

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 0 719 403 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
05.12.2001 Bulletin 2001/49

(51) Int Cl.7: **F41A 5/04**, F41A 5/10,
F41A 19/30

(21) Application number: **94929827.7**

(86) International application number:
PCT/US94/10528

(22) Date of filing: **16.09.1994**

(87) International publication number:
WO 95/08090 (23.03.1995 Gazette 1995/13)

(54) **FIREARM HAVING STAGGERED CAMMING MECHANISM**

FEUERWAFFE MIT VERSETZTEM NOCKENMECHANISMUS

ARME A FEU POURVUE D'UN MECANISME A CAME DECALEE

(84) Designated Contracting States:
AT BE CH DE FR GB IT LI

(74) Representative: **Leale, Robin George**
Frank B. Dehn & Co., European Patent Attorneys,
179 Queen Victoria Street
London EC4V 4EL (GB)

(30) Priority: **17.09.1993 US 123063**
04.10.1993 US 130873

(43) Date of publication of application:
03.07.1996 Bulletin 1996/27

(56) References cited:

WO-A-82/03910	WO-A-91/17407
DE-C- 424 528	US-A- 1 020 056
US-A- 1 020 596	US-A- 1 165 621
US-A- 1 226 478	US-A- 1 358 104
US-A- 1 618 510	US-A- 2 245 621
US-A- 2 664 786	US-A- 3 217 441
US-A- 3 237 335	US-A- 3 504 594
US-A- 3 756 120	US-A- 3 857 324
US-A- 4 854 217	US-A- 5 157 209
US-A- 5 235 770	US-A- 5 309 815
US-A- 5 502 914	

(60) Divisional application:
01201078.1 / 1 106 955

(73) Proprietor: **Moon, Kook Jin**
Blauvelt, NY 10913 (US)

(72) Inventor: **Moon, Kook Jin**
Blauvelt, NY 10913 (US)

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 0 719 403 B1

Description

[0001] This invention relates in general to firearms and more particularly to improvements in semi-automatic firearms having an action operated by a reciprocally moveable operating slide.

[0002] In a firearm of this type having a moveable breech locking barrel, space must be allotted within the receiver to accommodate movement of the barrel parts as the barrel travels between locked and unlocked positions. In a handgun this requirement often results in a gun having a relatively high profile, that is a gun wherein the barrel and operating slide are located a substantial distance above the trigger guard and its associated pistol grip.

[0003] WO 82 03910A discloses a firearm having an elongate upward open receiver including opposing laterally spaced apart sidewalls, a breech locking barrel having a bore extending axially therethrough and including a muzzle end and a breech end, said barrel having a depending cam lug spaced in an axial direction from said muzzle end and extending downwardly within said receiver and between said sidewalls, said cam lug defining a cam surface, a barrel camming pin mounted on said receiver and having a laterally extending camming pin axis, said camming pin engaging said cam surface to support said barrel for forward and rearward movement longitudinally of said receiver and for pivotal movement relative to said receiver between locked and unlocked positions, an operating slide for moving said barrel between said locked and unlocked positions and for releasably securing said barrel in said locked position, and a firing mechanism including an operating trigger mounted in said receiver below said barrel camming pin and disposed below said cam lug when said barrel is in its locked position.

[0004] The present invention is characterised in that said cam lug is laterally offset relative to the axis of said bore and a portion of said trigger is disposed generally adjacent said laterally offset cam lug and between said cam lug and an associated one of said sidewalls when said barrel is in its unlocked position.

[0005] An embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which:-

Fig. 1 is a side elevational view of a semi-automatic pistol embodying the present invention;

Fig. 2 is a somewhat enlarged longitudinal sectional view through the pistol of Fig. 1;

Fig. 3 is an enlarged somewhat schematic fragmentary sectional view taken along the line 3-3 of Fig. 2;

Fig. 4 is a somewhat schematic fragmentary longitudinal sectional view through the gun of Fig. 1 shown with the barrel in locked position;

Fig. 5 is similar to Fig. 4 but shows the barrel in an unlocked position;

Fig. 6 is a somewhat schematic enlarged fragmen-

tary longitudinal sectional view through the rear portion of the operating slide showing the striker assembly in cocked position;

Fig. 7 is similar to Fig. 6 but shows the striker in a striking position;

Fig. 8 is a sectional view taken along the line 7-7 of Fig. 6;

Fig. 9 is a fragmentary sectional view taken along the line 9-9 of Fig. 8;

Fig. 10 is a somewhat reduced fragmentary sectional view taken along the line 10-10 of Fig. 8;

Fig. 11 is an enlarged somewhat schematic fragmentary sectional view similar to Fig. 2 but shown with the firing mechanism in half-cocked position;

Fig. 12 is similar to Fig. 11 but shows the opposite side of the gun with the firing mechanism in fully-cocked position at the point of release;

Fig. 13 is an enlarged somewhat schematic fragmentary sectional view taken generally along the line 13-13 of Fig. 11; and

Fig. 14 is a perspective view of the U-shaped spacer.

