(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 458 753 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
06.11.2024 Bulletin 2024/45

(21) Application number: **24201734.1**

(22) Date of filing: **19.10.2022**

(51) International Patent Classification (IPC):
B66B 5/00 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B66B 5/0075

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
22202531.4 / 4 357 287

(71) Applicant: **Wittur Holding GmbH**
85259 Wiedenzhausen (DE)

(72) Inventors:
- **Baris, Ergen**
  24127 Bergamo (IT)
- **Yildiz, Oguzhan**
  24127 Bergamo (IT)
- **Selek, Mesut**
  24126 Bergamo (IT)

(74) Representative: **Misselhorn, Hein-Martin**
Patent- und Rechtsanwalt
Am Stein 10
85049 Ingolstadt (DE)

(54) **BLOCKING DEVICE FOR THE CAR OF AN ELEVATOR SYSTEM**

(57) Blocking device for the car of an elevator system, comprising a latch, a latch guide body and a position switch, wherein the latch lies displaceably in the latch guide body and, in the extended position, can engage in a latch receiving opening of a car sling, preferably embodied in the horizontal beam of the car sling, when the latch is at a correspondingly aligned height with respect to the latch receiving opening of the car sling, the blocking device with its latch guide body, which preferably carries the latch and the position switch, being mountable on the car guide rail of the elevator system, and the latch comprises a curvature notch on a horizontal edge of the latch, which can at least partially accommodate a position sensor of the position switch.

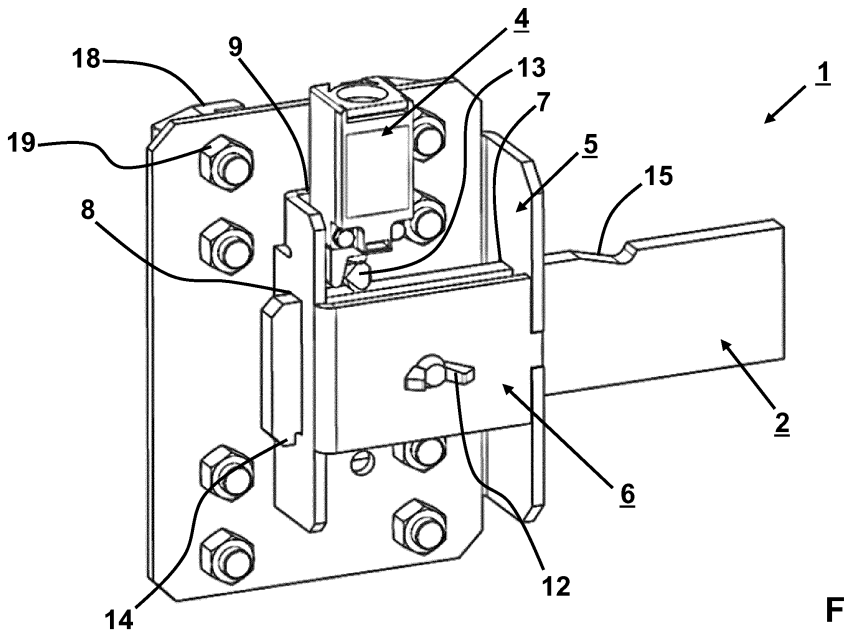


Fig. 5

EP 4 458 753 A2

Description

[0001] The invention relates to a blocking device for the car of an elevator system according to the generic term of claim 1.

[0002] The invention further relates to the correspondingly equipped elevator system according to the generic term of the according claim.

TECHNICAL BACKGROUND

[0003] Even with modern elevator systems, manual maintenance work often has to be carried out. This occurs, for example, during regular maintenance or repairs to maintain the safety of the elevator system, such as a rope change or motor replacement.

[0004] For this purpose, the sling (sometimes also referred to as "frame") of the car and the car itself must be fixed to the car guide rails in such a way that the car and/or its sling are mechanically supported. This is necessary to protect the workers carrying out the maintenance work and/or to keep the car safe at a certain height, usually preferably in the area of the upper floors. A typical case in which such a procedure is necessary is, for example, the rope change of an elevator system already mentioned. In an assembled elevator system, the car and its sling are supported by the ropes. When these ropes are replaced, the elevator car must be supported in some other way because the ropes must first be removed and can therefore temporarily no longer exert a corresponding load-bearing effect.

[0005] Currently, mostly mechanical blocking devices, which consist of many and/or complex individual parts, are used for the desired fixing or blocking of the car. Thus, current blocking devices are usually expensive and/or difficult to install. Since space in the elevator shaft is usually very limited, it is also mostly not possible to use the safety switches that are usually used as standard in elevator construction. Due to various important requirements, these safety switches are usually large, complex and/or consist of many individual parts. This contributes to the additional complexity and increased price of the overall system, since even more complex, space-saving safety switches from other technical areas have to be installed.

THE TASK UNDERLYING THE INVENTION

[0006] In the light of this, it is the object or "task" of the invention to provide a means by which the elevator car can be stably supported in a simple manner.

THE SOLUTION ACCORDING TO THE INVENTION

[0007] This task is solved by a blocking device with the features of claim 1.

[0008] According to the invention, a blocking device for the car of an elevator system is proposed for this purpose. This is preferably, but not in all cases, an elevator system with an L-sling, i.e. a so called back pack elevator system. As usual, a corresponding counterweight is needed in order to achieve a balanced elevator system. The counterweight(s) have to be guided on counterweight guide rails.

[0009] The blocking device according to the invention comprises a latch, a latch guide body and a position switch. The blocking device is characterized by the fact that the latch lies displaceably in the latch guide body and, in the extended position, can engage in a latch receiving opening of the car sling, preferably being embodied in the horizontal beam, when the latch is at a correspondingly aligned height to the latch receiving opening. The whole blocking device can be attached to a car guide rail. The car and its sling can thus be fixed to the guide rails in such a way that the car is completely immobilized.

[0010] The blocking device thus comprises few and easy-to-manufacture parts that contribute to the simplicity of the entire system and can be manufactured at low cost so that they can remain permanently in the elevator system in question.

[0011] With the design according to the invention, a very reliable, simply constructed and yet highly resilient blocking device is created.

PREFERRED DESIGN OPTIONS

[0012] Preferably, the latch is borne at least at two points/regions and preferably by two window embrasures in the latch guide body, which are more than insignificantly spaced apart from each other as seen in the horizontal direction, which is the direction along which the latch is slided back and forth. In this way, a particularly high load capacity of the blocking device is achieved.

[0013] Preferably, the latch guide body comprises or consists of two L-shaped parts, a first L-shaped part and a second L-shaped part, which are connected to each other, preferably welded. Preferably, there is a form fit ("positive lock") interconnection between the first and the second L-shaped parts. It can be embodied such, that the shorter leg of the first L-shaped part has a cutout or notch into which a protrusion carried by the longer leg of the second L-shaped part is inserted. It is an option that a welding rope or point additionally interconnects said protrusion and the notch of said cutout with one another.

[0014] However, after the welding, the shorter leg of the second L-shaped part is substantially perpendicular to the base area or the longer leg of the first L-shaped part and the shorter leg of the first L-shaped part is perpendicular to the longer leg of the second L-shaped part, wherein the shorter leg of the first L-shaped part is substantially parallel to the shorter leg of the second L-shaped part.

