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54 **Monitor arm coupling unit for coupling a flat panel display monitor to an end of a monitor arm of a monitor arm stand, and monitor arm stand including such a monitor coupling unit**

57 A monitor arm coupling unit for coupling a flat panel display monitor to an end of a monitor arm of a monitor arm stand, comprising a monitor coupling part having a back plate that is provided with mounting provisions arranged in a mounting pattern that in use cooperates with corresponding mounting provisions on the back of a flat panel display monitor. The back plate comprises a central portion and a peripheral edge spaced away therefrom, and a monitor arm coupling piece that is connected to the back plate via an adjustment mechanism. An end part of the monitor arm coupling piece is adjustable via the adjustment mechanism between a first position in which the end part of the monitor arm coupling piece is located more closely to the central part of the back plate, and a second position in which the end part is located more closely to the peripheral edge of the back plate.

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Title: Monitor arm coupling unit for coupling a flat panel display monitor to an end of a monitor arm of a monitor arm stand, and monitor arm stand including such a monitor coupling unit

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The invention generally relates to monitor arm stands, and in particular to a monitor arm coupling unit for coupling a flat panel display monitor to an end of a monitor arm of a monitor arm stand. Monitor arm stands are well known, and are used to position flat panel display monitors at a work space, such as a desk, at a desired viewing position. Typically a monitor arm stand comprises a post that extends along a longitudinal axis, a monitor arm for supporting a monitor radially outward relative to the longitudinal axis of the post, and a monitor arm coupling piece with which the monitor arm in use is swivably coupled to the post at a set position of the longitudinal axis. Commonly, such monitor arm coupling piece is embodied as a plateau that includes machined clamping surfaces that are axially adjustable along the longitudinal axis of the column to a rotationally fixed, set height position, and that carries the monitor arm via a bolt swivel connection.

20 A first post may be embodied as a main column that is supported by the desk, and may include a mounting track so that, in addition to a swivel angle of the monitor arm, the position of the arm on the longitudinal axis of the post may be set to position the monitor at a desired height and depth relative to an edge of the desk. In basic work spaces where only a single monitor is provided, a monitor arm stand may be used to support only a single display monitor. However, in more complex work spaces, there can be desire to use a monitor arm stand to support a plurality of monitors, e.g. monitors for two desks, plural display monitors per desk in a single viewing plane, or even a bank of monitors.

30 Monitor arm stands may in practice be fairly complex in their configuration, and may e.g. be articulated in that two monitor arms are

swivably connected via a common intermediate post, to increase the reach of the stand or to allow more monitors to be placed in a single viewing plane. Also, the monitor arm stand may have multiple monitor arms. A single post may thus be embodied as a main column that may carry two or more
5 separate carrying arms, e.g. each serving a desk. The monitor arms may each carry a single monitor, but may also individually carry a plurality of monitors. Also, the monitor arms may jointly carry a plurality of monitors, e.g. via a cross bar, depending on the configuration. In such configuration, two arms may serve the same desk.

10 Often, an existing monitor stand needs to be reconfigured, e.g. to carry a different number of monitors. After such reconfiguration, e.g. for ergonomic and/or aesthetic reasons, it is often desired that the monitors are aligned in height position, e.g. with their top edges, bottom edges or centers at the same height level. Typically, reconfiguration involves a relatively
15 complex operation, requiring substitution of parts and/or the use of tools. For example, when a monitor arm stand is reconfigured from a single arm configuration to a single post dual arm configuration, to ensure that the monitors are carried at the same height in the new configuration, a plateau with a single swivel bolt connection that carries a single arm needs to be
20 replaced by a plateau that carries dual swivel bolts, or the monitor arm coupling units need to be unscrewed and reattached to the display monitors to compensate for unequal height position of the display monitors.

The invention aims to alleviate at least some of the above disadvantages. In particular, the invention aims to provide a monitor arm
25 stand that is relatively easy to reconfigure, and/or that reduces the need for substitution of parts.

Thereeto, the invention provides for a monitor arm coupling unit for coupling a flat panel display monitor to an end of a monitor arm of a
30 monitor arm stand, comprising a monitor coupling part having a back plate that is provided with mounting provisions arranged in a mounting pattern

that in use cooperates with corresponding mounting provisions on the back of a flat panel display monitor, which back plate comprises a central portion and a peripheral edge spaced away therefrom, and a monitor arm coupling piece that is connected to the back plate via an adjustment mechanism, in
5 which an end part of the monitor arm coupling piece is adjustable via the adjustment mechanism between a first position in which the end part of the monitor arm coupling piece is located more closely to the central portion of the back plate, and a second position in which the end part is located more closely to the peripheral edge of the back plate. This way, the height
10 position of a monitor carried on the monitor arm may be compensated relatively easily, without the need for using tools.

The mounting provisions may in particular be embodied as apertures or holes, and the mounting pattern may correspond to a mounting pattern arranged on the backside of a flat panel display monitor. The
15 mounting pattern may in particular be arranged in a flat plane. A monitor arm coupling unit having such a mounting pattern may typically be referred to as a VESA mount, and the mounting pattern may e.g. be a standardized mounting pattern in accordance with the FDMI standard.

The adjustment mechanism may comprise a base part that is
20 connected to the back plate, and an adjustment part that is mounted to the base part and that carries the monitor arm coupling piece. This allows for a relatively simple construction.

The base part may be mounted to the back plate eccentrically. This allows good adjustment distance to be combined with limited stroke of the
25 adjustment part.

The central portion of the back plate may correspond to a center point of the back plate and/or the mounting pattern. This allows the first position to correspond with the center. The second position may e.g. be chosen to be most closely located to the peripheral edge of the back plate.

This maximizes adjustment distance within the space available for adjustment on the back plate.

The adjustment part may be reversible relative to a reversing axis that extends substantially transversely to the back plate, and that is spaced
5 away from the central portion. Such reversing axis may be a rotation axis of the adjustment part, e.g. in case of a rotatably connected adjustment part, so that the adjustment part need not be disconnected from the back plate for adjustment. The adjustment part may as an alternative or in addition be detachable, so that upon adjustment it may e.g. be detached, flipped about
10 the reversing axis, and be reattached. The adjustment part may alternatively be adjustable along an adjustment track, e.g. a linear adjustment track that extends along the first axis of symmetry of the back plate.

The adjustment part may be positioned on a first axis of symmetry
15 of the mounting pattern of the back plate in both the first and second position, e.g. on an axis of symmetry that in use on the monitor arm stand extends substantially upright.

The adjustment part may in the second position be spaced away from a second axis of symmetry of the mounting pattern of the back plate,
20 and may in the first position be located on the second axis of symmetry of the mounting pattern, e.g. an axis of symmetry that in use on the monitor arm stand extends substantially level or horizontally. The central portion may coincide with the intersection of the first and second axes of symmetry.

The monitor arm coupling piece may in its first position be directed
25 from the reversing axis towards the central portion, and in which the monitor arm coupling piece in the second position be directed with its end part from its reversing axis away from the central portion. This maximizes adjustment distance within the space available for adjustment on the back plate.

