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DESCRIPTION

Technical field

[0001] The invention relates to an assembly of a powered ambulance cot and a loading device therefor, the loading device comprising a sliding guide block, an extension arm, a linear guide configured to be fixedly mounted in an ambulance floor, and a fastening system. The proposed device falls within the field of medical devices, namely devices used for loading medical powered ambulance cots in a road ambulance.

Background art

[0002] Loading devices are used in road ambulances through which medical ambulance cots are loaded from an external environment into an internal ambulance structures and subsequently secured for safe transport. The terrain conditions of the external environment cause height and angular differences in the reference planes of the cot and the loading system. The cot operators approach the loading system from variable directions in real conditions, which increases these differences.

[0003] An important part of the loading device is an extension arm, which includes the contact surfaces. In the extended state of the arm, the cot is placed on the resting surfaces with all its weight. By sliding the arm towards the ambulance, the loading system including the cot locks into a precisely defined lock position of the fastening system.

[0004] Resting the cot on the extendable arm is a critical step in the loading process. In this process, the cot is placed with its full weight on the defined resting surfaces of the arm. Correct alignment of the cot before resting requires increased operator attention. This also increases working time. There is a risk that the cot may be placed outside the resting surfaces, which can significantly increase safety risks for both the patient and the operator.

[0005] US 20160287454 A1 describes self-actuating ambulance cots which include a support frame, a pair of legs and a hydraulic actuator. The support frame is guided from a front end to a rear end of the cot. The pair of legs are in movable engagement with the support frame. The hydraulic actuator is in movable engagement with the pair of legs and the support frame, extending and retracting the pair of legs to the support frame. The hydraulic actuator comprises a cylindrical housing, a rod and a sliding guide member. The sliding guide member is movably engaged with the cylinder housing and is rigidly engaged with the bar, the sliding guide member moving in the direction of the cylinder body.

[0006] Powered roll-in cots are described in EP 2523642 A1 and include a support frame, a pair of front legs, a pair of rear legs and a cot actuation system. The pair of front legs may be

slidably coupled to the support frame. The front leg comprises at least one front wheel. The pair of rear legs is slidably coupled to the support frame and each rear leg comprises at least one rear wheel. The cot actuation system includes a front actuator that moves the front legs and a rear actuator that moves the rear legs. The front actuator and rear actuator raise or lower the support frame in tandem. The front actuator raises or lowers the front end of the support frame independently of the rear actuator, while the rear actuator raises or lowers the rear end of the support frame independently of the front actuator.

[0007] DE 102008005900 A1 discloses a telescopic ambulance table designed especially for use in ambulances. The telescopic ambulance table comprises a lower table, which is arranged horizontally in the ambulance in the longitudinal direction to the cot and which is equipped with a hinged joint so that its vertical position can be changed. The telescopic ambulance table further includes extendable supports which are slidably connected to the lower table and which are used to extend from the ambulance cargo compartment and subsequently to fasten the cot. The telescopic ambulance table further includes a drive for extendable supports that controls the movement of the supports in the longitudinal direction and which ensures the patient to be transported on the cot in and out of the ambulance. The drive is controlled by a drive control, depending on the load and the position of the extendable supports.

[0008] The ambulance cot described in EP 2431015 A2 consists of a base frame, a litter frame and a support mechanism coupled to the base frame and the litter frame. The support mechanism comprises at least one pair of frame members that are centrally connected to each other. The frame members each have opposite ends fixed to the base frame and the litter frame, wherein at least one of said pair of frame members is provided with a first mount arranged between their middle length and the base frame, while the second mount is arranged between their middle length and the litter frame. The first and second mounts are arranged to contact the base frame and the litter frame.

[0009] A combination cot loading and fastening system is described in EP 2384728 A1. This system is designed for loading and unloading ambulance cots of normal height, approximately 76 centimetres, into an emergency rescue vehicle with a transport deck in excess of 78 centimetres. The system includes a pair of tracks, a shuttle assembly to securely pull the ambulance cot along the pair of tracks, and a locking mechanism mounted on the shuttle assembly. The shuttle assembly comprises a frame having a first end, a second end, a longitudinal body, two pairs of stabilizer bars, a pair of lifting cylinders, and a three-point attachment yoke assembly mounting the locking mechanism. The other end is located adjacent to the interior of the vehicle. The pair of tracks guides the ambulance cot into or out of the vehicle, while the locking mechanism releasably fixes the ambulance cot to the tracks. The shuttle assembly is arranged such that the locking mechanism is positioned below the vehicle level at an angle of 10° to 25° and at a distance of 22.8 to 50 cm from the vehicle.

[0010] The stretcher loading platform described in WO 9804228 A1 comprises a base frame that is adapted to secure the stretcher in an ambulance, and a support tray with a head and

foot portions arranged on the base frame. The support tray further comprises lift arms which are rotatably mounted between the base frame and the support tray. The front lift arm allows the stretcher to be pulled in and out of the ambulance, while the rear lift arm is slidably connected to the stretcher via a pivot joint formed on the front lift arm. This allows the stretcher to tilt to the desired position.

[0011] The European patent application EP 2366369 A2 discloses a support module having a base unit receiving a patient stretcher, and a guiding path enabling formation of an intermediate position between a patient supporting position and a patient receiving position, in a non-telescopic condition of the base unit. Change of inclination of the patient stretcher is achieved with respect to the patient supporting position in addition to a change in a horizontal position of the patient stretcher, in the patient receiving position. The patient supporting position is achieved from the intermediate position by telescopic movement of the base unit.

[0012] The international patent application WO 2011041170 A2 discloses an ambulance cot loading and unloading apparatus, including a base for mounting to an emergency vehicle deck and an arm mounted for linear movement along the base, which is configured for engaging an ambulance cot. A drive mechanism is provided for raising the arm, which is configured in the presence of an applied force with a first magnitude on the arm to raise the arm at a first speed and in the presence of an applied force on the arm with a second magnitude greater than the first magnitude to raise the arm at another speed or speeds lower than the first speed.

Summary of the invention

[0013] The object of the invention is to design a loading device for safe and intuitive loading of a powered ambulance cot in a road ambulance.

[0014] The present invention, as defined in claim 1, provides an assembly of a powered ambulance cot and a loading device therefor, the loading device comprising a sliding guide block, an extension arm, a linear guide configured to be fixedly mounted in an ambulance floor, and a fastening system.

[0015] The ambulance cot comprises a stretcher portion and a built-in chassis, wherein a U-shaped horizontal bar is arranged in the front portion of the chassis, and the chassis is further provided with two front pins, a surface for guiding a locking axis and a double-action lock comprising an upper lock and a lower latch. In the rear portion of the chassis, a rear pin and a lever of the double-action lock are located, which lever unlocks it after pulling.

[0016] The sliding guide block guides the ambulance cot to the correct position relative to the extension arm, which in turn guides the entire assembly through a linear guide to the fastening system.

[0017] The sliding guide block is formed by a set of approach ramps to assist the operator in

the initial alignment of the ambulance cot relative to the loading system. The set of approach ramps is formed by a main approach ramp, side approach ramps and adjacent surfaces in the longitudinal direction that are engageable with the horizontal bar in the front portion of the ambulance cot, wherein the main approach ramp guides the ambulance cot to a correct vertical position and the side approach ramps with the adjacent surfaces in the longitudinal direction guide the ambulance cot to a correct horizontal position. The ambulance cot is guided along the approach ramps to two automatic autonomous locks, which simply by pushing unlock the guide block displacement and at the same time lock the construction of the ambulance cot and the guide block together. Each autonomous lock comprises a thrust lever, a first gear mechanism and a latch, wherein with the front portion of the ambulance cot being pressed simultaneously on both thrust levers of the autonomous locks, the latch is released by means of the first gear mechanism thereby to unlock the sliding guide block for linear displacement over the extension arm by means of sliders mounted on the sliding guide block. This ensures that the ambulance cot is correctly guided during further movement along the extension arm. Lock control is automatic and does not require operator's attention. The locks are designed with respect to the construction in such a way that they cannot be unlocked when the ambulance cot is approached from the wrong positions in the vertical and horizontal sense. The autonomous locks block the horizontal backward movement of the ambulance cot when the sliding guide block is unlocked.

[0018] The extension arm includes two guide ends with rollers, two guiding side bars with end stops in the front portion and a shaped recess for the latch, further the locking axis arranged on a lever mechanism, an arm lock and an arm lock lever. The lever mechanism, which is mounted on the extension arm, controls the position of the locking axis relative to the position of the sliding guide block, the arm lock fixes the extension arm in the maximum extension position and the arm lock lever has a contact surface allowing to unlock the extension arm manually or by the chassis of the ambulance cot. After moving the guide block, the mechanism, including the locking axis, is raised, which is then automatically locked into the double-action lock consisting of the upper lock and the lower latch and mounted on the chassis of the ambulance cot and the ambulance cot is locked against reverse displacement. Locking of the locking axis in the upper lock ensures correct positioning of the ambulance cot in the longitudinal direction after resting the ambulance cot on the extension arm, and the lower latch automatically locks with a transverse axis located in the extension arm when the ambulance cot rests on the extension arm, thereby preventing the ambulance cot from tilting in the longitudinal direction. The sequence of the steps of anchoring the ambulance cot allows the cot to rest in a precisely defined and secure position on the extension arm. The double-action lock is unlocked by pulling the lever on the ambulance cot.

[0019] The sliding guide block design together with the design of the extension arm allows a wide range of relative positions of the loading system relative to the ambulance cot, but critical positions are eliminated.

