



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 382 931 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
21.01.2004 Bulletin 2004/04

(51) Int Cl.7: **F41C 33/02**

(21) Application number: **03425477.1**

(22) Date of filing: **16.07.2003**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

(72) Inventor: **Pellegrini, Pietro**
50054 Fucecchio (Firenze) (IT)

(74) Representative: **Bardini, Marco Luigi et al**
c/o Società Italiana Brevetti S.p.A.
Corso dei Tintori, 25
50122 Firenze (IT)

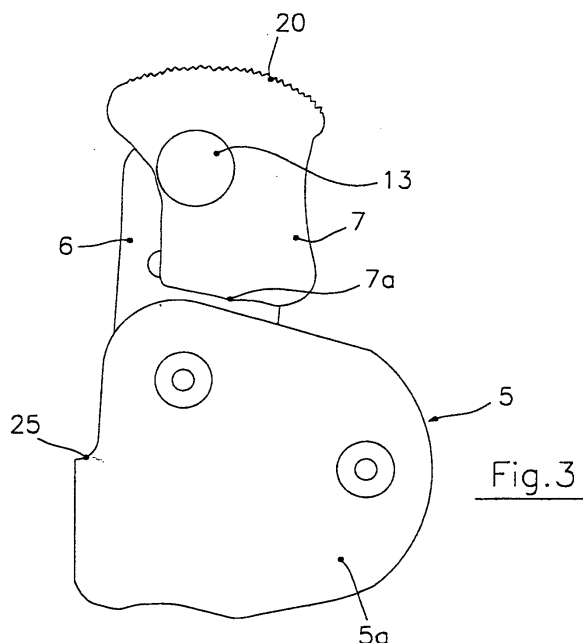
(30) Priority: **19.07.2002 IT FI20020134**

(71) Applicant: **Radar Leather Division S.r.l.**
50054 Fucecchio (Firenze) (IT)

(54) **Safety lock for holster**

(57) A holster safety device to prevent a pistol from accidentally slipping out of its holster (1) or being pulled out by unauthorized persons, comprising a strap (2) rotatably attached to the holster (1) to fit around the pistol inserted in the holster substantially in correspondence to the butt of said pistol, an arm (6) integral with said strap (2) extending from a box (4) integral with said holster and terminating with a push-button (7), said arm (6) being hinged to said box (4) in such a way as to permit its being rotated between two angularly spaced positions in which said strap is, respectively, engaged on the butt of the pistol and removed therefrom. Within said box

there are provided means (10, 11) for locking the rotation of said arm (6) that can be released following pressure exerted on said push-button (7) and with consequent possibility of making said arm (6) slide in the axial direction. The push-button (7) is hinged to the end of the arm (6) and can be brought into two angularly spaced positions, the shape of said push-button being such that in one of said positions one of its sides (7a) bears against said box (4), thus preventing the axial sliding of said arm and therefore also the release of its rotation, there being provided means (17) for locking said push-button in each of said angularly different positions.



EP 1 382 931 A1

Description

[0001] The present invention relates to a safety lock for holsters. More precisely, the invention relates to a safety lock capable of preventing the accidental or non-

[0002] As is known, holsters for pistols, especially those used by the police and personnel concerned with the defense of persons and goods, 'have to be designed in such a way as to firmly retain the weapon, and this not only during the normal movements of the user, but also on the occasion of more intensive physical activities, scuffles and the like, while yet enabling the user to pull it out easily and quickly in case of need. Particularly convenient among the various configurations that have been proposed has been found to be the one that envisages the use of a mobile strap attached to the mouth of the holster and intended to fit around the butt of the weapon when it is in position within the holster. A snap connection device locks the strap in this position and prevents the weapon from slipping out of the holster. When the weapon has to be pulled out, it is sufficient to press a button integral to the strap to release the snap connection device, overcoming an elastic reaction, and to permit an angular displacement of the strap to free the weapon.

[0003] To confer greater safety upon the device that has just been described, especially with a view to preventing the strap from being rotated accidentally or by a person other than the user of the weapon, the button by means of which the strap is released and allowed to rotate has been equipped with a lock that prevents it from moving and must necessarily be deactivated before the button can be operated. In this way, even though one effectively obtains greater safety of the device, the extraction of the weapon becomes more laborious and effectively calls for the execution of two distinct and successive movements of the hand. This can involve difficulty and delay in pulling out the weapon and create a situation of danger for the user.