[0006] In the drawings and in the description which follows the invention is illustrated and described with reference to a handgun or semi-automatic pistol indicated generally by the reference numeral 10. The illustrated pistol 10 has a frame or upwardly open receiver indicated generally at 12 including laterally spaced apart sidewalls 14, 14, best shown in Figs. 3 and 13, an operating trigger 16 pivotally supported on the receiver between the sidewalls by a trigger pivot pin 17, a breech locking barrel 18 supported on the receiver, and an operating slide 20 suitably supported on the receiver for limited reciprocal movement during manual cocking of the gun and during automatic recoil upon firing.

[0007] Illustration and detailed description of conventional features such as the extractor, ejector, ejection port and magazine feed mechanism have been omitted, since an understanding of these features is not essential to an understanding of the invention.

[0008] Considering the pistol 10 in further detail, the breech locking barrel 18, best shown in Figs. 2, 4 and 5, is supported for movement on the receiver 12 and has a bore 22 which extends coaxially through it. An integral barrel cam lug 24 defines a cam surface 26, depends from the rear or breech end portion of the barrel 18, and extends into the upwardly open receiver 12. In accordance with the present invention the barrel cam lug 24 is laterally offset from the axis of the barrel bore, as shown in Fig. 3 where the bore axis is indicated at 28 and the lateral offset is designated by the numeral 30. This lateral offset provides a space between one side of the cam lug 24 and the associated receiver sidewall 14, as shown in Fig. 3.

[0009] A barrel mounting or camming pin 38 supported in fixed position on the receiver by the sidewalls 14, 14 extends laterally across the receiver 12 and engages

the cam surface 26 on the offset cam lug to support the barrel 18 for limited forward and rearward movement longitudinally of the receiver 12 and for pivotal movement about a laterally extending axis relative to the receiver. The operating slide 20 which moves the barrel between its locked and unlocked positions is supported on the receiver 12 for reciprocal sliding movement longitudinally of the receiver between a forward position shown in Figs. 2 and 4 and corresponding to the locked position of the barrel and a retracted position shown in Fig. 5 corresponding to an unlocked position of the barrel 18. In its forward position the operating slide 20 engages a forwardly facing abutment surface 40 on the barrel to retain the barrel in its locked position against a forwardly facing breech face 42 best shown in Fig. 2 and defined by a rear portion of the operating slide 20. A recoil spring 44 supported by a recoil spring guide 46 and mounted in the forward end of the receiver 12 acts between the receiver and the operating slide 20 to bias the operating slide toward its forward or barrel locking position of Fig. 4.

[0010] Referring now to Figs. 2 and 11-14, the firing mechanism, which includes the trigger 16, employs a spring propelled inertia striker assembly indicated generally at 48. The striker assembly is received within a stepped cylindrical bore 50 which extends through the rear portion of the operating slide 20. The bore 50 is coaxial aligned with the barrel bore axis 28 when the barrel 18 is in its locked position, as best shown in Fig. 2. The bore 50 has a generally cylindrical rear portion 52, a diametrically reduced intermediate portion 54, which communicates with the rear portion 52, and a further diametrically reduced forward end portion 56, which communicates with the intermediate portion 54 and opens through the breech face 42. A rearwardly facing annular abutment surface 58 is located at the juncture of the rear portion 52 and the intermediate portion 54.

[0011] The striker assembly 48 includes a striker 60, a generally U-shaped spacer 62, a striker spring 64 and a striker spring guide rod 65. The striker 60 is generally cylindrical, supported for coaxial sliding movement within the bore 50 and has a forwardly facing shoulder 68 for cooperative engagement with the abutment surface 58 to limit the forward travel of the striker within the bore 50. The forward end portion of the striker has a reduced diameter and is adapted to be freely received within the intermediate portion 54. At its forward or free end the striker 60 has a tip 66 sized for free passage through the forward portion 56 and to a striking position beyond the breech face 42. An axially extending slot 67 extends laterally through the striker 60 rearward of the shoulder 68 and intersects a bore 69 which extends coaxially through the rear part of the striker. An integral tongue 71 depends from the rear end of the striker 60 and projects downwardly through and beyond an associated slot 70 formed in the lower rear portion of the operating slide 20 and best shown in Fig. 13.

