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(54) **Modular console for computers and the like**

(57) The main object of the present invention is a modular console for computers and the like, which includes the perfect placement of all typical computer components and also offers a large free working surface.

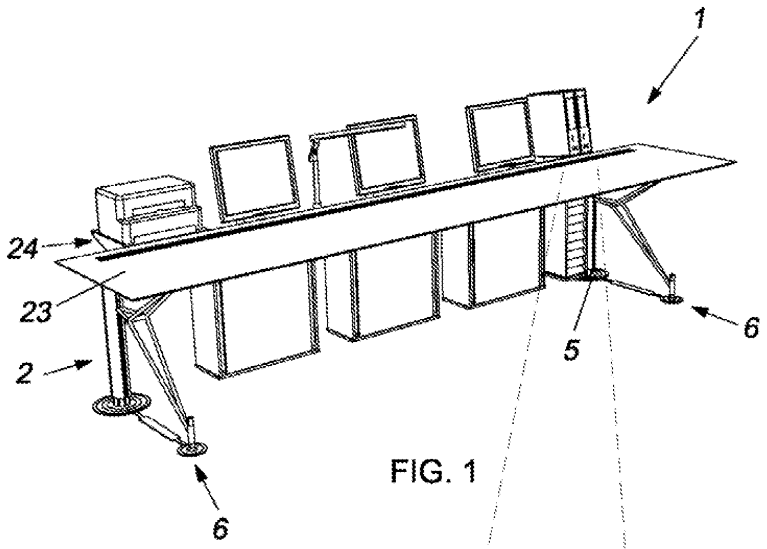

FIG. 1

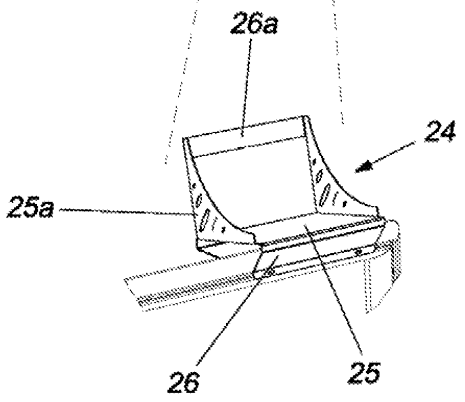

FIG. 7

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Description

OBJECT OF THE INVENTION

[0001] The main object of the present invention is a modular console for computers and the like, which includes the perfect placement of all typical computer components and also offers a large free working surface.

BACKGROUND OF THE INVENTION

[0002] At present, a large variety of tables or consoles are known which are adapted to work with computers, which comprise an upper board and a support structure, enabling modular assemblies and ducts for the cables.

[0003] For example, document ES2090500 discloses a desk module for this purpose. It permits modular assemblies and implements two different channels to separate the data and power cables.

[0004] Document EP0643935 discloses an ergonomic workstation, configured with a particular orientation for the operator and formed by several consoles. The monitors are CRT and adjustable. It is ergonomically adapted according to US requirements.

[0005] Nevertheless, in these documents, and in general, consoles of this type do not achieve a good separation of the working area from the area where the computers are positioned and placed, producing an occupation or reduction in the working area, an invasion of cables in many cases, and a laborious assembly and wiring of the equipment.

DESCRIPTION OF THE INVENTION

[0006] The modular console of the invention has a simple constitution which provides a perfect separation of the working area and the equipment placement area, and a quick and functional assembly.

[0007] In accordance with the invention, the modular console comprises a structure which includes a rear frame and components consisting of sides, intermediate arms and a front beam. This structure supports the corresponding upper board which constitutes the work surface.

[0008] The special feature of the invention consists of the rear frame being visible, i.e. in its upper central portion it is not covered by the board, and is accessible for assembling the computers, for which purpose it implements direct means of attachment of components and accessories.

[0009] Furthermore, the frame consists of tubular profiles, wherein the cables can be carried. In another embodiment, the cables can be located in an external chute.

[0010] The accessories that can be assembled to support the computers or any other necessary material are very varied, for example, supporting members for printers, monitors, filers, connecting strips, lamps, drawers, etc

[0011] It further permits the easy assembly of several modules between one another, it being possible to adopt even angular forms, which permit carrying out polygonal assemblies.

DESCRIPTION OF THE DRAWINGS

[0012] To complement the description being made and with the object of helping towards a better understanding of the characteristics of the invention, in accordance with a preferred example of practical embodiment thereof, a set of figures is attached as an integral part of the description, wherein the following has been represented with an illustrative non-limitative character:

Figure 1.- Shows a view of the console of the invention, in a simple assembly.

Figure 1a shows a view of figure 1 where the board has been eliminated to give a better appreciation of its structure.

Figure 2 shows a section of the upper profile of the frame comprising the structure of the modular console of the invention.

Figure 2a shows the sliding elements opposite the grooves of the frame whereon they slide and are fixed.

Figure 3 shows two examples of the sliding elements which form part of the means of attachment of components and accessories.

Figure 4 shows a view of an angular modular assembly.

Figure 4a shows a detail of the area in accordance with the structure corresponding to the assembly of figure 4.

Figure 5 shows a detailed view of one of the intermediate arms which compose the structure of the console of the invention.

Figure 5a shows a side detail of the anchoring of an intermediate arm to the structure of the console of the invention.

Figure 5b shows a perspective view

Figures 6 to 15 show several accessories that can be mounted on the structure of the console of the invention.

PREFERRED EMBODIMENT OF THE INVENTION

[0013] The modular console (1) of the invention, as shown in figures 1 and 1a, comprises a structure (2) which supports a board (23), with the special characteristic that the structure (2) includes a visible frame (3), i.e. which is not placed below the board (23), but is accessible and has direct means of attachment of different components and accessories, leaving the board (23) completely free as a work surface.

[0014] The structure (2) includes as components principally sides (6) and a plurality of intermediate arms (15), which are shown in figure 1a, and which support a hori-

zontal upper front beam (13), this front beam (13) and the intermediate arms (15) cooperating in the support of the board (23).

[0015] The frame (3) has tubular profiles of general elliptical section, configuring an upper central portion (3a) and two side portions (3b), at whose lower ends are fitted separate rear brackets (5). Inside the tubular profiles, the cables of the computers can be arranged, as seen in figure 2, internally having a partition (110) which defines two channels (111, 112) to separate power and data cables.

[0016] The means of attachment of different components and accessories, for their part, consists of separate grooves (4, 4a) front and rear, which run throughout the length of the frame (3) at the ends corresponding to the major axis of its section, and in all its portions. Therein are inserted protuberances belonging to anchorings of the different components and accessories.

[0017] These protuberances, in the case of the accessories, mainly comprise sliding elements (88) of demountable detachment, shown in figure 3. Figure 2a shows the sliding elements (88) opposite the grooves (4, 4a) of the frame whereon they slide and are fixed.

[0018] For modular assemblies, with several frames (see figures 4 and 4a), additional components have been provided, consisting of intermediate sides (6a), also coupled to other intermediate vertical portions (3c) which form part of two adjacent frames (3), corresponding to two adjacent modular consoles (1) and which configure the major modular console (1 a).

[0019] Both the lateral sides (6) and the intermediate sides (6a) include (see figures 1 a and 4a) a node (11) wherefrom three extremities radially originate: a rear extremity (8), a front descending extremity (9), and another front ascending extremity (10).

[0020] The free end of the rear extremity (8) is fixed to any of the portions (3a, 3b) of the frame (3) -or also to the intermediate vertical frame (3c) in the case of modular assemblies-. That of the front descending extremity (9) to another front bracket (12), and that of the front ascending extremity (10) to the front beam (13). The front bracket (12) is strapped to the rear bracket (5) by a lower strap (14), and the free end of the front ascending extremity (10) is strapped to the frame (3) -or to the common area of the two adjacent frames, in the case of modular assemblies, by another upper strap (95) wherefrom, furthermore, there originates from the upper part a support (96) for the board (23).

[0021] The front brackets (12) and/or the rear brackets (5) are telescopic and can be height adjusted to level the modular console (1) of the invention, for example, by axial threaded rods (900) or locking gears of their extension.

[0022] In this example of the invention, the three extremities (8, 9, 10) include separate triangles of profiles and/or rods, which share one of their sides, forming the node (11).

[0023] In the case of modular assemblies to form a major modular console (1 a) (see figures 4 and 4a), angular forms may arise to achieve, for example, polygonal assemblies. In these cases, the intermediate vertical portion (3c) common to the adjacent frames (3) includes an upper joint (89) whereto the upper portions (3a) of the adjacent frames (3) are attached, as well as the upper strap (95) of the intermediate side (6a). Furthermore, a triangular cover (100), level with the adjacent boards (23) has been provided by a widened supporting member (96a) originating from the upper part of the upper strap (95), to give continuity to the work surface.

