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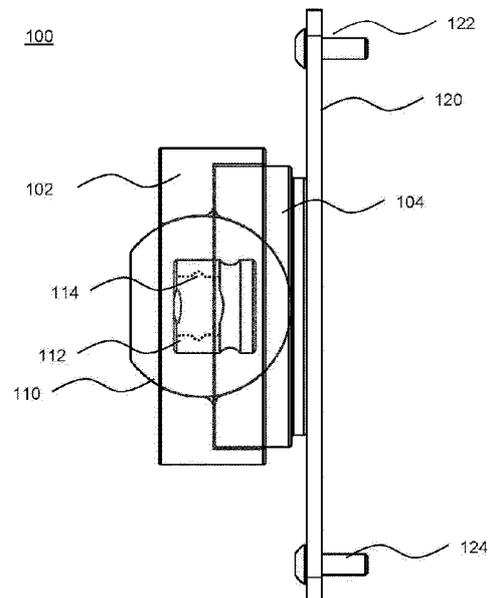
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54 **Coupling device for coupling an accessory to a carrying arm, such arm and a holding bar.**

57 The various aspects relate to a coupling device for coupling an accessory to a carrying arm, such carrying arm and a holding bar to be provided between the arm and one or more coupling devices. The coupling device comprises a coupling module for coupling the accessory to the coupling device, a first connector for providing a releasable connection to the arm, the arm comprising a second connector arranged to be connected to the first connector and a joint for connecting the first connector to the coupling module. The joint comprises a first joint member connected to the coupling module and a second joint member connected to the first connector, the joint members are connected for providing the joint such that the first joint member and the second joint member are swivelable and the first connector is directed under an angle with respect to the joint axis.



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COUPLING DEVICE FOR COUPLING AN ACCESSORY TO A CARRYING ARM, SUCH ARM AND A HOLDING BAR

TECHNICAL FIELD

5 The various aspects relate to arms for carrying accessories and devices and connection modules for connecting such accessories and devices to the arms.

BACKGROUND

Various carrying arms for carrying monitor displays are available on the market.
10 Monitors may be fixed directly to such arms via a connector plate with screw holes spaced apart in accordance with the FDMI standard (Flat Display Mounting Interface), which connector plate is fixed to the carrying arm, either directly or via swivelable joints. Also arms are available with a detachable connector plate. This allows monitor displays to be removed from the arm quickly and conveniently for safe storage and efficiently
15 connecting the connector plate to the monitor display.

SUMMARY

It is preferred to provide a system for carrying accessories and devices like a monitor display and parts thereof that provide more flexibility.
20

A first aspect provides a coupling device for coupling an accessory to a carrying arm. The coupling device comprises a coupling module for coupling the accessory to the coupling device, a first directional connector for providing a releasable connection to the arm, the arm comprising a second directional connector arranged to be connected to
25 the first directional connector and a joint for connecting the first directional connector to the coupling module. The joint comprises a first joint member connected to the coupling module and a second joint member connected to the first directional connector, the first joint member and the second joint member are connected for providing the joint such that the first joint member and the second joint member are swivelable relative to one
30 another in at least one dimension over at least one swiveling axis which swiveling axis is provided under an angle with respect the orientation of the first directional connector and the first directional connector is directed in a longitudinal orientation with respect to the joint if the joint is in substantially a centre position.

Such coupling device allows for flexibility in building carrying systems for multiple monitors, by providing the joint fixed to the coupling module - like a coupling plate - and providing the releasable connector to the second joint member, rather than providing the releasable connection between the coupling module and the first joint member. This is because such coupling device is suitable for connecting an accessory to a single arm, but also for connecting the accessory to a larger holding module like a holding bar, together with other accessories. Such larger holding module may in turn be connected to the arm.

Each accessory is preferably connected to such holding module via a joint, because this allows for a usually desired ability to adjust an angle of each accessory, like a monitor display. By providing the coupling device according to the first aspect, only the second directional connector would have to be provided with the larger holding module - or the arm, for that matter - rather than a full joint with a connector for connecting to a connector plate. This allows for flexibility in design and building, but also for less complexity per individual part and in more efficient storage management.

A second aspect provides an arm for carrying an accessory. The arm comprises an arm member and a second directional connector arranged to be connected to the first directional connector of the coupling device according to the first aspect for providing a releasable connection to the coupling device according to the first aspect. The second directional connector is pivotally connected to the arm member via a pivotal connection member and the second directional connector is connected to the arm member such that the second directional connector is oriented substantially perpendicular to a pivotal axis of the pivotal connector connection.

Together with the coupling device according to the first aspect, this allows, in addition to the advantages indicated previously, for a flexible and compact system for carrying accessories.

A third aspect provides a holding bar for holding at least two accessories. The holding bar comprises a third directional connector arranged to be connected to the second directional connector of the arm according to the second aspect, a fourth directional connector arranged to be connected to the first directional connector of the coupling

device according to the first aspect for providing a releasable connection to the coupling device according to the first aspect; and a fifth directional connector arranged to be connected to the first directional connector of the coupling device according to the first aspect for providing a releasable connection to the coupling device according to the first aspect. The third directional connector, the fourth directional connector and the fifth directional connector are oriented substantially perpendicular to a longitudinal direction of the holding bar, the fourth directional connector and the fifth directional connector are oriented substantially parallel to one another; and the third directional connector is oriented in a direction substantially opposite to that of the fourth directional connector and the fifth directional connector.

Such holding bar extends the opportunities for flexibly providing a solution for carrying multiply accessories by means of one or more carrying arms.

A fourth aspect provides a kit of parts comprising at least two of the coupling devices according to the first aspect, the arm according to the second aspect and the holding bar according to the third aspect.

BRIEF DESCRIPTION OF THE DRAWINGS

The various aspects and embodiments thereof will now be discussed in conjunction with Figures. In the Figures,

Figure 1: shows a monitor connection module;

Figure 2 A: shows a carrying arm viewed from a side;

Figure 2 B: shows the carrying arm viewed from the top;

Figure 3: shows the carrying arm and the monitor connection module in a connected state;

Figure 4: shows a first multi monitor holding module; and

Figure 5: shows a second multi monitor holding module.

Figure 6 A: shows a second monitor connection module from the top

5 Figure 6 B: shows a second monitor connection module from a side

DETAILED DESCRIPTION

10 Figure 1 shows a monitor connection module 100 as a coupling device. The monitor connection module 100 is arranged for coupling a monitor - in the sense of a display - to a carrying arm. The monitor connection module 100 comprises a ball 110 as a second joint member of a ball joint. The ball 110 is connected to a female quick release connector 112 as a first directional connector for connecting the monitor connection module 100 to the carrying arm. In this particular embodiment, the ball 110 is connected
15 to the female quick release connector 112 by the female quick release connector 112 being incorporated in the ball 110.

The female quick release connector 112 comprises an indentation 114 at the inside wall of the female quick release connector 112. The indentation may be provided as a local
20 indentation or as a circumferential groove along the inner wall of the female quick release connector 112. The ball 110 is preferably made out of plastic and the female quick release connector 112 may be incorporated while the ball 110 is moulded. Alternatively, the female quick release connector 112 and the ball 110 are provided in one single piece and one single material.

