
- F21V21/116 (EP, US)  
- F21V33/00 (US)

CA - F21W2131/1005 (EP, US)  
- F21W2131/402 (US)  
- F21W2131/403 (US)

PA - JCA RENTALS LLC [US]

TI - ELEVATED **STRUCTURE-MOUNTED  
LIGHTING SYSTEM**

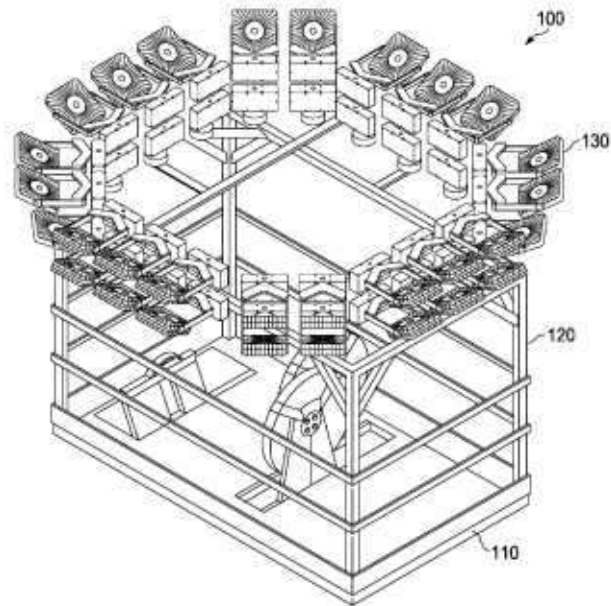
AB - An improved elevated **structure-mounted lighting system** is disclosed. The **lighting system** may be used on **drilling** rigs, or with other applications, including for **drilling**, production, refineries, frac sites, construction, and other



industrial applications that may use tower/mast type equipment. The improved elevated **structure-mounted lighting system** may accommodate any style or design of crown section of a **drilling** rig and may be mounted on a pole or independent mount **system**.

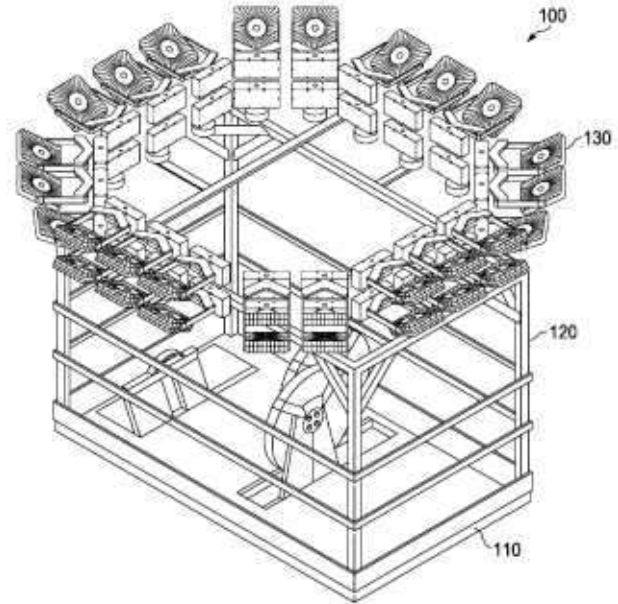
2/26 © EPODOC / EPO

- PN - [CA3058473](#) A1 20190919
- PR - US201862643663P  
20180315; US201816009032  
20180614; WO2018US42795  
20180719
- AP - [CA20183058473](#) 20180719
- DT - I
- CCI - [F21V21/08](#) ; [F21V21/116](#)
- CCA - [F21W2131/1005](#) ; [F21W2131/402](#)
- CI - E21B41/00 (US)  
- F21S8/088 (US)  
- F21V21/08 (EP)  
- F21V21/116 (EP, US)  
- F21V21/26 (US)  
- F21V33/006 (US)
- CA - F21W2131/1005 (EP, US)  
- F21W2131/402 (EP, US)
- PA - JCA RENTALS LLC [US]
- TI - IMPROVED ELEVATED **STRUCTURE-MOUNTED LIGHTING SYSTEM**
- AB - An improved elevated **structure-mounted lighting system** is disclosed. The **lighting system** may be used on **drilling** rigs, or with other applications, including for **drilling**, production, refineries, frac sites, construction, and other industrial applications that may use tower/mast type equipment. The improved elevated **structure-mounted lighting system** may accommodate any style or design of crown section of a **drilling** rig and may be mounted on a pole or independent mount **system**.



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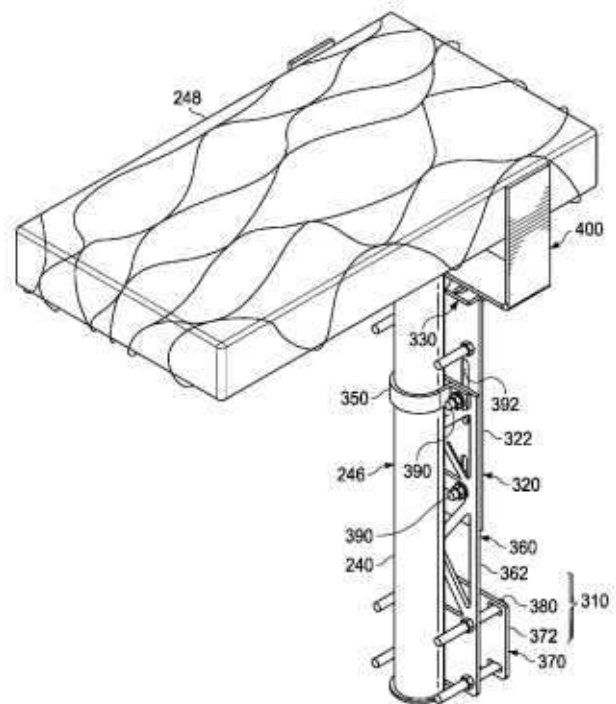
PN - [WO2019177653](#) A1 20190919  
 PR - US201816009032  
 20180614; US201862643663P  
 20180315  
 AP - [WO2018US42795](#) 20180719  
 DT - \*\*  
 CT - /US/ ISR (A1)  
[WO2018020400](#) A1 20180201 [XY]  
 (APOLLO ENERGY SERVICES CORP  
 [CA])  
 [X] 1, 2, 5-8 & 12  
 \*, Fig. 1, 2B-2D, para. [0035],  
 [0036], [0041], [0042], [0045] \*  
 [Y] 9-11;  
[US2015184840](#) A1 20150702 [XY]  
 (GOWANLOCK MATTHEW [CA], et al)  
 [X] 1, 3, 4, 6, & 7  
 \*, abstract, Fig. 1, 2, 5, 6, para.  
 [0043]-[0050] \*  
 [Y] 9-11;  
[US2014313406](#) A1 20141023 [Y]  
 (BECKER GREGORY TOWLE [US])  
 [Y] 9-11  
 \*, Fig. 1, para. [0033], [0037],  
 [0042], [0043] [0084], [0099] \*;  
[US2017023195](#) A1 20170126 [A]  
 (GOWANLOCK MATTHEW [CA], et al)  
 [A] 1-12  
 \*, entire document \*;  
[WO2018042348](#) A1 20180308 [A]  
 (APOLLO ENERGY SERVICES CORP  
 [CA])  
 [A] 1-12  
 \*, entire document \*  
 CCI - [F21V21/08](#) ; [F21V21/116](#)  
 CCA - [F21W2131/1005](#) ; [F21W2131/402](#)  
 CI - E21B41/00 (US)  
 - F21S8/088 (US)  
 - F21V21/08 (EP)  
 - F21V21/116 (EP, US)  
 - F21V21/26 (US)  
 - F21V33/006 (US)  
 CA - F21W2131/1005 (EP, US)  
 - F21W2131/402 (EP, US)  
 PA - JCA RENTALS LLC [US]  
 TI - IMPROVED ELEVATED **STRUCTURE-**  
**MOUNTED LIGHTING SYSTEM**  
 AB - An improved elevated **structure-**  
**mounted lighting system** is



disclosed. The **lighting system** may be used on **drilling** rigs, or with other applications, including for **drilling**, production, refineries, frac sites, construction, and other industrial applications that may use tower/mast type equipment. The improved elevated **structure-mounted lighting system** may accommodate any style or design of crown section of a **drilling** rig and may be mounted on a pole or independent mount **system**.