The base part and the adjustment part may be embodied as cooperating ball joint parts. This allows the back plate to tilt and swivel relative to the monitor arm coupling piece, and allows for reliable transfer of the weight forces of a monitor attached to the back plate.

5 In use, the back plate of the monitor arm coupling unit may typically be coupled to the back of a flat panel display monitor through mounting provisions of the mounting pattern of the back plate that cooperates with corresponding mounting provisions on the back of the monitor. The adjustment part may therefore be provided with a coupling, in particular a linear insertion coupling. The provision of a coupling allows the
10 monitor arm coupling unit to be coupled to an end of a monitor arm of a monitor arm stand relatively easily via a corresponding coupling part provided on the end of the monitor arm stand. A linear insertion coupling allows the monitor coupling part to be coupled in a linear coupling
15 movement, which when it is with its coupling axis arranged substantially transversely to the back plate typically allows a monitor to be switched out from an array of monitors in the same plane without need to displace nearby monitors.

 The base part may be positioned eccentrically from the central
20 portion at a distance $\frac{1}{2}e$ in particular with its reversing axis. The adjustment part may then be reversibly mounted in the base part between a first position in which the end part of the monitor arm coupling piece is aligned with the central portion, and a second position in which the end part is spaced away from the central portion with a distance $2 \cdot \frac{1}{2}e$.

25 The invention further relates to a monitor arm stand, comprising a post that extends along a longitudinal axis, a monitor arm for supporting a monitor radially outward relative to the longitudinal axis of the post, and a first monitor arm coupling piece with which the monitor arm in use is swivably connected to the post at a set position on the longitudinal axis,
30 further comprising a further monitor arm coupling piece that is connected to

a free end of the monitor arm that in use cooperates with a monitor arm coupling unit.

The distance e mentioned above may correspond to half of the height h of the first monitor arm coupling piece along the longitudinal axis of the post. This way, when a monitor arm stand is reconfigured from a single arm configuration to a single post dual arm configuration, the first monitor arm may then stay in place, and a second monitor arm may be positioned above it. To ensure that the monitors are carried at the same height in the new configuration, the end parts of the further monitor arm coupling pieces are each set via the adjustment mechanism to the second position, and facing away from each other. The end parts of the monitor arm coupling units are then each offset from the center with a distance e . The total adjustment $2e$ equals the height h of the first monitor arm coupling piece of the added monitor arm.

In case the monitor arm coupling unit of the first monitor arm faces upward in the second position, the further monitor arm coupling piece may be uncoupled via its coupling and reversed, or may be used for the second monitor arm if the other further monitor arm coupling piece of the first monitor arm faces downward in the second position. As an alternative, the monitor arm itself, or a portion thereof may be disconnected and replaced upside down. This way, the height position of a monitor carried on the monitor arm may be compensated relatively easily, without the need for using tools.

The post may thus include two monitor arms that are each positioned with their first monitor arm coupling piece adjacently above each other on the post, and in which the monitor arms each carry a monitor arm coupling unit at their free end of which the adjustment part is set in the second position, and in which the adjustment parts are facing away from each other, i.e. the bottom adjustment part facing downward, and the top adjustment part facing upward.

It should be noted that the technical features described above may each on its own be embodied in a monitor arm coupling unit or monitor arm stand, i.e. isolated from the context in which it is described here, separate from other features or in combination with only a number of features
5 described in the context in which it is disclosed herein. Each of these features may further be combined with any other feature disclosed, in any combination.

The invention will be further elucidated on the basis of non-limitative exemplary embodiments represented in the drawings. In the
10 drawings:

Fig. 1 shows a schematic exploded view of a monitor arm coupling unit;

Fig. 2a shows a schematic rear view of a monitor arm stand including a single post carrying a single monitor arm carrying a single
15 monitor arm coupling unit in accordance with fig. 1;

Fig. 2b shows a schematic rear view of the monitor arm coupling unit of fig. 2a;

Fig. 2c shows a schematic side view of the monitor arm coupling unit of fig. 2b;

Fig. 3a shows a schematic rear view of the monitor arm stand of Fig. 2a reconfigured to include two single monitor arms that each carry a
20 single monitor arm coupling unit.

Fig. 3b1 shows a schematic rear view of the monitor arm coupling unit of the top arm of fig. 3a;

Fig. 3b2 shows a schematic rear view of the monitor arm coupling unit of the bottom arm of fig. 3a;

Fig. 3c1 shows a schematic side view of the monitor arm coupling unit of fig. 3b1; and

Fig. 3c2 shows a schematic side view of the monitor arm coupling
30 unit of fig. 3b2.

It should be noted that the figures are merely schematic representations of a preferred embodiment of invention. In the figures, identical or corresponding parts are represented with the same reference numerals.

5 Referring to fig.1, fig.2a, fig 2b and fig 2c a monitor arm coupling unit 1 for coupling a flat panel display monitor to an end of a monitor arm 2 of a monitor arm stand 3 is shown. The monitor arm coupling unit 1 comprises a monitor coupling part 4 having a back plate 5 that is provided with mounting provisions 6 arranged in a mounting pattern that in use
10 cooperates with corresponding mounting provisions on the back of a flat panel display monitor. In use, the back plate 5 is coupled to the back of a flat panel display. The mounting provisions 6 are here embodied as bolt or screw holes, but may e.g. also be embodied as mounting pins or clamps. In use bolts or screws passing through the mounting pattern of the back plate
15 may cooperate with corresponding mounting provisions, typically threaded inserts, on the back of the monitor.

The back plate 5 comprises a central portion 7 and a peripheral edge 8 spaced away therefrom. The back plate 5 further comprises a monitor arm coupling piece 9 that is connected to the back plate 5 via an adjustment
20 mechanism 10. An end part of the monitor arm coupling piece 9 is adjustable via the adjustment mechanism 10 between a first position in which the end part of the monitor arm coupling piece 9 is located more closely to the central portion 7 of the back plate 5, and a second position in which the end part is located more closely to the peripheral edge 8 of the
25 back plate 5. As shown in the drawings, the monitor arm coupling piece 9 is in the first position.

The adjustment mechanism 10 comprises a base part 11 that is connected to the back plate 5, and an adjustment part 12 that is mounted to the base part 11 and that carries the monitor arm coupling piece 9. The base
30 part 11 is mounted to the back plate 5 eccentrically. The central portion of

the back plate 5 corresponds to a center point of the back plate 5, which in this embodiment is also the center point of the mounting pattern. The base part 11 is positioned eccentrically from the center point at a distance e .

5 The adjustment part 12 is reversible relative to a reversing axis A that extends substantially transversely to the back plate 5, and that is spaced away from the central portion. In this embodiment, the reversing axis A is a rotation axis of the adjustment part 12.

In this embodiment, the adjustment part 12 is positioned on a first axis of symmetry of the mounting pattern of the back plate 5 in both the first and second position, formed by a vertical axis of the back plate 5. The adjustment part 12 is in the second position spaced away from a second axis of symmetry of the mounting pattern of the back plate, formed by a horizontal axis of the back plate. The adjustment part 12 is in the first position located on the second axis of symmetry of the mounting pattern.