[0015] In this way, two simple sheet metal parts are combined to form a latch guide body that is particularly resilient and therefore also particularly resistant to possible operating errors or "rough treatment" under condi-

tions of practice.

[0016] Further possible configurations, modes of operation and advantages result from the dependent claims and/or the subsequent description of the exemplary embodiment and/or with reference to the figures.

FIGURE LIST

[0017]

Figure 1 shows the latch guide body of the blocking device according to the invention in three-dimensional view.

Figure 2 shows the latch of the blocking device according to the invention with coupled position switch in the retracted state of the latch.

Figure 3 shows, analogously to Fig. 2, the latch of the blocking device according to the invention with coupled position switch in the extended state of the latch.

Fig. 4 shows the blocking device with its latch in the retracted state.

Fig. 5 shows, analogously to Fig. 4, the blocking device with its latch in the extended state.

Fig. 6 shows the top view of the counterweight guide rails and car guide rails of an elevator system with a blocking device mounted as intended on each car guide rail.

Fig. 7 shows, analogously to Fig. 6, the counterweight guide rails and car guide rails of an elevator system with a blocking device mounted as intended on each car guide rail in three-dimensional view.

Fig. 8 shows the upper part of the car sling with its upper horizontal beam comprising the latch receiving openings.

Fig. 9 shows the entire elevator system (without car), with only the upper part of the car sling and part of the car guide rails and counterweight guide rails shown, with blocking devices fitted as intended.

PREFERRED EMBODIMENT

[0018] Fig. 1 to Fig. 9 show the preferred embodiment for the blocking device 1 according to the invention, and the elevator system 20 correspondingly equipped with preferably two blocking devices 1.

[0019] First of all, Fig. 1 shows the complete latch guide body 3, which comprises a first L-shaped part 5 and a second L-shaped part 6, these two parts being connected to each other, preferably welded.

[0020] The preferably shorter leg of the L-shaped part 6 thus rests perpendicularly to the base area (which is preferably the longer leg) of the first L-shaped part 6 on the very same base area, with its narrow end face. The shorter leg of the second L-shaped part 6 is preferably designed in such a way that the end thereof has a tab 9. The tab 9 is once again bend for 90° related to the shorter leg of the second L-shaped part. Nevertheless, the tab is preferably an integral part of said shorter leg.

[0021] This tab 9 preferably comprises at least two holes 10, which accommodate fastening screws and/or threaded pins for the position switch 4, which may extend through the tab and the housing of the position switch. As can be seen from the figures, the first L-shaped part 5 furthermore comprises a notch on the end face of its shorter leg. Accordingly, the longer leg of the second L-shaped part 6 comprises a protrusion on its end face; said protrusion fitting into said notch, for reasons of stabilization.

[0022] The latch guide body 3 comprises two aligned openings 7 and 8 through which the latch 2 is later guided and held. The two openings 7 and 8 preferably have the same dimensions.

[0023] In addition, the first L-shaped part 5 preferably also comprises at least four, better at least six holes 17, preferably even at least eight holes 17, that are arranged in two vertical rows which have a horizontal spacing from one another of at least the width of a car guide rail. The distance and positioning of said holes is tuned to the guide rails used. As can be seen in Fig. 1, the upper horizontal row or rows are also spaced from the lower horizontal row or rows in order to allow the latch 2 to pass unhindered.

[0024] These holes 17 are used for fastening the latch guide body 3 to the car guide rail, which will also be described and shown in more detail later.

[0025] The second L-shaped part 6 usually comprises a threaded hole 11 in the area of the longer leg, through which preferably a wing screw 12 is guided.

[0026] In the shown embodiment example, the openings 7 and 8 have a rectangular cross-section, since the latch 2 also has a rectangular cross-section. The latch 2 with correspondingly coupled position switch can be seen in Fig. 2 and Fig. 3. Here, the cross-section of the latch 2 is essentially constant apart from the curvature notch 15, the stopping tab 14 and potential bevels.

[0027] The stopping tab 14 is preferably provided at the end or in the area of the end of the latch 2 that faces away from the latch receiving opening 16 in the installed state. Here, the stopping tab 14 preferably protrudes from the regular cross-section of the latch 2.

[0028] "Installed state" in this context means the state in which the respective blocking device has been mounted as intended, namely in such a way that the car blocking device is mounted on the car guide rail, wherein the latch can be received by the latch receiving opening, preferably an aperture in the car sling, particularly preferred in the upper horizontal beam, when brought at correspond-

ingly aligned heights and after the latch is being extended.

[0029] The latch 2 also comprises a curvature notch 15 located on a horizontal edge of the latch 2. The curvature notch 15 is preferably a pitch circle cutout with subsequent ramp towards the side of the latch 2 that is facing away from the latch receiving opening 16. In this preferred example, the roller lever 13 of the position switch 4 is guided by this curvature notch, and the roller lever 13 lies on the pitch circle cutout when the latch is retracted (see Fig. 2). Thus, the position switch 4 is not triggered. In the extended state of the latch (see Fig. 3), the roller lever 13 of the position switch 4 is pushed up by the ramp of the curvature notch 15 and in consequence also by the edge of the latch 2 in the area with no notch. Thus, the position switch 4 is triggered and corresponding safety devices are released.

[0030] Fig. 4 and Fig. 5 show the latch guide body 3 already described with the latch 2 inserted, and the position switch 4 attached in the retracted state (Fig. 4) and extended state (Fig. 5).

[0031] Preferably, the position switch 4 is mounted on the tab 9 with the help of two screws or threaded pins that are inserted to the holes 10.

[0032] Fig. 4 and Fig. 5 also explicitly show the preferred wing screw 12 already mentioned. When completely screwed in, this presses against the latch 2 in such a way that unintentional displacement of the latch 2 is at least made more difficult, preferably even impossible. In the long term, it is therefore impossible for the latch to become acoustically noticeable during normal operation under the influence of operational vibrations or even to be gradually displaced in such a way that it eventually becomes an unintentional obstacle.

[0033] If the latch 2 is to be moved, the wing screw 12 must first be loosened. It is therefore preferable to leave the wing screw 12 screwed in at all times, both in the retracted and in the extended state, in order to make unintentional displacement even less likely in both positions.

[0034] The wing screw 12 and the thread cooperating with it are designed in such a way that the wing screw 12 - even for complete loosening - does not have to be unscrewed completely and can therefore always remain captive in place.

[0035] Since the latch 2 is displaceably supported by the two openings 7 and 8 (their embracements), the latch 2 can be manually displaced and therefore brought from the retracted state to the extended state. In the extended state, the stopping tab 14 touches the shorter leg of the second L-shaped part 6. This creates a stop that defines and limits the intended extension position of the latch 2.

[0036] Fig. 6 and Fig. 7 show how the blocking device 1 or better the two blocking devices 1 are attached to the car guide rail 21. For this purpose, the blocking devices 1 are preferably mounted on the inner side of the car guide rail 21, so that the blocking device 1 is facing the center of the elevator shaft. The two blocking devices 1 are each mounted on the car guide rail 21 with guide rail clamps 18 at the same height and each in the same orientation, relative to the respective car guide rail 21.