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- PN - [US2019285236](#) A1 20190919
- PNFP - US10473282 B2 20191112
- PR - US201816138723  
20180921; US201816009032  
20180614; US201862643663P  
20180315
- AP - [US201816138723](#) 20180921
- DT - \*; Rep
- CT - || STSE (A1)  
[US2016109079](#) A1 20160421 [X]  
(MCKINLEY STEPHEN C [US], et al)  
[X] 1, 3-4, 6-7, 12, 2, 5  
\* claim 1 | Fig. 2, 60 Paragraph  
[0019] | Fig. 4, 70 | Paragraph  
[0021] | Figs. 2-4, 20 Paragraph  
[0019] | Fig. 6, 56 Paragraph [0021]  
| Fig. 3, 60 Paragraph [0019] | Fig.  
3, 60 | claim 3 | Fig. 4 | claim 6 |  
Paragraph [0007] | claim 7 | , claim  
2 | claim 1 | Paragraph [0006] |  
claim 5 | claim 4 | Fig. 4 |  
Paragraph [0021] | claim 12 | \*;  
[US2019242218](#) A1 20190808 [Y]  
(GOWANLOCK MATTHEW [CA])  
[Y] 2, 5  
\* Paragraph [0045] | \*;  
[US5272611](#) A 19931221 [A] (LAI  
SHIH-WANG [TW]);  
[US2015184840](#) A1 20150702 [A]  
(GOWANLOCK MATTHEW [CA], et al)  
- || STSE (B2)  
[US5272611](#) A 19931221 [ ] (LAI SHIH-  
WANG [TW]);  
[US2015184840](#) A1 20150702 [ ]



(GOWANLOCK MATTHEW [CA], et al);  
[US2016109079](#) A1 20160421 [ ]  
 (MCKINLEY STEPHEN C [US], et al);  
[US2019242218](#) A1 20190808 [ ]  
 (GOWANLOCK MATTHEW [CA])

- CCI - [F21S8/088](#) ; [F21V21/116](#)
- CCA - [F21W2131/1005](#)
- CI - E21B41/00 (US)  
 - F21S8/088 (EP, US)  
 - F21V21/116 (EP, US)  
 - F21V33/00 (US)
- CA - F21W2131/1005 (EP, US)  
 - F21W2131/402 (US)  
 - F21W2131/403 (US)
- PA - (A1 B2)  
 JCA RENTALS LLC [US]
- TI - (A1)  
 ELEVATED **STRUCTURE**-MOUNTED  
**LIGHTING SYSTEM**  
 - (B2)  
 Elevated **structure**-mounted  
**lighting system**
- AB - (A1 B2)  
 An improved elevated **structure**-  
 mounted **lighting system** is  
 disclosed. The **lighting system**  
 may be used on **drilling** rigs, or  
 with other applications,  
 including for **drilling**, production,  
 refineries, frac sites,  
 construction, and other  
 industrial applications that may  
 use tower/mast type equipment.  
 The improved elevated **structure**-  
 mounted **lighting system** may  
 accommodate any style or design  
 of crown section of a **drilling** rig  
 and may be mounted on a pole  
 or independent mount **system**.

PN - [US2019285235](#) A1 20190919

PNFP - US10711961 B2 20200714

PR - US201816009032  
20180614; US201862643663P  
20180315

AP - [US201816009032](#) 20180614

DT - \*; Rep

CT - || STSE (B2)  
[US5272611](#) A 19931221 [ ] (LAI SHIH-  
WANG [TW]);  
[US10473282](#) B2 20191112 [ ]  
(ALLISON JOSHUA C [US], et al);  
[US2005184207](#) A1 20050825 [ ]  
(BERTRAM MORTON III [US]);  
[US2012217897](#) A1 20120830 [ ]  
(GORDIN MYRON [US], et al);  
[US2013135848](#) A1 20130530 [ ]  
(CHRYSANTHOUS VAN [CA]);  
[CN108240588](#) A 20180703 [ ]  
(OCEANS KING DONGGUAN  
LIGHTING SCIENCE & TECH CO LTD,  
et al)

CCI - [F21V21/08](#) ; [F21V21/116](#)

CCA - [F21W2131/1005](#) ; [F21W2131/402](#)

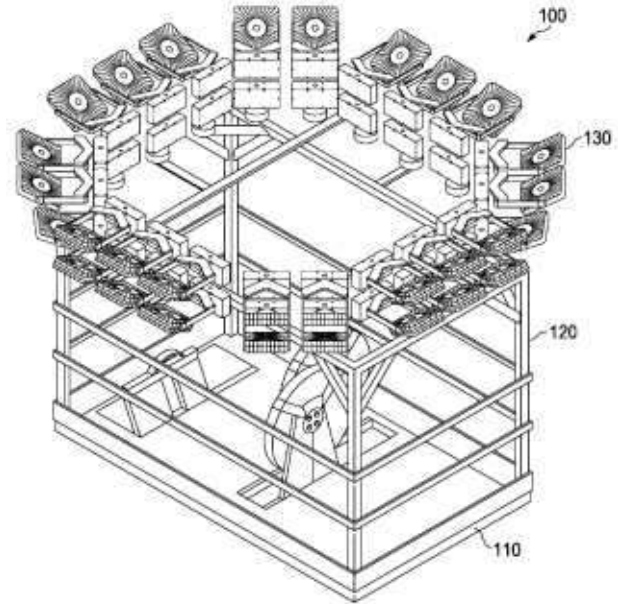
CI - E21B41/00 (US)  
- F21S8/088 (US)  
- F21V21/08 (EP)  
- F21V21/116 (EP, US)  
- F21V21/26 (US)  
- F21V33/006 (US)

CA - F21W2131/1005 (EP, US)  
- F21W2131/402 (EP, US)

PA - (A1)  
JCA RENTALS LLC [US]  
- (B2)  
C&M OILFIELD RENTALS LLC [US]

TI - (A1)  
ELEVATED **STRUCTURE-MOUNTED  
LIGHTING SYSTEM**  
- (B2)  
Elevated **structure-mounted  
lighting system**

AB - (A1 B2)  
An improved elevated **structure-**  
mounted **lighting system** is  
disclosed. The **lighting system**  
may be used on **drilling rigs**, or  
with other applications,



including for **drilling**, production, refineries, frac sites, construction, and other industrial applications that may use tower/mast type equipment. The improved elevated **structure-mounted lighting system** may accommodate any style or design of crown section of a **drilling** rig and may be mounted on a pole or independent mount **system**.

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PN - [CN109083629](#) A 20181225

PR - CN201811212470 20181018

AP - [CN201811212470](#) 20181018

DT - I

CI - E21B3/02 (CN)  
- E21B15/003 (CN)  
- E21B21/16 (CN)  
- E21B47/002 (CN)  
- E21B49/00 (CN)

PA - UNIV XIAN SCI & TECHNOLOGY

TI - Coal mine rock mass similar material **drilling** peeping detection **system** and method

AB - The invention discloses a coal mine rock mass similar material **drilling** peeping detection **system** and method. The **system** comprises a rack, a **drilling** device, a washing mechanism, a **drilling** peeping mechanism and a monitoring module. The **drilling** device comprises a base, a sliding **assembly** and a **drilling assembly**. The washing mechanism comprises an air gun and an air compressor. The **drilling** peeping mechanism comprises an inserting rod, a camera and a **lighting** lamp. The method includes the following steps that 1, a coal mine rock mass similar material three-dimensional model is erected; 2, the **drilling** device is mounted, and **drilling** points are arranged; 3, the coal mine rock mass similar material is **drilled**; 4, **drill** holes are flushed; 5, the height of a fissure zone is determined. The change of the height of the fissure zone and the change of the height of a fissure zone gas enrichment region can be accurately simulated in the coal seam recovery process, and therefore reference is provided for gas extraction in the fissure zone in the exploitation process of a coal rock layer and reduction of the gas concentration.

