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MIAMI, FL 33131 (US)****Publication Classification**(51) **Int. Cl.⁷ F41A 1/00**(52) **U.S. Cl. 89/167**(57) **ABSTRACT**

A hand firearm, in particular a pistol, with an insert, a breech movably guided on the insert, a barrel and a control mechanism for controlling the locking and unlocking of the breech with the barrel. In order to simplify the control mechanism, it includes a control spindle replaceably arranged on the insert and further an associated open control cam on the barrel.

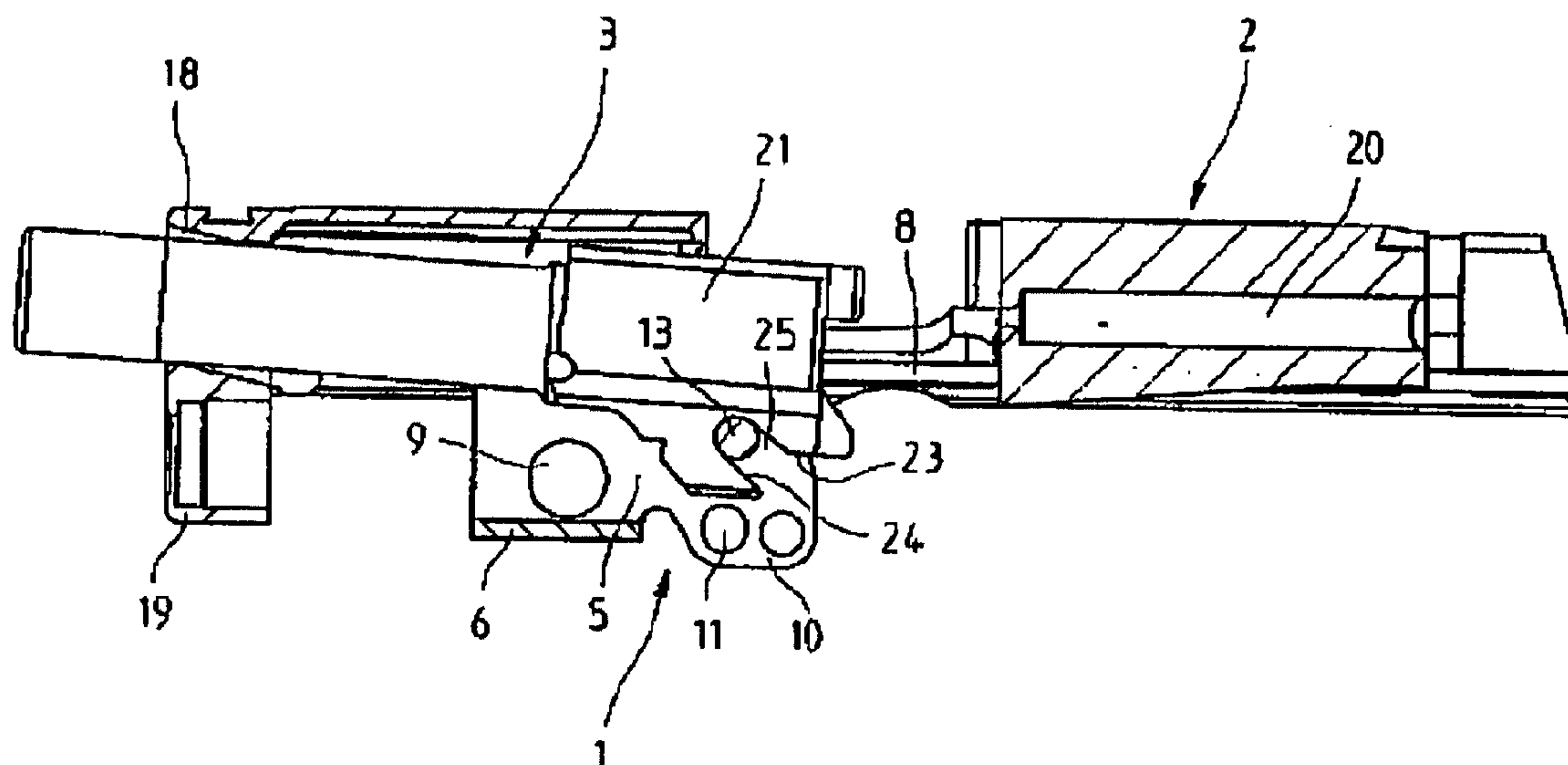
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Fig. 1

