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(54) **Couch for physiotherapeutic treatment of persons**

(57) A couch (2) for physiotherapeutic treatment of persons or patients and comprising a basic support frame (4) provided with driving wheels (6) and a height adjustable upper frame system (10) comprising individually adjustable frame parts (35, 37, 39) for pillow parts (34, 36, 38) to support the legs, the torso, the head and possible the arm of the person or patient, and where the frame parts (35, 37) for the pillows for supporting the torso and the legs furthermore comprise means (40, 42) for angular

adjustment of these frame parts (35, 37), where the frame parts (35, 37) for the pillows (34, 36) for supporting the torso and the legs are provided with such adapted adjustment means (40, 42) that the frame part (37) for supporting the torso of the person or patient may take in a raised position in relation to the shoulder and head of the person or patient, while the frame part (35) for supporting the leg of the person or patient may take in a lowered angular position in relation to the frame part (37) for supporting the torso of the person or patient.

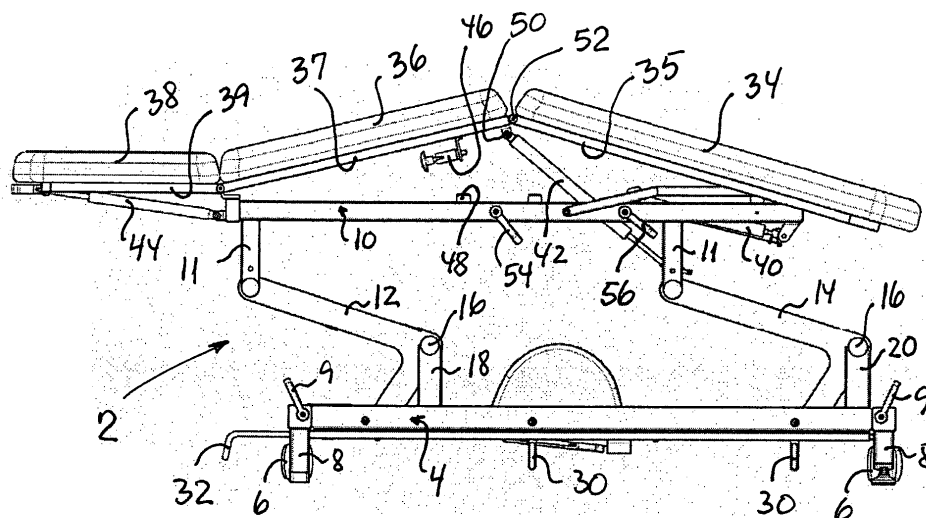


FIG. 4

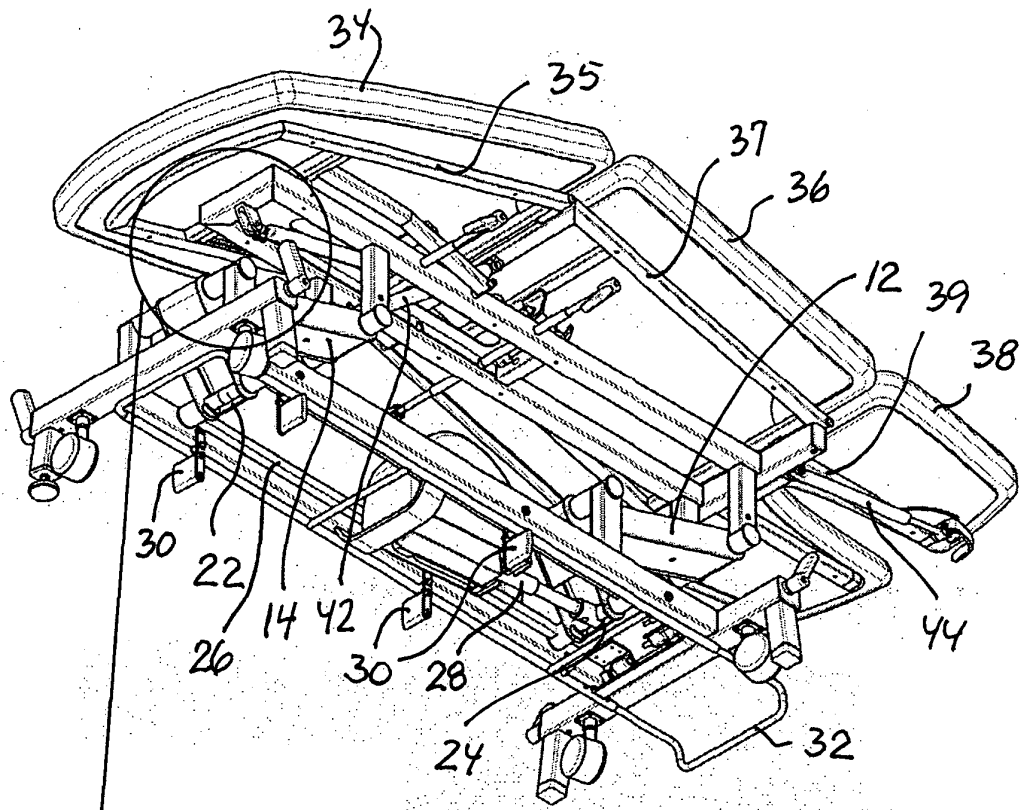


FIG. 5A

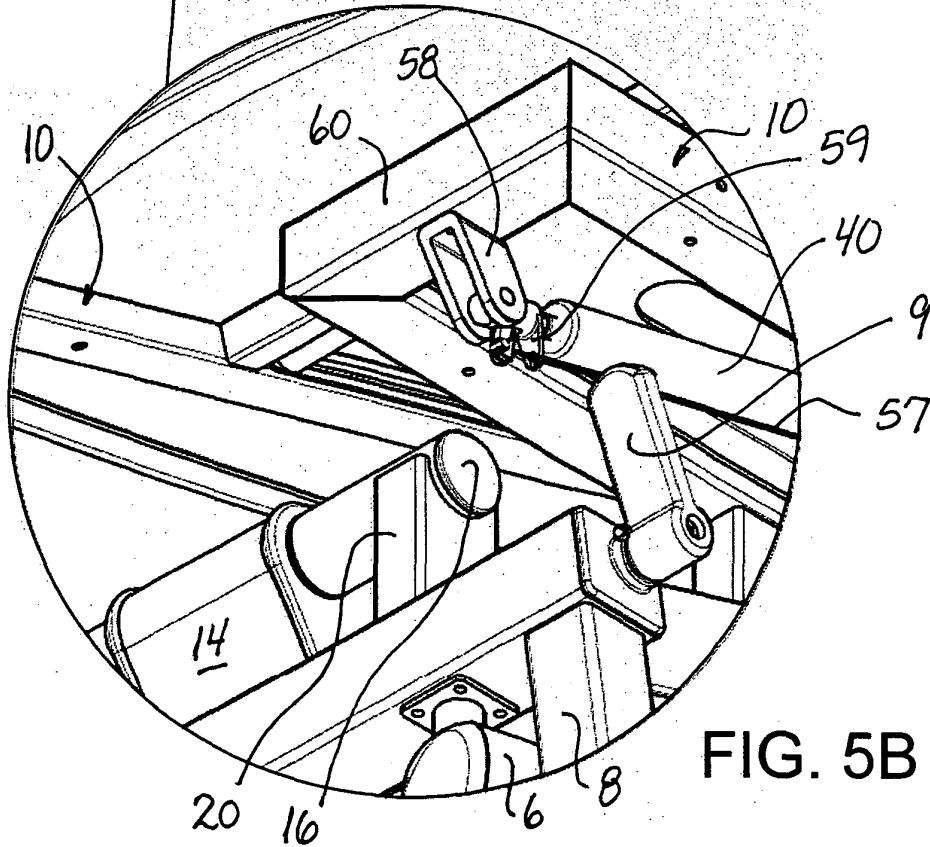


FIG. 5B

Description

Field of the Invention

[0001] The present invention relates to a couch for physiotherapeutic treatment of persons or patients and of the type described in the preamble to claim 1

Background of the Invention

[0002] Couches of this type are known in many embodiments for use by physiotherapeutic or massage treatment (massotherapy) of persons or patients in general or during rehabilitation after surgical treatments of the extremities in particular the legs.

[0003] However, another group of persons or patient may be treated on a couch according to the invention, namely persons or patient during rehabilitation suffering from temporally diseases such as cerebral haemorrhage which influences their ability to use their extremities or their mobility in general.

Object of the Invention

[0004] The present invention has for its purpose to provide an improved couch of the introductory described type and by means of which there may be obtained more comfort for the persons or patients during physiotherapeutic or massage treatment during rehabilitation after by way of example surgical treatments of the extremities in particular the legs.

Description of the Invention

[0005] The couch according to the invention is characterized in that the frame parts for the pillows for supporting the torso and the legs are provided with such adapted adjustment means that the frame part for supporting the torso of the person or patient may take in a raised position in relation to the shoulder and head of the person or patient, while the frame part for supporting the leg of the person or patient may take in a lowered angular position in relation to the frame part for supporting the torso of the person or patient.

[0006] By simple technical provisions is hereby obtained more comfortable couch for the persons or patients during physiotherapeutic or massage treatment during rehabilitation after by way of example surgical treatments of the extremities in particular the legs.

[0007] Furthermore there is obtained an improved couch by means of which there is provided improved and flexible possibilities for arrangement of the persons or patients in optimal treatment positions.

[0008] In practice the frame part for supporting the legs of the person or patient may be used for supporting the back or torso of the person or patient, while the frame part for supporting the torso in such case is used for supporting the legs of the person or patient or in other words

the person or patient is treated on the couch in an inverted position, where the normal frame part for supporting the head of the person or patient is used as a foot support.

[0009] Appropriately, the couch according to the invention is provided such that said adjustment means for the frame parts for the pillows for supporting the torso and the legs is furthermore such provided that the frame part for the pillow for supporting the legs may be raised without also raising the frame part for the pillow for supporting the torso until the frame part for the pillow for supporting the legs is aligned with the frame part for the pillow for supporting the torso, and that the aligned frame parts thereafter may be raised or lowered together in a coordinated manner.