**7/26** © EPODOC / EPO

PN - [ES120891U](#) U 19660701

PNFP - ES120891Y Y 19661016

PR - ES19660120891U 19660407

AP - [ES19660120891U](#) 19660407

DT - I

PA - (U Y)  
FRAGOSO DELGADO RAFAEL; PICAZO SIMARRO ANTONIA; ARROYO ARROYO FAUSTINO

TI - (U)

Improved sanitary framework (Machine-translation by Google Translate, not legally binding)

AB

- (U)

An improved sanitary panel characterized in that it essentially consists of a panel to which a panel cover is hinged, intended to cover the mechanisms and electrical conduits, resting the **assembly** on four legs provided with rubber plugs in such a way that the upper part of said panel is It finds a visor on which an ashtray and a device for putting matches or a lighter are located, and also a place conveniently prepared to place the covers of the containers on it when they have been used, located below the aforementioned fluorescent tubes. intended for complete **lighting** of the device; being immediately below the previously described set a box inside which fits another second box in such a way that on the first one a cover is fitted that rests on a perimeter projection provided for this purpose, said cover being provided with a handle that adjusts to **drills** through corresponding pivots held by nuts; At the bottom, another box is placed on the board, inside which a hollow device with a trapezoidal prismatic shape is attached, inside which, together with the side walls, there is an axis on which toilet paper is rolled, which protrudes through an opening provided for this purpose. The box can be the aforementioned axis fixed and separated by the action of an articulated piece that resembles an elastic clamp, and a device also attached to the board and intended to place deodorant tablets inside it consisting essentially of a box analogous to the previous ones. but with an external surface endowed with a series of slits that allow odorous effluents to exit, finally placing two boxes with two corrugated bottoms on the bottom and laterally, which are fitted with a hinged lid and lock and are destined to store the elements and cleaning products of characteristic caustic and toxic; finding between these two boxes a device that internally has a lifting platform on which the bucket or container that contains water and other cleaning products is located and that has a practicable door as well as a hinged lid that rises synchronously when mentioned platform ascends; having provided that the lifting **system** is mechanical and is actuated by rotating a handle arranged on the board in such a way that when turning said world in a convenient manner, a pulley is actuated which, through a second pulley, sets in motion cables that pass through of the two hinged boards and that act on pieces located under the mobile platform that at the same time ascends the platform acts on a rod whose end runs through a slide simultaneously raising the lid. (Machine-translation by Google Translate, not legally binding)

8/26 © EPODOC / EPO

PN

- [US2018163956](#) A1 20180614

Fig. 1

PR

- WO20161854329  
20160720; US201615736156  
20160720; US201562196556P  
20150724

AP

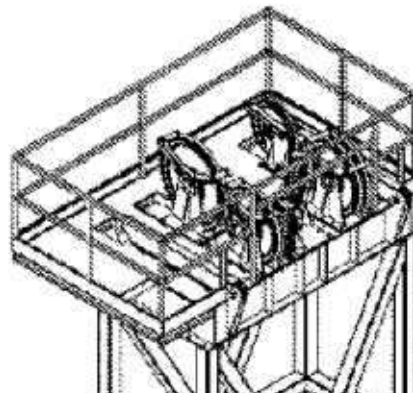
- [US201615736156](#) 20160720

DT

- \*\*

CCI

- [F21S2/00](#) ; [F21V21/00](#) ; [F21V21/30](#)



CCA - [F21W2131/10](#)

CI - E21B41/00 (US)  
 - F21S2/00 (EP)  
 - F21V21/00 (EP)  
 - F21V21/116 (US)  
 - F21V21/30 (EP, US)

CA - F21W2131/10 (EP)  
 - F21W2131/1005 (US)

PA - APOLLO ENERGY SERVICES CORP  
 [CA]

TI - ATTACHABLE **LIGHTING SYSTEM**

AB - An attachable **lighting system** for a tower **structure** such as a **drilling** rig. A **lighting system** is described for a tower **structure** having at least one side. A **lighting** frame is attached to at least one side of the tower **structure**, the **lighting** frame including at least one light support bracket attached to the **lighting** frame for holding at least one **lighting** fixture. The **system** is attachable at any level of the tower, high or low.

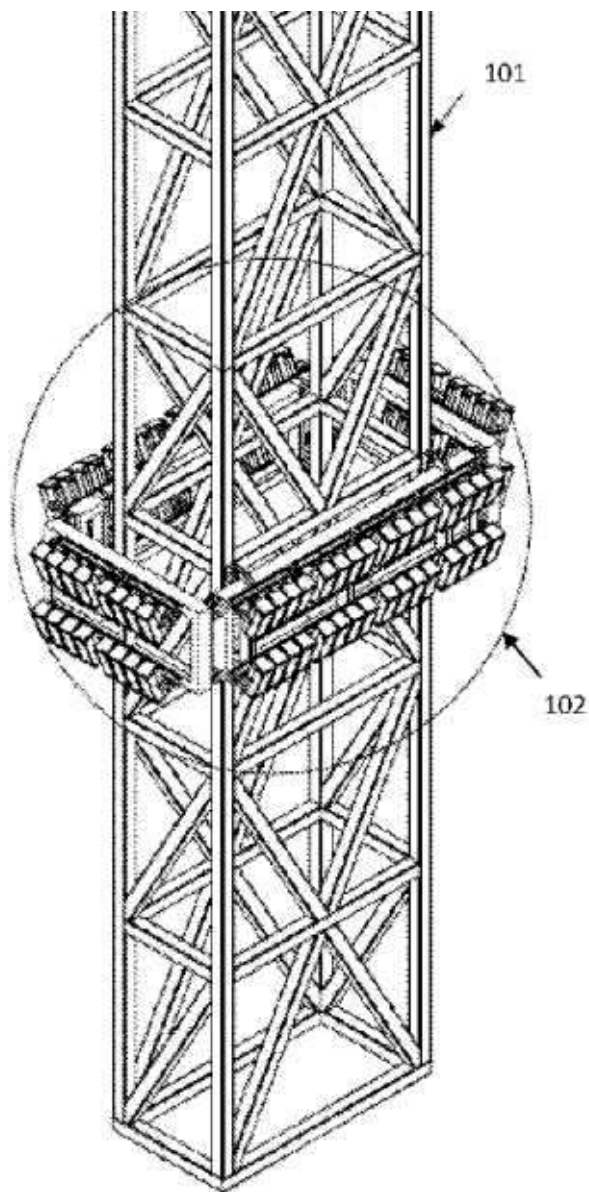


Fig. 1

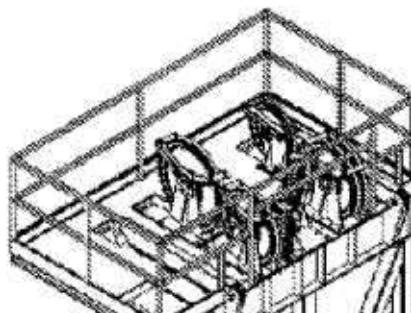
9/26 © EPODOC / EPO

PN - [CA2993419](#) A1 20170202

PR - US201562196556P  
 20150724; WO20161854329  
 20160720

AP - [CA20162993419](#) 20160720

DT - I



CCI - [F21S2/00](#) ; [F21V21/00](#) ; [F21V21/30](#)

CCA - [F21W2131/10](#)

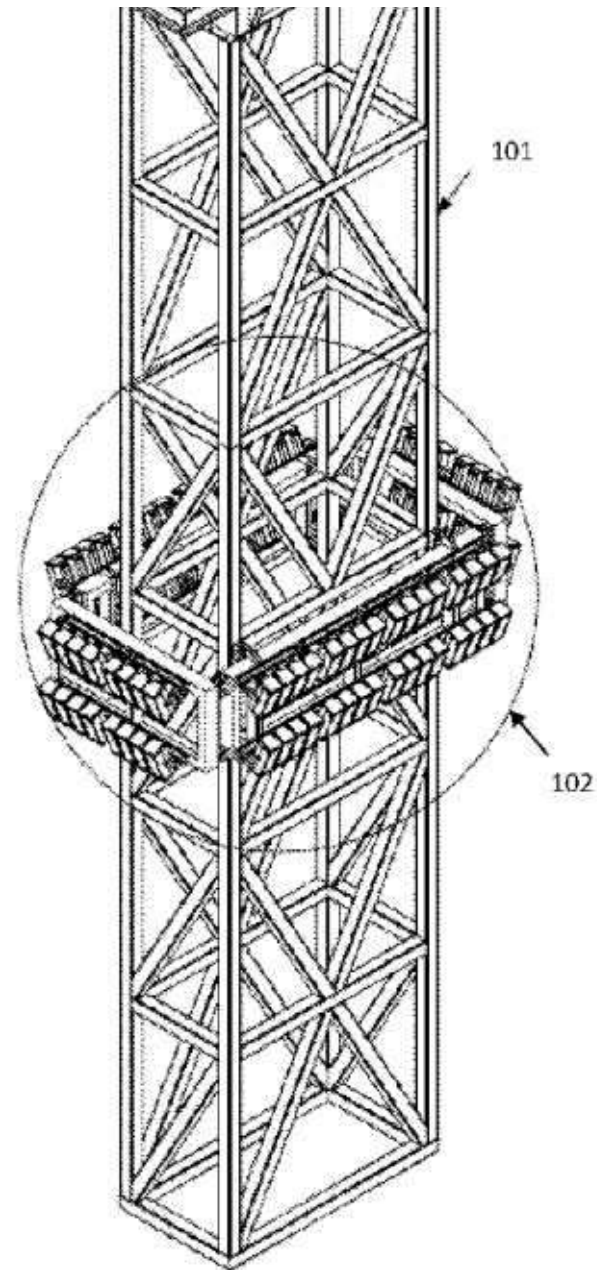
CI - [E21B41/00](#) (US)  
- [F21S2/00](#) (EP)  
- [F21V21/00](#) (EP)  
- [F21V21/116](#) (US)  
- [F21V21/30](#) (EP, US)