[0037] As can be seen especially in Fig. 6, the mounted blocking device 1 and/or a part of the blocking device 1 does not collide with the counterweight guide rails 24.

[0038] As already mentioned and shown in the figures, the clamping body of the guide rail clamps 18 is partially engaging around the car guide rail 21 in the installed state, and the threaded pin of the guide rail clamps 18 is guided through the respective holes 17 of first L-shaped part 5. By tightening a nut 19, which is screwed onto the threaded pin of the guide rail clamps 18, the first L-shaped part 5 and therefore the latch guide body 3 is fastened to the car guide rail 21 in a frictionally locking manner.

[0039] It should be borne in mind that in individual cases it may be advantageous to take precautions for the extremely rare case of a total failure, beyond the largest accident that can actually be assumed, via the number and/or the strength and/or the intended tightening torque of the used screw connections. This is the accident in which the car in full travel collides with a part of the blocking device 1. If the screw connection is appropriately designed, the blocking device 1 is pushed along the car guide rail 21 a short distance in such an accident, overcoming the static friction and under high sliding friction. Ideally, just enough to leave a protective space that is at least just large enough and yet to dissipate the kinetic energy of the car in such a way that neither serious injuries to passengers nor massive damage or even derailment of the car are to be feared. To put it in a nutshell, the use of the blocking device as an energy absorber or force limiter could be considered.

[0040] Fig. 8 shows the corresponding car sling 22 that is constructed as an L-sling; i. e. of back-pack type. As it can be seen, the upper horizontal beam 23, which is in this example aligned parallel to the plane spanned up by the car guide rails, comprises two latch receiving openings 16 into which the latch 2 in the extended state enters.

[0041] Fig. 9 shows a section of the complete elevator system 20 (without car) with two blocking devices 1 mounted as intended, with the latch 2 retracted; yet in the right vertical position, where the latches 2 can be extended in the intended way as the latches 2 are on the corresponding height with the corresponding latch receiving openings 16.

[0042] As can be seen, each latch 2 is designed and arranged for protruding into the beam of the car sling through the gap that is left between a car guide rail 21 and a counterweight guide rail 24. This is extremely space saving.

[0043] It can be seen that the combination of the latch 2 and the upper horizontal beam 23 of the car sling 22 with its latch receiving openings 16 according to the invention is preferably designed in such a way that the car cannot perform uncontrolled travel movements either upwards or downwards after the two latches 2 have been extended and have entered the corresponding latch re-

ceiving openings 16. This is because the car can neither start moving uncontrollably in the direction of the shaft head nor - for example in the event of failure or unintentional release of its brake - can it drop uncontrollably and thus possibly endanger an installer, who is standing on the car roof carrying out maintenance work and is not expecting such a movement.

[0044] Via the position control of the car, the car is thus preferably moved to the corresponding height at which the latch 2 is aligned with the latch receiving opening 16, and the latch 2 is preferably extended manually. In this way, the entire car sling 22 and thus the car are supported. The symmetrical arrangement of the two blocking devices 1 results in a balanced bearing without additional bearing moments.

MISCELLANEOUS

[0045] Moreover, it is particularly convenient that the latch 2 has a substantially rectangular cross-section apart from notches, tabs and/or bevels. This contributes to the simple design of the blocking device 1.

[0046] In the light of this, it is also preferably that the latch 2 has a substantially constant cross-section.

[0047] Furthermore, it is preferred that the openings 7 and 8 have the same shape as the cross-section of the latch 2.

[0048] In addition, it is preferred that at least two holes 10 are provided on the tab 9, which preferably each receive a screw and/or a threaded pin in order being able to attach the position switch 4 in a simple and save manner.

[0049] It is also particularly preferred that the second L-shaped part 6 has a - preferably threaded - hole 11 in the area of its longer leg, preferably for the passage of a wing screw 12.

[0050] Furthermore, it is preferred that the position sensor of the position switch 4 is designed as a roller lever 13.

[0051] It is also convenient that the holes 17 of the first L-shaped part 5 each receive a screw and/or the threaded pin of a guide rail clamp 18.

[0052] This guide rail clamp 18 preferably comprises a clamping body and a threaded pin, the clamping body partially engaging around the car guide rail 21 in the installed state and the threaded pin being guided through a hole 17 of the first L-shaped part 5 and, by tightening a nut 19 which is screwed onto the threaded pin, fastening the first L-shaped part 5 and therefore the latch guide body 3 to the car guide rail 21 in a frictionally locking manner.

[0053] Moreover, it is especially preferred that the first L-shaped part 5 and/or the second L-shaped part 6 are designed as folded sheets, preferably made of steel.

[0054] The following alternative example (an alternative example is hereinafter also referred to as AE) may also claimed if necessary.

AE 1: Blocking device (1) for the car of an elevator system (20), comprising a latch (2), a latch guide body (3) and a position switch (4), wherein the latch (2) lies displaceably in the latch guide body (3) and, in the extended position, can engage in a latch receiving opening (16) of a car sling (22), preferably embodied in the horizontal beam (23) of the car sling (22), when the latch
(2) is at a correspondingly aligned height with respect to the latch receiving opening (16) of the car sling (22), the blocking device (1) with its latch guide body (3), which preferably carries the latch (2) and the position switch (4), being mountable on the car guide rail (21) of the elevator system (20), characterized in that the latch (2) comprises a curvature notch (15) on a horizontal edge of the latch (2), which can at least partially accommodate a position sensor of the position switch (4).

[0055] The following alternative examples (the term alternative examples is hereinafter also referred to as AEs) may also claimed if necessary.

AE 2: The blocking device (1) according to AE 1, characterized in that the latch (2) is borne at least at two points in the latch guide body (3).

AE 3: The blocking device (1) according to any one of the preceding AEs, characterized in that the latch guide body (3) comprises two L-shaped parts, a first L-shaped part (5) and a second L-shaped part (6), which are connected to each other, preferably welded, such that the shorter leg of the second L-shaped part (6) is substantially perpendicular to the base area or the longer leg of the first L-shaped part (5), and the shorter leg of the first L-shaped part (5) is perpendicular to the longer leg of the second L-shaped part (6), wherein the shorter leg of the first L-shaped part (5) is substantially parallel to the shorter leg of the second L-shaped part (6).

AE 4: The blocking device (1) according to any one of the preceding AEs, characterized in that the shorter leg of the first L-shaped part (5) comprises an opening (7) for the passage of the latch (2).

AE 5: The blocking device (1) according to any one of the preceding AEs, characterized in that the shorter leg of the second L-shaped part (6) comprises an opening (8) for the passage of the latch (2).

AE 6: The blocking device (1) according to any one of the preceding AEs, characterized in that the openings (7,8) of the two L-shaped parts (5,6) are aligned with each other.

AE 7: The blocking device (1) according to any one of the preceding AEs, characterized in that the open-

ings (7,8) of the two L-shaped parts (5,6) have essentially the same dimensions.

AE 8: The blocking device (1) according to any one of the preceding AEs, characterized in that latch (2) comprises a stopping tab (14) protruding from the regular cross-section of the latch (2) on the side of the latch (2) facing away from the latch receiving opening (16), preferably directly at the corresponding end of the latch (2) or in the area of said end of the latch (2).