[0010] Preferably, the couch according to the invention is provided such that said adjustment means for the frame parts for the pillow for supporting the torso and the legs comprises displacement force means preferably in the form of gas-spring cylinders, one of which extending between a transverse arm member of said basic support frame and a rear end part of said frame part for the pillow for supporting the torso as this frame part furthermore is pivotably connected with the front end of said frame part for the pillow supporting the legs.

[0011] And furthermore the couch according to the invention may be provided such that said frame part for the pillow for supporting the legs comprises displacement force means preferably in the form of a gas-spring cylinder extending between a transverse arm member of said basis support frame and a rear end of said frame part for the pillow for supporting the legs, as said frame part furthermore is connected with a transverse arm member the opposite ends of which being guided in elongate slots in side panels of said frame part.

Description of the Drawing

[0012] The invention is described in more details in the following with reference to the accompanying drawing, in which:

- | | |
|--------|---|
| Fig. 1 | shows a plane view of an embodiment of a couch according to the invention - seen from the rear end thereof, |
| Fig. 2 | shows a plane view of the couch cf. Fig. 1 - seen from the left hand side as the rear end of the couch is at the right hand side of Fig. 2, |
| Fig. 3 | shows a plane view of the couch cf. Fig. 2 - seen from the rear end and with the torso and leg pillows lifted to a drainage position, |
| Fig. 4 | shows a plane view of the couch cf. Fig. 2 - seen from the left hand side and with the torso and leg pillows lifted to a drainage position, |

- Fig. 5A shows a perspective view of the couch cf. Fig. 2 - seen from below and with the torso and leg pillows lifted to a drainage position,
- Fig. 5B shows an enlarged perspective view of encircled details of Fig. 5A,
- Fig. 6A shows a perspective view of the couch cf. Fig. 2 - seen from below and with the torso and leg pillows lowered to a position without drainage,
- Fig. 6B shows an enlarged perspective view of encircled details of Fig. 6A,
- Fig. 7 shows a plane view of the couch cf. Fig. 2 - seen from the rear end and with the rear pillow in a raised top position,
- Fig. 8 shows a plane view of the couch cf. Fig. 2 - seen from the left hand side and with the rear pillow in a raised top position,
- Fig. 9A shows a perspective view of the couch cf. Fig. 2 - seen from below and with the rear pillow in a plane lowered position,
- Fig. 9B shows an enlarged perspective view of encircled details of Fig. 9A,
- Fig. 10A shows a perspective view of the couch cf. Fig. 2 - seen from below and with the rear pillow in a raised top position,
- Fig. 10B shows an enlarged perspective view of encircled details of Fig. 10A,
- Fig. 11 shows a perspective view of the couch cf. Fig. 2 - seen from above and with a front pillow with an opening for the face of a person or patient,
- Fig. 12 shows a perspective view of another embodiment for the couch according to the invention - seen from above and with three front pillows, namely a central pillow with an opening for the face of a person or patient and side pillows, which are supported on separate adjustable supports,
- Fig. 13A shows a perspective view of the upper frame system of the couch without pillows and seen in a raised drainage position,
- Fig. 13B shows an enlarged perspective view of encircled detail of Fig. 13A,
- Fig. 14A shows a perspective view of the upper frame

system of the couch without pillows and where the torso and the leg portion of the frame system is raised to a drainage position,

Fig. 14B shows an enlarged perspective view of encircled details of Fig. 14A,

Fig. 15A shows a perspective view of the upper frame system of the couch without pillows and where the leg portion of the frame system is raised to a top position,

Fig. 15B shows an enlarged perspective view of encircled details of Fig. 15A,

Fig. 16A shows a perspective view of the upper frame system of the couch without pillows and where the respective frame parts are in a lower plane position, and

Fig. 16B shows an enlarged view of encircled details of Fig. 16A.

Detailed Description of the Invention

[0013] The couch 2 shown in Figs 1-3 comprises a basic support frame 4 provided with driving wheels 6 and height adjustable legs 8 lifting the driving wheels 6 free from the floor operated by handle or pedals 9 in order to fixate the couch 2 in a wanted position on the floor.

[0014] In a distance above the basic support frame 4 the couch 2 comprises a frame support structure 10, which by means of vertical arm members 11 is supported in height adjustable manner on angular arm members 12, 14 being pivotally mounted at transverse shaft members 16 between vertical upstanding carrying arm members 18, 20 of the basic support frame 4.

[0015] Lower end parts 22, 24 of said angular arm members 12, 14 are mutually connected at both sides by means of connection rods 26, and the lower end part 24 is furthermore connected to displacement force means, preferably in the form of an electric actuator 28 operated by plate-shaped activation means 30, for the height adjustment of the frame support structure 10 by rotation of said angular arm members 12, 14 around said transverse shaft members 16.

[0016] The plate-shaped activation means 30 are positioned at both side of the basic support frame 4 and connected to a common loop rod 32 stretching along the basic support frame 4, so that the height adjustment of the frame support structure 10 by activation of the electric actuator 28 may be operated from more positions including from the head end of the couch 2 by means of the loop rod 32.

[0017] The frame support structure 10 of the couch 2 may be equipped with suitable pillows by way of example in the form of a rear pillow 34 for supporting the legs, a

middle pillow 36 for supporting the back or torso and a pillow 38 for supporting the head.

[0018] In Fig. 4 is shown how the angular adjustment between the frame support structure 10 and further support frame parts 35, 37, 39 for the pillows 34, 36, 38 is carried out by means of gas-spring cylinders 40, 42, 44. The support frame part 37 for the middle pillow 36 is furthermore provided with a manual locking device 46 cooperating with a central locking hole in a the side of a transverse arm 48.

[0019] The gas-spring cylinder 42 extends between a transverse arm between the vertical arm members 11 and a central hinge point 50 near hinge connections 52 between the support frame part 37 and the support frame parts 35. The activation of the gas-spring cylinder 42 is effected by operating a handle 54, while the activation of the gas-spring cylinder 40 is effected by operating a handle 56 and a wire 57 connected to a piston release mechanism 59 (Figs. 5B and 6B).

[0020] The gas-spring cylinder 40 extends between a central part 58 (Figs. 5B and 6B) a rear end part 60 of the frame support structure 10 and a central part of a transverse arm 62 (Fig. 14A) of an arm structure 64, which at an upper end is provided with a transverse, tubular arm member 66, which at opposite ends is provided with engagement pins 68 engaging in elongate slots 70 provided at a middle part of the support frame part 35 in both insides thereof (Fig. 10B).

[0021] The operation of the gas-spring cylinder 44 for the adjustment of the head part 39 of the frame support structure 10 is effected by means of a handle 79 (Figs. 13A and other similar figures), which may be operated from the front end of the couch 2.

[0022] Fig. 11 shows a perspective view of the embodiment of the couch 2 according to the invention comprising three pillows 34, 36 and 38, while the modified couch 72 shown in Fig. 12 is provided with five pillows 34, 36 and a narrow face pillow 74 together with narrow side pillows 76 for supporting the arms of the person being treated. Therefore each of the side pillows 76 are supported on a certain support arm system 78 so that the side pillows may be lowered and swung in relation to the narrow face pillow 74.

[0023] As shown in the Figs. 13A, 14A, 15A and 16A the couches 2 and 72 may be used with the shown variations of the adjustment of the support frame structure 10 for supporting the respective pillows 34, 36, 38, 74, 76.

[0024] Finally it should be mentioned that by way of example the couch 2 as shown with the adjustment according to Figs. 7, 8, 10A the rear part of the couch 2 and the pillow 34 is used for supporting the back of a person or patient under treatment by way of example the shoulders or the arms. In other words in this situation of use the person or patient is seated on the middle pillow 36 and the head or face pillow 38 may even in such case serve the purpose of supporting the feet of the person or patient being treated.

Claims

1. A couch (2, 72) for physiotherapeutic treatment of persons or patients and comprising a basic support frame (4) provided with driving wheels (6) and a height adjustable upper frame system (10) comprising individually adjustable frame parts (35, 37, 39) for pillow parts (34, 36, 38), to support the legs, the torso, the head and possible the arm of the person or patient, and where the frame parts (35, 37) for the pillows (34, 36) for supporting the torso and the legs furthermore comprise means for angular adjustment of these frame parts (35, 37), **characterized in that** the frame parts for the pillows for supporting the torso and the legs are provided with such adapted adjustment means that the frame part for supporting the torso of the person or patient may take in a raised position in relation to the shoulder and head of the person or patient, while the frame part for supporting the leg of the person or patient may take in a lowered angular position in relation to the frame part for supporting the torso of the person or patient.
2. A couch according to claim 1, **characterized in that** said adjustment means for the frame parts for the pillows for supporting the torso and the legs is furthermore such provided that the frame part for the pillow for supporting the legs may be raised without also raising the frame part for the pillow for supporting the torso until the frame part for the pillow for supporting the legs is aligned with the frame part for the pillow for supporting the torso, and that the aligned frame parts thereafter may be raised or lowered together in a coordinated manner.
3. A couch according to claim 1, **characterized in that** said adjustment means for the frame parts for the pillow for supporting the torso and the legs comprises displacement force means preferably in the form of gas-spring cylinders, one of which extending between a transverse arm member of said basic support frame and a rear end part of said frame part for the pillow for supporting the torso as this frame part furthermore is pivotably connected with the front end of said frame part for the pillow supporting the legs.
4. A couch according to claims 1 and 3, **characterized in that** said frame part for the pillow for supporting the legs comprises displacement force means preferably in the form of a gas-spring cylinder extending between a transverse arm member of said basis support frame and a rear end of said frame part for the pillow for supporting the legs, as said frame part furthermore is connected with a transverse arm member the opposite ends of which being guided in elongate slots in side panels of said frame part.