CA - [F21W2131/10](#) (EP)  
- [F21W2131/1005](#) (US)

PA - APOLLO ENERGY SERVICES CORP  
[CA]

TI - ATTACHABLE LIGHTING SYSTEM

AB - An attachable **lighting system** for a tower **structure** such as a **drilling** rig. A **lighting system** is described for a tower **structure** having at least one side. A **lighting** frame is attached to at least one side of the tower **structure**, the **lighting** frame including at least one light support bracket attached to the **lighting** frame for holding at least one **lighting** fixture. The **system** is attachable at any level of the tower, high or low.



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PN - [CN107687595](#) A 20180213

PR - CN201710783993 20170904

AP - [CN201710783993](#) 20170904

DT - I

CT - // STSE (A)

[CN101575860](#) A 20091111 [A] (SHANGHAI NO 2 MUNICIPAL ENG CO [CN])

[A] 1-10

\* 全文 \*;

[CN102147033](#) A 20110810 [A] (CHINA CMIIC ENGINEERING & CONSTRUCTION CORP, et al)

[A] 1-10

\* 全文 \*;  
[CN102522723](#) A 20120627 [A] (SHAOXING ELECTRIC POWER BUREAU)  
 [A] 1-10  
 \* 全文 \*;  
[CN106871087](#) A 20170620 [A] (CHINA AIRPORT PHOTOELECTRICITY LIGHTING HUBEI CO LTD)  
 [A] 1-10  
 \* 全文 \*;  
[CN106907605](#) A 20170630 [A] (CHINA AIRPORT PHOTOELECTRICITY LIGHTING HUBEI CO LTD)  
 [A] 1-10  
 \* 全文 \*;  
[CN107191675](#) A 20170922 [A] (CHINA RAILWAY 23RD BUREAU GROUP 2TH ENG CO LTD)  
 [A] 1-10  
 \* 全文 \*

- CTNP - // STSE (A)  
 [X] - 李军委, "“城市电网改造中的非开挖技术应用”", 《价值工程》  
 [X] 1-10  
 \* 第105-106页 \*  
 [A] - 李晨辉等, "非开挖铺管技术在海河综合开发建设中的应用", 《城市基础设施建设》  
 [A] 1-10  
 \* 第262-263页 \*  
 [A] - 陈志成, "“水平导向钻进非开挖铺管技术应用”", 《市政技术》  
 [A] 1-10  
 \* 第19-22页 \*
- CI - E01C17/00 (CN)  
 - F21S8/022 (CN)  
 - F21V21/04 (CN)  
 - F21V23/001 (CN)
- CA - F21W2111/06 (CN)
- PA - SICHUAN SHUANGLONG AIRPORT CONSTRUCTION CO LTD
- TI - Construction method for airport road pavement light transformation
- AB - The invention discloses a construction method for airport road pavement light transformation. The construction method comprises the following steps: determining the **structure** of an airport road, and determining a vertical **drilling** depth according to the **structure** of the airport road; performing surveying and setting-out according to requirements of a design drawing, and determining a **drilling** position of a directional **drill**; **drilling** vertical holes in the positions, where lights are mounted, of the pavement through a vertical **drilling** machine; performing directional **drilling** construction under the pavement, and **drilling** wiring tube channels in a soil surface area to the positions of the vertical holes according to a positioning curve; dragging wiring tubes along the wiring tube channels to finish traversing of the wiring tubes; and pulling light cables in the wiring tubes in a threading manner, and after performing hole back-filling, mounting the lights. According to the construction method, the original airport road pavement cannot be damaged or destroyed when a **lighting system** is replaced or added in the construction process; and meanwhile, construction can be performed without suspension of shipping service, so that the total construction time cannot be influenced, and normal operation of an airport is guaranteed.

AP - [CN201710142666](#) 20170310

DT - I

CCA - [Y02B20/72](#)

CI - F21S9/035 (CN)  
 - F21V14/02 (CN)  
 - F21V19/02 (CN)  
 - F21V21/0824 (CN)  
 - F21V21/14 (CN)  
 - F21V23/003 (CN)  
 - F21V23/02 (CN)  
 - F21V31/00 (CN)

CA - F21W2131/10 (CN)  
 - Y02B20/72 (EP)

PA - CHENGDU CYLON ELECTRONIC TECH CO LTD

TI - Multifunctional field **lighting** device

AB - The invention discloses a multifunctional field **lighting** device. The multifunctional field **lighting** device solves the problem that in the prior art, a **lighting** device is inconvenient to use on rainy days, and the **lighting** device is prone to getting wet in the rain and shorter in service life. The multifunctional field **lighting** device comprises a support mechanism and a solar **lighting system** located on the top of the support mechanism. The support mechanism comprises a supporting rod, a rotating rod, a **drill** bit and a supporting device. The solar **lighting system** comprises a connecting pipe, a machine box provided with a fixing ring, solar panel supports, solar panels and a **lighting** cover. A controller, a solar storage battery, a power plate and a standby battery are arranged in the machine box. A **lighting** device is arranged in the **lighting** cover. The **lighting** device comprises a rotating piece, a lamp holder, an LED lamp, a drive motor and a drive controller. The supporting device comprises a fixed support, a movable support provided with a locking rotary knob and lever pieces. The machine box is provided with an umbrella used for keeping off the rain. The multifunctional field **lighting** device is simple in **structure**, scientific and reasonable in design and convenient to use.

12/26 © EPODOC / EPO

PN - [WO2017017565](#) A1 20170202

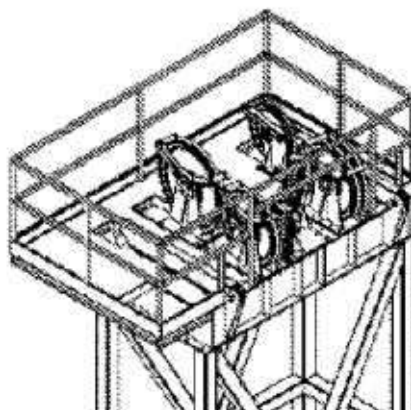
PR - US201562196556P 20150724

AP - [WO20161854329](#) 20160720

DT - \*; Rep

CT - /US/ ISR (A1)  
[US9316390](#) B2 00000000 [Y]  
 (GOWANLOCK, M., et al)  
 [Y] 1-16  
 \*Same inventor\* \*Abstract; Figs. 1, 5, 6; Col. 4, lines 39-40) \*  
 - /US/ ISR (A1)  
[CN103629549](#) A 00000000 [Y]  
 (ZHOU, M., et al.)  
 [Y] 1-16  
 \*Machine translation from Chinese

Fig. 1



to English using Questel-Orbit\*

\*Abstract; para[0026-0028]; Fig. 1) \*

- |US| ISR (A1)

[US6848806](#) B2 00000000 [Y]

(YOSHIDA, M., et al.)

[Y] 2, 4-9

\*Abstract; Fig. 1, 5A-C; Col. 3, lines 7-32 and Col. 5, lines 1-+8\*

- |US| ISR (A1)

[US6155696](#) A 00000000 [A]

(WINTON, T.G., et al.)

[A] 0

\*Abstract\*

- |US| ISR (A1)

CN203215413U U 00000000 [A] (DAI H., et al.)

[A] 1, 16

\*Abstract\*

- |US| ISR (A1)

[US3856639](#) A 00000000 [A] (ROHN, I., et al.)

[A] 1, 16

\*Abstract\*

- |US| ISR (A1)

[US3696241](#) A 00000000 [A] (MEYER, R.E., et al.)

