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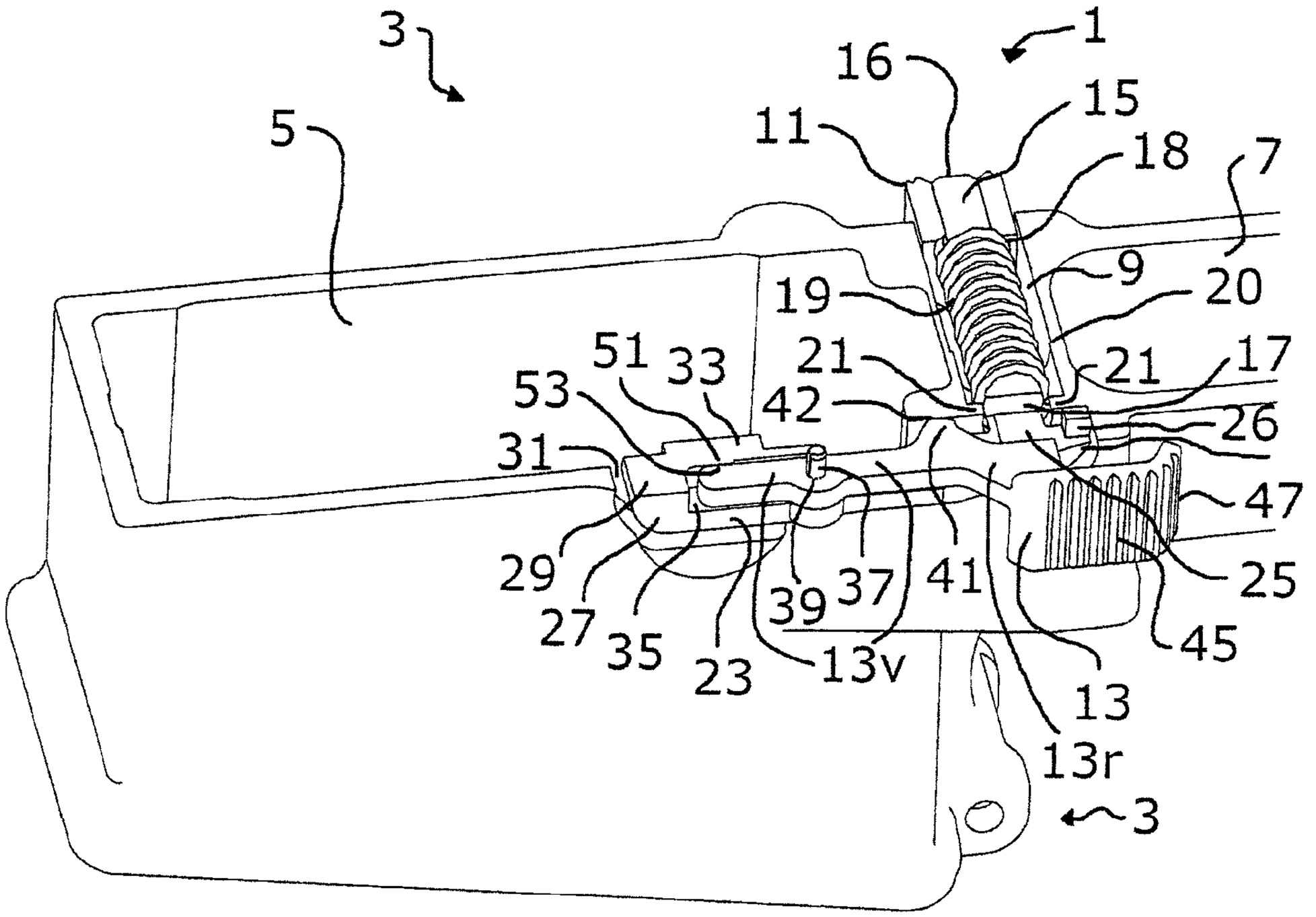
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(54) **Title: MAGAZINE RELEASING/RETAINING MECHANISM FOR A FIREARM, AND BUTTSTOCK AND WEAPON RECEIVER FOR A FIREARM, IN EACH CASE EQUIPPED THEREWITH**



(57) **Abrégé/Abstract:**
The invention relates to a magazine releasing/retaining mechanism (1) that can be operated from both sides, for a firearm, having a magazine retaining arm (23), and handles (11, 13) protruding on both sides of the firearm for transferring the magazine retaining

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(57) **Abrégé(suite)/Abstract(continued):**
arm (23) from its magazine retaining position to its magazine releasing position, and vice versa, wherein one of the handles (13) is designed as a rocker lever, the rocker axis of which is supported on the weapon receiver (3). The magazine releasing/retaining mechanism (1) is characterized in that the magazine retaining arm (23) has a longitudinal slot (35) passing through it, the handle (13) is supported in the longitudinal slot (35) when in its magazine retaining position, and comprises a bulge (41) serving as the rocker axis, which is fitted into the longitudinal slot toward the weapon receiver (3). The invention also relates to both a buttstock as well as a weapon receiver (3) for a firearm, which are equipped, respectively, with a magazine releasing/retaining mechanism (1) of this type.

Abstract

The invention relates to a magazine releasing/retaining mechanism (1) that can be operated from both sides, for a firearm, having a magazine retaining arm (23), and handles (11, 13) protruding on both sides of the firearm for transferring the magazine retaining arm (23) from its magazine retaining position to its magazine releasing position, and vice versa, wherein one of the handles (13) is designed as a rocker lever, the rocker axis of which is supported on the weapon receiver (3). The magazine releasing/retaining mechanism (1) is characterized in that the magazine retaining arm (23) has a longitudinal slot (35) passing through it, the handle (13) is supported in the longitudinal slot (35) when in its magazine retaining position, and comprises a bulge (41) serving as the rocker axis, which is fitted into the longitudinal slot toward the weapon receiver (3). The invention also relates to both a buttstock as well as a weapon receiver (3) for a firearm, which are equipped, respectively, with a magazine releasing/retaining mechanism (1) of this type.

(Figure 3)

Magazine Releasing/Retaining Mechanism for a Firearm, and Buttstock and Weapon Receiver for a Firearm, in Each Case Equipped Therewith

Field of the Invention

The invention relates to a magazine releasing/retaining mechanism for a firearm that can be operated from either side, having a magazine retaining arm, protruding handles on each side of the firearm, for transferring the magazine bracket arm from its magazine retaining position to its magazine releasing position, and vice versa, wherein one of the handles is designed in the manner of a rocker arm, the rocker axis thereof being supported on the weapon receiver. In addition, the invention relates to a buttstock and a weapon receiver for a firearm, each of which are equipped with a magazine releasing/retaining mechanism of this type.

Prior Art

Magazine releasing/retaining mechanisms are known in various embodiments, and have the objective of retaining a magazine in the magazine chamber of a firearm, in a locking manner, for example, or to release the magazine, in order to exchange the magazine, for example.

In these documents, positional indications, such as “up,” “down,” “front,” “back,” etc. always concern weapons held in the normal firing position, in which the bore axis runs horizontally, and the firing of shots occurs toward the front, away from the shooter.

A magazine, in accordance with NATO standards, for example, comprises a magazine catch on its left side. If a shooter has fully inserted a magazine of this type into the magazine chamber of a firearm, then a latch disposed in or on the weapon receiver of a spring-loaded magazine releasing/retaining mechanism automatically engages in the magazine catch. The magazine is then securely locked into the weapon in its operating position. Magazine releasing/retaining

mechanisms of this type are used with magazine-loaded firearms, e.g. with rifles, assault rifles, light machine guns, submachine guns, and pistols.

In order to release the magazine, normally at least one handle is provided on the magazine releasing/retaining mechanism. If a shooter actuates the handle, then this pulls and/or pushes the latch out of the magazine catch. By this means, the magazine is released and can be removed from the weapon by the shooter, or, respectively, falls downward, out of the magazine chamber, when the firearm is held in the normal firing position.

A shooter can then insert a new magazine in the magazine chamber, and the magazine is then, again, locked in place with the latch.

A right-handed shooter normally actuates the magazine releasing/retaining mechanism by means of the handle with the index finger of his right hand, located on the buttstock. Earlier magazine releasing/retaining mechanisms could only be operated on the right side of the weapon, seen in the direction of firing, such that left-handed shooters found it difficult to operate the magazine releasing/retaining mechanism.