[0004] The object of the present invention is to provide a safety lock device for a pistol holster that will have the same efficacy as the known devices, but without being associated with the drawbacks set out above.

[0005] A particular object of the present invention is to provide a locking device of the aforementioned type in which the release of the button and its actual depression are obtained by acting directly on the button itself.

[0006] These objects are attained by means of the safety locking device for a pistol holster of which the essential characteristics are set out in Claim 1. Further important characteristics are described in the dependent claims.

[0007] The invention will now be illustrated in greater detail by means of the description of an embodiment thereof, which is given by way of example and is not to be considered limitative in any way, the description mak-

ing reference to the attached drawings of which:

- Figure 1 shows a side elevation view of a holster to which there has been applied the safety device in accordance with the present invention;
- Figures 2 and 3 show front elevation views of the safety device in accordance with the present invention in, respectively, the locked position and the released position;
- Figures 4 and 5 show two partial views of the device in accordance with the invention, but seen from the opposite side of the elevations reproduced in Figures 2 and 3;
- Figure 6 shows a longitudinal partial sectional view through the device in accordance with the invention along the lines VI-VI of Figure 2;
- Figure 7 shows an internal side elevational view of one of the two shells that make up the box of the device; and
- Figure 8 shows a front elevational view of the device in accordance with the invention, where in dotted lines there is also shown the rotated position of the button in which it becomes possible for the pistol to be pulled out;
- Figure 9 is a longitudinal partial sectional view of a variation of the means for locking the push-button in the two angularly spaced positions.

[0008] Referring to Figure 1, the reference number 1 indicates a conventional belt-type pistol holster suitable for containing weapon, in particular a pistol, and provided with a semi-rigid strap 2 that extends across the mouth of the holster to fit over the top of the butt of the weapon, thus preventing the pistol from being pulled out or slipping accidentally out of the holster. One end of the strap 2 is rotatably connected to the holster 1 by means of a hinge pin 3, thus making it possible for the strap 2 to be displaced through an angle of about 90° in such a way as to liberate the weapon and permitting it to be pulled out. On the side opposite the hinge pin 3 there is provided a safety device, generically indicated by the reference number 4, which locks the strap in the position in which it retains the weapon within the holster and permits it to be released when the user wants to pull out the pistol.

[0009] More precisely, as is shown in greater detail in Figures 2 to 5, the safety device 4 consists of a box 5 that is integral with the holster 1 and from the upper part of which there extends an arm 6 carrying a push-button 7. The arm 6 is integral with the strap 2 and can perform an angular displacement with respect to the box 5, in particular, can be turned through about 90°, dragging the strap 2 with as it moves. In conditions of normal use, i.e., when the weapon is at rest in the holster 1, the arm 6 cannot be rotated, because it is blocked with respect to the box, as will be explained further on, and the push-button 7 has to be depressed before it can be released and rotated.

[0010] The box 5 is made up of two shells 5a and 5b that are paired and attached to each other by means of screws or in some other appropriate way. As shown in Figure 8, the arm 6 is provided with a slotted hole 6a that engages with a pin 8 projecting from the shell 5b of the box 5, while the bottom end 9 of the arm 6 is in contact with an elastic element 22 that keeps a tooth 10 of the arm 6 engaged within a corresponding seating 11 formed on a rigid plate 26 arranged within the shell 5b (see Figure 7). The arm 6 passes out of the box 5 by means of a throat 12 (which can be seen in Figure 8) that permits it to be angularly displaced. Pressing the push-button 7 in the direction of the longitudinal axis of the arm 6, the reaction of the elastic element 22 is overcome, so that the tooth 10 can become disengaged from the respective seating 11, thus permitting the angular displacement of the arm 6. In order to permit the rotation of the end of the arm 9 inside the box 5, the shells 5a and 5b are provided with an arcuate groove in which the tooth 10 can slide.

[0011] According to the invention the push-button 7 is rotatably connected to the top end of the arm 6 by means of a pin 13 and can also perform an elastically opposed axial movement along said pin, as will be described further on.