[0020] After contacting the extension arm, the lower construction of the ambulance cot is folded to compress the extension arm lock lever. The unlocked extension arm is inserted into

the ambulance via the linear guide, wherein the front and rear pins on the chassis of the ambulance cot are automatically locked into the fastening system in the extreme position. The entire assembly is locked in the fastening system against lateral, longitudinal and vertical movements during transport.

[0021] The linear guide has a pair of mirrored stationary rails configured to be fixedly mounted in the ambulance floor, wherein a telescopic sliding bar is arranged in each stationary rail and the extension arm is slidably arranged between the sliding bars, wherein a linear displacement of the extension arm is provided along the sliding bars between its extreme positions. Advantageously, the extension arm is supported on both sides on a pair of sliding carriages travelling between the pair of sliding bars.

[0022] The fastening system has a front block, a rear block and a coupling pull rod. The front pin of the ambulance cot is fastened to the front block and the rear pin of the ambulance cot to the rear block. The front block is configured to be fixedly mounted in the ambulance floor and has two spring-loaded locking pins provided in the lower portion with pull rods connected to a transmission axis, and in the central portion of the front block, the transmission axis is provided with a second gear mechanism that positions the coupling pull rod with respect to the transmission axis. Above the locking pins of the front block there are grooves for the front pins of the ambulance cot. The rear block is also configured to be fixedly mounted in the ambulance floor and has a strutting gear in the lower portion, which positions the coupling pull rod with respect to locking blocks, and two locking blocks in the upper portion, a spring-loaded spacer between them, a groove above them for the rear pin of the ambulance cot, and further in the rear portion two guide surfaces and a control lever. Above the locking blocks, there is a groove for the rear pin of the ambulance cot. By moving the control lever, both lock pins and both locking blocks are unlocked simultaneously, with the locking blocks reaching the extreme position, the spring-loaded spacer automatically locks to guide the ambulance cot with the sliding guide block and the extension arm into the fastening system. To fully guide the ambulance cot in, both front pins must fit into the grooves for the front pins as well as the rear pin into the groove for the rear pin. By compressing the spring-loaded spacer, both locking pins and both locking blocks are unlocked and thereby blocked simultaneously, thereby blocking the movement of the ambulance cot by the fastening system in all directions.

Description of the drawings

[0023] The invention will be illustrated by the drawings where: Fig. 1 is an isometric view of a loading device including an ambulance cot; Fig. 2 is an isometric view of a sliding guide block; Fig. 3 shows a detailed view of a sliding guide block mechanism from below; Fig. 4 is an isometric view of an extension arm; Fig. 5 shows a detailed view of the principle of the locking mechanism of the extension arm and the ambulance cot; Fig. 6 is an isometric view of the fastening system; Fig. 7 shows a detailed view of the locking mechanism arrangement in the front block of the fastening system; Fig. 8 shows a detailed view of the strutting gear in the rear block of the fastening system; Fig. 9 shows an isometric view of the arrangement of the

mechanisms in the rear block of the fastening system; Fig. 10 shows a detail of the rear portion of the ambulance cot including the lever of the double-action lock and the rear pin; Fig. 11 shows an isometric view of the extension arm positioning on the linear guide; Fig. 12 shows a detail of the front portion of the ambulance cot including the horizontal bar and the front pins from the bottom, and Fig. 13 shows the extreme positions of the locking axis on the extension arm.

Description of the exemplary embodiments

[0024] The assembly of a powered ambulance cot and a loading device therefor will be illuminated in an exemplary embodiment thereof with reference to the respective drawings.

[0025] The interconnection of the individual components of the device is shown in Fig. 1. The assembly comprises an ambulance cot 1 and a loading device comprising a sliding guide block 4, an extension arm 3, a linear guide 2 fixedly mounted in the ambulance floor and a fastening system 5, also fixedly mounted in the ambulance floor.

[0026] The ambulance cot 1 is shown in Figs. 4, 10 and 12 and includes a stretcher portion and a built-in chassis. A horizontal bar 43 is arranged in the front portion of the chassis, and the chassis is further provided with two front pins 44, a surface 22 for guiding a locking axis 16 and a double-action lock 23 comprising an upper lock 24 and a lower latch 25, wherein a rear pin 45 and a lever 40 of the double-action lock 23 are located in the rear portion of the chassis.

[0027] The sliding guide block 4 is shown in Fig. 2. In this exemplary embodiment, the sliding guide block 4 comprises a structure covered by a main approach ramp 6 serving as its cover. Furthermore, side approach ramps 7, which are the contact surfaces for the front portion of the structure of the ambulance cot 1, comprise the horizontal bar 43 and a pair of the front pins 44 as shown in Fig. 12. For guiding the ambulance cot 1, there are the side approach ramps 7 which guide the horizontal bar 43 in the horizontal direction, while the main approach ramp 6 guides the horizontal bar 43 in the vertical direction. The side approach ramps 7 are adjoined by longitudinal surfaces 8 which precisely define the horizontal bar 43 in the horizontal plane of the ambulance cot 1. The sliding guide block 4 is further provided with two autonomous locks 9 formed by a thrust lever 10, a first gear mechanism 11 and a latch 12, as it is depicted in Fig. 3.

[0028] The function of the sliding guide block 4 is as follows. The sliding guide block 4 is released only when the two autonomous locks 9 are unlocked by means of the horizontal bar 43 which pushes the lever 10 in such a way that the latch 12 is released by the first gear mechanism 11, and thereby ensures the movability of the sliding guide block 4. Simultaneously, when unlocked, the autonomous locks 9 are set in the position in which they block the backward movement of the ambulance cot 1 in the horizontal direction. This blocking is effective throughout the whole trajectory along the extension arm 3 except for the extreme starting position, i.e. the position where the sliding block 4 is located at the edge of the arm 3.

The sliding guide block 4 is provided with sliders 13 which allow linear displacement over the extension arm 3.

[0029] An exemplary embodiment of the extension arm 3 is shown in Fig. 4. The extension arm 3 comprises guiding side bars 14, guide ends 15 with rollers, a locking axis 16 fixed in the arms of a lever mechanism 17, an arm lock 18 and an arm lock lever 19. The guiding side bars 14 for the sliding guide block 4 are provided with end stops 20 and a shaped recess 21 for the latch 12.

[0030] The lever mechanism 17 controls the position of the locking axis 16 in relation to the position of the sliding guide block 4. When the sliding guide block 4 is moved forward, the locking axis 16 is automatically raised to the highest position as shown in Fig. 13. The interval between the lowest and the highest position of the locking axis 16 defines the range of permissible vertical distance between the extension arm 3 and the ambulance cot 1.

[0031] The ambulance cot 1 has a surface 22 for guiding the locking axis 16 into the double-action lock 23 arranged in the chassis of the ambulance cot 1, wherein the double-action lock 23 comprises an upper lock 24 and a lower latch 25 as shown in Fig. 5. The first step of locking the double-action lock 23 is to lock the locking axis 16 in the upper lock 24. This step ensures that the ambulance cot 1 is positioned correctly in the longitudinal direction after it has contacted the extension arm 3. The second step of locking the double-action lock 23 is that the lower latch 25 automatically locks the transverse axis 26 when the ambulance cot 1 rests on the extension arm 3, thereby blocking the tilting of the ambulance cot 1 in the longitudinal direction. When unlocking the double-action lock 23, both steps are performed simultaneously by pulling the lever 40 on the ambulance cot 1 shown in Fig. 10. The arm lock 18 of the extension arm 3 fixes the extension arm 3 in the position of maximum extension of the loading device. The arm lock lever 19 of the lock 18 of the extension arm 3 has a contact surface 27 enabling the unlocking manually or by the chassis structures as shown in Fig. 4.

[0032] The linear guide 2 comprises a pair of mirrored stationary rails 41 fixedly mounted in the ambulance floor, wherein each stationary rail receives a telescopic sliding rail 48. An extension arm 3 is slidably arranged between the sliding rails 48. Advantageously, the extension arm 3 is supported on both sides on sliding carriages 42 travelling on sliding rails 48, as can be seen in Fig. 11. The travel range of the telescopic sliding rails defines the working trajectory of the extension arm 3. The maximum extension of the telescopic sliding rails is designed with respect to the installation dimensions of commonly used vehicles, wherein during handling, a collision with any part of the vehicle body (e.g. road ambulance) must not occur.

[0033] The fastening system 5 comprises a front block 28, a rear block 29, and a coupling pull rod 30, as shown in Fig. 6. The front block 28 has two grooves 46 for the front pins 44 arranged on the ambulance cot 1, as shown in Figs. 6 and 12, and on the sides, two spring-loaded locking pins 31 provided with pull rods 32 in the lower portion, which are connected to the transmission axis 33, as shown in Fig. 7. In the central portion of the front block 28, the

transmission axis 33 is fitted with a second gear mechanism 34 which is adjustable so that the position of the coupling pull rod 30 relative to the transmission axis 33 can be finely adjusted. As shown in Figs. 6, 8 and 9, the rear block 29 comprises a strutting gear 35, locking blocks 36, a spring-loaded spacer 37, guide surfaces 38, a control lever 39, and a groove 47 for the rear pin 45 arranged on the ambulance cot 1. Applying force to the control lever 39 simultaneously unlocks the two locking pins 31 (see Fig. 6) and the two locking blocks 36 (see Fig. 9). Upon reaching the end position of the locking blocks 36, the spring-loaded spacer 37 automatically blocks it. The interlocking of the assembly comprising the front and rear blocks 28 and 29 and the coupling pull rod 30 ensures that both locking pins 31 and both locking blocks 36 remain in the unlocked position. By pressing the spring-loaded spacer 37, the front and rear blocks 28 and 29 are unlocked and they simultaneously lock both locking pins 31 and both locking blocks 36. In the locked state, the fastening system 5 locks the front pins 44 and the rear pin 45, and thereby the movement of the ambulance cot 1 in all directions.