In the meantime, magazine releasing/retaining mechanisms that can be operated from both sides have become known. These often have a complex structure, and when placed on the weapon or the magazine retainer, thus protrude from the weapon, and are not sufficiently safeguarded against an unintentional actuation. For this reason, known solutions of this type frequently have a bulky structure, and in rough maneuver operation, or even combat operation, are subject to damage, or malfunction of their components, due to contaminants, for example. Known magazine releasing/retaining mechanisms are also sometimes difficult to integrate in existing weapon systems.

The magazine releasing/retaining mechanism of the generic type specified in the introduction is known from US 4,615,134. For its actuation, a pushbutton is provided on the right side of the firearm, and a handle is provided on the opposite, lower side, which is fitted on a magazine retaining arm, and encompasses this retaining arm. The handle is coupled to a pin having an elastically supported bolt that is fitted into the magazine retaining arm. When actuated, the handle rests against the weapon receiver, and pulls the bolt via the coupling, and thus the

magazine retaining arm, counter to a spring force, out of the weapon receiver, into the magazine releasing position. With the magazine releasing/retaining mechanism known from US 4,615,134, the handle fitted on the magazine retaining arm faces away from the shooter, toward the front, and thus cannot be operated by the shooting hand located on the buttstock.

US 4,521,985 shows a magazine releasing/retaining mechanism on a pistol that can be operated from both sides, for the actuation of which, pushbuttons are provided on both sides.

US 4,759,144 shows a magazine releasing/retaining mechanism that can be operated from both sides, for the actuation of which a pushbutton is provided on one side, and an operating lever is provided on the other side. The operating lever can be pivoted in an elastically supported cylinder, and rests against a piston-shaped component, supported in a fixed manner on the receiver. When pivoted, the operating lever forces the cylinder into the magazine releasing position, against a spring.

US 2010/0281736 A1 shows a magazine releasing/retaining mechanism, which can be pivoted about a bolt forming the pivotal axis. The L-shaped magazine releasing/retaining mechanism designed as an operating lever is actuated via a linear slider that can be actuated from both sides, which pivots the magazine releasing/retaining mechanism out of engagement with the magazine when slid to the left or to the right, via a control cam lying in a recess of the slider.

Furthermore, US 2006/0123683 A1 shows another magazine retaining/releasing mechanism that can be operated from both sides, the magazine retaining arm of which is pivotally supported on a spring loaded actuation bolt. The magazine releasing/retaining mechanism can be disengaged from the magazine, both from the right side, by pushing the actuation bolt, and from the left side, by pivoting the handle.

Lastly, a retrofitting magazine releasing/retaining mechanism that can be operated from both sides is known from Knight's Armament Company (www.knightarmco.com/shop). With this magazine releasing/retaining mechanism a left side operating lever/triggering lever is fitted onto an existing retaining slider of a magazine retaining arm, and attached to a beading via an axle.

As a result, this magazine releasing/retaining mechanism is bulky and is accompanied with the danger of the operating lever becoming caught on clothing worn by the shooter, or elsewhere, during use, and/or of being actuated unintentionally. Furthermore, the support point of this magazine releasing/retaining mechanism lies on the outside of the receiver, and behind an actuation bolt serving as a spring seat. The operating lever/triggering lever attached to the magazine retaining arm is subjected to the action of a spring on the side of its pivotal axis facing away from the shooter, which presses the back portion of the operating lever/triggering lever permanently against the outer surface of the weapon receiver with its contact bulge.

Objective and Solution of the Invention

With this background, the objective of the invention is to provide a magazine releasing/retaining mechanism for firearms that can be operated from both sides and at the same time functions reliably.

In a broad aspect, the present invention provides a magazine releasing/retaining mechanism 1 that can be operated from both sides for a firearm, having a magazine retaining arm 23, and handles 11, 13 protruding on both sides of the firearm, for transferring the magazine retaining arm 23 from its magazine retaining position to its magazine releasing position, and vice versa, wherein one of the handles 13 is designed as a rocker lever, the rocker axis of which is supported on the weapon receiver 3, characterized in that the magazine retaining arm 23 has a longitudinal slot 35 passing through it, the handle 13 is supported in the longitudinal slot 35 in its magazine retaining position, and comprises a bulge 41 serving as the rocker axis, which is fitted into the longitudinal slot toward the weapon receiver 3.

The magazine releasing/retaining mechanism of the present invention thus has the following features: the magazine retaining arm has a longitudinal slot passing through it, the handle is supported in the longitudinal slot when it is in its magazine retaining position, and comprises a bulge that is fitted into this slot toward the weapon receiver, serving as a rocker axis. The present invention also, moreover, provides a buttstock and a receiver of a firearm distinguished in that the buttstock of a firearm or the weapon receiver of a firearm, respectively, is equipped with a magazine releasing/retaining mechanism of this type.

The magazine releasing/retaining mechanism functions reliably, and increases the reliability of a firearm equipped therewith. The magazine retaining/releasing mechanism can be cost-effectively manufactured by means of known metal casting processes, or metal injection molding processes, so-called MIM processes, as well as with typical sintering processes. The longitudinal slot can be formed readily during the production, e.g. as a cut-out or a milled groove.

The bulge resting against the weapon receiver stabilizes the handle on the weapon receiver. A one-point support on the weapon receiver reduces the danger of contamination thereby. Because the bulge serves as a rocker axis, the bulge is supported continuously on the weapon receiver, both in the magazine retaining position and also in the magazine releasing position, as well as during the transition between these positions. During the transition between these positions, the bulge functions as a fulcrum and can roll over the weapon receiver. The pivot point is thus always in a defined position, and enables a secure transfer of forces.

Because the handle is also supported in the magazine retaining arm, it can be balanced with respect to the magazine releasing/retaining mechanism. It is also ensured that the handle will not unintentionally pivot away from the weapon receiver, or buttstock, respectively, when in the magazine retaining position. Moreover, the handle is securely fixed, and thus protected from damage.

On the whole, the magazine releasing/retaining mechanism according to the invention is shorter and protrudes less from the firearm in comparison with the prior art. Because of the partial accommodation of the handle inside the magazine retaining arm, a flatter and more compact structure can be obtained.

The weapon receiver, as set forth in the present invention, comprises a weapon receiver designed as a single unit, as well as a multi-piece weapon receiver, consisting, for example, of a receiver upper part and a receiver lower part. The magazine releasing/retaining mechanism is provided thereon at a suitable position. The receiver lower part can be designed as a buttstock module, a buttstock module with a magazine chamber for receiving a magazine, a buttstock module with a mount for a trigger mechanism, a buttstock module having a magazine chamber and a mount for a trigger mechanism, a buttstock with a mount for a trigger mechanism and a shoulder support, or a buttstock module having a magazine chamber, a mount for a trigger mechanism, and a shoulder support. The buttstock, as set forth in the present invention, is a buttstock for firearms.

Preferably, the magazine releasing/retaining mechanism handle is supported in the longitudinal slot when the magazine is removed in the magazine retaining position, in the front region of its front lever arm facing the direction of firing, and has a manipulation surface in the region of the back end of its back lever arm.

This enables a compact construction and a secure support of the handle.

Preferably the front lever arm is largely received in the longitudinal slot when in the magazine retaining position.

As a result, the handle is largely inserted in the magazine retaining arm, and thus protected from contamination and/or damage. This insertion also prevents a tilting of the handle.

Preferably the magazine retaining arm and the front lever arm are connected in an articulated manner in the longitudinal slot.

This articulated connection enables a short lever stroke.

The support of the bulge on the weapon receiver preferably occurs between the pivot joint and the movement axis of the handle. In doing so, the point of support is preferably located in front of the magazine releasing/retaining mechanism cylinder that is fitted into the weapon receiver, seen in the direction of firing.

This enables a compact structure and reduces susceptibility to contamination.

Preferably the magazine releasing/retaining mechanism is held tightly in place, in its magazine retaining position, by an elastic element.

The magazine retaining position for the magazine releasing/retaining mechanism is generally known as the position in which the magazine is retained in the magazine chamber, and engages with the magazine catch with its magazine latch. An elastic element can, for example, be a

spring, a rubber-like component, or another suitable component. This retains the magazine releasing/retaining mechanism in its magazine retaining position, under tension, in an elastic manner.

As is generally known, in order to exchange magazines, a shooter slides the magazine releasing/retaining mechanism into the magazine releasing position, in which the magazine retaining arm is disengaged from the magazine catch of the magazine with its magazine retaining latch, and the magazine is released.

Preferably at least a section of the back lever arm is guided lengthwise along at least one guide surface formed on/in the magazine retaining arm.

