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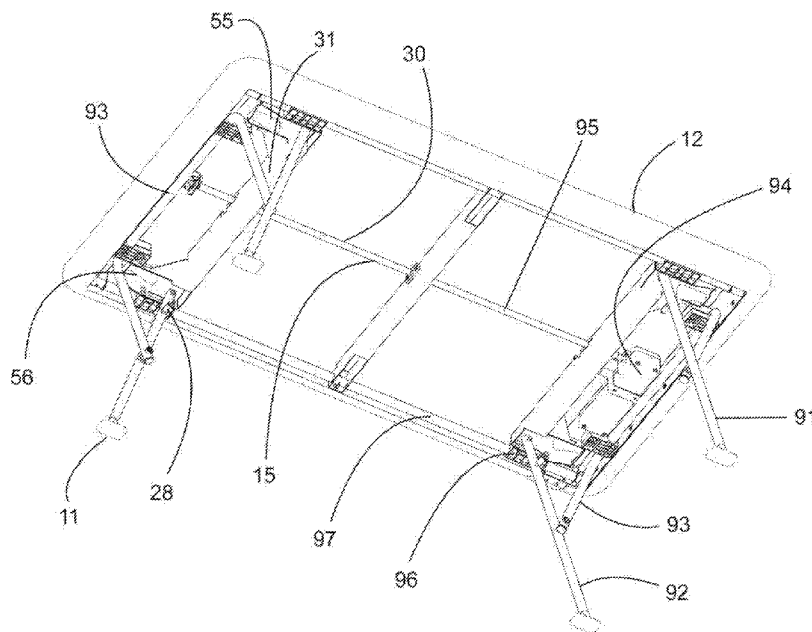
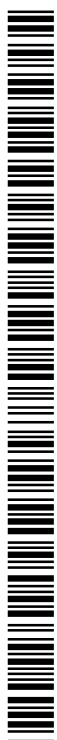


FIG. 33

(57) **Abstract:** An adjustable desk mountable workstation (90) comprising: a platform (12) adapted to support a computer keyboard thereon; and a pair of symmetrically opposed legs (91) for standing or mounting on a desk and on which the platform (12) is mounted, the legs (91) being adjustable so as to alter the height of the platform (12) above the desk, each leg (91) having outer and inner ends, wherein adjustment of the legs (91) involves concomitant pivoting without displacement at their respective outer ends and pivoting plus horizontal displacement at their respective inner ends, thereby altering the height of the platform (91) with respect to the desk.



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## DESK MOUNTABLE WORKSTATION

### TECHNICAL FIELD

The present invention relates to desk mountable workstations. In a particular aspect, the invention relates to height adjustable workstations mountable on fixed height desks.

### BACKGROUND ART

Any discussion of documents, devices, acts or knowledge in this specification is included to explain the context of the invention. It should not be taken as an admission that any of the material forms a part of the prior art base or the common general knowledge in the relevant art in Australia or elsewhere on or before the priority date of the disclosure and broad consistory statements herein.

Consistent prolonged sitting at a work desk is associated with serious health conditions, including disk related low back pain, heart disease, diabetes, cancer and reduced life span. Given this, it may be advantageous to provide an apparatus, such as that of the present invention, which enables a user to alternate between sitting and standing at their work desk, thereby enabling the user to reduce the length of each sitting period, as well as overall sitting time.

One solution to this problem has been to make the work desk itself height adjustable. However, such solutions are typically more complex, expensive and prone to breakage, and more difficult to store and transport, than fixed height desks. Therefore, height adjustable work desks have not been taken up as a suitable solution for the most part, particularly not as a means of prophylaxis.

U.S. Patent Publication no. 2015/0250303 A1 describes an alternative solution in which a height adjustable platform is sat upon a fixed height desk. Specifically, the adjustable desk platform described includes: a monitor platform defining a substantially planar work surface; a base located beneath the monitor platform, the base defining a bottom surface without legs that is adapted to sit on an existing desk; first and second sets of arms coupling the

monitor platform to the base, wherein the first and second sets of arms are adapted for movement of the monitor platform substantially in parallel with the base between a fully raised position and a fully lowered position; and a user-operable locking mechanism associated with the upper platform, the locking mechanism adapted to releasably lock the upper platform in the fully raised position, and in at least one intermediate position between the fully raised position and the fully lowered position. A computer monitor is to be mounted on the monitor platform, and the apparatus further includes a keyboard tray for mounting of a keyboard thereon.

Unfortunately, the solution described in U.S. Patent Publication no. 2015/0250303 A1 suffers from various drawbacks. For instance, in order to raise the monitor platform, the sets of arms pivot at their lower ends without any simultaneous horizontal movement of their upper ends with respect to the monitor platform, thereby resulting in forward movement of the monitor platform into the limited work space of a user as the platform is raised. Further, such an off balanced arrangement requires the use of a counterweight, adding unnecessary weight to the device. Moreover, the height of the monitor platform is not continuously lockable in the sense that an anchor must be selectively engaged in one of a number of perforations to lock the platform at a predetermined height. Of course, the ergonomic height of the platform for a user may not always correspond with the predetermined heights available. Additionally, to raise or lower the monitor platform, the user must use a handle to release an anchor and then manually lift or lower the upper platform. This places undue stress on the user's body given the substantial weight of various components such as the platform and monitor resting thereupon. Although a booster spring is used to assist upward movement, the assistance it provides is limited and it is only effective in providing assistance in or near the fully lowered position. Further still, whilst mentioning in passing that the keyboard tray can be located at an adjustable distance from the base platform, the trays in the embodiments shown and described are not height adjustable. Thus, the absence of embodiments with an enabling disclosure of a keyboard tray which is height adjustable

independently of the monitor platform presents difficulties for ergonomically setting up various users with differing vertical distances between the eye line and the elbow line.

Thus, it may be advantageous to provide a new height adjustable workstation which is mountable on a fixed height desk, and which reduces, limits, overcomes, or ameliorates some of the problems, drawbacks, or disadvantages associated with prior art devices, or provides an effective or improved alternative to such devices.

## 10 DISCLOSURE OF THE INVENTION

In one aspect, the invention provides an adjustable desk mountable workstation comprising:

a platform adapted to support a computer keyboard thereon; and

a support structure for standing or mounting on a desk and on which the platform is disposed, the support structure being adjustable so as to alter the height of the platform above the desk.

In another aspect, the invention provides an adjustable desk mountable workstation comprising,

a first platform, and

a first adjustable leg on which the first platform is disposed, the first leg having first and second ends, wherein adjustment of the leg comprises concomitant: pivoting of the leg at its first end, pivoting of the leg at its second end, and running, rolling, translation, or sliding of the leg at its second end, thereby resulting in a change in height of the first platform.

The running, rolling, translation, or sliding of the first leg at its second end may be in a substantially horizontal direction.

The change in height of the first platform may be absent any horizontal translation thereof.

There may be a pair of first legs. Each first leg may extend in opposite directions. The pair of first legs may be opposed. They may be symmetrically opposed. They may be symmetrical in a transverse plane. The transverse plane may be a midline transverse plane.

There may be a pair of swing member. The swing members may be opposed. They may be symmetrically opposed. They may be symmetrical in a transverse plane. The transverse plane may be a midline transverse plane.

There may be a pair of running members. The running members may  
5 be opposed. They may be symmetrically opposed. They may be symmetrical in a transverse plane. The transverse plane may be a midline transverse plane. The workstation may further comprise,

a second platform, and

a second adjustable leg disposed on the first platform, and on which  
10 the second platform is disposed, the second leg having first and second ends, wherein adjustment of the second leg comprises concomitant: pivoting of the second leg at its first end, pivoting of the second leg at its second end, and running, rolling, translation, or sliding of the second leg at its second end, thereby resulting in a change in height of the second platform.

15 The running, rolling, translation, or sliding of the second leg at its second end may be in a substantially horizontal direction.

The change in height of the second platform may be absent horizontal translation thereof.

There may be a pair of second legs. Each second leg may extend in  
20 opposite directions.

In another aspect, the invention provides an adjustable desk mountable work station comprising:

- a first support structure for standing or mounting on the desk;
- a first platform supported on the first support structure; and
- 25 – an adjustment mechanism for adjusting the height of the first platform above the desk, the adjustment mechanism comprising,
  - a running portion adapted to run along a frame of the first platform, an inner portion of the lower support structure being pivotally connected with the running portion, and
  - 30 – a swing member for causing pivoting of the lower support structure about its pivotal connection with the running portion.

In another aspect, the invention provides an adjustable desk mountable workstation comprising:

- a lower support structure for standing or mounting on the desk,
- a lower platform supported by the lower support structure, the lower platform being adapted to support a computer keyboard thereon,
- 5 – a lower adjustment mechanism for adjusting the height of the lower platform above the desk,
- an upper support structure mounted on the lower platform,
- an upper platform supported by the upper support structure, the upper platform being adapted to support a computer screen thereon, and
- 10 – an upper adjustment mechanism for adjusting the height of the upper platform above the lower platform.

In yet another aspect, the invention provides an adjustable desk mountable work station comprising:

- 15 – a first or lower support structure for standing or mounting on the desk, the lower support structure comprising,
  - a stationary base for standing or mounting on the desk,
  - a leg having inner and outer ends, the outer end of the leg being pivotally connected to the base, and
  - 20 – a strut having inner and outer ends, the inner end of the strut being pivotally connected to the leg,
- a lower platform supported on the lower support structure, the lower platform being adapted to support a computer keyboard thereon, the outer end of the strut member being pivotally connected with the lower platform, the lower platform having a frame, and
- 25 – an adjustment mechanism for adjusting the height of the lower platform above the desk, between a lowered configuration in which the leg is folded towards or along the platform, and a raised configuration in which the leg is extended away from the platform, the adjustment mechanism comprising,
- 30

- a running member adapted to run along the frame, the inner end of the leg being pivotally connected with the running member, and
- a swing member for causing pivoting of the leg about its connection with the running member,

5

wherein elevation of the lower platform from the lowered position is initiated by the swing member urging the leg to pivot downwardly about its pivotal connection with the running member, following which outward movement of the running member along the frame causes the inner end of the leg to travel outward and pivot further downward, resulting in extension of the leg and thereby raising the lower platform.

10

The swing member may comprise a ramped portion along which a portion of the leg may travel. The swing member may comprise a block.

15

There may be a pair of legs. The legs may extend away from each other from their inner to outer ends. Each leg may extend laterally outward.

20

The adjustment mechanism may comprise a further running member. The further running member may be configured to move outward. The running member may initially remain stationary during raising of the lower platform whilst the further running member moves outward. Then, once the swing member has finished urging the leg to pivot downwardly, the running member may move outwardly with the further running member until leg extension is complete.

25

The adjustment mechanism may be continuously adjustable. It may be manually adjustable by use of a handle. The adjustment mechanism may further comprise a screw mechanism which is connected with and rotatable by manual rotation of the handle. Activation of the screw mechanism may result in outward movement of the inner running member.

30

The work station may further comprise:

- a second or upper support structure for standing or mounting on the lower platform, the upper support structure comprising,

- 7 -

- a stationary upper base for standing or mounting on the lower platform,
- an upper leg having inner and outer ends, the outer end of the upper leg being pivotally connected to the upper base, and
- 5       – an upper strut having inner and outer ends, the inner end of the upper strut being pivotally connected to the upper leg,
- an upper platform supported on the upper support structure, the upper platform being adapted to support a computer monitor thereon, the outer end of the upper strut member being pivotally connected with the
- 10       upper platform, the upper platform having an upper frame, and
- an upper adjustment mechanism for adjusting the height of the upper platform above the lower platform, between a lowered configuration in which the upper leg is folded towards or along the upper platform, and a raised configuration in which the upper leg is extended away from
- 15       the upper platform, the upper adjustment mechanism comprising,
  - an upper running member adapted to run along the frame, the inner end of the upper leg being pivotally connected with the upper running member, and
  - an upper swing member for causing pivoting of the upper leg
  - 20       about its connection with the upper running member,wherein elevation of the upper platform from its lowered position is initiated by the upper swing member urging the upper leg to pivot downwardly about its pivotal connection with the upper running member, following which outward movement of the upper running
- 25       member along the upper frame causes the inner end of the upper leg to travel outward and pivot further downward, resulting in extension of the upper leg and thereby raising the upper platform.

The upper swing member may comprise a ramped portion along which a portion of the upper leg may travel. The upper swing member may

30       comprise an upper block.

There may be a pair of upper legs. The upper legs may extend away from each other from their inner to outer ends. Each upper leg may extend laterally outwardly.

The upper adjustment mechanism may comprise a further upper  
5 running member. The further upper running member may be configured  
move outwardly. The upper running member may initially remain stationary  
during raising of the lower platform whilst the further upper running member  
moves outward. Then, once the swing member has finished urging the leg to  
pivot downwardly, the running member may move outwardly with the further  
10 running member until leg extension is complete. The upper adjustment  
mechanism may be continuously adjustable. It may be manually adjustable  
by use of a handle. The upper adjustment mechanism may further comprise  
a screw mechanism which is connected with and rotatable by manual rotation  
of the handle. Activation of the upper screw mechanism may result in  
15 outward movement of the inner running member.

In another aspect, the invention provides an adjustable desk  
mountable workstation comprising:

a platform;  
an adjustable support on which the platform is disposed; and  
20 an automatic adjustment mechanism for automatically adjusting the  
height of the platform above the desk. The height of the platform may be  
automatically adjustable to a pre-determined, pre-saved or pre-set height.

The workstation may comprise a timer. The timer may be adapted to  
signal a user when the timer runs out. The timer may run whilst the platform  
25 height remains stationary. The timer may reset on height adjustment of the  
platform.

The automatic adjustment mechanism may comprise a computer. The  
computer may comprise the timer.

The computer may comprise a processor. The computer may further  
30 comprise or be linked with a memory, user interface, display, power supply  
and/or network interface. The memory may store coded instructions. The  
processor may be adapted to execute the coded instructions.

The automatic adjustment mechanism may comprise a motor. When in operation, the motor may create a rotational torque for adjusting the adjustable support, thereby raising or lowering the platform. The computer or processor may operate the motor.

5 The user interface may comprise user input means. The user input means may comprise one or more touch or push buttons.

The display may be adapted to display numerals representing the height of the platform. The computer or processor may operate the display.

10 In another aspect, the invention may provide a method of operating a desk mountable workstation having an automatic height adjustable platform, the method comprising:

receiving input from a user relating to a height of the platform;

saving the inputted height into a memory of or linked with the workstation;

15 receiving input from a user to adjust the platform height to the saved height;

retrieving the saved height from the memory of or linked with the workstation; and

automatically adjusting the height of the platform to the saved height.

20 In another aspect, the invention may provide a method of operation of a desk mountable workstation having an automatic height adjustable platform, the method comprising:

receiving input from a user, via a user interface of the workstation, relating to a height of the platform;

25 saving the inputted height into a memory of the workstation;

receiving input from a user to adjust the platform height to the saved height;

retrieving the saved height from the memory of the workstation; and

automatically adjusting the height of the platform to the saved height.

30 The method may comprise receiving input from the user relating to the duration of a timer of the workstation, running the timer whilst the platform is

stationary, and triggering a signal to the user, or automatically adjusting the height of the platform, on completion of the timer.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

5 In order that the invention may be more clearly understood and put into practical effect there shall now be described in detail preferred constructions of the invention. The ensuing description is given by way of non-limitative examples only and is with reference to the accompanying drawing, wherein:

10 Fig. 1 is top perspective view of a first version of a desk mountable workstation in accordance with the invention, in a folded configuration;

Fig. 2 is a bottom perspective view of the desk mountable workstation in the folded configuration;

15 Fig. 3 is a bottom plan view of the desk mountable workstation in the folded configuration;

Fig. 4 is a top perspective view of the desk mountable workstation in a semi-open configuration;

Fig. 5 is a bottom perspective view of the desk mountable workstation in the semi-open configuration;

20 Fig 6 is a bottom plan view of the desk mountable workstation in the semi-open configuration;

Fig. 7 is top perspective view of the desk mountable workstation in a fully open configuration;

25 Fig. 8 is a bottom perspective view of the desk mountable workstation in the fully open configuration;

Fig. 9 is a bottom plan view of the desk mountable workstation in the fully open configuration;

Fig. 10 is a top perspective view of the desk mountable workstation in the semi-open configuration with a lower platform removed;

30 Fig. 11 is a top plan view of the lower adjustment mechanism and lower support structure of the desk mountable workstation in the semi-open configuration;

Fig. 12 is a diagrammatic perspective view illustrating running a lift initiation portion of the adjustment mechanism in respect of the lower or upper right rear leg of the workstation;

5 Figs. 13 to 17 are a sequence of diagrammatic front side views illustrating operation of the lift initiation portion during extension of the lower / upper right rear leg, from zero degrees in Figure 13, to ten degrees in Figure 14, to twenty degrees in Figure 15, to thirty degrees in Figure 16, and finally to leg full extension in Figure 17;

10 Fig. 18 is a bottom perspective view of an upper platform of the desk mountable workstation in the folded configuration;

Fig. 19 is a bottom plan view of the upper platform in the folded configuration;

Fig. 20 is a bottom perspective view of the upper platform in the semi-open configuration;

15 Fig. 21 is a bottom plan view of the upper platform in the semi-open configuration;

Fig. 22 is a bottom perspective view of the upper platform in the fully open configuration;

20 Fig. 23 is a bottom plan view of the upper platform in the fully open configuration;

Fig. 24 is a top plan view of the upper adjustment mechanism and upper support structure, mounted atop the lower platform, and in the semi-open configuration;

25 Fig. 25 is a top perspective view of the desk mountable workstation in the semi-open configuration with the upper platform removed; and

Figs. 26 to 31 are a sequence of bottom perspective views illustrating operation of the lift initiation portion during extension of the lower / upper right rear leg from zero degrees in Figure 26 out to around 45 degrees in Figure 31.

30 Fig. 32 is a front perspective view from above of a second version of a desk mountable workstation in an open configuration;

Fig. 33 is a rear perspective view from below of the second version workstation in an open configuration;

Fig. 34 is a rear perspective view from below of the second version workstation in a closed configuration;

5 Fig. 35 is a diagram of a user interface for facilitating electronic height adjustment of the second version workstation;

Fig. 36 is a block diagram of computer hardware for implementing platform height adjustment of the second version workstation; and

10 Figs. 37 & 38 combined provide a flowchart illustrating an example process that may be implemented by the computer.

### **MODES FOR CARRYING OUT THE INVENTION**

Referring now to Figures 1 to 9, there is shown a first version of a desk mountable workstation, generally designated 10, being continuously  
15 movable or adjustable between a fully closed or flat configuration as shown in Figures 1 to 3, an intermediate or part open configuration as shown in Figures 4 to 6, and a fully open or extended configuration as shown in Figures 7 to 9.

The workstation 10 comprises an adjustable lower support structure 11 for mounting or seating on a desk top, a lower platform 12 mounted on the  
20 lower support structure 11, an adjustable upper support structure 13 mounted atop the lower platform 11, and an upper platform 14 mounted on the upper support structure 13. Further, the workstation 10 comprises a lower adjustment mechanism 15 for continuous adjustment of the lower support structure 11 and thereby the height of the lower platform 12 with respect to  
25 the desk top, and an upper adjustment mechanism 16 for continuous adjustment of the upper support structure 13 and thereby the height of the upper platform 14 with respect to the lower platform.

The lower platform 13 comprises a rectangular timber panel 17 or table top with rounded corners and bevelled edges as shown. Similarly, the  
30 upper platform 14 comprises a timber panel 18 or table top with rounded and bevelled edges as shown. The upper platform 14 is of similar length to the lower timber panel / lower platform, but is only approximately one third to one

half as wide from front to back as the lower timber panel / lower platform. The upper platform is located directly above a rear portion of the lower platform.

The lower support structure 11 comprises a left and right lower support portions, 19 and 20 respectively, configured as a mirror image of each other in a midline transverse plane. Each portion comprises a transverse base rod 21 extending from front to rear and interconnecting a lower front leg 23 and a lower rear leg 24.

Each lower leg, 22 and 23, comprises parallel lower front and rear rods, 26 and 27 respectively, interconnected with spacers 28, and ending distally by pivotal attachment to a foot bracket 29 (see also Fig. 12) mounted on the desk. A lower front strut 24 pivotally connects the lower front leg 22 to the lower platform 12, and a lower rear strut 25 pivotally connects the lower rear leg 23 to the lower platform 12.

Referring now to Figures 10 and 11, the lower adjustment mechanism comprises a lower rotating portion 30, a lower running portion 31, and a lower initial assist mechanism 55 (see Figure 12). The rotating portion 30 comprises a foldable handle 32 connected with an elongate first screw member 33, the first screw member passing through and being anchored beneath the lower platform by a pair of first guide blocks 34, and ending in a circular bevelled first gear 35. Articulating perpendicularly with the first gear 35 are circular bevelled second and third gears, 36 and 37 respectively. The second gear 36 is secured to the end of an elongated second screw member 38 which extends away perpendicularly to the right of the first screw member 33, and the third gear 37 is secured to the end of an elongated third screw member 39 which extends away perpendicularly to the left of the first screw member. A pair of first guide blocks 40 is mounted beneath the lower platform 12 near opposite ends of the second screw member 38, receiving the second screw member therethrough. Similarly, a pair of second guide blocks 41 is mounted beneath the platform towards opposite ends of the third screw member 39, receiving the third screw member therethrough.

The running portion 30 of the lower adjustment mechanism comprises a pair of first running blocks 42 receiving the second screw member 38 therethrough, and a pair of second running blocks 43 receiving the third screw member 39 therethrough. The pair of first running blocks 42 is fixedly  
5 mounted on and moves horizontally with a first transverse plate 44. Similarly, the pair of second running blocks 43 is fixedly mounted on and moves horizontally with a second transverse plate 45. A linear elongated slot 88 with rounded ends (see Fig. 26) is defined in the outer wall of an inverted U-shaped end of the first lower transverse plate 44. In fact, there are four slots  
10 88, one in each of the vertical front and rear walls of each of the first and second lower transverse plates, 44 and 45 respectively.

Attached to the front inverted U-shaped end of the first transverse plate 44 is a lateral or outer first front wheel bracket 46b, and attached to the rear inverted U-shaped end of the first transverse plate 44 is a lateral or outer  
15 rear first wheel bracket 47b. Medial to each of the outer first lower wheel brackets, 46b and 47b respectively, are inner or medial first wheel brackets, 46a and 47a. Similarly, attached to the front inverted U-shaped end of the second transverse plate 45 is a lateral or outer front second wheel bracket  
20 48b, and attached to the rear inverted U-shaped end of the second transverse plate 45 is a lateral or outer rear second wheel bracket 49b. Medial to each of the outer second wheel brackets, 48b and 49b respectively, are inner or medial first wheel brackets, 48a and 49a. A pin 89 passing through the most medial, inner or upper spacer of each lower leg, and projecting through its respective slot 88, pivotally or rotatably connects each  
25 lower leg to its respective inner medial wheel bracket. Each of the front and rear, first and second wheel brackets has a line of three wheels 50 mounted thereon (see also Figure 12). The wheels 50 of the pair of front first wheel brackets 46 roll or run in a C-shaped front first channel 51 which is secured peripherally about the underside of the lower platform, whilst the wheels 50 of  
30 the pair of rear first wheel brackets 47 roll or run in a C-shaped rear first channel 52 which is secured peripherally about the underside of the lower platform. Similarly, the wheels 50 of the pair of front second wheel brackets

48 roll or run in a C-shaped front second channel 53 which is secured peripherally about the underside of the lower platform, whilst the wheels 50 of the pair of rear second wheel brackets 49 roll or run in a C-shaped rear first channel 54 which is secured peripherally about the underside of the lower platform.

Referring to Figure 12, there is shown part of the lower initial assist mechanism 55 comprising a partially wedge shaped block 56 which is fixed to and projects down from the underside of roof of the inverted U-shaped end of the transverse plate 44. The wedge block 56 has a ramped undersurface 57, angled at about forty five degrees, and which continues into a flat undersurface 58. In fact, the lower initial assist mechanism comprises four lower wedge blocks 56, one for engagement with the second most medial spacer of each lower leg during the initial phase of opening.

In order to manually raise the height of the lower platform 12, a user retracts and folds out a grasping segment 59 of the handle 32. The user then grasps segment 59 and rotates the handle in a clockwise direction. The clockwise rotation of the handle 32 in turn causes clockwise rotation of the first screw member 33 and its first bevelled gear wheel 35. The rotating first gear's articulation with the second and third bevelled gear wheels, 36 and 37 respectively, causes clockwise rotation of the second and third gears and their respective second and third screw members, 38 and 39 respectively. Unlike the fixed guide blocks which are unmoved by rotation of the screw members therethrough, the first and second pairs of running blocks, 42 and 43 respectively, move laterally out along their respective rotating second and third screw members. Being affixed to the first and second pairs of running blocks, the first and second transverse plates, 44 and 45 respectively, are moved laterally towards their respective sides of the lower platform 12. Concomitantly, the wheels 50 of the front and rear, first and second lateral wheel brackets, 46b, 47b, 48b, 49b, roll laterally outwards along and within the front and rear, first and second, channels, 51-54.