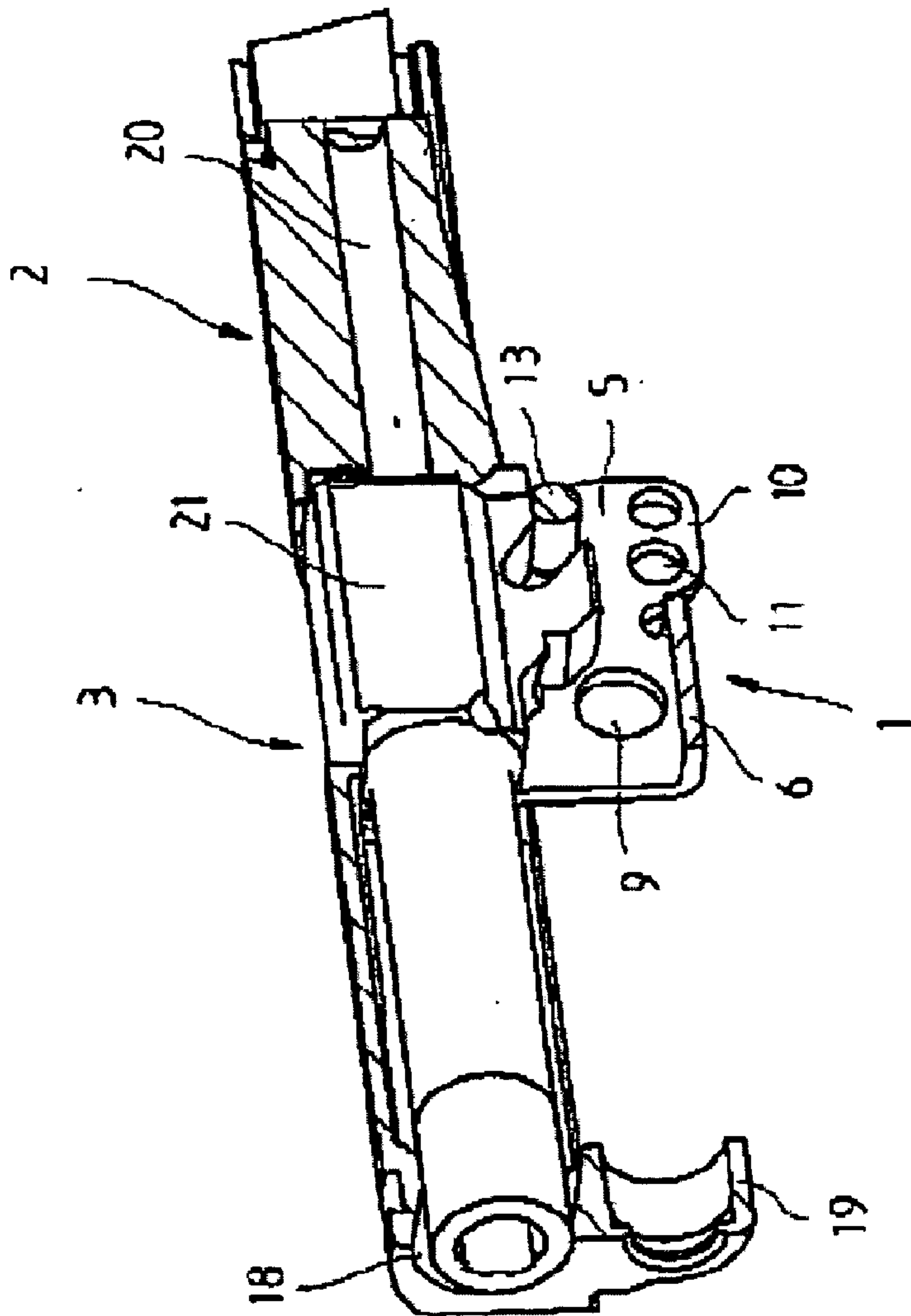