[0012] As can be seen in Figures 4 and 5, the top end of the arm 6 is provided with a head 14 and two symmetrical shoulders 15. On the face of the push-button 7 to which the arm 6 is connected there is provided a first seating 16 with an edge 16a that exactly reproduces the profile of the head 14 and the shoulders 15, so that the push-button 7 cannot rotate around the axis of the pin 13 when the head 14 is engaged in the seating 16. In this condition push-button 7 is integral to arm 6. On the same face of the push-button 7 there is also provided a second seating 17 that is not as deep as the seating 16 and has an edge 17a that again reproduces the profile of the head 14 and of one shoulder 15 of the arm 6. The seatings 16 and 17 are arranged at substantially 90° with respect to each other, so that when the push-button 7 is displaced by means of rotation, it can be brought into two different positions with respect to the arm 6 that are substantially rotated through 90° with respect to each other and are shown in Figures 4 and 5.

[0013] As is shown in Figure 6, the rotatable and elastically sliding connection between the push-button 7 and the head 14 of the arm 6 is obtained by means of the pin 13, which is hollow, threaded on the inside and engaged in a seating 28 of the push-button 7. The bottom of the seating 28 is provided with an opening 28a in which the end of the pin 13 is engaged in order to come into contact with the arm 6, while around the pin 13 there is arranged a helical spring 29 that bears against the head of the pin and the bottom of the seating 28. A screw 30 that is screwed into the pin 13 and passes through the arm 6 locks the pin 13 with respect to the arm 6. To pass from the position of Figure 4 to the position of Figure 5, one has to press the push-button 7 in the axial

direction of the pin 13 in order to overcome the elastic reaction of the spring 29 and thus to disengage the head 14 of the arm 6 from the seating 16 and bring it to the level of the seating 17. When the rotation through about 90° of the push-button 7 has been completed, the head 14 will be engaged in the seating 17 and locked in it due to the effect of a tooth 18 projecting orthogonally from the seating 17, which becomes engaged with a corresponding seating 19 provided in the arm 6 (see Figures 4 and 5).

[0014] The geometric conformation of the push-button 7 is such that, when the end of the arm 6 is engaged in the seating 17 of the push-button, any possible sliding of the arm 6 with respect to the box 5 is prevented, because the side 7a of the push-button 7 bears against the edge of the box 5 from which the arm 6 projects. This is due to the fact that the distance of the side 7a from the axis of the pin 13 is equal to or slightly smaller than the distance between the axis and the edge of the box 5 from which the arm 6 projects. The distance of the axis of the pin 13 from the side of the push-button 7 adjacent to the side 7a, on the other hand, is significantly smaller than the distance from the same edge of the box 5, which makes it possible for the arm 6 to slide inside the box 5 after pressure has been exerted on the push-button 7.

[0015] Advantageously, at least the side opposite the side 7a of the push-button 7 has a rifled surface 20 in order to create the greatest possible friction at the moment in which the arm 6 has to be released and allowed to move by rotating the push-button 7 from the position of Figure 5 to the position of Figure 4.

[0016] Advantageously, the arm 6 will have a symmetrical form to permit its being used both with holsters worn on the right and holsters worn on the left. To this end, as shown in Figure 8, in a position where it is the symmetrical counterpart of the tooth 10 with respect to the longitudinal axis of the arm 6, there is provided another tooth 21 that performs the same function, but faces in the opposite direction with respect to the plane that contains the arm 6, said tooth 21 being likewise capable of becoming engaged in the seating 11 (Figure 7) provided in the shell 5b after the rotation has been completed. The broken line in Figure 8 indicates the position attained by the push-button 7 at the end of its rotation around the pin 8 and after it has been made to move inside the box 5 so as to disengage the tooth 10 (or 21) from the seating 11. On the box 5 there is provided a side stop 25 with which the push-button 7 comes into contact at the end of its rotation. A groove similar to the groove 27 is provided on the shell 5a in order to permit the simultaneous movement of the tooth 21 within the box 5.

[0017] According to a variation of the invention shown in Figure 9, the means for locking the push-button 7 in either angularly spaced positions comprise a pair of angularly spaced seats 30 (only one shown in Figure 9, the other one being spaced about 90° apart) formed on

the face of the end of arm 6 to which the push-button 7 is attached and ball 31 protruding from a respective seat 32 formed in the push-button 7 and elastically urged against said face of the arm 6 by a spring 33 housed in the seat 32.

[0018] When the ball 31 is put in correspondence to one of the seats 30, any free rotation of the push-button is prevented, and it is necessary to overcome the elastic force of the spring 33 to move the push-button 7 from one position to the other one. With respect to the solution shown in Figures 4 and 5, the present variation is easier to be operated, as an action only in the sense of rotation of the push-button is needed to disengage and rotate it.