[0024] The intermediate arms (15) components of the structure (2) which support the board (23) (see figure 5) comprise a rear anchoring (190) to attach to the upper portion (3a) of the frame (3), a front attachment (78) for fixing and support of the front beam (13), and an intermediate table (22) to support the board (23), where bores are implemented (79) precisely of attachment of the board (23). This rear anchoring (190) comprises a lower bridge (191) provided with opposing protuberances consisting of: a rear fixed tab (192) which is inserted in the rear groove (4a), and another front tab (193) which is demountable and height-adjustable, to fix in the front groove (4). Thanks to the possibility of height adjustment, the board (23) can optimally be levelled, in short, it will be positioned in the upper part. In addition to the rear anchoring (190), a horizontal flange (194) originates in the rear part.

[0025] With regard to the accessories which can be fixed to the upper portion (3a) of the frame (3) we can cite the following non-limitatively:

- An accessory consisting of a supporting member (24) for computers (printers, etc) (see figure 6), constituted by a sheet folded according to three folds: a central fold (25) appreciably horizontal for support of the computer; and two end folds (26) converging towards the upper portion (3a) of the frame (3), whose edges implement a bilateral anchoring (290) for attachment to the frame (3).
- An accessory consisting of a communication module (80) (see figures 15 and 15a), constituted by a casing (81) to support electronic equipment and equipped with bilateral anchoring (290) for attachment to the upper portion (3a) of the frame (3).

[0026] The bilateral anchorings (290) mainly consist of flanges (295) adjacent to the grooves (4, 4a), where the sliding elements (88) which will be inserted therein are fixed. The flanges (295) may be implemented, for example, directly on the edges of the end folds (26) of the supporting member (24) for computers, or implemented in a lower protruding manner in the casing (81) of the communication module (80).

- An accessory consisting of a variant of the supporting member (24) for computers (see figure 7), which additionally comprises two side aprons (25a) originating from the upper part of the central fold (25),

interlinked by an upper rear apron (26a), suitable, for example for depositing files.

- An accessory consisting of a lower supporting member (50), which consists of, at least, a vertical tube (51) provided with an upper anchoring (490) for fastening to the upper portion (3a) of the frame (3), and which is projected through the lower part of the frame (3). On this lower supporting member (50) formed by one or more vertical tubes (51) it is possible to attach, for example: a cabinet (55) for a central processing unit of a computer or similar (see figure 9); a ventilated container (56) to house electrical connections (see figure 10); a clamp support (57) for a central processing unit of a computer or similar (see figure 11); drawers (58) (see figure 12), or other elements.

[0027] The upper anchoring (490) (see figures 10 and 10a) comprises a curved upper clamp (491) with two end flanges (495) adjacent to the grooves (4, 4a), where the sliding elements (88) which are inserted therein are fixed. The curved upper clamp (491) has a shape adapted to the lower curvature of the upper portion (3a) of the frame (3), avoiding bending when resting thereon. Figure 10c shows in detail how the sliding elements (88) are connected to the upper curved clamp (491) for their sliding assembly on the grooves (4, 4a) of the frame (3).

- An accessory consisting of a lamp (60) (see figure 13), constituted by a luminaire (61), a switch, an articulated supporting member (62) and a lower anchoring (590) for attachment to the upper portion (3a) of the frame (3).

[0028] The lower anchoring (590) (see figures 13a and 13b) comprises a curved lower clamp (591) with two end flanges (595) adjacent to the grooves (4, 4a), where the sliding elements (88) which are inserted therein are fixed. The lower curved clamp (591) also has a form adapted to the upper curvature of the upper portion (3a) of the frame (3), avoiding bending. From the lower curved clamp (591) originates an upper tubular body (596) where the articulated supporting member (62) is coupled.

- An accessory consisting of a post (30) to hang flat screens (see figures 8 and 8a), which has a lower versatile anchoring (390) for fastening on the upper portion (3a) of the frame (3) -or also the rear anchorings (190) of the intermediate arms (15)- and of an upper slide (33) height interlocking, equipped with an implement (34) of extending arm (34a) of attachment of the flat screen. The possibility of also fixing the post to the anchorings of the intermediate arms (15) avoids the existence of some of these (15) from hampering the placement of this accessory.

[0029] The versatile anchoring (390) consists of a threaded hole, not represented, implemented on the base of the post (30) where it can be attached thanks to the corresponding screw, not represented, either to the flange (194) which forms part of the rear anchoring (190) of any intermediate arm (15), or the upper tubular body (596) of a lower anchoring (590).

- An accessory consisting of a fork (70) for attachment of equipment (71) (see figures 2 and 14), equipped with a single anchoring (690) of attachment to any portion (3a, 3b, 3c) of the frame (3). This single anchoring consists of, at least, a flange adjacent to the front groove (4) or to the rear groove (4a), where a sliding element (88), which is introduced in the corresponding groove, is fixed.

Claims

1. Modular console (1) for computers and the like, which comprises a structure (2) with sides (6), as well as an upper board (23) supported by the structure (2) and which constitutes a work surface; **characterized in that** the structure (2) comprises a visible rear frame (3) equipped with direct means of attachment of components and accessories, formed by a central upper portion (3a) and separate side portions (3b); the structure (2) also comprising a horizontal upper front beam (13) supported by the sides (6) and by a plurality of intermediate arms (15) attached to the central portion (3a) of the frame (3).

2. Modular console (1) according to claim 1, **characterized in that** the frame (3) is formed by tubular profiles.

3. Modular console (1) according to claim 1, **characterized in that** the direct means of attachment of components and accessories provided on the frame (3) consists of separate longitudinal, front and rear grooves (4, 4a), where protuberances of anchorings of the components or accessories are inserted.

4. Modular console (1) according to claim 3, **characterized in that** the protuberances consist of sliding elements (88) for demountable detachment.

5. Modular console (1) according to claim 1, **characterized in that** the frame (3) has separate rear brackets (5) on its side portions (3b).

6. Modular console (1) according to claim 5, **characterized in that** the rear brackets (5) are fitted in the lower ends of the side portions (3b) of the frame (3).

7. Modular console (1) according to claim 1, **characterized in that** it further comprises intermediate sides (6a) which are coupled to vertical central portions (3c) which form part of two adjacent frames (3)

corresponding to two adjacent modular consoles (1) and forming a major modular console (1 a).

8. Modular console (1) according to claims 1, 3, 5 and 7, **characterized in that** each side (6) or intermediate side (6a) includes a node (11) wherefrom there originate radially three ends (8, 9, 10) formed by a rear extremity (8), another descending front extremity (9) and another ascending front extremity (10); whose free ends are respectively attached to: any of the portions (3a, 3b, 3c) of one or two frames (3), to another front bracket (12), and to the front beam (13); the front bracket (12) being strapped to the rear bracket (5) by a lower strap (14), and the free end of the ascending front extremity (10) to the frame or frames (3) by another upper strap (95), wherefrom a support (96) for the board (23) originates in its upper part.

9. Modular console (1) according to claim 8, **characterized in that** the three extremities (8, 9, 10) are formed by separate triangles of profiles and/or rods, which share one of their sides, forming the node (11).

10. Modular console (1) according to claims 7 and 8, **characterized in that** the major modular console (1 a) adopts an angular shape; where the central vertical portion (3c) comprises an upper joint (89) wherein are attached the central portions (3a) of the adjacent frames (3) as well as the upper strap (95) of the intermediate side (6a); having a triangular cover (100), level with the adjacent boards (23) by a widened supporting member (96a) originating from the upper part of the upper strap (95).

11. Modular console (1) according to claim 1, **characterized in that** the intermediate arms (15) comprise a rear anchoring (190) to the central portion (3a) of the frame (3), a front attachment (78) for support and fixing of the front beam (13), and an intermediate table (22) to support the board (23).

12. Modular console (1) according to claim 11, **characterized in that** bores (79) for attaching to the board (23) are implemented on the intermediate table (22).

13. Modular console (1) according to claims 3 and 11, **characterized in that** the rear anchoring (190) comprises a lower bridge (191) provided with opposite protuberances consisting of: a fixed rear end tab (192) designed to be inserted in the rear groove (4a) and another front tab (193) demountable and height-adjustable designed to be fixed in the front groove (4a) in order to support the intermediate arm (15) with possibility of levelling, a horizontal flange (194) originating in the rear part from the rear anchoring (190).