As shown in Figures 13 to 17 and 26 to 31, lateral movement of the transverse plates also results in concomitant lateral movement of respective

wedge blocks 56. As each wedge blocks move laterally, its ramped undersurface 57 runs over the second most medial spacer 28 of the corresponding lower leg, thereby causing the second spacer to effectively run down the ramp during the first fifteen degrees or so of leg extension. As this occurs, the leg is forced to swing out, rotating about the leg's pivotal connection to its respective medial wheel bracket. Initially, whilst the ramp swings the lower leg out, the medial wheel bracket remains stationary until the medial end of the slot 88 abuts against the projecting member or pin 89 to which it is connected, which then pushes it laterally along in its channel. As the medial bracket is pushed laterally, the medial end of the lower leg, which is pivotally connected to the medial wheel bracket, also moves laterally. As the lower end of the lower leg remains fixed by virtue of its stationary foot bracket, the upper end of the leg is forced to pivot and rise upwards, thereby raising the height of the lower platform. Extension of each lower leg is also controlled by its respective pivotally attached strut.

Thus, initial pivoting of the leg into extension is facilitated by the ramping mechanism of the wedge block. Once an initial degree of extension is achieved with the ramping mechanism, torque is applied with the sliding mechanism. Thus, the initial amount of force required by the user when turning the handle is substantially reduced by virtue of the ramping mechanism, thereby making manual operation viable.

Once the desired height for the lower platform has been reached, the user simply ceases winding the handle, and folds it away into a lower recess defined in the front side of the lower platform. Stowing of the handle also serves to lock the height of the platform, although effective locking of the platform height may occur at any position in the continuous height range once manual turning of the handle ceases. In order to lower the lower platform, the user winds the lower handle in an anti-clockwise direction and the reverse process to the above takes place.

Referring now to Figures 18 to 23, the upper support structure 13 comprises left and right upper support portions, 60 and 61 respectively,

configured as a mirror image of each other in a midline transverse plane. Each portion comprises an upper front leg 62 and upper rear leg 63.

Each upper leg, 62 and 63, comprises parallel upper front and rear rods, 64 and 65 respectively, interconnected with spacers 28, and ending distally by pivotal connection to an upper foot bracket 66 which is mounted on to the rear portion of the lower platform's upper surface (see also Figs. 4 and 7). An upper front strut 67 pivotally connects the upper front leg 62 to the upper platform 14, and an upper rear strut 68 pivotally connects the upper rear leg 63 to the upper platform 14.

Referring now to Figures 24 and 25, the upper adjustment mechanism comprises an upper rotating portion 69, upper running portion 70, and upper initial assist mechanism 55 (see Figure 12). The upper rotating portion 69 comprises a retractable upper handle 72 connected with an elongate upper screw member 73 which extends lengthwise beneath the upper platform.

The running portion 70 of the upper adjustment mechanism comprises a pair of first upper running blocks 74 receiving the upper screw member 73 therethrough towards its right end, and a pair of second upper running blocks 75 also receiving the upper screw member 39 therethrough, but towards its left end. The pair of first upper running blocks 74 is fixedly mounted on and moves horizontally with a first upper transverse plate 76. Similarly, the pair of second upper running blocks 75 is fixedly mounted on and moves horizontally with a second upper transverse plate 77. A linear elongated slot 88 with rounded ends (see Fig. 26) is defined in the outer wall of an inverted U-shaped end of the first upper transverse plate 76. In fact, there are four slots 88, one in each of the vertical front and rear walls of each of the first and second upper transverse plates, 76 and 77 respectively.

Attached to the front inverted U-shaped end of the first upper transverse plate 76 is a lateral or outer front first upper wheel bracket 78b, and attached to the rear inverted U-shaped end of the first upper transverse plate 76 is a lateral upper first wheel bracket 79b. Medial to each of the outer upper first wheel brackets, 78b and 79b, are inner or medial upper first wheel brackets, 78a and 79a. Similarly, attached to the front inverted U-shaped

end of the second upper transverse plate 77 is a lateral front upper second wheel bracket 80b, and attached to the rear inverted U-shaped end of the second upper transverse plate 77 is a lateral rear upper second wheel bracket 81b. A pin 89 passing through the most medial, inner or upper spacer of each upper leg, and projecting outwardly through its respective slot, pivotally or rotatably connects each upper leg to its respective inner wheel bracket. Each of the front and rear, upper first and second wheel brackets has a series of three wheels 50 rotatably mounted thereon (see also Figure 12). The wheels 50 of the pair of front first upper wheel brackets 78 roll or run in a C-shaped front upper first channel 82 which is secured to the anterior underside of the upper platform, whilst the wheels 50 of the pair of rear upper first wheel brackets 79 roll or run in a C-shaped rear upper first channel 83 which is secured to the posterior underside of the upper platform. Similarly, the wheels 50 of the pair of front upper second wheel brackets 80 roll or run in a C-shaped front upper second channel 84 which is secured to the anterior underside of the upper platform, whilst the wheels 50 of the pair of rear upper second wheel brackets 81 roll or run in a C-shaped rear upper second channel 85 which is secured to the posterior underside of the lower platform.

Referring again to Figure 12, there is shown the upper initial assist mechanism 71, which is substantially the same as the lower initial assist mechanism 55, aside from the reduced scale of it and its interacting components. Therefore, the upper initial assist mechanism 71 and lower initial assist mechanism 55 are both illustrated by the same figures, with at least some shared features being identified using the same reference numerals.

Thus, the upper initial assist mechanism comprises a partially wedge shaped block 56 which is fixed to and projects down from the underside of the roof of the inverted U-shaped end of its corresponding upper transverse plate 76. The wedge block 56 of the upper initial assist mechanism has a ramped undersurface 57, angled at about forty five degrees, and which continues into a flat undersurface 58. In fact, the upper initial assist mechanism comprises four upper wedge blocks 56, one for engagement with

the second most medial spacer of each upper leg during the initial phase of opening.

In order to manually raise the height of the upper platform 12 independently of the lower platform 12, a user first retracts the upper handle 5 72. The user then grasps the handle 72 and rotates it in a clockwise direction. The clockwise rotation of the handle 72 in turn causes clockwise rotation of the upper screw member 73, resulting in the first and second pairs of upper running blocks, 74 and 75 respectively, moving laterally out along the upper screw member towards opposite sides of the upper platform. Being 10 affixed to the first and second pairs of upper running blocks, the first and second upper transverse plates, 76 and 77 respectively, are moved laterally towards their respective sides of the upper platform 14. Concomitantly, the wheels 50 of the front and rear, first and second medial wheel brackets, 78a, 79a, 80a, 81a, roll laterally outwards along and within the front and rear, first and second, channels, 82-85. 15

As shown in Figures 13 to 17 and 26 to 31, lateral movement of the transverse plates also results in concomitant lateral movement of respective wedge blocks 56. As each wedge blocks move laterally, its ramped undersurface 57 runs over the second most medial spacer 28 of the 20 corresponding upper leg, thereby causing the second spacer to effectively run down the ramp during the first fifteen degrees or so of leg extension. As this occurs, the leg is forced to swing out, rotating about the leg's pivotal connection to its respective medial wheel bracket. Initially, whilst the ramp swings the upper leg out, the medial wheel bracket remains stationary until 25 the medial end of the slot 88 abuts against the projecting member or pin 89 to which it is attached, which then pushes it laterally along in its channel. As the medial bracket is pushed laterally, the medial end of the lower leg, which is pivotally connected to the medial wheel bracket, also moves laterally. As the lower end of the upper leg remains fixed by virtue of its stationary foot 30 bracket, the upper end of the leg is forced to pivot and rise upwards, thereby raising the height of the upper platform. Extension of each upper leg is also controlled by its respective pivotally attached strut.

Thus, initial pivoting of the upper leg into extension is facilitated by the ramping mechanism of the wedge block. Once an initial degree of extension is achieved with the ramping mechanism, torque is applied with the sliding mechanism. Thus, as for the lower platform, the initial amount of force  
5 required by the user to raise the upper platform when turning the handle is substantially reduced by virtue of the ramping mechanism, thereby making manual operation viable.

Once the desired height for the upper platform has been reached, the user simply ceases winding the handle, and then retracts it into an upper  
10 recess 87 defined in the right side of the upper platform. Stowing of the handle also serves to lock the height of the platform, although effective locking of the platform height may occur at any position in the continuous height range once manual turning of the handle ceases. In order to lower the upper platform, the user winds the upper handle in an anti-clockwise direction  
15 and the reverse process to the above takes place.

Referring now to Figures 32 to 34, there is shown a second version of a desk mountable workstation, generally designated 90. Like the first version  
10, the second version 32 is continuously movable or adjustable between a fully closed or flat configuration (as shown in Figure 34), an intermediate or part open configuration (not shown for this version), and a fully open or  
20 extended configuration (as shown in Figures 32 and 33). The second version of the desk mountable workstation 90 is similar in many respects to the first version 10. Thus, features of the second version 90 alike or in common with the first version 10 are labelled with the same reference numerals. However,  
25 the second version 90 differs from the first version 10, at least in the following aspects.

Like the first version 10, the second version comprises an adjustable  
(lower) support structure 11 for mounting or seating on a desk top, a (lower)  
platform 12 mounted on the support structure 11, and an (lower) adjustment  
30 mechanism 15 for continuous adjustment of the support structure 11 and thereby the height of the platform 12 with respect to the desk top. However, unlike the first version 10, the second version does not comprise an

adjustable upper support structure mounted atop the (lower) platform, an upper platform, nor an upper adjustment mechanism. That is, the monitor platform has been omitted from the second version.

The (lower) support structure 11 differs in the second version from the first version in that its front and rear legs, 91 and 92 respectively, comprise a single cylindrical beam rather than two parallel front and rear rods interconnected with spacers. Further, toward each side of the second version 90, the front and rear legs, 91 and 92 respectively, are pivotally connected to the platform 12 by a single C-shaped strut member 93, rather than the separate front and rear struts described for the first version 10. Whilst each of the legs 91, 92 is rotatably or pivotally connected at its lower or outer end to a stationary foot member or bracket 29, the transverse base rod 21 present in the first version is omitted from the second version.

As per the first version 10, the adjustment mechanism 15 of the second version 90 comprises a rotating portion 30, a running portion 31, and an initial assist mechanism 55 (see Figures 33 and 34). However, unlike the manual adjustment mechanism 15 of the first version, the second version comprises an automatic adjustment mechanism 15. Thus, rather than comprising a foldable handle, the rotating portion 30 of the second version comprises automatic torque producing means in the form of an electric motor 94 which is rotatably connected at an end of a single lengthwise screw member 95. Further, the second version comprises a computer 101 having a user interface 95 (see Figs. 32 and 35) which will be described in more detail below.

The running portion 30 of the second version 90 differs from the first version in that, rather than comprising wheel brackets which roll in C-shaped channels, it comprises sleeve brackets or members 96 which at least partially enclose and run or slide along respective cylindrical guide rails 97 (see Figures 33 and 34).

Referring now to Figure 35, an external view of the user interface 95 of the computer 101 is shown. It comprises a three digit dot matrix display 97, user input means in the form of a down button 98 and an up button 99, each

being used for platform height adjustment and display input, and a 'stand' button 100 used to toggle between sitting and standing saved height presets, or used as an 'enter' or 'select' button within menus.

Figure 36 is a schematic diagram of non-limiting example hardware componentry of and/or in connection with the computer 101. The example implementation shown includes a general purpose programmable processor 102, such as the Intel® family of microprocessors. The processor 102 is adapted to execute coded instructions 105 present in a main memory such as random access memory (RAM) 103, for example dynamic random access memory (DRAM), and/or read only memory (ROM) 104, for example flash memory. To receive input signals from the down, up and stand buttons, 98, 99 and 100 respective, the example includes an external bus interface 106. The external bus interface 106 may comprise one or more USB ports for connection of peripherals. The example implementation also includes a network interface 107, e.g. a wireless LAN interface, to enable the processor 102 to interact with a remote server 129. An internal power supply 108, such as a battery, may be provided, or as in this case, the power supply 108 may be external, such as may be provided from a mains power outlet. Hardware components, such as the processor and memories, are communicably linked via a bus 109. The processor 102 may execute, among other things, machine accessible instructions 105 causing operation of the electric motor in response to user input via the input buttons, 98, 99 & 100.

In a suitable form, the network interface 107 allows the workstation 90 to communicate with and/or be controlled by the remote server 129 or an external computing device 129 such as a smart phone, smart watch, desktop computer, laptop computer, or remote control. Thus, components of the hardware such as the memory 103 & 104, processor 102, display 97 and user input means 98, 99 & 100 such as buttons, a mouse, or keyboard, may be physically located in or connected with one or more external computing devices 129 instead of or as well as in or with the workstation computer 101. The memory of the external computing device may comprise an application or program with coded instructions 105 for execution by the external

computing device's processor, which processor may direct the workstation computer 101 to perform various functions such as raising or lowering the height of the platform. Thus, a user may control the height of the platform or various menu functions using their mobile phone or a laptop computer, for instance.

Figures 37 & 38 together illustrate a flowchart representative of an example process that may be executed by the processor 102. In the example provided, the flowchart may be embodied in coded instructions 105 stored in RAM 103, although it is also envisaged that in other forms the instructions may, for example, be stored in a tangible medium such as flash memory. In other forms, various combinations of firmware, software and/or hardware may be used to implement the flow chart, as would be understood by a person skilled in the art. Further, it is envisaged that in other forms the order of execution of the blocks may be changed, and the blocks described in Figure 37 may be changed, divided, eliminated, combined, etc. Each of the blocks in Figure 37 represents or comprises a step, module, function and/or application involved in the example process.

In the example shown, the process of Figure 37 begins at block 110 which represents a start-up step, module, function and/or application. This step involves plugging the computer 101 into the power source 108 so that the processor 102 automatically displays the default height of the platform 12 above the desk on the display 97, that being zero centimetres (displayed as '- -') in this instance. This represents the home screen.

At block 111, a user may enter the main menu by depressing both down and up buttons, 98 and 99 respectively, for two seconds. This results in a first sub menu item "TIM" (timer) being displayed. At block 112, the user may scroll through the main menu by pressing up and/or down buttons to vertically scroll through the submenu items "TIM" (timer), "UNI" (units) and "EXT" (exit) displayed separately on the display screen 97. At block 113, the user may select a displayed sub menu items by a single press of the stand/enter button 100. At block 114, the user may exit the main menu by

scrolling to the submenu item “EXT” (exit) on the display and pressing the stand/enter button once.

At block 115, where the user has entered the “TIM” (timer) submenu in step 113, the user may adjust the length of time, in minutes, for which the platform is to remain stationary before the timer runs out and triggers a display, as discussed further below. In this embodiment, the timer operates whilst the platform is stationary at any height, although it is envisaged that in other embodiments the timer may be operable only at its lowest position zero centimetres above the platform, that being at the working sitting height for the user. Up and down buttons are used to adjust to the desired timer duration, with the display blinking time in minutes. In the particular embodiment shown, the timer is set to “000” (off) by default, and the maximum time which may be set is one hundred minutes. At block 116, the user sets / saves the desired time by depressing the stand/enter button for 1.5 seconds. With the timer set, the words “TIMER SET” horizontally scroll across before exiting the timer configuration to the home screen.

At block 117, where the user has entered the “UNI” (units) submenu in step 113, the user may adjust the units used for quantifying the height of the platform above the desk by pressing the up or down button to scroll through options “CM” (centimetres) and “IN” (inches) which blink on the display. At block 118, the user sets / saves the desired units by depressing the stand/enter button for one and a half seconds. With the units set, the words “UNIT SET” scroll horizontally across the display screen before the unit configuration is exited to the home screen.

At block 119, on the home screen, the user adjusts the desired platform height by pressing the up or down buttons to increase or decrease the quantity displayed. The display blinks as the height numbers are scrolled through and the user can hold the buttons down for faster scrolling. In this embodiment, the display jumps from zero to twenty (as a platform height of less than twenty centimetres is not allowed) and then displays one centimetre increments (or 0.5 inch increments) from twenty to forty four centimetres. At block 120, the user may set the desired height by depressing the stand/enter

button for one and a half seconds, at which time the display stops blinking. At block 121, after a one second delay, the platform rises to the set height above the desk. The display flashes an upwardly directed arrow for the first twenty centimetres of travel. Between and including heights of twenty and  
5 forty four centimetres, corresponding height numbers scroll vertically up on the display during travel. Once the set height is reached, the corresponding height number remains displayed. When the platform is in motion, pressing of any button cancels travel. At block 122, once the desired height has been reached, it can be saved in the memory by holding the stand / enter button  
10 for one and a half seconds. The words 'PRESET SAVED' then horizontally scroll across the display to confirm pre-set height save.

In another version, the user can enter their own height, or length of some other feature of their body such as leg length, and stored in memory is a database containing suitable platform heights which correspond to the  
15 user's height or body part length. Using this information, the workstation is able to adjust to a platform height appropriate to the user's height or body part length.

At block 123, when the desk is raised (to any available position), the user may quickly lower the platform back to its lowest position for sitting at  
20 their desk by pressing the stand / enter button. The display flashes a down arrow for one second, before travel begins and the platform lowers to its base position with corresponding height numbers scrolling vertically down on the display during travel, and a downward arrow is displayed again for the last twenty centimetres of lowering. Once the lowest position is reached, the  
25 displays shows a platform height of zero centimetres as '- - -'. At block 124, once the desk becomes stationary at the base position, the timer starts automatically. Any movement of the desk resets the timer. At block 125, elapse of the timer triggers pulsing of a full middle segment display. Pressing any button stops the middle segment display and resets the timer loop.

30 At block 126, when the desk is lowered to its lowest position, the platform may be quickly raised to the pre-set height suitable for working at whilst the user is standing (or supported on some form of high stool), or if

there is no pre-set height, to a default standing height (twenty centimetres in this instance), by a single press of the stand / enter button. Once pressed, the display blinks the saved pre-set height or default height for 1.5 seconds, and then the platform begins to travel as per block 121.

5           At block 127, if there is no processor activity for sixty seconds, the processor switches off the display and enters sleep mode. Pressing of any button will awaken the display.

          At block 128, if height adjustment is obstructed or there is a weight overload, pinch current overload protection is triggered, with 'ERR' (error)  
10       displayed and piezo buzz warning activated.

          While this invention has been described in connection with specific embodiments thereof, it will be understood that it is capable of further modification(s). The present invention is intended to cover any variations, uses or adaptations of the invention following in general, the principles of the  
15       invention and including such departures from the present disclosure as come within known or customary practice within the art to which the invention pertains and as may be applied to the essential features hereinbefore set forth.

          As the present invention may be embodied in several forms without  
20       departing from the spirit of the essential characteristics of the invention, it should be understood that the above described embodiments are not to limit the present invention unless otherwise specified, but rather should be construed broadly within the spirit and scope of the invention as defined in the broad consistory statements. Various modifications and equivalent  
25       arrangements are intended to be included within the spirit and scope of the invention and consistory statements herein. Therefore, the specific embodiments are to be understood to be illustrative of the many ways in which the principles of the present invention may be practiced.

          The terminology used herein is for the purpose of describing particular  
30       example embodiments only and is not intended to be limiting. As used herein, the singular forms "a", "an" and "the" may be intended to include the plural forms as well, unless the context clearly indicates otherwise. The

terms “comprise”, “comprises,” “comprising,” “including,” and “having,” or variations thereof are inclusive and therefore specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, 5 steps, operations, elements, components, and/or groups thereof.

The method steps, processes, and operations described herein are not to be construed as necessarily requiring their performance in the particular order discussed or illustrated, unless specifically identified as an order of performance. It is also to be understood that additional or alternative 10 steps may be employed. Reference to positional descriptions, such as lower and upper, are to be taken in context of the embodiments depicted in the figures, and are not to be taken as limiting the invention to the literal interpretation of the term but rather as would be understood by the skilled addressee.

Although the terms first, second, third, etc. may be used herein to describe various elements, components, regions, layers and/or sections, these elements, components, regions, layers and/or sections should not be limited by these terms. These terms may be only used to distinguish one element, component, region, layer or section from another region, layer or 20 section. Terms such as “first,” “second,” and other numerical terms when used herein do not imply a sequence or order unless clearly indicated by the context. Thus, a first element, component, region, layer or section discussed below could be termed a second element, component, region, layer or section without departing from the teachings of the example embodiments.

Spatially relative terms, such as “inner,” “outer,” “beneath”, “below”, “lower”, “above”, “upper” and the like, may be used herein for ease of description to describe one element or feature’s relationship to another element(s) or feature(s) as illustrated in the figures. Spatially relative terms may be intended to encompass different orientations of the device in use or 25 operation in addition to the orientation depicted in the figures. For example, if the device in the figures is turned over, elements described as “below” or “beneath” other elements or features would then be oriented “above” the 30

other elements or features. Thus, the example term “below” can encompass both an orientation of above and below. The device may be otherwise oriented (rotated 90 degrees or at other orientations) and the spatially relative descriptors used herein interpreted accordingly.

**CLAIMS**

1. An adjustable desk mountable workstation comprising:  
a platform adapted to support a computer keyboard thereon; and  
5 a support structure for standing or mounting on a desk and on which the platform is disposed, the support structure being adjustable so as to alter the height of the platform above the desk.
- 10 2. The adjustable desk mountable workstation according to claim 1, wherein the support structure comprises at least one leg having first and second ends, wherein adjustment of the support structure involves concomitant pivoting of the at least one leg at its first end, and pivoting and displacement of the at least one leg at its second end.
- 15 3. The adjustable desk mountable workstation according to claim 2, wherein during adjustment of the support structure, there is no displacement of the at least one leg at its first end, and the displacement of the at least one leg at its second end occurs in a substantially horizontal direction.
- 20 4. The adjustable desk mountable workstation according to any one of the preceding claims, wherein adjustment of the support structure alters the height of the platform without any substantial horizontal displacement of the platform.
- 25 5. The adjustable desk mountable workstation according to any one of claims 2 to 4, wherein the support structure comprises at least one stationary base or foot for standing or mounting on the desk, the first end of the at least one leg being rotatably connected to the at least one base or foot.
- 30 6. The adjustable desk mountable workstation according to any one of claims 2 to 5, wherein the support structure comprises at least one strut having first and second ends, the first end of the at least one strut being

pivotaly connected to the at least one leg and the second end of the at least one strut being rotatably connected with the platform.

5 7. The adjustable desk mountable workstation according to any one of claims 2 to 6, wherein the support structure is adjustable to alter the height of the platform above the desk between a lowered position in which the at least one leg is folded towards or along the platform and a raised position in which the at least one leg is opened away from the platform.

10 8. The adjustable desk mountable workstation according to claim 7 comprising at least one swing member adapted to cause rotation of the at least one leg about its second end during initial raising of the platform from the lowered position.

15 9. The adjustable desk mountable workstation according to claim 8,  
wherein the platform has a frame, the support structure has at least one running member adapted to run along the frame, the second end of the at least one leg is pivotaly connected with the at least one running member, and the at least one swing member is adapted to cause rotation of the at  
20 least one leg about its connection with the at least one running member,

wherein elevation of the platform from the lowered position is initiated by the at least one swing member urging the at least one leg to rotate downwardly about its rotatable connection with the at least one running member, following which movement of the at least one running member  
25 along the frame causes displacement and further downward rotation of the second end of the at least one leg, resulting in opening of the at least one leg and thereby raising of the platform.

30 10. The adjustable desk mountable workstation according to claim 9, wherein the at least one swing member comprises a ramped portion along which a portion of the at least one leg travels during initial elevation of the platform from the lowered position.

11. The adjustable desk mountable workstation according to claim 10, wherein the workstation comprises pairs of opposed swing members, running members, and legs.

5

12. The adjustable desk mountable workstation according to any one of the preceding claims, wherein the support structure is continuously adjustable.

13. The adjustable desk mountable workstation according to claim 11,  
10 wherein the workstation comprises a screw mechanism for continuous adjustment of the support structure.

14. The adjustable desk mountable workstation according to any one of the preceding claims comprising an automatic adjustment mechanism for  
15 automatically adjusting the height of the platform above the desk.

15. The adjustable desk mountable workstation according to claim 14,  
wherein the height of the platform is automatically adjustable to a predetermined height.

20

16. The adjustable desk mountable workstation according to claim 15 comprising a timer adapted to run whilst the platform height remains stationary, and signal to a user when a predetermined time period expires.

25 17. The adjustable desk mountable workstation according to claim 16, wherein the timer is adapted to automatically reset on height adjustment of the platform.

30 18. The adjustable desk mountable workstation according to any one of claims 14 to 17 comprising a motor, wherein in operation, the motor creates a rotational torque for adjusting the support structure, thereby raising or lowering the platform.

19. The adjustable desk mountable workstation according to any one of claims 14 to 18 comprising user input means in the form of one or more touch or push buttons.