25 The ball 110 is confined in a first joint member comprising a joint cover housing 102 and a joint bottom housing 104. The joint cover housing 102 and the joint bottom housing 104 provide a cavity with an opening having a smaller circumference than the largest diameter of the cavity, thereby retaining the ball 110. The joint bottom housing 104 is
30 connected to a connector plate 120. In another embodiment, the joint bottom housing 104 and the connector plate 120 may be provided in a single piece of material. The connections between the joint cover housing 102, the joint bottom housing 104 and the connector plate 120 may be provided by means of screws, welds, snap-fit connections, nuts-and-bolts, other, or a combination thereof.

The connector plate 120 acts as a coupling module for coupling the monitor to the monitor connection module 100. Alternatively or additionally to the connector plate 120, a holder for a tablet computer, a holder for a mobile telephone, a holder for a laptop computer, a document holder, a holder for other equipment, another holder for other equipment or a combination thereof may be provided with the connection module 100.

The connector plate 120 is preferably a rectangular and in particular square plate comprising four holes at such distances as defined by the VESA (Video Electronics Standards Association) by means of the FDMI standard (Flat Display Mounting Interface). Figure 1 shows a first screw 122 and a second screw 124 provided in holes provided in the connector plate 120 for connecting a monitor to the monitor connection module 100.

The female quick release connector 112 is a directional connector in the sense that a male part can be inserted in one direction and preferably in one single direction. In this case the one single direction is horizontal in the plane of Figure 1. The female quick release connector 112 is provided in the ball 110 such that with the ball being in a centred position, the female quick release connector 112 is provided in a longitudinal orientation with respect to the joint provided by the ball 110 and a housing provided by the joint cover housing 102 and the joint bottom housing 104. The centred position of the swivelable connection is not necessarily the position between two extremities of swiveling action. Rather, the centred position is the position that a person would consider to be the centred position, where two parts swivelable with respect to one another are provided in elongated continuation of one another - rather than being provided in an angle relative to one another.

The ball 110 on one hand and the joint cover housing 102 and the joint bottom housing 104 on the other hand provide a joint. The joint enables the ball on one hand and the joint cover housing 102 and the joint bottom housing 104 on the other hand to swivel in any direction with a pivotal axis perpendicular to the orientation of the female quick release connector 112 and over a pivotal axis axially oriented to the female quick release connector 112. Alternatively, a joint is provided that is swivelable over a pivotal axis that is oriented perpendicularly or axially with respect to the female quick release connector 112.

As an alternative to the ball joint, also other swivelable joints may be provided. Either one joint may be provided or a combination of two or more joints. Such joints may be of the type enabling a swivel movement or of a type enabling movement in two or more directions, for example a uni-directional swivel joint. The joint preferably allows a swiveling action over an axis that is under an angle with the orientation of the quick release connector 112.

Figure 2 A shows a side view of a carrying arm 200 for carrying an accessory. The carrying arm comprises an arm member 210 comprising a hole 202 for providing a swivelable connection with a stationary stand 250. The stationary stand 250 is preferably a pole with a substantially cylindrical shape. The stationary stand 250 comprises in this embodiment a flange 252 for preventing the carrying arm 200 from sliding too low along the stationary stand 250. Alternatively or additionally, the hole 202 may be provided as a blind hole for the same purpose.

The carrying arm 200 further comprises a connector holding member 220 which is pivotally connected to the arm member 210 and pivotable over a pivoting axis 222. The connector holding member 220 has a male quick release connector 230 connected to it as a second directional connector. The male quick release connector 230 has a sliding male connector sleeve 232 provided around an inner male connector member 236 which is drawn by means of a dotted line. By sliding the male connector sleeve 232 towards the arm member 210, a securing ball 234, provided partially in a cavity in the male connector sleeve 232 and partially in a cavity in the inner male connector member 236, is allowed to lower, due to a slightly tapered shape of the inner male connector member 236. The lowering of the securing ball 234 results in the securing ball not to protrude anymore from the male connector sleeve 232, which in turn allows the male quick release connector 230 to be inserted in the female quick release connector 112 (Figure 1).

If the male connector sleeve 232 is slid back in resting position, away from the arm member 210, the securing ball 234 moves back in its protruding position as shown in Figure 2 A. If this occurs when the male connector sleeve 232 is inserted in the female quick release connector 112, the securing ball 234 protrudes in the indentation 114 of the female quick release connector 112. In this way, the connection between the male

quick release connector 230 and the female quick release connector 112 is secured. The male connector sleeve 232 is preferably spring loaded with a bias away from the arm member 210. As an additional security, a blocking member 240 is provided between the male connector sleeve 232 and the connector holding member 220. This type of quick release coupling is arranged to provide a quick and secure way of coupling and de-coupling the connection module to and from the carrying arm 200.

Figure 2 B shows a top view of the carrying arm 200 and the stationary stand 250. Figure 2 B shows in particular the hole 202 in another perspective. Figure 2 B also shows a pivotal connection 224 between the arm member 210 and the connector holding member 220. The pivotal connection 224 provides the pivoting axis 222 that is perpendicular to the orientation of the male quick release connector 230. The pivoting axis 222 between the arm member 210 and the connector holding member 220 is parallel to a stand pivoting axis between the arm member 210 and the stationary stand 250. Alternatively, more pivotal connections or a single pivotal connection with more than one degree of freedom are provided between the arm member 210 and the connector holding member 220.

Figure 3 shows the connection module 100 connected to the carrying arm 200. With the male quick release connector 230 provided in the female quick release connector 112 and the female quick release connector 112 connected to the ball 110 in a way that the female quick release connector 112 is fully comprised by the ball 110, a very compact connection is provided between the connection module 100 and the carrying arm 200. The connectors may also be provided in an opposite way - the female quick release connector 112 connected to the connector holding member 220 and the male quick release connector 230 connected to the ball 110. This would mean the ball 110 and with that, the connection module 100 comprises a further protruding part.

As to the connector holding member 220, providing connectors in an opposite way would either comprise a hole or a protruding part holding the female quick release connector 112. A hole in the connector holding member 220 for receiving the male quick release connector 230 when connected to the ball 110 would make it very difficult, if not impossible, to provide the pivotal connection 224 (Figure 2 B) by means of a screw or bolt through the whole of the arm member 210. Alternatively, the pivotal connection may

be provided by screws or bolts not being provided entirely through the whole connector holding member 220. This could result in a less robust connection between the arm member 210 and the connector holding member 220. And a protruding member for holding the female quick release connector 112 would result in a total construction less compact than the one discussed above.

In again another embodiment, the ball 110 is provided with a hole with a screw thread and the connector holding member 220 with a through hole for a bolt or a screw for connecting the ball 110 to the connector holding member 220. In this embodiment, both the ball 110 and the connector holding member 220 comprise a female directional connector. Such connection is less convenient to use than the connector discussed above, in particular not in case a screwdriver is required. Additionally or alternatively, other types of connectors may be used for connecting the monitor connection module 100 to the carrying arm 200. Other available and new connection types, including quick release mechanisms, may be used as well, with male - female connector parts, female-female connector parts and with hermaphrodite connector types, comprising both protruding and indented parts in connector parts.