15 The monitor arm coupling piece 9 is in its first position directed from the reversing axis A towards the central portion, and in which the monitor arm coupling piece 9 in the second position is directed with its end part from its reversing axis A away from the central portion. The base part 11 and the adjustment part 10 are embodied as cooperating ball joint parts. 20 The base part 11 comprises two ring segments 13 that have inner surfaces embodied as sphere sections. The ring segments 13 are being mounted together using screws to hold a ball 14 there between with friction, so that in use the back plate 5 may swivel and tilt.

The adjustment part 12 is provided with a linear insertion coupling 25 15, which allows the monitor arm coupling unit 1 to be coupled to the end of the monitor arm 2 of the monitor arm stand 3 relatively easily via a corresponding coupling part provided on the end of the monitor arm stand. The linear insertion coupling allows the monitor arm coupling unit 1 to be coupled in a linear coupling movement, and is with its coupling axis 30 arranged substantially transversely to the back plate 5. In this embodiment,

the linear insertion coupling 15 is embodied as a female mounting aperture 17 having a cylindrical base shape, that is adapted to receive a cylindrical male insertion coupling part 18. The insertion coupling parts 17 and 18 are provided with v-shaped alignment grooves and apertures. Within the
5 alignment groove on the male insertion coupling part 18, a leaf spring 19 is mounted that is provided with apertures that catch on studs provided in the female insertion coupling part 17. A release 20 is provided on the male insertion coupling part 18 that acts on the leaf spring 19 to uncouple the studs when actuated. The cylindrical male insertion coupling part 18 carries
10 a monitor arm coupling piece 9 that is embodied as a clamping bushing 21 via a post 23. The clamping bushing 21 may be operated using a crew ring 22 between a clamping operating position in which it may clamp onto a post 23 carried on a free end of the monitor arm 2, and a releasing position in which it leaves the post 23 free.

15 Referring in particular to fig. 2a, a monitor arm stand 3 is shown. The monitor arm stand 3 comprises a post 24 embodied as a pillar that extends along a longitudinal axis, a monitor arm 2 for supporting a monitor radially outward relative to the longitudinal axis of the pillar post 24, and a first monitor arm coupling piece 25 with which the monitor arm 2 in use is
20 swivably connected to the pillar post 24 at a set position on the longitudinal axis. The distance e corresponds to half of the height h of the first monitor arm coupling piece 25 along the longitudinal axis of the pillar post 24. A further post 23 carried on the free end of the monitor arm 2 is clampingly engaged by the clamping bushing 21 of the further monitor arm coupling
25 piece carried on the cylindrical male insertion coupling part 18.

Referring to figs. 3 the pillar post 24 includes two monitor arms 2 that are positioned with their first monitor arm coupling pieces adjacently above each other on the pillar post 24, and in which the monitor arms 2 each carry a monitor arm coupling unit 1 at their free end of which the

adjustment part 12 is set in the second position, and in which the adjustment parts 12 are facing away from each other.

When the monitor arm stand of Fig. 2a is reconfigured from its single arm configuration to a single post dual arm configuration as shown in
5 Fig. 3a, the first monitor arm 2 can stay in place, and a second monitor arm 2 is being positioned above it. To ensure that the monitors are carried at the same height in the new configuration, the end parts of the monitor arm coupling units 1 are each set via the adjustment part 12 to the second
10 position, and facing away from each other. The end parts of the monitor arm coupling units 1 are then each offset from the central portion with a distance e . The total adjustment $2e$ equals the height h of the first monitor arm coupling piece 25 of the added monitor arm. For example, the height h may be about 50mm so as to allow the height compensation to be generated within a VESA standard FDMI interface including a mounting pattern
15 having mounting apertures placed on four corners of an outer square having a side of 100 mm, concentrically arranged with the central portion of the back plate.

As shown, the reconfigured monitor arm 3 stand has a pillar post 24 that includes two monitor arms 2 that are positioned with their first
20 monitor arm coupling pieces 25 adjacently above each other on the pillar post 24. The monitor arms 2 each carry a monitor arm coupling unit 1 at their free end of which the adjustment part 12 is set in the second position. The adjustment parts 12 are facing away from each other, i.e. the bottom adjustment part 12 facing downward, and the top adjustment part 12 facing
25 upward. The center points of the back plates are located at equal height, and the monitors carried thereon may thus be positioned with their centers at the same height above the desk.

The invention is not limited to the exemplary embodiment represented here, but includes variations. Such variations shall be clear to

the skilled person and are considered to fall within the scope of the invention as defined in the appended claims.

LIST OF REFERENCE SIGNS

1. monitor arm coupling unit
 2. monitor arm
 3. monitor arm stand
 4. monitor coupling part
 5. back plate
 6. mounting provisions
 7. central portion
 8. peripheral edge
 9. monitor arm coupling piece
 10. adjustment mechanism
 11. base part
 12. adjustment part
 13. ring segments
 14. ball
 15. linear insertion coupling
 17. female insertion coupling part , female mounting aperture
 18. male insertion coupling part
 19. leaf spring
 20. release
 21. clamping bushing
 22. screw ring
 23. post
 24. pillar post
 25. first monitor arm coupling piece
- A. reversing axis

Conclusies

1. Monitorarmkoppelingseenheid voor het koppelen van een plat panel display monitor aan een uiteinde van een monitorarm van een monitorarmsteun, omvattende een monitorkoppelingsdeel met een rugplaat die is voorzien van een in een bevestigingspatroon aangebrachte
5 bevestigingsvoorzieningen die tijdens gebruik samenwerken met corresponderende bevestigingsvoorzieningen aan de rug van een plat panel display monitor, welke rugplaat een centraal deel omvat en een op afstand daarvan gelegen perifere rand, en een via een verstelmechanisme met de rugplaat verbonden monitorarmkoppelingsdeel, waarbij een einddeel van
10 het monitorarmkoppelingsdeel via het verstelmechanisme verstelbaar is tussen een eerste stand waarin het einddeel van het monitorarmkoppelingsdeel meer nabij het centrale deel van de rugplaat is gelegen, en een tweede stand waarin het einddeel meer nabij de perifere rand is gelegen.
- 15 2. Monitorarmkoppelingseenheid volgens conclusie 1, waarbij het verstelmechanisme een basisdeel omvat dat met de rugplaat is verbonden, en een in het basisdeel opgenomen versteldeel dat het monitorarmkoppelingsdeel draagt.
3. Monitorarmkoppelingseenheid volgens een der voorgaande conclusies,
20 waarbij het basisdeel excentrisch met de rugplaat is verbonden.
4. Monitorarmkoppelingseenheid volgens een der voorgaande conclusies, waarbij het centrale deel van de rugplaat correspondeert met een middelpunt van de rugplaat en/of het bevestigingspatroon.
5. Monitorarmkoppelingseenheid volgens conclusie 4, waarbij het
25 versteldeel keerbaar is ten opzichte van een keeras die zich in hoofdzaak

dwars op de rugplaat uitstrekt, en die op afstand is gelegen van het centrale deel van de rugplaat.