This ensures a reproducible movement of the handle, and prevents a tilting of the handle.

Furthermore, it is preferred that the magazine releasing/retaining mechanism can be transferred from the magazine retaining position to the magazine releasing position by means of pushing by a shooter against either of its two handles.

A releasing of the magazine retainer with the free hand is also desirable here, wherein the free hand can both grab the magazine as well as be kept ready to actuate the magazine retainer release.

The application of pressure to the handles occurs thereby, preferably, with the index finger of the shooting hand located on the buttstock. Advantageously, it is thus possible to operate the mechanism from both the left and right sides in an ergonomic manner, for right-handed persons as well as for left-handed persons.

A shooter can transfer the magazine releasing/retaining mechanism from the magazine retaining position to its magazine releasing position in that he pushes the first handle into the weapon receiver and/or pivots the second handle until it abuts the weapon receiver. When the second handle is pivoted, it rests against the weapon receiver with its bulge, and, with its magazine latch, pulls the front end of the magazine retaining arm, via its articulated connection, out of the

magazine catch, as well as pulling the back end of the magazine retaining arm, in the manner of a parallel sliding, away from the weapon receiver, against a spring force.

Preferably at least one of the magazine releasing/retaining mechanism handles has a slip resistant manipulation surface.

The slip resistant manipulation surface can be generated by means of recesses, such as grooves or corrugations in the surface, or a rubber coating. This enables manipulation of the slide stop lever with gloves as well, and in particular in wet conditions, without slipping. By this means, the operating safety of a weapon can be increased.

Preferably the magazine releasing/retaining mechanism is designed as a retrofitting kit.

As a result of the simple, compact and space saving construction of the magazine releasing/retaining mechanism according to the invention, existing buttstocks, or weapon receivers, respectively, can be retrofitted in a simple manner, by exchanging components, without the need for mechanical reworking. Thus, firearms, such as standard rifles like the M16, for example, can be retrofitted with the magazine releasing/retaining mechanism according to the invention. In particular, older weapons can be ergonomically optimized thereby, and retrofitted with a magazine releasing/retaining mechanism that can be operated from both sides.

With more modern, new weapons, the magazine releasing/retaining mechanism according to the invention is preferably a component of the weapon receiver, or the receiver lower part of the buttstock, respectively, from the start. Many weapons are currently comprised of individual assemblies, because in this manner, malfunctioning or defective components can be simply replaced, this being applicable, in particular, for a buttstock, or weapon receiver, or receiver lower part, respectively, having an integrated magazine releasing/retaining mechanism according to the invention.

For these reasons, the magazine releasing/retaining mechanism according to the invention is also a component of a weapon receiver, or a buttstock, or a receiver lower part, respectively.

Preferably a buttstock has at least one guard projection for at least one handle of the magazine releasing/retaining mechanism.

Preferably a weapon receiver has at least one guard projection for at least one handle of the magazine releasing/retaining mechanism.

The guard projection(s) can protrude outward at the side of the weapon receiver, or buttstock, and be provided in the proximity of at least one handle. They can already be formed during the production, in the casting of a weapon receiver or buttstock, or they can be implemented as an add-on component. The guard projection(s) prevent an unintentional actuation of the handle, which could have a negative affect on the functionality of a weapon. Advantageously, a shooter cannot unintentionally release the magazine with his finger, thus undermining the operational readiness of the weapon. Moreover, the magazine releasing/retaining mechanism, and in particular its handles, is protected against impact and damage, and thus against bending or breakage, by means of a guard projection.

Description of the Figures

Embodiment examples of the invention are explained below in greater detail, with reference to the attached, schematic drawings. Shown in the drawings are:

Fig. 1 a perspective view of a magazine releasing/retaining mechanism according to the invention, in its magazine retaining position – diagonally from the back;

Fig. 2 a perspective cross-section view of the magazine releasing/retaining mechanism shown in Fig. 1;

Fig. 3 a perspective cross-section view of a magazine releasing/retaining mechanism according to the invention, inserted in a weapon receiver, in its magazine retaining position – diagonally from above;

Fig. 4 a view from above, of a cross-section, cut through a magazine releasing/retaining mechanism inserted in a weapon receiver, in its magazine retaining position;

Fig. 5 a view from above, of a cross-section of the magazine releasing/retaining mechanism shown in Fig. 4, but in its magazine releasing position;

Fig. 6 a perspective side view of a magazine releasing/retaining mechanism inserted in a weapon receiver, in its magazine retaining position; and

Fig. 7 a perspective side view of the magazine releasing/retaining mechanism shown in Fig. 6 – diagonally from below.

The construction of the magazine releasing/retaining mechanism 1 shall first be explained based on Figs. 1 – 3. Figs. 1 and 2 show the magazine releasing/retaining mechanism 1 without a weapon receiver 3 and Fig. 3 shows it with a weapon receiver.

The magazine releasing/retaining mechanism 1 has, substantially, the form of an L, when viewed from above. A first handle 11, here designed basically as a pushbutton or knob, enables an operation of the magazine releasing/retaining mechanism 1 from the right side of a weapon. This handle 11 is coupled to a bolt 15 by a known threaded connection, not shown. For this, the first handle 11 comprises a through hole 12 having an internal thread cut into it, which is screwed together with a counter-thread on the right end 16 of the bolt 15.

The bolt 15 forms the lower leg of the L, and is encompassed by a spiral spring 19. At its left end 17, the bolt 15 transitions into a magazine retaining arm 23, which extends at basically a right angle to the bolt 15, and forms the long leg of the L. The magazine retaining arm 23 is an integral part of the bolt 15, but can also be coupled to the bolt 15 by suitable attachment means. An integral design ensures a high degree of stability for the magazine releasing/retaining mechanism 1.

The magazine releasing/retaining mechanism 1 is can be transferred, by means of its first and/or second handle 11, 13, from its magazine retaining position (cf. Figs. 1 – 4), against the force of the spiral spring 19, to its magazine releasing position, in which it releases the magazine (cf. Fig. 5).

A longitudinal slot 35 extends, in the firing direction, in the magazine retaining arm 23, which is open toward the side of the magazine retaining arm 23 facing away from the weapon, having a substantially U-shaped cross-section in its front and back regions, wherein the open side of the U faces away from the weapon. The middle part of the longitudinal slot 35, lying between these two regions, conversely, is formed as a through slot. A second handle 13 is inserted in this longitudinal slot 35, having basically the shape of a rocker lever or a pivot lever, with a front lever arm 13v and a back lever arm 13r. This handle enables operation of the magazine releasing/retaining mechanism 1 from the left side of the weapon. A rectangular magazine latch 33 protrudes from the front region 29 of the magazine retaining arm 23, which engages, in the known manner, in a (not shown) complementary recess in the magazine, and holds it in place when the magazine retaining arm 23 is in the magazine retaining position.

The longitudinal slot 35 extends over nearly the entire length of the magazine retaining arm 23, and has a upper and a lower lateral wall in the depicted embodiment example, both of which lie within the magazine retaining arm 23. At the back end of the longitudinal slot 35, at least one lateral wall transitions into a guide surface 25 for a rocker movement of the second handle 13 in the longitudinal slot 35. Preferably both lateral walls of the longitudinal slot 35 transition in this respective back end section into guide surfaces 25 for the second handle 13, wherein the guide surfaces 25 are preferably planar, and end at their ends facing toward the weapon, to the left of the bolt 15 (cf. Figs. 1 and 2). The same guide surfaces 25 are also located in the region of the through hole 39.

Fig. 2 shows that, in any case, the lower lateral wall, preferably both lateral walls, of the longitudinal slot, transition into the planar guide surfaces 25 via a step 63. This step 63 is located to the left and right of the through hole (39) (Figs. 4 and 5), such that the upper and lower sides of the handle 13 only come to rest against the planar guide surfaces 25. Because of the

recesses between the guide surfaces 25, the movement of the handle 13 is less susceptible to contamination.

The front side 27 and back side 26 end sections of the magazine retaining arm 23 border the longitudinal slot 35 in the longitudinal direction, wherein the back side end section 26 rests against the weapon receiver 3 with its vertical surface 28 facing the weapon 11, when the magazine has been removed (cf. Figs. 1 and 4).

The back side section 26 serves to reinforce, or stabilize the shape of the magazine retaining arm 23. The two surface sections facing away from the weapon, in this case, the left section of the back region of the magazine retaining arm 23, are slanted, and form, respectively, parallel ramp-like sections 57a, b, at its back end section 26, in order to ensure a sufficient rocking, or pivoting, respectively, of the second handle 13.