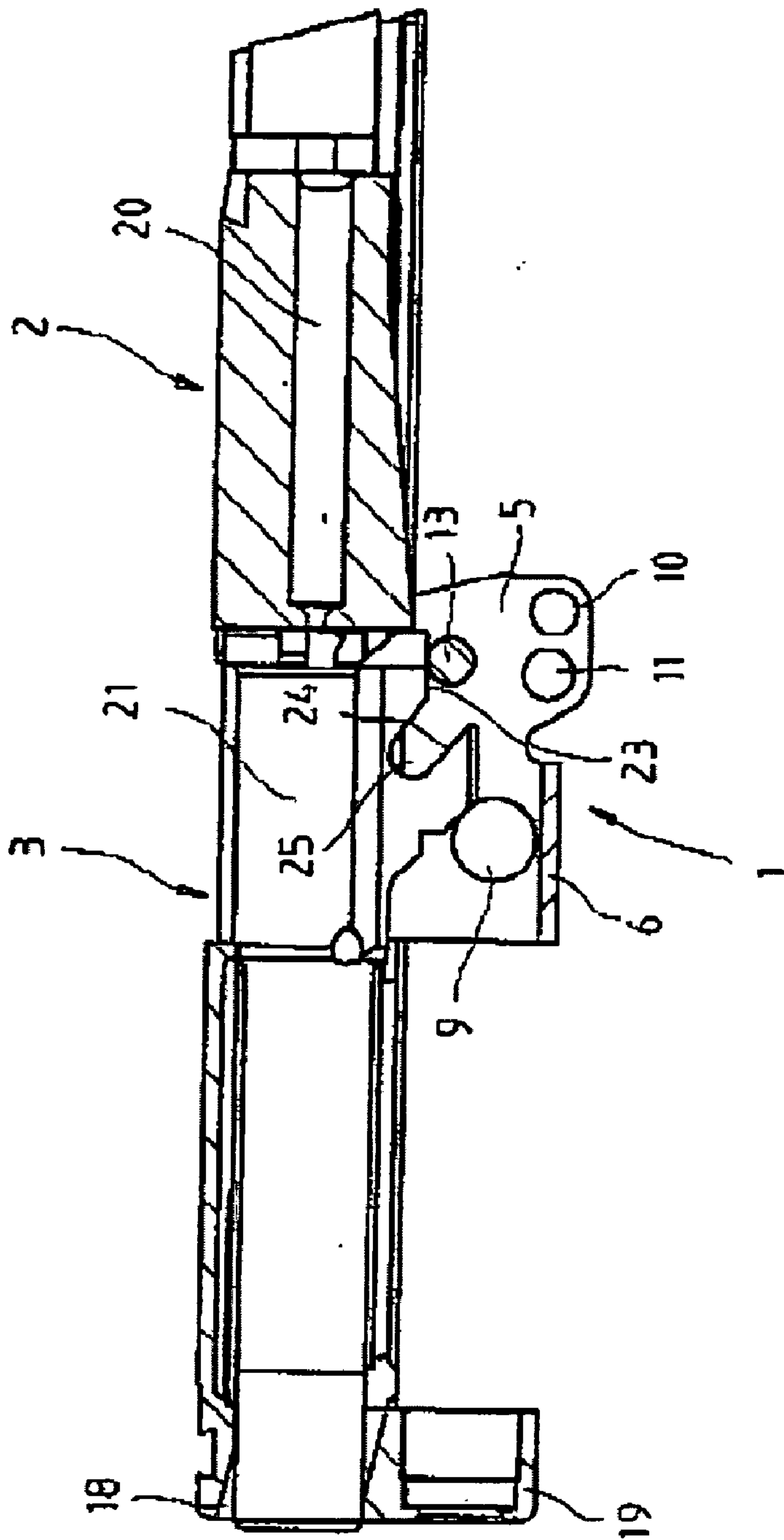