[0019] The safety device in accordance with the invention therefore makes it possible to lock the action of the push-button 7 on which one has to act in order to permit the rotation of the arm 6 and therefore of the strap 2. On the other hand, the operations of releasing the action of the push-button 7, releasing the rotation of the arm 6 and actually rotating the arm 6 can be carried out by means of a single and continuous action performed on the push-button 7, thus simplifying in a significant manner the pulling out of the weapon from the holster, though without compromising the safety of the device that retains the weapon in the holster.

[0020] The invention is not limited to the embodiment described and illustrated hereinabove, but comprises any variation thereof as set forth in the attached claims.

Claims

1. A holster safety device to prevent a pistol from accidentally slipping out of its holster (1) or being pulled out by unauthorized persons, comprising a strap (2) rotatably attached to the holster (1) to fit around the pistol inserted in the holster substantially in correspondence to the butt of said pistol, an arm (6) integral with said strap (2) extending from a box (4) integral with said holster and terminating with a push-button (7), said arm (6) being hinged to said box (4) in such a way as to permit its being rotated between two angularly spaced positions in which said strap is, respectively, engaged on the butt of the pistol and removed therefrom, within said box there being provided means (10, 11) for locking the rotation of said arm (6) that can be released following pressure exerted on said push-button (7) and with consequent possibility of making said arm (6) slide in the axial direction, **characterized in that** said push-button (7) is hinged to the end of said arm (6) and can be brought into two angularly spaced positions, the shape of said push-button being such that in one of said positions one of its sides (7a) bears against said box (4), thus preventing the axial sliding of said arm and therefore also the release of its rotation, there being provided means (17) for locking said push-button in each of said angularly different positions.
2. A holster safety device in accordance with claim 1, wherein the distance of one side (7a) of said push-button (7) from the pin (13) by means of which it is connected to said arm (6) is equal to or slightly smaller than the distance of said pin from the edge of the box (4), said side facing towards said edge in one of said angularly spaced positions.
3. A holster safety device in accordance with claim 1 or claim 2, wherein said means for locking said push-button (7) in each of said two positions comprise a first seating (16) provided on said push-button (7) with a profile substantially equal to the profile of the end of said arm (6) and with at least one abutment portion (16a) to prevent relative rotation, and a second seating (17) of smaller depth than said first seating (16) that likewise has an abutment portion (17a) for the end of said arm (6), but in an angularly displaced position, said push-button (7) being elastically slidable with respect to the axis of said pin (13), so that it can be moved in such a way that the end of said arm (6) can pass from the level of said first seating (16) to the level of said second seating (17) and vice versa.
4. A holster safety device in accordance with claim 3, wherein a tooth (18) capable of becoming engaged in a corresponding seating of said arm is provided in said second seating (19) to lock the push-button in the corresponding position.
5. A holster safety device according to claim 1 or 2, wherein said means for locking said push-button in each of the two positions comprise a pair of angularly spaced seats (30) formed on the face of said arm (6), to which said push-button (7) is attached, and a ball (31) protruding from a respective seat (32) formed on push-button (7) and elastically urged against the face of the arm (6), thereby when said ball (31) is put in correspondence to one of said seats (30) any possibility of free rotation is prevented and it is necessary to overcome the elastic reaction to move the push-button (7) from one to the other of said positions.
6. A safety device in accordance with claim 1, wherein said arm (6) is symmetrical in shape.
7. A safety device in accordance with any one of the preceding claims, wherein said means for locking the rotation of said arm (6) comprise a seating (11) in said box and a tooth (10) at the end of the arm (6) inside the box to become engaged in said seating, said arm end bearing against elastic means (22) to permit said tooth to become disengaged

from said seating following an axial sliding of said arm.

8. A safety device in accordance with claim 7, wherein at said end there are provided two teeth (10, 21) arranged symmetrically with respect to the longitudinal axis and pointing in opposite directions with respect to the plane in which said arm is contained.