6. Monitorarmkoppelingseenheid volgens conclusie 5, waarbij de keeras een rotatie-as is van het versteldeel.

5 7. Monitorarmkoppelingseenheid volgens een der voorgaande conclusies, waarbij het versteldeel zowel in de eerste stand als in de tweede stand op een eerste symmetrie as van het bevestigingspatroon van de rugplaat is gelegen.

8. Monitorarmkoppelingseenheid volgens een der voorgaande conclusies,
10 waarbij het versteldeel in de tweede stand op afstand van een tweede symmetrie as van het bevestigingspatroon van de rugplaat is gelegen, en in de eerste stand op de tweede symmetrie as van het bevestigingspatroon van de rugplaat is gelegen.

9. Monitorarmkoppelingseenheid volgens een der voorgaande conclusies,
15 waarbij het monitorarmkoppelingsdeel in de eerste stand met zijn einddeel vanuit de keeras naar het centrale deel van de rugplaat toe is gericht, en waarbij het monitorarmkoppelingsdeel in de tweede stand met zijn einddeel vanuit de keeras van het centrale deel van de rugplaat af is gericht.

10. Monitorarmkoppelingseenheid volgens een der conclusies 2-8, waarbij
20 het basisdeel en het versteldeel zijn uitgevoerd als samenwerkende kom- en kogeldelen.

11. Monitorarmkoppelingseenheid volgens een der voorgaande conclusies, waarbij het versteldeel is voorzien van een koppeling, in het bijzonder een lineaire insteekkoppeling.

25 12. Monitorarmkoppelingseenheid volgens een der voorgaande conclusies, waarbij de rugplaat is gekoppeld met de rug van een plat panel display monitor doordat bevestigingsvoorzieningen van het patroon van de rugplaat

samenwerken met corresponderende bevestigingsvoorzieningen aan de rug van de monitor.

13. Monitorarmkoppelingseenheid volgens een der conclusies 5-12, waarbij het basisdeel met een tussenafstand $\frac{1}{2}e$ excentrisch is gelegen vanaf
5 het centrale deel, en waarbij het versteldeel keerbaar is opgenomen in het basisdeel tussen een eerste stand waarin het einddeel van het monitorarmkoppelingsdeel is opgelijnd met het centrale deel, en een tweede stand waarin het einddeel met een tussenafstand $2\frac{1}{2}e$ van het centrale deel is gelegen.
- 10 14. Monitorarmsteun, omvattende een zich langs een langsas uitstreckende staander, een monitorarm voor het radiaal buitenwaarts ten opzichte van de langsas van de staander ondersteunen van een monitor, en een eerste monitorarmkoppelingsdeel waarmee de monitorarm tijdens
15 gebruik op een bepaalde langsaspositie zwenkbaar met de staander kan worden gekoppeld, voorts omvattende een aan een vrij uiteinde van de monitorarm aangebracht verder monitorarmkoppelingsdeel dat tijdens gebruik samenwerkt met een monitorkoppelingsdeel van een monitorkoppelingseenheid volgens een der voorgaande conclusies.
15. Monitorarmsteun volgens conclusie 14, waarbij de tussenafstand e
20 correspondeert met de helft van de hoogte h van het eerste monitorarmkoppelingsdeel in de richting van de langsas van de staander.
16. Monitorarmsteun volgens conclusie 14 of 15, waarbij de staander twee armen omvat die met de eerste monitorarmkoppelingsdelen
25 aangrenzend boven elkaar op de staander zijn gepositioneerd, en waarbij de montitorarmen elk aan hun vrije uiteinde een monitorarmkoppelingseenheid dragen waarvan het versteldeel in de tweede stand is geplaatst, en waarbij de versteldelen naar elkaar toe zijn gericht.

17. Werkwijze voor het samenstellen van een monitorarmsteun, waarbij twee monitorarmen met de eerste monitorarmkoppelingsdelen aangrenzend boven elkaar met een staander worden gekoppeld, en waarbij elke monitorarm aan een vrij uiteinde wordt voorzien van een
- 5 monitorkoppelingseenheid om een monitor te dragen, en waarbij einddelen van verdere monitorarmkoppelingsdelen die via een verstelmechanisme verstelbaar zijn tussen een eerste stand waarin het einddeel van het verdere monitorarmkoppelingsdeel meer nabij het centrale deel van de rugplaat is gelegen, en een tweede stand waarin het einddeel meer nabij de perifere
- 10 rand is gelegen, in de tweede stand worden geplaatst, en met de versteldelen naar elkaar toe worden gericht, zodat de einddelen op de zelfde positie ten opzichte van de langsas van de staander komen te liggen.