Fig. 2



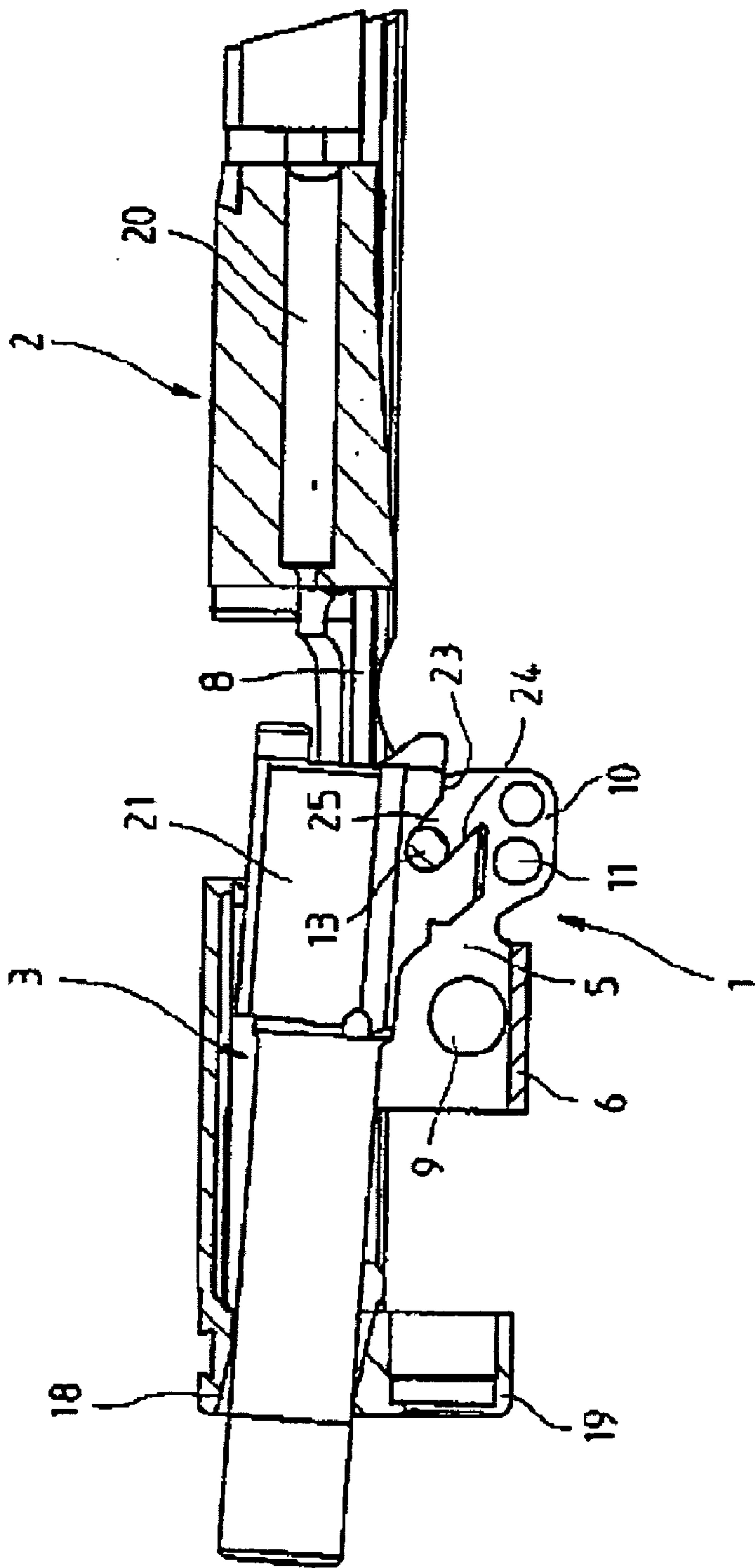


Fig. 3

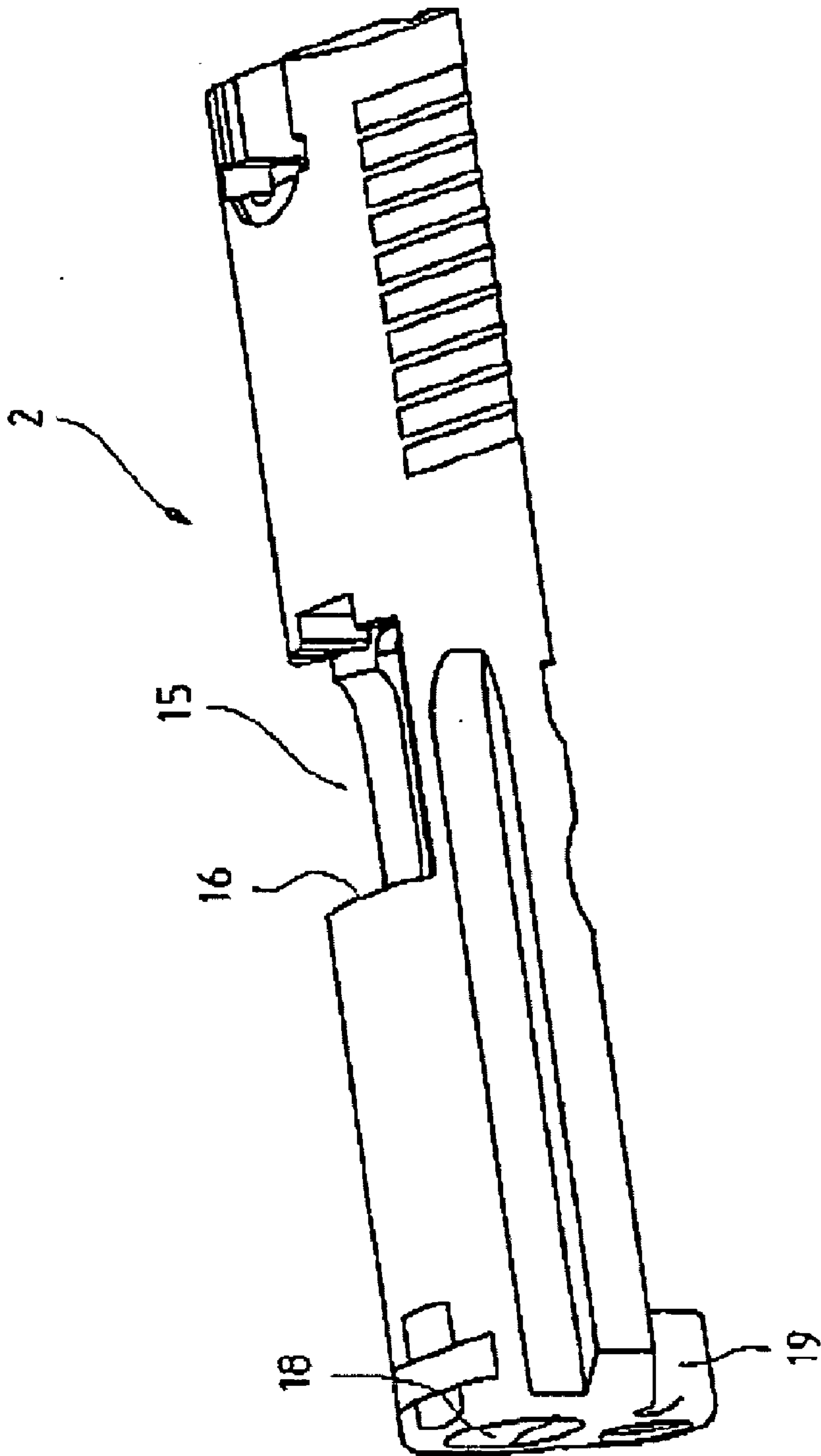


Fig. 4