AE 9: The blocking device (1) according to any one of the preceding AEs, characterized in that the second L-shaped part (6) comprises on its shorter leg, preferably in the area of the rear end of the leg, a tab (9), which is perpendicular to the shorter leg of the second L-shaped part (6).

AE 10: The blocking device (1) according to any one of the preceding AEs, characterized in that the latch (2) comprises a curvature notch (15) on a horizontal edge of the latch (2), which can at least partially accommodate a position sensor of the position switch (4).

AE11: The blocking device (1) according to any one of the preceding AEs, characterized in that the curvature notch (15) comprises a pitch circle cutout with subsequent ramp towards the side of the latch (2) that is facing away from the latch receiving opening (16) until the ramp merges with the regular cross-section of the latch (2).

AE 12: The blocking device (1) according to any one of the preceding AEs, characterized in that the longer leg of the first L-shaped part (5) has at least six holes (17) for receiving screws and/or threaded pins, the holes (17) preferably being arranged in two vertical rows which have a horizontal spacing from one another of at least the width of a car guide rail (21) and at most the width of a car guide rail (21) plus 50 mm.

AE13: An elevator system (20) with two blocking devices (1) according to any one of the preceding AEs, wherein the elevator system (20) comprises a car sling (22) and at least two car guide rails (21), characterized in that the blocking devices (1) are each attached to one car guide rail (21), particularly preferably on the inner side of the car guide rail (21), so that the blocking device (1) is facing the center of the elevator shaft, wherein a latch (2) of a blocking device (1) lies displaceably in a latch guide body (3) and, in the extended position, can engage in a latch receiving opening (16) of the car sling (22), preferably embodied in the horizontal beam (23) of the car sling (22), when the latch (2) is at a correspondingly aligned height with respect to the latch receiving opening (16) of the car sling (22).

AE 14: The elevator system (20) according to AE 13, characterized in that the latch receiving opening (16) of the car sling (22) is an aperture in the upper horizontal beam (23) of the car sling (22).

AE 15: The elevator system (20) with two blocking devices (1) according to any one of the preceding AEs, characterized in that the two blocking devices (1) are each mounted on the car guide rail (21) with car guide rail clamps (18) at the same height and each in the same orientation, relative to the respective car guide rail (21) .

REFERENCE LIST

[0056]

1	Blocking device
2	Latch
3	Latch guide body
4	Position switch
5	First L-shaped part
6	Second L-shaped part
7	Opening in the first L-shaped part
8	Opening in the second L-shaped part
9	Tab of the second L-shaped part
10	Hole of the tab
11	Threaded hole
12	Wing screw
13	Roller lever
14	Stopping tab of the latch
15	Curvature notch of the latch
16	Latch receiving opening
17	Hole in the first L-shaped part
18	Guide rail clamp
19	Nut
20	Elevator system
21	Car guide rail
22	Car sling
23	Upper horizontal beam
24	Counterweight guide rail

Claims

1. Blocking device (1) for the car of an elevator system (20), comprising a latch (2), a latch guide body (3) and a position switch (4), wherein the latch (2) lies displaceably in the latch guide body (3) and, in the extended position, can engage in a latch receiving opening (16) of a car sling (22), preferably embodied in the horizontal beam (23) of the car sling (22), when the latch (2) is at a correspondingly aligned height with respect to the latch receiving opening (16) of the car sling (22), the blocking device (1) with its latch guide body (3), which preferably carries the latch (2)

and the position switch (4), being mountable on the car guide rail (21) of the elevator system (20), **characterized in that** the latch (2) comprises a curvature notch (15) on a horizontal edge of the latch (2), which can at least partially accommodate a position sensor of the position switch (4).

2. The blocking device (1) according to claim 1, **characterized in that** the latch (2) is borne at least at two points in the latch guide body (3).

3. The blocking device (1) according to any one of the preceding claims, **characterized in that** the latch guide body (3) comprises two L-shaped parts, a first L-shaped part (5) and a second L-shaped part (6), which are connected to each other, preferably welded, such that the shorter leg of the second L-shaped part (6) is substantially perpendicular to the base area or the longer leg of the first L-shaped part (5), and the shorter leg of the first L-shaped part (5) is perpendicular to the longer leg of the second L-shaped part (6), wherein the shorter leg of the first L-shaped part (5) is substantially parallel to the shorter leg of the second L-shaped part (6).

4. The blocking device (1) according to any one of the preceding claims, **characterized in that** the shorter leg of the first L-shaped part (5) comprises an opening (7) for the passage of the latch (2).

5. The blocking device (1) according to any one of the preceding claims, **characterized in that** the shorter leg of the second L-shaped part (6) comprises an opening (8) for the passage of the latch (2).

6. The blocking device (1) according to any one of the preceding claims, **characterized in that** the openings (7,8) of the two L-shaped parts (5,6) are aligned with each other.

7. The blocking device (1) according to any one of the preceding claims, **characterized in that** the openings (7,8) of the two L-shaped parts (5,6) have essentially the same dimensions.

8. The blocking device (1) according to any one of the preceding claims, **characterized in that** latch (2) comprises a stopping tab (14) protruding from the regular cross-section of the latch (2) on the side of the latch (2) facing away from the latch receiving opening (16), preferably directly at the corresponding end of the latch (2) or in the area of said end of the latch (2).

9. The blocking device (1) according to any one of the preceding claims, **characterized in that** the second L-shaped part (6) comprises on its shorter leg, preferably in the area of the rear end of the leg, a tab (9), which is perpendicular to the shorter leg of the second L-shaped part (6).

10. The blocking device (1) according to any one of the preceding claims, **characterized in that** the curvature notch (15) comprises a pitch circle cutout with subsequent ramp towards the side of the latch (2) that is facing away from the latch receiving opening (16) until the ramp merges with the regular cross-section of the latch (2).

11. The blocking device (1) according to any one of the preceding claims, **characterized in that** the longer leg of the first L-shaped part (5) has at least six holes (17) for receiving screws and/or threaded pins, the holes (17) preferably being arranged in two vertical rows which have a horizontal spacing from one another of at least the width of a car guide rail (21) and at most the width of a car guide rail (21) plus 50 mm.

12. An elevator system (20) with two blocking devices (1) according to any one of the preceding claims, wherein the elevator system (20) comprises a car sling (22) and at least two car guide rails (21), **characterized in that** the blocking devices (1) are each attached to one car guide rail (21), particularly preferably on the inner side of the car guide rail (21), so that the blocking device (1) is facing the center of the elevator shaft, wherein a latch (2) of a blocking device (1) lies displaceably in a latch guide body (3) and, in the extended position, can engage in a latch receiving opening (16) of the car sling (22), preferably embodied in the horizontal beam (23) of the car sling (22), when the latch (2) is at a correspondingly aligned height with respect to the latch receiving opening (16) of the car sling (22).

13. The elevator system (20) according to claim 12, **characterized in that** the latch receiving opening (16) of the car sling (22) is an aperture in the upper horizontal beam (23) of the car sling (22).

14. The elevator system (20) with two blocking devices (1) according to any one of the preceding claims, **characterized in that** the two blocking devices (1) are each mounted on the car guide rail (21) with car guide rail clamps (18) at the same height and each in the same orientation, relative to the respective car guide rail (21).