Industrial applicability

[0034] The present invention can be used in the medical field, particularly in devices for loading powered medical or ambulance cots in a road ambulance.

List of reference signs

[0035]

1. 1. Ambulance cot
2. 2. Linear guide
3. 3. Extension arm
4. 4. Sliding guide block
5. 5. Fastening system
6. 6. Main approach ramp
7. 7. Side approach ramp
8. 8. Adjacent surface in the longitudinal direction
9. 9. Autonomous lock
10. 10. Thrust lever
11. 11. First gear mechanism of the autonomous lock 9
12. 12. Latch
13. 13. Slider
14. 14. Guiding side bar
15. 15. Guide end
16. 16. Locking axis
17. 17. Lever mechanism
18. 18. Arm lock of the extension arm 3
19. 19. Arm lock lever of the arm lock 18 of the extension arm 3

- 20. 20. End stop
- 21. 21. Shaped recess
- 22. 22. Surface for guiding the locking axis 16
- 23. 23. Double-action lock
- 24. 24. Upper lock of the double-action lock 23
- 25. 25. Lower latch of the double-action lock 23
- 26. 26. Transverse axis
- 27. 27. Contact surface
- 28. 28. Front block
- 29. 29. Rear block
- 30. 30. Coupling pull rod
- 31. 31. Locking pin
- 32. 32. Pull rod of the front block 28
- 33. 33. Transmission axis
- 34. 34. Second gear mechanism of the front block 28
- 35. 35. Strutting gear
- 36. 36. Locking block
- 37. 37. Spring-loaded spacer
- 38. 38. Guide surface
- 39. 39. Control lever
- 40. 40. Lever of the double-action lock 23
- 41. 41. Stationary rail
- 42. 42. Carriage
- 43. 43. Horizontal bar
- 44. 44. Front pins
- 45. 45. Rear pin
- 46. 46. Groove for the front pins 44
- 47. 47. Groove for the rear pin 45
- 48. 48. Sliding bar

REFERENCES CITED IN THE DESCRIPTION

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Lasteanordning til en elektrisk ambulancebårePatentkrav

- 5 1. En samling af en elektrisk ambulancebåre(1) og en lasteanordning hertil, lasteanordningen omfatter en glidende styreklods(4), en forlængerarm(3), et lineær styr(2) konfigureret til at være fikseret på et ambulancegulv og et fastspændingssystem(5), **kendetegnet ved**
- 10 a. ambulancebåren(1) udgør en båredel og et indbygget understel, hvori en horisontal stang(43) er placeret i den forreste del af understellet, og understellet er ydermere udstyret med to fortapper(44), en overflade(22) til at styre en låseakse(16) og en dobbeltvirkende
- 15 lås(23) som omfatter en øvre lås(24) og en nedre rigel(25), hvori en bagtap(45) og et håndtag(40) til den dobbeltvirkende lås(23) er placeret i den bagerste del af understellet;
- 20 b. den glidende styreklods(4) har en primær adgangsrampe(6), side adgangsramper(7) og tilstødende overflader(8) i den langsgående retning, som kan tilgås med den forreste del af ambulancebåren(1), hvori den primære adgangsrampe(6) styrer ambulancebåren(1) til en korrekte vertikal position og side adgangsramperne(7) med de tilstødende
- 25 overflader(8) i den langsgående retning styrer ambulancebåren(1) til en korrekt horisontal position, og den glidende styreklods(4) er ydermere udstyret med to uafhængige låse(9), hver omfatter en trykstang(10), en første gearmekanisme(11) og en rigel(12), hvori når den
- 30 forreste del af ambulancebåren(1) presses samtidig ned på begge trykstænger(10) på de uafhængige låse(9), bliver rigelen(12) frigjort ved hjælp af første gearmekanismen(11) derved åbnes den glidende styreklods(4) for lineær forskydning af forlængerarmen(3) ved hjælp af glidere(13) fastgjort til den glidende
- 35 styreklods(4), hvori de uafhængige låse(9) spærrer for bevægelse bagud af ambulancebåren(1) i den horisontale retning efter åbningen af den glidende styreklods(4);
- 40 c. forlængerarmen(3) har to styre ender(15) med hjul, to styrende sidestænger(14) med ende stoppere(20) i den forreste del og en formet indskæring(21) til rigelen(12), ydermere låseakslen(16) placeret på en løfttestangsmekanisme(17), en armlås(18) og en
- 45 armlåsløftestang(19), hvori løfttestangsmekanismen(17) kontrollerer positionen af låseakslen(16) i forhold til positionen af den glidende styreklods(4), armlåsen(18) fikserer forlængerarmen(3) i den fulde forlængende position og armlåsløftestangen(19) har en kontaktflade(27), som tillader at åbne forlængerarmen(3)
- 50 manuelt eller af understellet af ambulancebåren(1), hvori låseakslen(16) styres ind i den dobbeltvirkende lås(23) på ambulancebåren(1) af overfladen(22), hvori låsning af låseakslen(16) i den øvre lås(24) i den dobbeltvirkende

lås(23) sørger for den korrekte placering af
 ambulancebåren(1) i den langsgående retning efter at have
 hvilet ambulancebåren(1) på forlængerarmen(3), og den
 nedre rigel(25) i den dobbeltvirkende lås(23) låser
 5 automatisk med en tværakse(26) i forlængerarmen(3) når
 ambulancebåren(1) hviler på forlængerarmen(3), derved
 forhindres ambulancebåren(1) i at tilte i den langsgående
 retning og hvori den dobbeltvirkende lås(23) åbnes ved at
 10 trække i håndtaget(40) på den dobbeltvirkende lås(23) på
 ambulancebåren(1);

- d. det lineære styr(2) har et par spejlede stationære
 skinner(41) konfigureret til at blive fikseret på
 ambulancegulvet, hvori en teleskopisk glidestang(48) er
 15 placeret i hver stationær skinne(41) og forlængerarmen(3)
 er placeret med en glidende funktion mellem de glidende
 stænger(48), hvori en lineær forskydning af
 forlængerarmen(3) kan ske hen ad de glidende stænger(48)
 mellem dens yder positioner; og
- e. fastspændingssystemet(5) har en frontklods(28), en
 20 bagklods(29), og en sammenkoblings-trækstang(30), hvori
 frontklodsen(28) er konfigureret til at være fastmonteret
 på ambulancegulvet og har to fjederbelastede
 låsetapper(31) over hvilke der er riller(46) til
 25 fronttapperne(44) af ambulancebåren(1) og som er udstyret
 i den nedre del med trækstænger(32) forbundet til en
 overføringsakse(33), og i den centrale del af
 frontklodsen(28), er overføringsaksen(33) udstyret med en
 anden gearmekanisme(34) som positionere sammenkoblings-
 30 trækstangen(30) med hensyn til overføringsaksen(33),
 hvori bagklodsen(29) er konfigureret til at være
 fastmonteret på ambulancegulvet og har et
 afstivningsgear(35) i den nedre del, som positionere
 sammenkoblings trækstangen(30) med hensyn til
 35 låseklodserne(36), og to låseklodser(36) i den øvre del,
 et fjederbelastet afstandsstykke(37) mellem dem, en
 rille(47) over dem til bagtappen(45) på
 ambulancebåren(1), og ydermere i den bagerste del to
 styreoverflader(38) og et kontrolhåndtag(39), hvori begge
 låsetapper(31) og begge låseklodser(36) åbnes samtidigt
 40 ved at bevæge kontrolhåndtaget(39), og når
 låseklodserne(36) når yder positionen, vil det
 fjederbelastede afstandsstykke(37) automatisk låse og
 styre ambulancebåren(1) med den glidende styreklods(4) og
 forlængerarmen(3) ind i fastspændingssystemet(5), og
 45 hvori ved at trykke på det fjederbelastede
 afstandsstykke(37), begge låsetapper(31) og begge
 låseklodser(36) åbnes og dermed blokeres samtidigt,
 dermed hindres bevægelse af ambulancebåren(1) ved hjælp
 af fastspændings-systemet(5) i alle retninger.

2. Samlingen i henhold til krav 1, **kendetegnet ved** at
 forlængerarmen(3) er understøttet på begge sider af et par af
 glidende slæder(42) som bevæger sig mellem de to glidende

stænger (48) .