[A] 1, 16

\*Abstract\*

- |US| ISR (A1)

CN203442735U U 00000000 [A]

(TANG, Z., et al.)

[A] 1, 16

\*Abstract\*

CCI - [F21S2/00](#) ; [F21V21/00](#) ; [F21V21/30](#)

CCA - [F21W2131/10](#)

CI - E21B41/00 (US)

- F21S2/00 (EP)

- F21V21/00 (EP)

- F21V21/116 (US)

- F21V21/30 (EP, US)

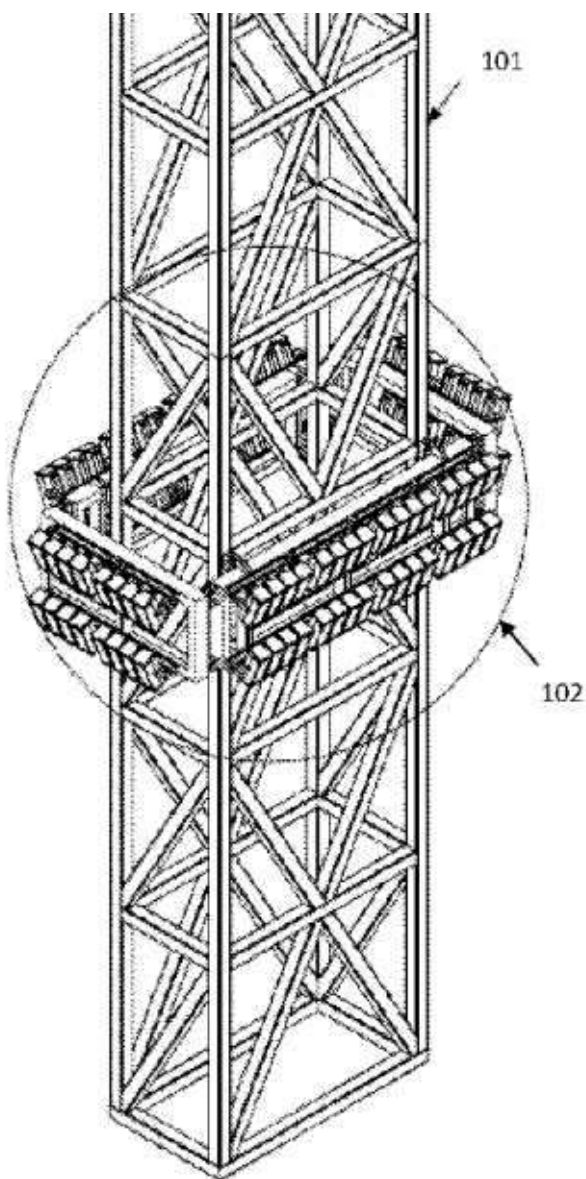
CA - F21W2131/10 (EP)

- F21W2131/1005 (US)

PA - APOLLO ENERGY SERVICES CORP  
[CA]

TI - ATTACHABLE LIGHTING SYSTEM

AB - An attachable lighting system for a tower structure such as a drilling rig. A lighting system is described for a tower structure having at



least one side. A **lighting** frame is attached to at least one side of the tower **structure**, the **lighting** frame including at least one light support bracket attached to the **lighting** frame for holding at least one **lighting** fixture. The **system** is attachable at any level of the tower, high or low.

**13/26** © EPODOC / EPO

PN - [CN205128999U](#) U 20160406  
 PR - CN201520843958U 20151027  
 AP - [CN201520843958U](#) 20151027  
 DT - I  
 PA - ZHENG SHUANGYANG  
 TI - Electric **drill** unscrambler of **drilling**  
 AB - The utility model provides an electric **drill** unscrambler of **drilling**, the main part of unscrambler is transparent disc **structure**, at the circular jack of disc centre of a circle processing, installs pipe shape fastener respectively in the two upper and lower **drill** ways of jack, sets up gap along the axis direction at the pipe wall from the mouth of pipe of this fastener, processes the outside screw thread socket pipe hoop of external screw thread, fastener at the outer wall of this fastener, the lower surface of unscrambler is equipped with many rings of LED lamp areas, and all LED lamp areas are concentric circle, **lighting** circuit is constituted with battery, switch electric connection in all LED lamp areas, and the battery is installed inside the unscrambler, and switching **system** is at the outer wall of unscrambler. The utility model has the advantages of exquisite **structure** and convenience for usage, etc.

**14/26** © EPODOC / EPO

PN - [CN205117295U](#) U 20160330  
 PR - CN201520953161U 20151126  
 AP - [CN201520953161U](#) 20151126  
 DT - I  
 PA - XUZHOU INST TECHNOLOGY  
 TI - Super large aperture well **drilling** follow -up wall of a well **structure**  
 AB - Super large aperture well **drilling** follow -up wall of a well **structure** has the annular concrete wall of a well of circle, and outside a week axial of the wall of a well is provided with the transfer line, on the last lower part circumferential edge edge of the wall of a well, it is adjacent and forked tail arch and dovetail that can interfitting to be provided with the order, install the light on the inner wall of the wall of a well, the axial both ends of light are connected with the wire in proper order and connect the power, this super large aperture well **drilling** follow -up wall of a well **structure** not only can adjust the frictional force of the wall of a well and wellhole, the transferring smoothly and follow of the wall of a well of being convenient for, and this super large aperture well **drilling** follow -up wall of a well **structure** has **lighting system** simultaneously, the downthehole portion's condition of observation well when making things convenient for the wall of a well to transfer, simple **structure**, the construction is

simple and convenient, and firm reliable, the wholeness is strong, is super large bore rig **drilling** operation's reliable wall of a well **structure**.

15/26 © EPODOC / EPO

PN - [CN104308668](#) A 20150128  
PR - CN201410534018 20141012  
AP - [CN201410534018](#) 20141012  
DT - I  
CT - // STSE (A)  
[CN104084848](#) A 00000000 [Y]  
[Y] 1-6  
\* 说明书第25-40段, 附图1-4 \*;  
CN204195408U U 00000000 [R]  
[R] 1-3  
\* 权利要求1-3 \*;  
[DE102007023009](#) A1 00000000 [A]  
[A] 1-6  
\* 全文 \*;  
CN202701912U U 00000000 [A]  
[A] 1-6  
\* 全文 \*;  
CN203304997U U 00000000 [A]  
[A] 1-6  
\* 全文 \*;  
[CN103192296](#) A 00000000 [Y]  
[Y] 1-3  
\* 说明书第30-35段, 附图1,3 \*;  
CN2684996Y Y 00000000 [A]  
[A] 1-6  
\* 全文 \*;  
[CN101774123](#) A 00000000 [Y]  
[Y] 1-3  
\* 说明书第20-44段, 附图1-2 \*

CI - B23Q37/00 (CN)

PA - ZONGYAO XU

TI - Miniature multifunctional combined machining center

AB - The invention discloses a miniature multifunctional combined machining center. The miniature multifunctional combined machining center comprises a tool magazine, a numerical control **system**, two spindles, three degree-of-freedom feed shafts and two degree-of-freedom rotating shafts, wherein the tool magazine is arranged on the front of a machine tool and at the highest point in right front of a spindle box, and an automatic tool exchange device mechanical arm of the tool magazine is longitudinally arranged on the right side of the machine tool; the numerical control **system** is arranged on the right side of the machine tool, is connected to the machine tool through a two-section connecting rod mechanism and can freely move in the movement range of the connecting rod mechanism; the connecting rod mechanism can be locked by a locking handle to fix the position of the numerical control **system**; the three degree-of-freedom feed shafts are respectively a shaft X, a shaft Y and a shaft Z; the two degree-of-freedom rotating shafts are respectively a shaft A and a shaft B; the shaft A also serves as a turning spindle and can be detached to increase the effective travel of a workbench and

the shaft X of the machine tool. The miniature multifunctional combined machining center has the characteristics that the miniature multifunctional combined machining center is small in size and light in weight, can be placed at any place and can be used in a storied house; the miniature multifunctional combined machining center is low in power consumption and can be directly powered by a **lighting** source; the miniature multifunctional combined machining center is rich in functions and flexible and controllable in **structure**, comprises the tool magazine, can automatically exchange tools, can realize five-shaft linkage, and can complete turning, milling, boring, planing, grinding, slotting, **drilling**, tapping, hobbing and other machining processes.