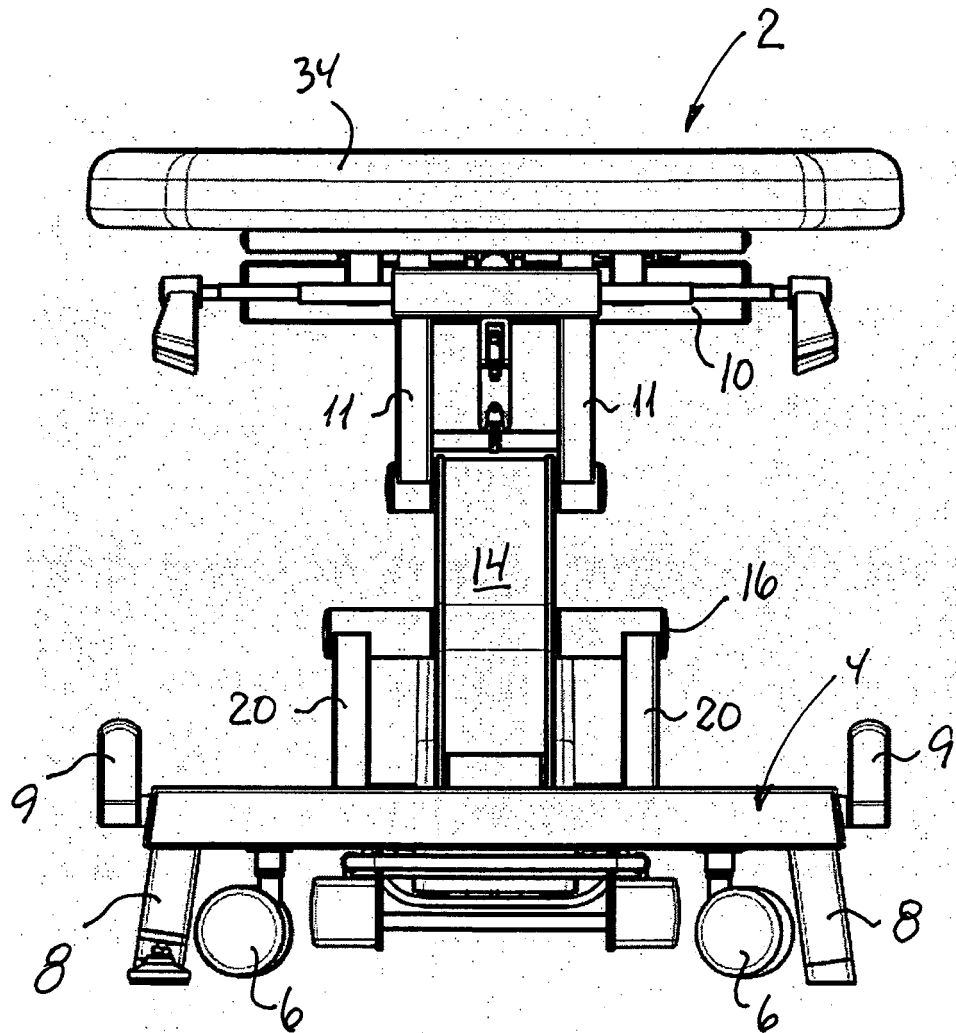


FIG. 1

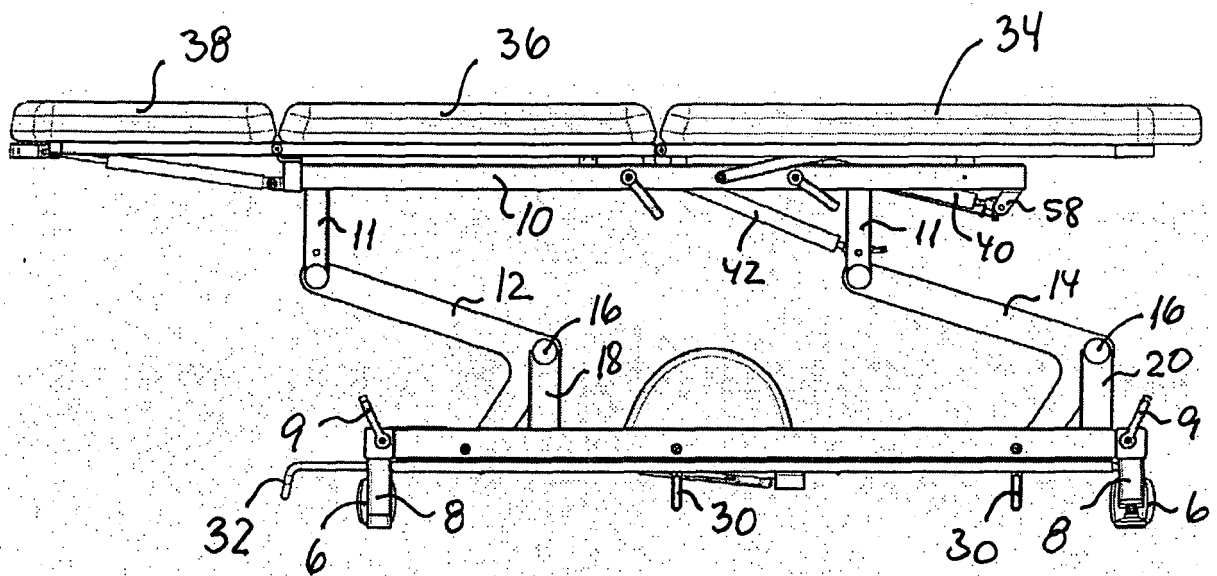


FIG. 2

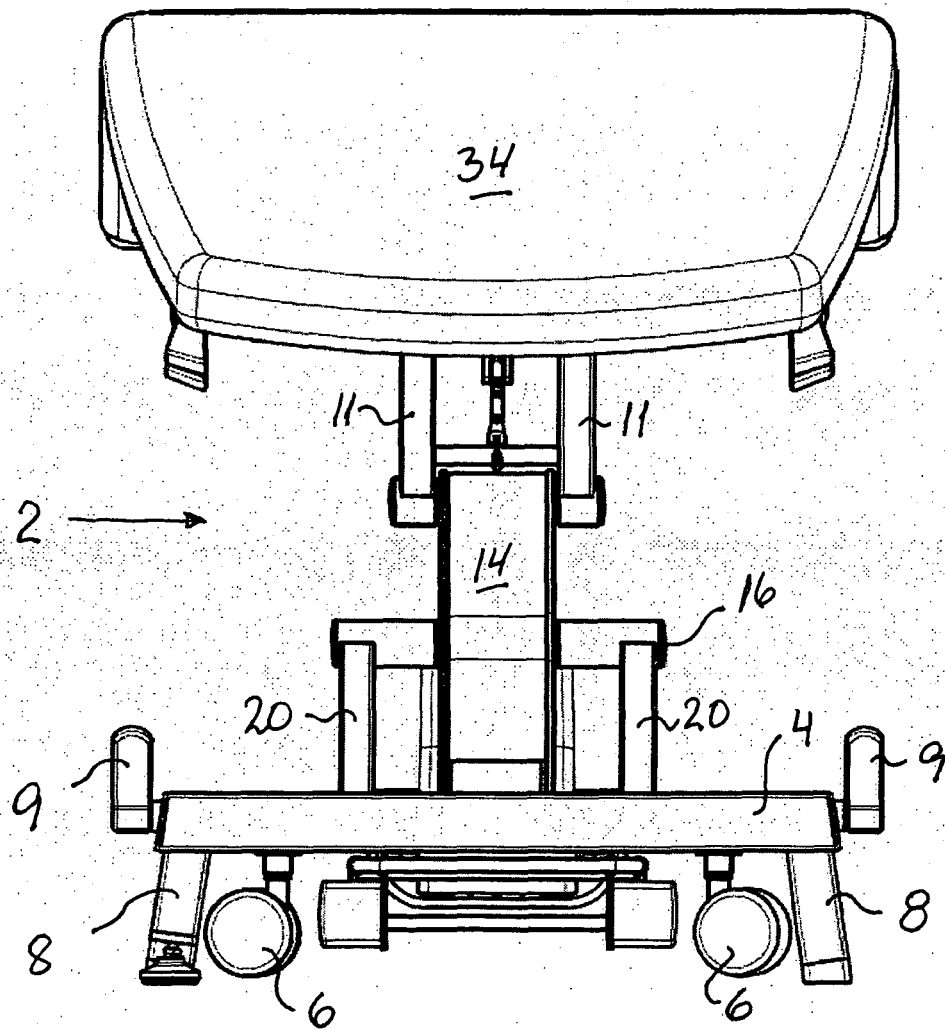


FIG. 3

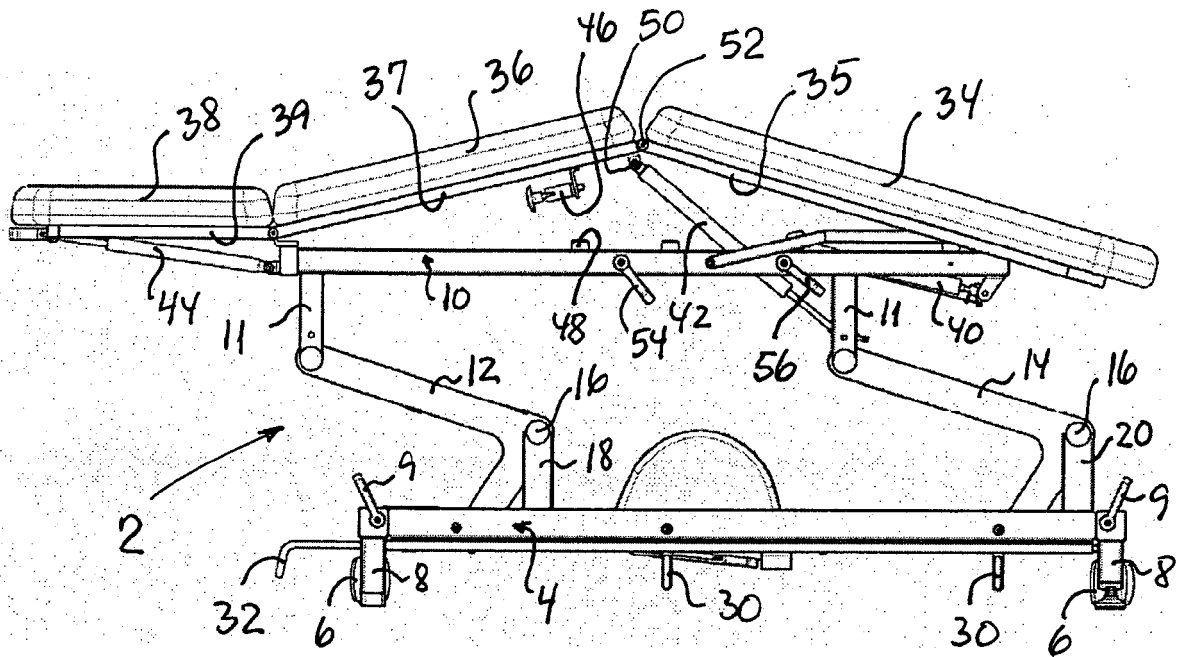


FIG. 4

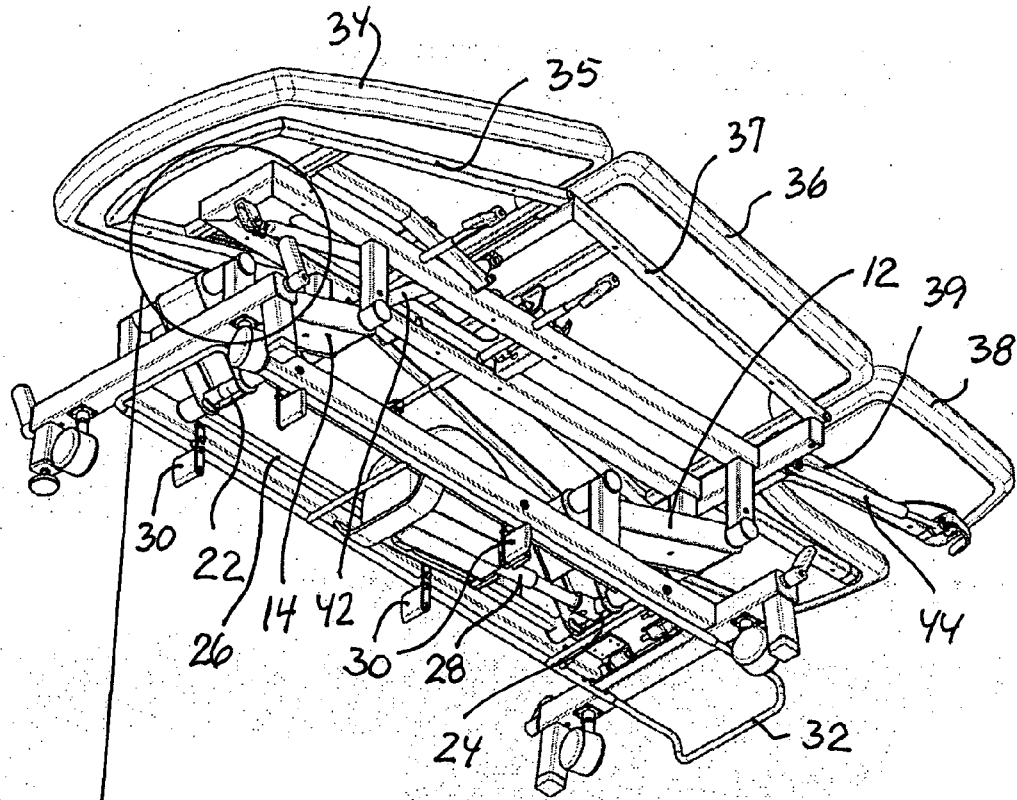


FIG. 5A

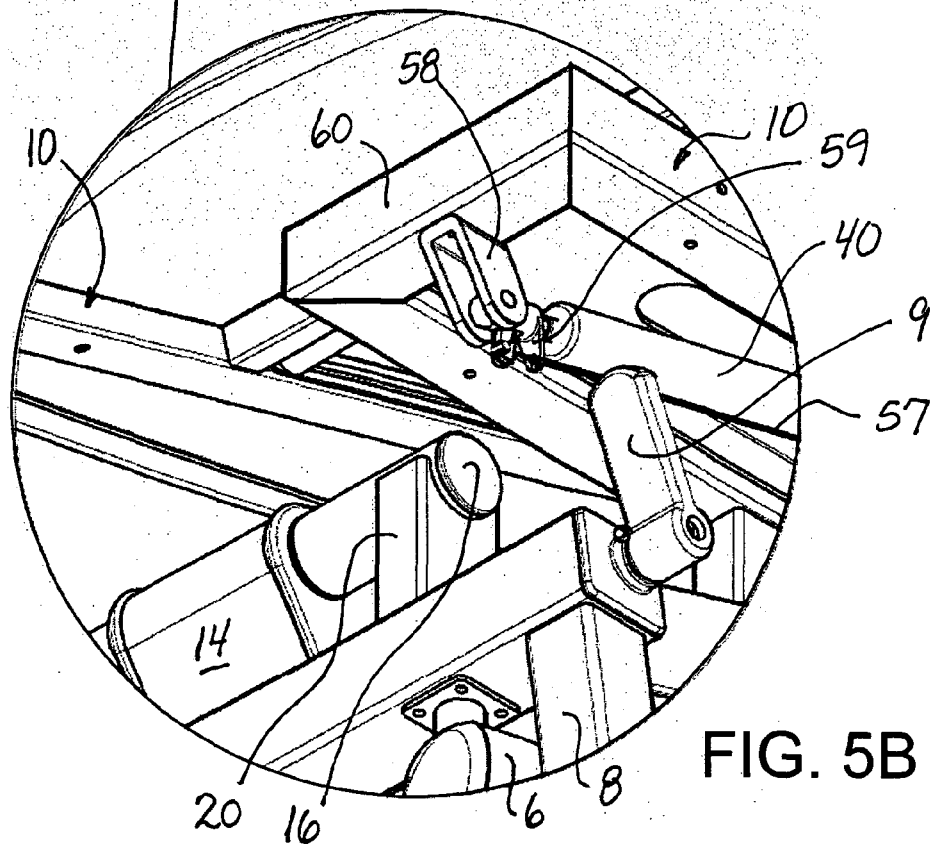


FIG. 5B

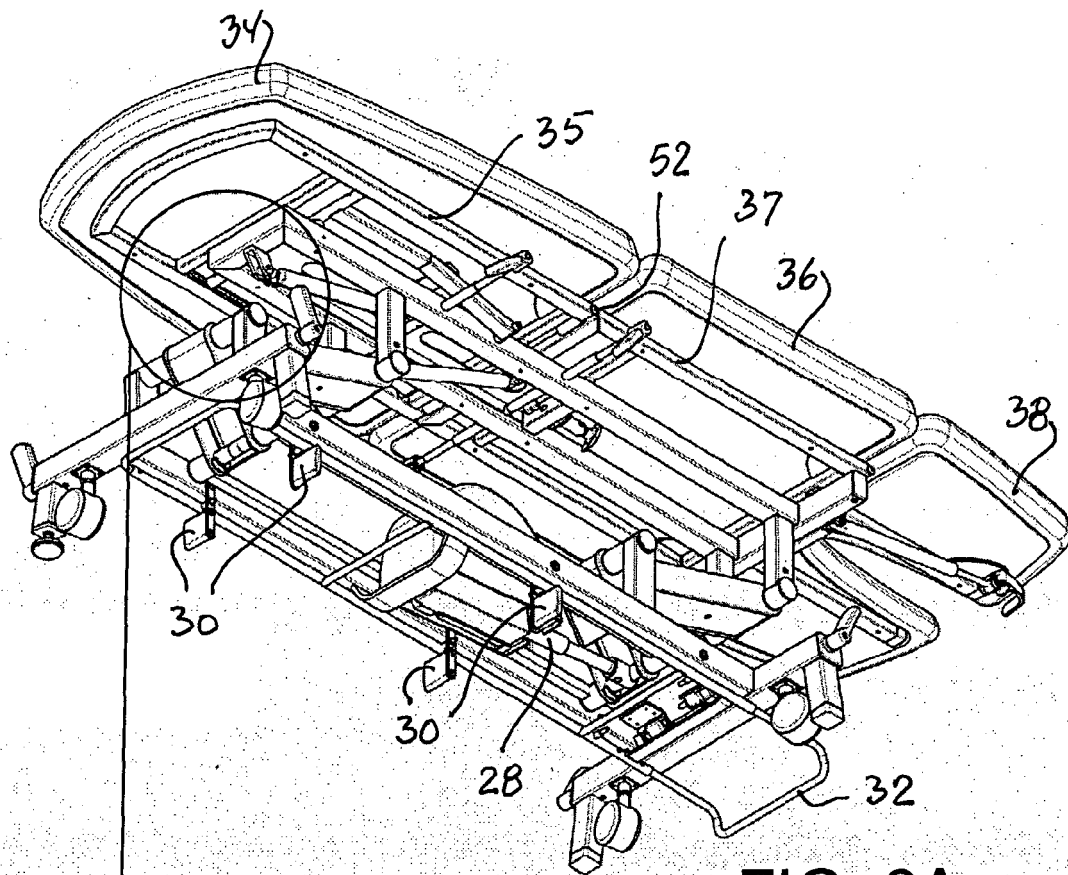