DRAWINGS

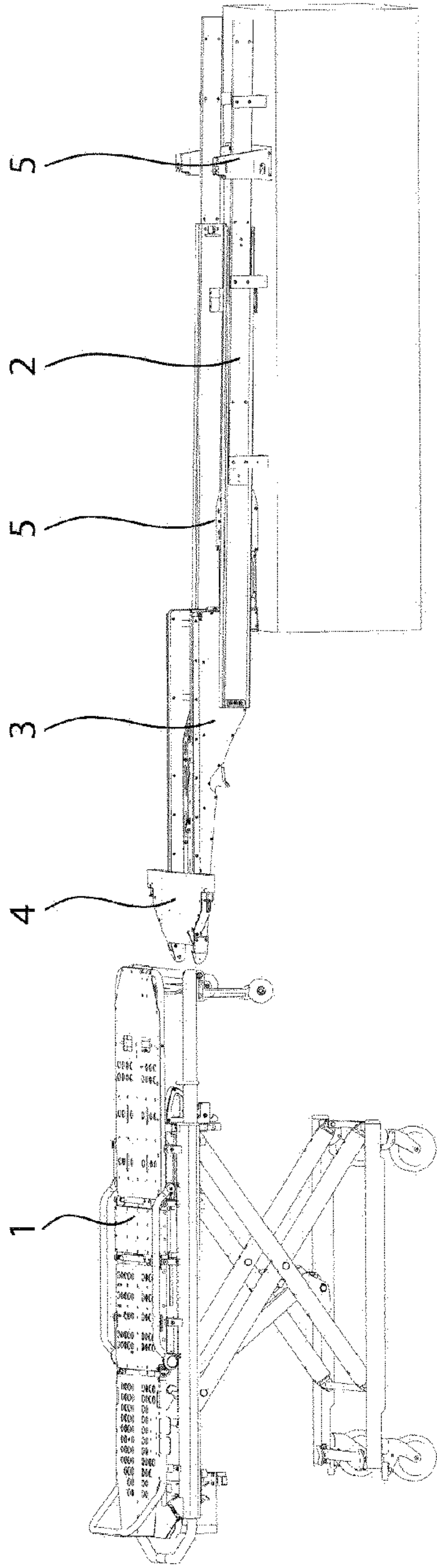


Fig. 1

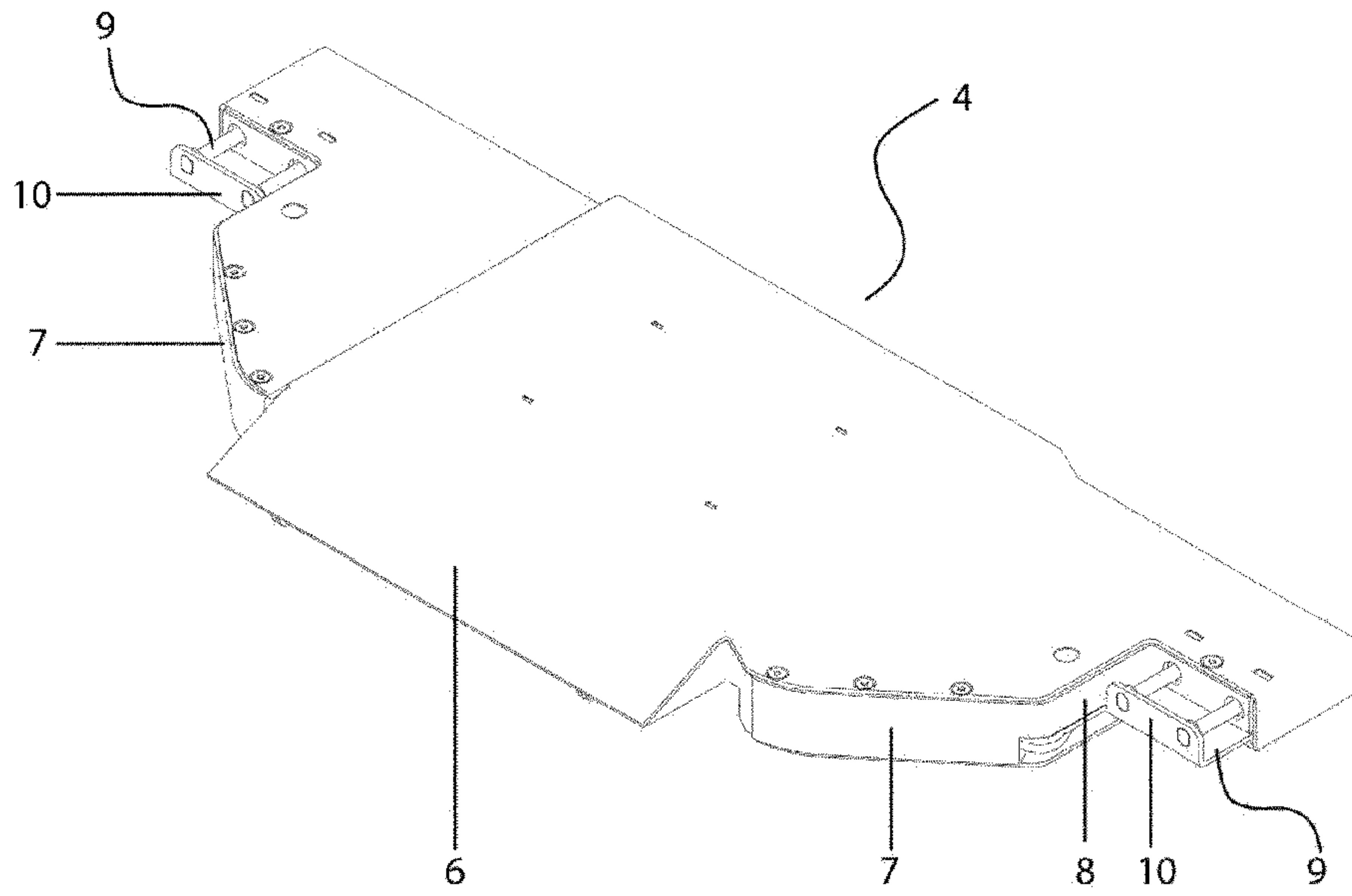


Fig. 2

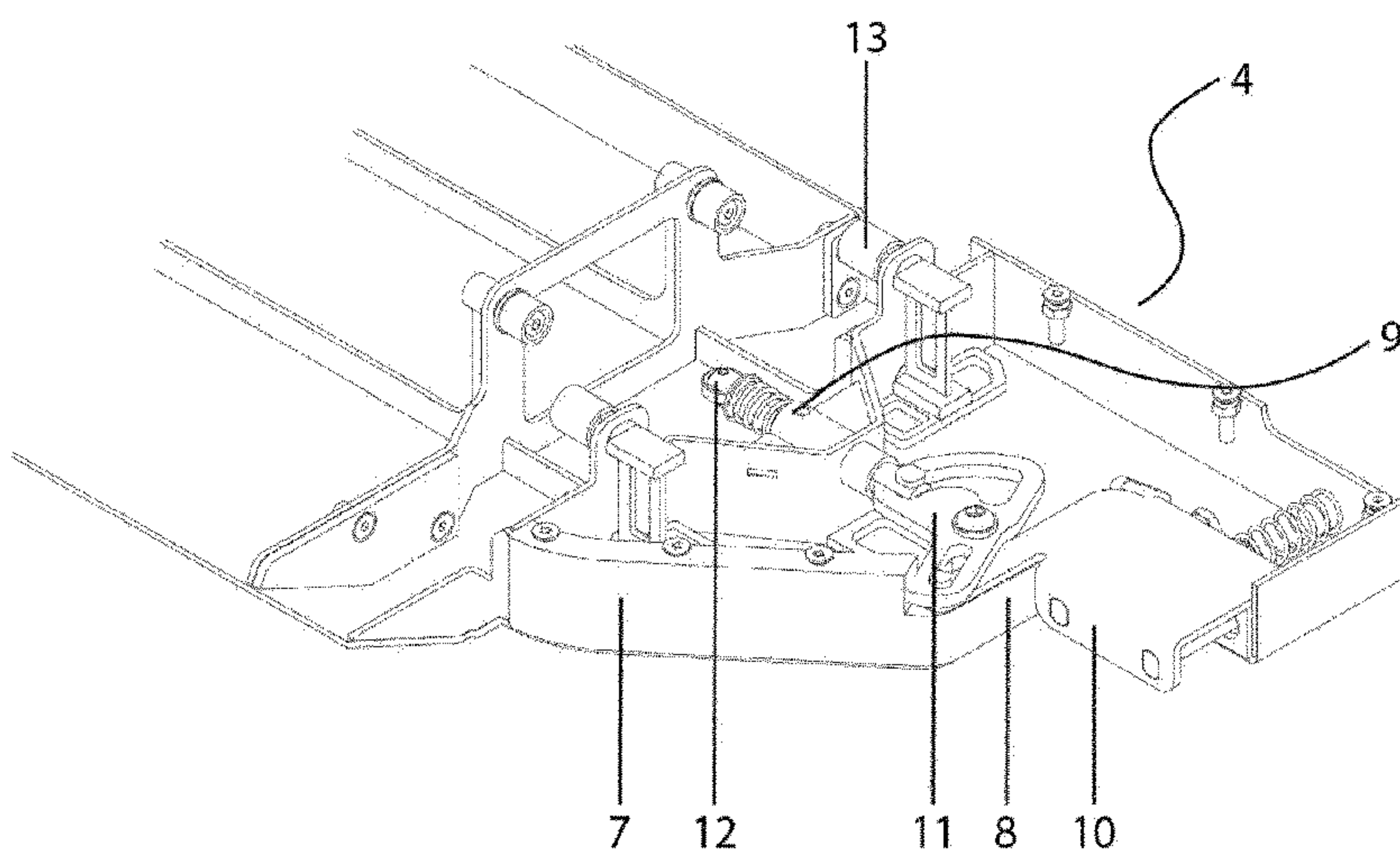