FIG. 1

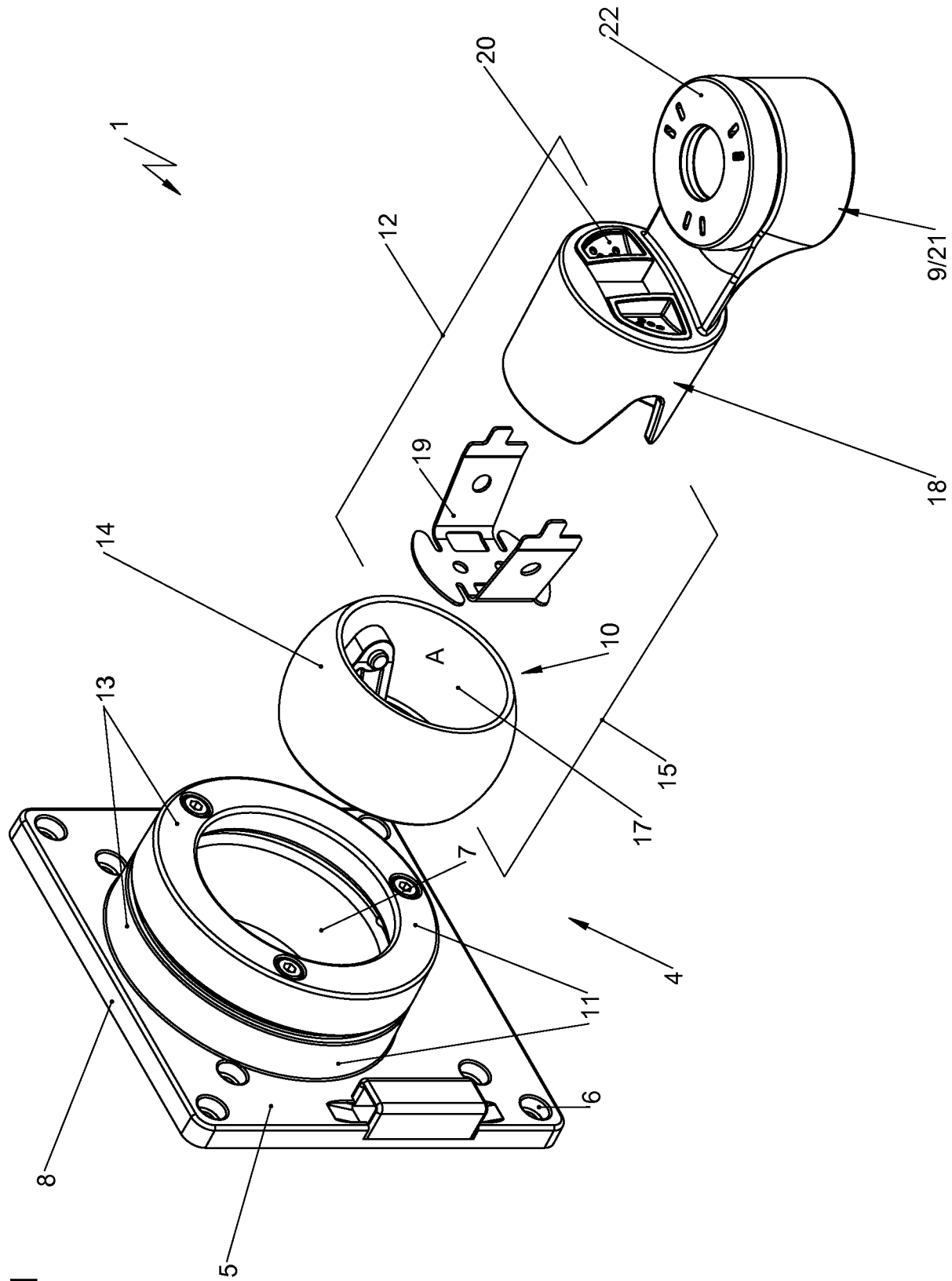


FIG. 2A

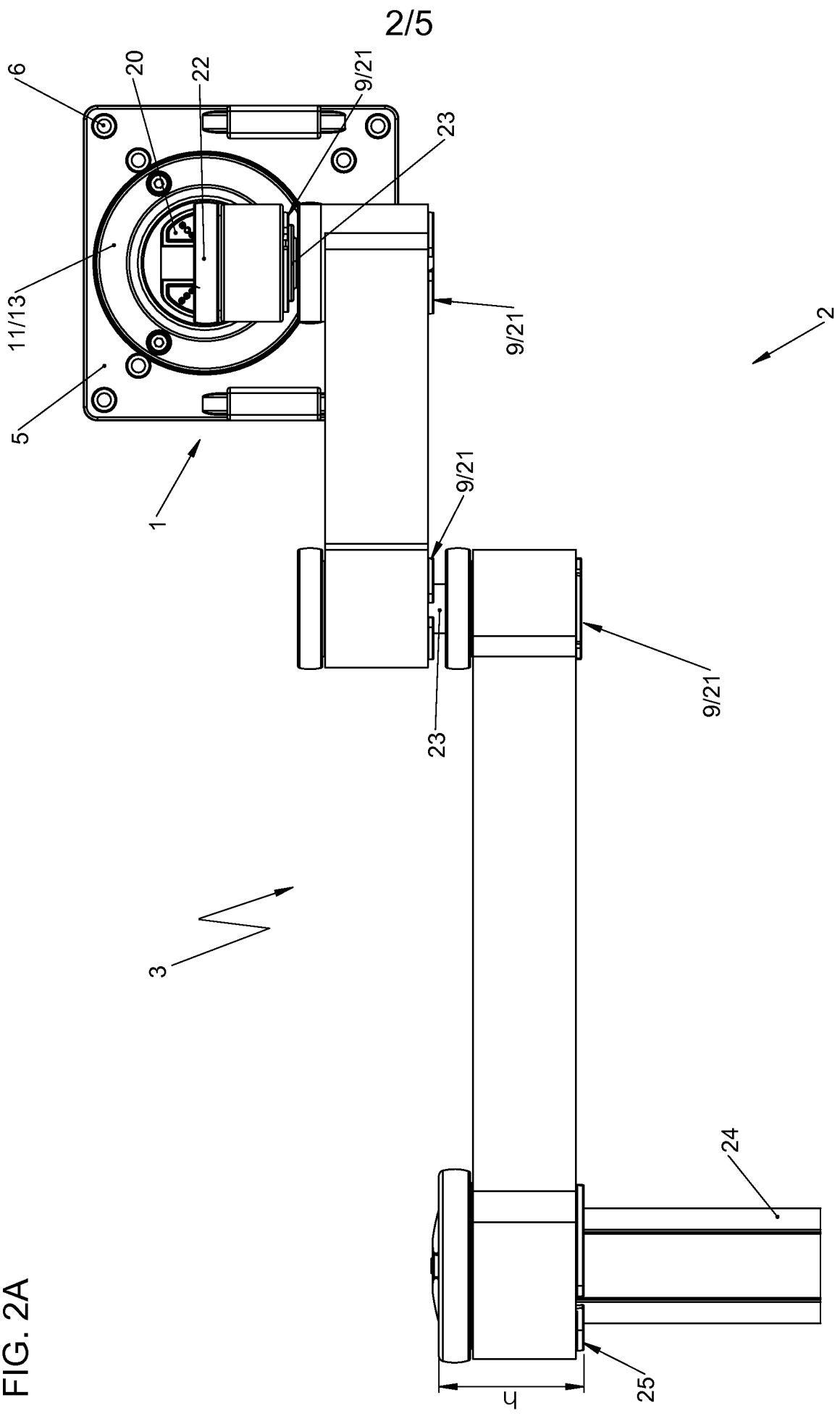


FIG. 2B

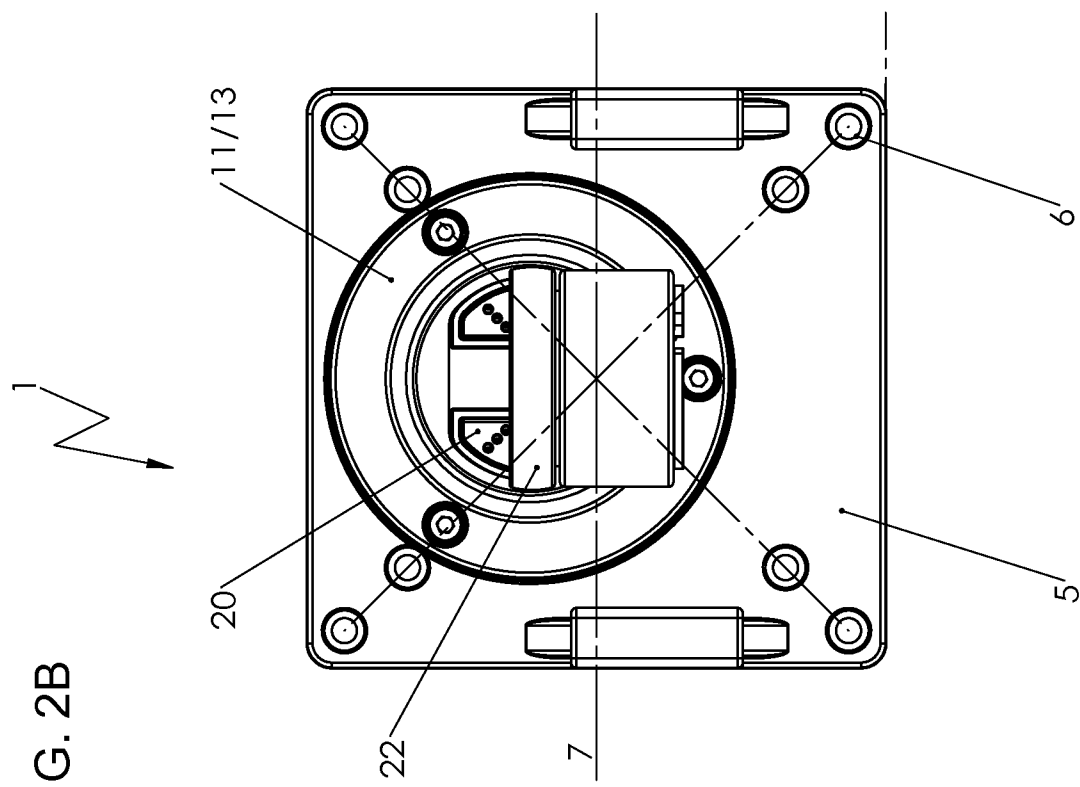


FIG. 2C

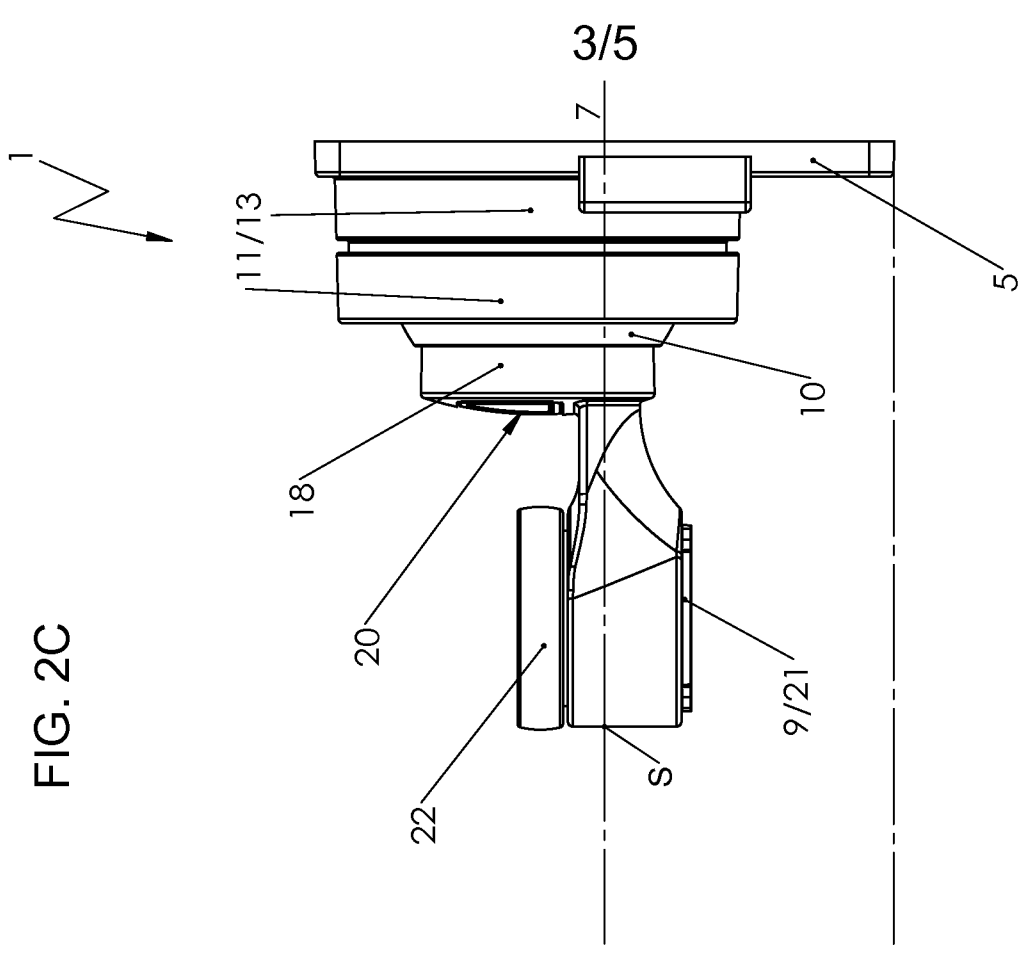


FIG. 3A

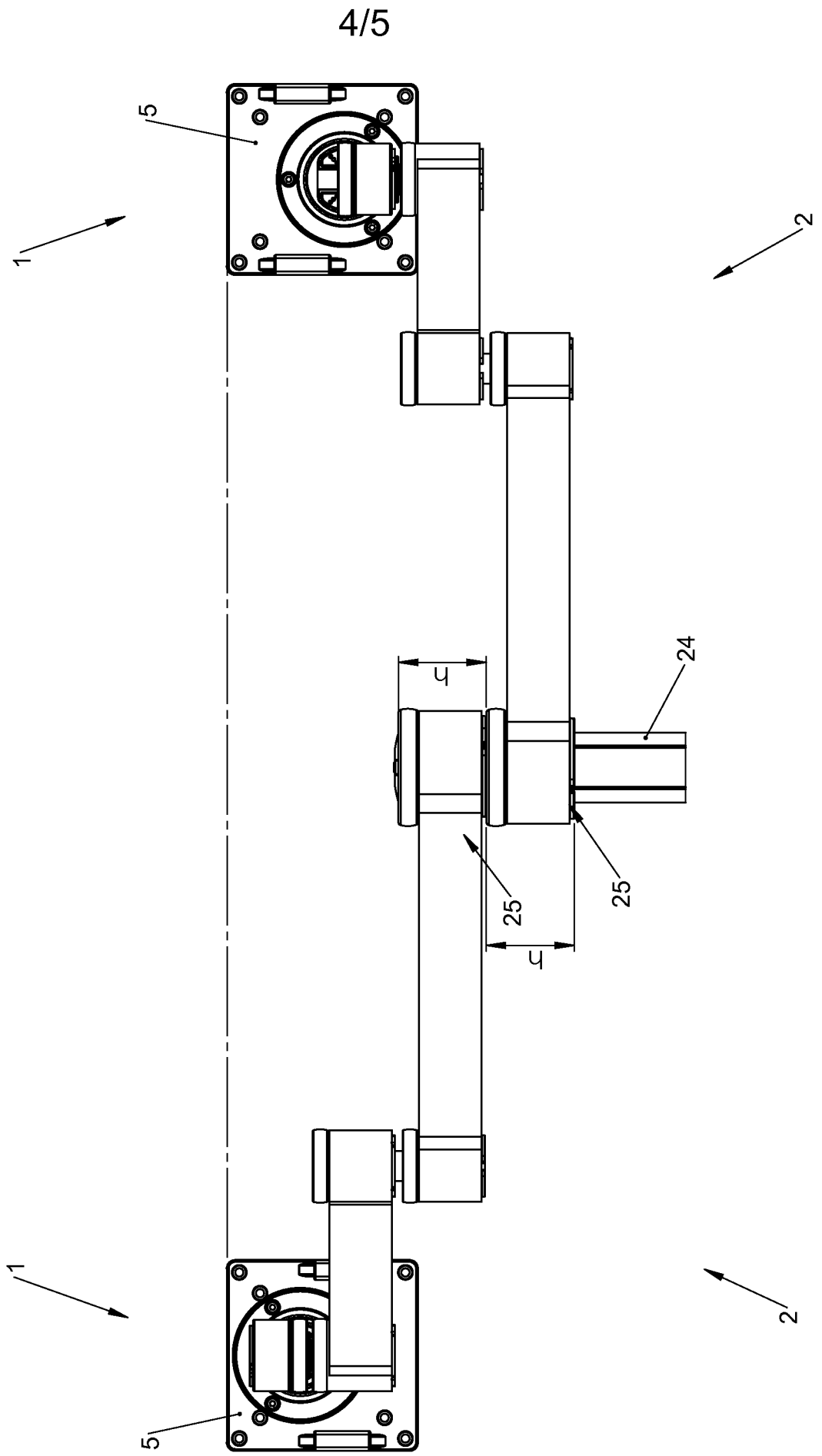


FIG. 3C1

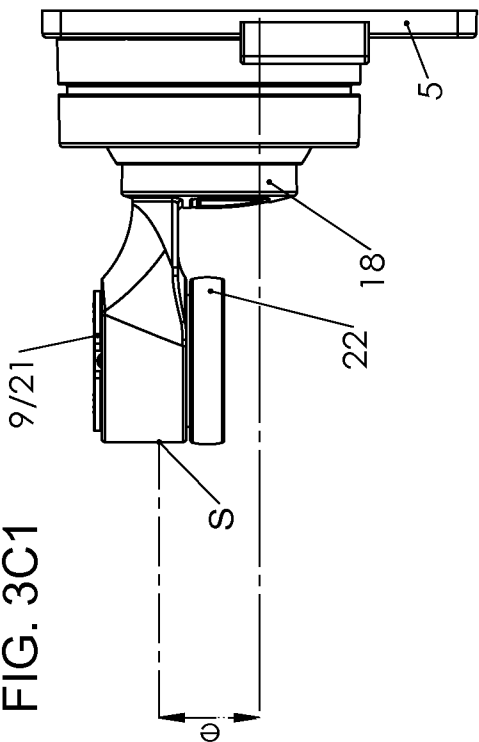


FIG. 3C2

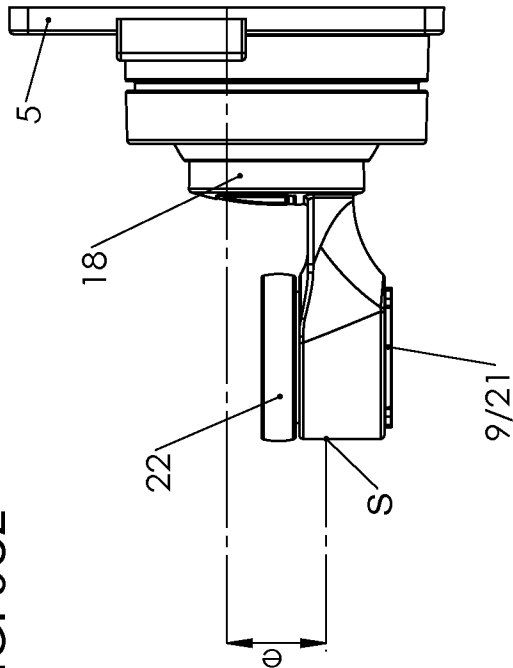


FIG. 3B1

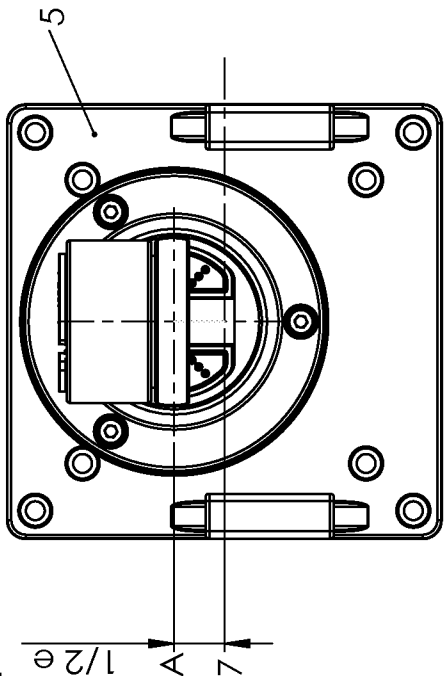
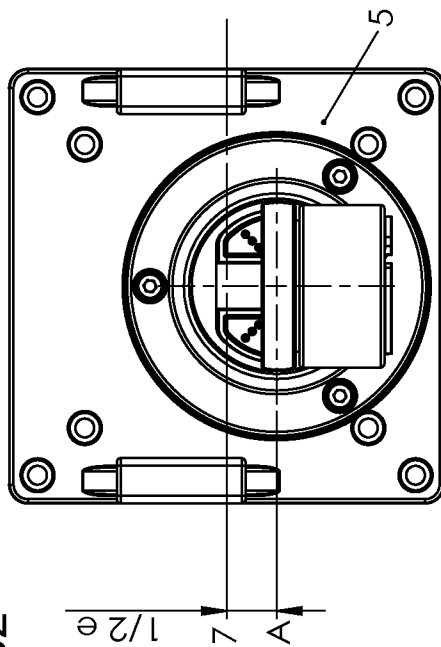


FIG. 3B2



Title: Monitor arm coupling unit for coupling a flat panel display monitor to an end of a monitor arm of a monitor arm stand, and monitor arm stand including such a monitor coupling unit

Abstract

A monitor arm coupling unit for coupling a flat panel display monitor to an end of a monitor arm of a monitor arm stand, comprising a monitor coupling part having a back plate that is provided with mounting provisions arranged in a mounting pattern that in use cooperates with corresponding mounting provisions on the back of a flat panel display monitor. The back plate comprises a central portion and a peripheral edge spaced away therefrom, and a monitor arm coupling piece that is connected to the back plate via an adjustment mechanism. An end part of the monitor arm coupling piece is adjustable via the adjustment mechanism between a first position in which the end part of the monitor arm coupling piece is located more closely to the central part of the back plate, and a second position in which the end part is located more closely to the peripheral edge of the back plate.