5

20. The adjustable desk mountable workstation according to any one of claims 14 to 19 comprising a display for displaying numerals representing the height of the platform with respect to the desk or floor.

10 21. A method of operating a desk mountable workstation having an automatic height adjustable platform, the method comprising:

receiving input from a user relating to a height of the platform;

saving the inputted height into a memory of or linked with the workstation;

15 receiving input from a user to adjust the platform height to the saved height;

retrieving the saved height from the memory of or linked with the workstation; and

automatically adjusting the height of the platform to the saved height.

20

22. The method according to claim 21, comprising:

receiving input from the user relating to the duration of a timer of the workstation;

running the timer whilst the platform is stationary; and

25 triggering a signal to the user, or automatically adjusting the height of the platform, on expiration of the timer.

23. The adjustable desk mountable workstation according to any one of claims 1 to 13, comprising:

30 an upper platform adapted to support a monitor thereon; and

an upper support structure for standing or mounting on the platform and on which the upper platform is disposed, the upper support structure

being adjustable so as to alter the height of the upper platform above the platform.

24. The adjustable desk mountable workstation according to claim 23,  
5 wherein the upper support structure comprises at least one upper leg having first and second ends, wherein adjustment of the upper support structure involves concomitant pivoting of the at least one upper leg at its first end, and pivoting and displacement of the at least one upper leg at its second end.

10 25. The adjustable desk mountable workstation according to claim 24, wherein during adjustment of the upper support structure, there is no displacement of the at least one upper leg at its first end, and the displacement of the at least one upper leg at its second end occurs in a substantially horizontal direction.

15 26. The adjustable desk mountable workstation according to any one of claims 23 to 25, wherein adjustment of the upper support structure alters the height of the upper platform without horizontal displacement of the upper platform.

20 27. The adjustable desk mountable workstation according to any one of claims 23 to 26, wherein the upper support structure comprises at least one upper stationary base or foot for standing or mounting on the platform, the first end of the at least one upper leg being rotatably connected to the at least  
25 one upper base or foot.

28. The adjustable desk mountable workstation according to any one of claims 23 to 27, wherein the upper support structure comprises at least one upper strut having first and second ends, the first end of the at least one  
30 upper strut being pivotally connected to the at least one upper leg and the second end of the at least one upper strut being rotatably connected with the upper platform.

29. The adjustable desk mountable workstation according to any one of claims 23 to 28, wherein the upper support structure is adjustable to alter the height of the upper platform above the platform between a lowered position in which the at least one upper leg is folded towards or along the upper platform and a raised position in which the at least one upper leg is opened away from the upper platform.

30. The adjustable desk mountable workstation according to claim 29 comprising at least one upper swing member adapted to cause rotation of the at least one upper leg about its second end during initial raising of the upper platform from its lowered position.

31. The adjustable desk mountable workstation according to claim 30, wherein the upper platform has an upper frame, the upper support structure has at least one upper running member adapted to run along the upper frame, the second end of the at least one upper leg is pivotally connected with the at least one upper running member, and the at least one upper swing member is adapted to cause rotation of the at least one leg about its connection with the at least one upper running member,

wherein elevation of the at least one upper platform from its lowered position is initiated by the at least one upper swing member urging the at least one upper leg to rotate downwardly about its rotatable connection with the at least one upper running member, following which outward movement of the at least one upper running member along the upper frame causes displacement and further downward rotation of the second end of the at least one upper leg, resulting in opening of the at least one upper leg and thereby raising of the upper platform.

32. The adjustable desk mountable workstation according to claim 31, wherein the at least one upper swing member comprises at least one upper

ramped portion along which a portion of the at least one upper leg travels during initial elevation of the upper platform from its lowered position.

33. The adjustable desk mountable workstation according to claim 32,  
5 wherein the workstation comprises pairs of opposed upper swing members, upper running members, and upper legs.

34. The adjustable desk mountable workstation according to any one of  
10 claims 23 to 33, wherein the upper support structure is continuously adjustable.

35. The adjustable desk mountable workstation according to claim 34,  
wherein the workstation comprises an upper screw mechanism for continuous adjustment of the upper support structure.

15

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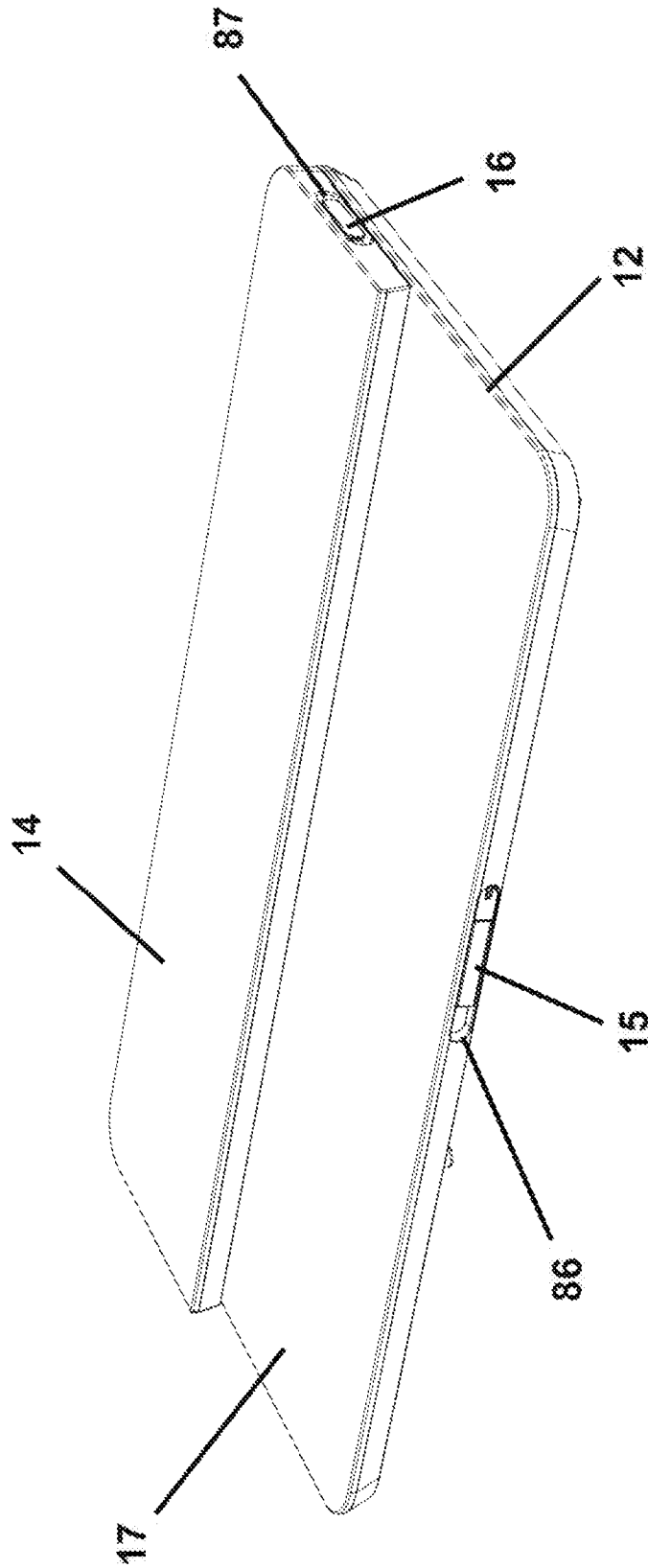


FIG. 1

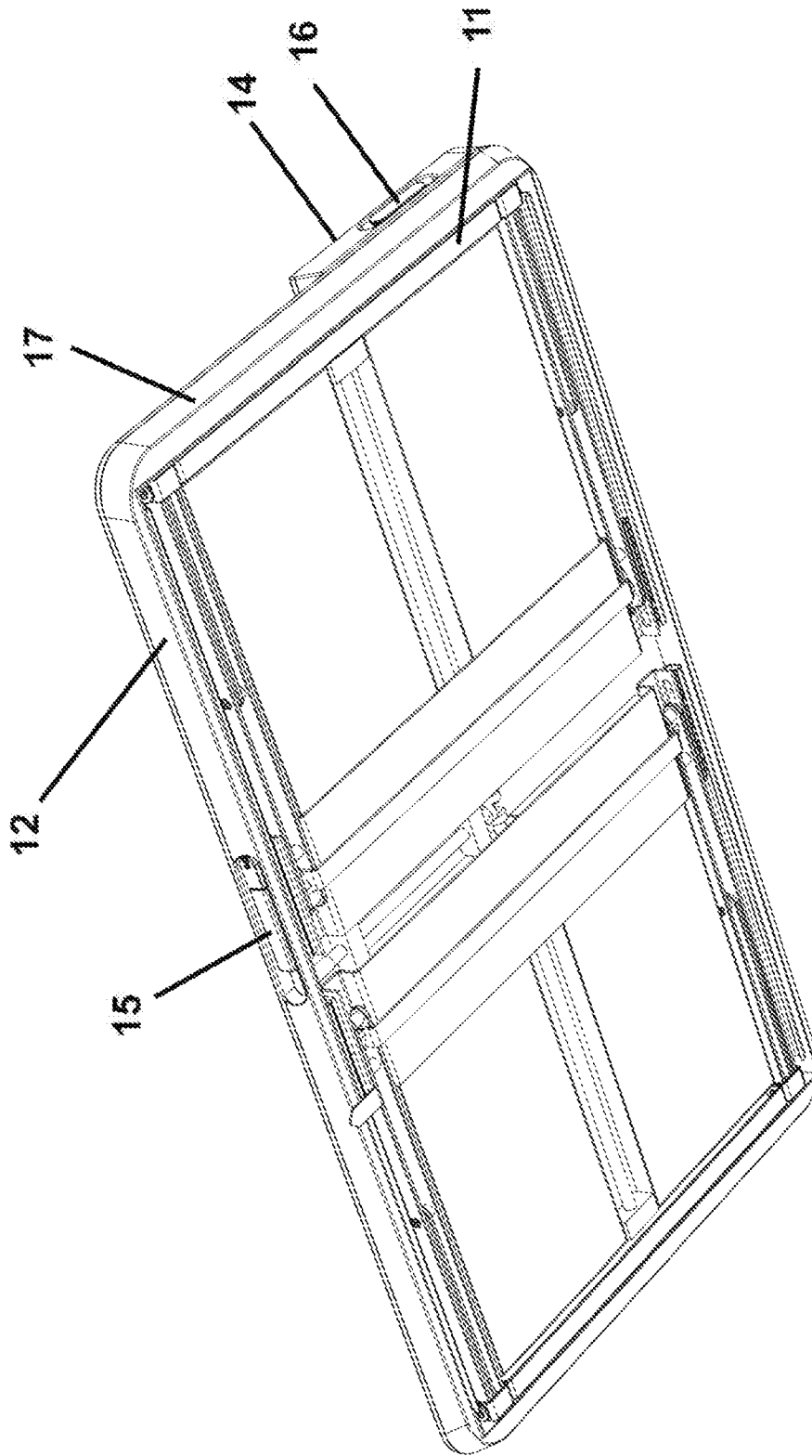


FIG. 2

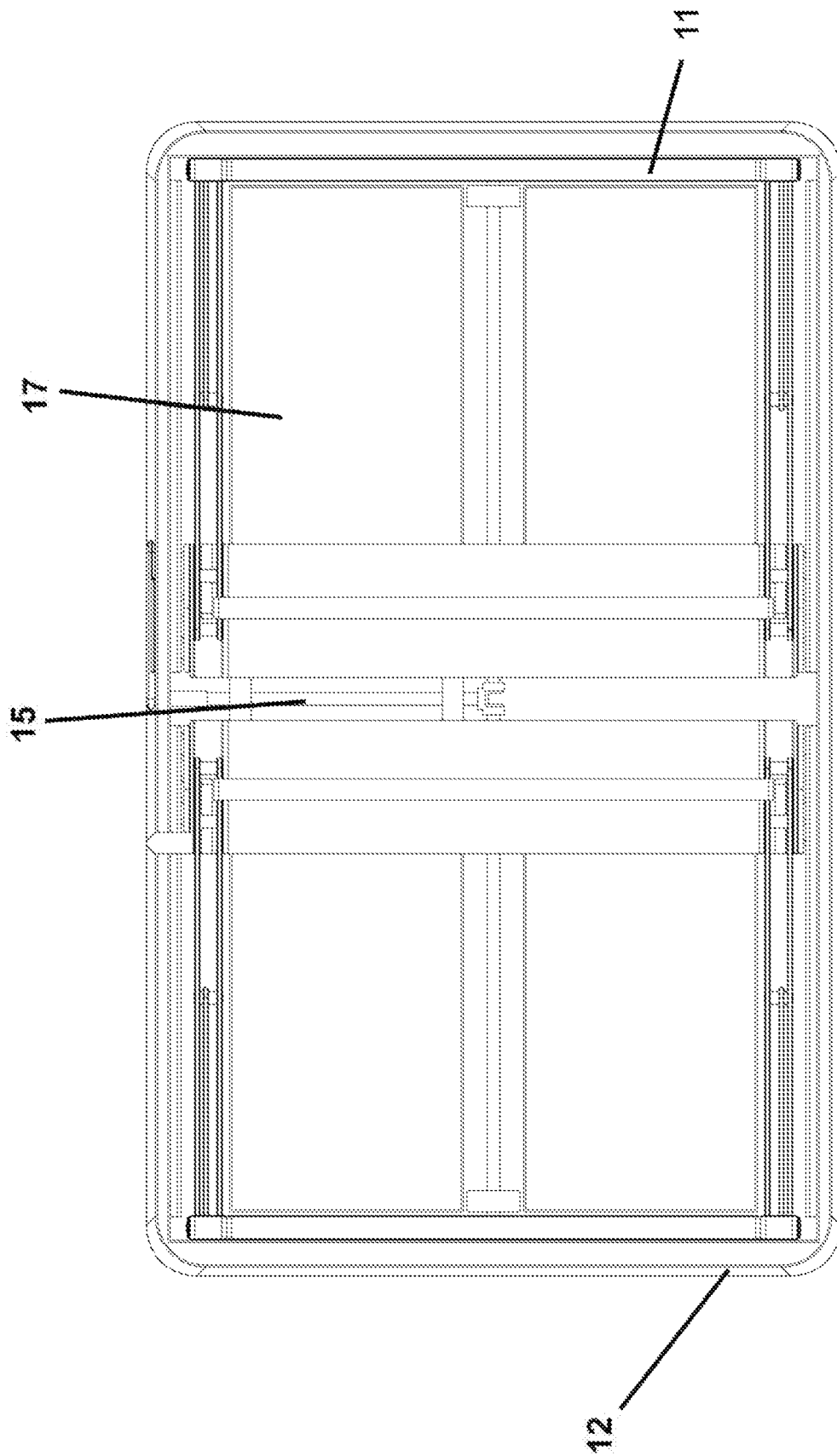


FIG. 3

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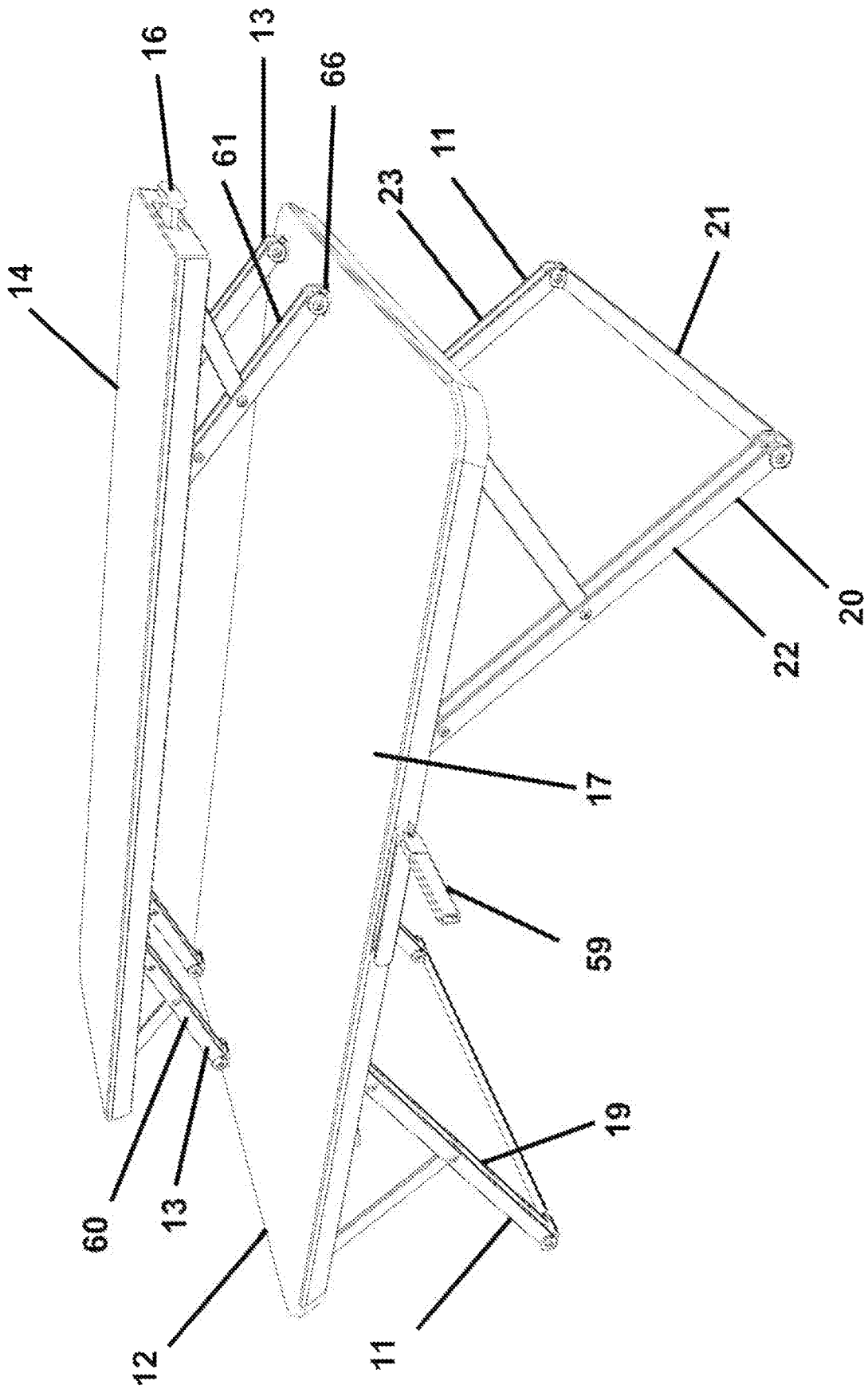


FIG. 4

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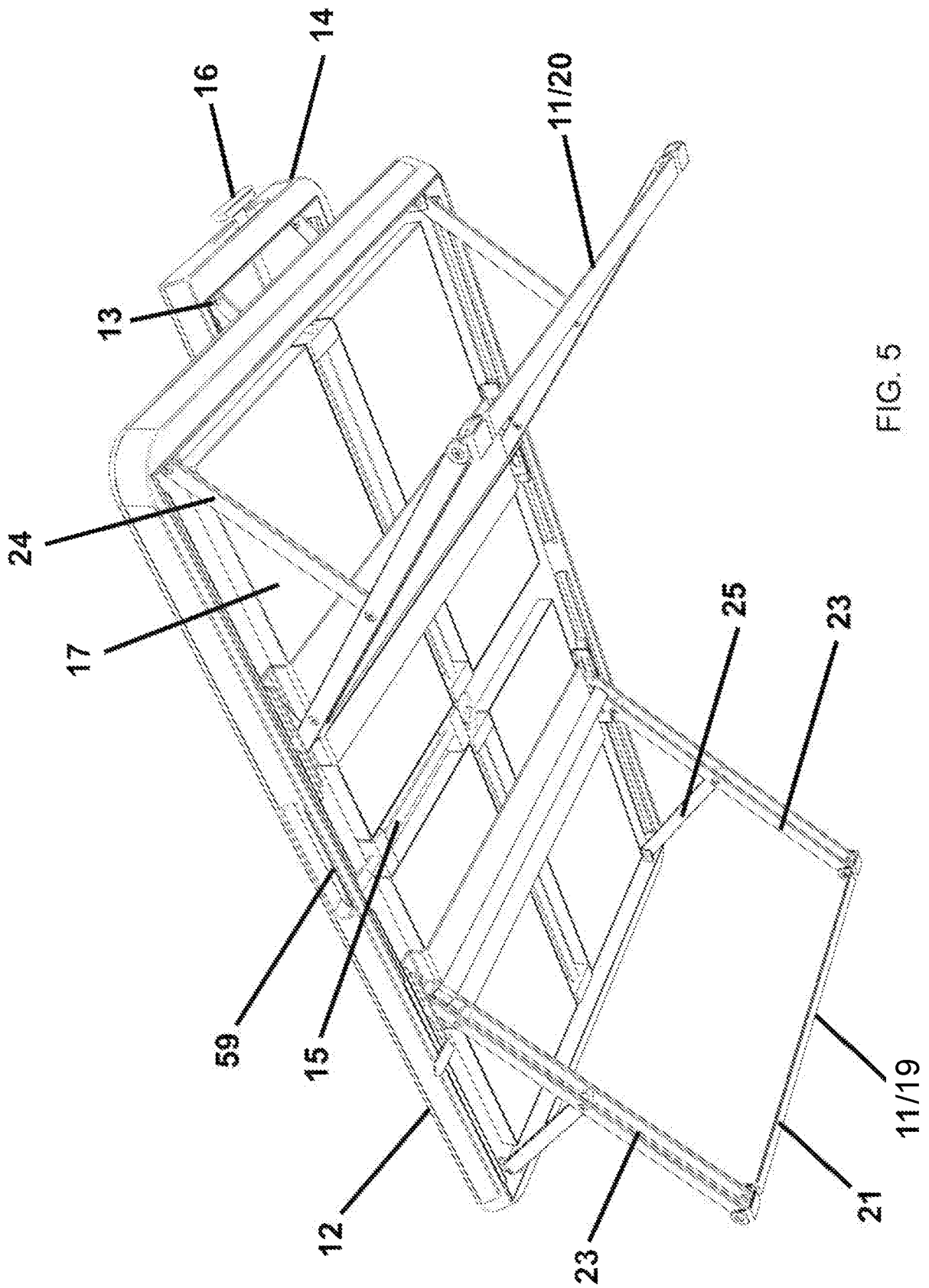