Fig. 3

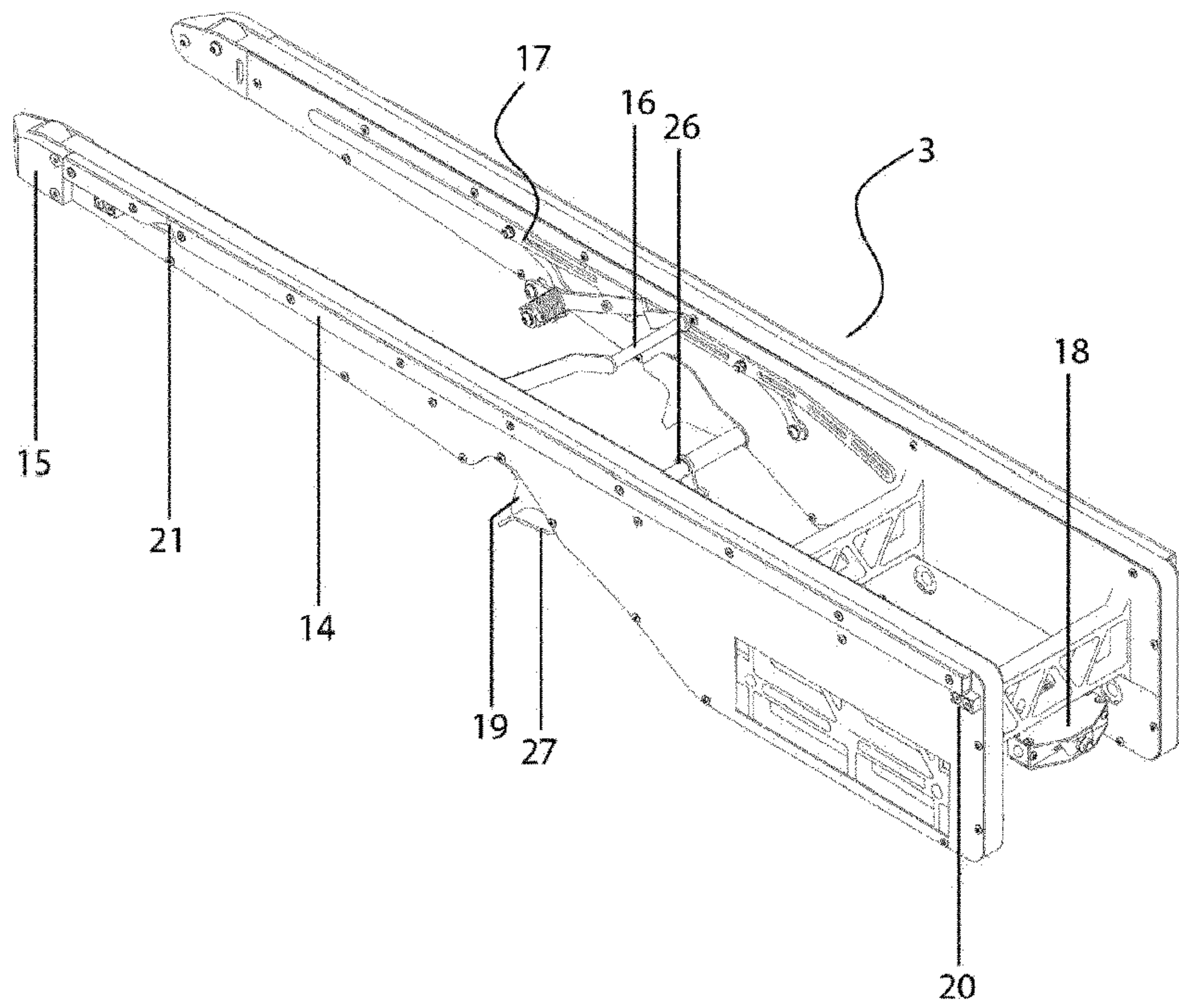


Fig. 4

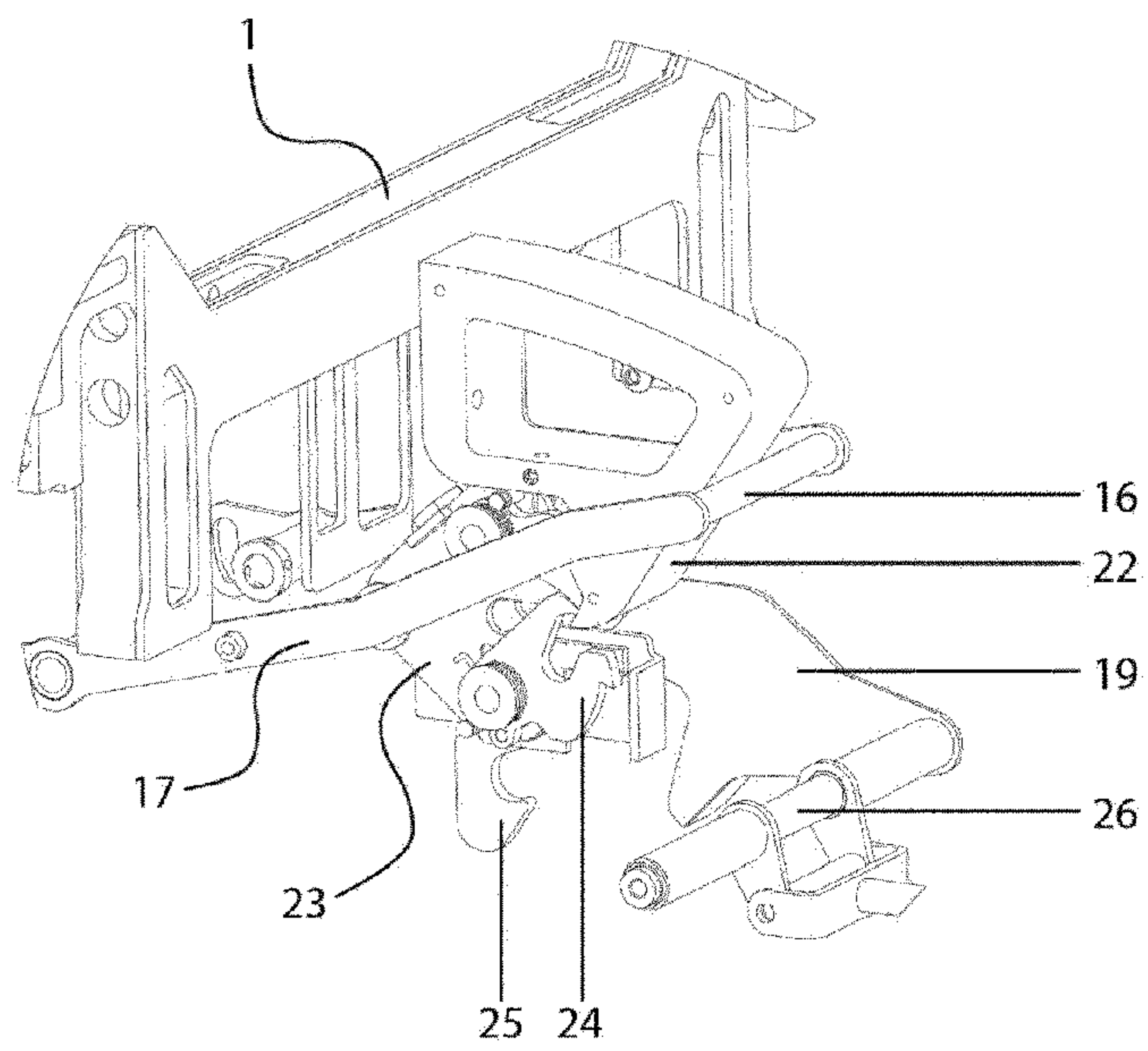


Fig. 5