16/26 © EPODOC / EPO

PN - [US2014292026](#) A1 20141002

PNFP - US9120517 B2 20150901

PR - US201313851701  
20130327; US201261616992P  
20120328

AP - [US201313851701](#) 20130327

DT - \*; Rep

CT - || R141 (A1)  
[US5884380](#) A 19990323 [ ] (THURM  
KENNETH R [US]);  
USD385232S S 19971021 [ ]  
(THURM KENNETH R);  
DE20021745U U1 20010308 [ ]  
(KRUSE INGO [DE]);  
[US6152585](#) A 20001128 [ ] (BARRY  
JAMES [US])  
- || STSE (B2)  
USD385232S S 19971021 [ ]  
(THURM KENNETH R);  
[US5884380](#) A 19990323 [ ] (THURM  
KENNETH R [US]);  
[US6152585](#) A 20001128 [ ] (BARRY  
JAMES [US]);  
DE20021745U U1 20010308 [ ]  
(KRUSE INGO [DE])

CCI - [B62J23/00](#) ; [B62J35/00](#)

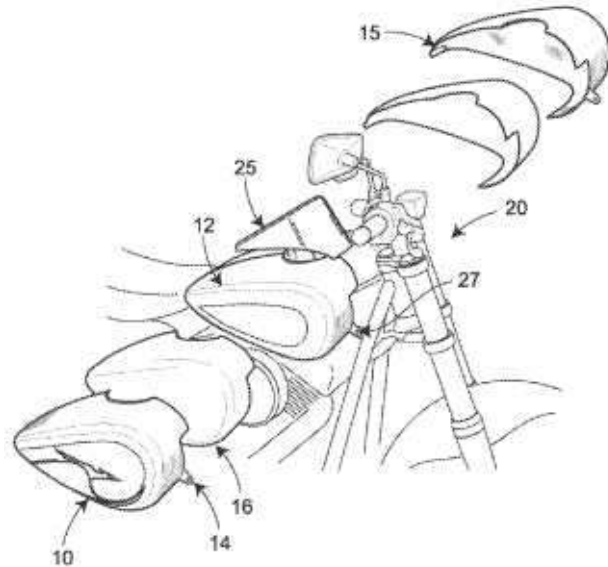
CCA - [F21Y2115/10](#) ; [Y10T29/49826](#)

CI - B62J6/00 (US)  
- B62J23/00 (EP, US)  
- B62J35/00 (EP, US)  
- F21K9/64 (EP, US)  
- F21V23/002 (US)

CA - F21Y2115/10 (EP, US)  
- Y10T29/49826 (EP, US)

PA - (A1 B2)  
SALVAGGIO JR DAVID [US]

TI - (A1)



CARBON FIBER SHELLS FOR  
CUSTOMIZING THE APPEARANCE  
OF A VEHICLE

- (B2)  
Carbon fiber shells for  
customizing the appearance of a  
vehicle

AB

- (A1 B2)  
A carbon fiber shell is used to  
change the appearance or look  
of a vehicle, such as a  
motorcycle, and is formed to be  
non-permanently installed over  
an existing vehicle component to  
customize the appearance of a  
vehicle while still being  
removable. The carbon fiber  
shell is molded to match the  
contours or the shape of the  
original vehicle component so  
that, when installed, the shell  
has the same contours and thus  
the same physical shape as the  
original vehicle component.  
Moreover, the carbon fiber shell  
is configured to be mounted onto  
the vehicle using existing  
mounting brackets, holes or  
other **structure** on the vehicle that  
is provided to mount or secure  
the original vehicle component,  
thereby eliminating the need  
to **drill** holes into, or apply glue  
or other adhesives to the  
original vehicle component. This  
feature additionally allows the  
carbon fiber shell to be removed  
in the same manner as the  
original vehicle component. The  
carbon fiber shell may also  
incorporate **lighting** effects and  
may be ordered via a **system** for  
customizing the vehicle.

PN - [WO2013148848](#) A1 20131003

PR - US201261616992P 20120328

AP - [WO2013US34124](#) 20130327

DT - \*; Rep

CT - */KR/ ISR (A1)*  
[EP2165921](#) A2 20100324 [X]  
(YAMAHA MOTOR RES & DEV  
EUROPE SRL [IT]);  
[JP2000177408](#) A 20000627 [Y]  
(YAMAHA MOTOR CO LTD);  
[US2006139939](#) A1 20060629 [Y]  
(OHIRA MASARU [JP], et al);  
JPH10181658 A 19980707 [A]  
(SUZUKI MOTOR CO);  
[US2005126546](#) A1 20050616 [A]  
(YAGISAWA KATSUICHI [JP])

CCI - [B29C70/30](#) ; [B62J23/00](#) ; [B62J35/00](#) ;  
[B62J50/40](#) ; [G09F13/28](#) ;  
[G09F21/048](#)

CCA - [G09F2013/222](#)

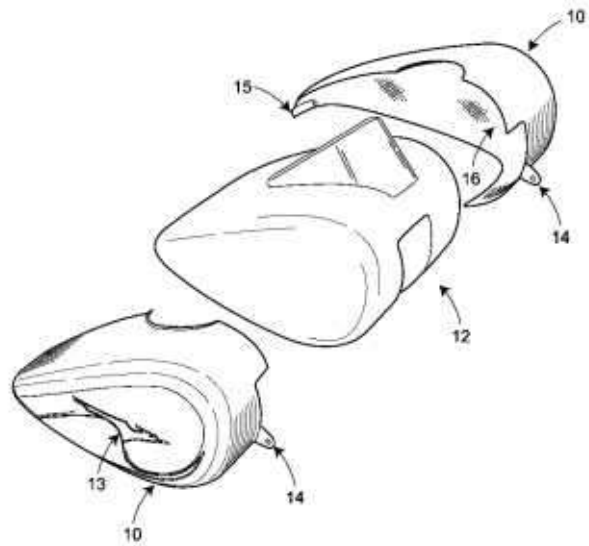
CI - B29C70/30 (EP)  
B62J23/00 (EP)  
B62J35/00 (EP)  
B62J50/40 (EP)  
G09F13/28 (EP)  
G09F21/048 (EP)

CA - G09F2013/222 (EP)

PA - SALVAGGIO DAVID JR [US]

TI - CARBON FIBER SHELLS FOR  
CUSTOMIZING THE APPEARANCE  
OF A VEHICLE

AB - A carbon fiber shell is used to  
change the appearance or look  
of a vehicle, such as a  
motorcycle, and is formed to be  
non-permanently installed over  
an existing vehicle component to  
customize the appearance of a  
vehicle while still being  
removable. The carbon fiber  
shell is molded to match the  
contours or the shape of the  
original vehicle component so  
that, when installed, the shell  
has the same contours and thus  
the same physical shape as the  
original vehicle component.  
Moreover, the carbon fiber shell  
is configured to be mounted onto



**FIG. 1**

the vehicle using existing mounting brackets, holes or other **structure** on the vehicle that is provided to mount or secure the original vehicle component, thereby eliminating the need to **drill** holes into, or apply glue or other adhesives to the original vehicle component. This feature additionally allows the carbon fiber shell to be removed in the same manner as the original vehicle component. The carbon fiber shell may also incorporate **lighting** effects and may be ordered via a **system** for customizing the vehicle.

**18/26** © EPODOC / EPO

- PN - [CN203066958U](#) U 20130717
- PR - CN20132044236U 20130127
- AP - [CN20132044236U](#) 20130127
- DT - I
- PA - UNIV XI AN SCI & TECHNOLOGY
- TI - Boring detection imaging **system**
- AB - The utility model discloses a boring detection imaging **system**, which comprises a probe rod, a data acquisition unit, a **lighting** facility, a depth detecting unit and an information processing and displaying unit, wherein the probe rod can stick into a **drill** hole that is detected; the data acquisition unit is installed at the front end of the probe rod; the **lighting** facility is installed at the front end of the probe rod; the depth detecting unit can detect the depth of the **drill** hole in a real-time manner, and the data acquisition unit is positioned in the **drill** hole; the information processing and displaying unit can analyze and process the information that is acquired by the data acquisition unit and the depth detecting unit, and can also simultaneously display analysis and processing results; the probe rod adopts an electric telescopic rod driven by an electric diving mechanism; the electric telescopic rod and the electric diving mechanism are connected through a transmission mechanism; the information processing and displaying unit comprises a main control chip, a displaying unit and a video codec; and the data acquisition unit comprises an infrared camera and a humidity sensor. The boring detection imaging **system** has the advantages of reasonably designed **structure**, lower input cost, simplicity and convenience in use, good using effect, and capability of continuously observing the internal condition of the **drill** hole in a real-time manner.