14. Modular console (1) according to claim 1, **characterized in that** it comprises an accessory consisting of a supporting member (24) for computers, consisting of a sheet folded along three folds: a central fold (25) considerably horizontal to support the computer, and two end folds (26) converging towards the upper portion (3a) of the frame (3), whose edges implement a bilateral anchoring (290) of attachment to the central portion (3a) of the frame (3).

15. Modular console (1) according to claim 1, **characterized in that** it comprises an accessory consisting of a communication module (80), constituted by a support casing (81) of electronic equipment and equipped with bilateral anchorings (290) for attachment to the central portion (3a) of the frame (3).

16. Modular console (1) according to claims 4, 14 and 15, **characterized in that** the bilateral anchoring (290) consists of end flanges (295) adjacent to the grooves (4, 4a), and where the corresponding sliding elements (88) are fixed.

17. Modular console (1) according to claim 14, **characterized in that** a variant of the supporting member (24) for computers additionally comprises two side aprons (25a) originating in its upper part from the central fold (25), interlinked by an upper rear apron (26a).

18. Modular console (1) according to claims 1 and 13, **characterized in that** it comprises an accessory consisting of a post (30) to hang flat screens (31), which has a versatile anchoring (390) for attaching to the upper portion (3a) of the frame (3) and/or to a rear anchoring (190), and an upper slide (33) height interlocking and equipped with an implement (34) of extending arm (34a) for fastening of the flat screen (31).

19. Modular console (1) according to claim 1, **characterized in that** it comprises an accessory consisting of a lower supporting member (50), which consists of, at least, a vertical tube (51) solidly joined to an upper anchoring (490) for attaching to the central portion (3a) of the frame (3), in order to be projected through the lower part of the frame (3).

20. Modular console (1) according to claim 19, **characterized in that** a cabinet (55) is attached to the vertical tubes (51) for a central processing unit of a computer or similar.

21. Modular console (1) according to claim 19, **characterized in that** a ventilated container (56) is attached in the vertical tubes (51) to house electrical connections.

22. Modular console (1) according to claim 19, **characterized in that** a clamp support (57) is attached to the vertical tubes (51) for a central processing unit of a computer or similar.

23. Modular console (1) according to claim 19, **characterized in that** a drawer (58) is attached to the vertical tubes (51).

24. Modular console according to claims 4 and 19, **characterized in that** the upper anchoring (490) comprises an upper curved clamp (491) adapted to the profile of the upper portion (3a) of the frame (3), with two end flanges (495) adjacent to the grooves (4, 4a), and where the sliding elements (88) are fixed.

25. Modular console (1) according to claim 1, **characterized in that** it comprises an accessory consisting of a lamp (60) constituted by a luminaire (61), a switch, an articulated supporting member (62) and a lower anchoring (590) for fastening to the upper portion (3a) of the frame (3).

26. Modular console according to claims 4, 18 and 25, **characterized in that** the lower anchoring (590) comprises a lower curved clamp (591) adapted to the profile of the upper portion (3a) of the frame (3), with two end flanges (595) adjacent to the grooves (4, 4a), and where the sliding elements (88) are fixed; an upper tubular body (596) originating from the lower curved clamp (591) for coupling to the articulated supporting member (62) of the lamp (60) and/or of the post (30) to hang flat screens.

27. Modular console according to claims 13, 18 and 26, **characterized in that** the versatile anchoring (390) comprises a threaded hole implemented in the base of the post (30) in order to be attached by a screw to a horizontal flange (194) of a rear anchoring (190) or to the upper tubular body (596) of a lower anchoring (590).

28. Modular console (1) according to claim 1, **characterized in that** it comprises an accessory consisting of a fork (70) for attachment to equipment (71), equipped with a single anchoring (690) for fastening to any portion (3a, 3b, 3c) of the frame (3).

29. Modular console (1) according to claims 4 and 28, **characterized in that** the single anchoring (690) consists of, at least, a flange adjacent to the front groove (4) or to the rear groove (4a), and where the corresponding sliding element (88) is attached.

30. Modular console (1) according to claims 5 and 8, **characterized in that** the front brackets (12) and/or the rear brackets (5) are telescopic in order to regulate their height to level the modular console (1).

