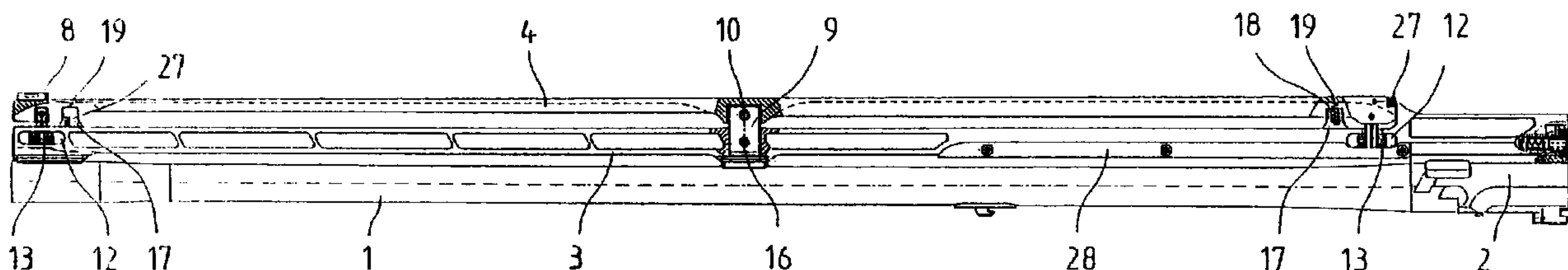




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(54) Titre : DISPOSITIF DE VISEE REGLABLE POUR PETITE ARME
(54) Title: ADJUSTABLE SIGHTING DEVICE FOR A SMALL ARM



(57) Abrégé/Abstract:

The invention concerns an adjustable sighting device for a small arm, in particular, for a shotgun, with a rail body (3) that can be fixed on the barrel (1) or the barrel group of the small arm, and a sighting device (4) which is arranged in an adjustable manner on the rail body (3). In order to obtain improved adjustment possibilities, the sight rail (4) is adjustable in height relative to the rail body (3) at both ends, by means of adjusting elements (6, 13).

Summary

The invention concerns an adjustable sighting device for a small arm, in particular, for a shotgun, with a rail body (3) that can be fixed on the barrel (1) or the barrel group of the small arm, and a sighting device (4) which is arranged in an adjustable manner on the rail body (3). In order to obtain improved adjustment possibilities, the sight rail (4) is adjustable in height relative to the rail body (3) at both ends, by means of adjusting elements (6, 13).

Figure 1

ADJUSTABLE SIGHTING DEVICE FOR A SMALL ARM

The invention concerns an adjustable sighting device for a small arm, in particular a shotgun, according to the preamble of Claim 1. The invention also concerns a small arm with such a sighting device.

In sporting shotgun shooting, especially in American Trap, there are different sports disciplines that make different demands on a gun with regard to point of impact and/or the target image. Thus, for example, in American Single Trap the distance between the pigeon bunker and the marksman's stand changes depending on the degree of difficulty. In order to adapt to this change, the marksman needs an adjustment possibility on his sight rail. Known sighting devices of this type are limited, however, in their adjustment possibilities, and usually permit only one-dimensional adjustment.

The objective of the invention is to create an adjustable sighting device of the type mentioned at the beginning, and a small arm with such a sighting device, which have improved adjusting possibilities.

This objective is attained by an adjustable sighting device with the features of Claim 1 and by a small arm with the features of Claim 16. Appropriate developments and advantageous refinements of the invention are the subject of the claims.

With the sighting device according to the invention, the sight rail can be adjusted in height at both ends, relative to the rail body, by adjustment elements. In this way, there is the possibility of vertically adjusting the sight rail in the muzzle area and in the rear area. Thus, both a parallel and an angular adjustment of the sight rail can be obtained without producing bending stresses in the sight rail. Another advantage of the sighting device according to the invention is found in the feasibility of simple replacement of the sight rail. It can be simply mounted and if necessary, it can be quickly and simply replaced. With the sighting device according to the invention, the barrel is to a large extent free and can expand, relative to the rail body, in the event of temperature fluctuations.