**19/26** © EPODOC / EPO

- PN - [CN103089148A](#) A 20130508
- PNFP - CN103089148B B 20140820
- PR - CN20131024694 20130123
- AP - [CN20131024694](#) 20130123
- DT - I

CT - *// STSE (A)*  
[CN102022106](#) A 00000000 [A];  
[CN102747949](#) A 00000000 [A];  
CN202181844U U 00000000 [A];  
[EP0203282](#) A1 00000000 [A];  
[CN102364028](#) A 00000000 [A]

PA - (A B)  
ZHEJIANG JICHAO AUTOMATION TECHNOLOGY CO LTD

TI - (A B)  
Control **system** special for down-the-hole **drill** carriage

AB - (A)  
The invention discloses a control **system** special for a down-the-hole **drill** carriage. The control **system** special for the down-the-hole **drill** carriage comprises a down-the-hole **drill** carriage controller, a control panel, a working condition displayer, a rotary motor, a rotary solenoid valve, a left drive motor, a left drive solenoid valve, a right drive motor, a right drive solenoid valve, a drive pump, a drive motor load sensor, a drive motor, a drive relay, an impactor, an air supply device, a baroreceptor, an air compressor, an air compressor relay, a generator, a diesel engine, a storage battery, a super-capacitor, a working relay, a capacitance relay, a working motor load sensor, a working motor, an impelling hydraulic cylinder, an impelling solenoid valve, a working pump, a swinging hydraulic cylinder, a swinging solenoid valve, a pitching hydraulic cylinder, a pitching solenoid valve, a supporting hydraulic cylinder group, a supporting solenoid valve group and a **lighting** device. According to the control **system** special for the down-the-hole **drill** carriage, whole electro-hydraulic drive of the down-the-hole **drill** carriage is realized. Besides, the down-the-hole **drill** carriage has the advantages of being stable in diesel engine load, simple in control **system**, simple in mechanical **structure**, small in energy loss, large in output force, and high in **drilling** efficiency.

20/26 © EPODOC / EPO

PN - [CN202088957U](#) U 20111228

PR - CN201120164373U 20110523

AP - [CN201120164373U](#) 20110523

DT - I

PA - ZHENGZHOU SAIRUI PETROLEUM EQUIPMENT MFG CO LTD

TI - Quick-moving **system** for compressor station

AB - The utility model relates to a quick-moving **system** for a compressor station, comprising an axle trailer **assembly**. The axle trailer **assembly** is connected with a base fixing device which is connected with a traction pin **assembly** and provided with a house body, the house body is provided with an exhaust **system** and internally provided with an air compressor and an air circuit **assembly**, the air circuit **assembly** is connected with an air cylinder **assembly** and a dryer **assembly** in sequence, and the house body is externally provided with an air outlet **assembly**. A set of complete air source purifying **system** consists of the house body, the air compressor, the air circuit **assembly**, the air cylinder **assembly**, the dryer **assembly** and the air outlet **assembly**, and can be connected on any gas appliance by the air outlet **assembly**. The set of air source purifying **system** is fixed on an axle trailer **system** by the base fixing device which can be detached at any time. An external anti-explosion **lighting** lamp can be used for auxiliary light for night work. The quick-moving **system** is particularly suitable for **drilling** crew in desert or gobi.

21/26 © EPODOC / EPO

PN - [CN102109156](#) A 20110629  
PNFP - CN102109156B B 20121205  
PR - CN201010539221 20101110  
AP - [CN201010539221](#) 20101110  
DT - I  
CT - *// STSE (A)*  
CN202132826U U 00000000 [ ];  
CN202132827U U 00000000 [ ];  
CN201359241Y Y 00000000 [ ];  
CN201281324Y Y 00000000 [ ];  
[JP2006091132](#) A 00000000 [ ];  
[JP2001167613](#) A 00000000 [ ];  
[DE3523028](#) A1 00000000 [ ]  
PA - (A B)  
RYDON LED LIGHTING CO LTD  
TI - (A B)  
Maintenance-free active heat radiating **system** of LED (Light Emitting Diode) lamp  
AB - (A)  
The invention discloses a maintenance-free active heat radiating **system** applied to an LED (Light Emitting Diode) lamp, and the **system** provided by the invention has the advantage of good heat radiating effect and basically does not have dust. In the maintenance-free active heat radiating **system** disclosed by the invention, a cyclone accelerator, an air filter, a cyclone dust shunt and a dust collector are arranged at the lower end of a hollow lamp post; the air inlet of the cyclone dust shunt is connected with outside air; after the air passes through the rotary channel of the cyclone dust shunt, large-grain dust is deposited into the dust collector by virtue of a rotary acceleration; then, the clean air enters the middle channel of the cyclone dust shunt and is blown into the air filter and the cyclone accelerator; a heat radiator is arranged on an LED **lighting assembly** at the upper end of the lamp post; a through hole is **drilled** on the heat radiator; a fixed pipe and a heat radiating sheet are arranged at the upper face of the heat radiator; after the air supplied by the cyclone accelerator at the lower end in the lamp post enters the fixed pipe connected with the lamp post from an inner hole at the upper end of the lamp post, the air passes through the through hole through a vent pipe arranged at the other end of the fixed pipe and is blown into the air inlet of an air increaser through the other end of the through hole; and the air outlet of the air increaser is aligned with the heat radiating sheet to blow the air. The maintenance-free active heat radiating **system** disclosed by the invention has the advantage of good heat radiating effect and basically does not have dust.

22/26 © EPODOC / EPO

PN - [CN101343900](#) A 20090114  
PNFP - CN101343900B B 20100616  
PR - CN200810118885 20080826  
AP - [CN200810118885](#) 20080826  
DT - I  
PA - (A)  
BEIJING JANGHO CURTAIN WALL CO [CN]

- (B)  
BEIJING JANGHO CURTAIN WALL CO
- TI - (A B)  
Large-span non-upright post curtain wall **system**
- AB - (A)  
The invention provides a great span non-column curtain wall **system**. The overall **structure** adopts the combined method of frame supporting glass curtain wall **structure** and drawing bar glass curtain wall **structure**. A cross beam is arranged between every two transverse splicing seams of the glass panels, one end of the cross beam is connected with the cross beam supporting **structure**, the other end is inserted into the adjacent cross beam through a core sleeve, and the upper part and the lower part of the cross beam supporting **structure** are connected with the upper top **structure** and the lower bottom **structure**. A hanging rod **system** is downward installed on the upper top **structure**, and under the self weight of the glass, the cross beam constantly remains a horizontal state or within the flexibility scope. The hanging rod **system** and the cross beam are crossed and both are inserted in the pre-drilled holes on the cross beam, load bearing adjusting nuts are installed at the lower parts of the pre-drilled holes, and the cross is supported on the load bearing adjusting nuts. The glass panel is inserted and fixed in the glass installation grooves of the upper and lower cross beams. The great span horizontal unscreened space is realized through the invention, and the great span non-column curtain wall **system** plays an active role in **lighting** and visual effect.
- (B)  
The invention provides a long-span non-column curtain wall **system**. The overall **structure** of the curtain wall **system** adopts the mode that a frame supported glass curtain wall **structure** is combined with a pulling rod glass curtain wall **structure**. A cross beam is arranged in each transversal splicing seam on a glass panel, one end of each cross beam is connected with a cross beam supporting **structure**, and the other end of the cross beam is spliced with the adjacent cross beam through a core sleeve, and the upper part and the lower part of the cross beam supporting **structure** are respectively connected with an upper top **structure** and a lower bottom **structure**. A hanging rod **system** is downward installed on the upper top **structure**, and under the deadweight function of the glass, the cross beam constantly stays in a horizontal state or within the flexibility scope. The hanging rod **system** and the cross beams are crossed and inserted into the pre-drilled holes on the cross beams, load bearing and adjusting nuts are installed at the lower parts of the pre-drilled holes, and the cross beams are supported on the load bearing and adjusting nuts. The glass panel is inserted and fixed in glass installation grooves of the upper and lower cross beams. The invention realizes the long-span horizontal transparent space, and plays an active role in **lighting** and visual effect.