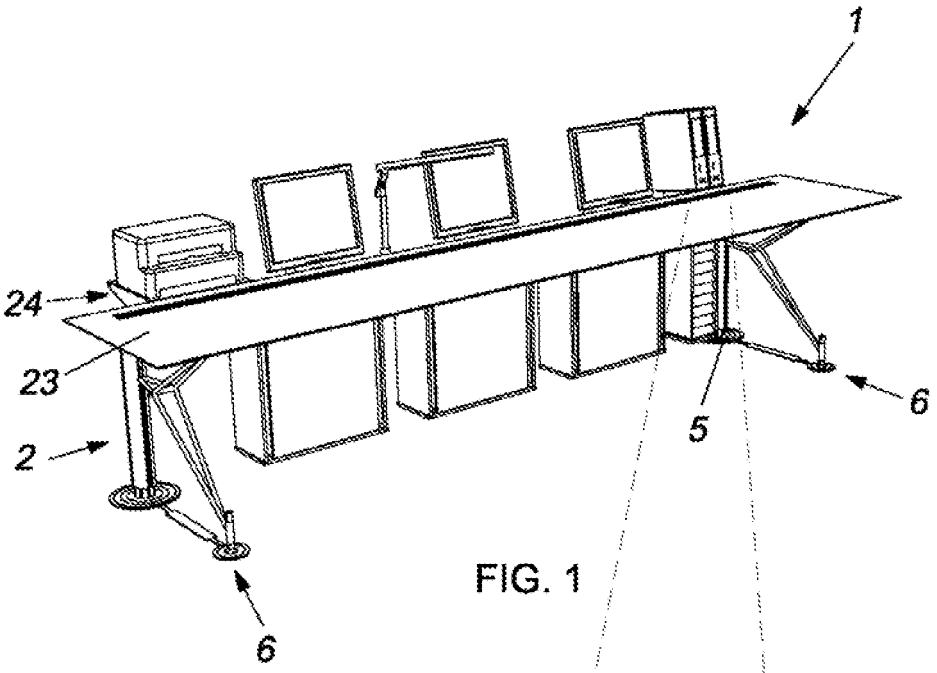

FIG. 1

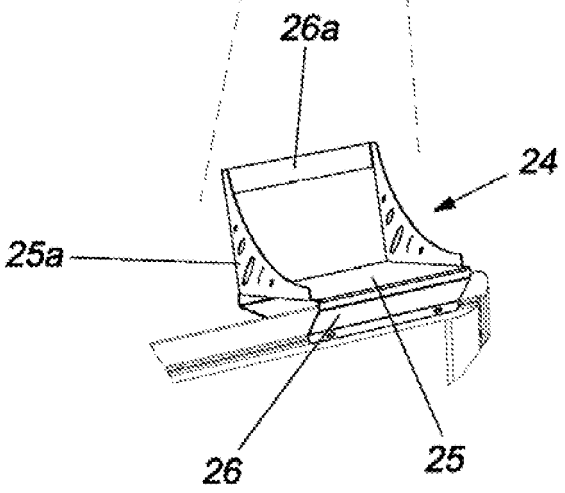

FIG. 7

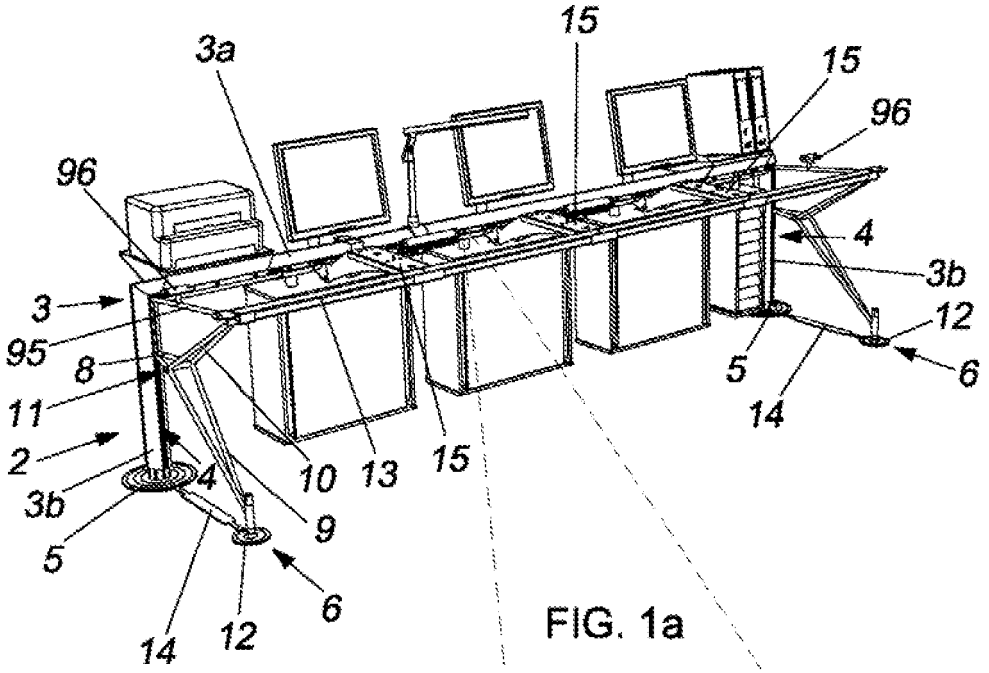

FIG. 1a

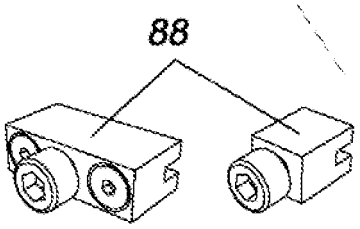

FIG. 3

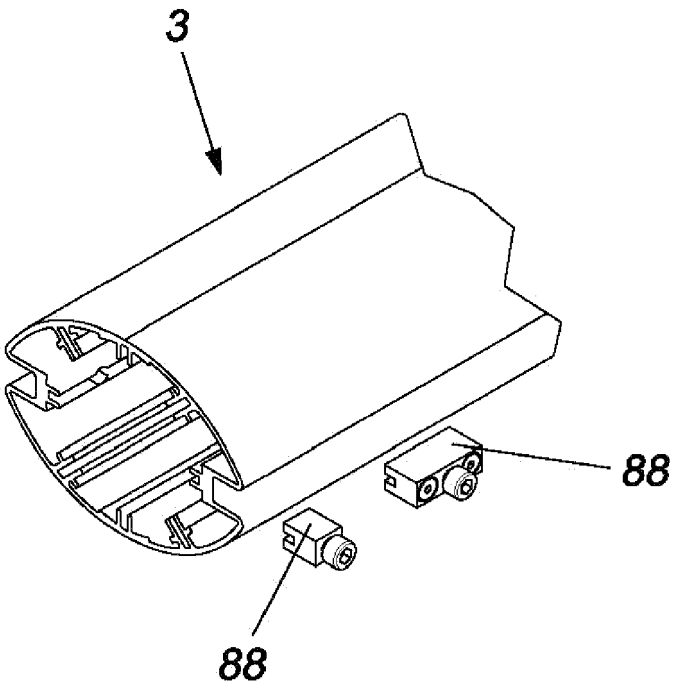

FIG. 2a

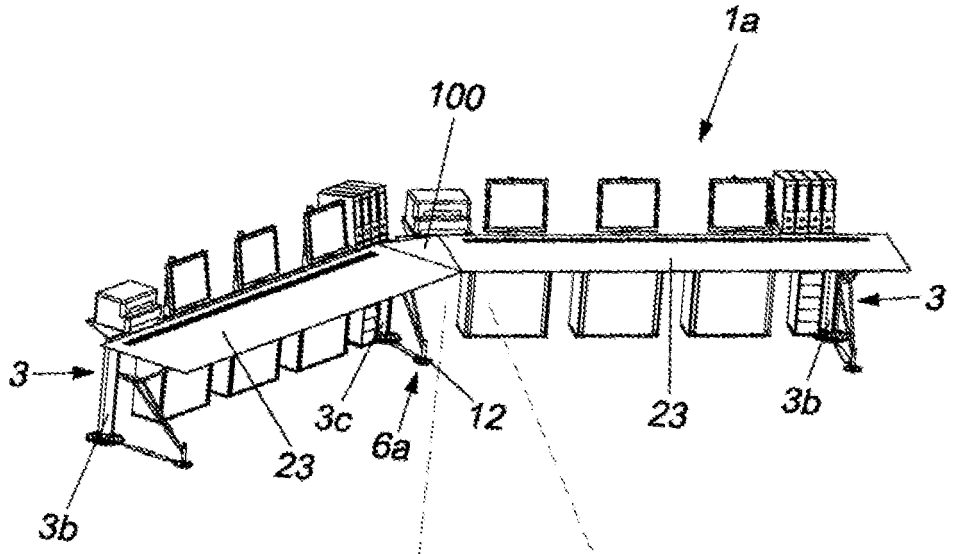