Fig. 1

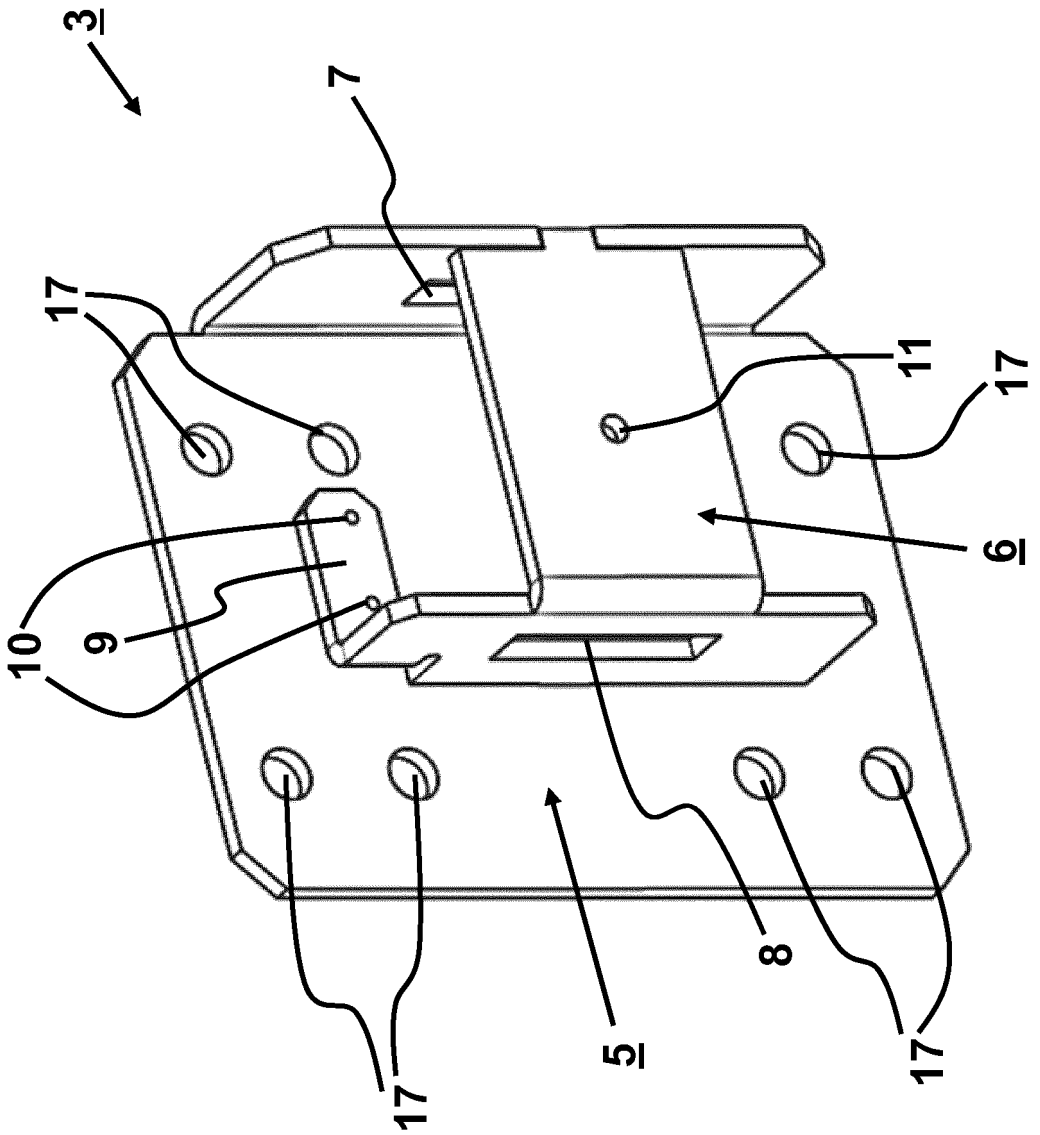


Fig. 2