[0012] The spacer 62 which drives the striker 60

through a portion of its travel to its striking position comprises a generally U-shaped member which is disposed within the forward end of the slot 67 and straddles the forward portion of the striker 60. The spacer 62 has a pair of forwardly projecting legs 72, 72 which extend forwardly beyond the shoulder 68 when the spacer 62 is disposed in driving engagement with the striker 60. The striker spring 64 is received on the striker guide rod 65, extends through the bore 69 and engages a spring retainer on the rear of the U-shaped spacer 62, substantially as shown. The striker assembly 48 is retained in assembly with the operating slide 20 by a back plate 73 releasably secured in the slots rear of the operating slide 20 by a spring biased detent (not shown). The striker spring 64 acts between the U-shaped spacer 62 and the back plate 73 to propel the striker 60 in a forward direction and toward its striking position as will be hereinafter further discussed. In the latter position the tip 66 projects through and beyond the breech face 42 to strike and detonate the primer of an associated cartridge in the barrel chamber when the gun 10 is fired.

[0013] Referring now particularly to Figs. 2 and 11-13, the firing mechanism includes a cocking and releasing element or cam indicated generally at 74 and supported by a pivot pin mounted in fixed position on and extending laterally across the receiver 12. The cam 74 has a first cam lobe 76 and is prevented from rotating in a counterclockwise direction from a first position, in which it appears in Fig. 11, by an abutment surface 78 on the cam which engages an arresting surface 80 on the receiver. A biasing spring 81 shown in Fig. 12 and connected between the cam 74 and the receiver 12 biases the cam 74 in a clockwise direction (Fig. 12) and toward its first position.

[0014] The cocking and releasing cam 74 further includes a second cam lobe 82 angularly offset in a counterclockwise direction from the first cam lobe 76 as shown in Fig. 11.

[0015] A trigger bar 84, which also comprises a part of the firing mechanism, is pivotally connected to the trigger 16 by a trigger bar pivot pin 85 for forward and rearward movement between the trigger pivot pin 17 and the barrel camming pin 38, substantially as shown in Figs. 11 and 12. A lateral projection 86 on the rear end of the trigger bar, best shown in Fig. 13, engages the cocking and releasing cam 74 within a recess 88 in the rear of the cam when the cam 74 is in its first position, as it appears in Fig. 11. When the trigger is pulled or drawn back to its firing position, as it appears in Fig. 12, the trigger bar 84 moves in a forward direction causing clockwise rotation of the cam 74 from its position of Fig. 11 to its position of Fig. 12. A spring 90 (Fig. 12) acts between the receiver 12 and the trigger bar to bias the trigger bar upwardly and to its position of engagement with the cam 74. An upwardly projecting cam 92 on the rear end of the trigger bar cooperates with a cam surface 94 on the under side of the operating slide 20 to disconnect the trigger bar 84 from the rotary cam 74 when the

operating slide 20 moves rearwardly toward its retracted position.

[0016] When the gun is uncocked and in inactive condition, as it appears in Fig. 2 the striker tongue 71 is located forward of the first cam lobe 76. Preparatory to firing the pistol 10 the operating slide 20 is manually retracted, which locates the tongue 71 rearward of the first cam lobe 76 as it appears in Fig. 11. The striker tongue 71 rests on the first cam lobe 76 which is prevented from rotating in a counterclockwise direction from its first position of Fig. 11 by engagement of the abutment surface 78 on the cam with the arresting surface 80 on the receiver. As the operating slide returns to its forward position in response to the biasing force of the recoil spring 44 the striker spring 64 is compressed placing the striker assembly 48 in its half-cocked position of Fig. 11. In this half-cocked position the striker 60 lacks sufficient potential energy to detonate a cartridge primer if accidentally released.

[0017] The aforescribed elements which comprise the firing mechanism move as the trigger 16 is drawn back toward its firing position. The cocking and releasing cam 74 moves in a clockwise direction from its position in Fig. 11 to drive the striker rearwardly from its half-cocked position to its fully-cocked position before it is released by the first cam lobe 76 in the position generally shown in Fig. 12.