FIG. 4

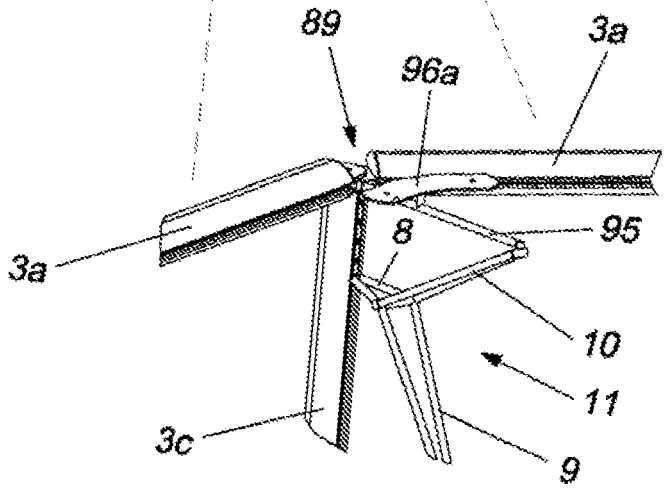

FIG. 4a

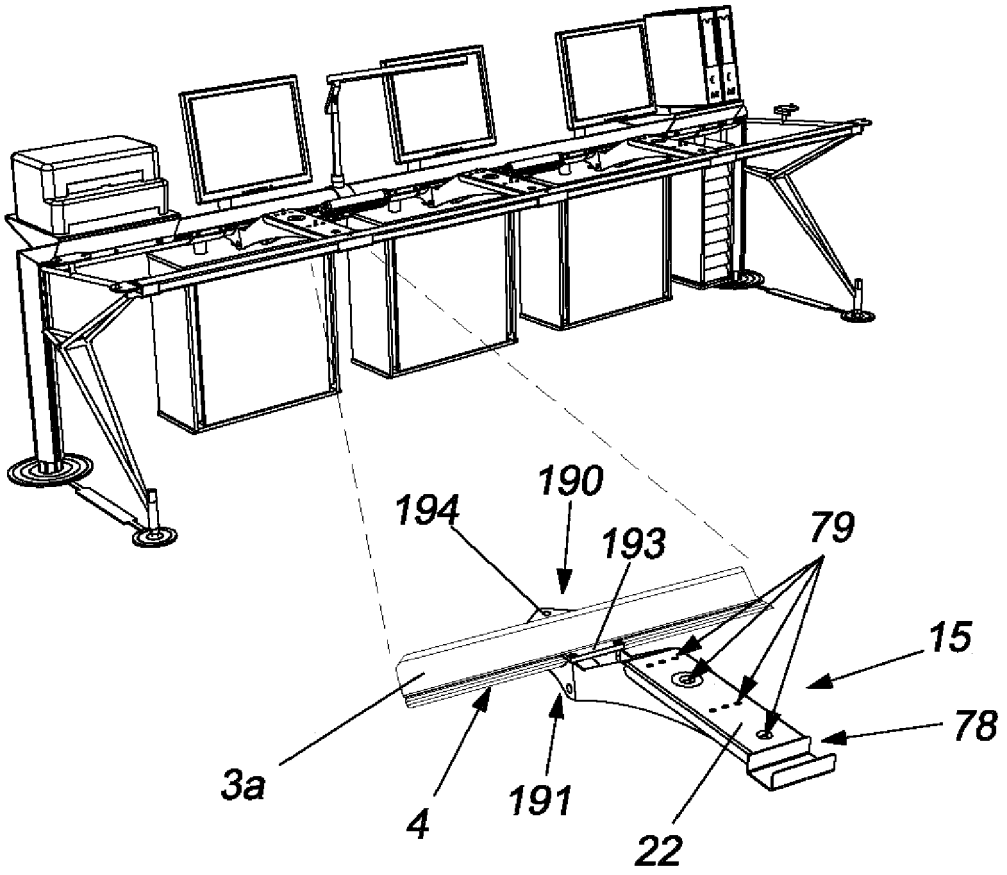

FIG. 5

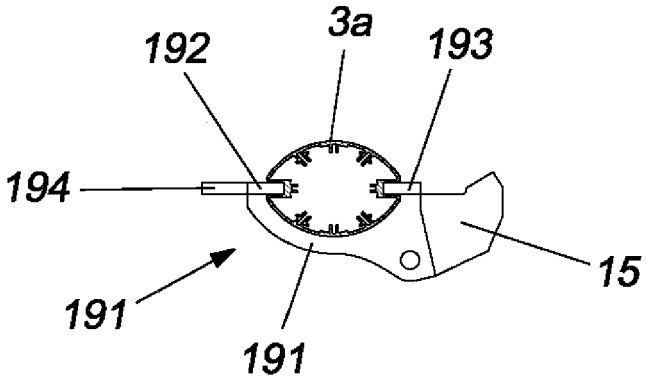

FIG. 5a

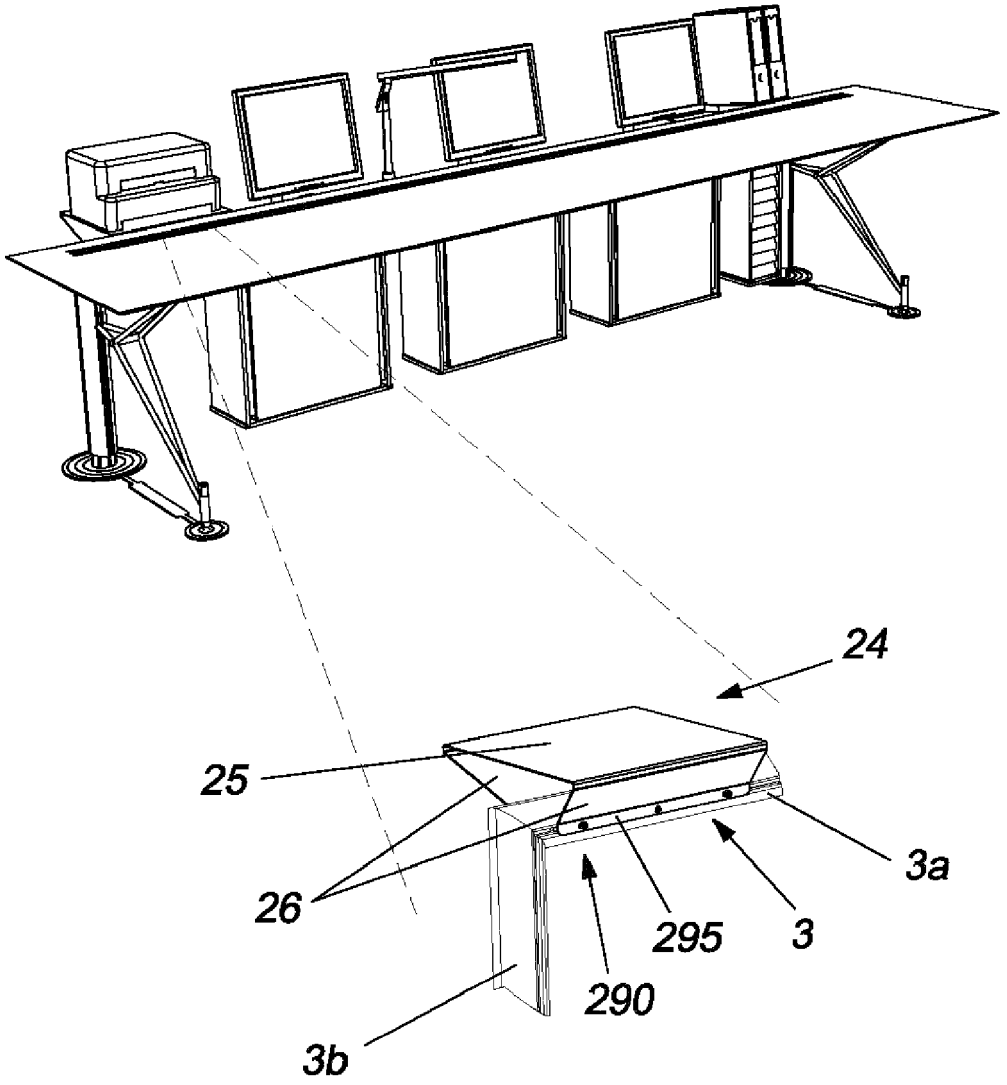

FIG. 6

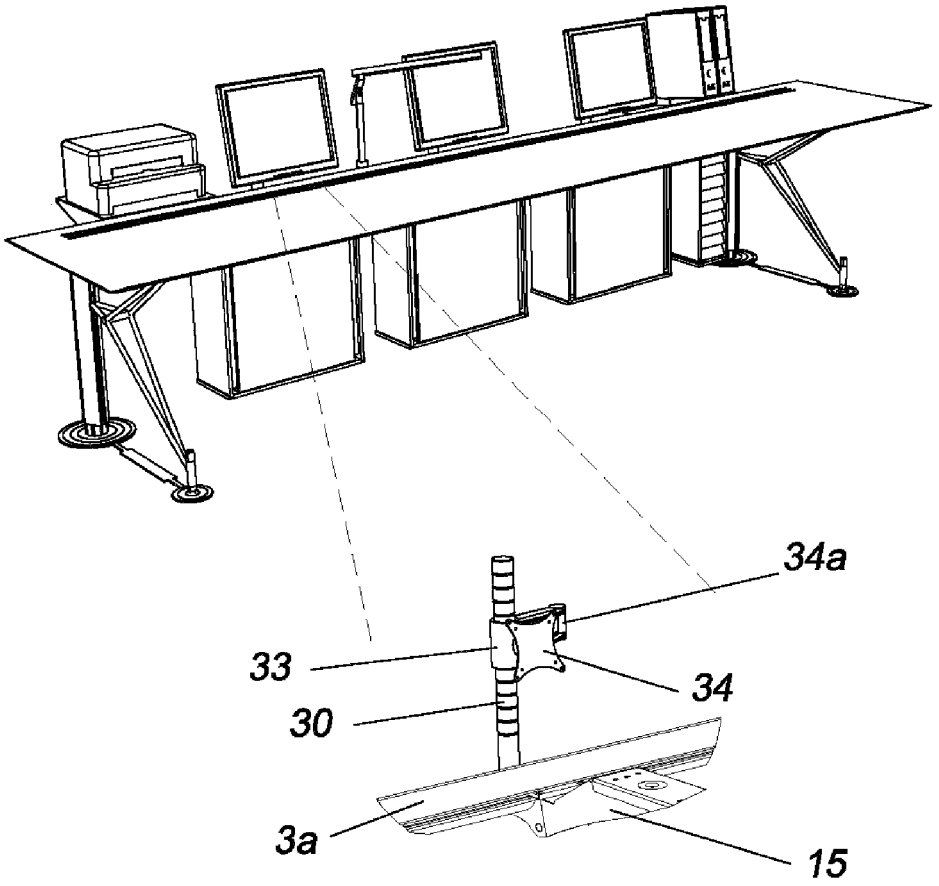

FIG. 8