SAMENWERKINGSVERDRAG (PCT)

RAPPORT BETREFFENDE NIEUWHEIDSONDERZOEK VAN INTERNATIONAAL TYPE

IDENTIFICATIE VAN DE NATIONALE AANVRAGE	KENMERK VAN DE AANVRAGER OF VAN DE GEMACHTIGDE
	P108360NL00
Nederlands aanvraag nr.	Indieningsdatum
2016954	13-06-2016
	Ingeroepen voorrangsdatum
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.
24-09-2016	SN67408
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 2016954

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 2007/246633 A1 (CARNEVALI JEFFREY D [US]) 25 oktober 2007 (2007-10-25)	1-9, 11-13
Y	* alinea [0021] - alinea [0030]; figuren 1-9 *	14
A	US 2006/065795 A1 (BLACKBURN NICHOLAS L [CA]) 30 maart 2006 (2006-03-30) * figuur 3 *	16,17
A	CN 205 118 590 U (KUNSHAN CHENGJIE COMPUTER PARTS CO LTD) 30 maart 2016 (2016-03-30) * figuren 1, 2 *	1
A	US 2005/092873 A1 (LIN CHIN-CHIH [TW]) 5 mei 2005 (2005-05-05) * figuur 1 *	1
	-/--	



Verdere documenten worden vermeld in het vervolg van vak C.



Leden van dezelfde octrooifamilie 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 octrooi(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

"&" lid van dezelfde octrooifamilie of overeenkomstige octrooipublicatie

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

14 maart 2017

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

Naam en adres van de instantie

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
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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**

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

NL 2016954

C.(Vervolg). VAN BELANG GEACHTE DOCUMENTEN		
Categorie *	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
Y	WO 02/073085 A1 (ID IND & DESIGN [FR]; RUDOLF ALAIN [FR])	14
A	19 september 2002 (2002-09-19) * figuur 1 * -----	1

**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 2016954

In het rapport genoemd octrooigescrift	Datum van publicatie	Overeenkomend(e) gescrift(en)	Datum van publicatie
US 2007246633	A1	25-10-2007	GEEN
US 2006065795	A1	30-03-2006	CA 2521790 A1 30-03-2006 US 2006065795 A1 30-03-2006
CN 205118590	U	30-03-2016	GEEN
US 2005092873	A1	05-05-2005	TW M254544 U 01-01-2005 US 2005092873 A1 05-05-2005
WO 02073085	A1	19-09-2002	EP 1368592 A1 10-12-2003 FR 2821901 A1 13-09-2002 JP 2004522920 A 29-07-2004 US 2004079858 A1 29-04-2004 WO 02073085 A1 19-09-2002

WRITTEN OPINION

File No. SN67408	Filing date (day/month/year) 13.06.2016	Priority date (day/month/year)	Application No. NL2016954
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
NL2016954

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	4-6, 9, 10, 12-17
	No: Claims	1-3, 7, 8, 11
Inventive step	Yes: Claims	10, 15-17
	No: Claims	1-9, 11-14
Industrial applicability	Yes: Claims	1-17
	No: Claims	

2. Citations and explanations

see separate sheet

WRITTEN OPINION

Application number
NL2016954

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 2007/246633 A1 (CARNEVALI JEFFREY D [US]) 25 oktober 2007 (2007-10-25)
- D2 US 2006/065795 A1 (BLACKBURN NICHOLAS L [CA]) 30 maart 2006 (2006-03-30)
- D5 WO 02/073085 A1 (ID IND & DESIGN [FR]; RUDOLF ALAIN [FR]) 19 september 2002 (2002-09-19)

2 Independent claims 1 and 17

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 monitorarmkoppelingseenheid (Fig. 1-9) voor (geschikt voor) het koppelen van een plat panel display monitor aan een uiteinde van een monitorarm (bijv. paal 12) van een monitorarmsteun, omvattende een monitorkoppelingsdeel (10) met een rugplaat (22) die is voorzien van een in een bevestigingspatroon (48) aangebrachte bevestigingsvoorzieningen die tijdens gebruik samenwerken met corresponderende bevestigingsvoorzieningen aan de rug van een plat panel display monitor (oppervlak S), welke rugplaat een centraal deel omvat (koppelgedeelte 40) en een op afstand daarvan gelegen perifere rand (Fig. 1), en een via een verstelmechanisme (30) met de rugplaat verbonden monitorarmkoppelingsdeel, waarbij een einddeel van het monitorarmkoppelingsdeel via het verstelmechanisme verstelbaar is tussen een eerste stand waarin het einddeel van het monitorarmkoppelingsdeel meer nabij het centrale deel van de rugplaat is gelegen (Fig. 1 of 4), en een tweede stand waarin het einddeel meer nabij de perifere rand is gelegen (Fig. 6).

2.2 The subject-matter of claim 17 involves an inventive step.

D2 is considered the closes prior art and discloses:

Werkwijze voor het samenstellen van een monitorarmsteun (4), waarbij twee monitorarmen (40, 42) met de eerste monitorarmkoppelingsdelen (Fig. 3/7) aangrenzend boven elkaar met een staander worden gekoppeld, en waarbij elke monitorarm aan een vrij uiteinde wordt voorzien van een monitorkoppelingseenheid (26) om een monitor te dragen.

The subject-matter of claim 17 therefore differs from D2 in that: waarbij einddelen van verdere monitorarmkoppelingsdelen die via een verstelmechanisme verstelbaar zijn tussen een eerste stand waarin het einddeel van het verdere monitorarmkoppelingsdeel meer nabij het centrale deel van de rugplaat is gelegen, en een tweede stand waarin het einddeel meer nabij de perifere rand is gelegen, in de tweede stand worden geplaatst, en met de versteldelen naar elkaar toe worden gericht, zodat de einddelen op de zelfde positie ten opzichte van de langsas van de staander komen te liggen.

The problem to be solved by the present invention may therefore be regarded as providing a method of assembling a monitor support with two supporting arms wherein the screen support can be provided on the same supporting height.

Document D2 already provides for method of providing two support arms each having monitor attachments that can be provided on the same supporting height, by providing each arm with two arm segments (12) that attached either on top or below each other to compensate for the height difference created by placing the support arms above each other on the support. As such, D2 solved the problem in an alternative way, such that a person skilled would not contemplate of using a monitor couple piece as disclosed e.g. in D1. Therefore claim 17 is considered to involve an inventive step.

3 **Dependent claims 2-16**

- 3.1 Furthermore D1 discloses the subject matter of dependent claims 2, 3, 7, 8 and 11 such that these claims lack novelty.
- 3.2 The subject matter of further claims 4, 5, 6, 9, 12 and 13 does not involve an inventive step in view of D1 and the common general knowledge of a person skilled in the art.
- 3.3 The subject matter of claim 14 does not involve an inventive step in view of a combination of D5 and D1.

- 3.4 The subject matter of claims 10, 15 and 16 is not known from the known prior art.

Re Item VII

Certain defects in the application

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

Re Item VIII

Certain observations on the application

- 6 Claim 9 refers to the "keeras", first introduced in claim 5, however, claim 9 depends on any of the preceding claims.
- 7 Claim 17, although not described, appears to be referring/depending to/on the "monitorarmsteun" as claimed in claim 16 .