The second handle 13 is secured on the magazine retaining arm 23 via an axle, or a pin 37, respectively, e.g. a locking pin. The pin 37 is (in the firing direction) positioned behind the front region of the magazine retaining arm 23, and is fitted into a through hole 39 provided in the second handle 13. It serves as a physical hinge axle for the second handle 13 inserted in the magazine retaining arm 23.

When in the magazine retaining position, the second handle 13 rests with a support surface 53 on its end facing the muzzle of the weapon, on a support surface 51 of the magazine retaining arm 23 lying opposite it (cf. Fig. 2). The second handle 13 comprises, additionally, at its section located behind the pin 37, or its through hole 39, respectively, a bulge 41, which enters the longitudinal slot 36 toward the weapon, and is supported on a support surface 42 in the weapon receiver 3 (cf. Figs. 3 – 5). The end of the handle 13 facing toward the shooter comprises a manipulation surface 45, preferably having a slip resistant surface. The manipulation surface 45 is bent at its back end 47 toward the weapon receiver 3.

In Fig. 3, the magazine releasing/retaining mechanism 1 is supported in a through hole 9 passing through the weapon receiver 3. The through hole 9 is positioned between a magazine chamber 5 and a recess 7 for receiving a, not shown, known trigger mechanism in the weapon receiver 3,

e.g. designed as a bore, and is fitted into the weapon receiver 3 transverse to the bore axis (not shown) of the firearm.

The bolt 15 passes entirely through the through hole 9, and tapers, starting at the step 20 formed in the through hole 9, toward the first handle 11. Both the step 20 and the tapering of the bolt 15 are dependent on the production, and can vary in terms of their design, e.g. they can be further toward the left or right.

The bolt 15 transitions at its end 17 opposite the first handle 11, the left end in this case, into the magazine retaining arm 23 positioned at the left, outside of the weapon receiver 3. The magazine retaining arm 23 extends adjacent to the magazine chamber 5 in the firing direction (cf. Figs. 3 – 6), and is thus parallel to the bore axis, and therefore at a right angle to the bolt 15.

The spiral spring 19 encompassing the bolt 15 tightens the magazine releasing/retaining mechanism in its magazine retaining position. With its end facing the right end 16 of the bolt 15, the spiral spring 19 presses against the surface 18 of the first handle 11 facing the weapon. With the other end, the spiral spring 19 rests against the weapon receiver 3, in this case on an annular shoulder 21 extending in the through hole 9 at basically a right angle. The annular shoulder 21 forms a passage for the bolt 15 extending out of the weapon receiver 3. In order to improve the support thereof on the annular shoulder 21, and on the first handle 11, the spiral spring 19 is flattened on each of its end regions.

The spiral spring 19 forces the first handle 11 out of the through hole 9, and thus out of the weapon receiver 3, into its magazine retaining position. Because the first handle 11, the bolt 15, and the magazine retaining arm 23 are connected to one another in a form-locking manner, in particular integrally, the spiral spring 19 pulls the magazine retaining arm 23 against the weapon receiver 3, and thus also pulls it into its magazine retaining position. In its magazine retaining position, the magazine retaining arm 23 lies with its back end, with its support surface 28 facing the weapon receiver 3, against the weapon receiver 3, when the magazine has been removed.

The one handle 11 extends outward to the right over the weapon receiver 3, and thus enables operation of the magazine releasing/retaining mechanism from the right side of the weapon. The second handle 13 extends outward to the left over the weapon receiver 3, in order to operate it (cf. Figs. 3 – 6).

The front end 29 of the magazine retaining arm 23 is disposed in a cut-out 31 passing through the weapon receiver 3. From its side facing the weapon, the rectangular magazine latch 33 protrudes toward the magazine chamber 5. In the magazine retaining position, the magazine latch 33 is fitted into the cut-out 31, extends into the magazine chamber 5 and engages in a complementary recess of a magazine, not shown, in order to be retained securely in the magazine chamber 5. The magazine retaining arm 23 has a rectangular recess 61 between its magazine latch 33 and its support surface 28. When the magazine has been inserted, a support surface 64 formed in front of the magazine latch 33 rests against the magazine in the magazine retaining position. The surfaces of the magazine retaining arm 23 lying in the recess 61 are held at a distance to the external wall of the magazine by the recess 61 when the magazine has been inserted.

In the magazine retaining position, the second handle 13 rests with its front support surface 53 on the support surface 51 on the magazine retaining arm 23 lying opposite. In addition, this handle 13 rests with its bulge 41 on the weapon receiver 3 at the support surface 42 located there. Because of tolerance overlappings of the components in question, it may be the case that when the magazine has been inserted, a minimal amount of play exists between the support surfaces of the handle and the surfaces they are resting against on the magazine retaining arm and on the receiver. Due to the insignificance of this play, the second handle does not need any further support or to be subjected to any additional force. Because of this support at two points, the second handle 13 is fixed in position against a pivoting on its own accord in its magazine retaining position, and rests against the magazine retaining arm 23. This enables a balanced support of the second handle 13, in which wobbling or flapping is largely prevented.

In order to transfer the magazine releasing/retaining mechanism 1 from its magazine retaining position to its magazine releasing position (cf. Fig. 5), the shooter exerts pressure on one of the

two handles 11, 13. He either pushes the first handle 11 into the weapon receiver 3, or he pivots the second handle 13 toward the weapon receiver 3.

With a right side actuation, the shooter pushes the first handle 11 against the force of the spring 19 into the weapon receiver 3. As a result, he slides – due to the form-locking connection of the first handle 13, bolt 15 and magazine retaining arm 23 – the magazine retaining arm 23 to the opposite side, out of the weapon receiver 3, and thus the magazine latch 33 from its locking engagement with the magazine.

Alternatively, the shooter can actuate the second, in this case left side, handle 13. For this, he pushes its manipulation surface 45 toward the weapon receiver 3. As a result, the second handle 13 tilts, or pivots, respectively, over the support point of its bulge 41 supported on the weapon receiver 3, such that the front end 13v of the second handle 13 pivots out of the longitudinal slot 35 in the magazine retaining arm 23, away from the weapon, and is directed away from the weapon via the pin 37 in the magazine retaining arm 23, against the force of the spring 19. In particular, the magazine retaining latch 33 is pulled, or pushed, respectively, by this means, out of its locking engagement with the magazine. The magazine retaining arm 23 thus releases the magazine (cf. Fig. 5). At the same time, the first handle 11 and the bolt 15 screwed to it are pulled into the hole 9, against the force of the spring 19.

In the magazine releasing position, the bent end 47 of the manipulating element 45 of the second handle 13 is located in the proximity of the weapon receiver 3, more precisely, in the proximity of the wall of the hole 7 for the, not shown, trigger mechanism, or rests against it. The back end section 26, the transition to the bolt 15 and the magazine latch 33 of the magazine retaining arm 23 are likewise spaced apart from the weapon receiver 3, or the magazine chamber 5, respectively. The bulge 41, and thus its support point for the pivoting of the second handle 13, are pushed toward the magazine chamber 6 in comparison with the magazine retaining position shown in Figs. 3 and 4, because they roll, when supported at their rounded ends, over the weapon receiver 3.

In this position, a shooter can then remove the magazine, or, respectively, the magazine falls automatically downward out of the weapon, as long as it is being held in the normal firing

stance. As soon as he releases both handles 11, 13, or no longer exerts pressure to them, the magazine latch 33 and the magazine retaining arm 23 return to their spring loaded home position. If the shooter then inserts a magazine into the magazine chamber, the magazine passes over the magazine retaining latch 33 on a ramp, and thus pushes the magazine retaining arm 23 a short distance out of the weapon receiver 3, against the force of the spring 19, until the magazine retaining latch 33 locks in place in the retaining recess in the magazine, and partially releases the spring 19.

Figs. 6 and 7 show a perspective side view of a magazine releasing/retaining mechanism 1 inserted in a weapon receiver, in its magazine retaining position. The weapon receiver 3 continues upward at this point. A slot-shaped hole 59 in the weapon receiver 3 is provided above the magazine releasing/retaining mechanism 1, for receiving a, not shown, slide stop lever. A guard projection 55 is provided beneath the magazine releasing retaining mechanism 1, which extends to the side of the weapon receiver 3. The guard projection prevents an unintentional actuation of the second handle 13, such that a shooter cannot unintentionally release the magazine. Likewise, this handle 13 is protected against impact and damage, and thus against bending or breaking.