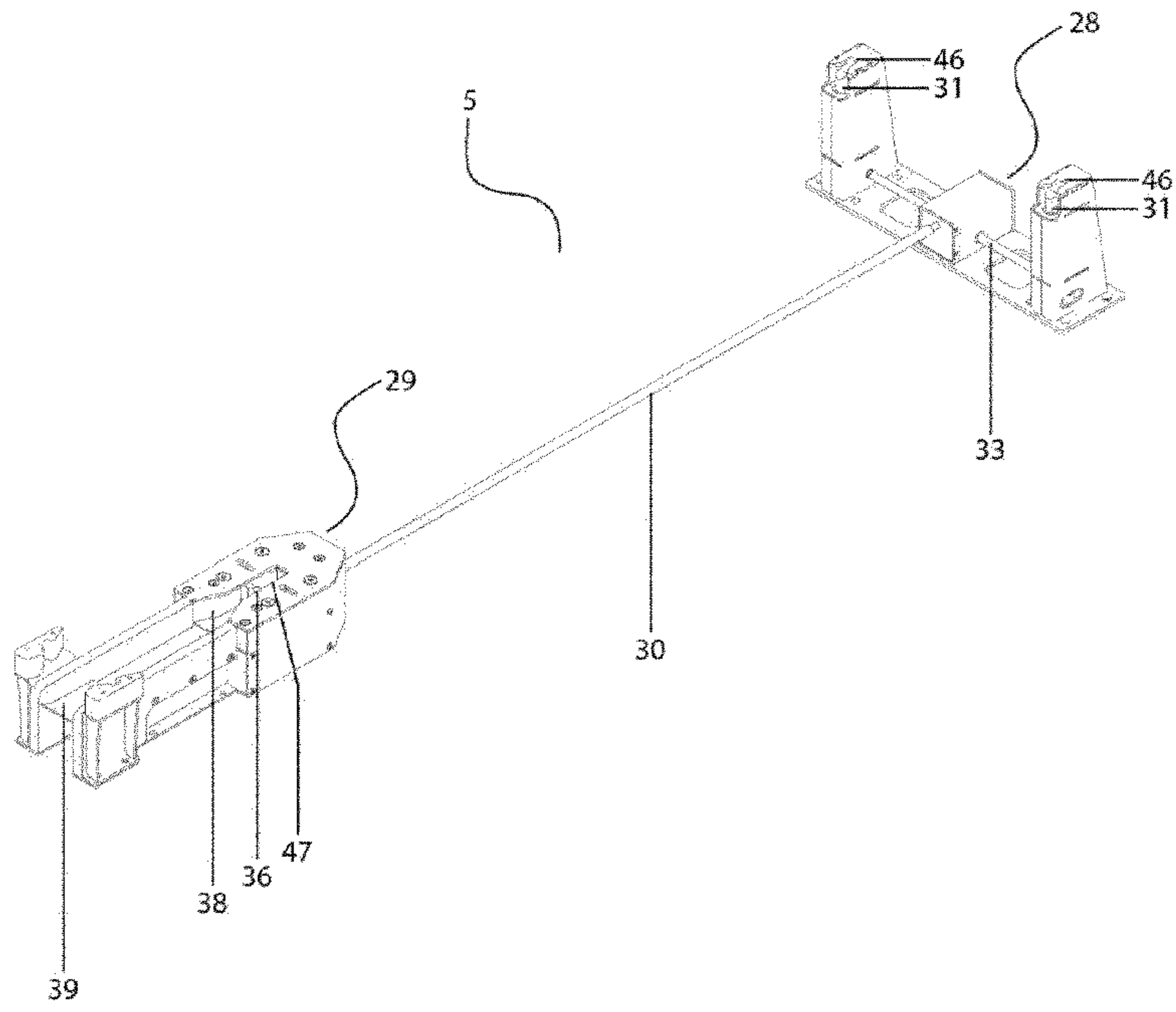


Fig. 6

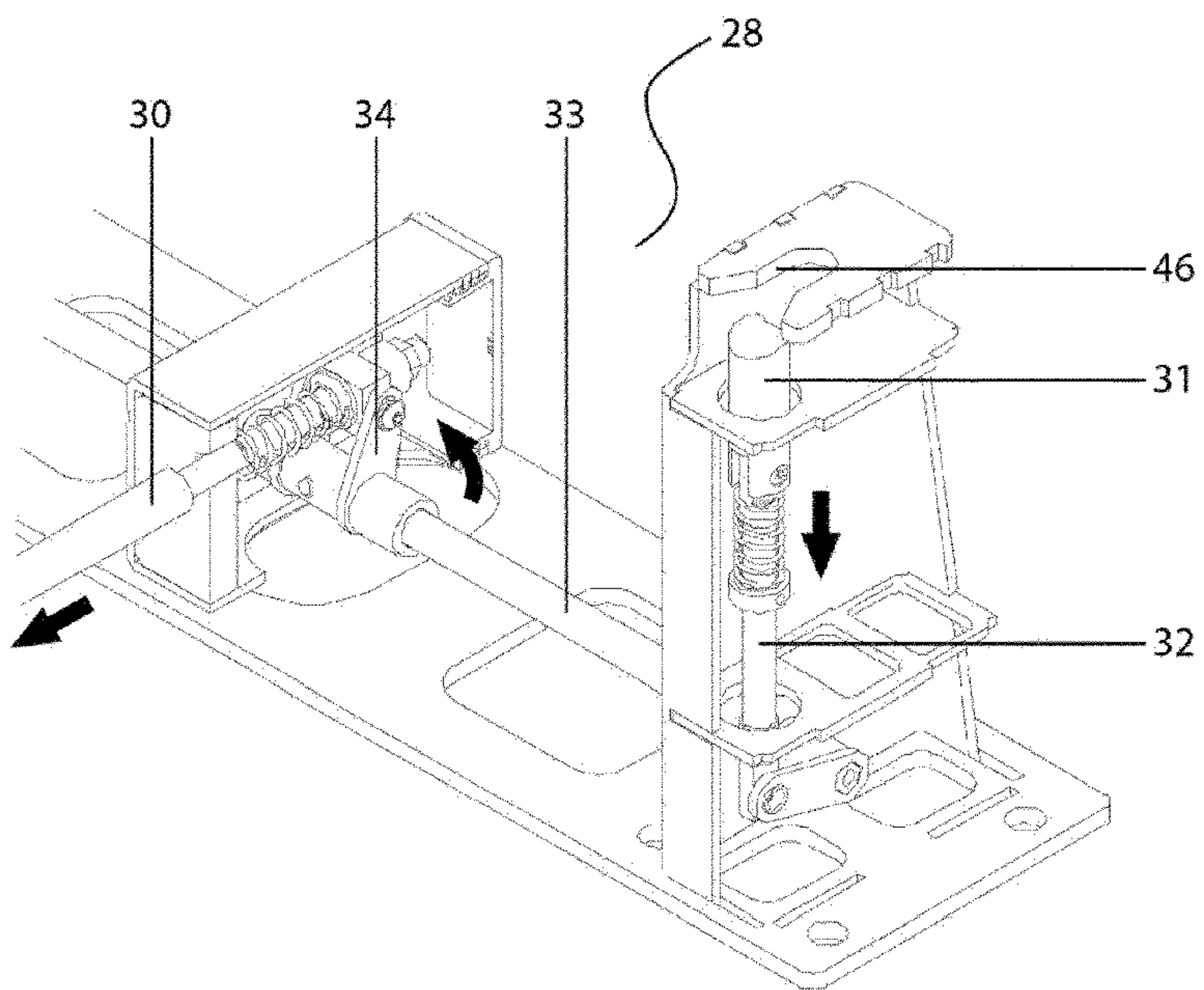


Fig. 7

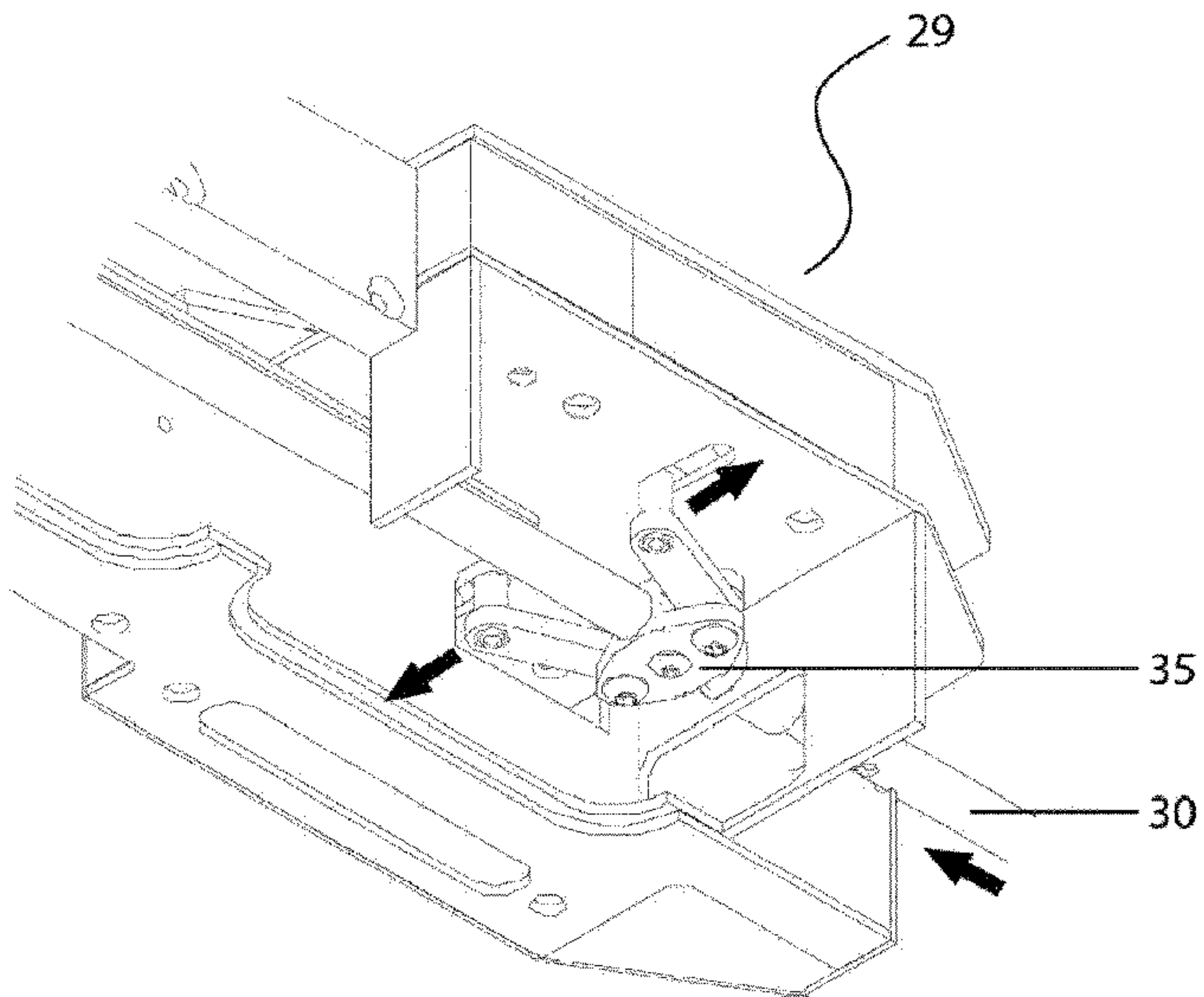