FIG. 6A

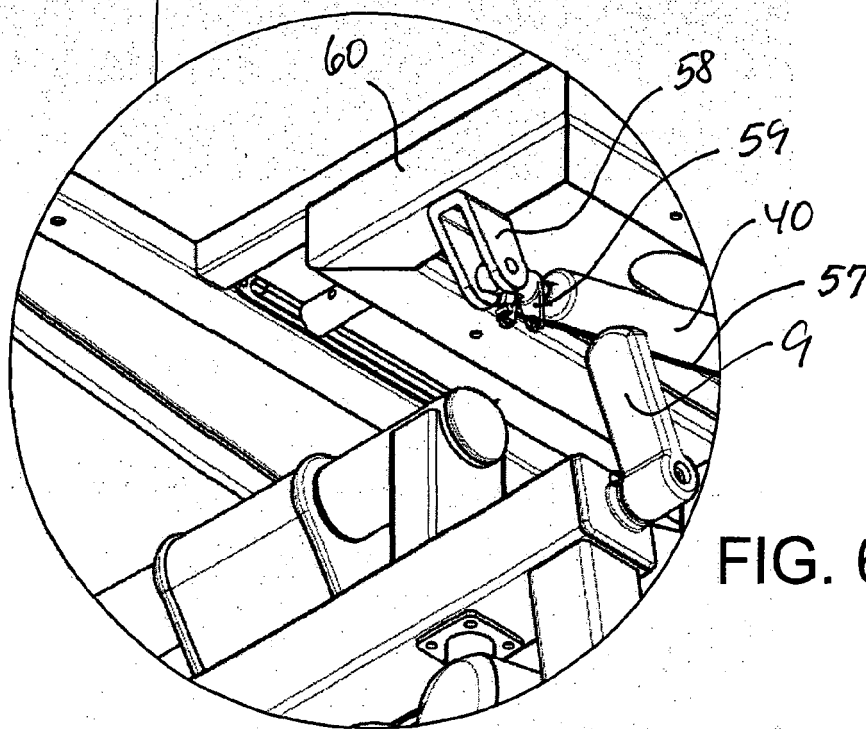


FIG. 6B

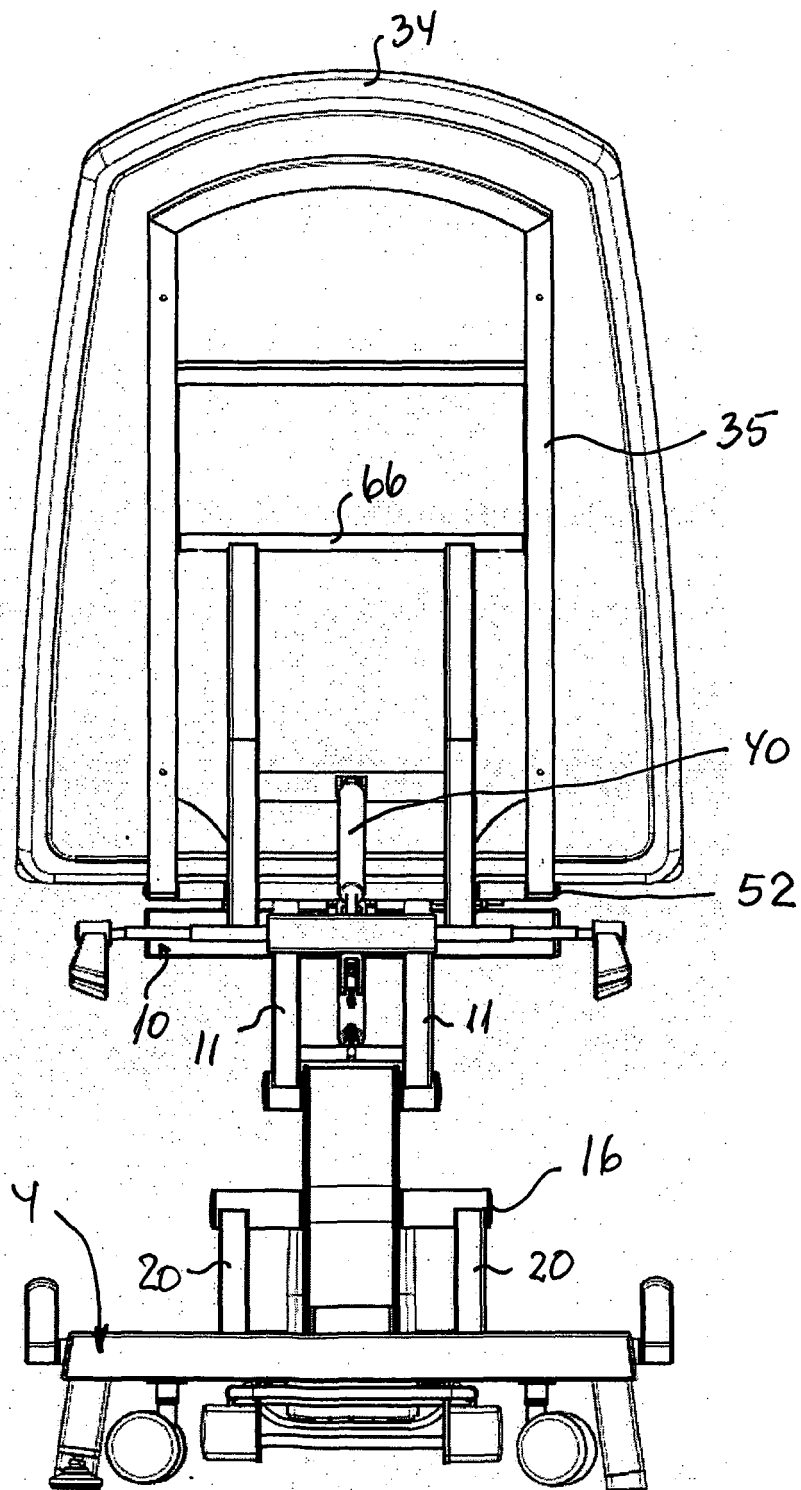


FIG. 7

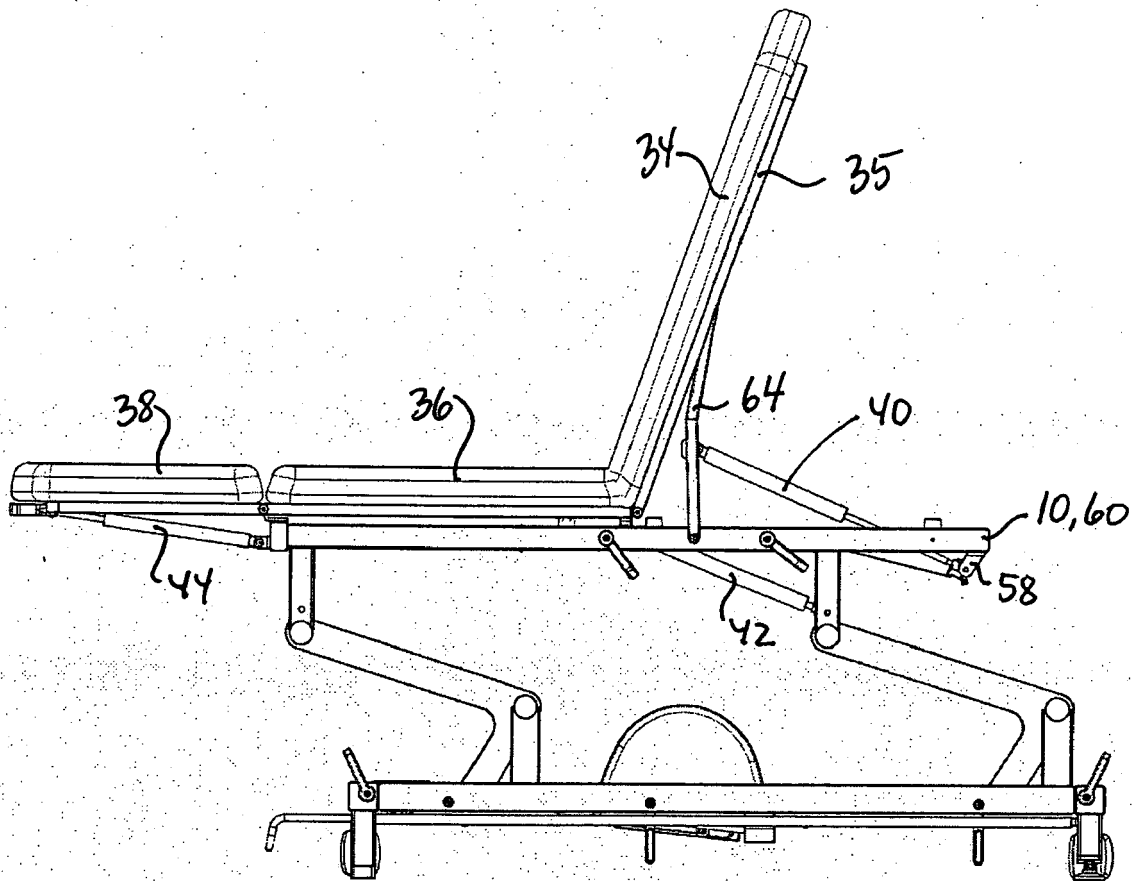


FIG. 8

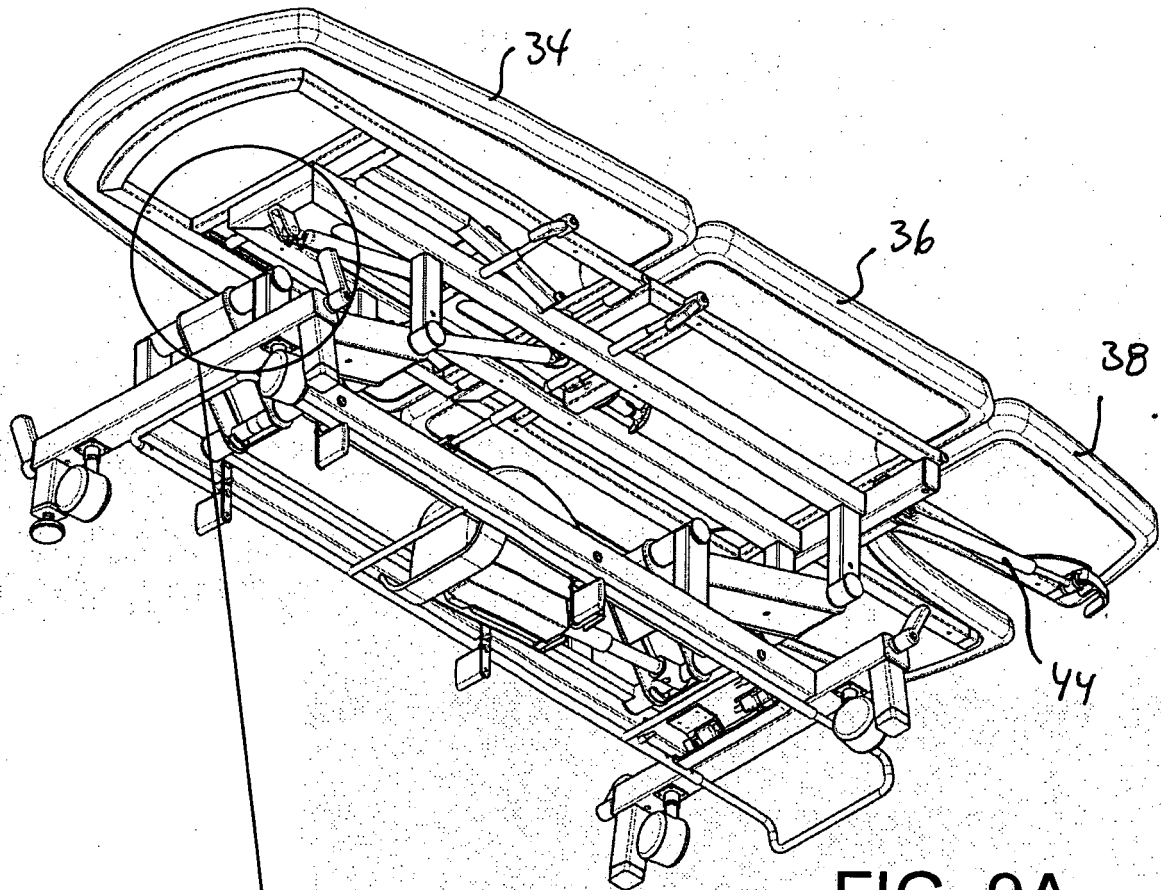


FIG. 9A

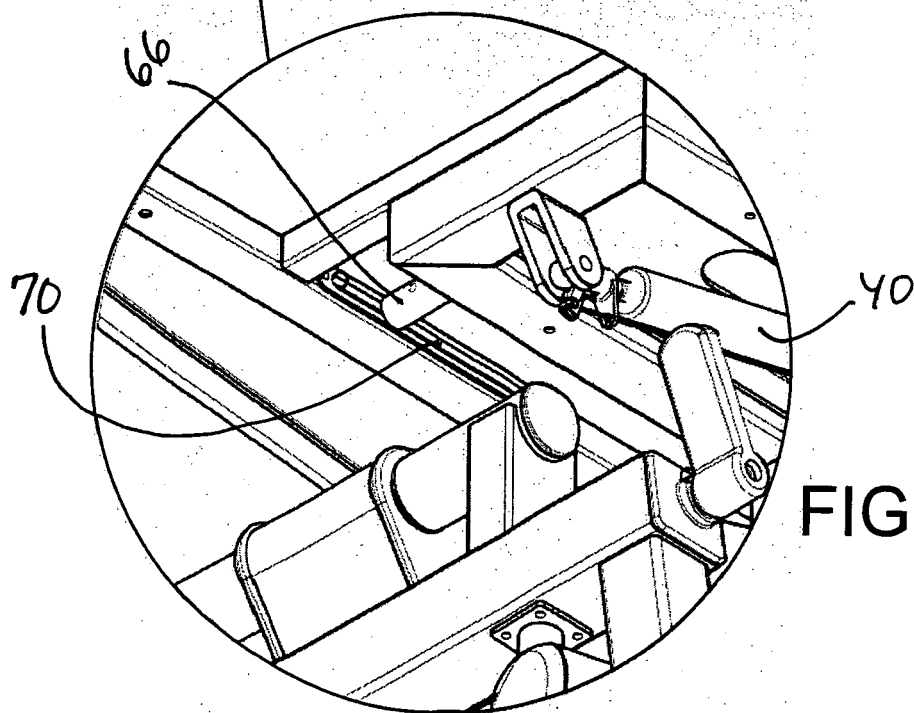


FIG. 9B

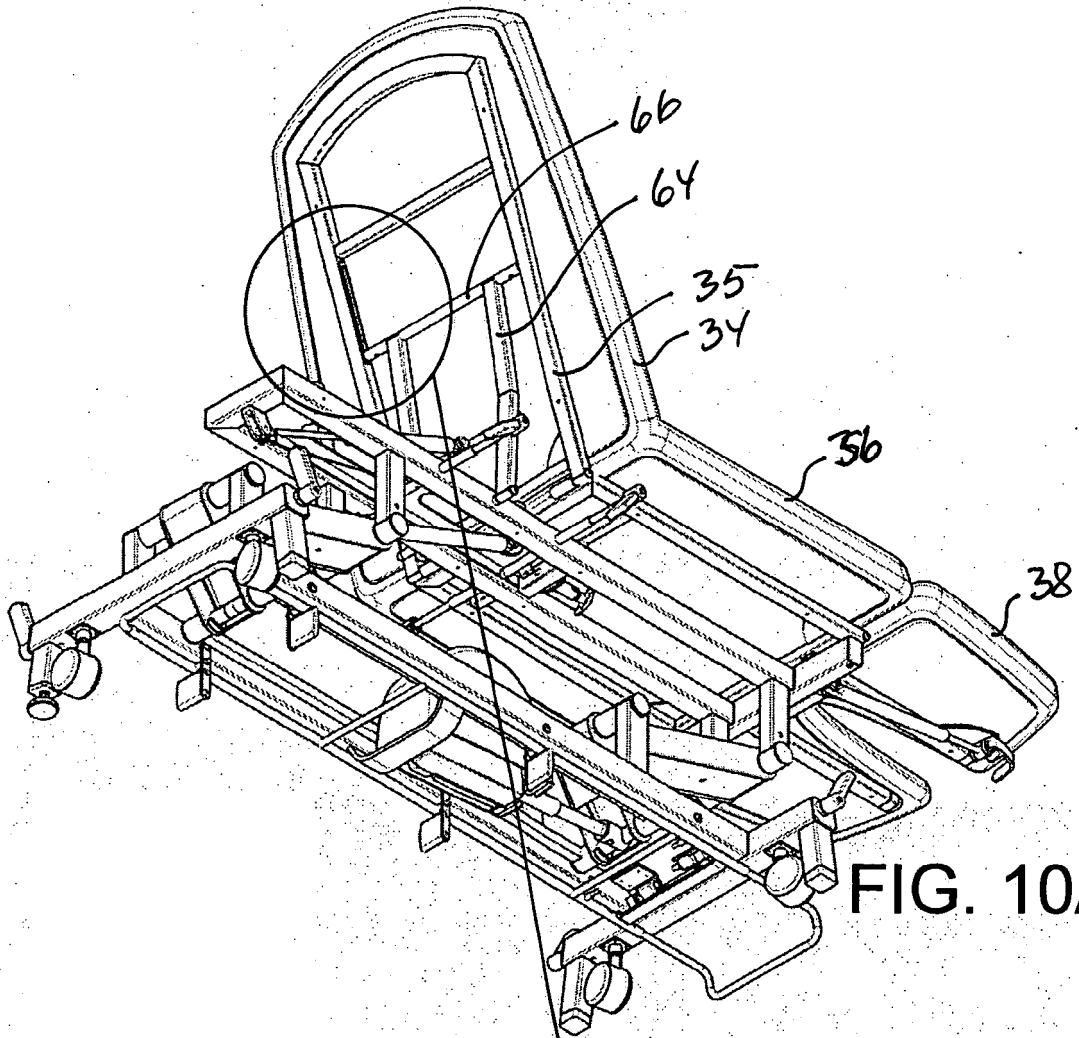


FIG. 10A