Claims

1. A magazine releasing/retaining mechanism (1) that can be operated from both sides for a firearm, having a magazine retaining arm (23), and handles (11, 13) protruding on both sides of the firearm, for transferring the magazine retaining arm (23) from its magazine retaining position to its magazine releasing position, and vice versa, wherein one of the handles (13) is designed as a rocker lever, the rocker axis of which is supported on the weapon receiver (3), characterized in that the magazine retaining arm (23) has a longitudinal slot (35) passing through it, the handle (13) is supported in the longitudinal slot (35) in its magazine retaining position, and comprises a bulge (41) serving as the rocker axis, which is fitted into the longitudinal slot toward the weapon receiver (3).

2. The magazine releasing/retaining mechanism (1) according to Claim 1, characterized in that the handle (13) is supported in the longitudinal slot (35) in the front region of its lever arm (13v) extending in the firing direction, and has a manipulating surface (45) at the back of its back lever arm (13r).

3. The magazine releasing/retaining mechanism (1) according to Claim 1 or 2, characterized in that the front lever arm (13v) is largely accommodated in the longitudinal slot (35) when in its magazine retaining position.

4. The magazine releasing/retaining mechanism (1) according to any one of Claims 1, 2 or 3, characterized in that the magazine retaining arm (23) and the front lever arm (13v) are connected in an articulated manner to one another in the longitudinal slot (35).

5. The magazine releasing/retaining mechanism (1) according to any one of Claims 1 to 4, characterized in that it is retained by an elastic element (19) in a spring loaded manner in its magazine retaining position.

6. The magazine releasing/retaining mechanism (1) according to any one of Claims 1 to 5, characterized in that at least one section of the lever arm (13r) extending toward the back is guided along at least one guide surface (25) formed on/in the magazine retaining arm (23).

7. The magazine releasing/retaining mechanism (1) according to any one of Claims 1 to 6, characterized in that it can be transferred from the magazine retaining position to the magazine releasing position by means of pressure exerted by a shooter on either of its two handles (11, 13).

8. The magazine releasing/retaining mechanism (1) according to any one of Claims 1 to 7, characterized in that at least one of its handles (11, 13) has a slip resistant manipulation surface (45).

9. The magazine releasing/retaining mechanism (1) according to any one of Claims 1 to 8, characterized in that it is designed as a retrofitting set for firearms.

10. A buttstock (3) for a firearm, characterized by a magazine releasing/retaining mechanism (1) according to any one of Claims 1 to 9.

11. The buttstock (3) according to Claim 10, characterized in that it has at least one guard projection (55) for at least one handle (11; 13) of the magazine releasing/retaining mechanism (1).

12. A weapon receiver (3) for a firearm, characterized by a magazine releasing/retaining mechanism (1) according to any one of Claims 1 to 9.

13. The weapon receiver (3) according to Claim 12, characterized in that it has at least one guard projection (55) for at least one handle (11; 13) of the magazine releasing/retaining mechanism (1).