Figure 4 shows the carrying arm 200 connected to a first multi monitor holding module 400 for carrying multiple monitors. The first multi monitor holding module 400 comprises a further female directional connector 410 connected to a first bar connecting plate 412 by being provided in the first bar connecting plate 412. The further female directional connector 410 is arranged to be connected to the male quick release connector 230. Alternatively, the further female directional connector 410 and the first bar connecting plate 412 are provided in one single piece and one single material

The first bar connecting plate 412 is pivotally connected to a second bar connecting plate 414 such that the first bar connecting plate 412 and the second bar connecting plate 414 are pivotable with respect to one another wherein the pivotal axis of the connection is axially oriented to the orientation of the further female directional connector 410. The second bar connecting plate 414 is connected to a first holding bar 450 and may be connected in a fixed way.

The first multi monitor holding module 400 further comprises a further male quick release connector 420 and a yet further male quick release connector 430. The further male quick release connector 420 and the yet further male quick release connector 430 are arranged to be connected to the female quick release connector 112 comprised by the monitor connection module 100. The yet further male quick release connector 430 as shown in Figure 4 may be the same as shown in other embodiments or of a different type. With two male connectors oriented substantially parallel to one another, substantially perpendicular to the orientation of the first holding bar 450 and substantially parallel as well as substantially opposite to the orientation of the further female directional connector 410, the first multi monitor holding module 400 is arranged for holding two monitors and/or other accessories.

Figure 5 shows a second multi monitor holding module 500. The second multi monitor holding module 500 is connected to a first carrying arm 200 and a second carrying arm 200'. The second multi monitor holding module 500 comprises a second holding bar 550 which has a rail 510 provided in it for holding at least 2 fixed or slidable female connector members 512. The slidable female connector members 512 are arranged for connecting with the male quick release connector 230 connected to the first carrying arm 200 and the second carrying arm 200'.

On a side opposite to where the rail 510 is located, the second holding bar 550 has a first fixed or slidable male connector 520, a second fixed or slidable male connector 530 and a third fixed or slidable male connector 540 connected to it. The male quick release connector 520 as shown in Figure 5 may be the same as shown in other embodiments or of a different type. The male connectors are oriented substantially parallel to one another, substantially perpendicular to the orientation of the second holding bar 550 and substantially parallel as well as substantially opposite to the orientation of the slidable female connector members 512, the second multi monitor holding module 500 is arranged for holding multiple monitors, up to an amount of three in this embodiment. A higher amount may be envisaged as well.

The second holding bar 550 has a slight curvature, which means that the orientation of the first male connector 520 is not entirely parallel to the orientation of the second male connector 530 and the third male connector 540, but at least substantially parallel. The

orientation of the male connectors is perpendicular to the orientation of a tangent to the second holding bar 550 at a location where the respective male connector is connected to the second holding bar 550. The second holding bar 550 may be arranged to have a fourth male connector connected to it for holding yet an additional monitor.

5

Figure 6 A and figure 6 B show a further monitor connection module 600. The monitor connection module 600 comprises a connector plate 620. To the connector plate 620, a U-shaped bracket 604 is provided as a first joint member. The bracket 604 is connected to the connector plate 620 by means of a bolt 608 that is fit on a protruding threaded bolt member (not shown) provided on the connector plate 620. Alternatively, the connector plate 620 and the U-shaped bracket 604 are provided in one single piece and one single material.

10

To the bracket, a connection member 602 is provided as a part of a second joint member. The connection member 602 is fit in a connection holding member 606 as a part of a second joint member. The connection holding member 606 is pivotally connected to the bracket 604, allowing a movement over a pivoting axis 630.

15

The connection between the connection holding member 606 and the connection member 602 may be provided as a rigid connection or as a pivoting connection. In the latter case, the connection may be used to swivel a monitor to which the connector plate 620 is connected from portrait orientation to landscape orientation and vice versa.

20

To the connection member 602, a female quick release connector 612 is connected. In this particular case, the female quick release connector 612 is provided inside the connection member 602. The female quick release connector 612 is arranged for coupling the monitor connection module 600 to a male quick release connector like the male quick release connector 230 as depicted in Figure 2 and other Figures. Alternatively, the connection member 602 and the female quick release connector 612 are provided in one single piece and one single material.

25

30

CONCLUSIES

1. Koppelingsinrichting voor het koppelen van een accessoire aan een draagarm,
5 de koppelingsinrichting omvattende:
- Een koppelingsmodule om de accessoire aan de koppelingsinrichting te koppelen;
 - Een eerste richtingsgeoriënteerde connector om in een losneembare verbinding met de draagarm te voorzien, de arm omvattende een tweede richtingsgeoriënteerde
10 connector ingericht om verbonden te worden met de eerste richtingsgeoriënteerde connector; en
 - Een verbinding om de eerste richtingsgeoriënteerde connector aan de koppelingsmodule te verbinden;
- Waarbij:
- 15 - De verbinding een eerste verbindingsdeel omvat dat verbonden is aan de koppelingsmodule en een tweede verbindingsdeel omvat dat verbonden is met de eerste richtingsgeoriënteerde connector;
 - Het eerste verbindingsdeel en het tweede verbindingsdeel zijn verbonden om in de verbinding te voorzien zodanig dat het eerste verbindingsdeel en het tweede
20 verbindingsdeel scharnierbaar zijn ten opzichte van elkaar over ten minste één scharnieras welke scharnieras is voorzien onder een hoek ten opzichte van de oriëntatie van de eerste richtingsgeoriënteerde connector; en
 - De oriëntatie van de eerste richtingsgeoriënteerde connector is gericht in het verlengde van de verbinding als de verbinding in hoofdzaak in een gecentreerde positie
25 is geplaatst.
2. Koppelingsinrichting volgens conclusie 1, waarbij de scharnieras in hoofdzaak loodrecht is voorzien ten opzichte van de oriëntatie van de eerste richtingsgeoriënteerde connector.
- 30
3. Koppelingsinrichting volgens een der conclusies 1 tot en met 2, waarbij de verbinding een kogelgewricht is.

4. Koppelingsinrichting volgens conclusie 3, waarbij het tweede verbindingsdeel een kogel is die is omvat door het kogelgewricht.

5. Koppelingsinrichting volgens een der conclusies 1 tot en met 2, waarbij het gewricht ten minste een van de volgende omvat:

- Een scharnier die in een enkele richting beweegbaar is, waarbij de scharnieras van de verbinding in hoofdzaak loodrecht op de oriëntatie van de eerste richtingsgeoriënteerde connector staat; of

- Een scharnier die in een enkele richting beweegbaar is, waarbij de scharnieras van de verbinding in hoofdzaak axiaal is georiënteerd ten opzichte van de eerste richtingsgeoriënteerde connector.

6. Koppelingsinrichting volgens een der voorgaande conclusies, waarbij de eerste richtingsgeoriënteerde connector is ingericht voor het ontvangen van een parende tweede richtingsgeoriënteerde connector.