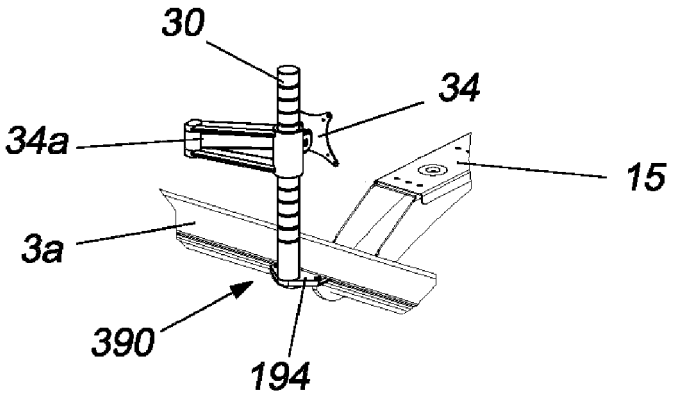

FIG. 8a

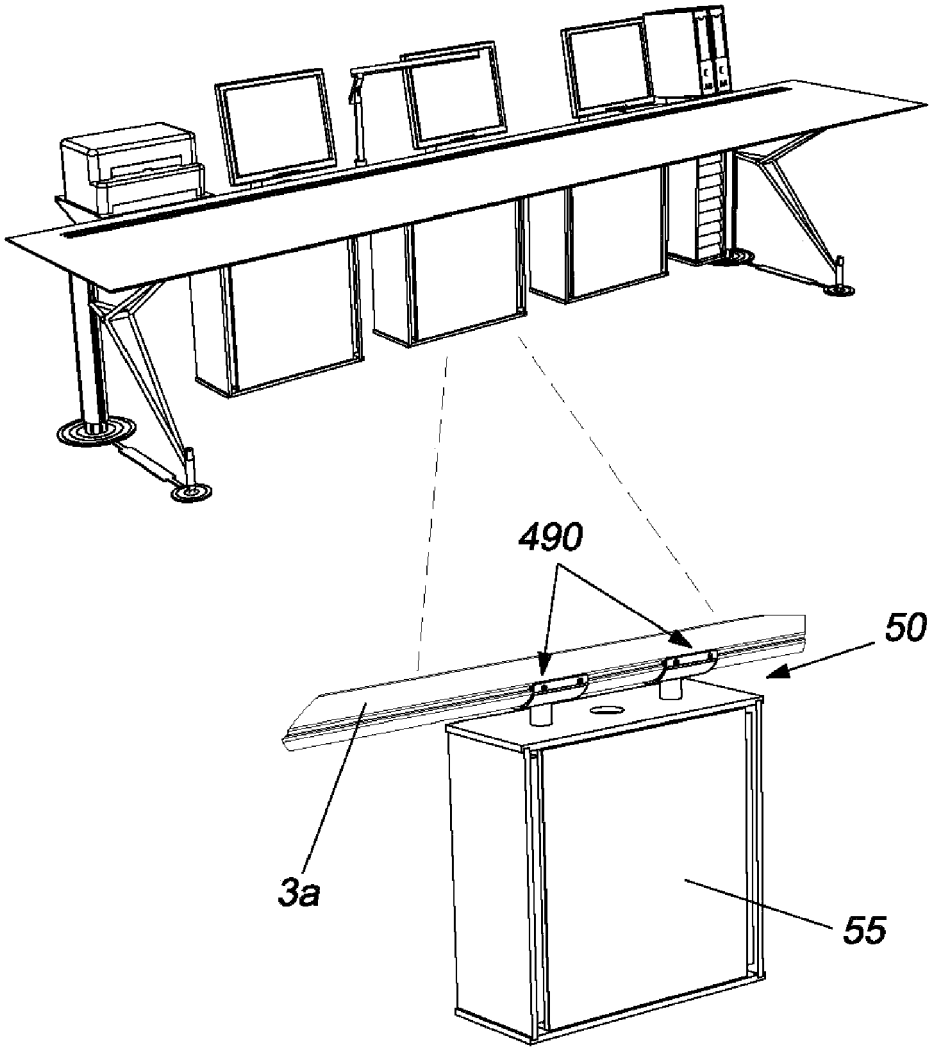

FIG. 9

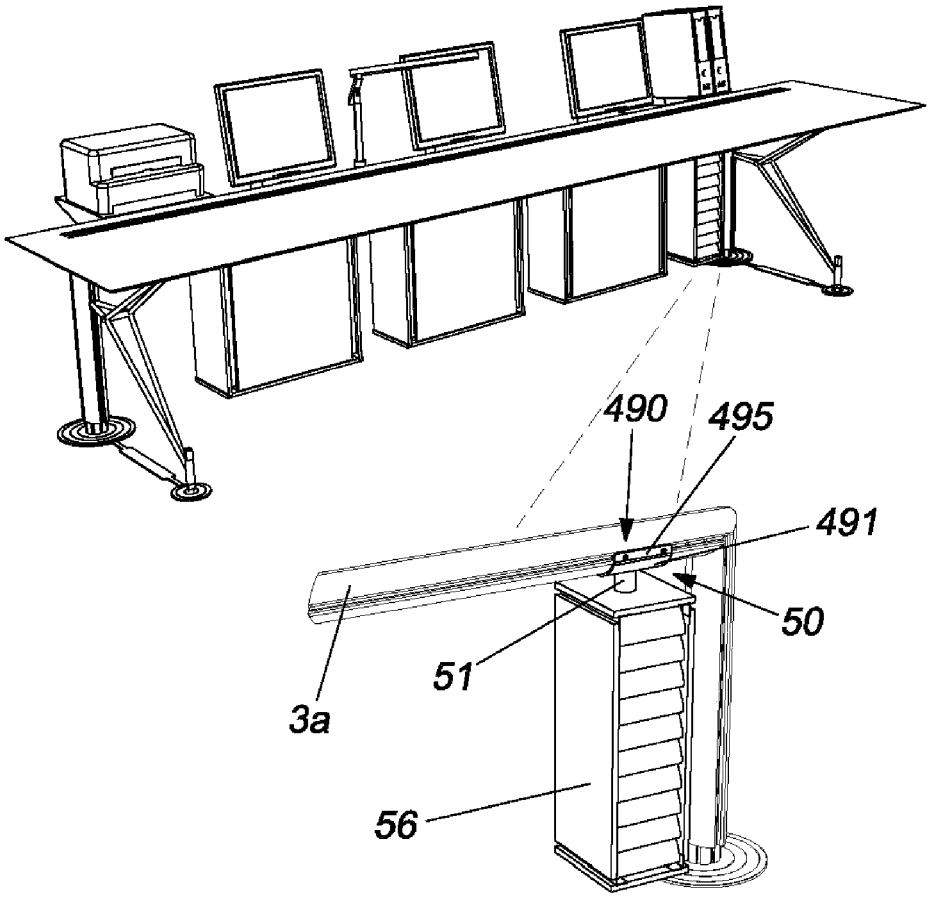

FIG. 10

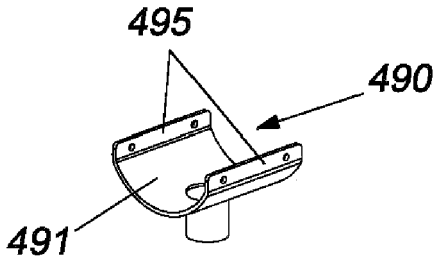

FIG. 10a

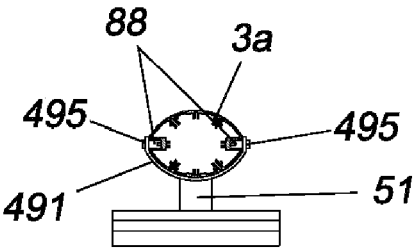

FIG. 10b

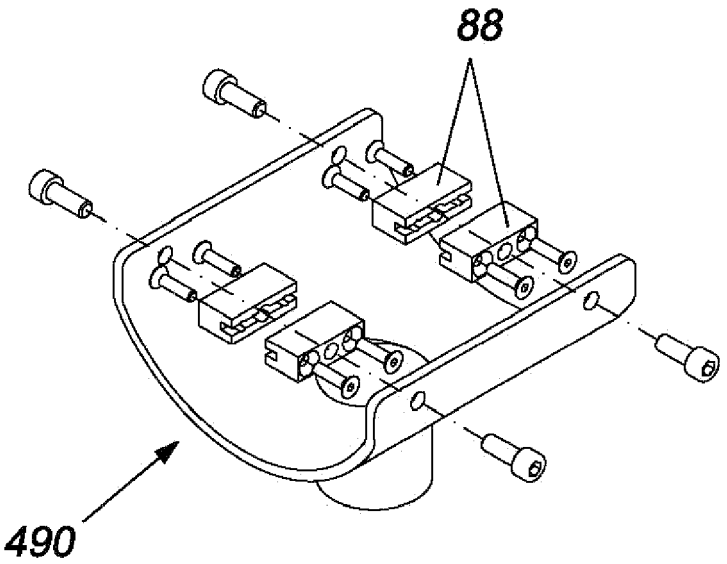