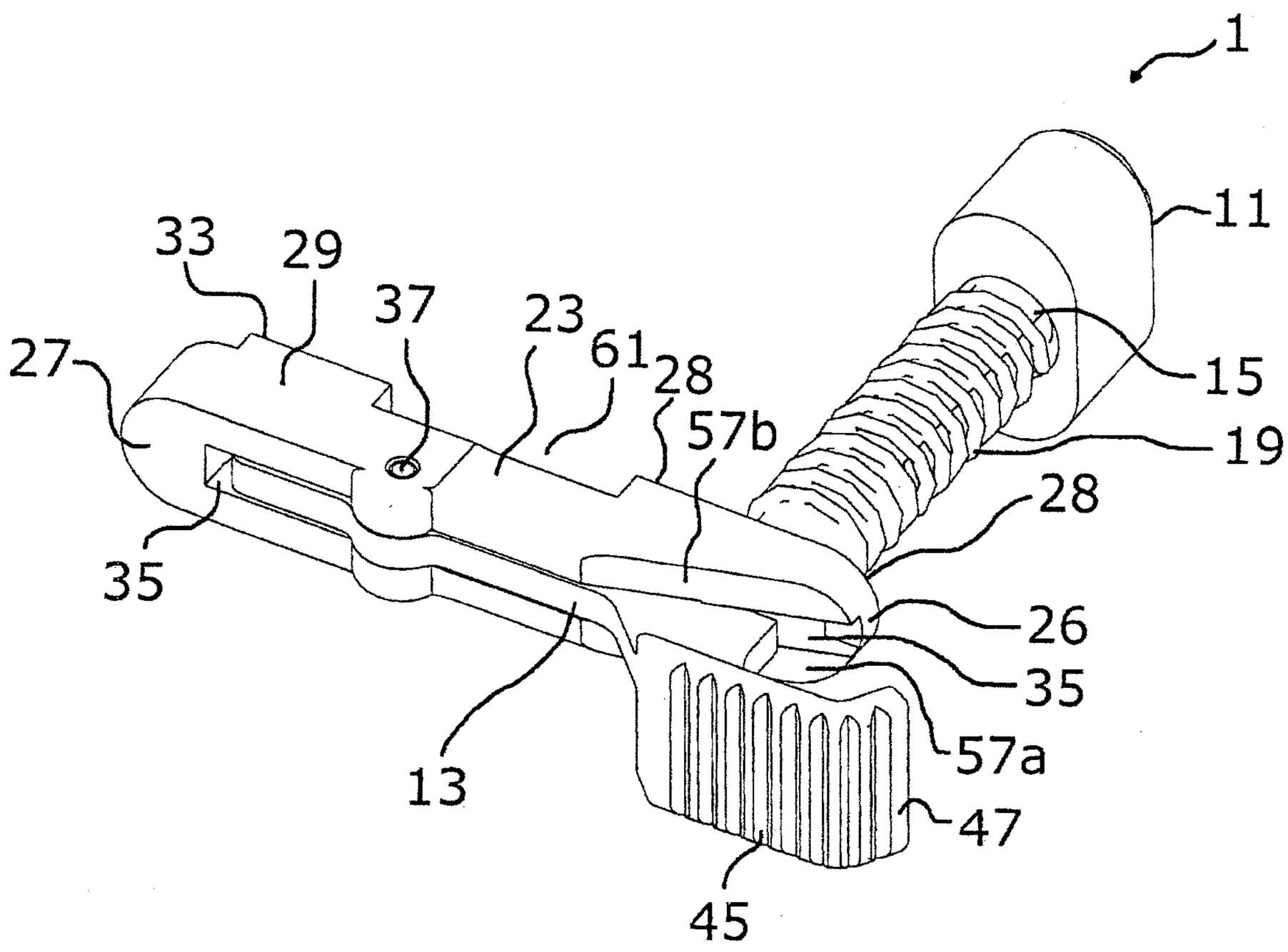


Fig. 1

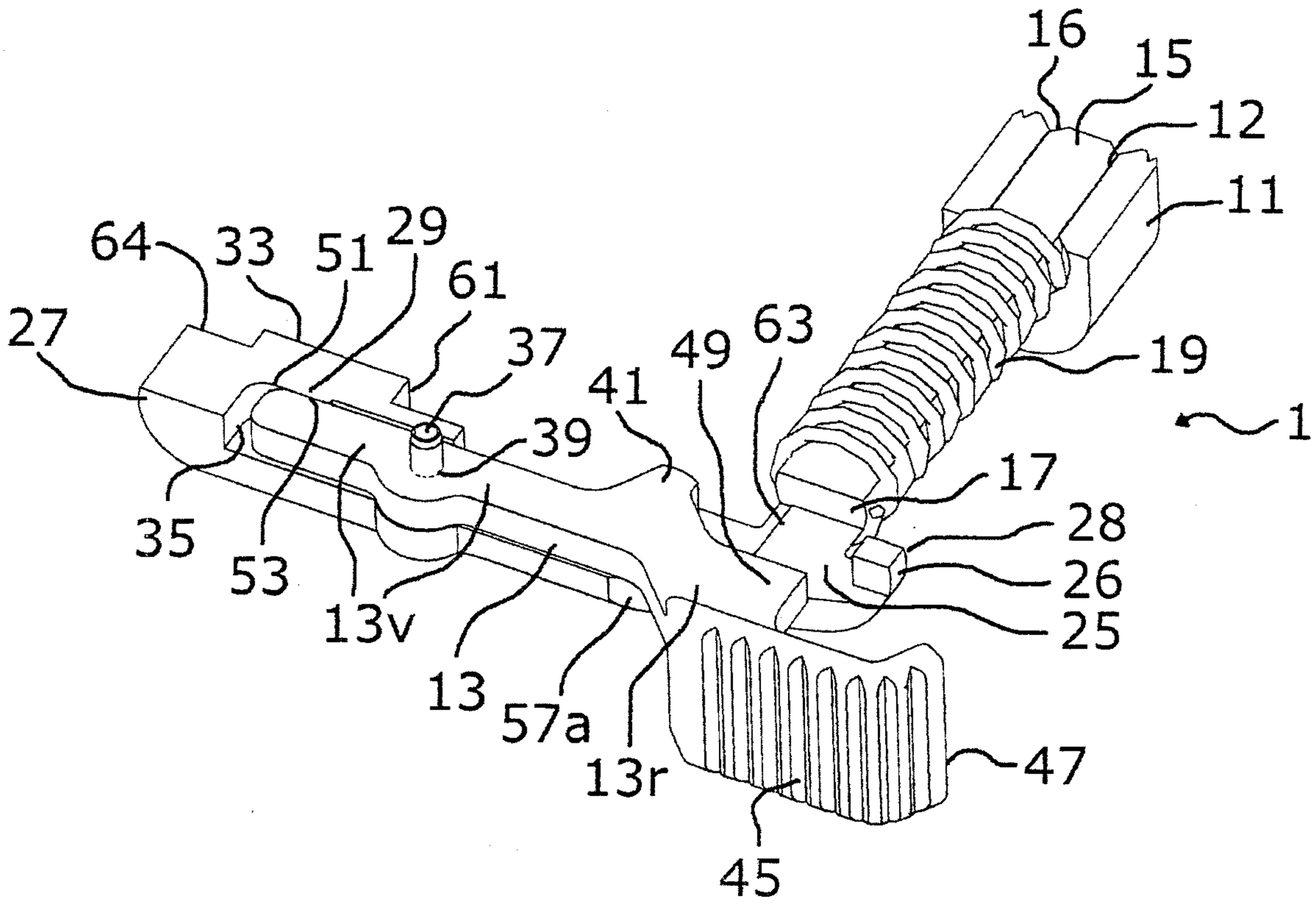

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Fig. 2

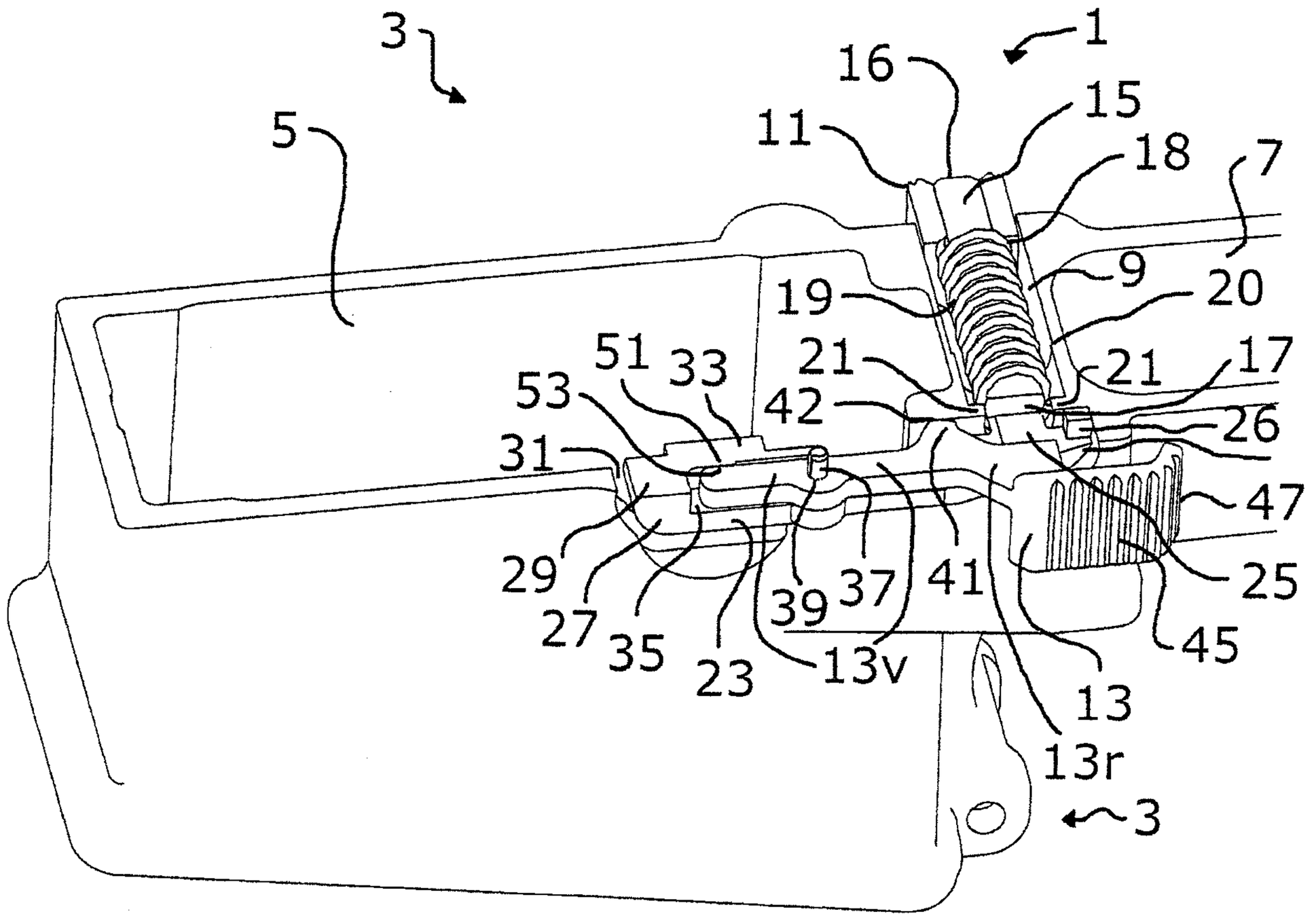