7. Koppelingsinrichting volgens conclusie 6, waarbij een eerste van de eerste richtingsgeoriënteerde connector en de tweede richtingsgeoriënteerde connector van een mannelijk type is en een tweede van de eerste richtingsgeoriënteerde connector en de tweede richtingsgeoriënteerde connector van een vrouwelijk type is.

8. Koppelingsinrichting volgens een der voorgaande conclusies, waarbij ten minste een van de eerste richtingsgeoriënteerde connector en de tweede richtingsgeoriënteerde connector een snelkoppeling omvat.

9. Koppelingsinrichting volgens een der voorgaande conclusies, waarbij de koppelingsmodule is ingericht om gekoppeld te worden aan een beeldscherm.

10. Koppelingsinrichting volgens een der voorgaande conclusies, waarbij de koppelingsmodule een VESA compatible plaat is.

11. Arm voor dragen van een accessoire, omvattende:

- Een armdeel;

- Een tweede richtingsgeoriënteerde connector ingericht om verbonden te worden aan een eerste richtingsgeoriënteerde connector van de koppelingsinrichting volgens een der voorgaande conclusies om in een losneembare verbinding met de koppelingsinrichting volgens een der voorgaande conclusies te voorzien, welke tweede

5 richtingsgeoriënteerde connector scharnierbaar is verbonden aan het armdeel via een scharnierend verbindingsdeel;

Waarbij de tweede richtingsgeoriënteerde connector is verbonden aan de arm zodanig dat de tweede richtingsgeoriënteerde connector in hoofdzaak loodrecht is georiënteerd ten opzichte van een scharnieras van een verbinding tussen het armdeel en het

10 scharnierend verbindingsdeel.

12. Arm volgens conclusie 11, waarbij de scharnieras in hoofdzaak loodrecht op de lengterichting van de arm staat.

13. Arm volgens een der conclusies 11 tot en met 12, verder omvattende een scharnierend standaard verbindingsdeel om te voorzien in een scharnierbare verbinding met een standaard en waarbij de scharnieras van de verbinding tussen het armdeel en het scharnierend verbindingsdeel in hoofdzaak parallel is aan de scharnieras van de scharnierbare verbinding met de standaard en het scharnierend standaard

15 verbindingsdeel.

20

14. Arm volgens een der conclusies 11 tot en met 13, verder omvattende een enkele scharnierende verbinding tussen de tweede richtingsgeoriënteerde connector en het armdeel.

25

15. Arm volgens een der conclusies 11 tot en met 14, waarbij de tweede richtingsgeoriënteerde connector scharnierbaar is verbonden aan de arm zodanig dat het armdeel en de tweede richtingsgeoriënteerde connector scharnierbaar zijn in een enkele richting.

30

16. Houderinrichting voor het houden van ten minste twee accessoires, omvattende:

- Een houderbalk;

- Een derde richtingsgeoriënteerde connector ingericht om verbonden te worden met de tweede richtingsgeoriënteerde connector van de arm volgens een der conclusies 11 tot en met 15;

5 - Een vierde richtingsgeoriënteerde connector ingericht om verbonden te worden met de eerste richtingsgeoriënteerde connector van de koppelingsinrichting volgens een der conclusies 1 tot en met 10 om te voorzien in een losneembare verbinding tussen de koppelingsinrichting volgens een der conclusies 1 tot en met 10; en

10 - Een vijfde richtingsgeoriënteerde connector ingericht om verbonden te worden met de eerste richtingsgeoriënteerde connector van de koppelingsinrichting volgens een der conclusies 1 tot en met 10 om te voorzien in een losneembare verbinding tussen de koppelingsinrichting volgens een der conclusies 1 tot en met 10;

Waarbij

15 - De derde richtingsgeoriënteerde connector, de vierde richtingsgeoriënteerde connector en de vijfde richtingsgeoriënteerde connector een in hoofdzaak loodrechte oriëntatie hebben met betrekking tot de houderbalk;

- De vierde richtingsgeoriënteerde connector en de vijfde richtingsgeoriënteerde connector in hoofdzaak parallel ten opzichte van elkaar zijn georiënteerd; en

20 - De derde richtingsgeoriënteerde connector is georiënteerd in een in hoofdzaak tegengestelde richting ten opzichte van de vierde richtingsgeoriënteerde connector en de vijfde richtingsgeoriënteerde connector.

17. Set van onderdelen omvattende ten minste twee uit de volgende opties:

- De koppelingsinrichting volgens een der conclusies 1 tot en met 10;

- De arm volgens een der conclusies 11 tot en met 15; en

25 - De houderinrichting volgens conclusie 16.