10

15

20

25

30

35

40

45

50

55

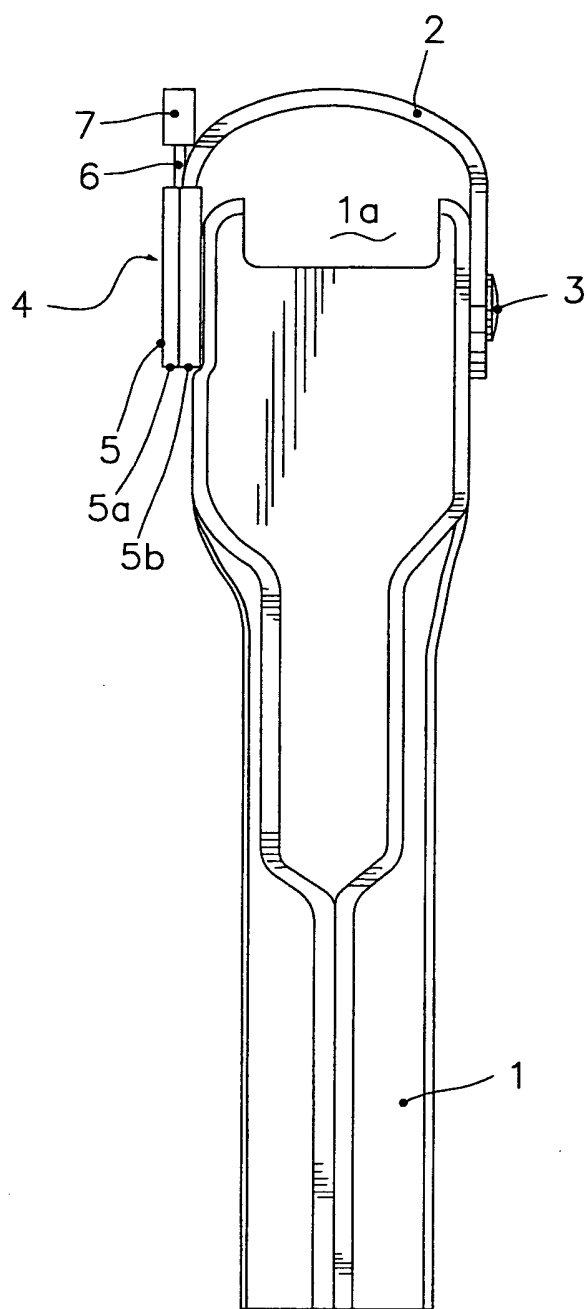


Fig.1

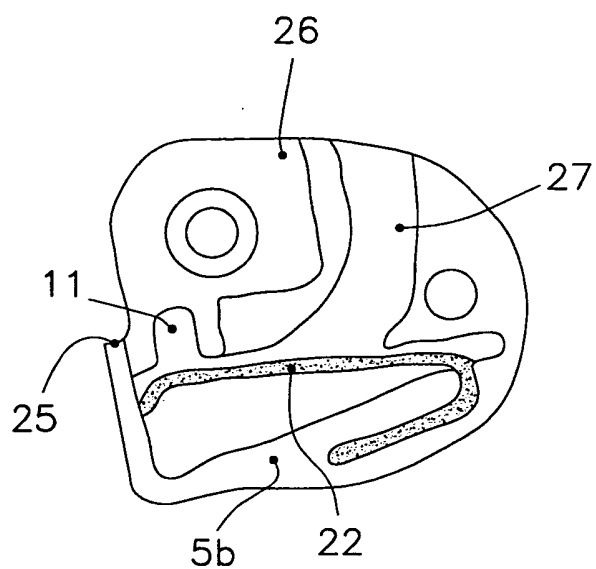