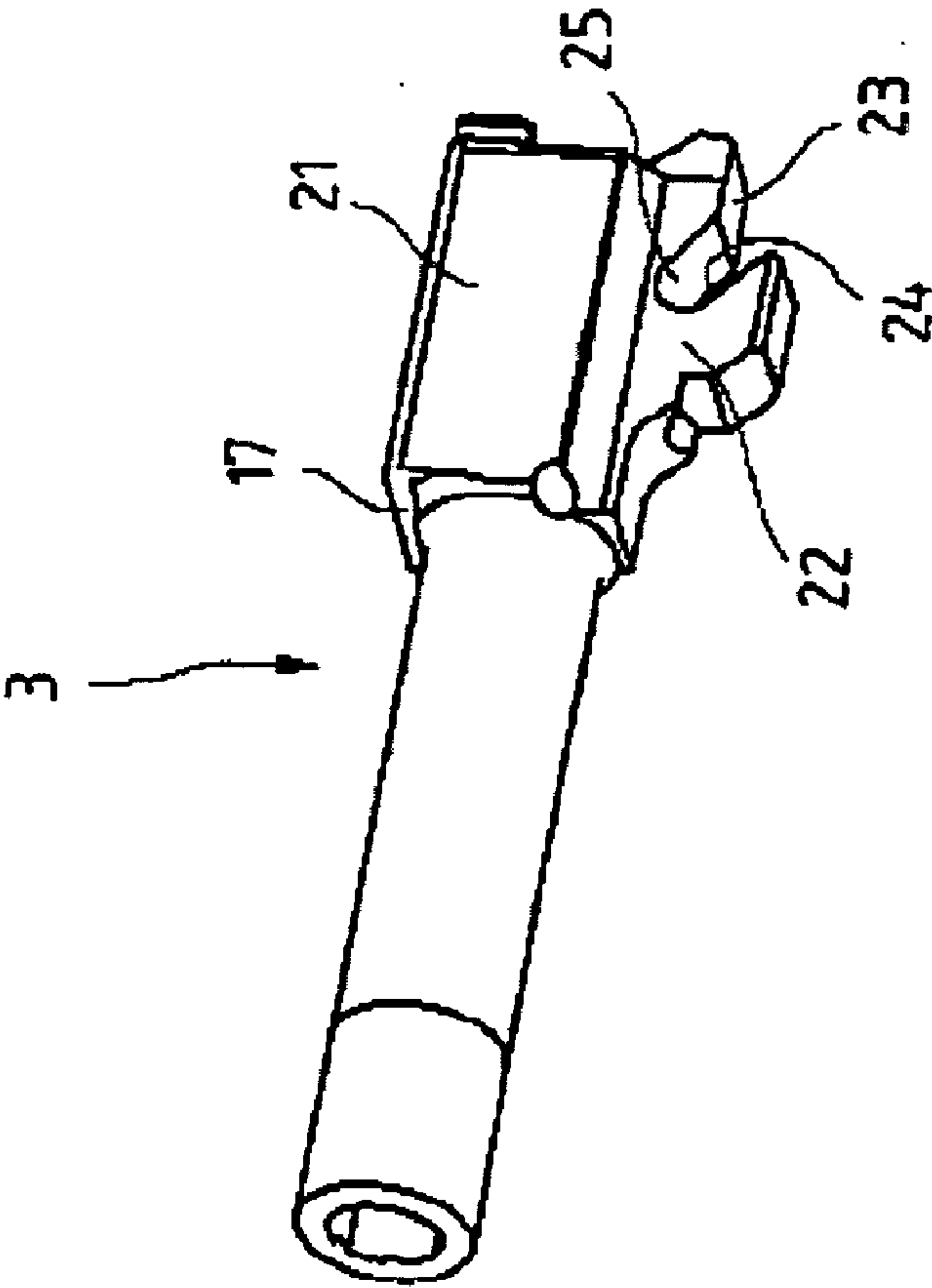


Fig. 5

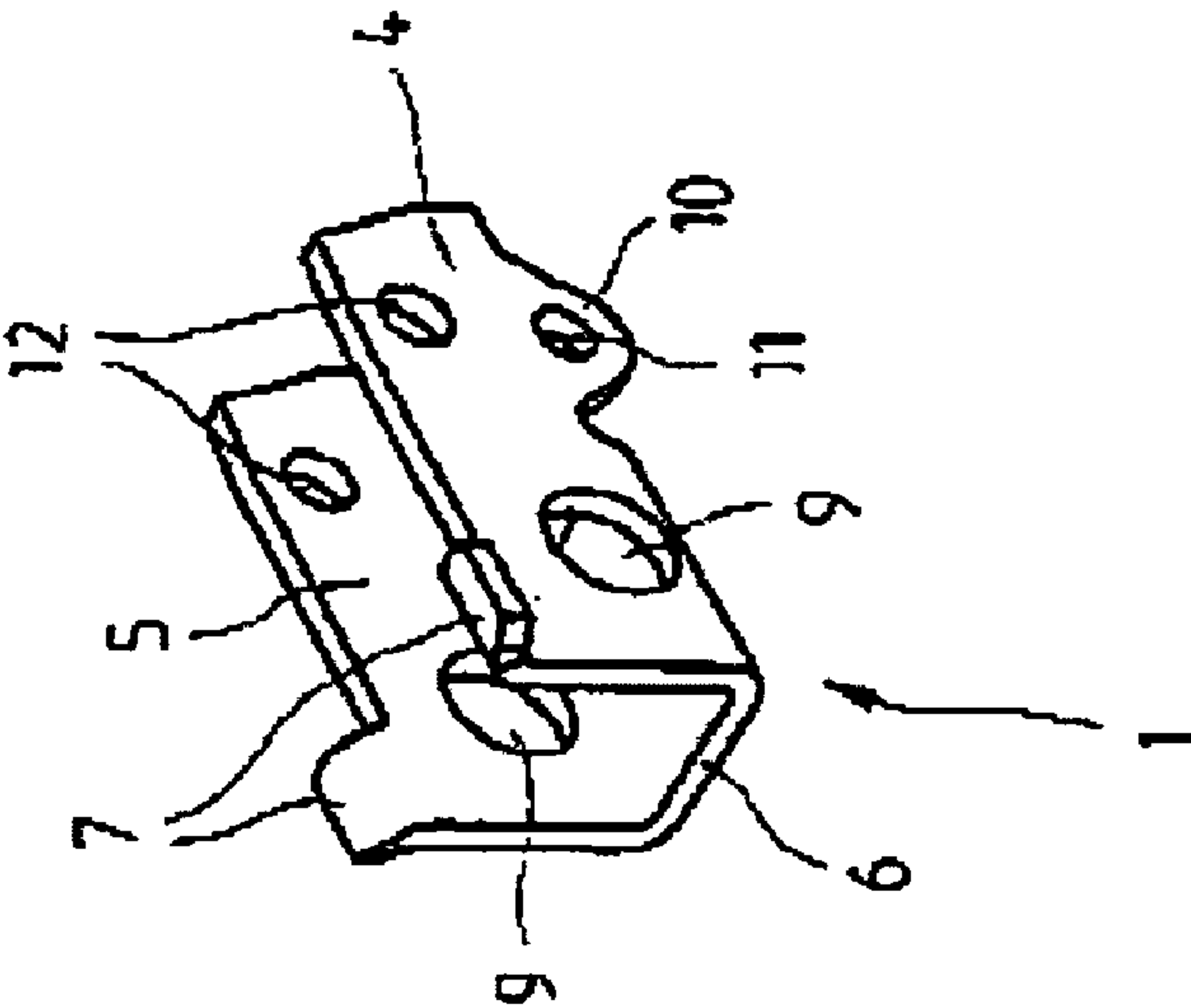


Fig. 6

HAND FIREARM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates to a hand firearm, especially a pistol.