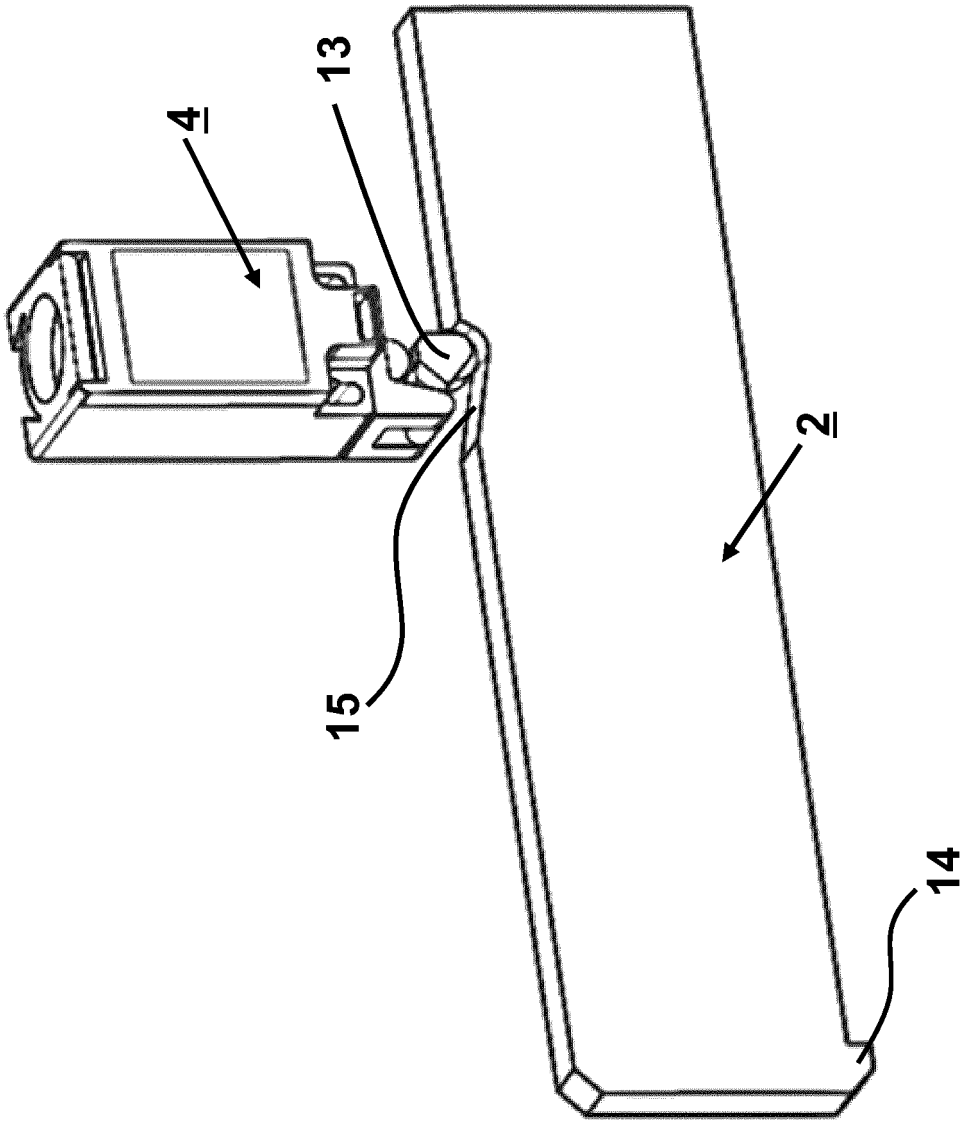
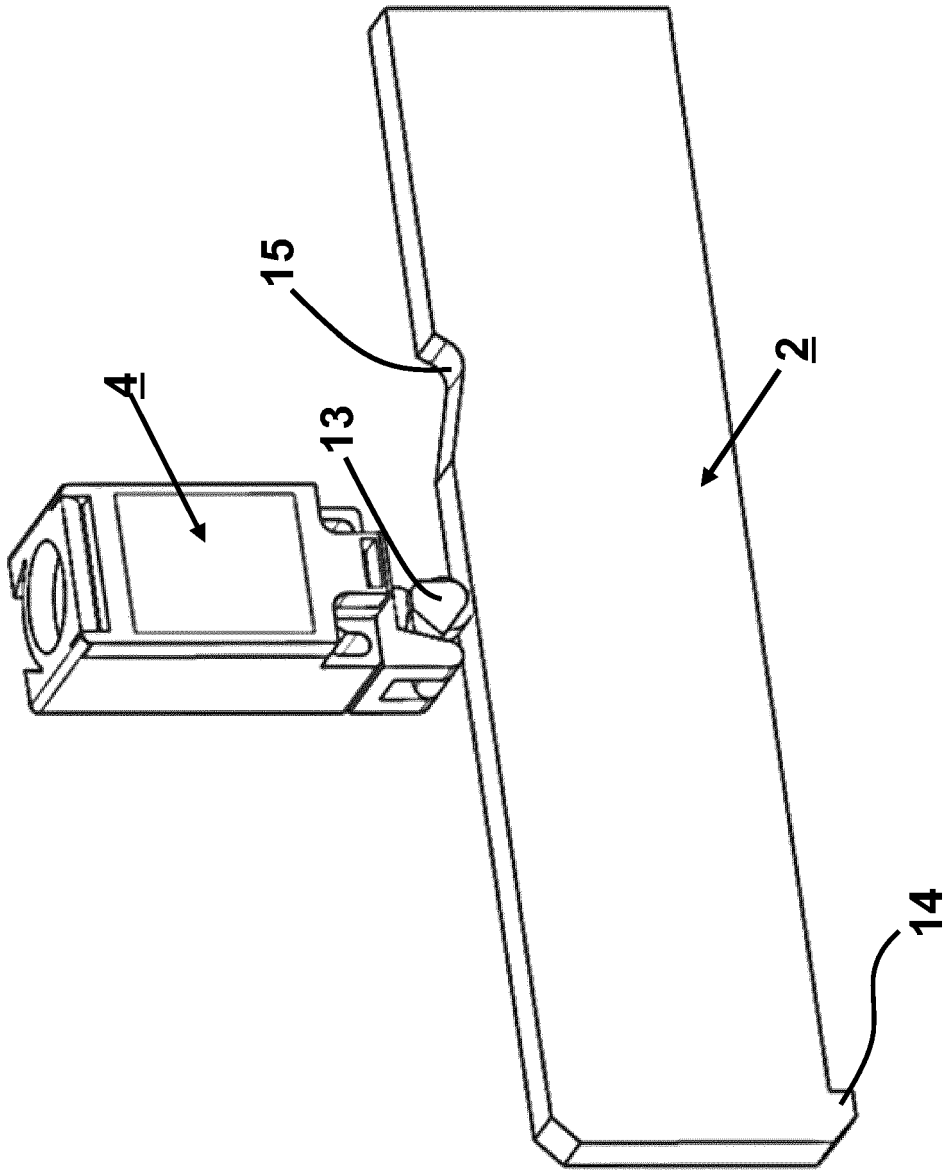