FIG. 5

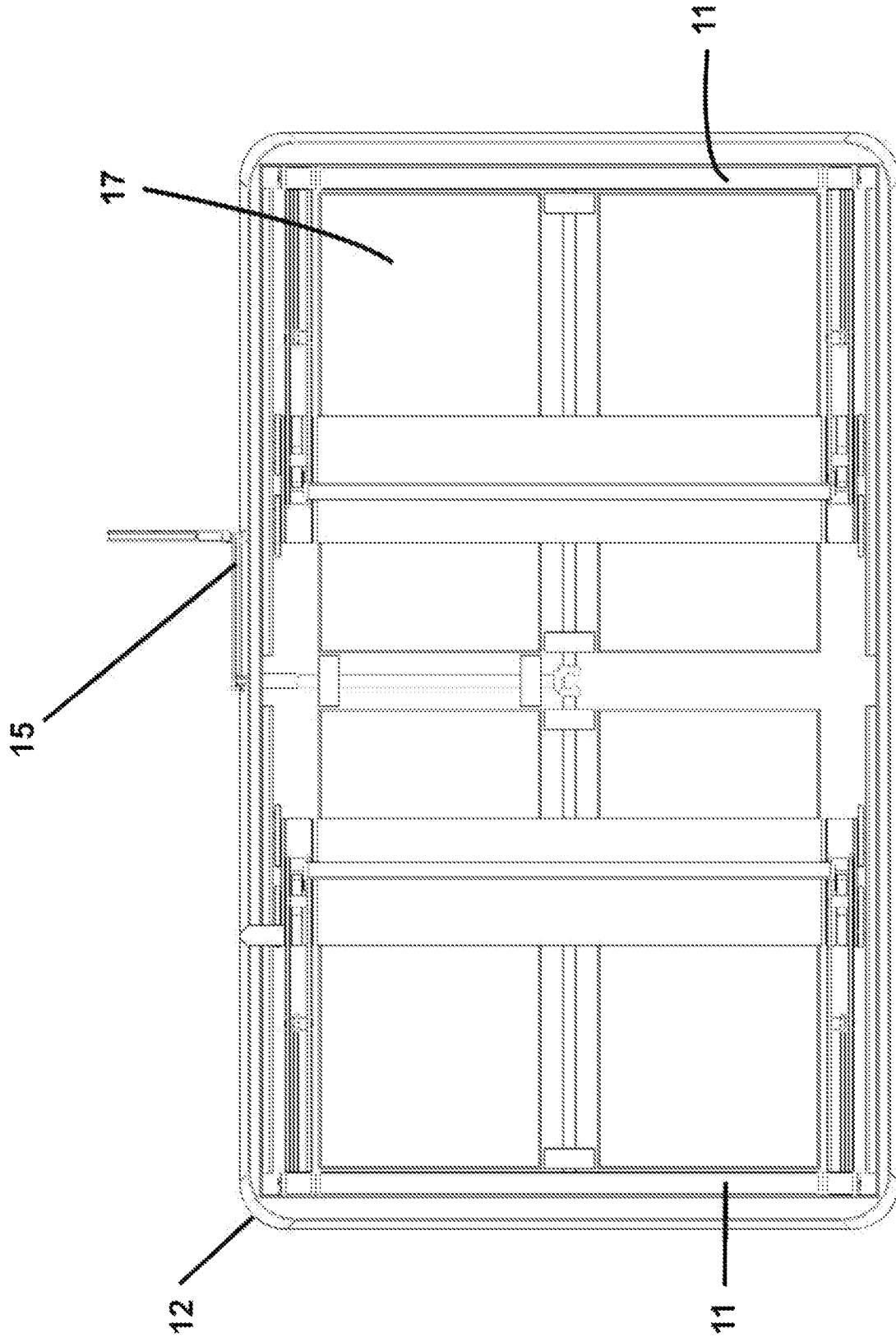


FIG. 6

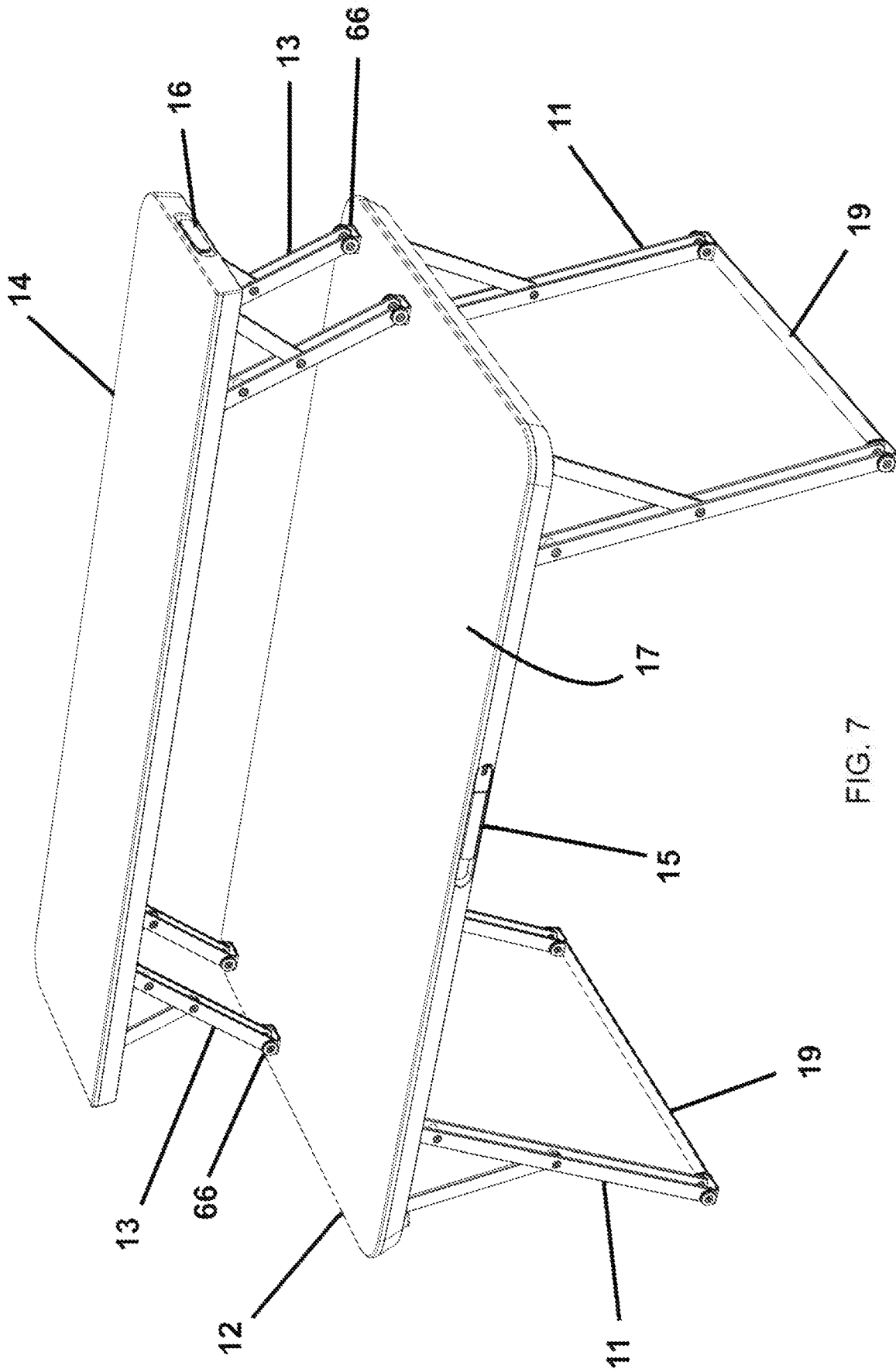


FIG. 7

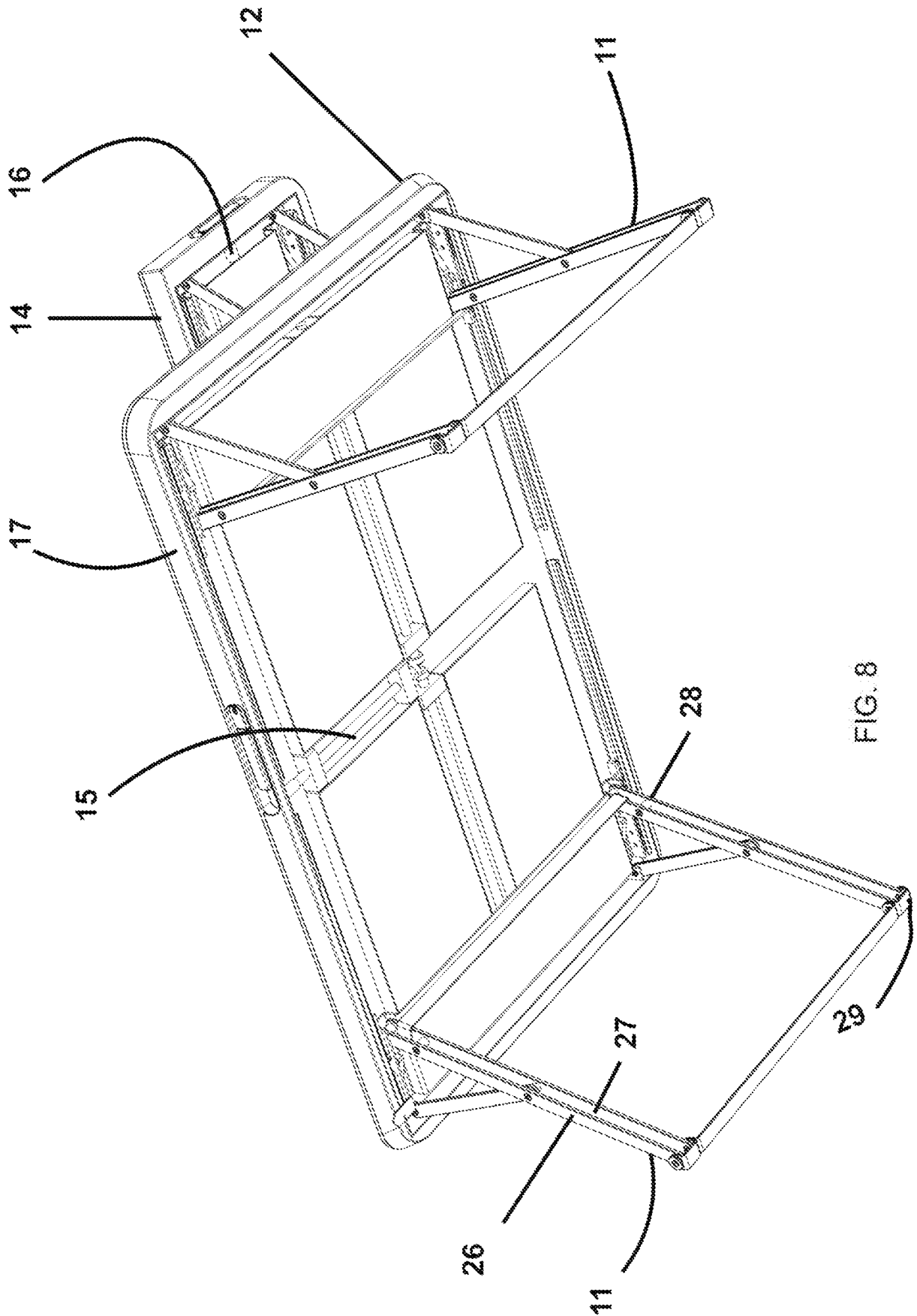


FIG. 8

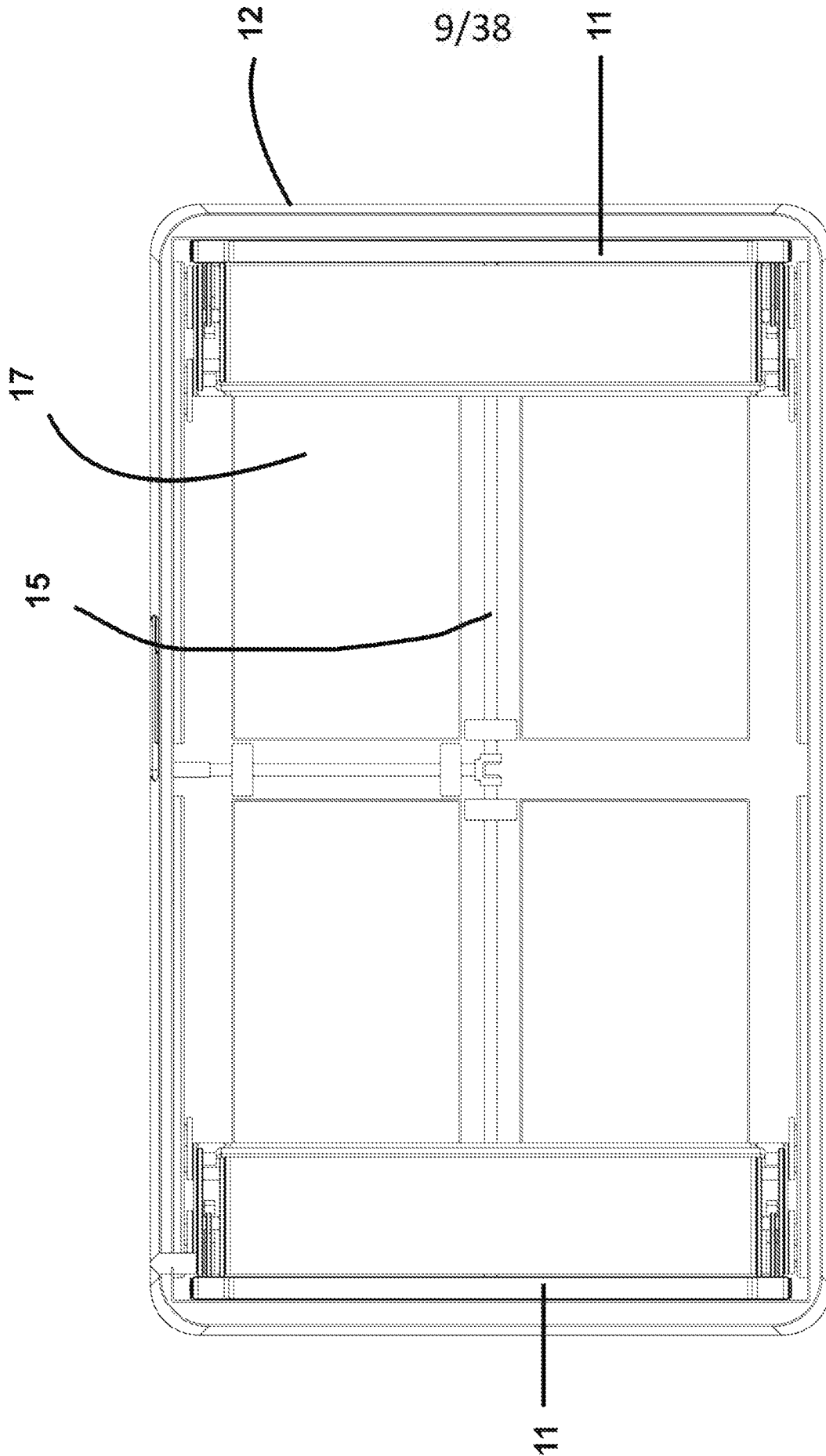


FIG. 9

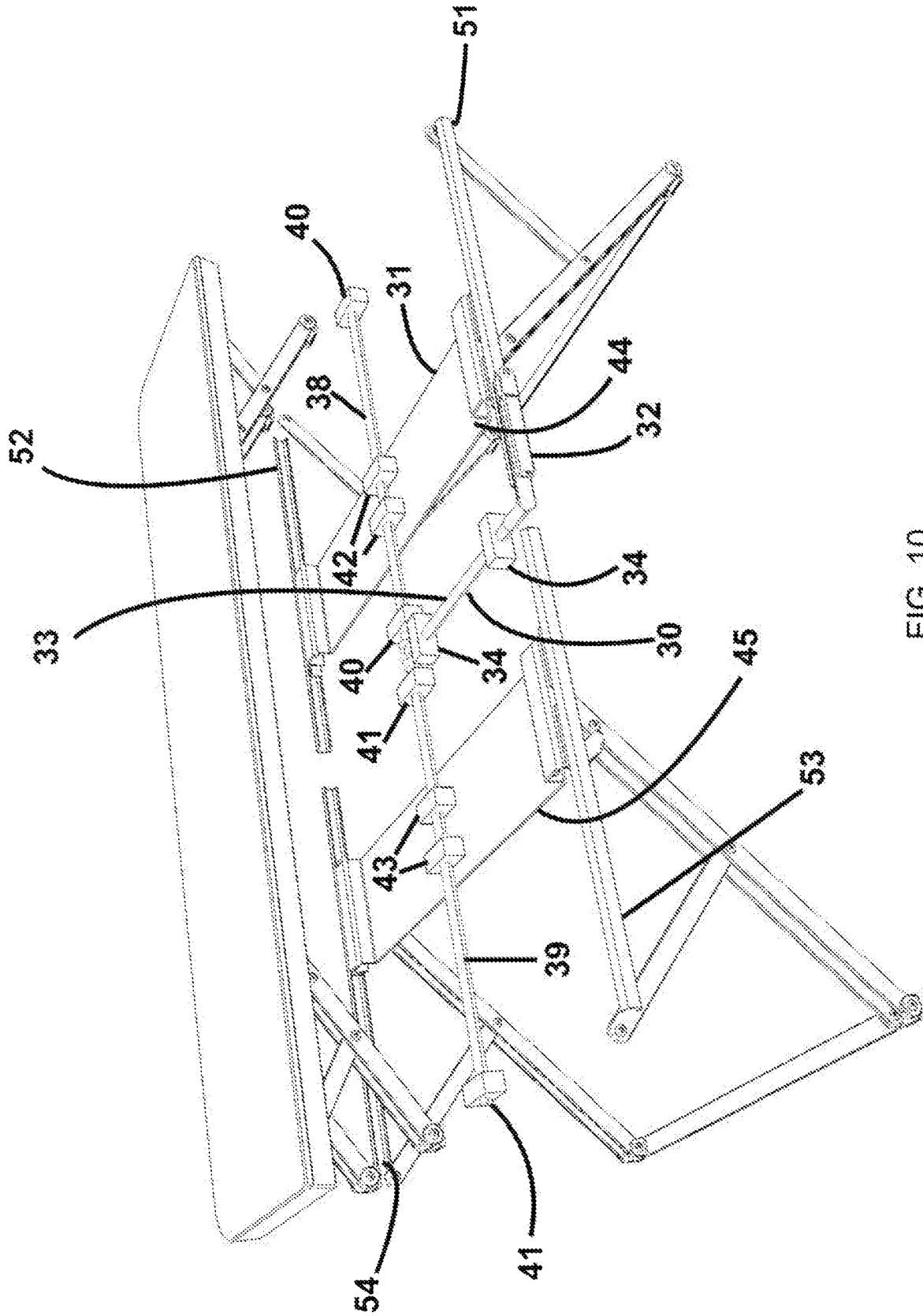


FIG. 10

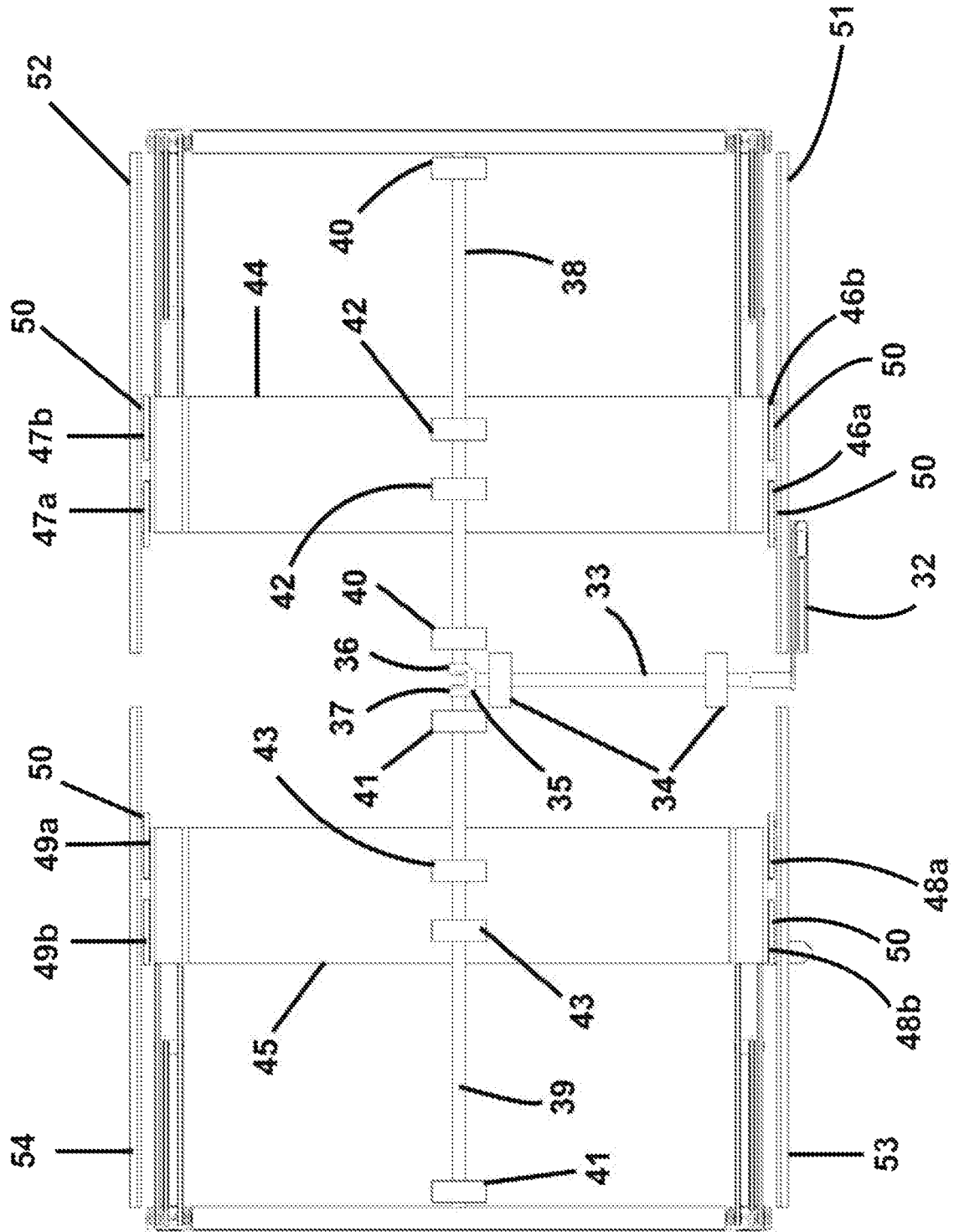
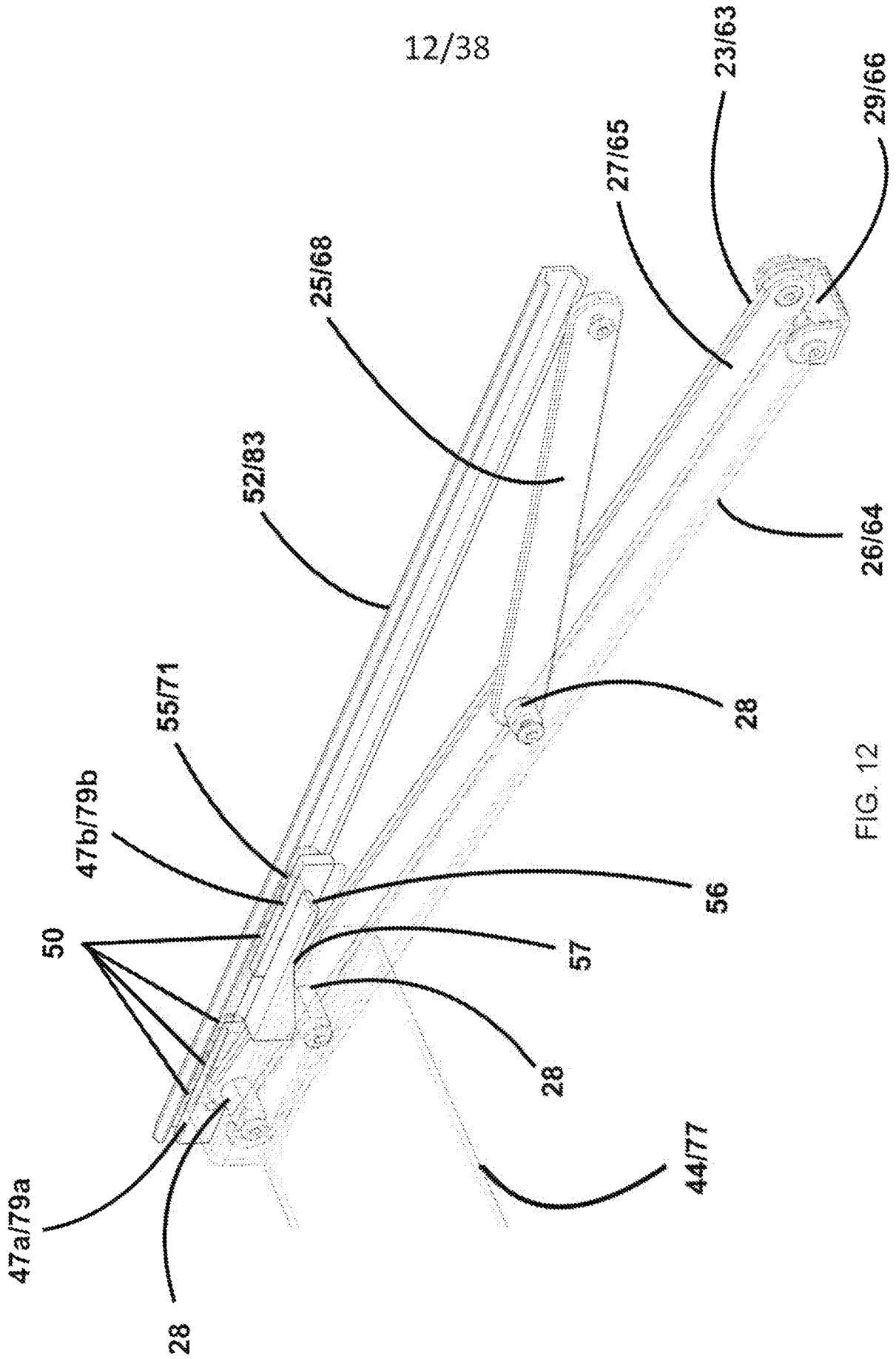