In a particularly appropriate embodiment, the sight rail can be continuously adjusted relative to the rail body. This enables a particularly accurate adjustment.

In an embodiment which can be simply operated, the adjustment elements are formed by adjusting bolts that are arranged in an articulated manner on the sight rail, and by corresponding adjusting nuts on the rail body. The adjusting nuts are preferably constructed as knurled nuts, and can thus be adjusted manually in a simple manner.

In another appropriate embodiment, the sight rail is situated on a middle element, which can be adjusted in height, such that it can pivot. In this way, an additional support of the sight rail relative to the rail body is obtained. In spite of the additional guide, both a parallel and angular adjustment of the sight rail can be obtained without warping.

Pressure spring are appropriately clamped in between the rail body and the sight rail. The sight rail is thus held free from play.

The rail body can be preferably guided on the barrel such that it is movable, and is firmly connected to the barrel only at one end. In this way the barrel can expand from heating without producing warping or deformation of the rail body.

In one aspect, the present invention provides an adjustable sighting device for a small arm, in particular for a shotgun, with a rail body which can be fastened on the barrel or the bundle of barrels of the small arm and a sighting rail which is arranged adjustably on the rail body and is adjustable in height in relation to the rail body at both ends by adjusting elements, characterised in that the sighting rail is arranged pivotably on a centrepiece which is adjustable in height.

Other distinctive features and advantages of the invention can be deduced from the following description of a preferred embodiment example, with the aid of the drawing. The figures show the following:

Figure 1, a barrel of a shotgun with a sighting device according to the invention, in a partially cut side view;

Figure 2, a sight rail of the sighting device shown in Figure 1 in a partially cut side view;

Figure 3, a rail body of the sighting device shown in Figure 1 in a partially cut side view;

Figure 4, a barrel of a shotgun with a barrel hook element in a side view;

Figure 5, a cross-section along the line A-A of Figure 4; and

Figure 6, the rear part of the barrel with the barrel hook element in an enlarged, partially cut side view.

Figure 1 shows a barrel 1 of a shotgun with a hook element 2 and a sighting device with a rail body 3 fastened to the barrel 1, and a sight rail 4 situated on the rail body so that it can be adjusted.

The sight rail 4, shown separately in Figure 2, extends almost over the entire length of the barrel 1 and has adjusting bolts 6 on its two ends, supported such that each can rotate around a transverse pin 5, with a threaded shaft 7 projecting downwards. The two adjusting bolts 6 are flattened laterally in the head area,

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wherein a better guidance is obtained within the sight rail 4. A sight 8 is fixed at the front end of the sight rail 4 on its upper side. A middle element 9, protruding downwards, is supported in the middle of the sight rail 4 such that it can rotate around a transverse pin 10.

Figure 3 shows the rail body 3, which can be mounted on the barrel 1 to hold the sight rail 4. The rail body 3 extends over the entire length of the barrel 1 and the hook element 2, and has boreholes 11 at its front end and in the rear area to hold adjusting bolts 6, and

interconnecting transverse elongated holes 12 for adjusting nuts 13, shown in Figure 1. Between boreholes 11 is provided an opening 14, constructed here as an elongated through hole, to hold the middle element 9 adapted to the shape of the opening 14. The middle element 9 has the cross-section of a round-ended feather key. On one side of the track is shown an elongated hole 15 in the vicinity of a through hole for a not-depicted counterscrew that meshes into a lateral threaded borehole 16 of the middle element, shown in Figure 1. Two pegs 17, protruding upwards, with blind holes 18 to hold pressure springs 19, are provided on the upper side of the rail body 3 next to the boreholes 11. On its underside, the rail body 3 has two stops 20 and 21, at a distance from one another and protruding downwards, with T-shaped grooves 22 and 23. Here the stop 20 is located on the front end of the rail body 3 and the other stop 21 in the area of the middle opening 14. An end threaded borehole 24 for fastening the rail body 3 to the hook element 2 is provided on the right rear end of the rail body 3, shown in Figure 3.