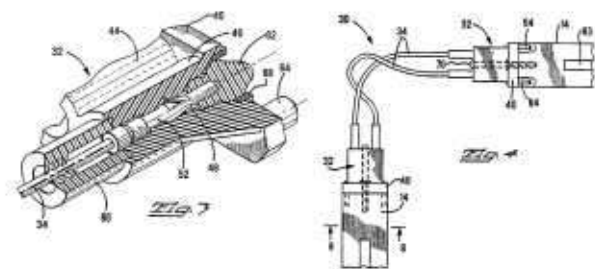
23/26 © EPODOC / EPO

- PN - [JP2004006397](#) A 20040108
- PR - JP20030273299 20030711
- AP - [JP20030273299](#) 20030711
- DT - I
- FI - F21S1/02&E; F21S8/02&420; F21V21/04; F21V21/04&G; F21V21/04&H; F21V21/04&310; F21V21/04&330; F21V29/00&A; F21V29/00&100; F21V29/00&111; F21V29/00&113; F21V29/503; F21V29/505; F21V29/77; F21V29/83; F21V7/00; F21V7/20; F21V7/20&Z; F21Y101/00
- FT - 3K014/LA02; 3K014/LB03; 3K014/LB04; 3K243/MA01
- PA - USHIO SPEX INC

- TI - **LIGHTING SYSTEM** HAVING SEPARABLE **STRUCTURE**
- AB - PROBLEM TO BE SOLVED: To provide a **lighting system** easy for installation work, component replacement, maintenance, specification revision, and the like.
- SOLUTION: A **lighting system** 30 is divided into three modules of a power supply part 33 in which electric components such as a lamp socket are accommodated, a **lighting** main body 35 in which optical components such as a mirror and a cone are mainly accommodated, and an installing frame 1 for installing the **lighting system** to a building. The modules are attachably/detachably combined with each other. The frame 1 is inserted into a hole **drilled** through a ceiling to be fixed. Various types of the **lighting** main bodies 35 are attached to the frame 1. Various types of the **lighting** main bodies 35 and various types of the power supplies 33 are selectively combined to be assembled into a desirable **lighting system**. When a user desires to replace a component of the **lighting system**, only the module with the component can be replaced.
- COPYRIGHT: (C) 2004,JPO

24/26 © EPODOC / EPO

- PN - [GB2275579](#) A 19940831
- PNFP - GB2275579 B 19970430
- PR - US19930021837 19930224
- AP - [GB19940002323](#) 19940207
- DT - \*, Rep
- CT - || STSE (A)  
[GB1290407](#) A 00000000 [ ];  
[US4479691](#) A 00000000 [ ];  
[US4572600](#) A 00000000 [ ];  
[US4770641](#) A 00000000 [ ]
- || STSE (B)  
[GB907331](#) A 00000000 [ ];  
[GB1290407](#) A 00000000 [ ];  
[GB1581806](#) A 00000000 [ ];  
[US4479691](#) A 00000000 [ ];  
[US4572600](#) A 00000000 [ ];  
[US4770641](#) A 00000000 [ ]
- CCI - [H01R13/621](#) ; [H01R25/162](#)
- CCA - [H01R13/521](#) ; [H01R13/5216](#)
- CI - H01R13/621 (EP)  
H01R25/162 (EP)
- CA - H01R13/521 (EP)  
H01R13/5216 (EP)
- PA - (A B)  
WHITAKER CORP [US]
- TI - (A B)  
Surface mount coupling connector
- AB - (A)  
A coupling connector 30 interconnects conductors contained in components 14 of modular systems such as



modular wiring or strip **lighting** systems (Figure 1). The connector 30 includes a pair of connector ends 32 interconnected by at least one conductor 34, the ends of which terminate in conductive gel 62. The ends 32 are firmly attached to surfaces of the components 14 to be interconnected so that the gel contacts the conductors contained within the components where the conductors intersect the component surfaces. Moisture resistant seals 86, 88 are arranged to seal the areas of contact from the elements. A cover is provided which is removably attached to the two connector ends 32 to provide a relatively rigid **structure**. The cover (Figures 6 to 10) is removable to provide access for disassembling the connector. The lightning **system** may be used in aircraft, **drilling** rigs, theatres and airports. <IMAGE>

25/26 © EPODOC / EPO

- PN - [DE4101277](#) A1 19920723
- PR - DE19914101277 19910117
- AP - [DE19914101277](#) 19910117
- DT - \*; Rep
- CT - *// STSE (A1)*  
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[DE3808907](#) A1 19891005 [ ] (KUEFFNER PETER DIPL ING [DE]);  
[DE3612681](#) A1 19870702 [ ] (GARTNER & CO J [DE]);  
[DE3334859](#) A1 19850411 [ ] (CONZELMANN FLACHGLAS [DE]);  
[DE3240639](#) A1 19840517 [ ] (BISCHOFF GLASTECHNIK [DE]);  
[DE3219798](#) A1 19830113 [ ] (CARDINALE RAFFAELE [CH]);  
[DE2424225](#) A1 19741212 [ ] (SCANGLAS AS);  
DE7915397U U1 00000000 [ ]
- CTNP - *// STSE (A1)*  
[ ] - Deutsche Bauzeitung "Structural glazing" 2/89S. 78-85
- CCI - [E06B3/5436](#) ; [E06B3/6604](#) ; [E06B3/6612](#) ; [E06B3/66304](#) ; [E06B3/66323](#) ; [E06B3/667](#) ; [E06B5/165](#) ;  
[E06B9/264](#)
- CCA - [Y02A30/249](#) ; [Y02B80/22](#)
- CI - E06B3/5436 (EP)  
- E06B3/6604 (EP)

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|     | - E06B3/6612 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|     | - E06B3/66304 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|     | - E06B3/66323 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|     | - E06B3/667 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|     | - E06B5/165 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|     | - E06B9/264 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CA  | - Y02A30/249 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|     | - Y02B80/22 (EP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| PA  | - GRIMM FRIEDRICH BJOERN [DE]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| TI  | - Double glazing - has profiled distance pieces to hold the panes at gap with elastic adhesive to transfer forces from one pane side to the other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| AB  | - The insulating glass <b>assembly</b> , using at least two panes for double glazing, has bodies of dimensional stability to hold the panes apart. The distance body has holders on the sides towards the glass panes to be secured by an adhesive and mouldable elastic material, esp. Si. The distance bodies are fitted at a gap from the panes. The bodies to act as distance pieces are hollow, with hollow communicating zones to be filled with material to the glass panes. The bodies are formed by at least two sections plugged together or in a keyed fit with each other. The sides or sections of the holders towards the glass panes are fitted with stabilising projections or holders to take the glass. The distance holder bodies have a round, oval or polygon cross section, or they are hollow bars with an H-shaped outer profile. The distance bodies form a bond or a screen, or a grid of bars and knotting bodies. The holding bodies can be fitted with a central threaded <b>drilling</b> , to be aligned with a <b>drilling</b> passing through the glass pane, for a screw mounting. ADVANTAGE - The distance body <b>structure</b> allows forces to be transferred from one side of the glass pane to the other, to give a glass sandwich <b>assembly</b> . |
| TXT | - double glazing unit with built-in: <b>lighting</b> , sprinkler <b>system</b> , electro-installation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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| PN | - <a href="#">CN201011012Y</a> 20080123                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| PR | - CN200720118781U 20070301                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| AP | - <a href="#">CN200720118781U</a> 20070301                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| DT | - I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| PA | - SHENZHEN CATIC CURTAIN WALL EN [CN]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| TI | - Light collecting dome <b>system</b> with glass <b>structure</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| AB | - The utility model discloses a glass <b>structure lighting</b> peak <b>system</b> which solves the technical problem that the utility model provides a glass <b>structure lighting</b> peak <b>system</b> that can arrange and fix glass support components and surface glasses without <b>drilling</b> on the glass surface. The harmless connection of the glass <b>structure</b> and the connection of adaptable <b>structure</b> displacement make the utility model have good dependability. The utility model adopts the following technical proposals for solving the technical problem. One glass <b>structure lighting</b> peak <b>system</b> comprises a surface glass, a main glass rib, a secondary glass rib and an access device. The access device comprises a shell body and a press board. The main glass rib is connected crossly and vertically with the secondary glass rib by the shell body. The surface glass is fixed at the top of the shell body by the press board. The utility model, compared with the prior technology, can fix the surface glass and the rib glass together without <b>drilling</b> on the glass surface. The connecting process of the glass <b>structure</b> is harmless connection, therefore, the utility model does not cause glass crazing and has higher <b>structure</b> reliability. |