[0003] 2. Prior Art

[0004] Large-caliber pistols as rule comprise a locked breech in which the movably seated barrel is locked to the breech in the rest position. This lock is not released until the projectile has left the barrel and the breech together with the barrel has moved back a short distance as a consequence of the recoil. In known hand firearms, the control of locking and unlocking is frequently effected by control slope or enclosed control cams provided on the barrel and by corresponding control elements that are either formed directly on the butt or are mounted as separate inserts in the butt. However, the manufacture of enclosed control cams is technically complex and therefore associated with correspondingly high manufacturing costs. Even manufacturing control elements formed directly on the butt is complicated and correspondingly cost-intensive. Likewise, even the assembly of inserts inserted into the butt with control elements arranged thereon requires a great expenditure of time and cost as well as a large amount of professional knowledge on the part of the assemblers. In addition, a replacement of parts that have become unusable due to wear or destruction is assembly-intensive, time-consuming and very expensive in the case of such inserts, since all the inserts have to be replaced.

[0005] Hand firearms are also already known in which the control element cooperating with a control boss on the barrel is designed as a so-called multifunctional lever (breakdown lever, slide stop lever). Even this design is cost-intensive and expensive to manufacture. Moreover, breaking down the weapon with such a multifunctional lever is bothersome and therefore not very user-friendly.

SUMMARY OF THE INVENTION

[0006] The invention address the problem of creating a hand firearm of the initially cited type that comprises a simplified control mechanism for controlling locking and unlocking. This problem is solved by a hand firearm with the features as described herein.

[0007] In the hand firearm in accordance with the invention, control of locking and unlocking is effected via an open control curve on the barrel as well as via a control spindle replaceably arranged in the receiving bores of an insert. The impulse for the locking or unlocking procedures is supplied by the breech, movably guided on the insert, which is at first moved back by the recoil and is subsequently pushed forward again by a closing spring. The control spindle is an uncomplicated structural component, manufacturable, e.g., as a turned part in a simple and economical manner, that can be readily mounted and replaced rapidly and economically in the case of wear or destruction. The control spindle inserted in the insert can be readily and rapidly exchanged without great mounting expense and without special professional knowledge. Any wear can be compensated by using different diameters of the control spindle. Since the control spindle does not have to assume any further functions as a

slide stop lever, breakdown lever or the like, the hand firearm can also be broken down in a simple and rapid manner. Even the open control curve provided on the barrel and cooperating with the control spindle does not require any great manufacturing cost, and can be manufactured in an economical manner. The control mechanism formed by the open control cam and the replaceable control spindle is not sensitive to contamination and assures a high degree of operational safety.

[0008] Practical embodiments and advantageous further developments of the invention are indicated in the following detailed description. Thus, the replaceable control spindle is set in a simple manner into the aligned receiving bores on two opposing side cheeks of the insert. This makes an especially simple assembly and disassembly possible.

[0009] In a preferred embodiment the open control cam cooperating with the control spindle is provided on a control boss on the bottom of the barrel. It comprises a sloping control surface that assures, together with the control spindle, the tilting of the barrel for unlocking the hand firearm during the rear movement of the breech. The control curve also comprises a stop surface parallel to the barrel axis for locking the barrel when the breech is closed.

[0010] In another advantageous embodiment the insert consists of two spaced-apart side cheeks connected to one another at their front ends by a lower connecting web. The insert is advantageously manufactured from a metal sheet, e.g., a steel sheet as a one-piece stamped bent part.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Other particulars and advantages of the invention result from the following description of a preferred embodiment, with reference to the drawings.

[0012] FIG. 1 shows an upper part of a hand firearm with an insert, breech and barrel, in a cut-away oblique view.

[0013] FIG. 2 shows the part of a hand firearm shown in FIG. 1 with closed breech, in a cut-away view.

[0014] FIG. 3 shows the part of a hand firearm shown in FIG. 1 with opened breech, in a cut-away view.

[0015] FIG. 4 shows a breech in an oblique view.

[0016] FIG. 5 shows a barrel in an oblique view.

[0017] FIG. 6 shows an insert in an oblique view.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

[0018] In FIGS. 1 to 3 the upper part of a hand firearm is schematically shown with insert 1, breech 2 movably guided on insert 1, and barrel 3. Insert 1, serving to guide breech 2 and to support and receive functional or operating parts such as, e.g., trigger sleeve, breakdown lever, control bolt, etc., is built into a known butt (not shown).