As can be seen from Figure 1, the two adjusting bolts 6 engage with their respective threaded shafts 7 in the two adjusting nuts 13 located within the elongated holes 12. The two adjusting nuts 13 are constructed as knurled nuts and protrude laterally outside the rail body 3. Radial threaded boreholes 25 with locking screws 26, which can be seen in Figure 6, are located in the adjusting nuts 13, by means of which an undesired adjustment of the sight rail 4 can be avoided. Furthermore, nondepicted cup springs are also located on the underside of the adjusting nuts 13, which bias the adjusting nuts 13 axially within the elongated holes 12. Figure 6 also shows one of the pressure springs 19, located in the blind holes 18 of the two pegs 17, by means of which the sight rail 4 is biased upwards relative to the rail body 3, and in this way is held free from play.

For adjustment of the sight rail 4, it is possible to first loosen the counterscrew located in the threaded borehole 16 so that the position of the sight rail 4 can be changed relative to the rail body 3. By rotating the two adjusting nuts 13, the sight rail 4 can be adjusted vertically in the muzzle area or in the area of the hook element 2, wherein both a continuous parallel and an angular adjustment can be attained without thereby producing bending stresses within the sight rail 4. Markings or scales 27 for indicating the adjustment position are placed on the sight rail 4 and/or on the rail body 3. Front shaft covers 28, which can be seen in Figure 1, are fixed on the right and left side of the rail body 3.

For assembly of the sighting device, the barrel 1, shown in detail in Figure 4, has on its upper side two bases 29 and 30, at a distance from one another, to hold the downwards-protruding stops 20 and 21 of the rail body 3. In this respect, the two bases 29 and 30 have a T-profile, which can be seen in Figure 5, which fits the T-shaped grooves 22

and 23 of the stops 20 and 21. In this way, the rail body 3 can be shoved onto the barrel 1 from the front until with its backside 31, and according to Figure 6, it encounters an upwards-protruding stop 32 of the hook element 2 and can be fixed by means of a securing screw 33 on the hook element 2, screwed into the threaded borehole 24. The two bases 29 and 30, for example, can be welded onto the barrel 1 or fixed to it in some other way.

In the embodiment shown, the barrel 1 is constructed with the barrel hook 2 as an alternate barrel for a receiver of an over-and-under shotgun. Instead of the upper barrel, however, the sighting device is provided here. The securing screw 33 for fixing the rail body 3 on the hook element 2 is situated, according to Figure 6, at the height of the upper striking pin and has a middle through hole 34 with a stop pin 36, which acts rearward by means of a spring 35, for the nondepicted, upper striking pin of the double-barrel shotgun. In this way, a striking pin damper is created that cushions the upper striking pin when it strikes and protects it.

1. Adjustable sighting device for a small arm, in particular for a shotgun, with a rail body (3) which can be fastened on the barrel (1) or the bundle of barrels of the small arm and a sighting rail (4) which is arranged adjustably on the rail body (3) and is adjustable in height in relation to the rail body (3) at both ends by adjusting elements (6, 13), characterised in that the sighting rail (4) is arranged pivotably on a centrepiece (9) which is adjustable in height.
2. Sighting device according to claim 1, characterised in that the sighting rail (4) is infinitely adjustable in relation to the rail body (3).
3. Sighting device according to claim 1 or 2, characterised in that the adjusting elements (6, 13) are formed by adjusting bolts (6) arranged pivotably on the sighting rail (4) and associated adjusting nuts (13) on the rail body (3).
4. Sighting device according to claim 3, characterised in that the adjusting nuts (13) are arranged in bottomless side slots (12) in the rail body (3).
5. Sighting device according to one of claims 1 to 4, characterised in that the centrepiece (9) is arranged adjustable in height inside an opening (14) in the rail body (3).
6. Sighting device according to claim 5, characterised in that the centrepiece (9) is held pivotable about a transverse pin (10) on the sighting rail (4).
7. Sighting device according to one of claims 1 to 6, characterised in that compression springs (19) are clamped between the rail body (3) and the sighting rail (4).
8. Sighting device according to claim 7, characterized in that the compression springs (19) are arranged in blind holes (18) of upwardly protruding projections (17) on the upper side of the rail body (3).
9. Sighting device according to one of claims 3 to 8, characterised in that the adjusting bolts (6) are arranged so as to be pivotable about transverse pins (5) in the sighting rail (4).