Fig. 8

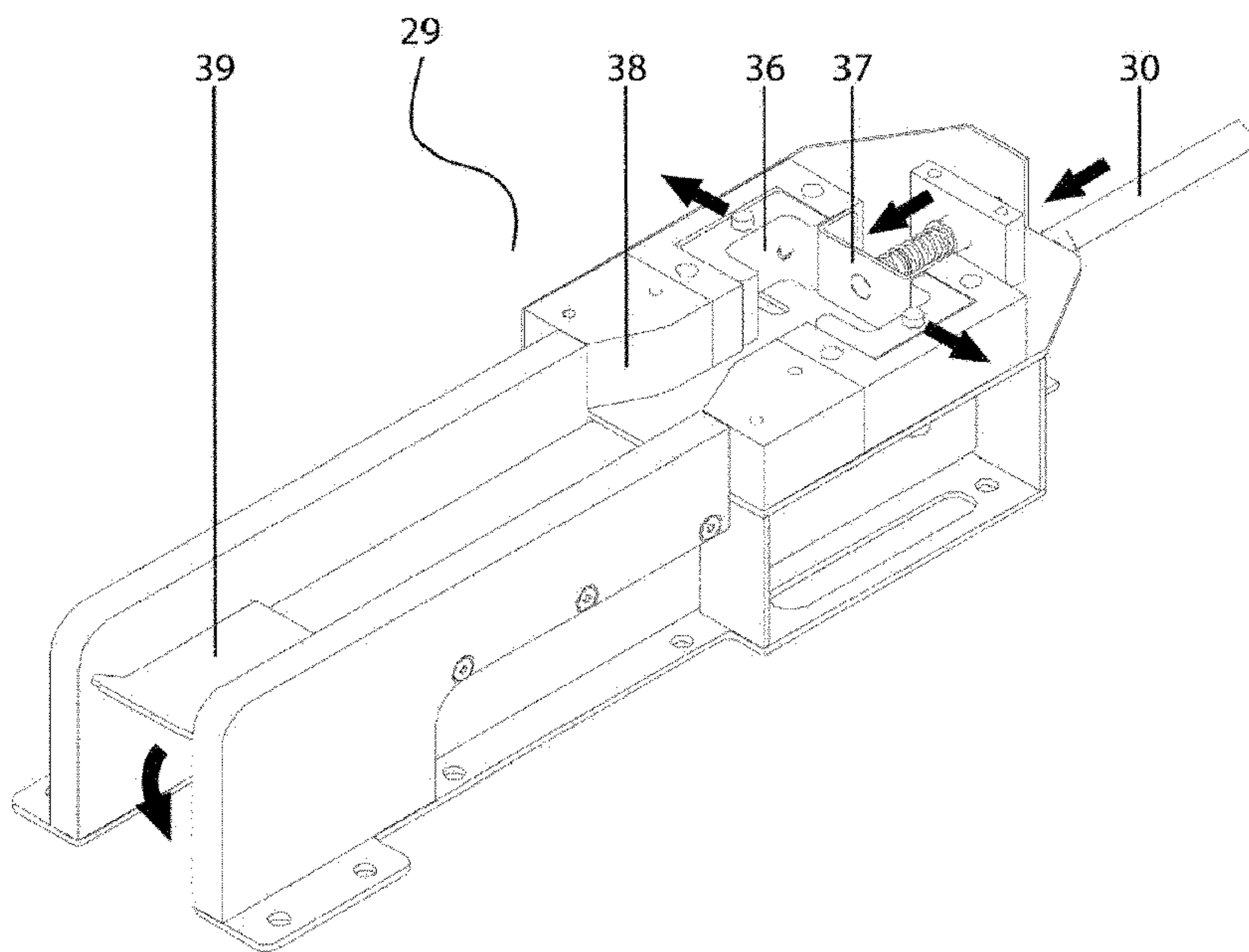


Fig. 9

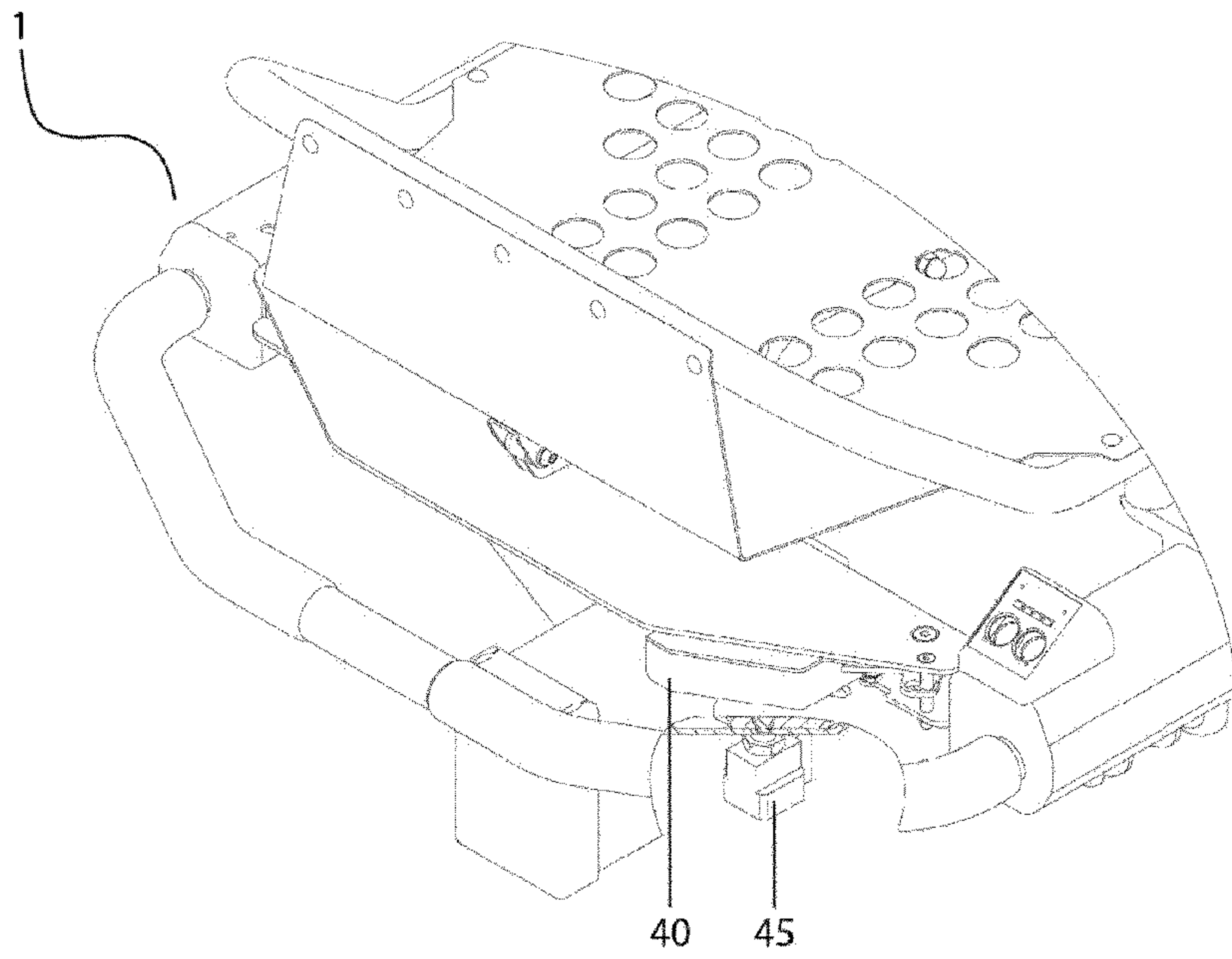


Fig. 10