Fig. 3



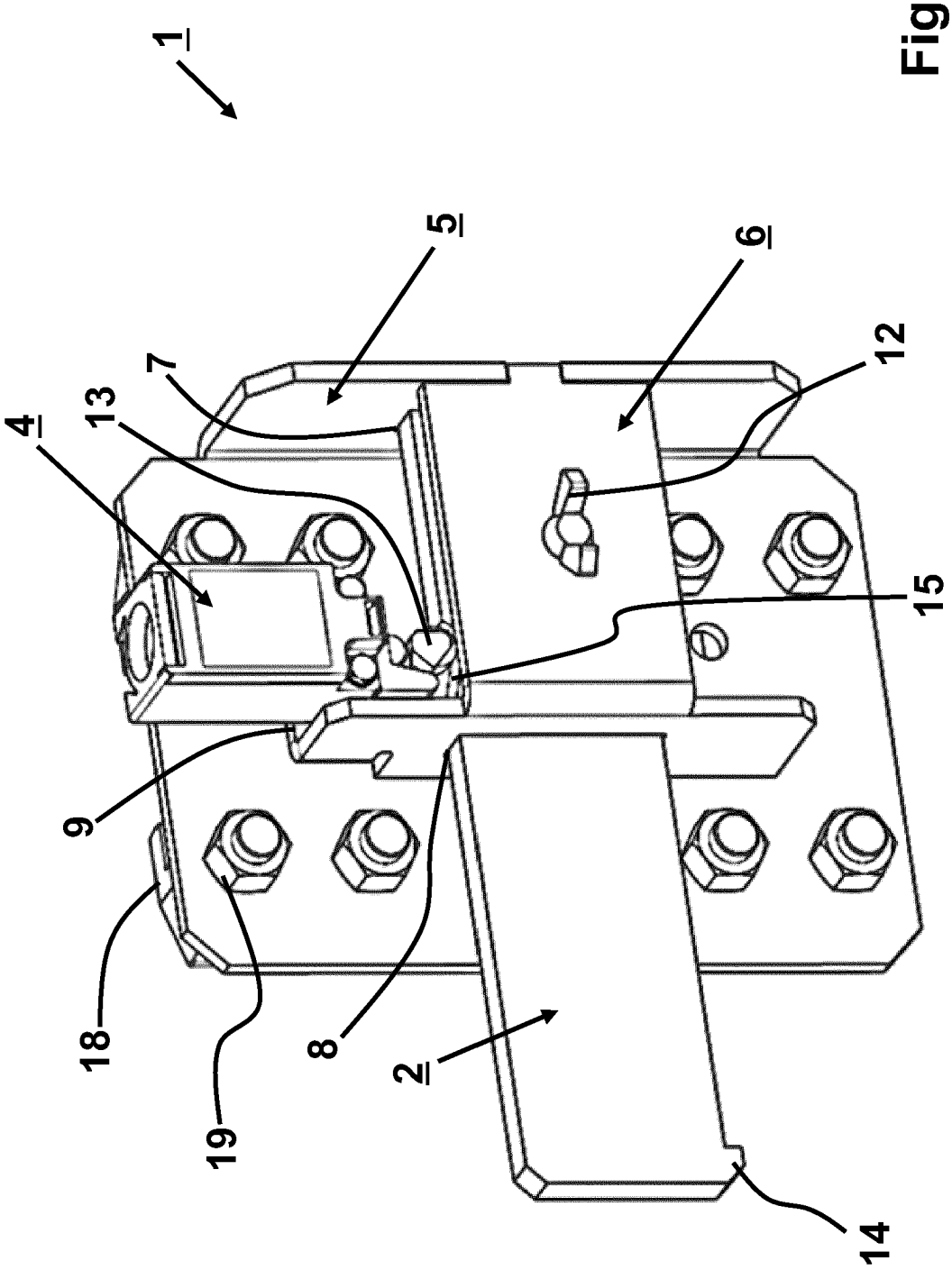


Fig. 4

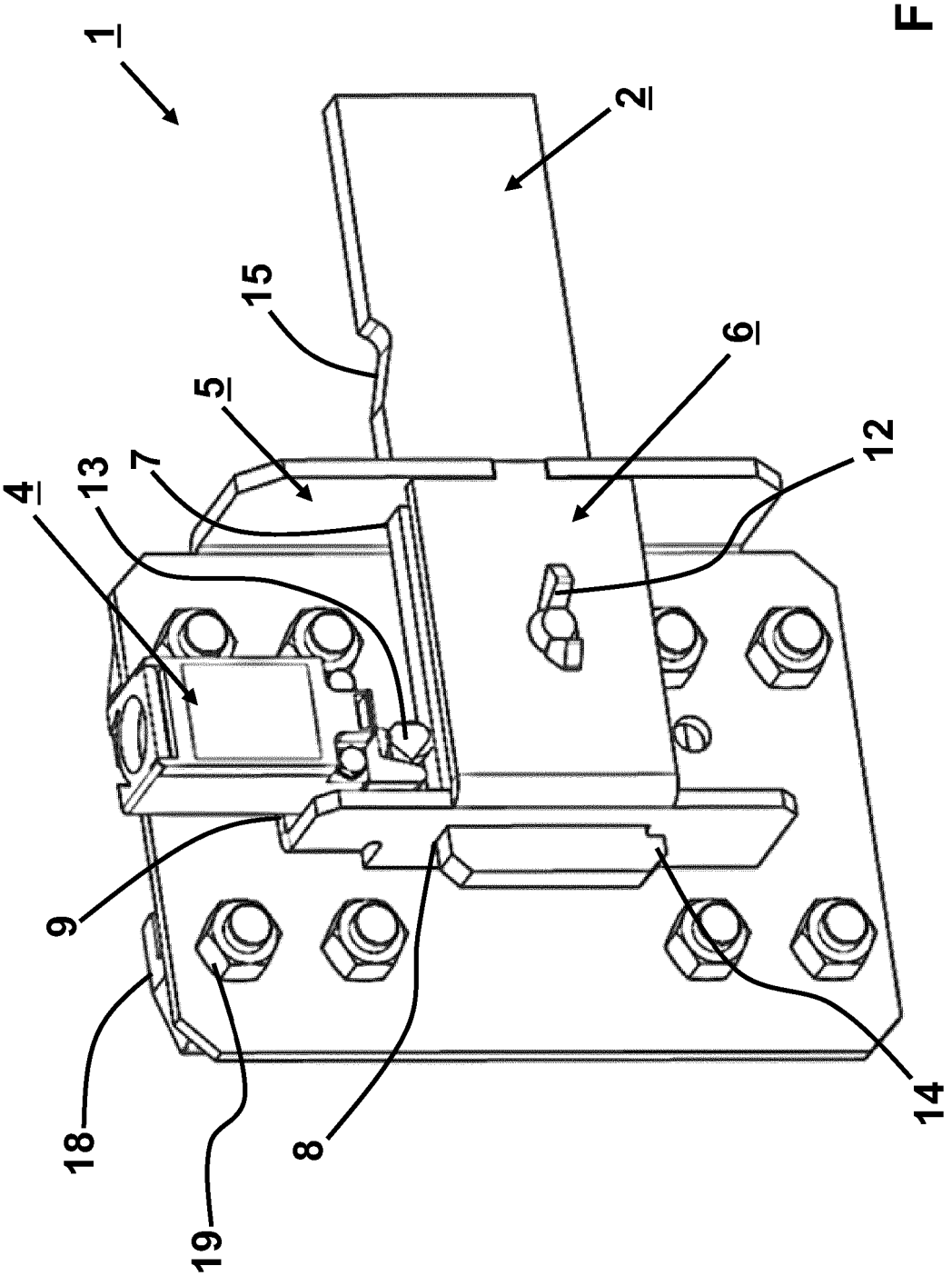


Fig. 5

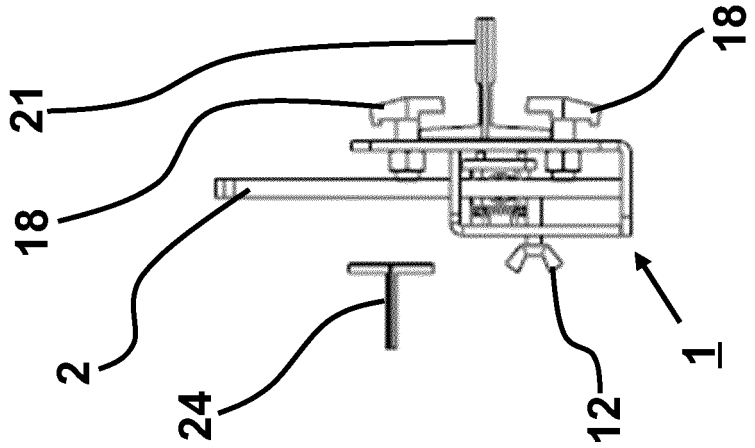