10. Sighting device according to one of claims 1 to 9, characterised in that the rail body (3) is guided displaceably on the barrel (1) and only connected firmly to the barrel (1) at one end.

11. Sighting device according to one of claims 1 to 10, characterised in that the rail body (3) comprises downwardly protruding projections (20, 21) with guide slots (22, 23) for connection to sockets (29, 30) on the upper side of the barrel (1) or bundle of barrels.

12. Sighting device according to one of claims 1 to 11, characterised in that the rail body (3) is fastened by means of a retaining screw (33) to a hook part (2) of the barrel (1).

13. Sighting device according to claim 12, characterised in that a firing pin damper (35, 36) is incorporated in the retaining screw (33).

14. Sighting device according to claim 13, characterised in that the firing pin damper (35, 36) comprises a stop pin (36) which is guided displaceably in a central through-bore (34) in the retaining screw (33) and pressed towards the rear by a compression spring (35).

15. Small arm with a barrel (1) and a sighting device fastened on the barrel (1), characterised in that the sighting device is embodied according to one of claims 1 to 14.

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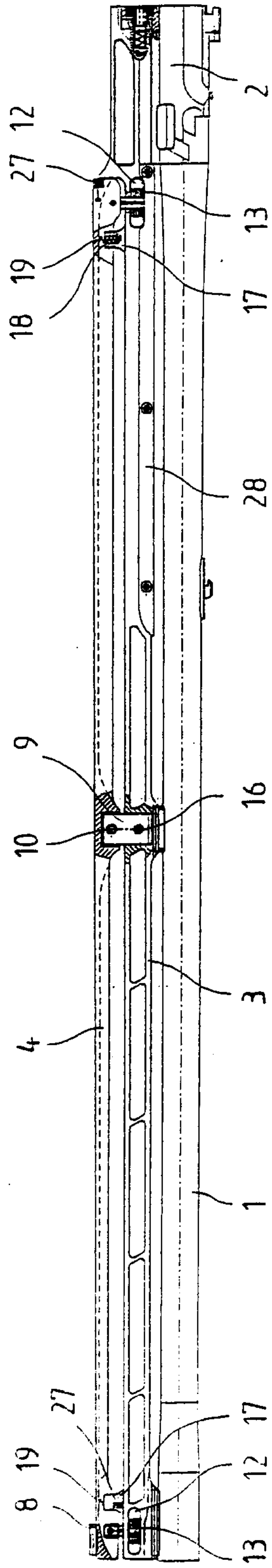