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Fig. 3

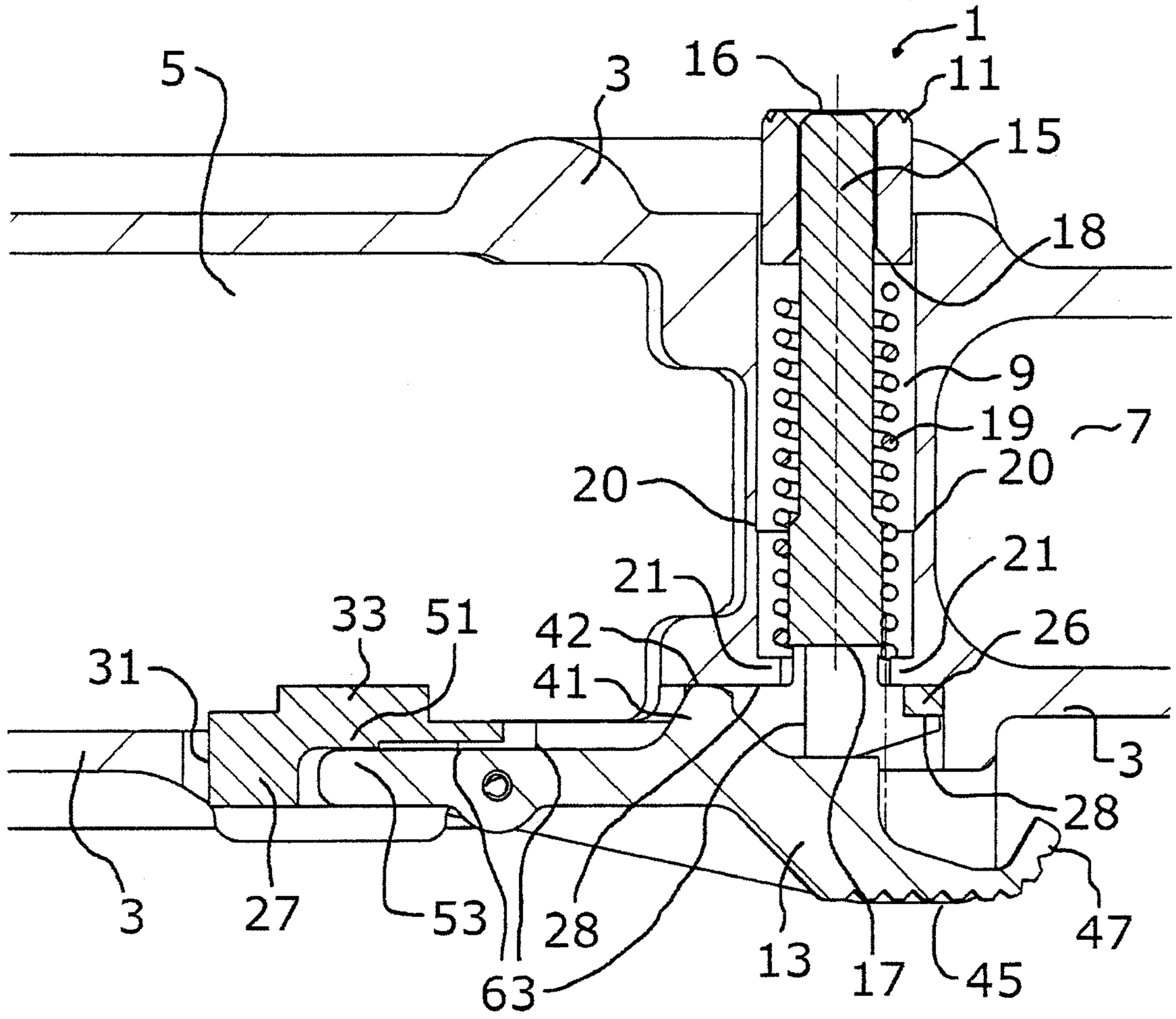

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Fig. 4

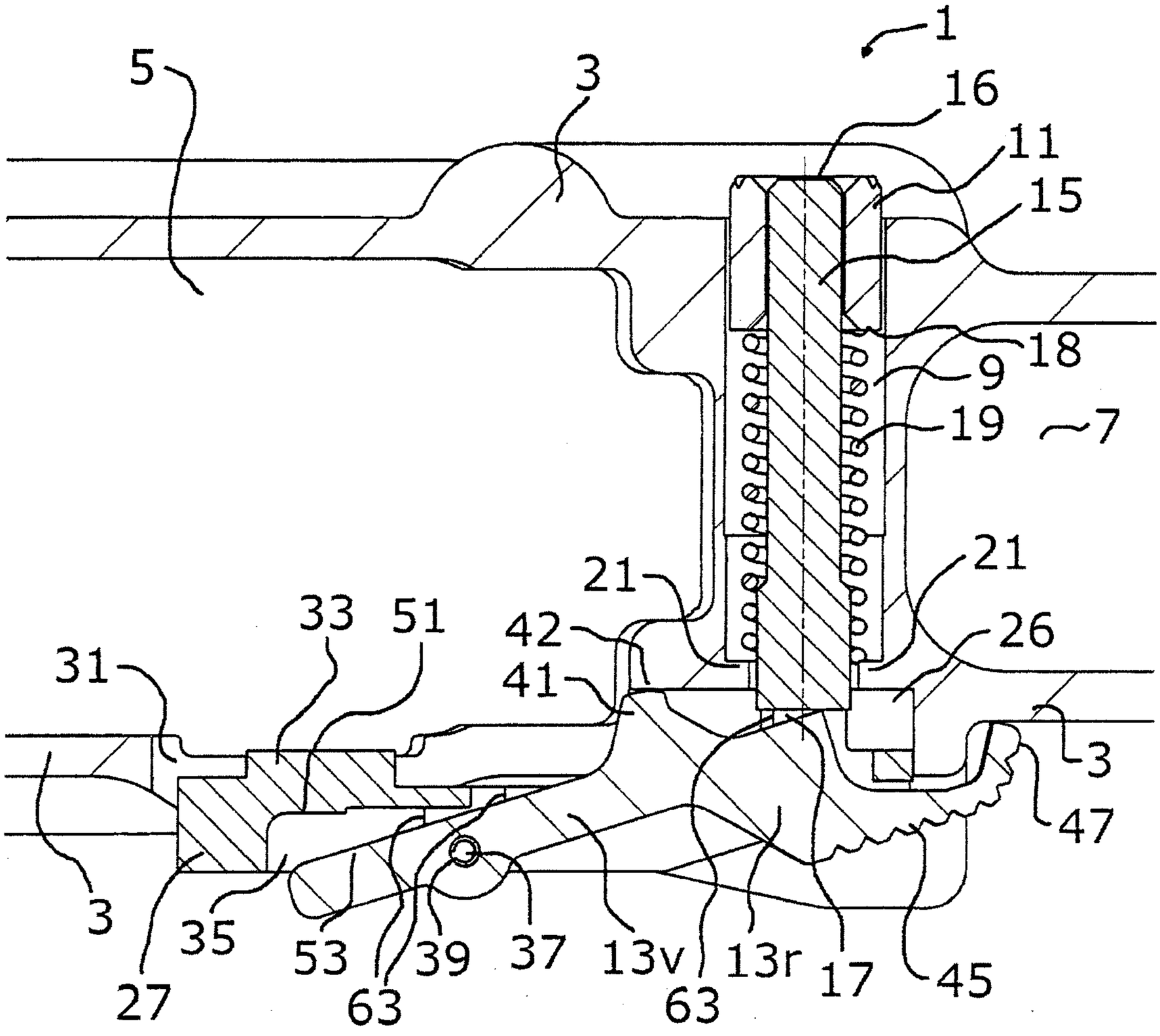

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Fig. 5