Fig. 6

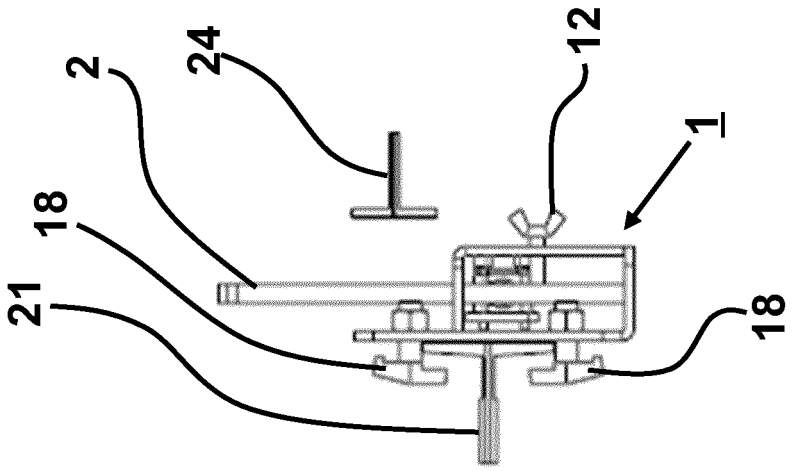


Fig. 7

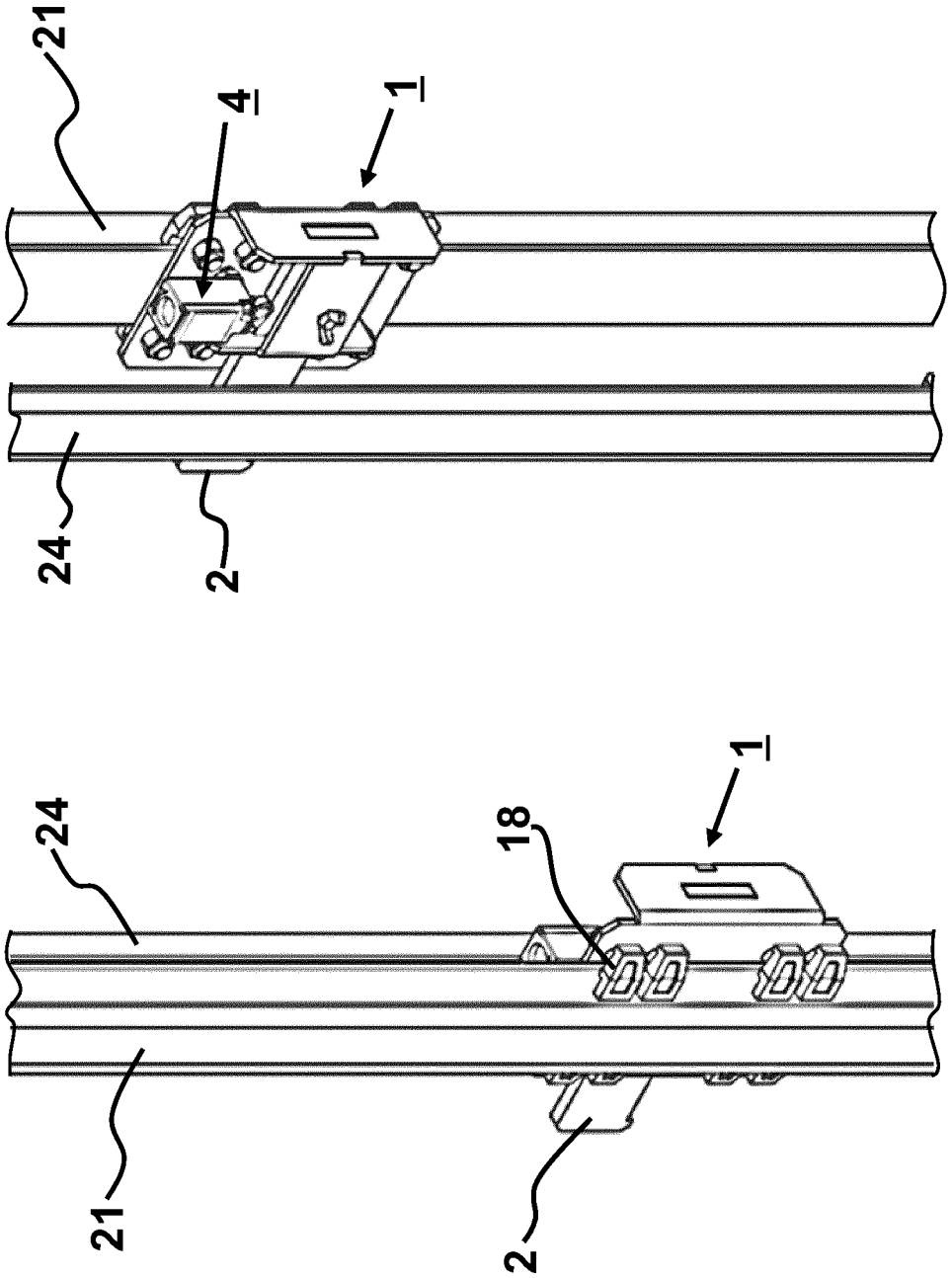


Fig. 8

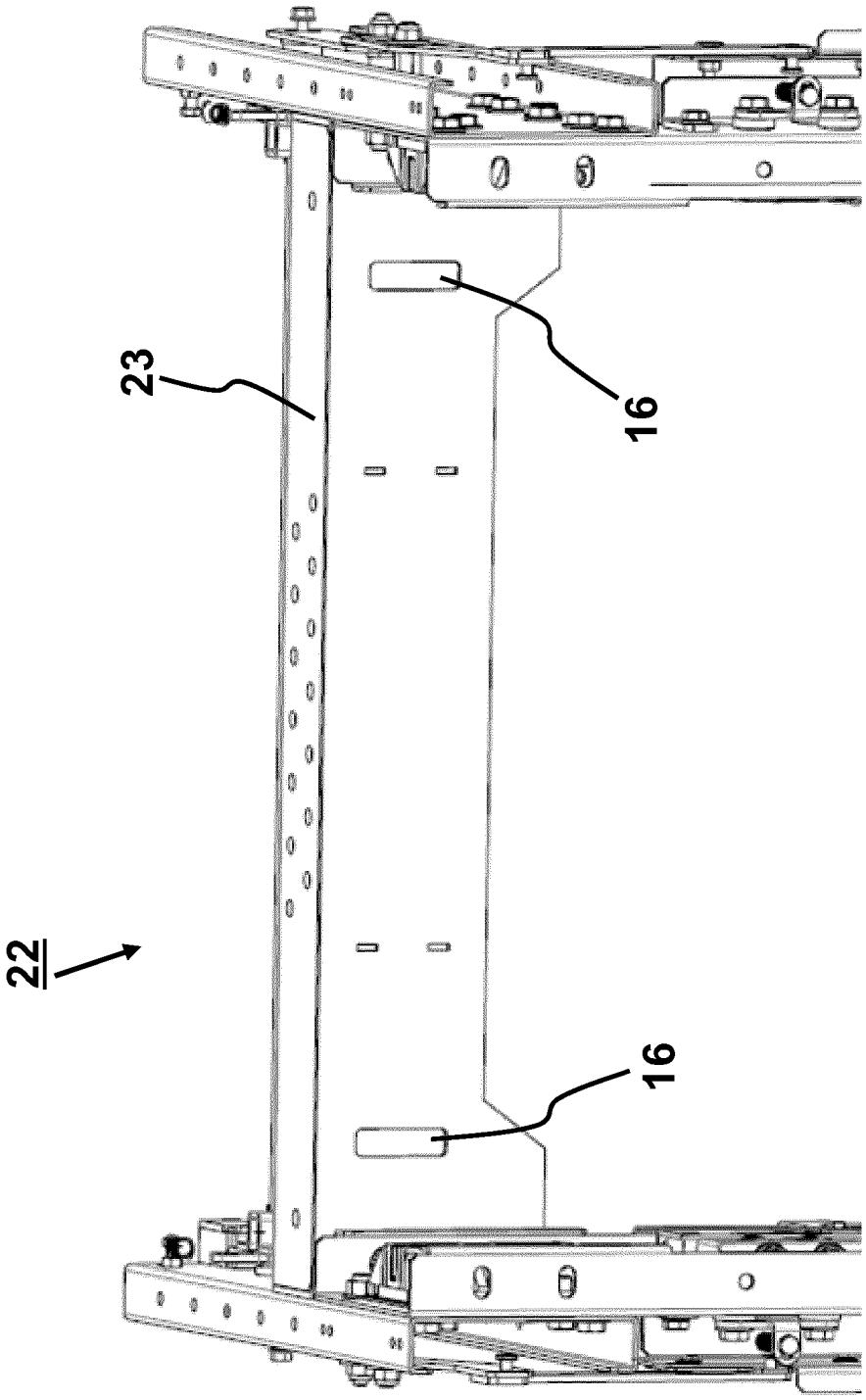


Fig. 9