Fig.7

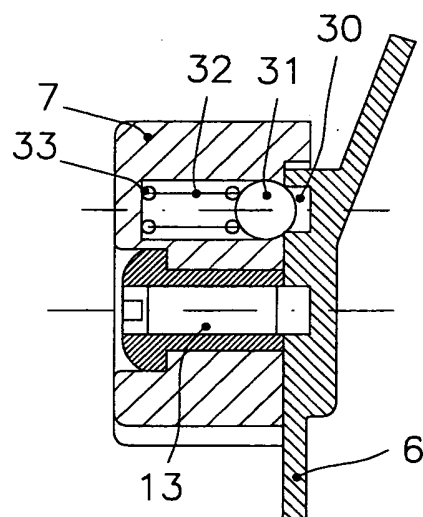
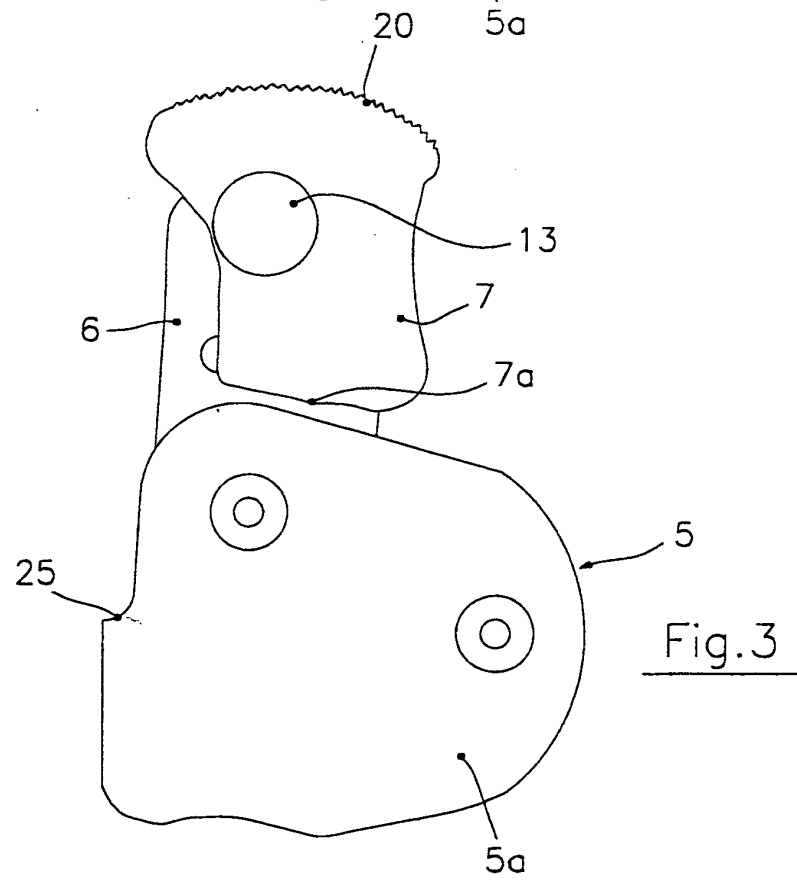
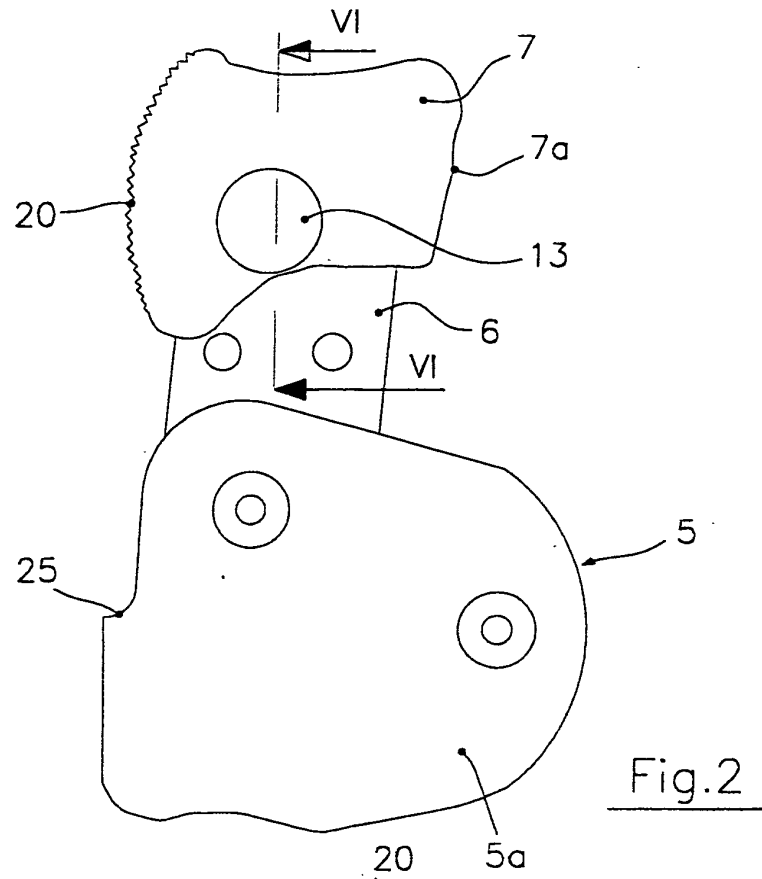