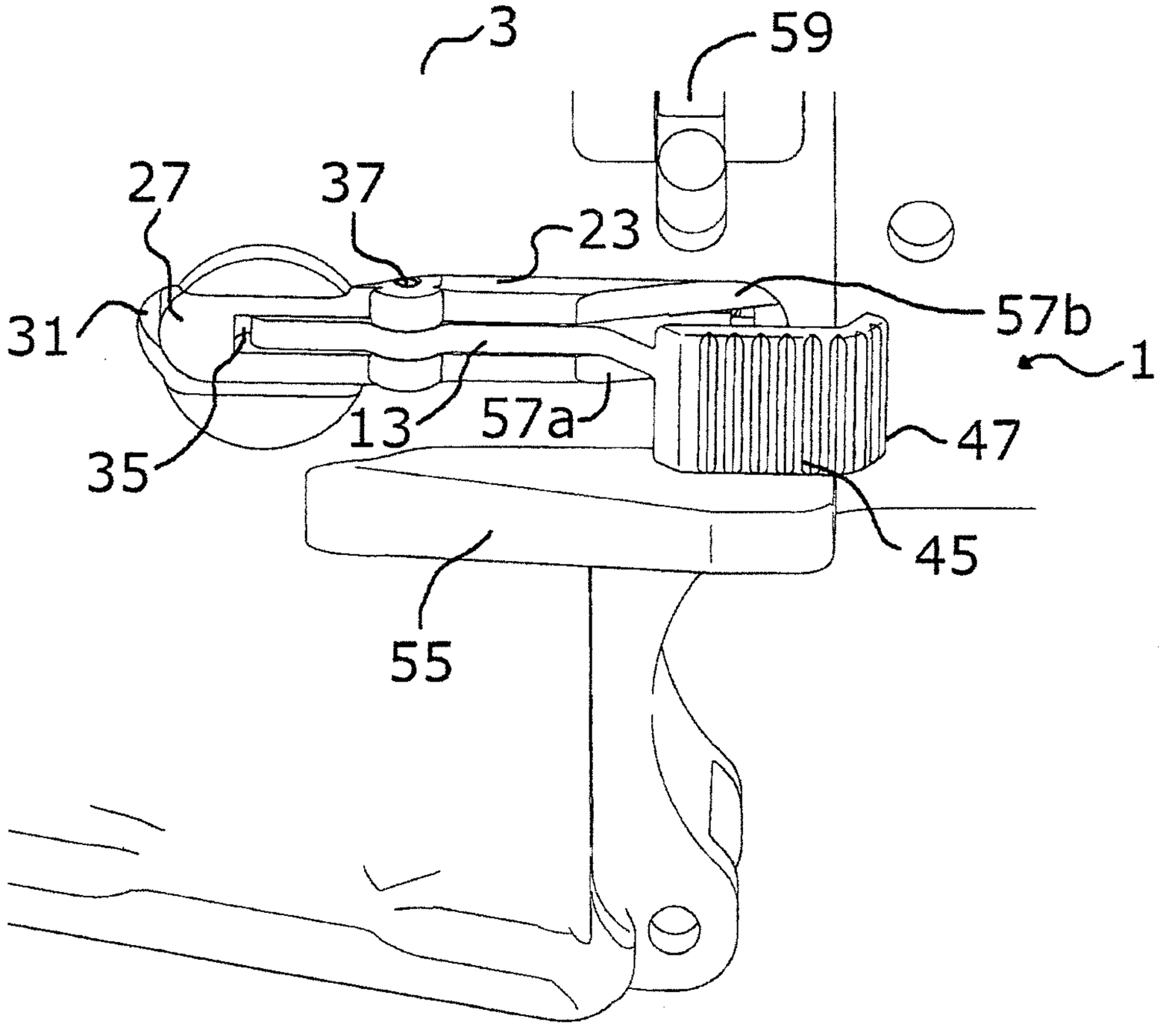


Fig. 6

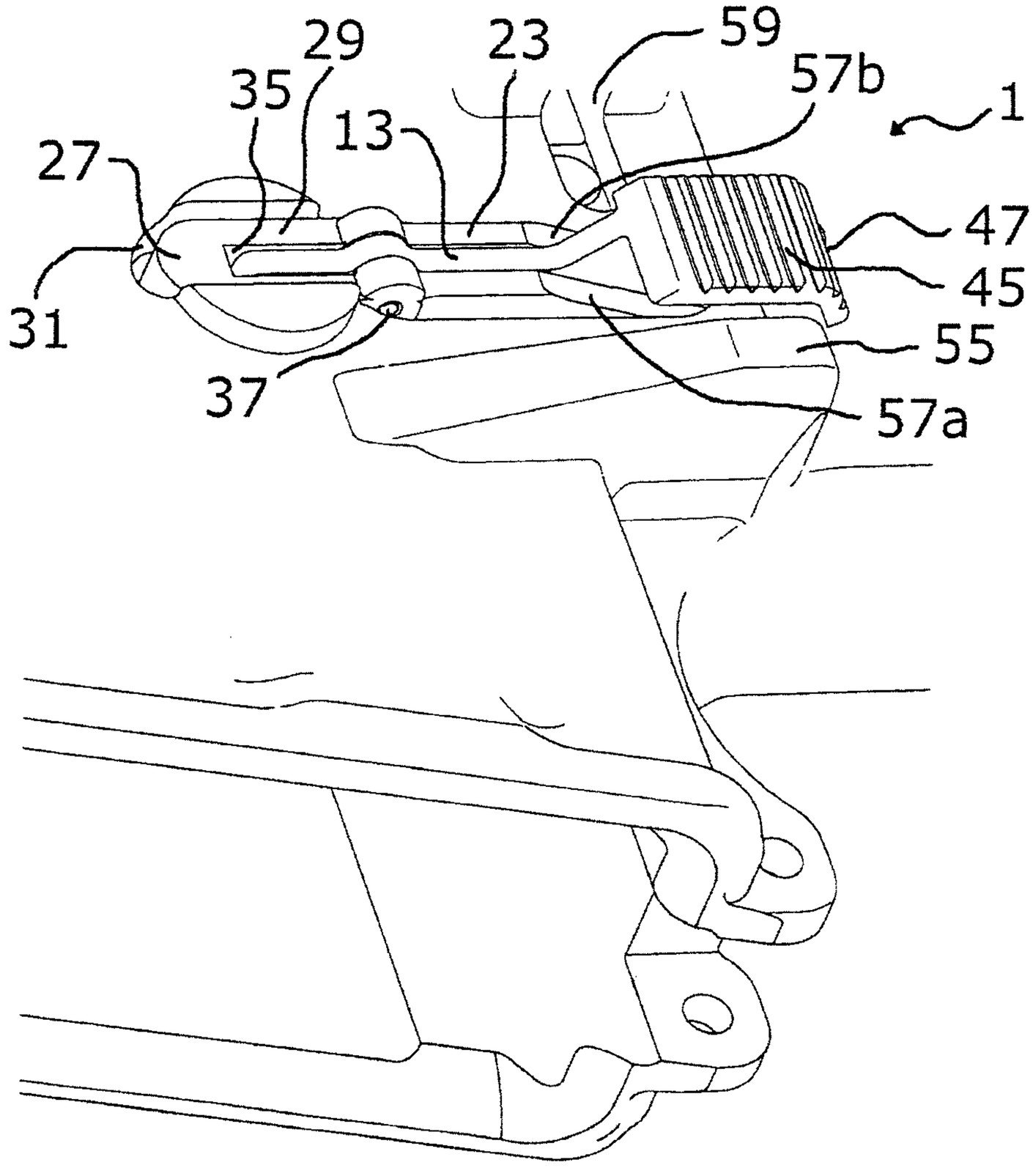
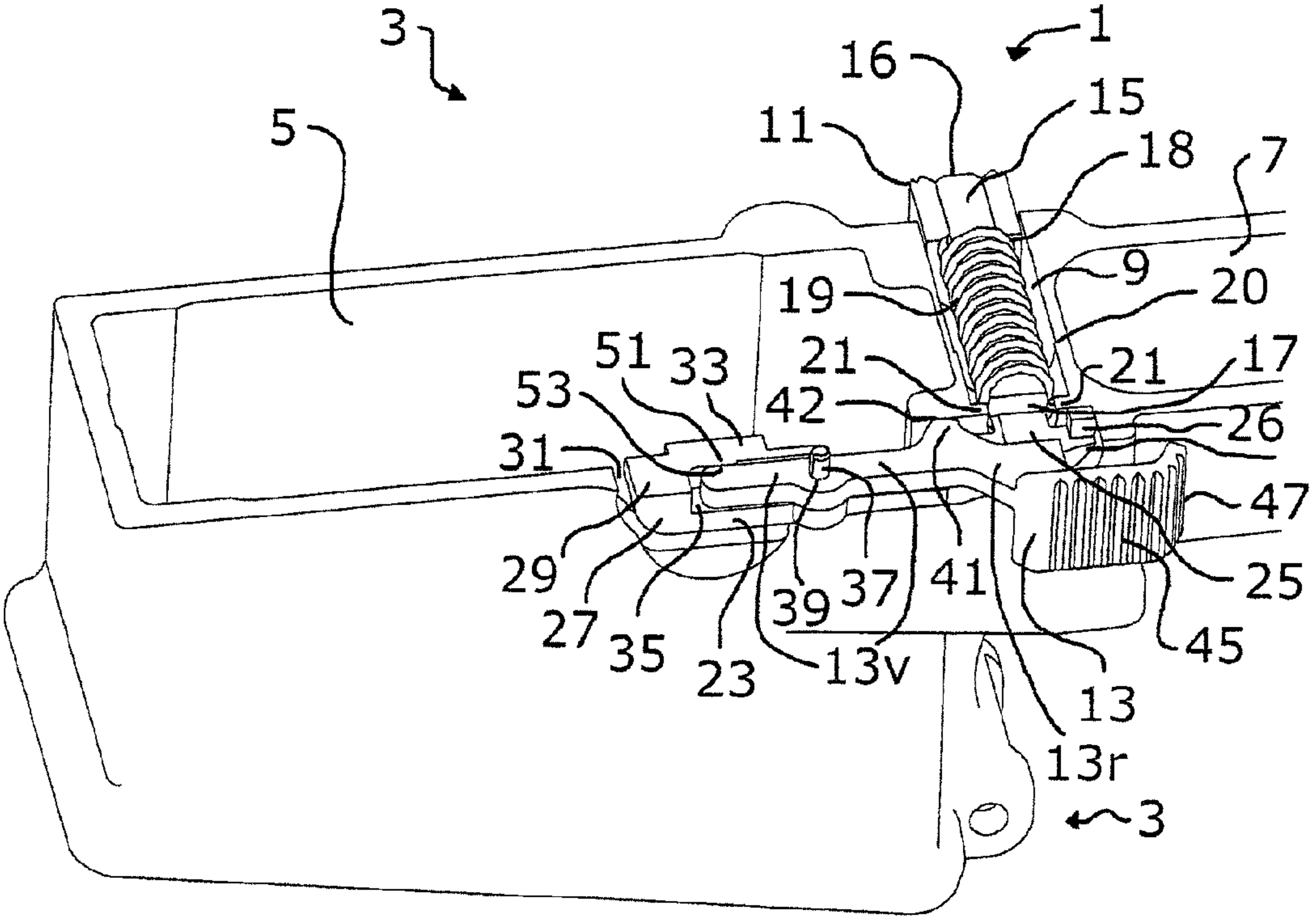


Fig. 7


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