FIG. 11



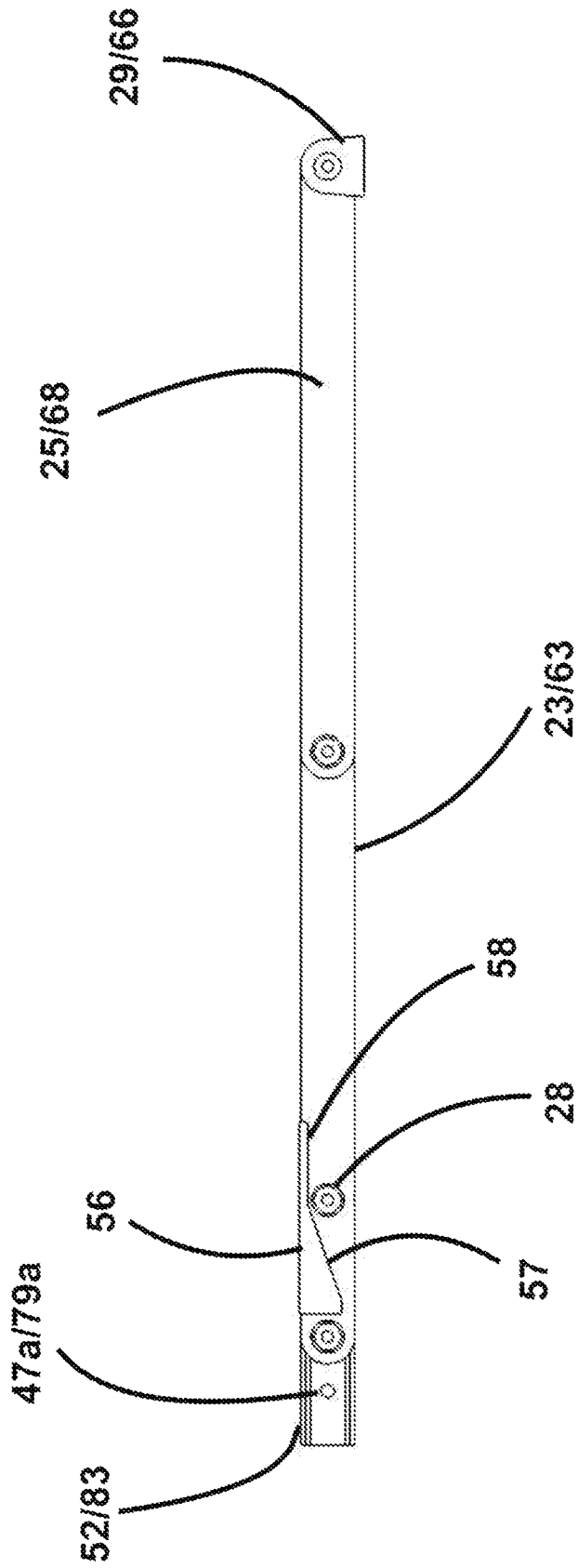


FIG. 13

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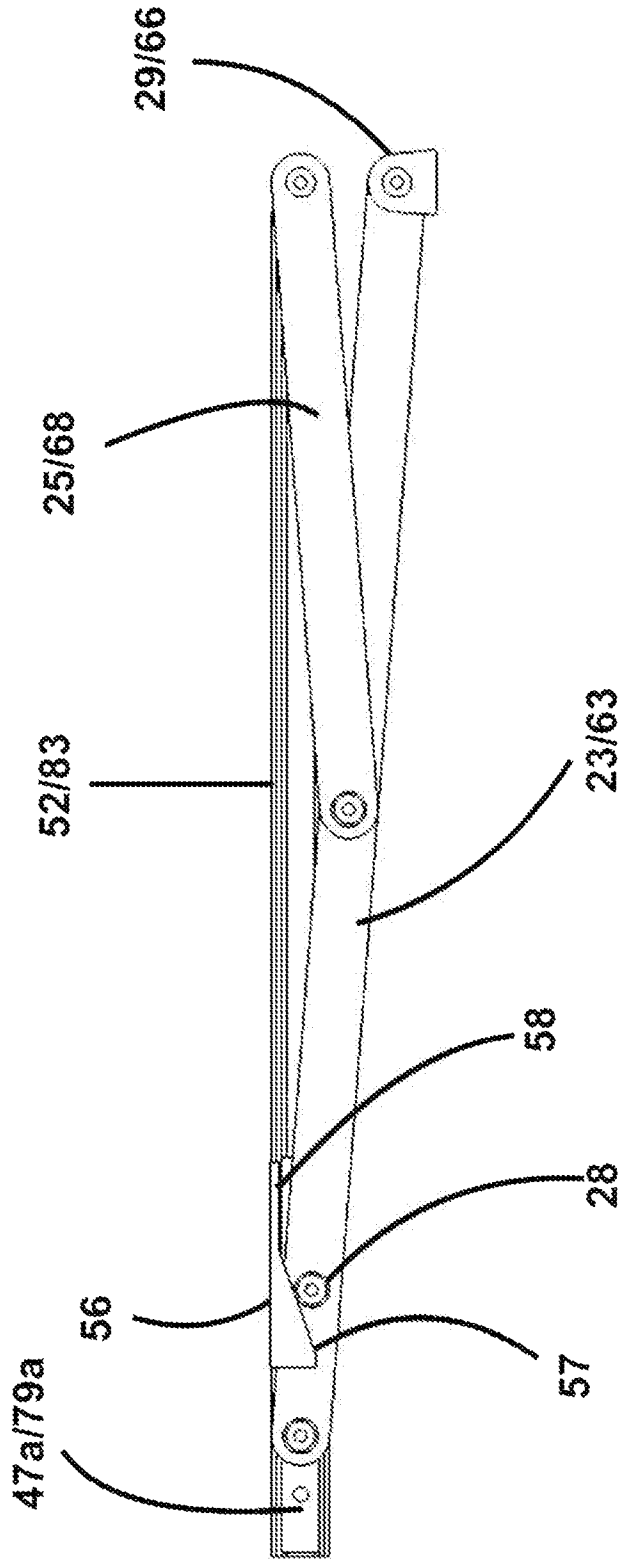


FIG. 14

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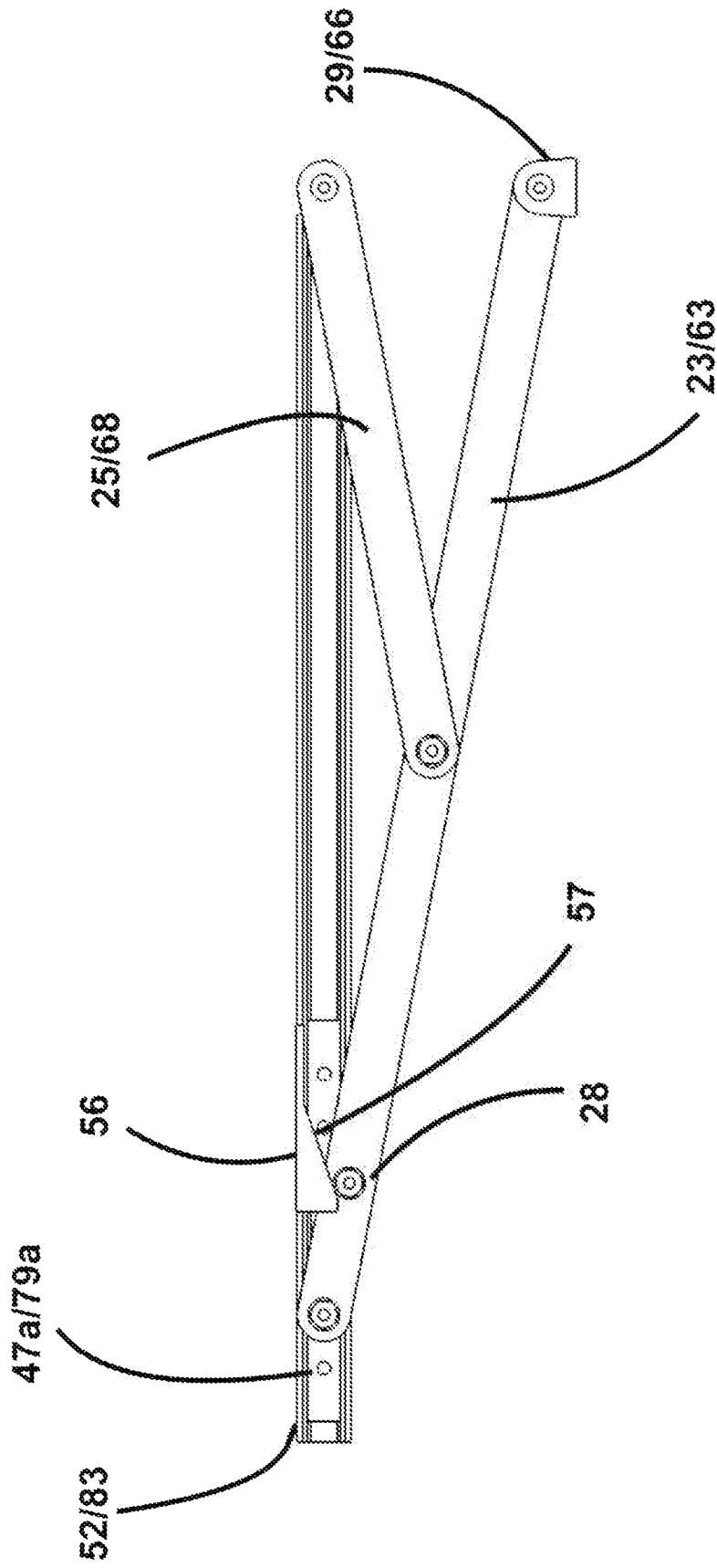


FIG. 15

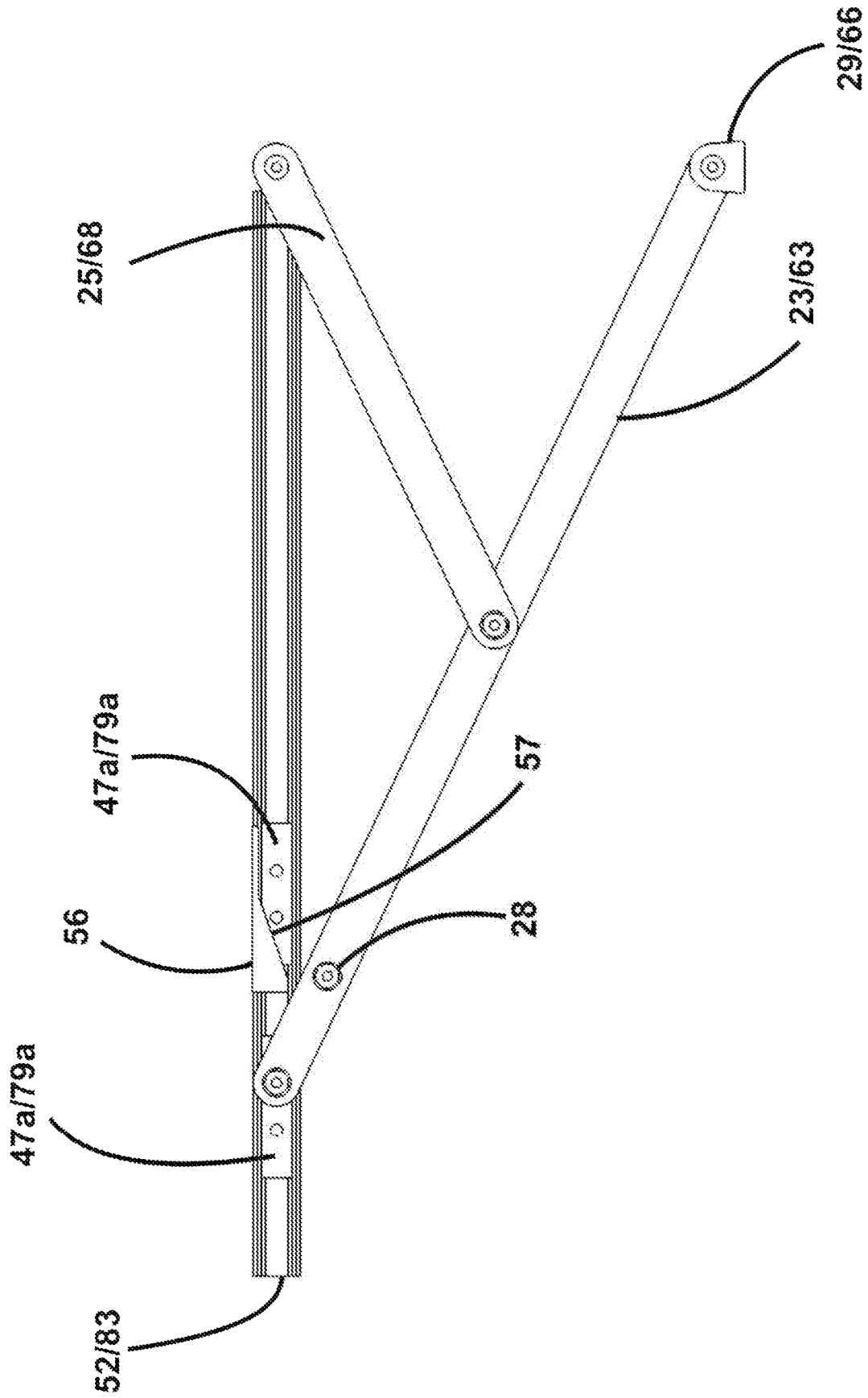


FIG. 16

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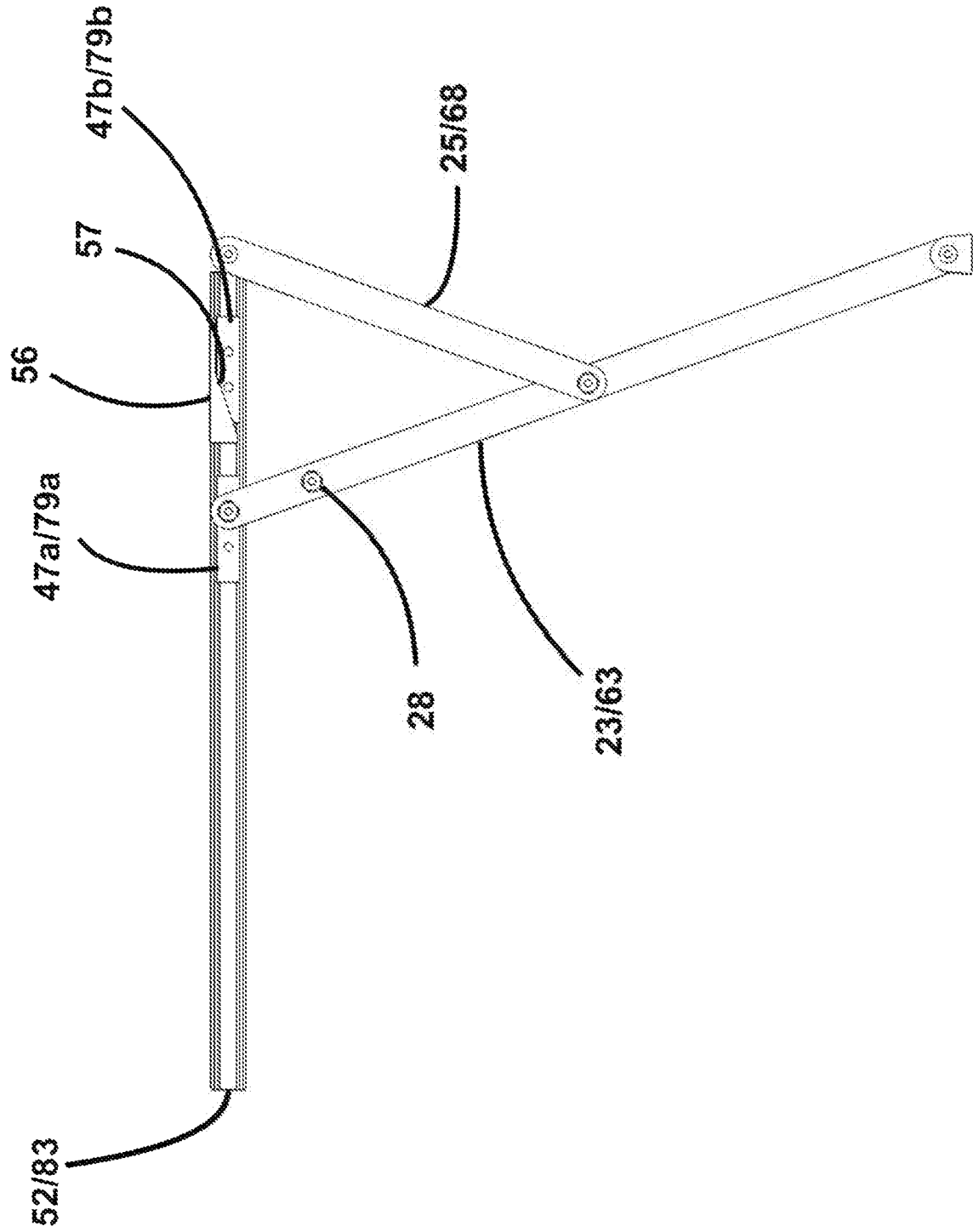