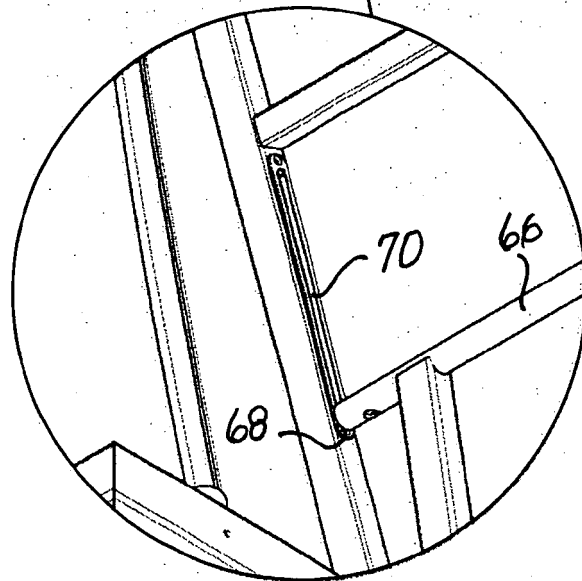


FIG. 10B

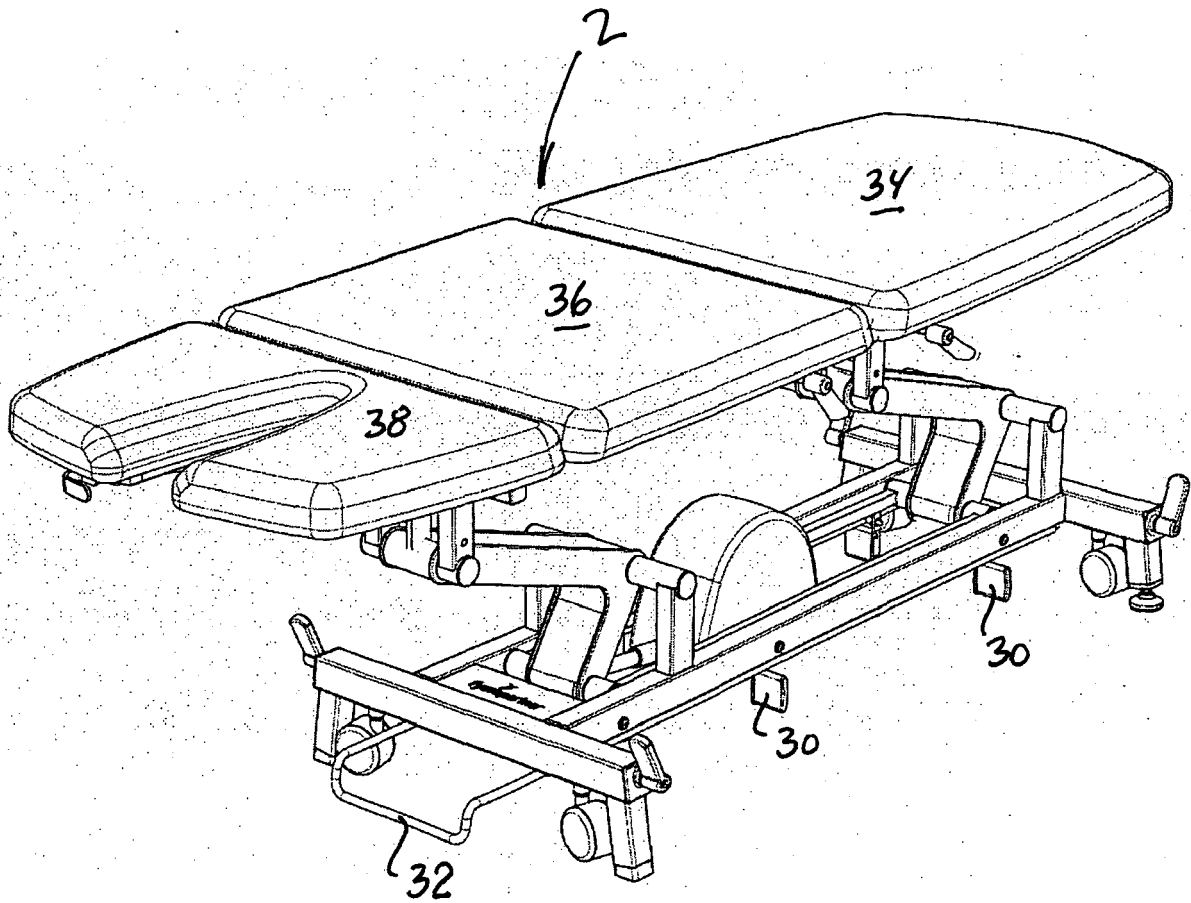


FIG. 11

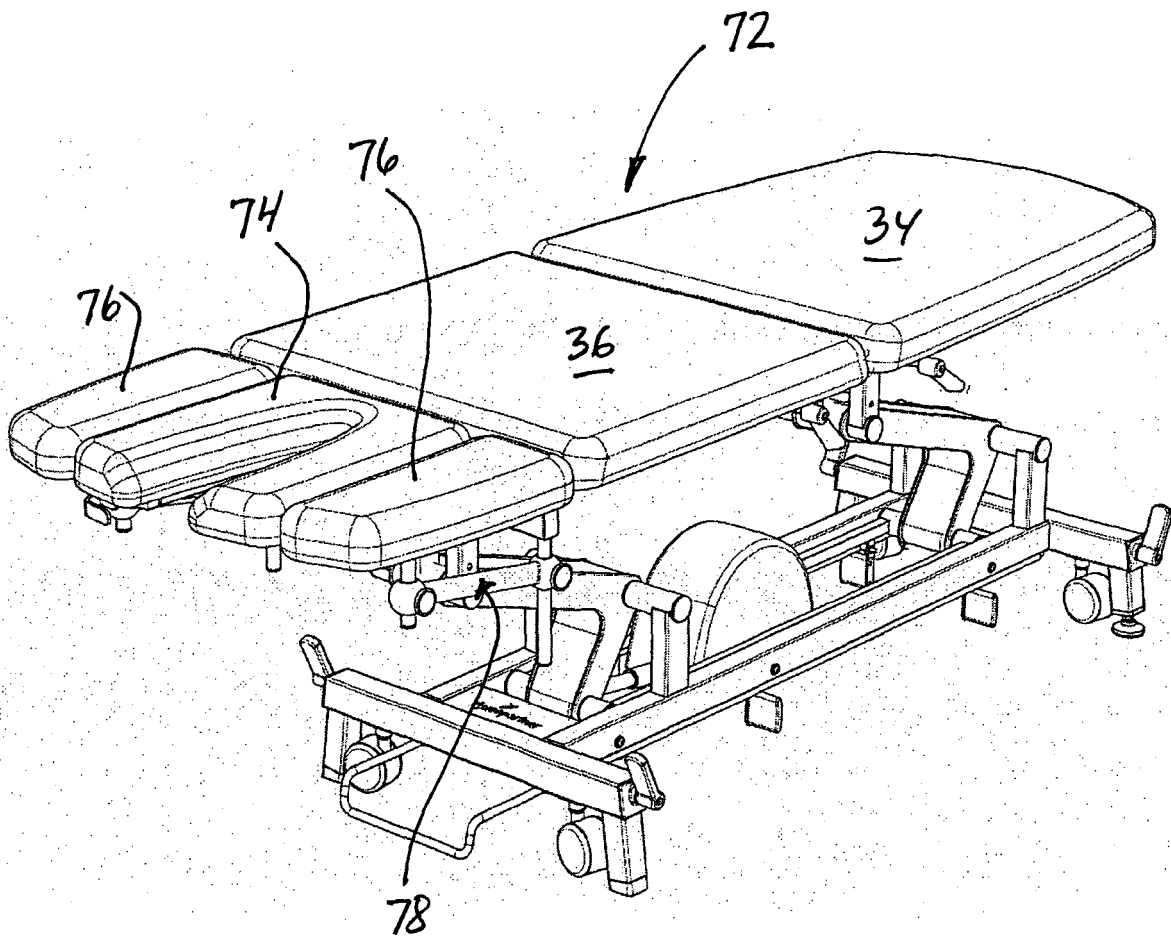


FIG. 12

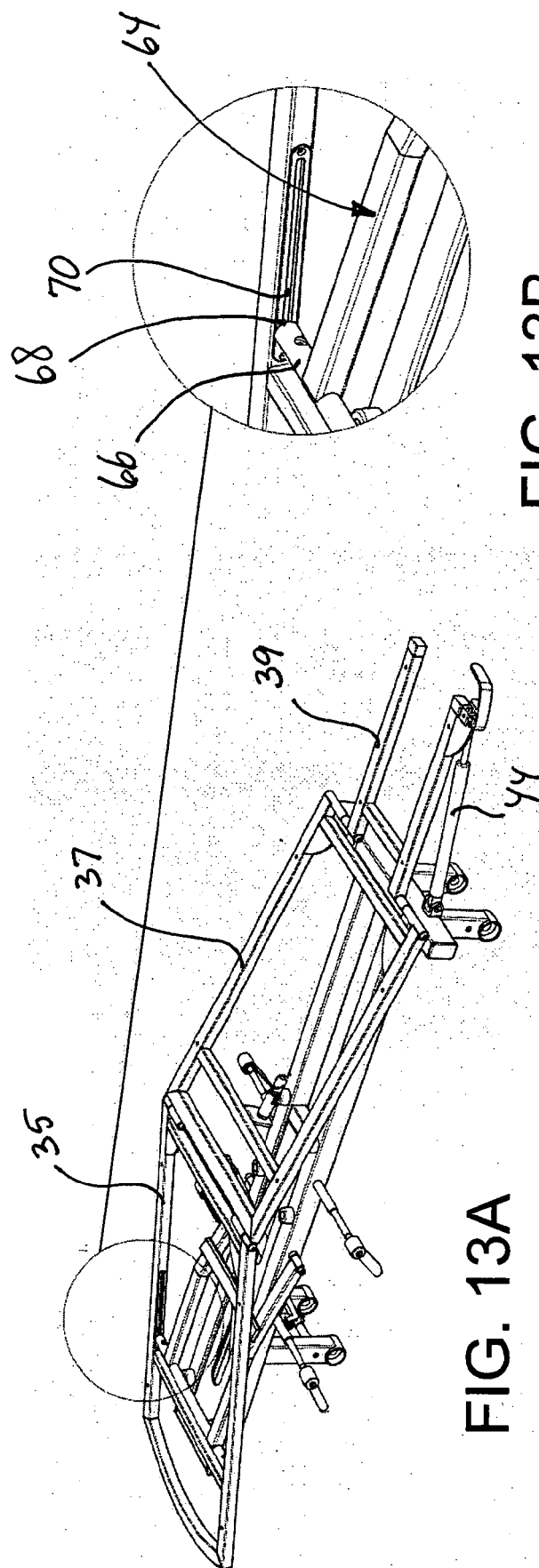


FIG. 13A

FIG. 13B

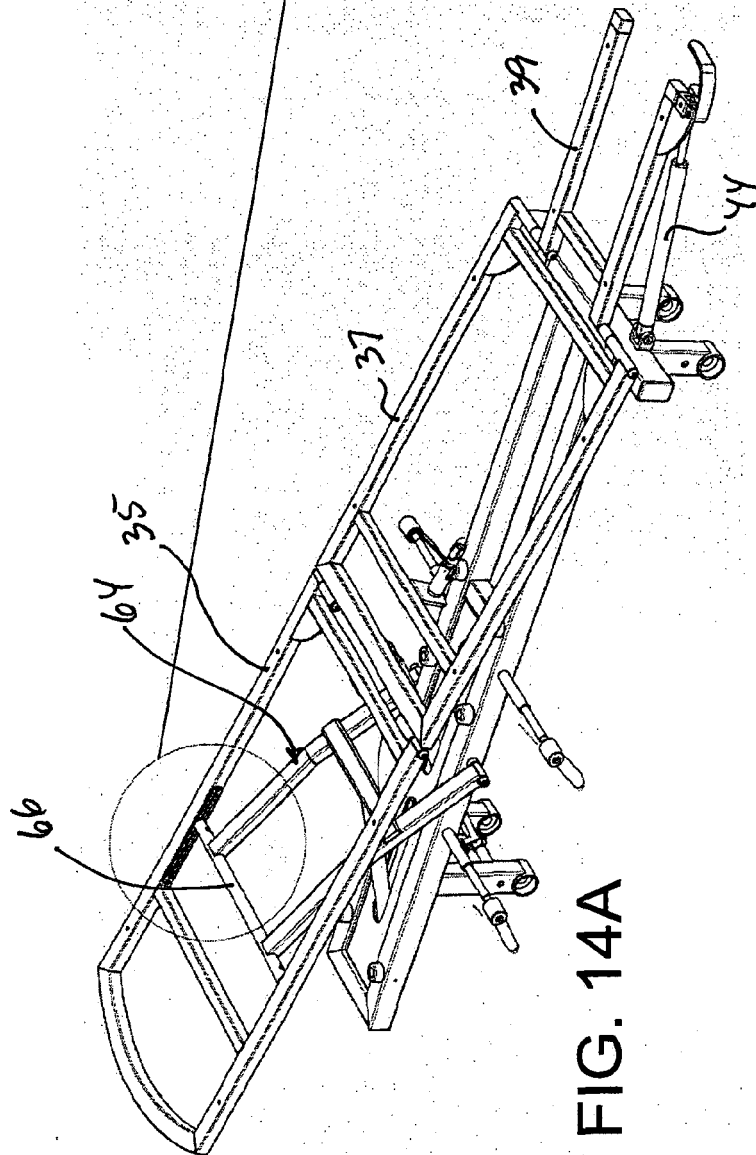


FIG. 14A

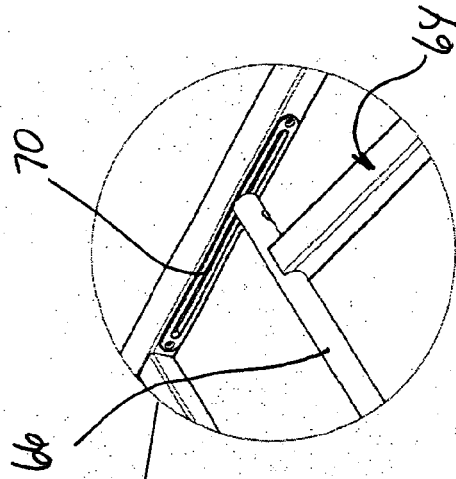


FIG. 14B