Fig. 1

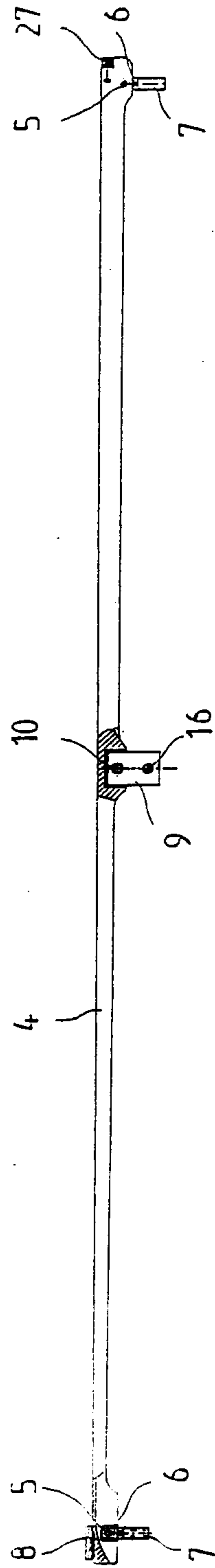


Fig. 2

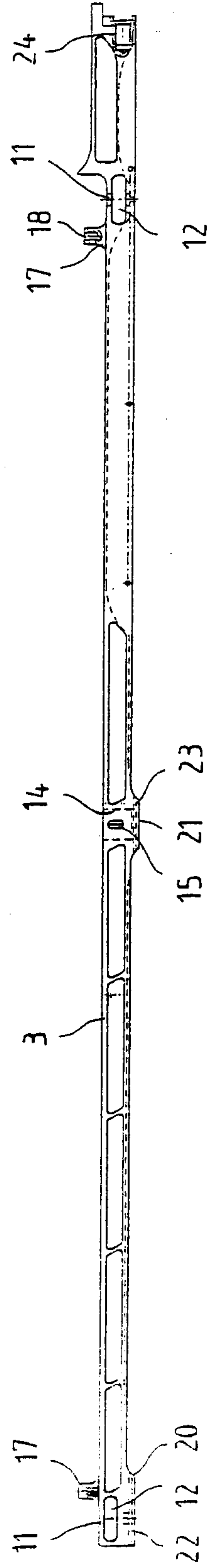


Fig. 3

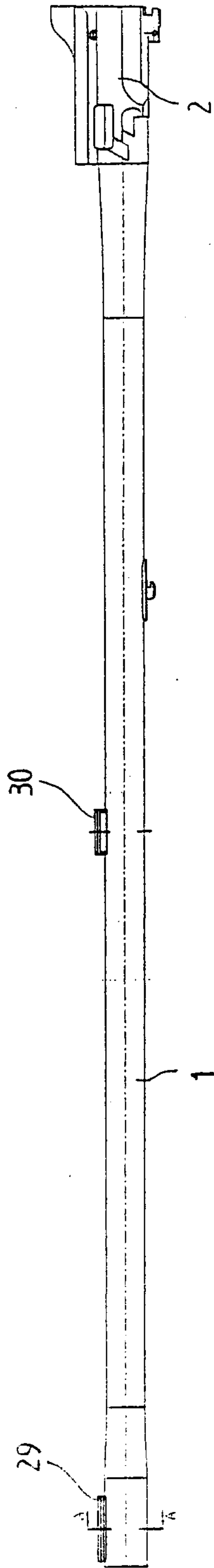