FIG. 10c

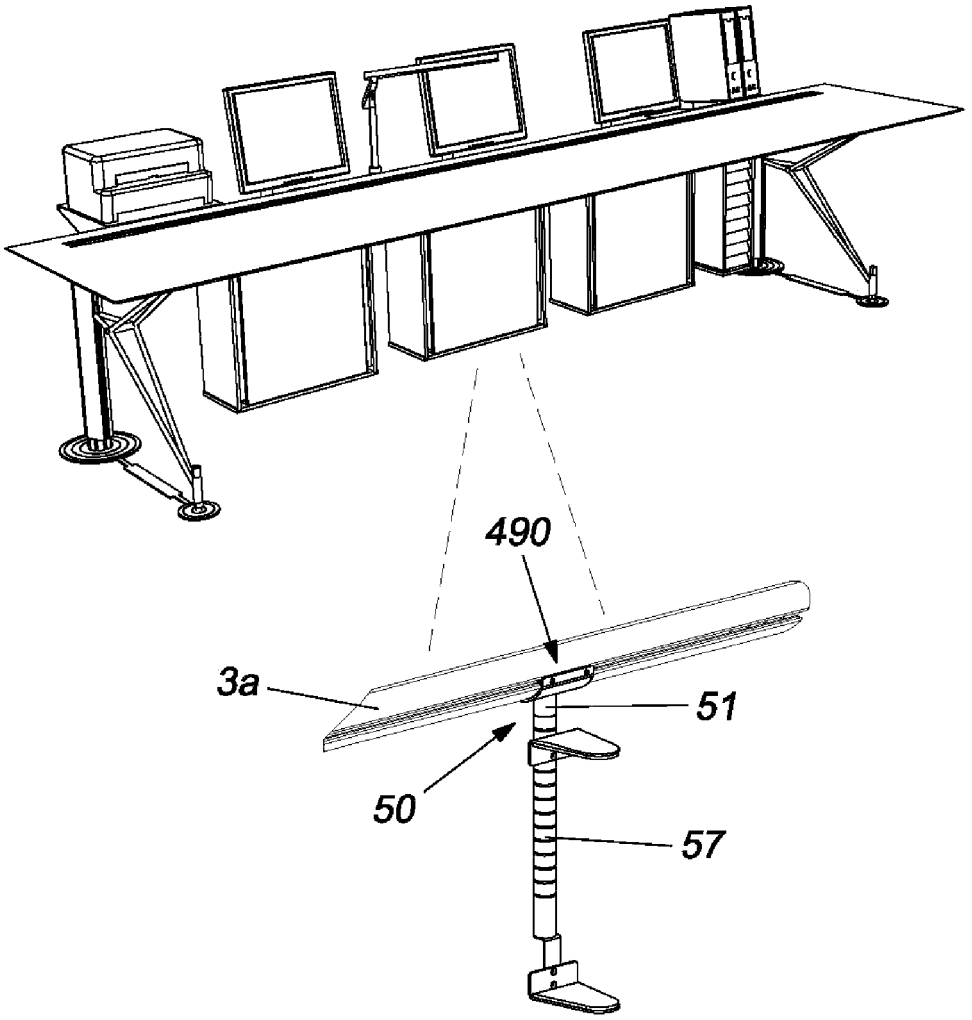

FIG. 11

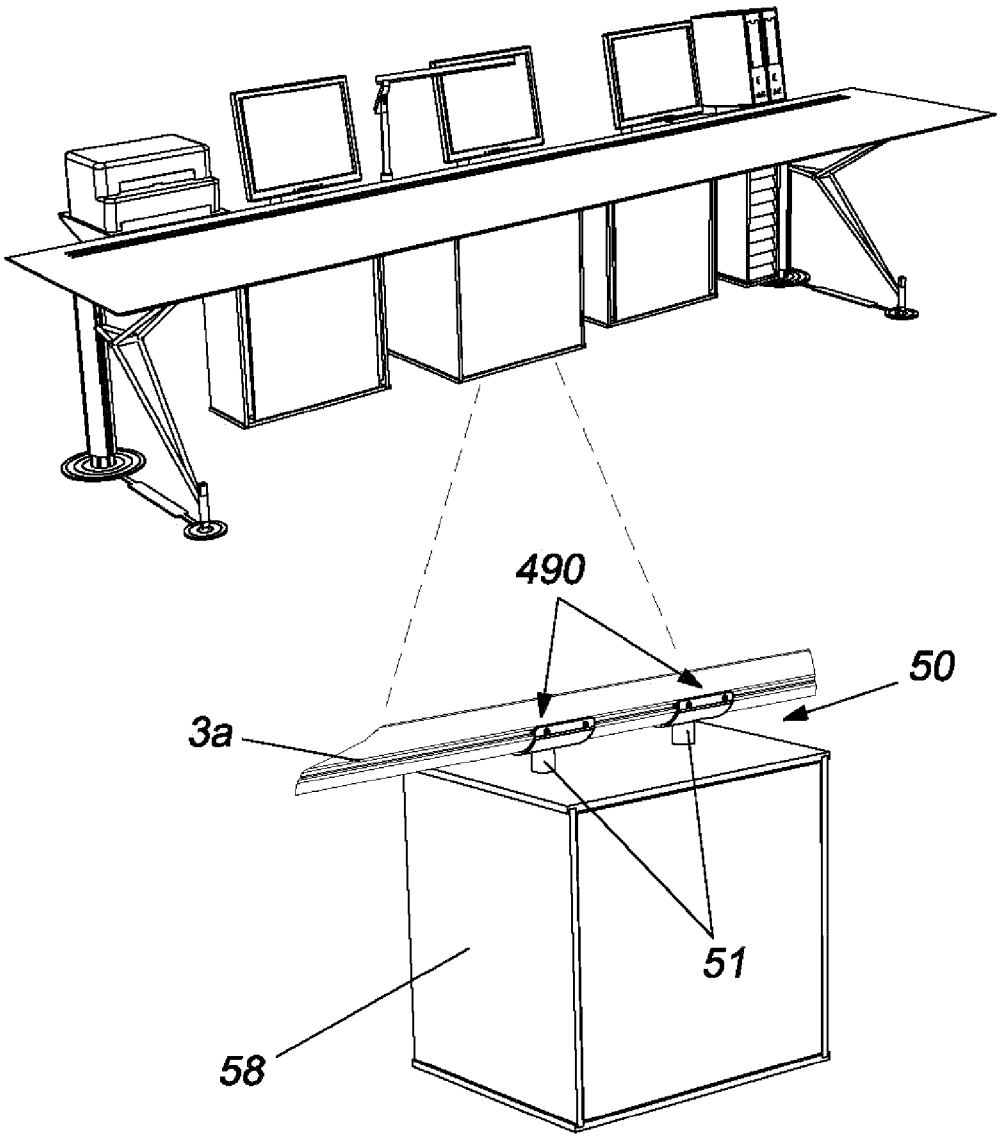

FIG. 12

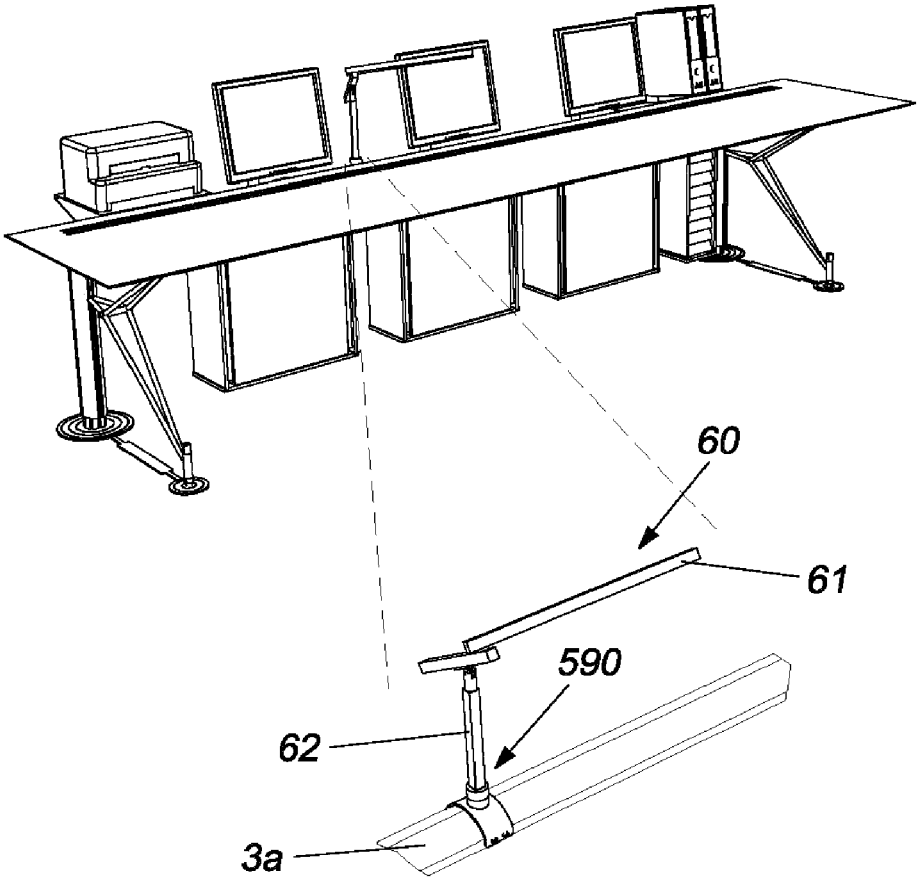

FIG. 13

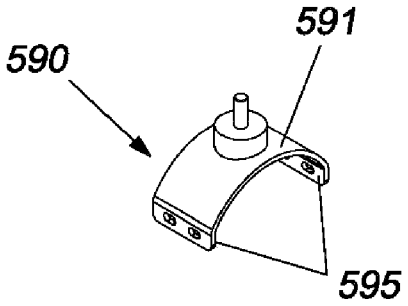

FIG. 13a

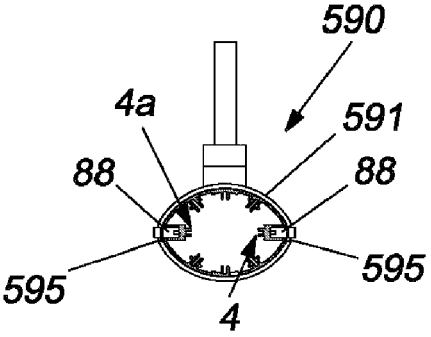

FIG. 13b