[0019] Insert 1, shown separately in FIG. 6, consists of a formed part bent in a track shape with two upwardly projecting, spaced-apart lateral cheeks 4, 5 connected to one another at the front ends via lower connecting web 6. Outwardly bent front guide webs 7 for guide channels 8, shown on the inside of breech 2 in FIG. 3, are provided on insert 1 on the upper side of the two lateral cheeks 4, 5 for

the longitudinal guidance of breech 2. Moreover, aligned openings for various support or guide pins are placed in the two lateral cheeks 4, 5. Thus, circular perforations 9 for the shaft of a breakdown lever are arranged in the two lateral cheeks 4, 5 on the U-shaped front part of insert 1. Bores 11 for a trigger sleeve are provided in two downwardly projecting, opposite webs 10. In addition, two circular, aligned receiving openings 12 for a control spindle 13, to be explained in detail in the following and shown in FIGS. 1 to 3, are located above bores 11 in the two lateral cheeks 4, 5 of insert 1. Other passages, recesses and/or stops for operating or functional elements of the hand firearm, which are not described in detail, can be provided on insert 1. The previously described insert 1 is manufactured in an especially advantageous manner from a metal sheet, preferably a steel sheet, as a one-piece stamped bent part.

[0020] FIG. 4 shows breech 2 movably guided in the longitudinal direction on insert 1. It comprises ejection opening 15 with front locking surface 16 on the front on which locking surface 17 comes to rest when breech 2 is closed according to FIG. 2. In a known manner, breech 2 comprises rear receiving bore 20 (shown in FIG. 1) for a firing pin (not shown) adjacent to front barrel opening 18 and block 19 arranged below it for a closing spring.

[0021] Barrel 3 shown alone in FIG. 5 comprises cartridge chamber 21, designed as a locking block, on whose front side barrel-side breech surface 17 is located. Control boss 22 is formed on the bottom of cartridge chamber 21 and comprises an open control cam with stop surface 23 running parallel to the barrel axis and with sloping control surface 24. Control surface 24 is provided on guide channel 25 running obliquely in control boss 22. A control mechanism for controlling the locking and unlocking of barrel and breech that can be manufactured in a simple and economical manner and is extremely reliable is formed by the control cam and associated control spindle 13.

[0022] The mode of operation of the control mechanism for controlling the locking and unlocking is explained in the following using FIGS. 2 and 3.

[0023] In FIG. 2, breech 2 is in its closed position. Cartridge chamber 21 of barrel 3, designed as a massive block, is adapted in its shape and dimensions to ejection opening 15 of breech 2 such that its edges fit into ejection opening 15, thus assuring a firm connection between breech

2 and barrel 3. Barrel 3 rests with its lower stop surface 23 on control spindle 13, which prevents a tilting of barrel 3.

[0024] After the firing of a shot, breech 2 and barrel 3 at first move back a short distance together as a consequence of the recoil until control spindle 13 moves into sloping groove 25 and comes to rest on sloping control surface 24. Barrel 3 is then tilted downward, as a consequence of which breech 2 can continue its backward movement without being impeded and a reloading process can take place.

[0025] In FIG. 3, breech 2 of the hand firearm is in the open or unlocked position. Barrel 3 is tilted downward after backward-traveling breech 2 has at first entrained barrel 3 and barrel 3 was guided downward after the entrance of control spindle 13 into sloping guide channel 25.

What is claimed is:

1. A hand firearm, in particular a pistol, comprising an insert, a breech movably guided on the insert, a barrel and a control mechanism for controlling the locking and unlocking of the breech with the barrel, wherein the control mechanism comprises a control spindle replaceably arranged on the insert and an associated, open control cam on the barrel.
2. A hand firearm according to claim 1, wherein the control spindle is set into aligned receiving openings of the insert.
3. A hand firearm according to claim 1, wherein the insert comprises two spaced-apart lateral cheeks connected to one another at their front ends via a lower connection web.
4. A hand firearm according to claim 1, wherein outwardly bent front and rear guide webs guiding the breech are provided on the upper side of the two lateral cheeks.
5. A hand firearm according to claim 1, wherein the insert is a one-piece stamped bent part made from sheet metal.
6. A hand firearm according to claim 1, wherein the open control curve is arranged on a control boss formed on the bottom of the barrel.
7. A hand firearm according to claim 1, wherein the open control curve comprises a stop surface running parallel to the axis of the barrel and that is a sloping control surface.
8. A hand firearm according to claim 7, wherein the sloping control surface is arranged in a control groove running obliquely in the control boss.

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