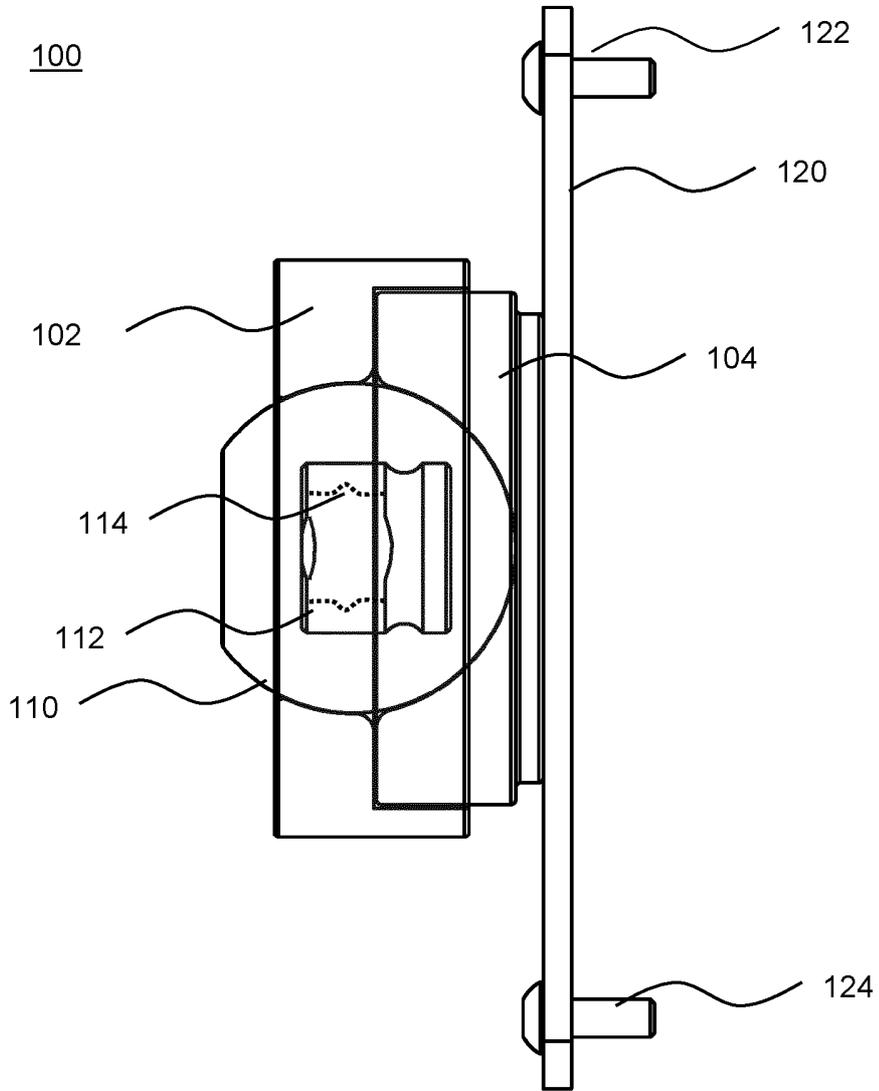


Fig. 1

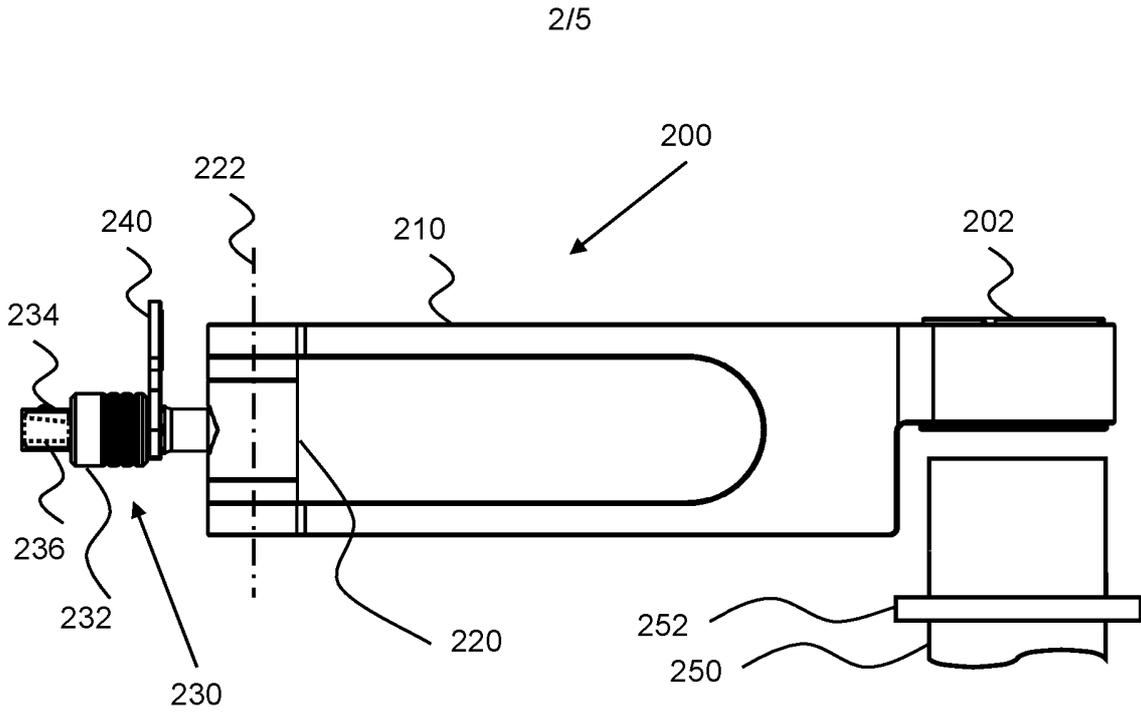


Fig. 2 A

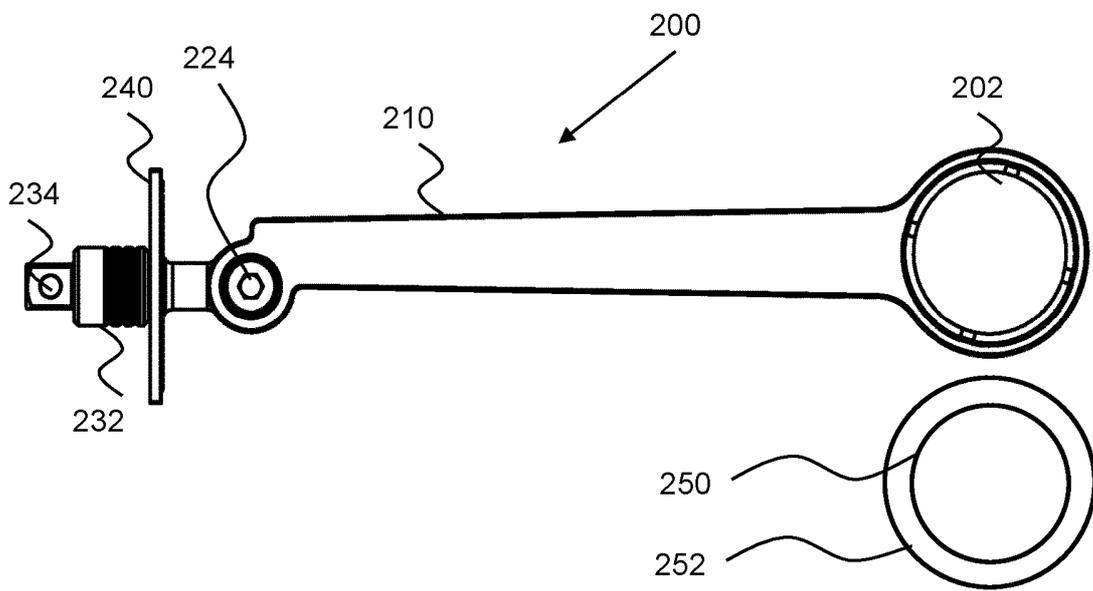


Fig. 2 B

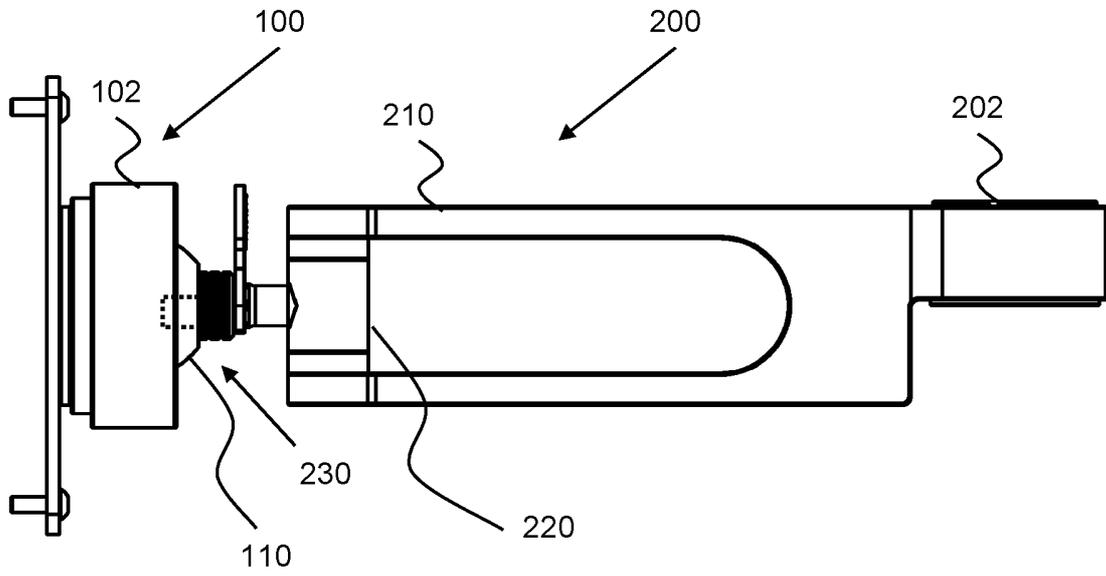


Fig. 3

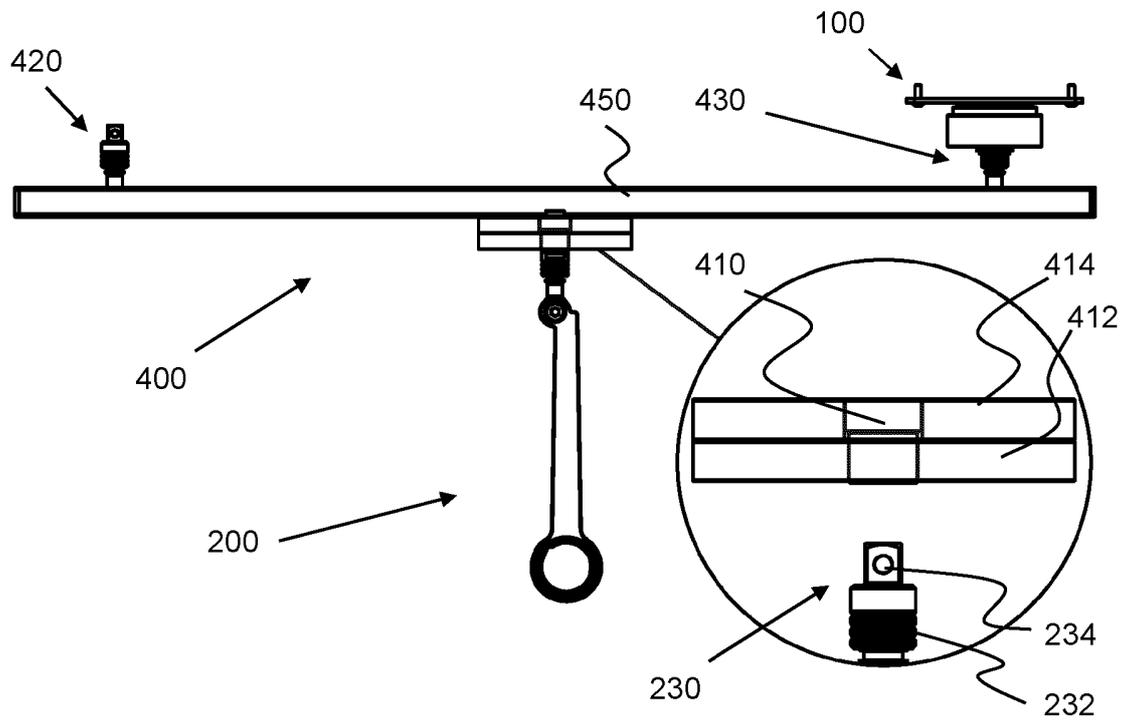


Fig. 4

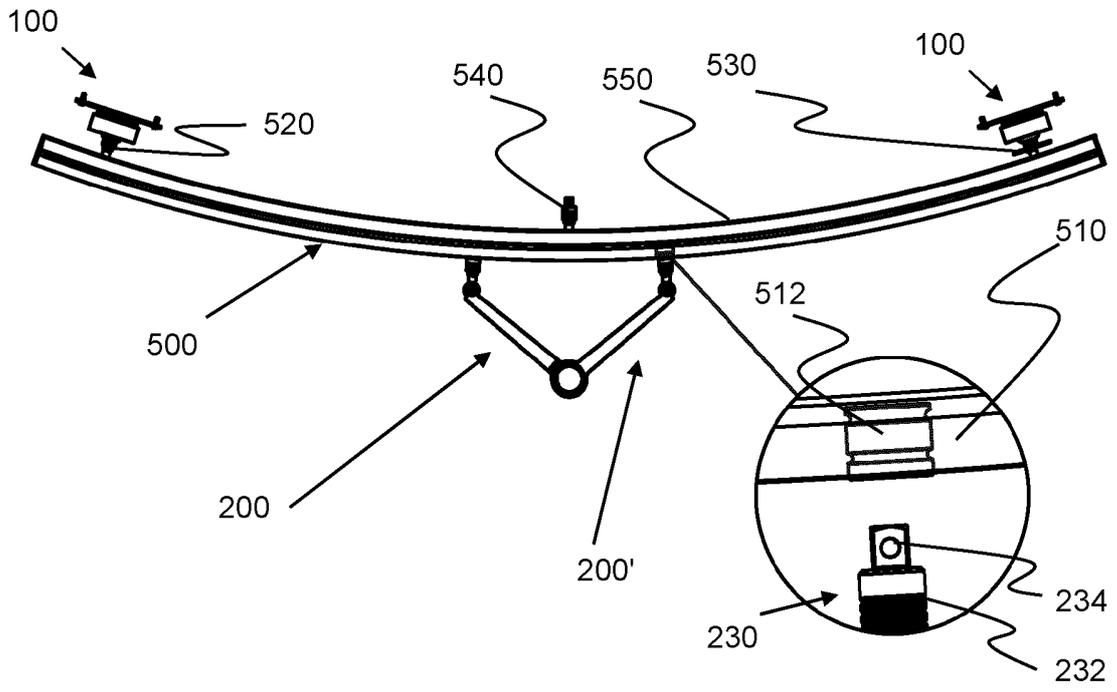


Fig. 5

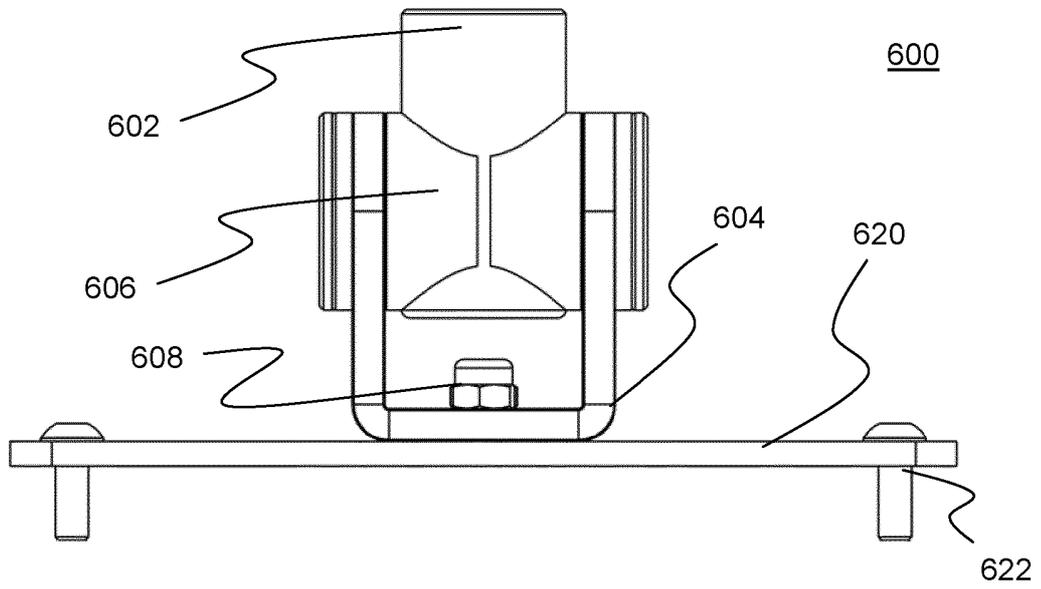


Fig. 6 A

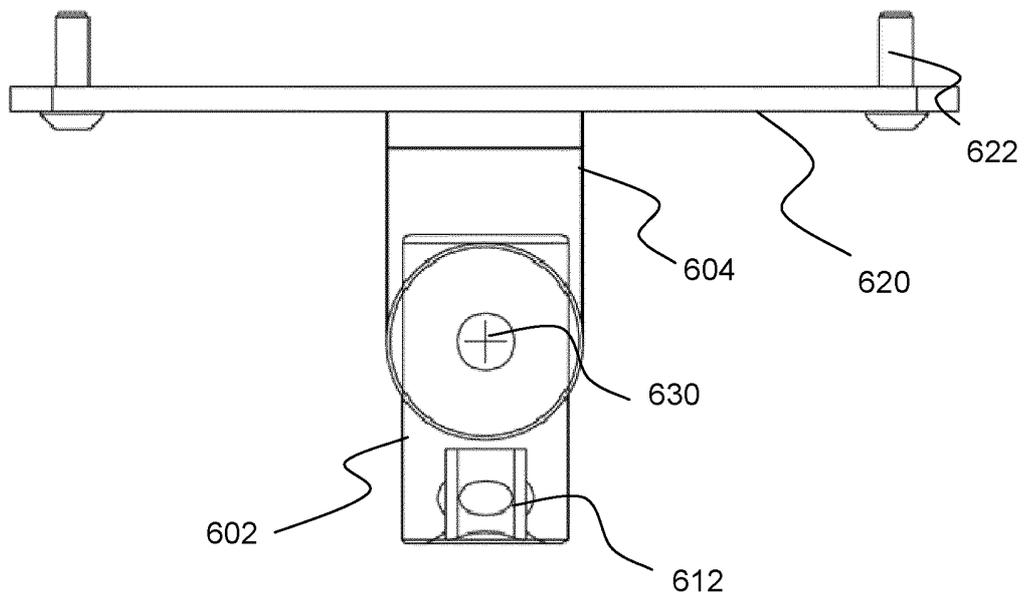


Fig. 6 B

SAMENWERKINGSVERDRAG (PCT)

RAPPORT BETREFFENDE NIEUWHEIDSONDERZOEK VAN INTERNATIONAAL TYPE

IDENTIFICATIE VAN DE NATIONALE AANVRAGE	KENMERK VAN DE AANVRAGER OF VAN DE GEMACHTIGDE	
	P21300013NL00	
Nederlands aanvraag nr.	Indieningsdatum	
2010596	09-04-2013	
	Ingeroepen voorrangdatum	
Aanvrager (Naam)		
Vlaar Innovations B.V.		
Datum van het verzoek voor een onderzoek van internationaal type	Door de Instantie voor Internationaal Onderzoek aan het verzoek voor een onderzoek van internationaal type toegekend nr.	
13-07-2013	SN 60380	
I. CLASSIFICATIE VAN HET ONDERWERP (bij toepassing van verschillende classificaties, alle classificatiesymbolen opgeven)		