FIG. 17

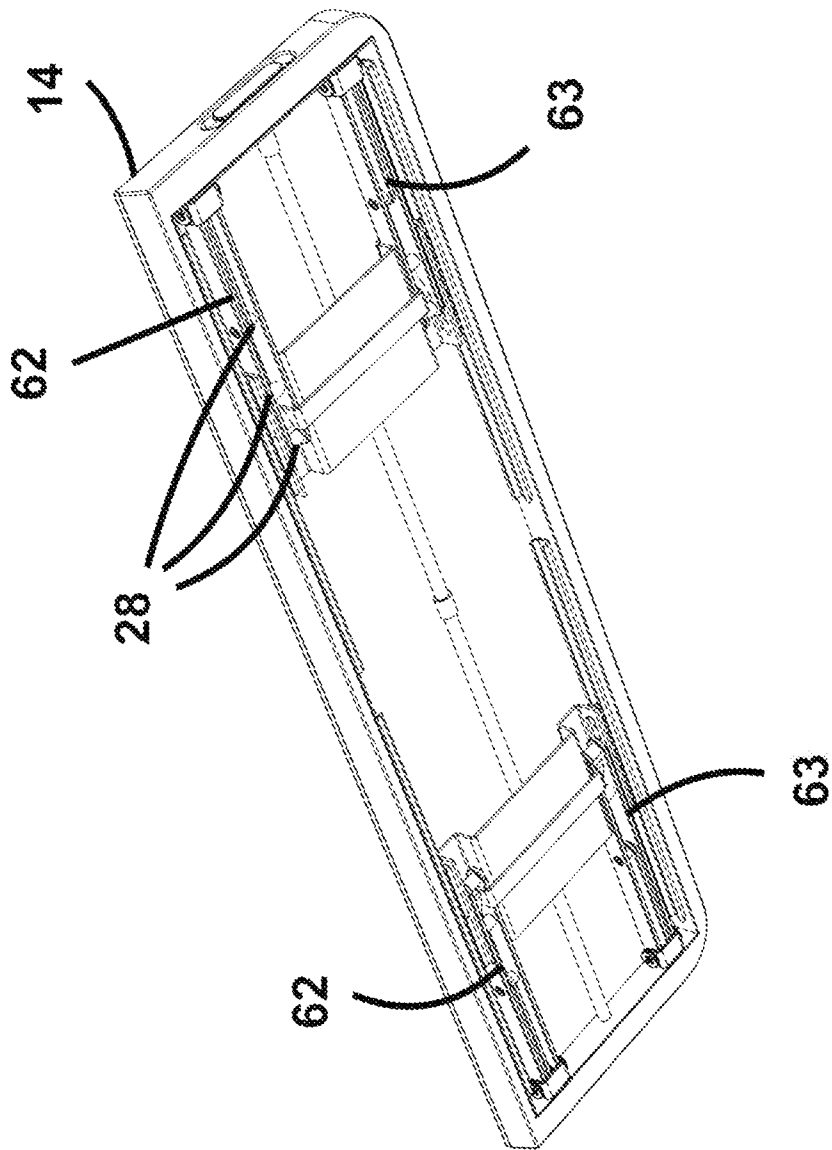


FIG. 18

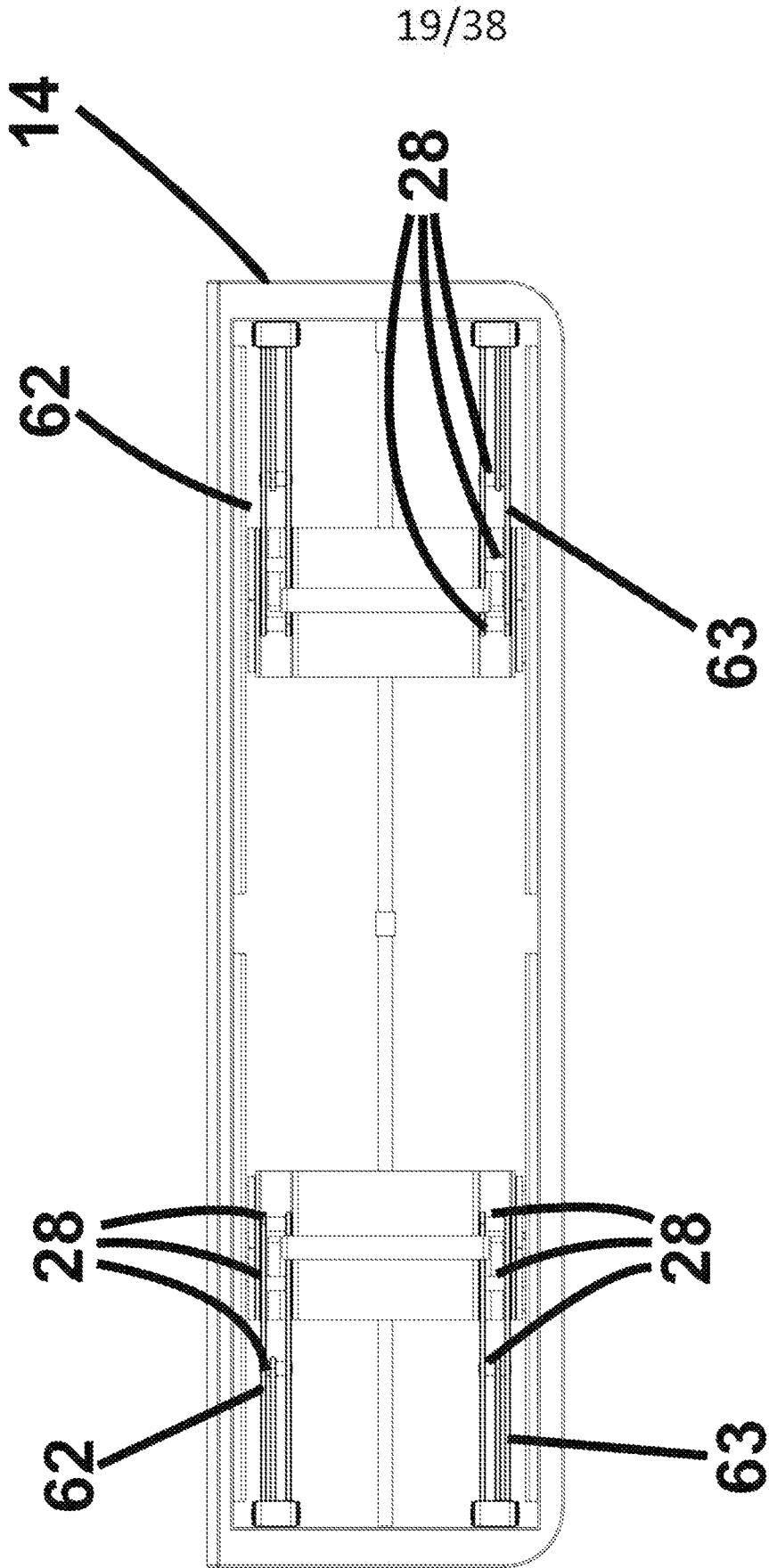


FIG. 19

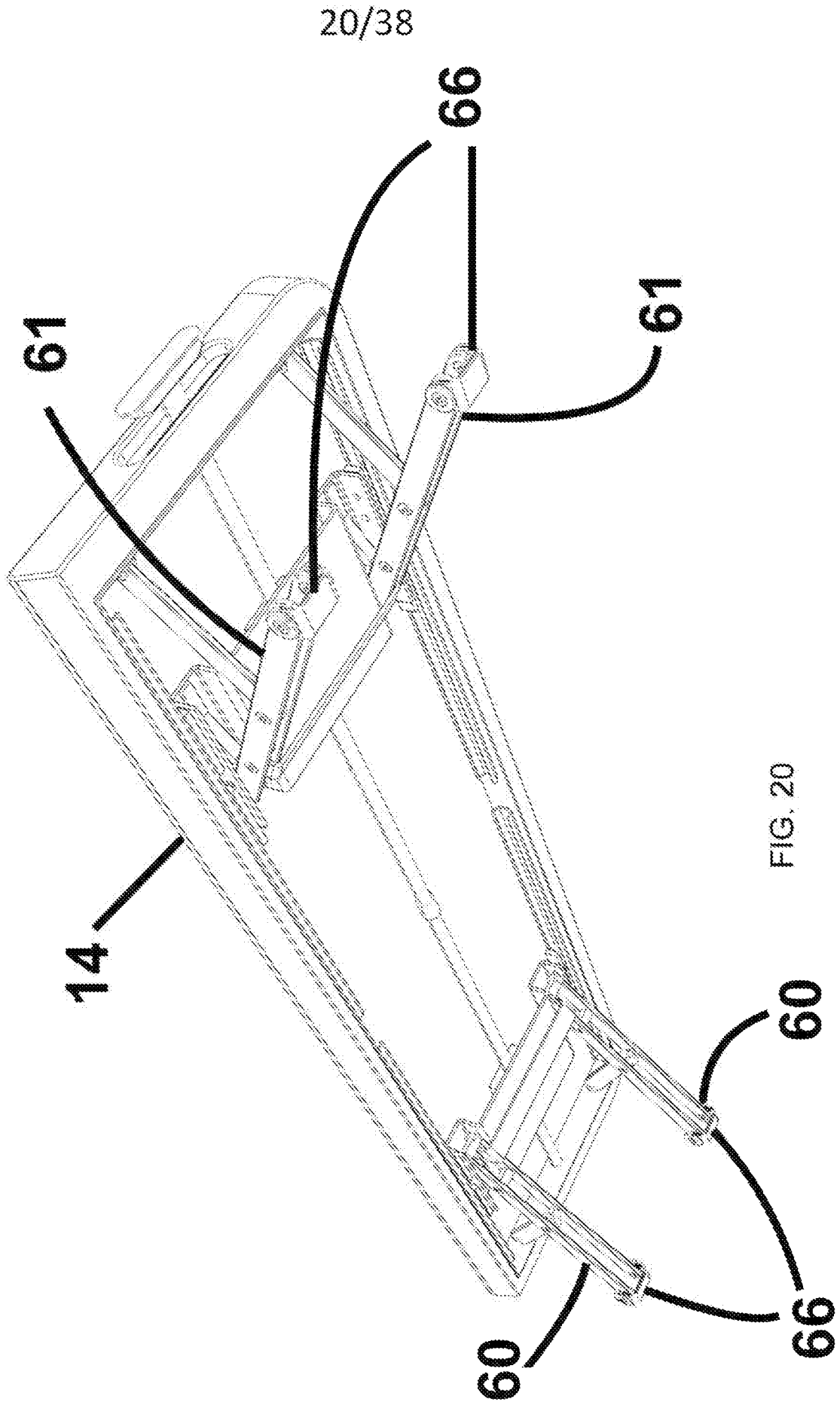


FIG. 20

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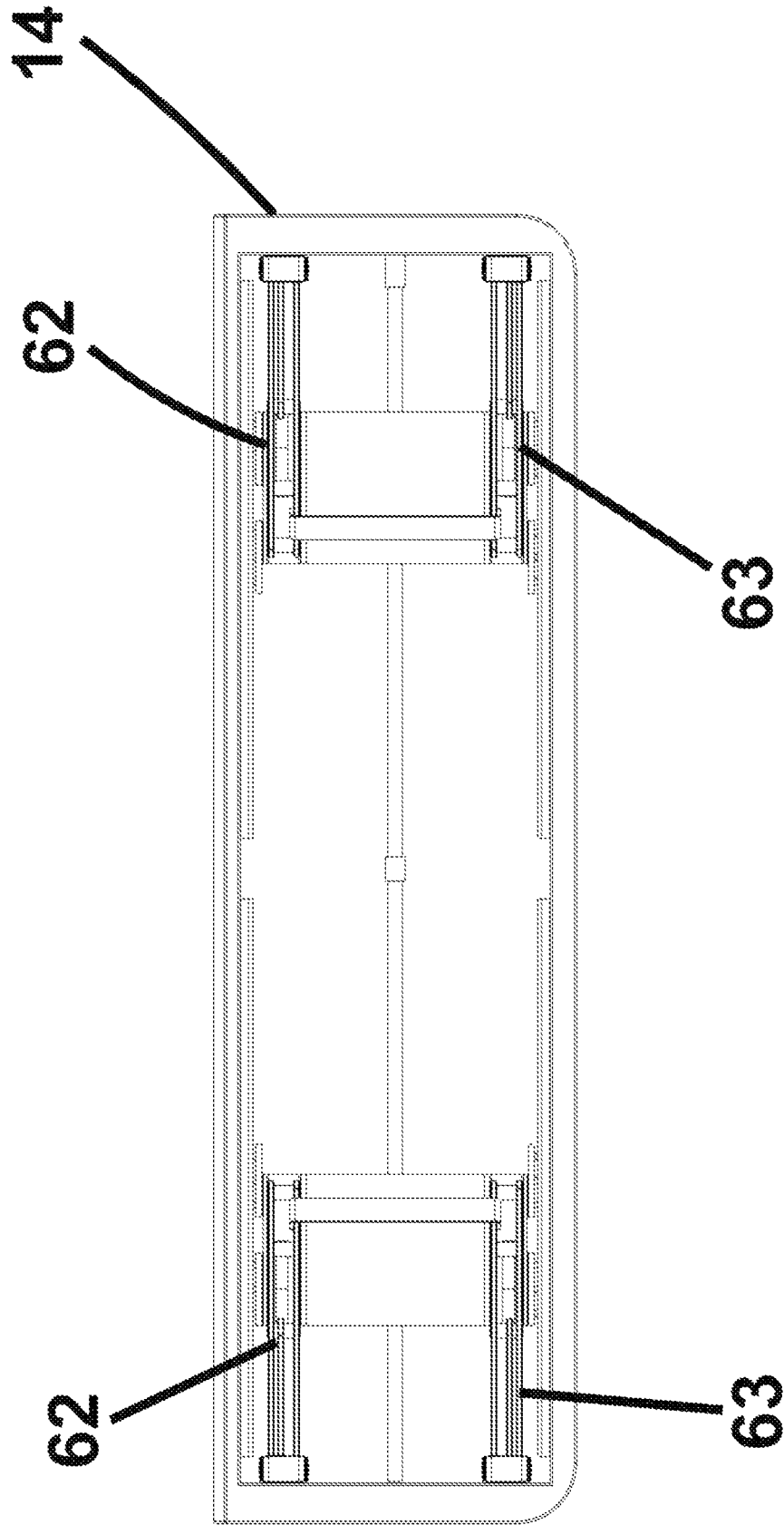


FIG. 21

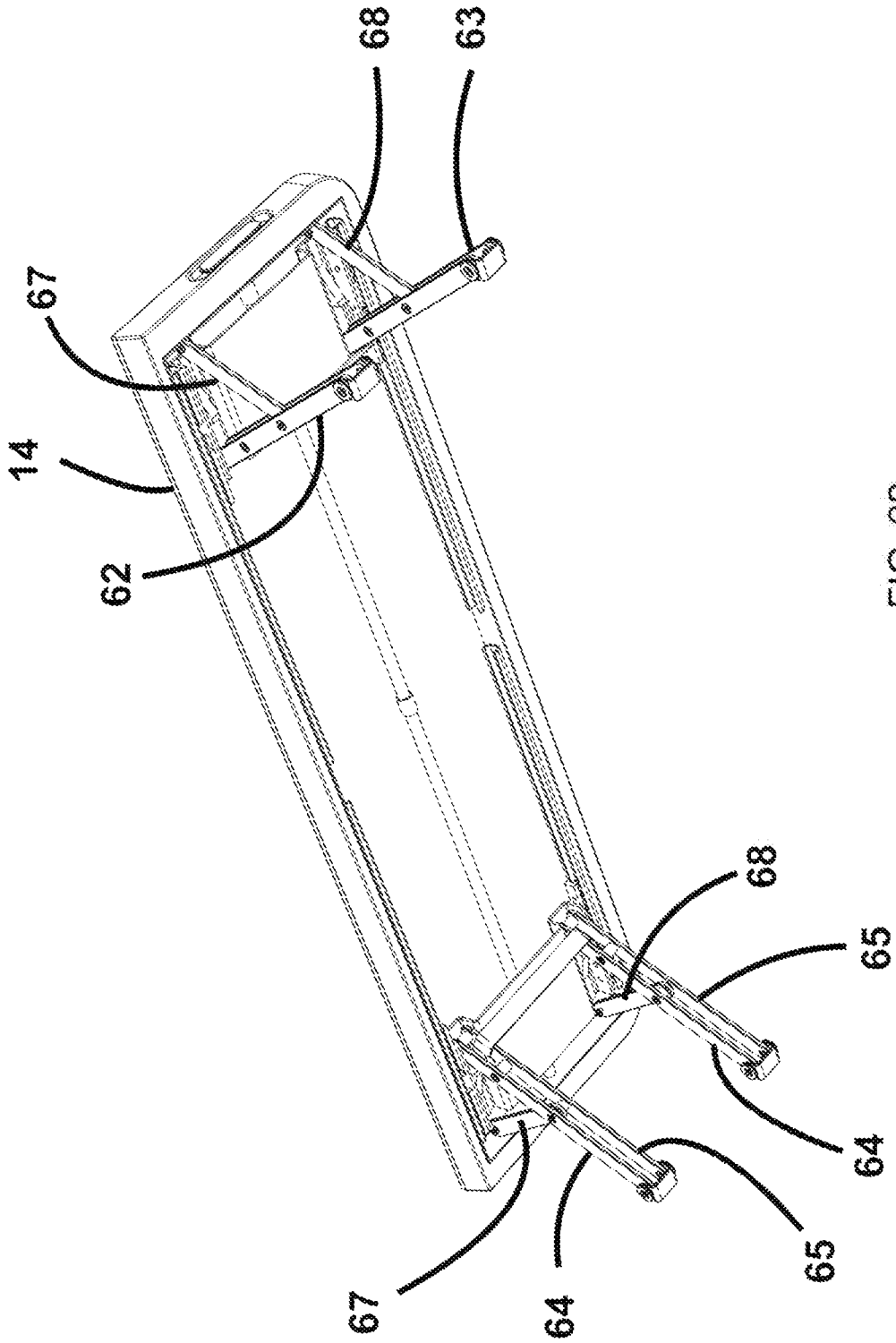


FIG. 22

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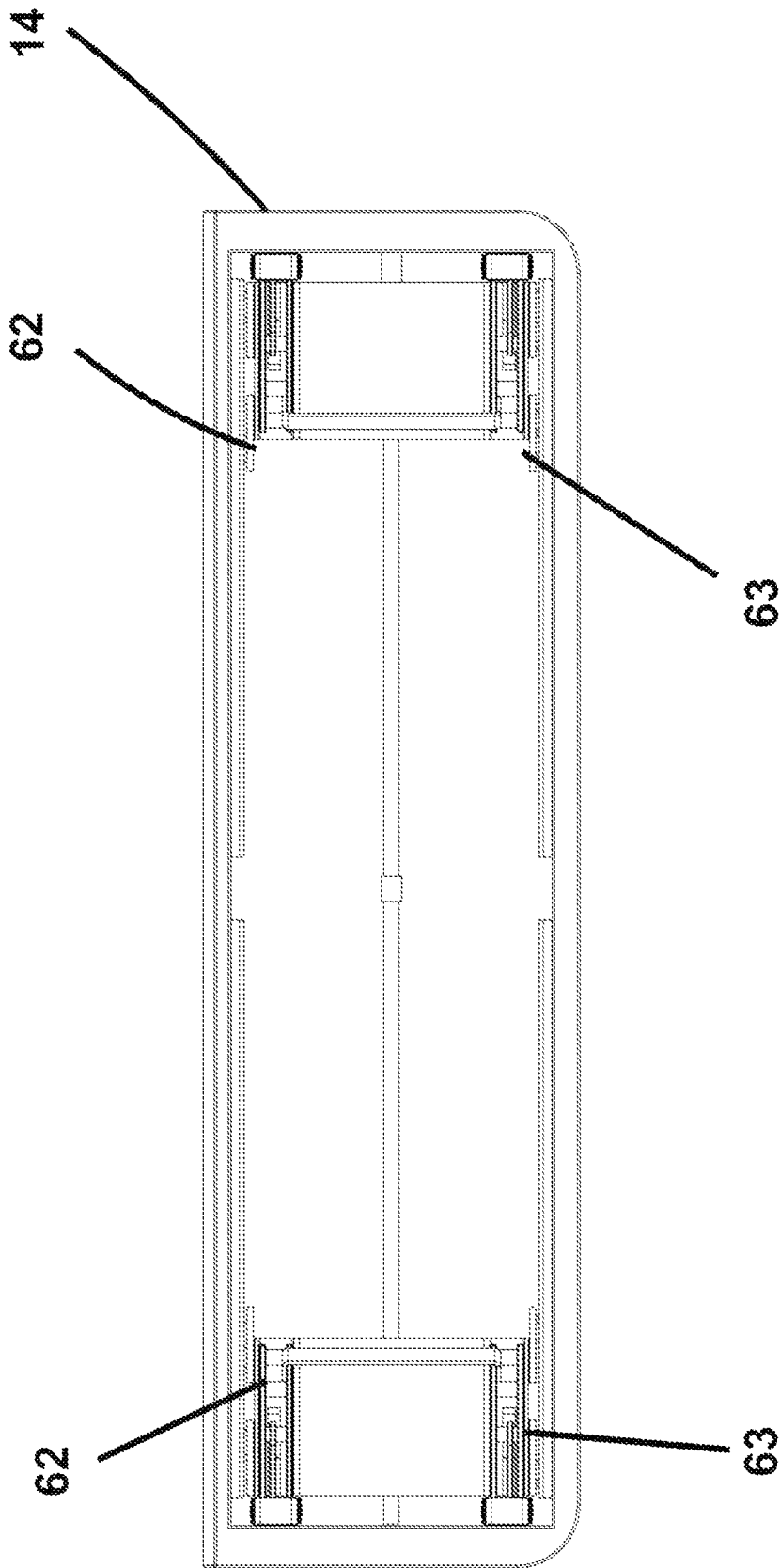