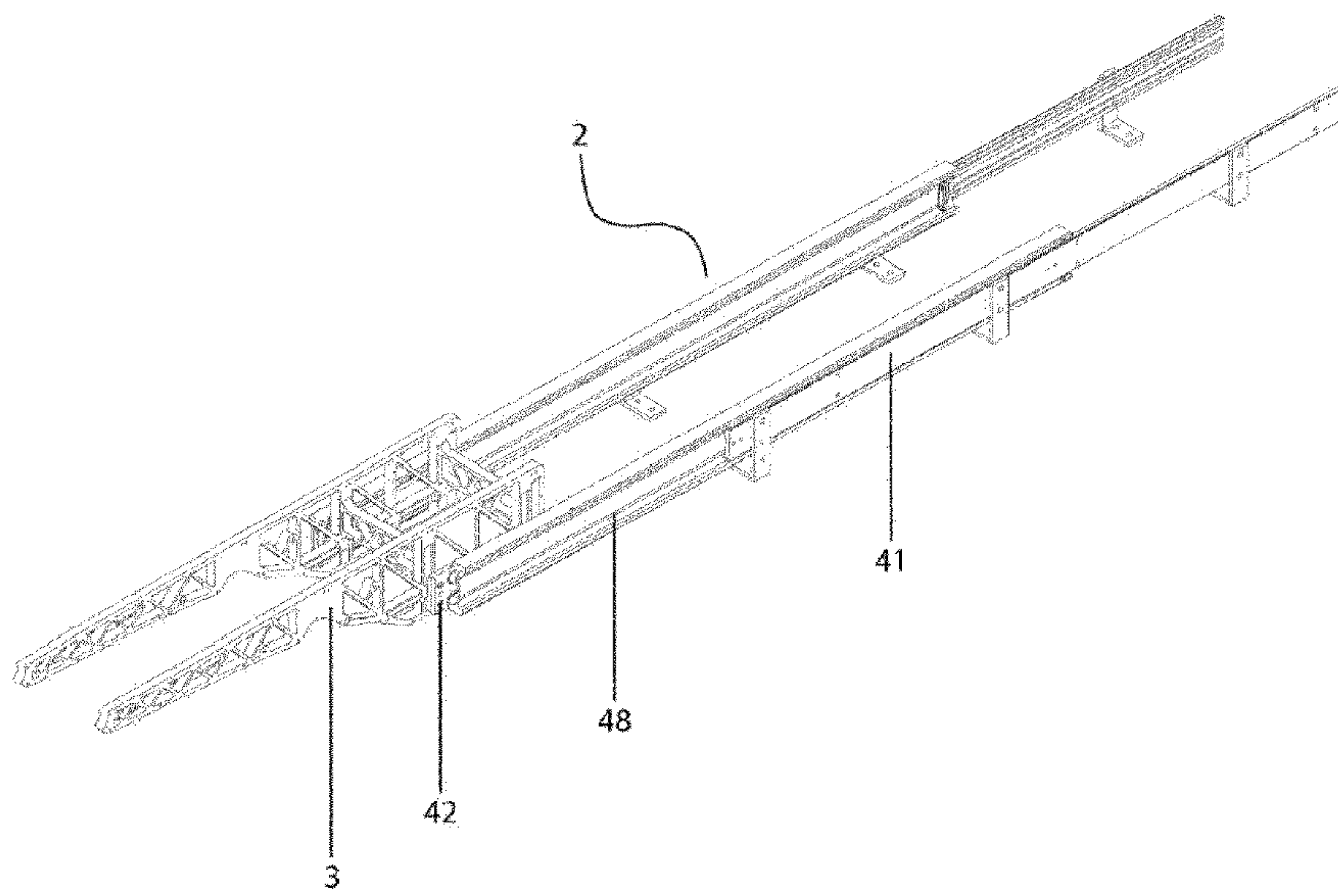


Fig. 11

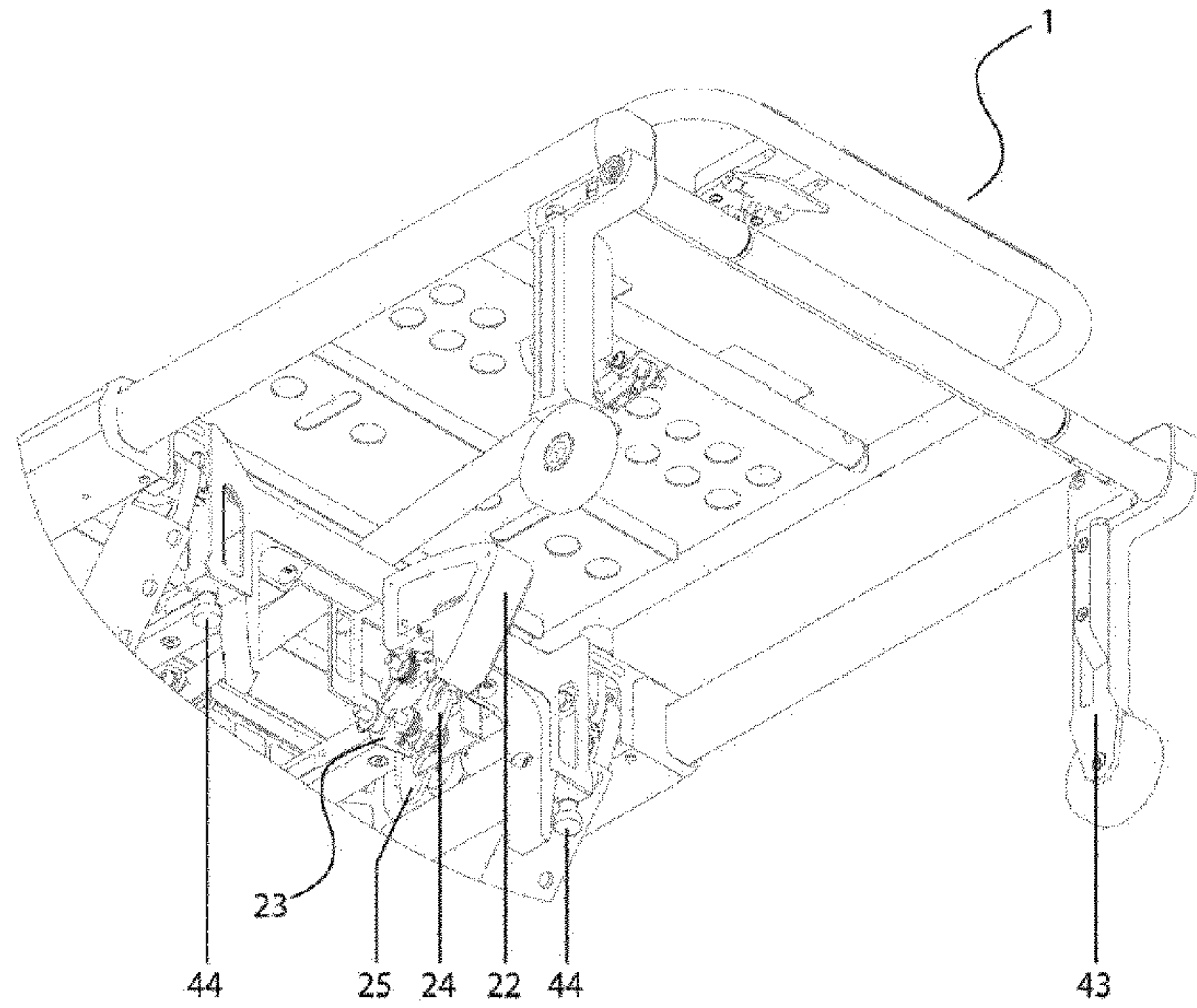


Fig. 12

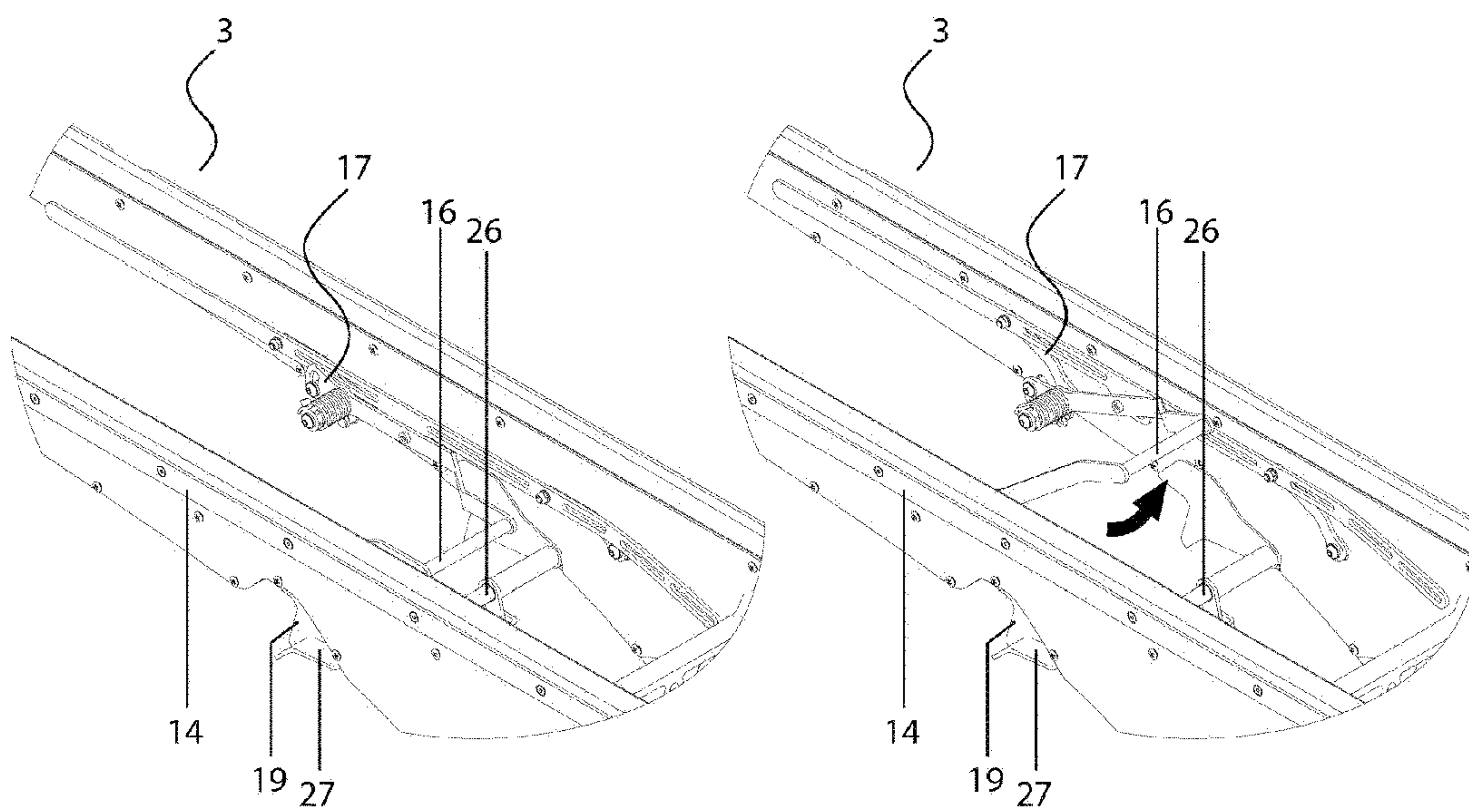


Fig. 13