Fig. 4

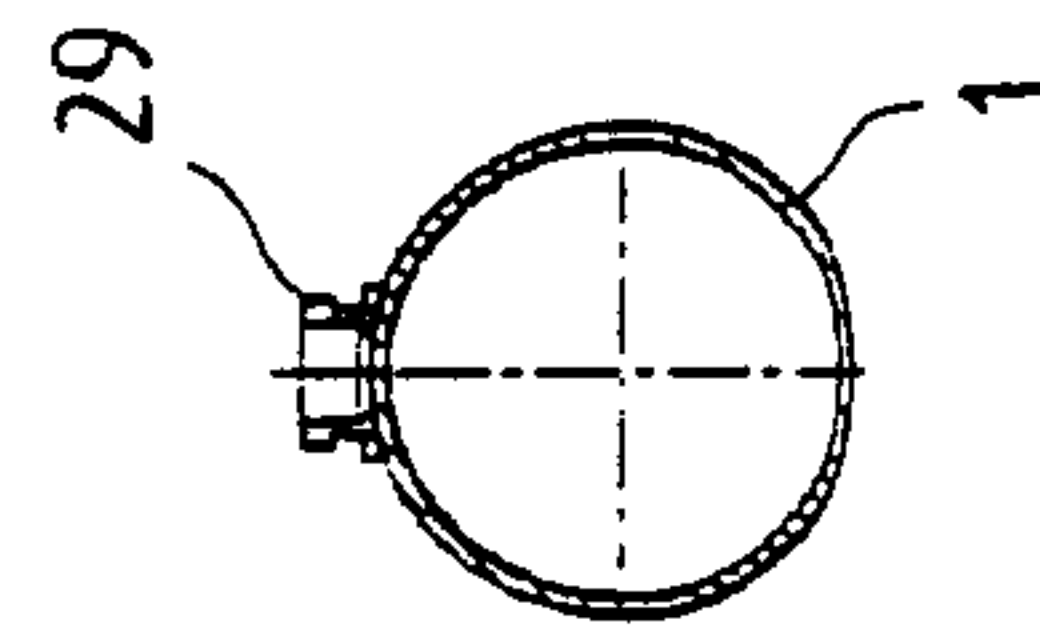


Fig. 5

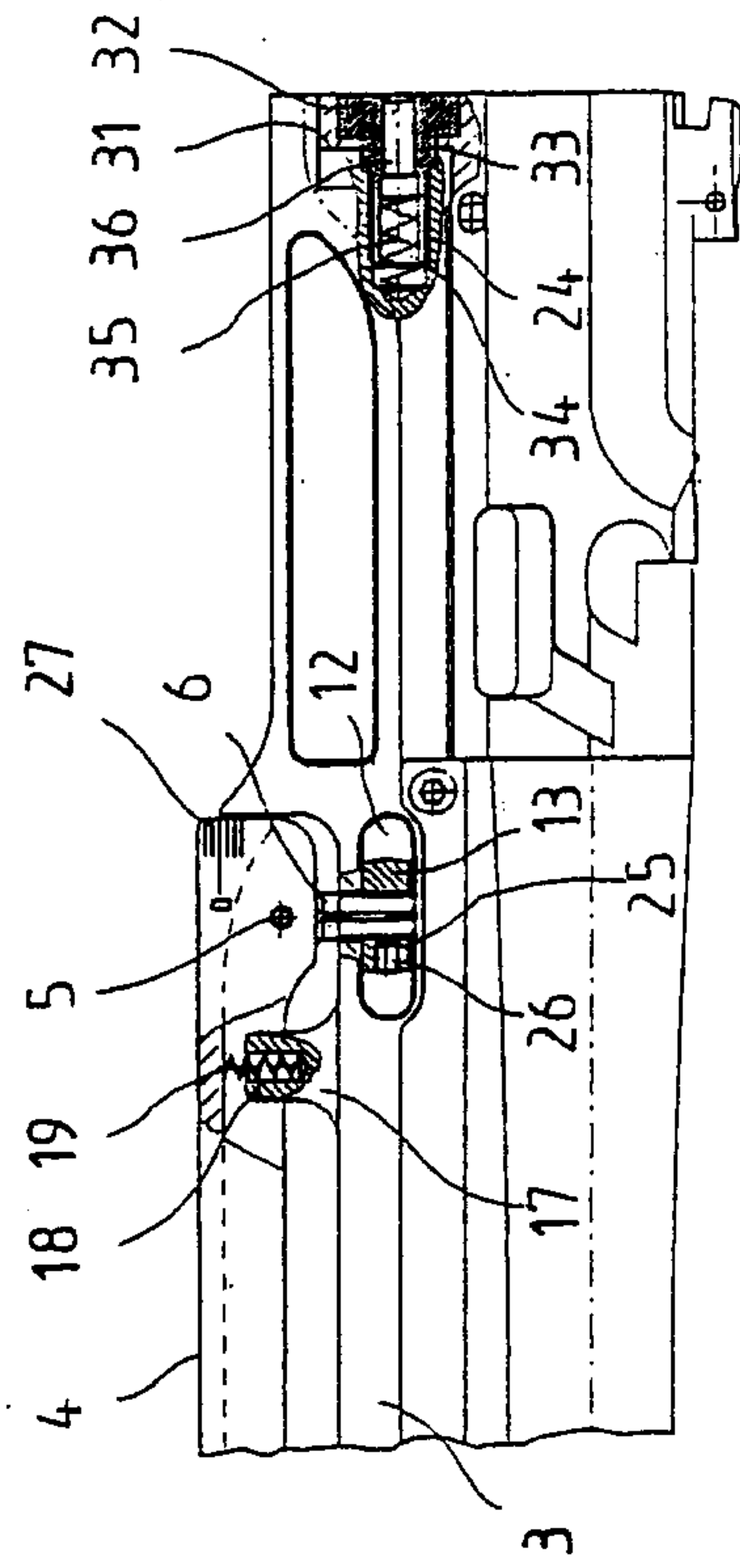


Fig. 6