FIG. 23

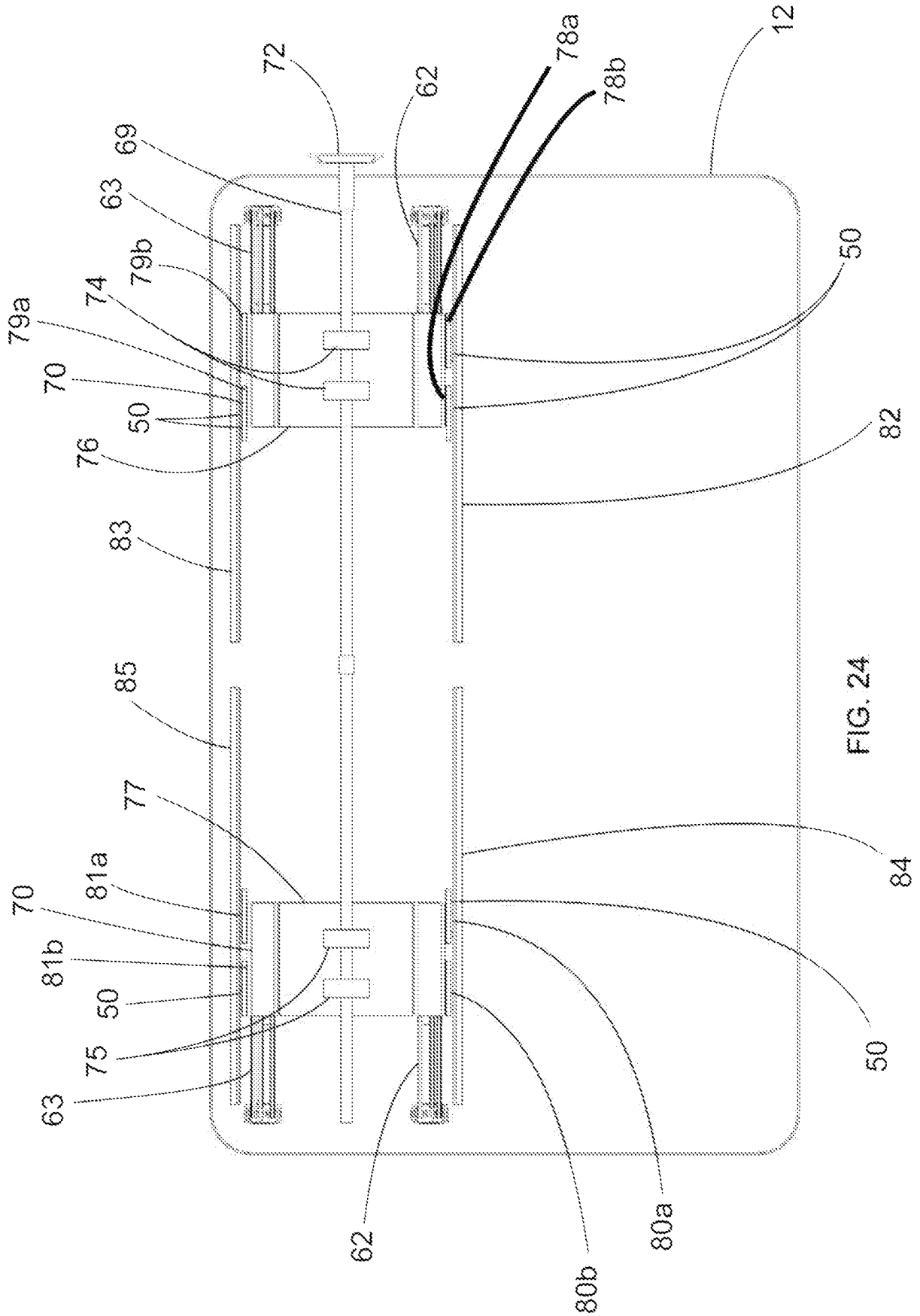


FIG. 24

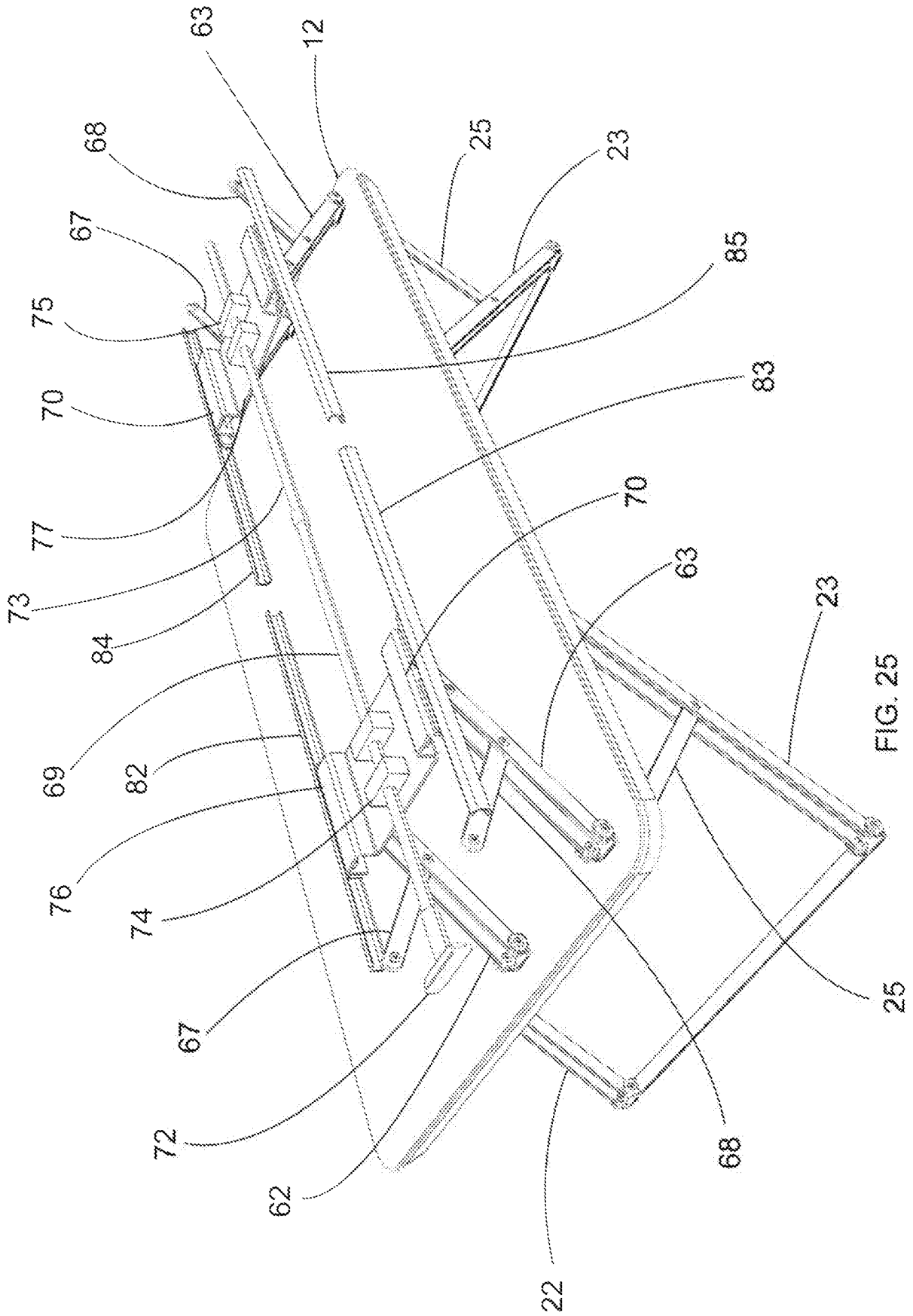


FIG. 25

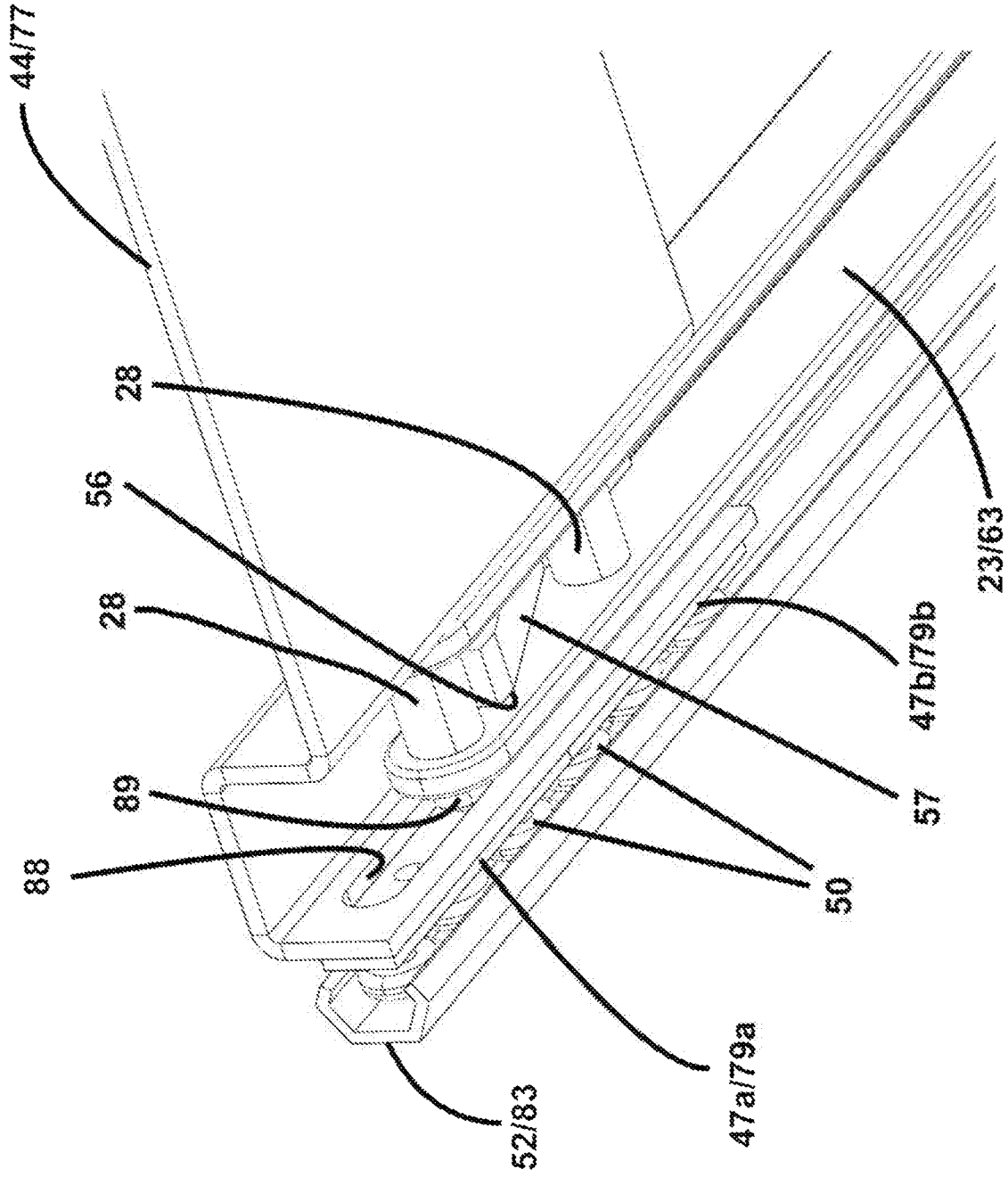


FIG. 26

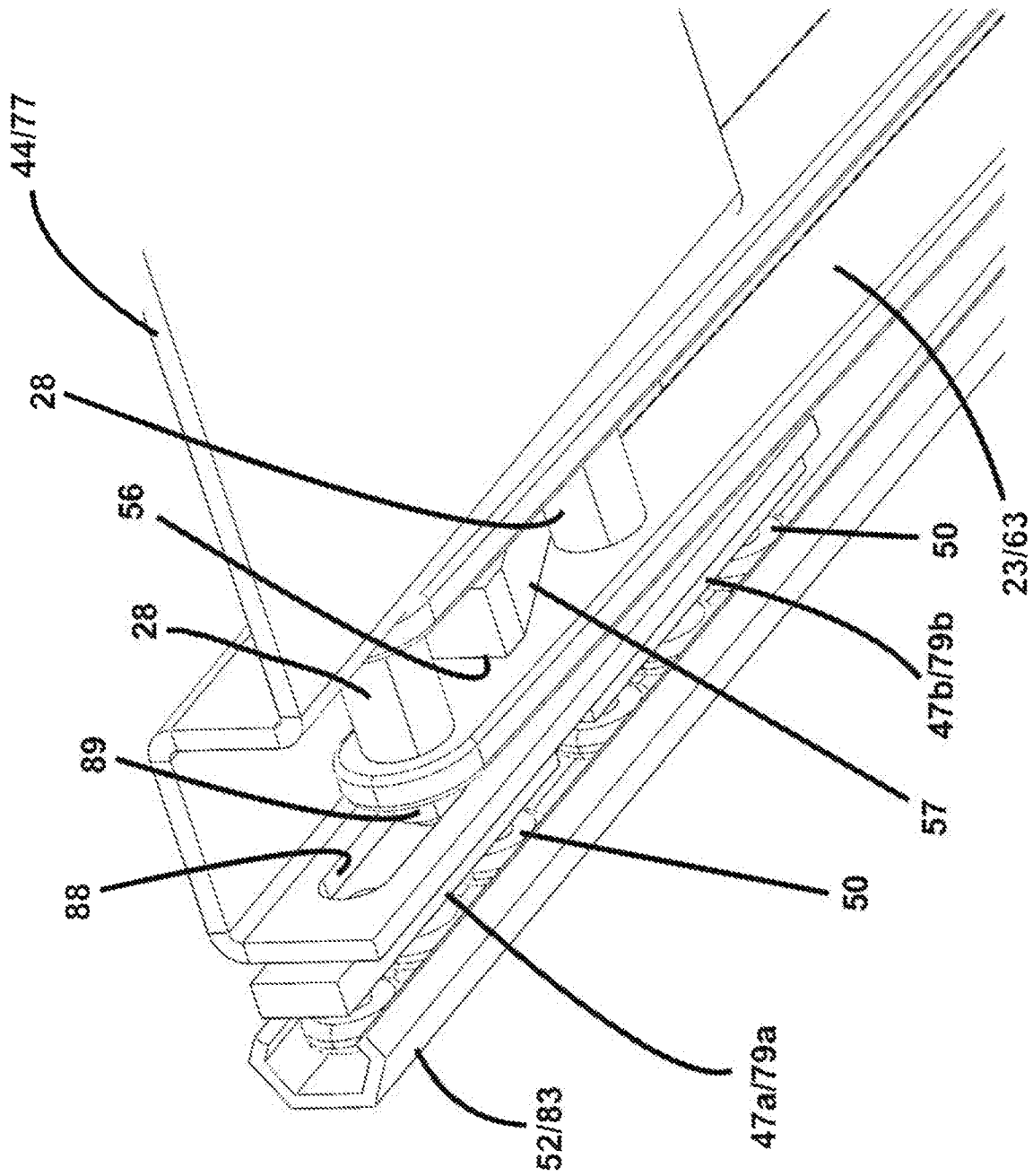


FIG. 27

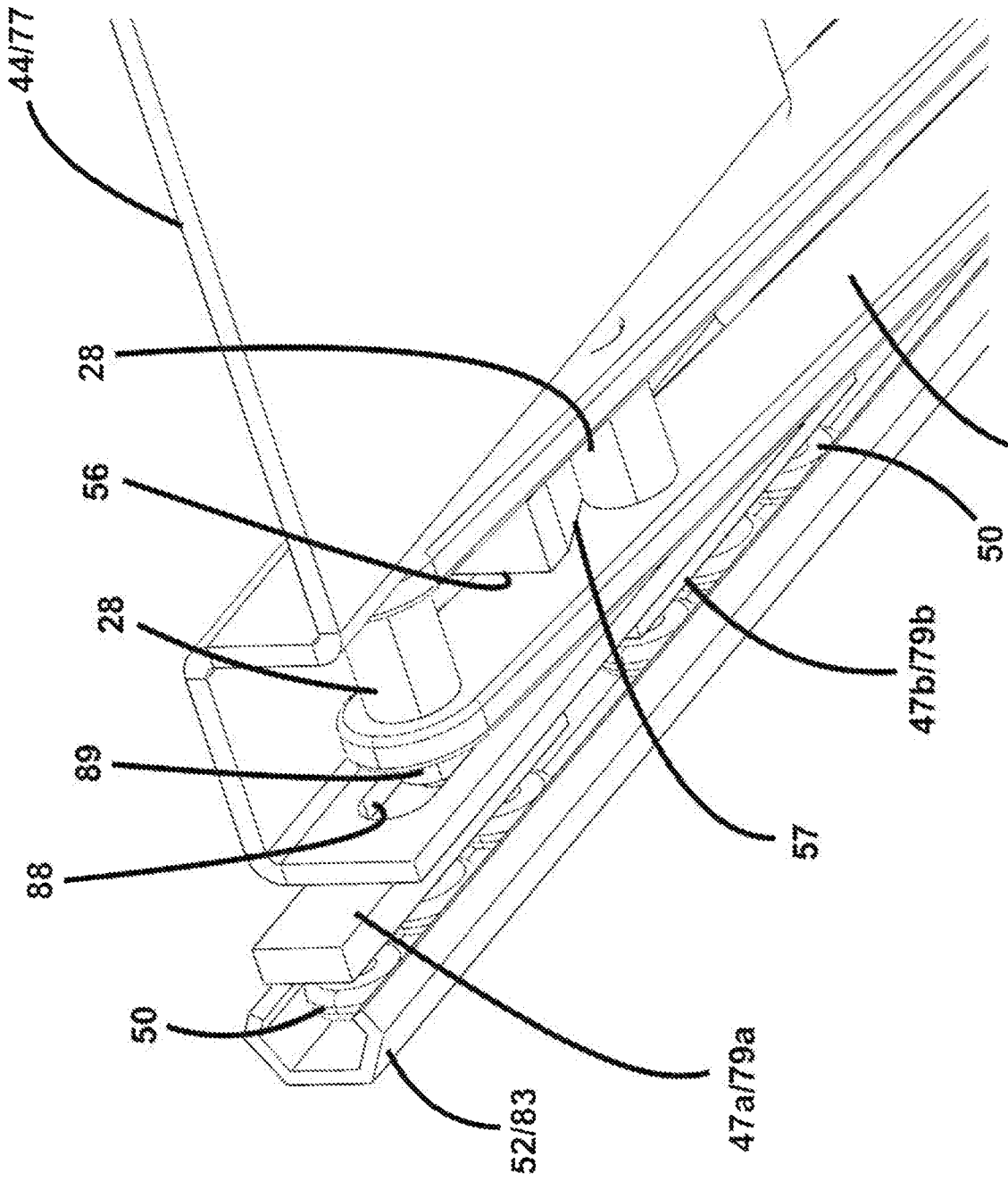


FIG. 28

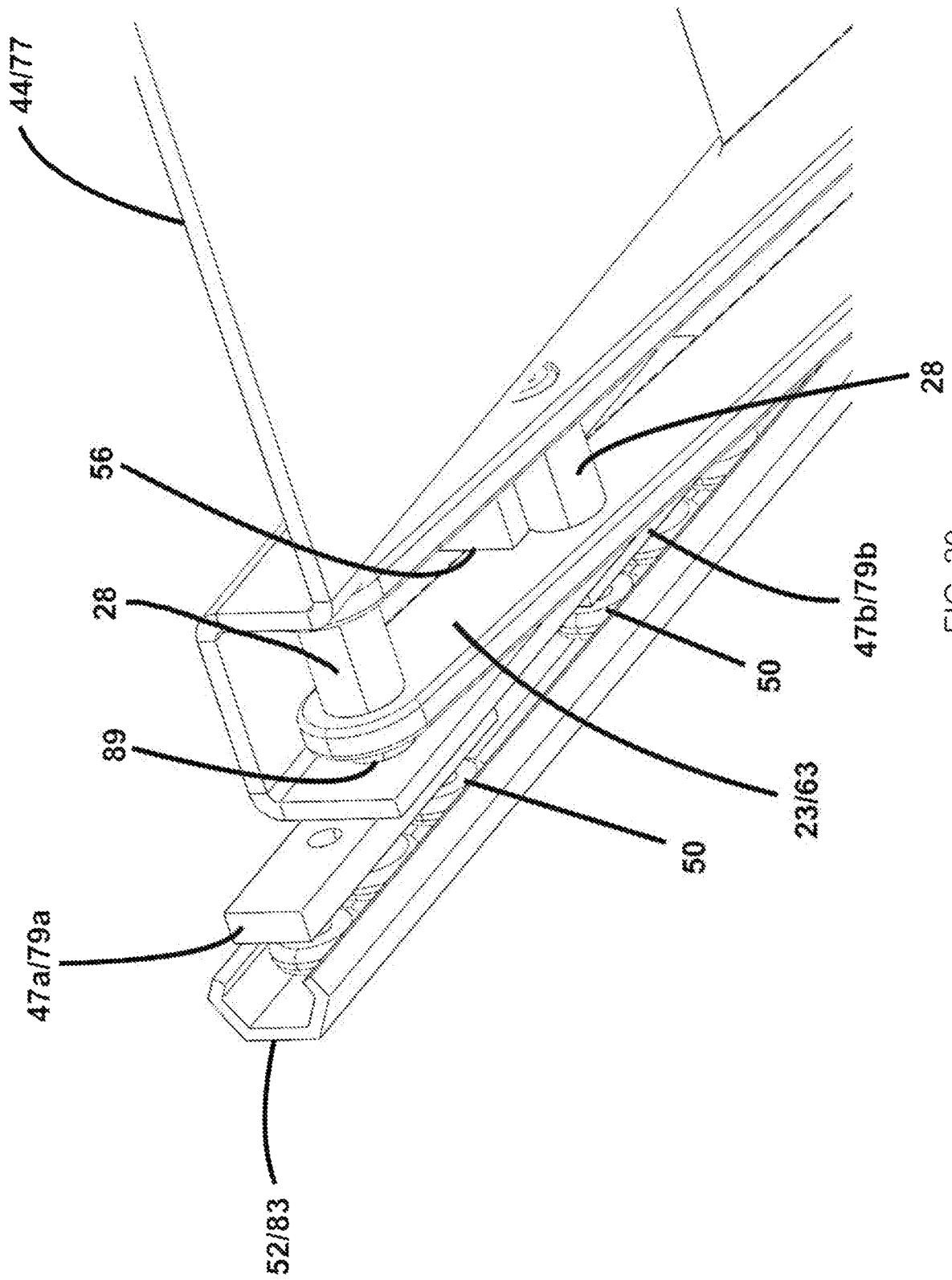


FIG. 29

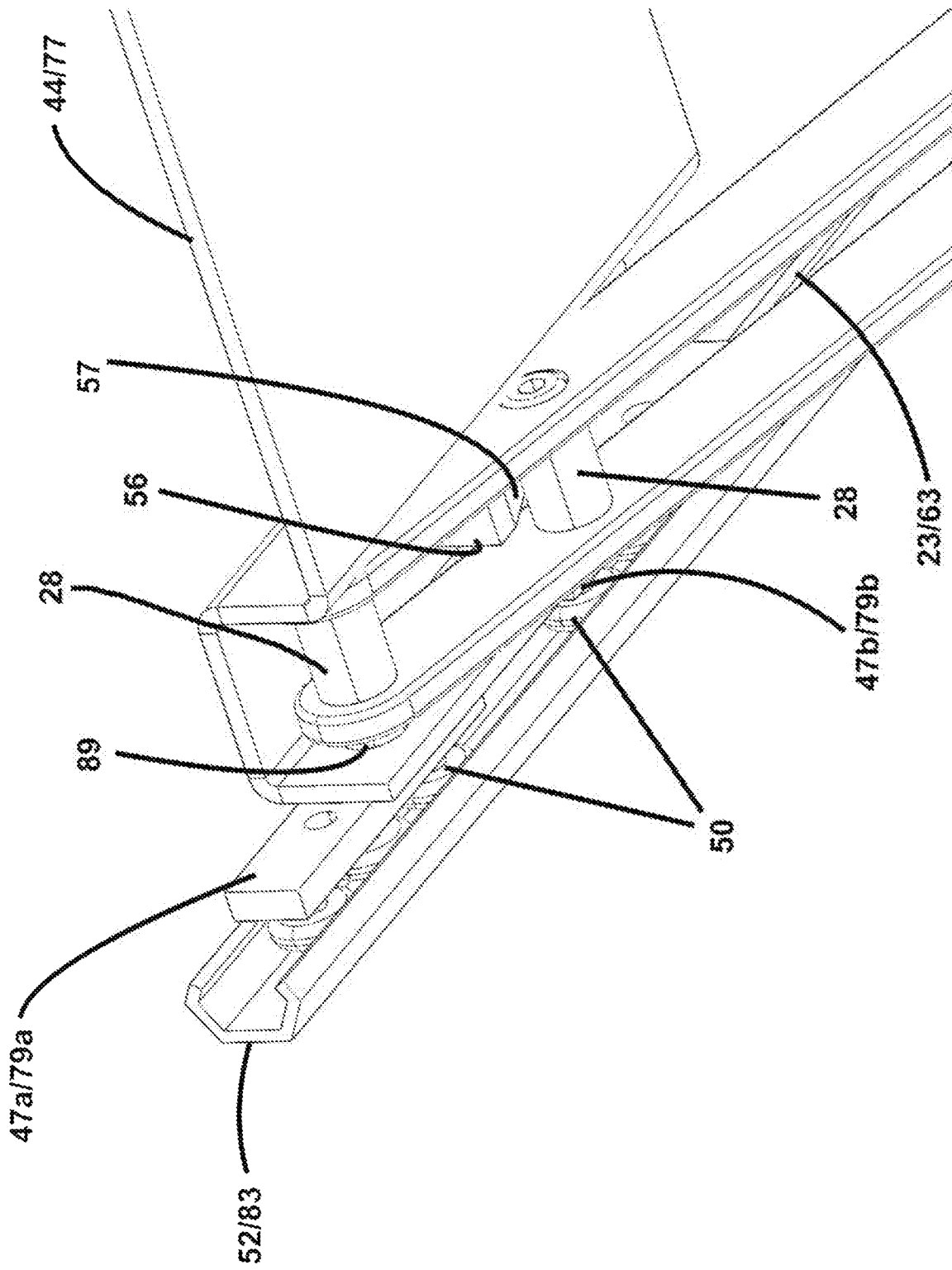


FIG. 30

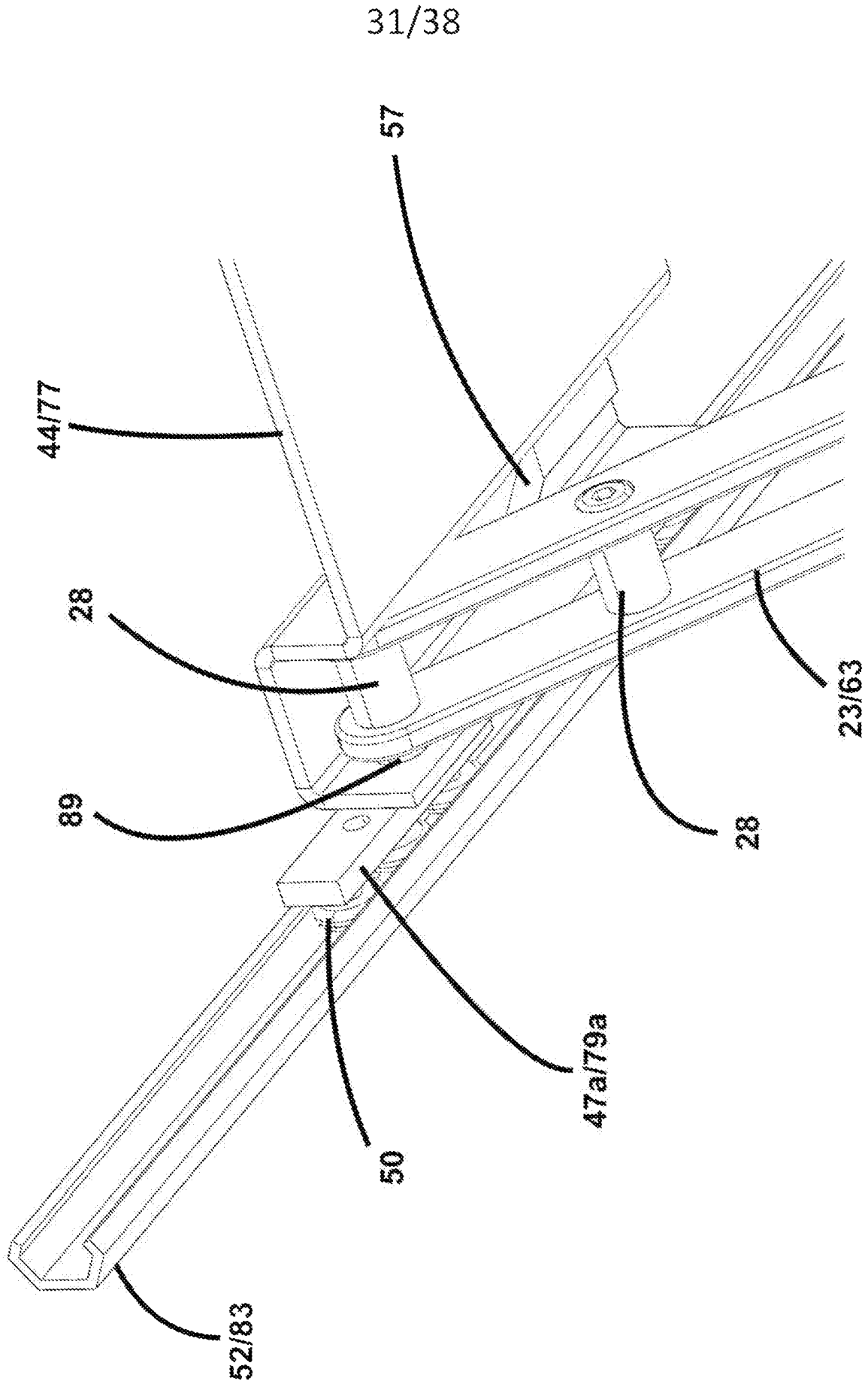


FIG. 31

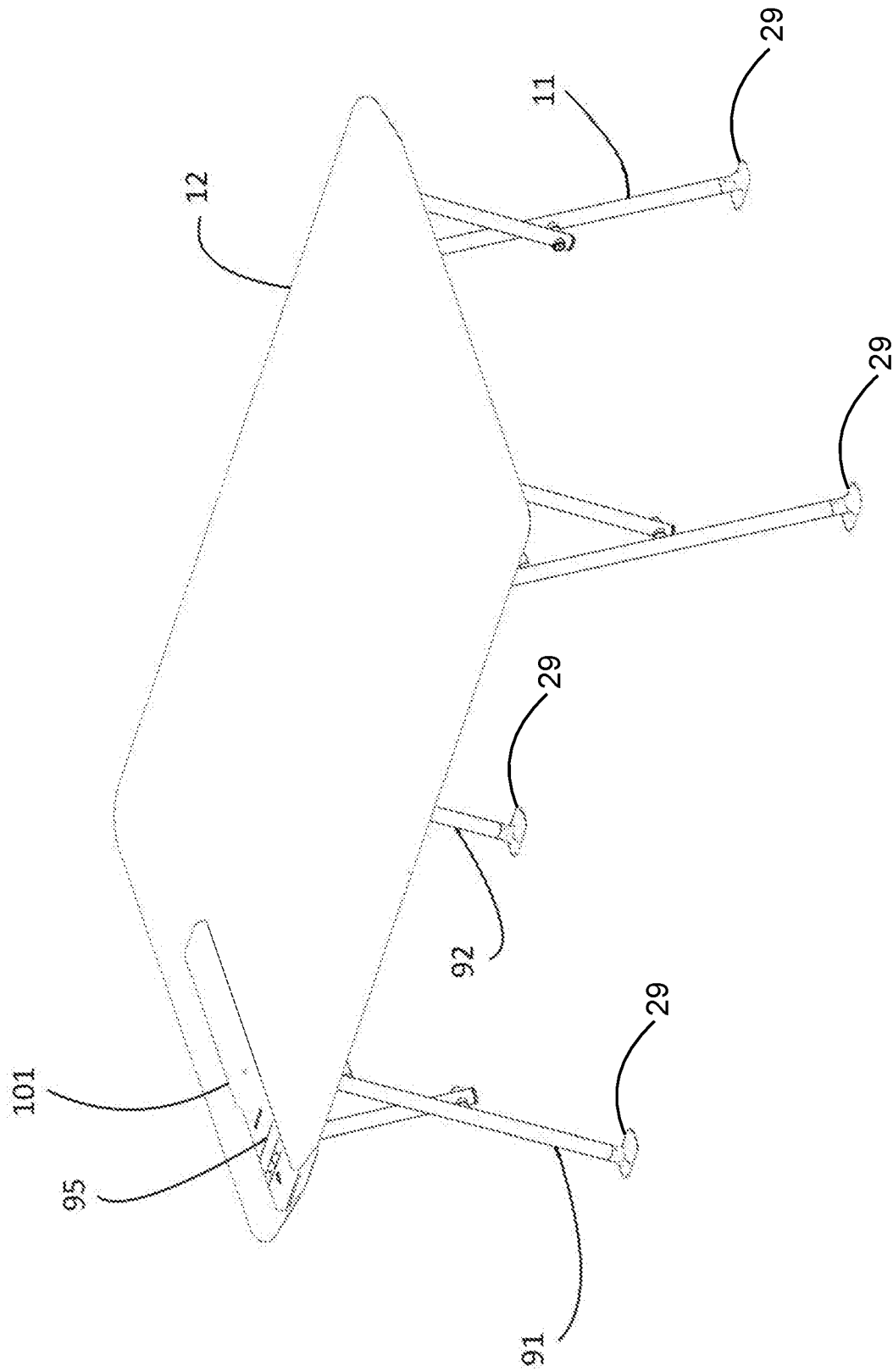


FIG. 32

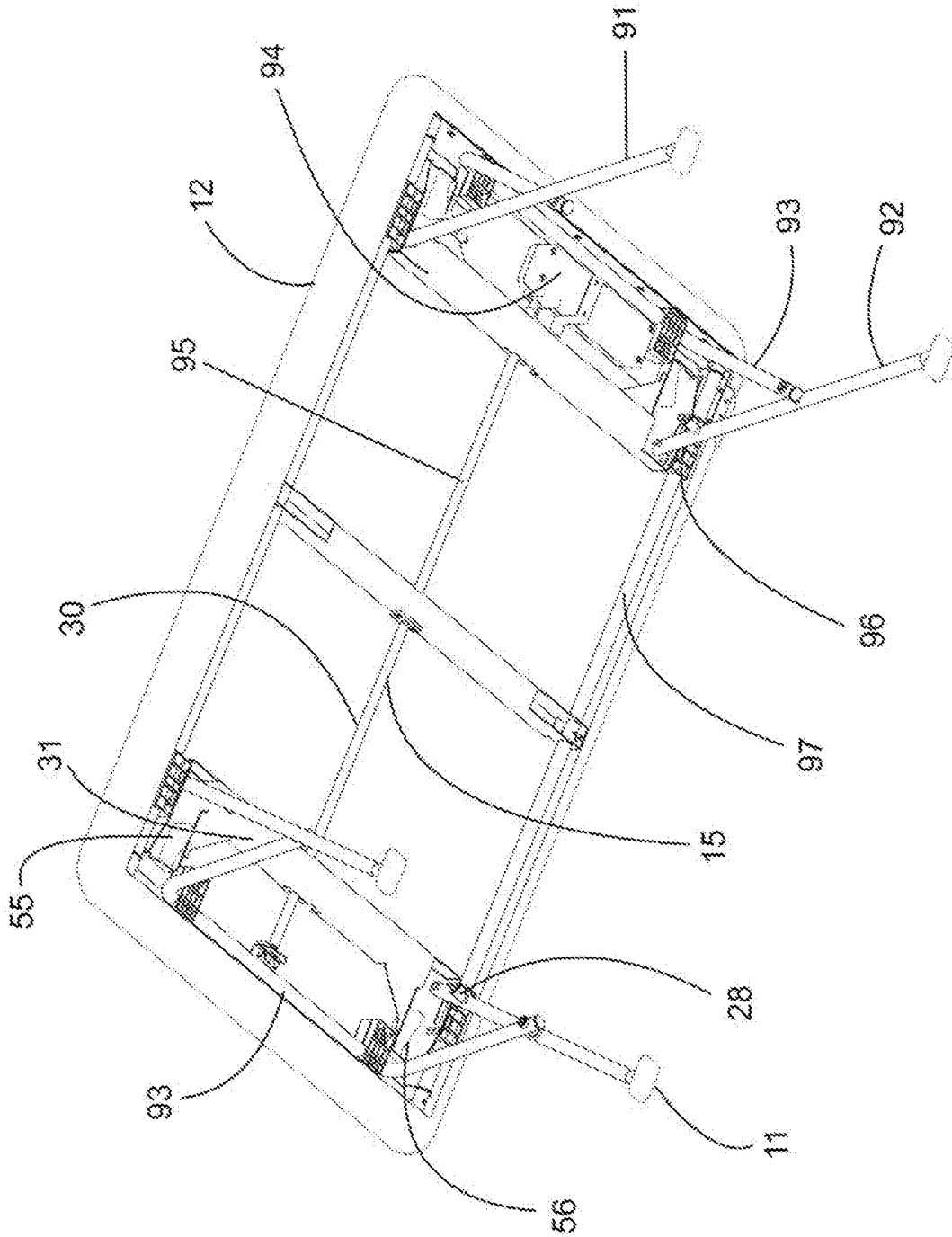


FIG. 33

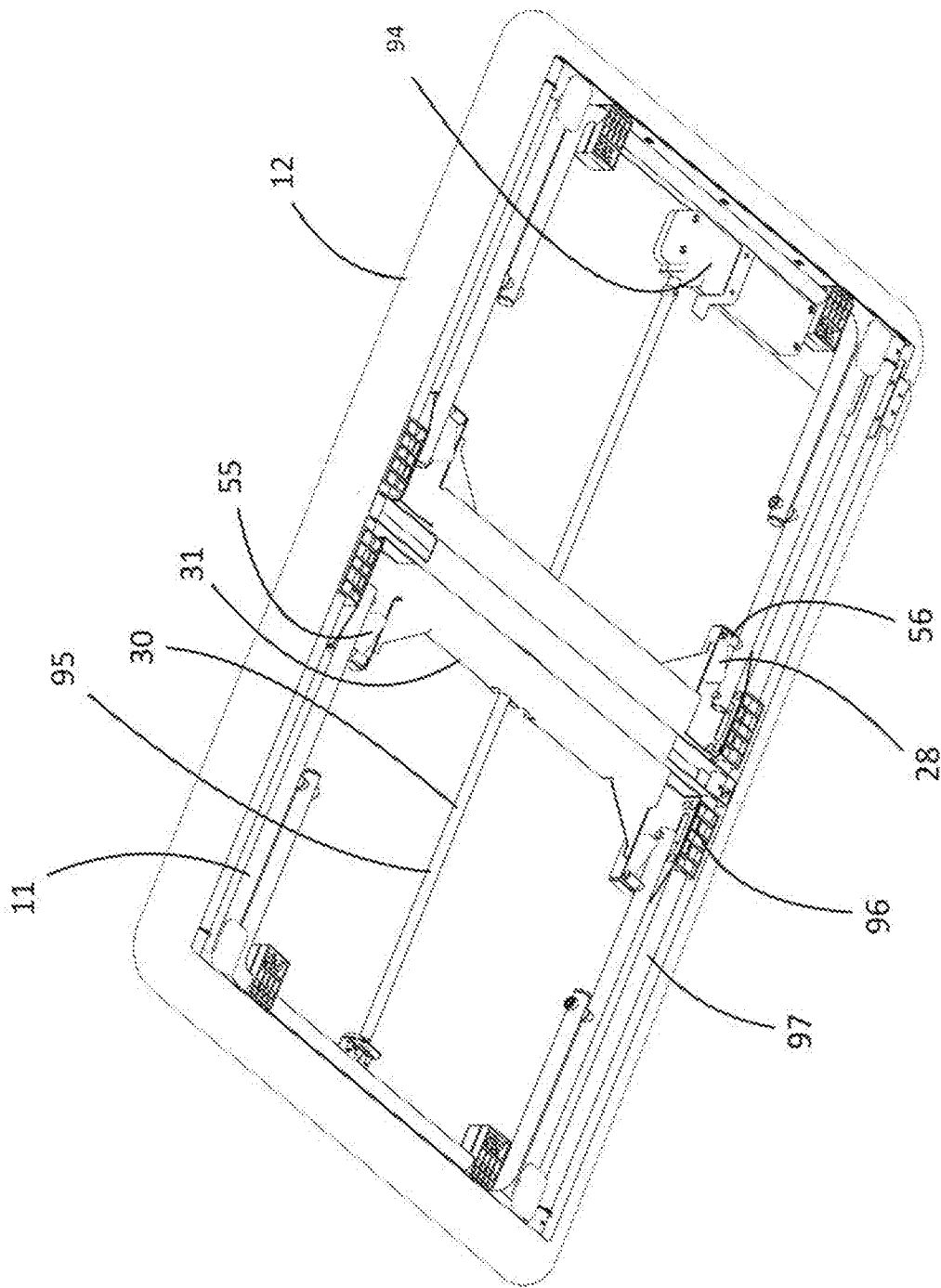


FIG. 34

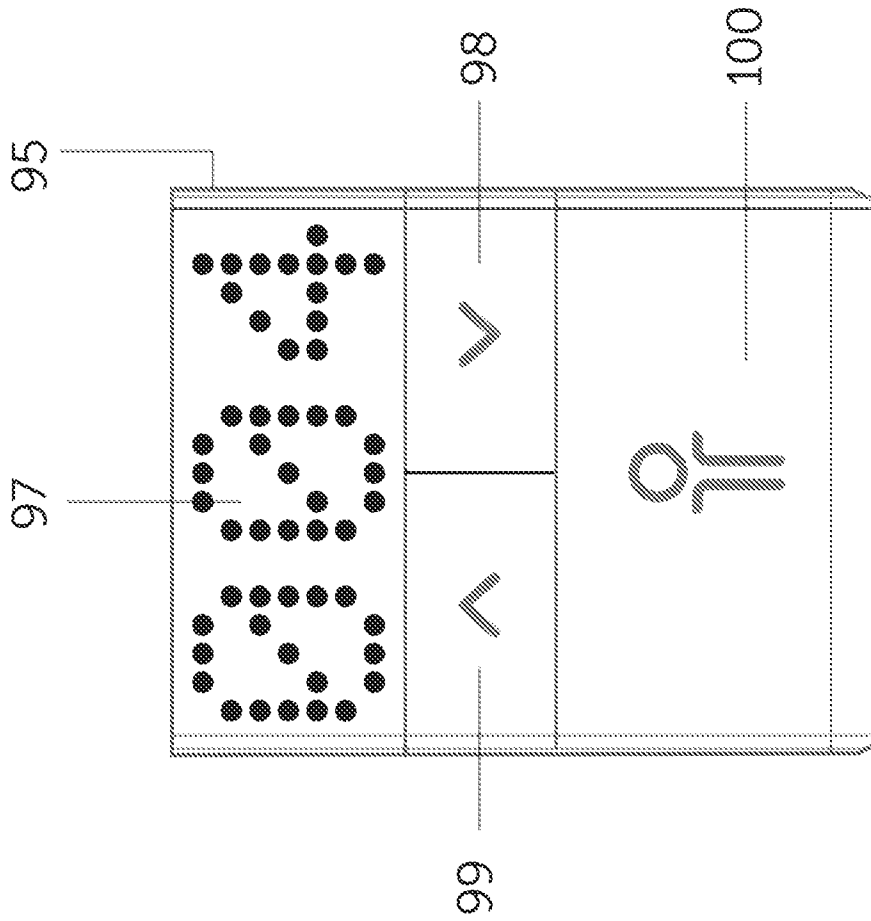


FIG. 35

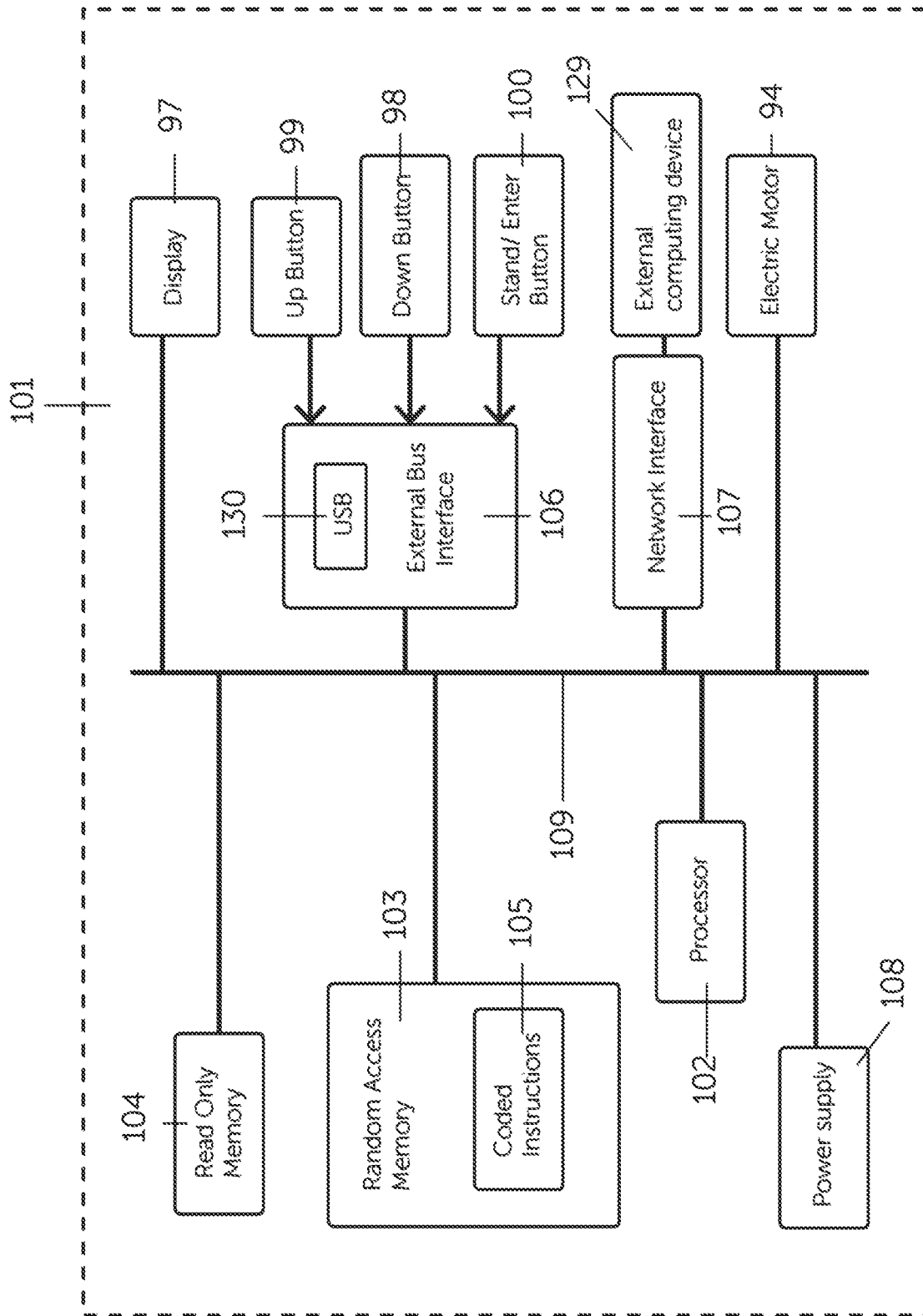
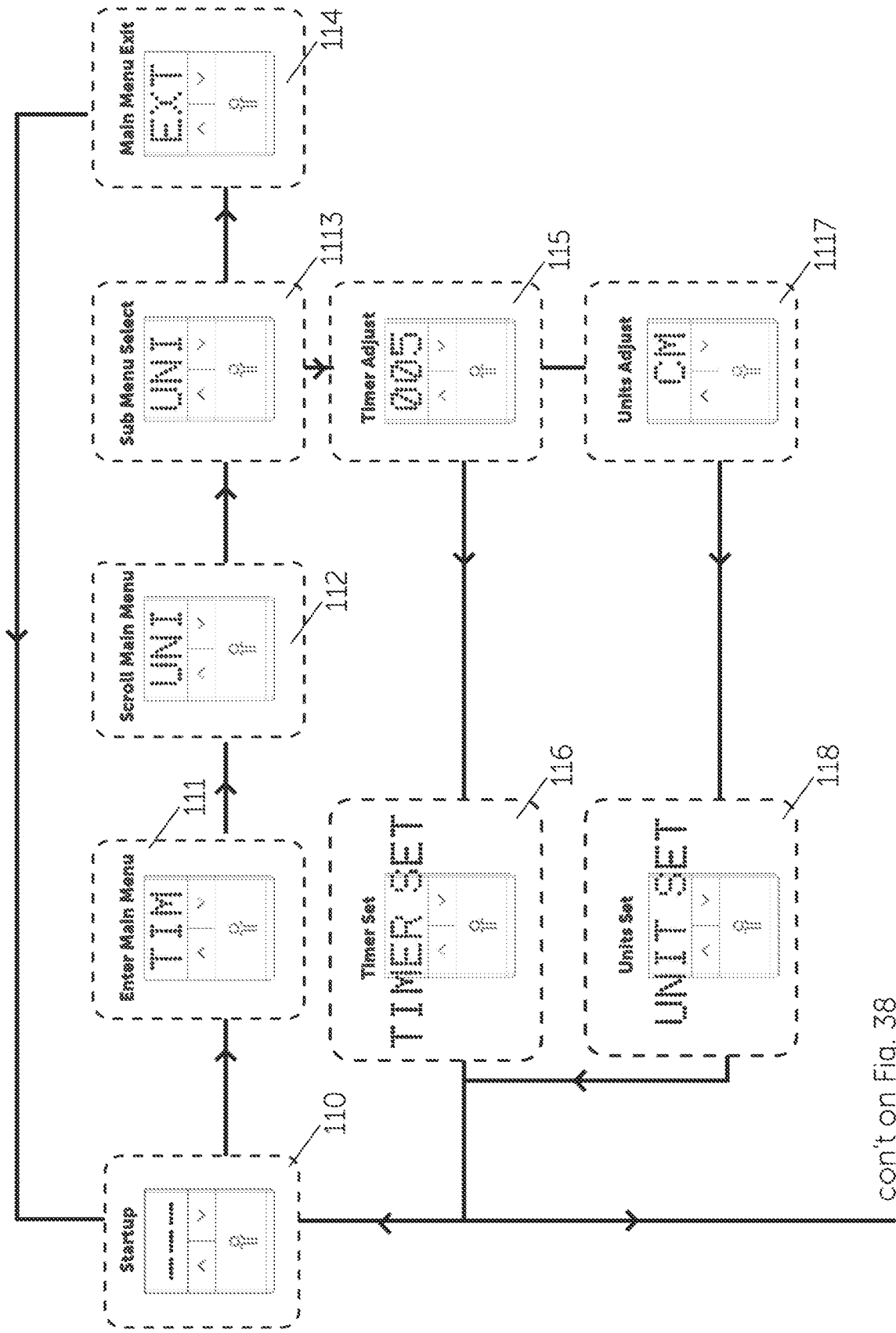


FIG. 36



con't on Fig. 38

FIG. 37

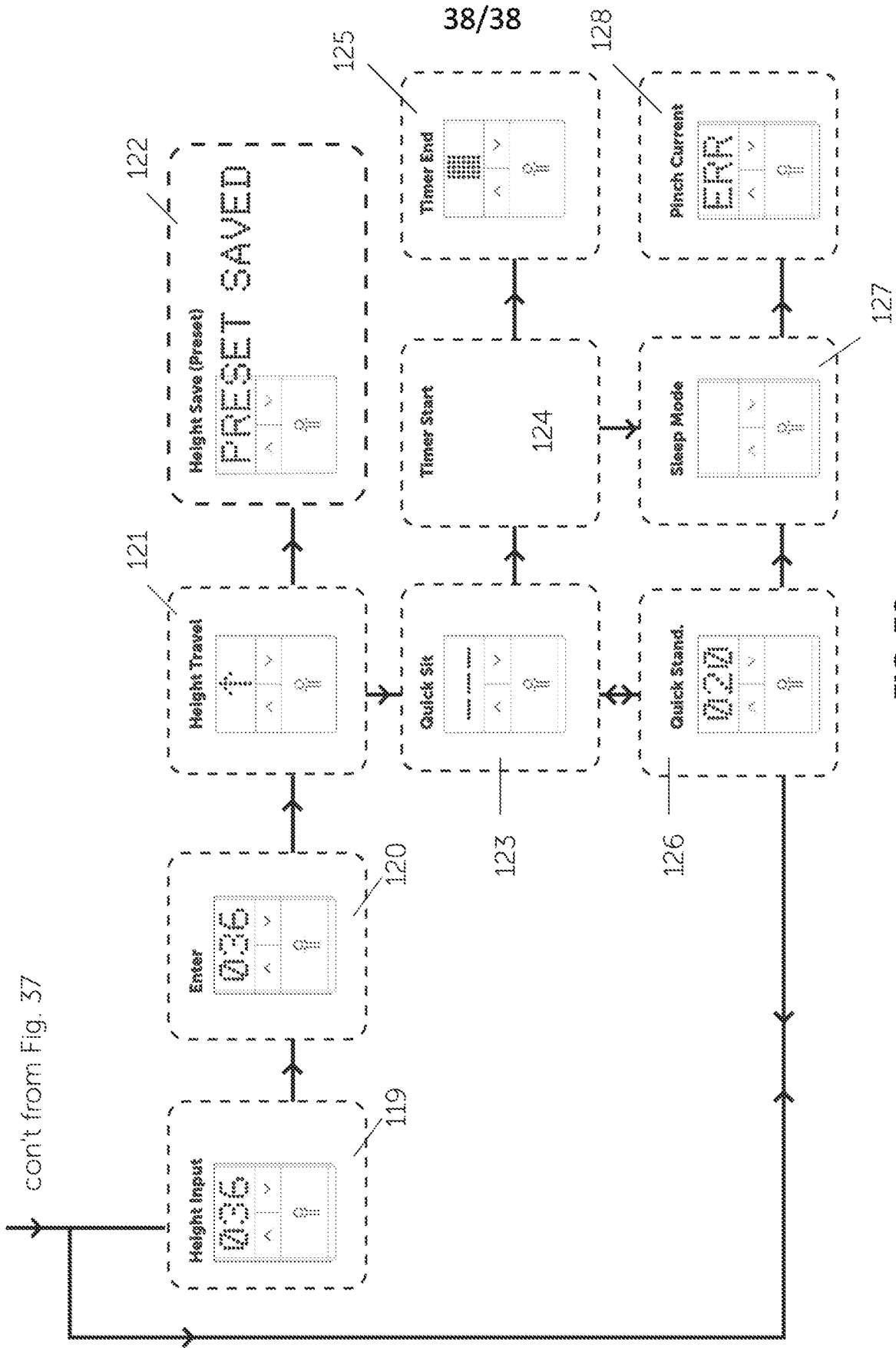


FIG. 38

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/AU2017/050867**

## A. CLASSIFICATION OF SUBJECT MATTER

**A47B 21/02 (2006.01) A47B 9/16 (2006.01) B66F 7/06 (2006.01)**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPOQUE 5.20; PATENW: IPCs and CPCs (A47B9/00, A47B21/00, A47B2021/00, A47B2200/00, A47B2021/0307, A47B21/0314, A47B2021/0321, A47B2021/0364, A47B2200/037, A47B2200/039, A47B2200/004, B66F7/00, B66F11/00, B66F13/00) &amp; keywords (screw, actuator, sit, stand, adjust, platform, desk, scissor, keyboard, monitor, computer) and similar terms/combinations. Auspat &amp; Espacenet: Inventor name &amp; Applicant name: ANGELINI, Daniel Paul; SIM, Robert/MOVI WORKSPACE. Google Patents: Keywords (half, scissor, platform, adjustable, height, desk, readout, collapsed, starting, cam) and similar terms/combinations.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

 Further documents are listed in the continuation of Box C See patent family annex

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search  
26 October 2017Date of mailing of the international search report  
26 October 2017

## Name and mailing address of the ISA/AU

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Email address: pct@ipaustralia.gov.au

## Authorised officer

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AUSTRALIAN PATENT OFFICE  
(ISO 9001 Quality Certified Service)  
Telephone No. +61399359660

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
the subject matter listed in Rule 39 on which, under Article 17(2)(a)(i), an international search is not required to be carried out, including
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

**See Supplemental Box for Details**

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.

C (Continuation).

DOCUMENTS CONSIDERED TO BE RELEVANT

**PCT/AU2017/050867**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 4575975 A (EISENBERG) 18 March 1986 Abstract lines 1-5, 11, Column 1 lines 15-29, Column 3 lines 14-15, 17-20, Figure 1, 9-10 Abstract lines 1-5, 11, Column 1 lines 15-29, Column 3 lines 14-15, 17-20, Figure 1, 9-10	1-7 8-20, 23-35
X Y	US 9049923 B1 (STAND TALL, LLC.) 09 June 2015 Abstract line 1, Column 1 lines 36-39, Column 4 lines 45-54, Figures 1-3 Abstract line 1, Column 1 lines 36-39, Column 4 lines 45-54, Figures 1-3	1, 21 22
Y	US 3350065 A (MANKEY) 31 October 1967 Column 6 lines 13-16, 42-75, Column 7 lines 1-10 Figures 5-6	8-11, 30-33
Y	US 2008/0203865 A1 (CHOVINARD et al.) 28 August 2008 Paragraph [0004] lines 4-7, Figures 1-8	12-20, 34-35
Y	US 5323695 A (BORGMAN et al.) 28 June 1994 Abstract lines 6-8, Column 1 lines 6-9, Column 2 lines 14-20, Column 10 lines 12-20, Column 11 lines 4-10, Column 13 lines 35-36, Column 16 lines 1-11, Figures 8-10	14-20, 22