Volgens de internationale classificatie (IPC)		
F16M11/04	F16M11/14	F16M11/20
II. ONDERZOCHE GEBIEDEN VAN DE TECHNIEK		
Onderzochte minimumdocumentatie		
Classificatiesysteem	Classificatiesymbolen	
IPC	F16M	
Onderzochte andere documentatie dan de minimum documentatie, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen		
III. <input type="checkbox"/>	GEEN ONDERZOEK MOGELIJK VOOR BEPAALDE CONCLUSIES (opmerkingen op aanvullingsblad)	
IV. <input type="checkbox"/>	GEBREK AAN EENHEID VAN UITVINDING (opmerkingen op aanvullingsblad)	

**ONDERZOEKSRAPPORT BETREFFENDE HET
RESULTAAT VAN HET ONDERZOEK NAAR DE STAND
VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE**

Nummer van het verzoek om een onderzoek naar
de stand van de techniek
NL 2010596

A. CLASSIFICATIE VAN HET ONDERWERP
INV. F16M11/04 F16M11/14 F16M11/20
ADD.

Volgens de Internationale Classificatie van octrooien (IPC) of zowel volgens de nationale classificatie als volgens de IPC.

B. ONDERZOCHETE GEBIEDEN VAN DE TECHNIEK

Onderzochte minimum documentatie (classificatie gevolgd door classificatiesymbolen)
F16M

Onderzochte andere documentatie dan de minimum documentatie, voor dergelijke documenten, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

Tijdens het onderzoek geraadpleegde elektronische gegevensbestanden (naam van de gegevensbestanden en, waar uitvoerbaar, gebruikte trefwoorden)

EPO-Internal, WPI Data

C. VAN BELANG GEACHTE DOCUMENTEN

Categorie °	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
X	US 2011/147546 A1 (MONSALVE FABIAN A [US] ET AL) 23 juni 2011 (2011-06-23) * alinea [0052] - alinea [0054]; figuren 15, 16 *	1-15
X	US 2010/128423 A1 (MOSCOVITCH JERRY [CA]) 27 mei 2010 (2010-05-27) * alinea [0029] - alinea [0031]; figuren 1B, 2A, 2B, 2C, 2D *	1-10
X	US 2012/175474 A1 (BARNARD BRANDON [US] ET AL) 12 juli 2012 (2012-07-12) * alinea [0046] - alinea [0067]; figuur 8 *	1-10
X	CN 102 608 843 A (WEIBAO PHOTOGRAPHIC EQUIPMENT CO LTD; YONGJIAN YANG) 25 juli 2012 (2012-07-25) * figuur 7 *	1-9

Verdere documenten worden vermeld in het vervolg van vak C.