Fig.9



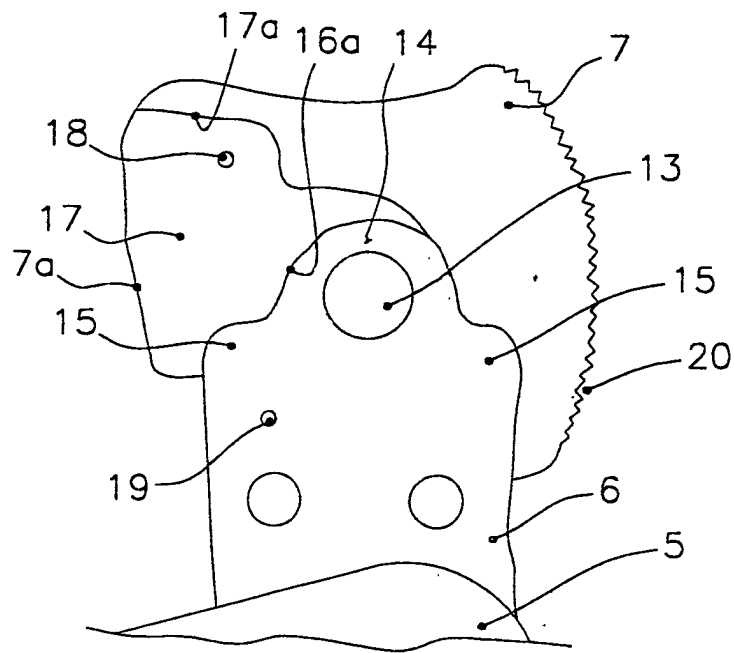


Fig. 4

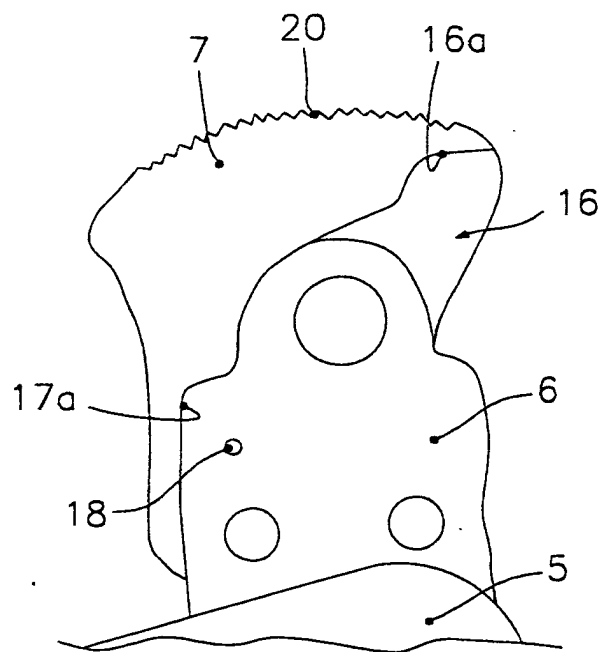
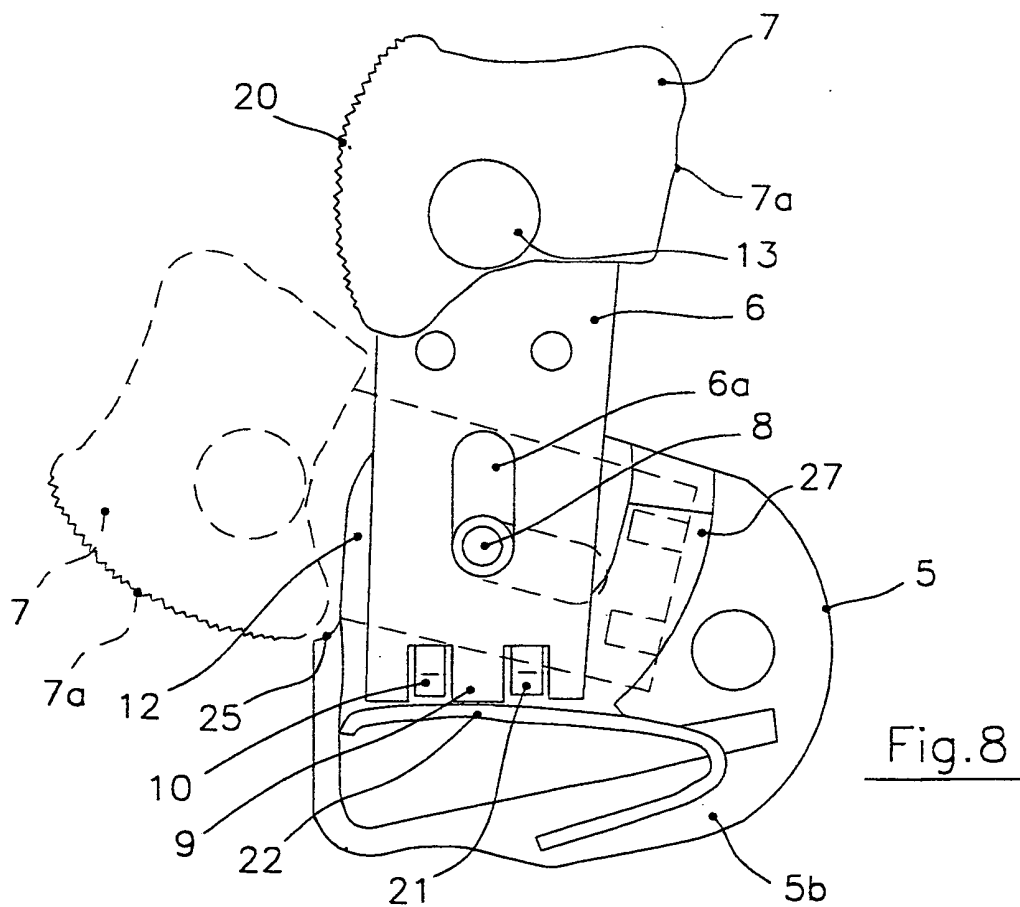
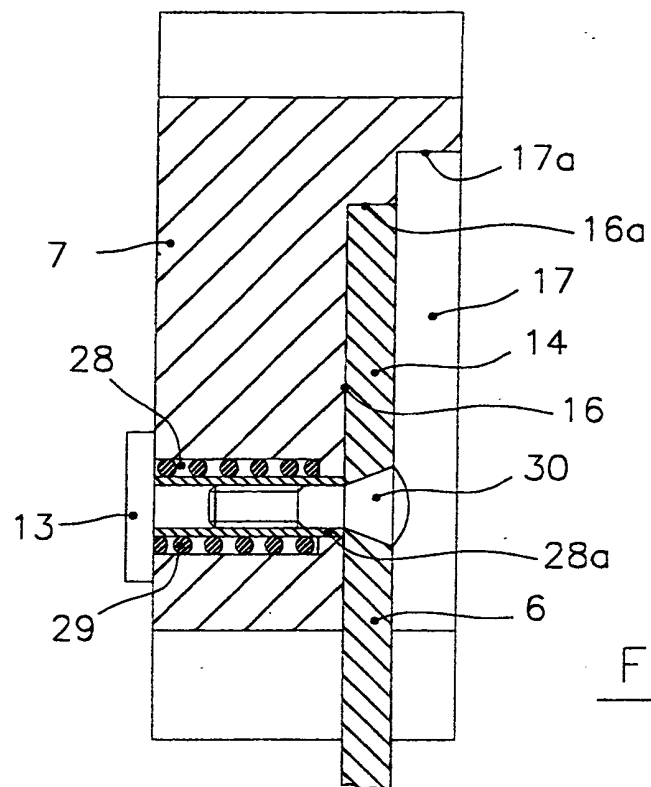


Fig. 5





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 42 5477

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 199 620 A (BELETSKY ROBERT J) 6 April 1993 (1993-04-06) * column 4, line 49 - column 6, line 60; figures 1-3 *	1-8	F41C33/02
A	US 5 441 187 A (MIXSON ROBERT) 15 August 1995 (1995-08-15) * column 4, line 4 - column 5, line 53; figure 1 *	1-8	
A	EP 0 971 196 A (BIANCHI INT) 12 January 2000 (2000-01-12) * paragraphs [0016]-[0024]; figures 1-7 *	1-8	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F41C
Place of search		Date of completion of the search	Examiner
MUNICH		17 October 2003	Ziegler, H-J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 42 5477

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

17-10-2003

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5199620	A	06-04-1993	US	5127566 A	07-07-1992

US 5441187	A	15-08-1995	NONE		

EP 0971196	A	12-01-2000	US	6085951 A	11-07-2000
			EP	0971196 A2	12-01-2000

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82