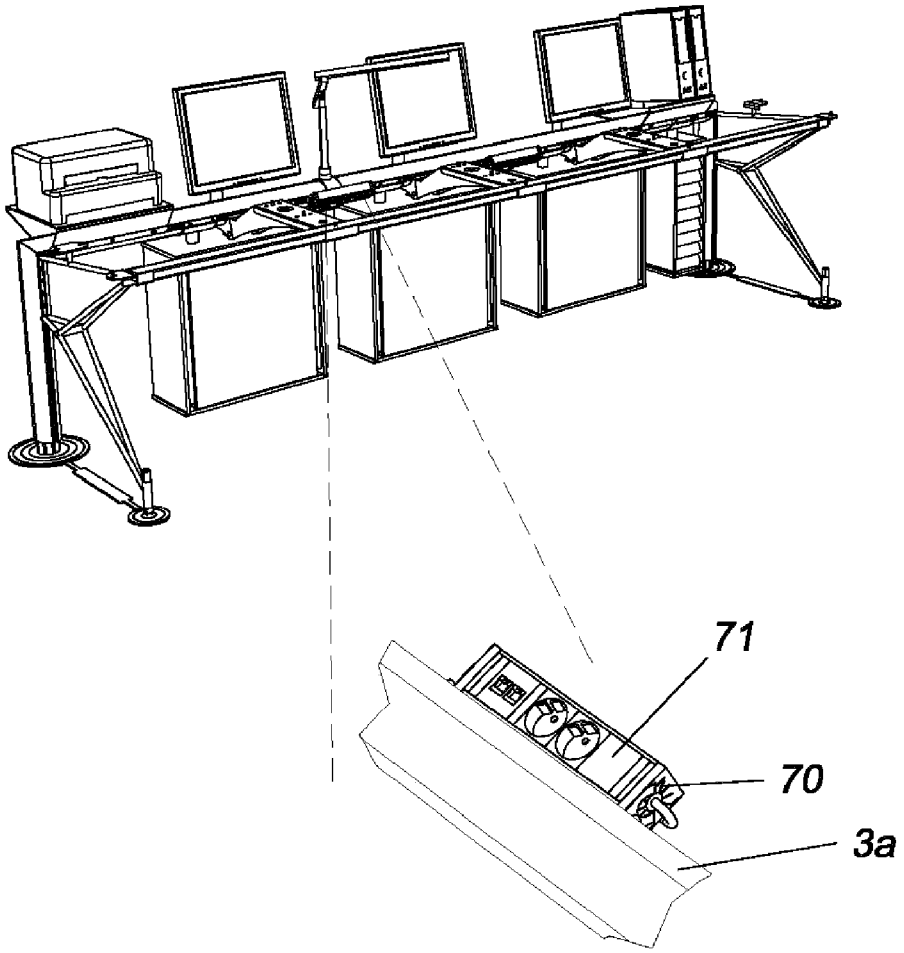

FIG. 14

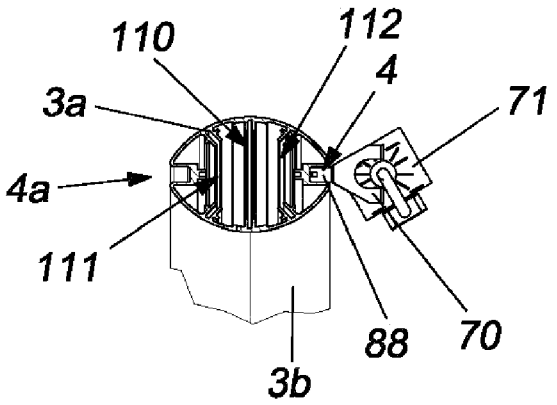

FIG. 2

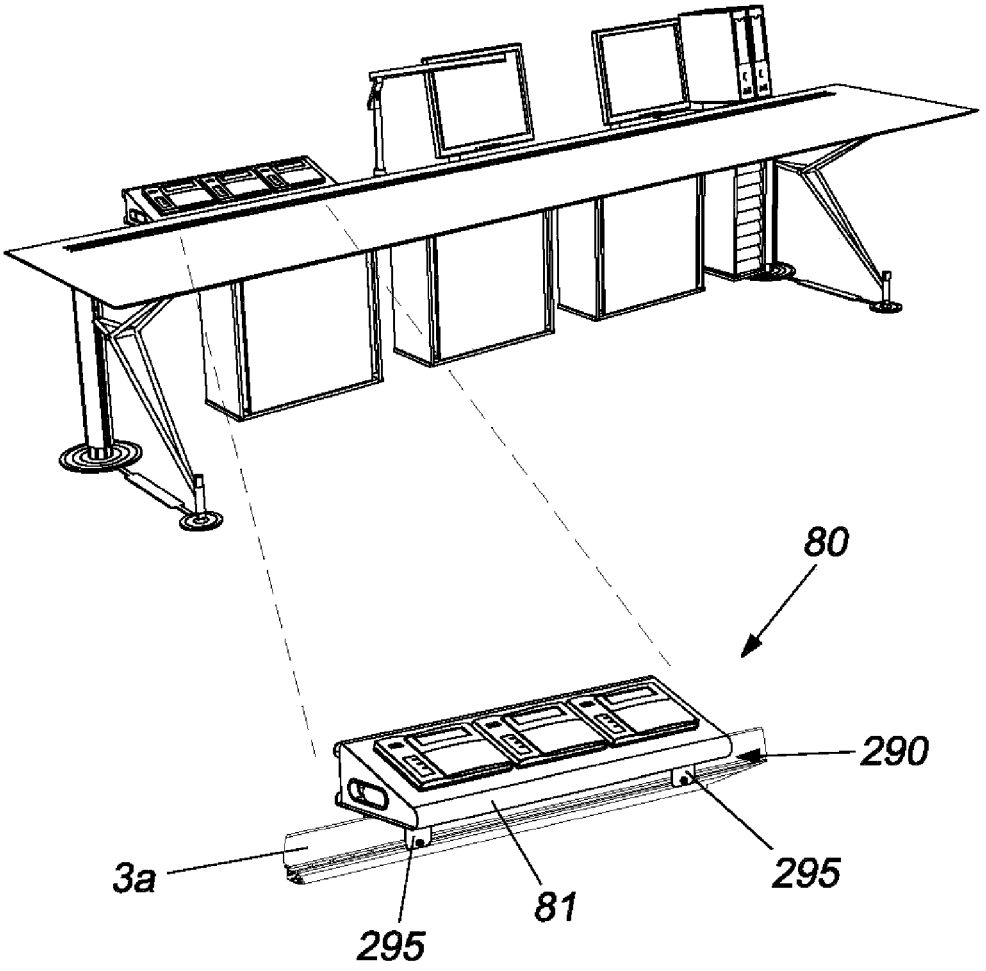

FIG. 15

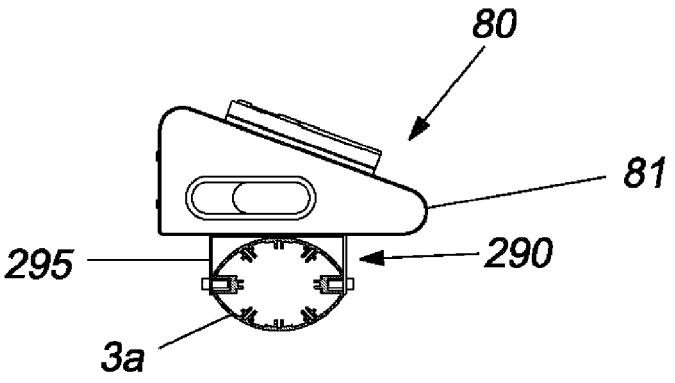

FIG. 15a

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- ES 2090500 **[0003]**
- EP 0643935 A **[0004]**