Leden van dezelfde octroofamilie zijn vermeld in een bijlage

° Speciale categorieën van aangehaalde documenten

A niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft

D in de octrooiaanvraag vermeld

E eerdere octroop(aanvraag), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven

L om andere redenen vermelde literatuur

O niet-schriftelijke stand van de techniek

P tussen de voorrangsdatum en de indieningsdatum gepubliceerde literatuur

T na de indieningsdatum of de voorrangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvraag, maar wordt vermeld ter verheldering van de theorie of het principe dat ten grondslag ligt aan de uitvinding

X de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur

Y de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht

Z lid van dezelfde octroofamilie of overeenkomstige octrooipublicatie

Datum waarop het onderzoek naar de stand van de techniek van internationaal type werd voltooid

19 december 2013

Verzenddatum van het rapport van het onderzoek naar de stand van de techniek van internationaal type

Naam en adres van de instantie

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De bevoegde ambtenaar

Lantsheer, Martijn

**ONDERZOEKSRAPPORT BETREFFENDE HET
RESULTAAT VAN HET ONDERZOEK NAAR DE STAND
VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE**

Informatie over leden van dezelfde octrooifamilie

Nummer van het verzoek om een onderzoek naar
de stand van de techniek

NL 2010596

In het rapport genoemd octrooigescrift	Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
US 2011147546	A1	23-06-2011	US 2011147546 A1
			WO 2011078886 A1

US 2010128423	A1	27-05-2010	CA 2755258 A1
			EP 2406534 A1
			US 2010128423 A1
			US 2013120954 A1
			WO 2010102390 A1

US 2012175474	A1	12-07-2012	US 2012175474 A1
			WO 2012094069 A2

CN 102608843	A	25-07-2012	CN 102608843 A
			WO 2013155806 A1



File No. SN60380	Filing date (<i>day/month/year</i>) 09.04.2013	Priority date (<i>day/month/year</i>)	Application No. NL2010596
International Patent Classification (IPC) INV. F16M11/04 F16M11/14 F16M11/20			
Applicant Vlaar Innovations B.V.			

This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the application
- Box No. VIII Certain observations on the application

	Examiner Lantsheer, Martijn
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WRITTEN OPINION

Application number

NL2010596

Box No. I Basis of this opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - a sequence listing
 - table(s) related to the sequence listing
 - b. format of material:
 - on paper
 - in electronic form
 - c. time of filing/furnishing:
 - contained in the application as filed.
 - filed together with the application in electronic form.
 - furnished subsequently for the purposes of search.
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty	Yes: Claims	10, 12, 16, 17
	No: Claims	1-9, 11, 13-15
Inventive step	Yes: Claims	16, 17
	No: Claims	1-15
Industrial applicability	Yes: Claims	1-17
	No: Claims	

2. Citations and explanations

see separate sheet

WRITTEN OPINION

Application number

NL2010596

Box No. VII Certain defects in the application

see separate sheet

Box No. VIII Certain observations on the application

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following documents:

D1 US 2011/147546 A1 (MONSALVE FABIAN A [US] ET AL) 23 juni 2011 (2011-06-23)

D2 US 2010/128423 A1 (MOSCOVITCH JERRY [CA]) 27 mei 2010 (2010-05-27)

D3 US 2012/175474 A1 (BARNARD BRANDON [US] ET AL) 12 juli 2012 (2012-07-12)

D4 CN 102 608 843 A (WEIBAO PHOTOGRAPHIC EQUIPMENT CO LTD; YONGJIAN YANG) 25 juli 2012 (2012-07-25)

2 **Independent claim 1**

2.1 The present application does not meet the criteria of patentability, because the subject-matter of claim 1 is not new.

D1 discloses:

een koppelingsinrichting (Figuren 15 en 16) voor het koppelen van een accessoire aan een draagarm (280), de koppelingsinrichting omvattende:

- Een koppelingsmodule (330, 340) om de accessoire aan de koppelingsinrichting te koppelen;

- Een eerste richtingsgeoriënteerde connector (360) om in een losneembare verbinding met de draagarm (280) te voorzien, de draagarm (280) omvattende een tweede richtingsgeoriënteerde connector (350, 351) ingericht om verbonden te worden met de eerste richtingsgeoriënteerde connector (Figuren 15 en 16); en

- Een verbinding (370, 374, 375, kogel van 360) om de eerste richtingsgeoriënteerde connector (360) aan de koppelingsmodule (330, 340) te verbinden; waarbij:

- De verbinding een eerste verbindingsdeel (370, 374, 375) omvat dat verbonden is aan de koppelingsmodule (330, 340) en een tweede verbindingsdeel (kogel van 360) omvat dat verbonden is met de eerste richtingsgeoriënteerde connector (360);

- Het eerste verbindingsdeel (370, 374, 375) en het tweede verbindingsdeel (kogel van 360) zijn verbonden om in de verbinding te voorzien zodanig dat het eerste verbindingsdeel (370, 374, 375) en het tweede verbindingsdeel

(kogel van 360) scharnierbaar zijn ten opzichte van elkaar over ten minste één scharnieras (kogelgewricht) welke scharnieras is voorzien onder een hoek ten opzichte van de oriëntatie van de eerste richtingsgeoriënteerde connector; en - De eerste richtingsgeoriënteerde connector (kogel van 360) is gericht in het verlengde van de verbinding (Figuren 15 en 16) als de verbinding in hoofdzaak in een gecentreerde positie is geplaatst.

2.2 The features of claim 1 are also known from D2, D3 and D4.

3 **Dependent claims 2-17**

3.1 Although claims 11, 16 and 17 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. These claims are therefore treated as dependent claims.

3.2 Dependent claims 2-17 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of novelty and/or inventive step.

3.3 The subject matter of claims 2-7, 9, 11 and 13-15 are known from D1 and therefore lack novelty.

Concerning claim 11: D1 discloses in particular in Figures 15 and 16 and paragraphs [0052]-[0054] that "*de tweede richtingsgeoriënteerde connector scharnierbaar is verbonden aan het armdeel via een scharnierend verbindingsdeel; waarbij de tweede richtingsgeoriënteerde connector is verbonden aan de arm zodanig dat de tweede richtingsgeoriënteerde connector in hoofdzaak loodrecht is georiënteerd ten opzichte van een scharnieras van een verbinding tussen het armdeel en het scharnierend verbindingsdeel*".

3.4 The subject matter of claims 10 and 12 does not involve an inventive step in view of D1 and a combination with the person skilled in the art, as the features of these claims are well established in the art.

3.5 The subject matter of claims 2-7 and 9 is known from D2 and D3.

3.6 The subject matter of claims 2, 3 and 5-8 is known from D4.

3.7 The subject matter of claims 16 and 17 is not known from the known prior art.

Re Item VII

4 Certain defects in the application

- 4.1 The relevant background art disclosed in D1 is not mentioned in the description, nor is this document identified therein.
- 4.2 The features of the claims are not provided with reference signs placed in parentheses.

Re Item VIII

5 Certain observations on the application

Clarity

- 5.1.1 Claims 5, 16 and 17 are not clear.
- 5.1.2 Claim 5 refers to "het gewricht" which was firstly introduced in claims 3 and 4. However, claim 5 is dependent on claims 1-2. Due to the wrong dependency, claim 5 is rendered not clear.
- 5.1.3 Claim 16 introduces a "houderbalk" but its position/location in the "houderinrichting" is not described. However, later in the claim it is described that the "derde richtingsgeoriënteerde connector, de vierde richtingsgeoriënteerde connector en de vijfde richtingsgeoriënteerde connector een in hoofdzaak loodrechte oriëntatie hebben met betrekking tot de houderbalk", therefore raising doubt to how the "houderbalk" relates to the "derde richtingsgeoriënteerde connector, de vierde richtingsgeoriënteerde connector en de vijfde richtingsgeoriënteerde connector" with the "houderinrichting". Claim 16 is therefore not clear.

Accordingly claim 17 lacks clarity.