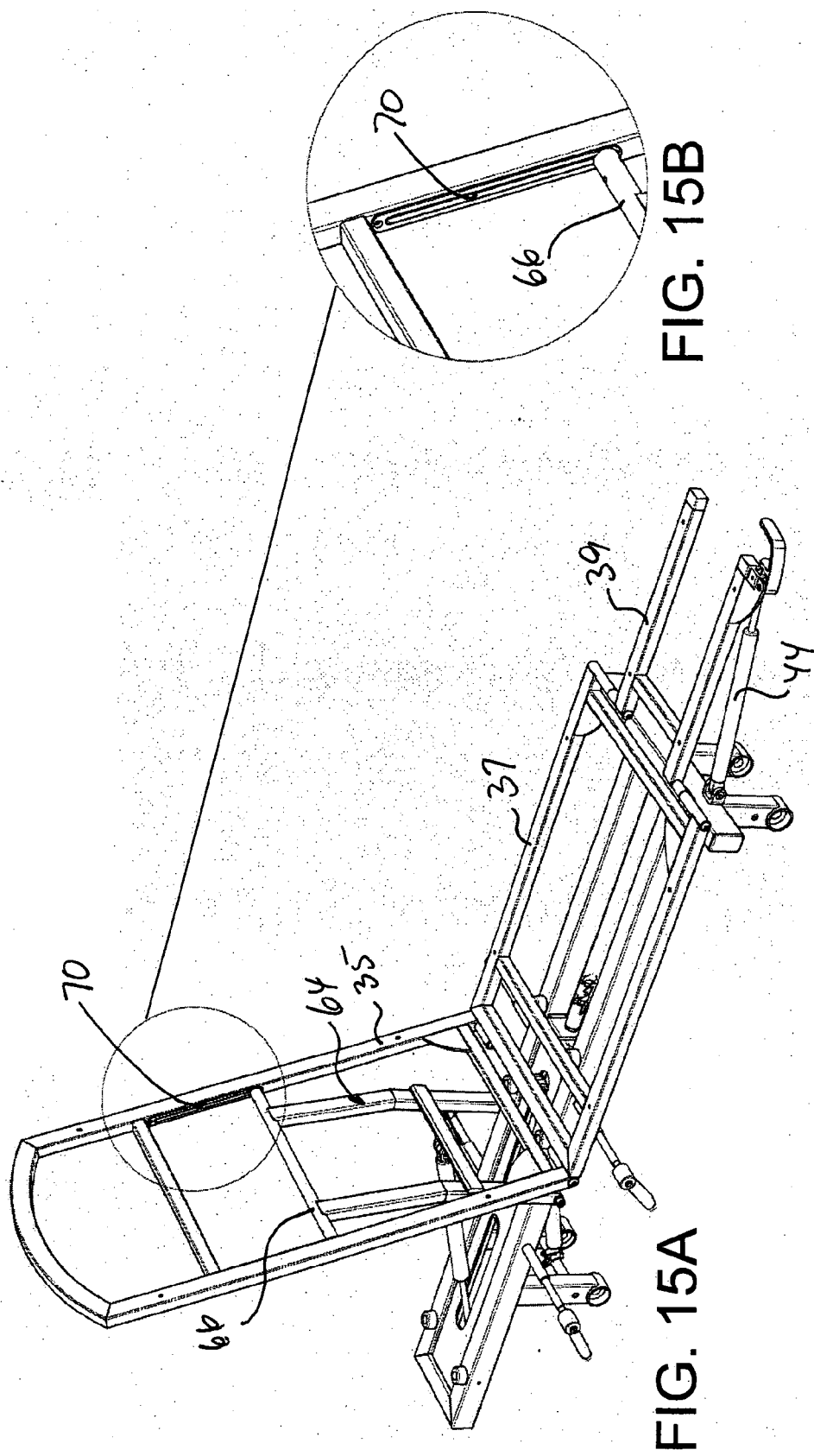


FIG. 15B

FIG. 15A

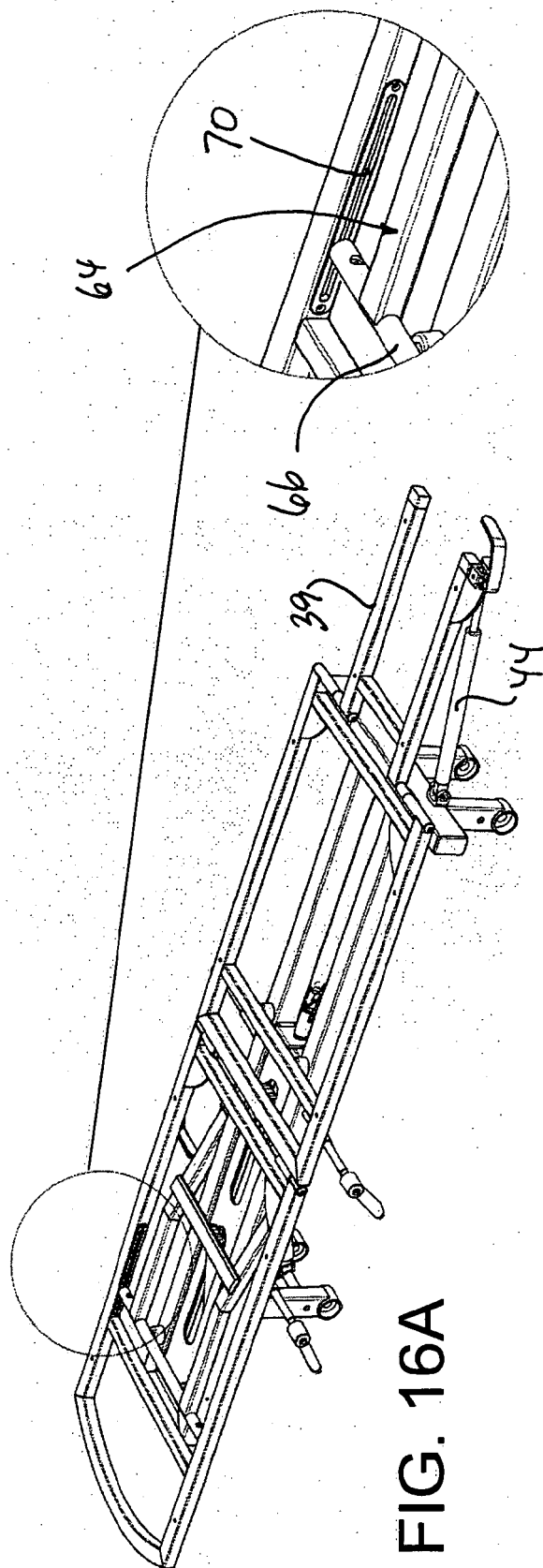


FIG. 16A

FIG. 16B



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 02 3531

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 90/03158 A (AFOR AB OY [FI]) 5 April 1990 (1990-04-05) * page 3, lines 13-37; figures 1-4 * * page 4, lines 1-11 * -----	1,3,4	INV. A61G13/00
X	FR 2 059 836 A (ETIENNE JEAN PIERRE) 4 June 1971 (1971-06-04) * the whole document * -----	1,2,4	
A	FR 2 167 378 A1 (BOUSQUET RENE [FR]) 24 August 1973 (1973-08-24) * the whole document * -----	1-4	
			TECHNICAL FIELDS SEARCHED (IPC)
			A61G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 April 2007	Examiner Bielsa, David
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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 02 3531

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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25-04-2007

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