Y	US 2005/0167548 A1 (BENDEN et al.) 04 August 2005 Figures 1A-3E, 8	23-35

**Supplemental Box****Continuation of: Box III**

The specification does not comply with Section 40(4) because the claims do not relate to one invention only. I have found different inventions based on the following features that separate the claims into distinct groups:

Group A: Claims 1-20 and 23-35 are directed to an adjustable desk mountable workstation comprising: a platform adapted to support a computer keyboard; and a support structure for standing or mounting on a desk and on which the platform is disposed, the support structure being adjustable so as to alter the height of the platform above the desk. An adjustable support structure is specific to this group of claims.

Group B: Claims 21-22 are directed to a method of operating a desk mountable workstation having an automatic height adjustable platform, the method comprising: receiving input from a user relating to a height of the platform; saving the inputted height into a memory of or linked with the workstation; receiving input from a user to adjust the platform height to the saved height; retrieving the saved height from the memory of or linked with the workstation; and automatically adjusting the height of the platform to the saved height. Automatic height adjustment according to user input is specific to this group of claims.

Unity of invention is only fulfilled when there is at least one “special technical feature” present in the claims that both:

- provides a technical relationship among all the claims; and
- makes a contribution over the prior art.

When there is no special technical feature common to all the claimed inventions there is no unity of invention.

In the above groups of claims, the identified distinguishing features may have the potential to make a contribution over the prior art, but are not common to all the claimed inventions and therefore cannot provide the required technical relationship.

The only features common between Groups A and B claimed inventions and which provide a technical relationship is a height adjustable desk mountable workstation platform.

However these common features do not make a contribution over the prior art because they are disclosed in:

D1, US 4575975 A (EISENBERG) 18 March 1986 (fig. 1, platform 2 on trestle frame).

Therefore in the light of this document this common feature cannot be a special technical feature. Therefore there is no special technical feature common to all the claimed inventions and the requirements for unity of invention are consequently not satisfied a posteriori.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/AU2017/050867**

This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

<b>Patent Document/s Cited in Search Report</b>		<b>Patent Family Member/s</b>	
<b>Publication Number</b>	<b>Publication Date</b>	<b>Publication Number</b>	<b>Publication Date</b>
US 4575975 A	18 March 1986	US 4575975 A	18 Mar 1986
		DE 3412549 A1	17 Oct 1985
US 9049923 B1	09 June 2015	US 9049923 B1	09 Jun 2015
US 3350065 A	31 October 1967	US 3350065 A	31 Oct 1967
		BE 705496 A	01 Mar 1968
		DE 1531343 A1	18 Dec 1969
		GB 1200771 A	05 Aug 1970
US 2008/0203865 A1	28 August 2008	US 2008203865 A1	28 Aug 2008
		US 7677518 B2	16 Mar 2010
		CA 2575492 A1	25 Jul 2008
		CA 2618957 A1	25 Jul 2008
US 5323695 A	28 June 1994	US 5323695 A	28 Jun 1994
		CA 2108479 A1	18 Oct 1992
		US 5259326 A	09 Nov 1993
		WO 9218033 A1	29 Oct 1992
US 2005/0167548 A1	04 August 2005	US 2005167548 A1	04 Aug 2005
		US 7048236 B2	23 May 2006
		CA 2486459 A1	29 Jul 2005

**End of Annex**