[0018] As the trigger is pulled beyond the position shown in Fig. 12 the first cam lobe 76 disengages from the striker tongue 71 thereby freeing the striker to move forward and toward its striking position in response to the propelling force imparted to the spacer 62 and the striker 60 by the striker spring 64. Forward movement of the spacer 62 is arrested by engagement of the forwardly extending legs 72, 27 with the rearwardly facing abutment surface 58. However, the striker 60 continues to move in a forward direction and to its striking position under its own inertia free of further influence by the striker spring 64.

[0019] The second cam lobe 82 is employed to elevate to a releasing position a blocking member 83 (Fig. 2) mounted in the operating slide 20 generally above the striker assembly 48 and spring biased downwardly and into a blocking position into the path of the striker 60 to prevent movement of the striker to its striking position when the trigger is in its inactive position. The angular offset of the second cam lobe 82 relative to the first cam lobe 76 times release of the striker block so that the striker remains in a blocked condition until the first cam lobe approaches its striker releasing position of Fig. 12 in response to movement of the trigger 16 to its firing position.

[0020] The trigger bar 84 remains in engagement with the cocking and releasing cam 74 until the striker tongue 71 has been released, a loaded cartridge has been detonated by the striker 60 and the operating slide 20 begins its rearward movement under recoil and toward its retracted position. During rearward movement of the op-

erating slide the cam surface 94 on the under side of the operating slide 20 engages the trigger bar cam 92 to pivot the trigger bar 84 downwardly and move it out of engagement with the cam 74, thereby freeing the cocking and releasing cam 74 and allowing it to spring back to its first position in response to the biasing force of the spring. The spent shell casing is also extracted and ejected in a convention manner during rearward movement of the operating slide 20.

[0021] As the operating slide 20 moves forwardly on its return stroke the striker tongue 71 catches the first cam lobe 76 which has returned to its first position. A round of ammunition is also fed from the magazine into the chamber during the return movement of the operating slide to its forward position. The gun is now ready to fire the next round in response to operation of the trigger.

[0022] It will now be apparent that the aforescribed gun 10 has a double-action and that pulling the trigger 16 both cocks the striker assembly and releases it from its cocked position. The cocking and releasing cam 74 also serves as a striker block when the striker 60 is in its half-cocked position so that the striker cannot escape from the latter position unless the trigger is pulled. It should be noted that the pivotal axis of the cocking and releasing cam 74 is located generally centrally of the cam. The first lobe 76 is centered generally vertically above the cam pivotal axis and the abutment surface 78 is located below the cam pivotal axis when the cam is in its first position. Thus, the abutment surface 78 on the cam and located below the cam axis and which cooperates with the arresting surface 80 on the receiver provides positive resistance to pivotal movement of the cam in a counterclockwise direction from its position of Fig. 11 so that the cam lobe 76 cooperates with the tongue 71 to block movement of the striker 60 toward its striking position. Vertical alignment of the first cam lobe 76 with the pivotal axis of the cam in its first position provides an important safety feature, because the angular movement of the cam (over 60 degrees) which is required to move the striker 60 to and release it in its fully-cocked position is too great a movement to result from dropping the gun. It will also be noted that the biasing force of the springs 64 and 81 which exert counterclockwise biasing force on the cam 74 cooperate with the arresting surface 80 on the receiver to retain the first cam lobe in vertically oriented or striker blocking position. The latter springs resist rotation of the cam 74 in the event that the gun is dropped or otherwise subjected to a sudden shock force. Further, since the pivotal axis of the cam is located generally centrally of the cam the weight and the cam is roughly evenly distributed about the cam axis so that dropping the gun is not likely to induce rotation of the cam due to its own inertia.

[0023] A long trigger pull is required to produce the angular displacement of the cocking and releasing cam (over 60 degrees) necessary to move the striker 60 from its half-cocked to its fully-cocked and releasing position. The first cam lobe 76 moves both vertically and horizon-

tally as the cam 74 travels along its rotational arc to move the striker 60 from its half-cocked to its fully-cocked and releasing positions against the biasing force of the springs 64 and 81. The aforescribed features result in an inherently safe firearm.

[0024] The staggered or laterally offset barrel cam lug provides sufficient cam surface to support the barrel for its movement while allowing sufficient space adjacent the cam lug for receiving portions of the trigger and the trigger bar when the barrel moves to its unlocked position and without increase in the width dimension of the gun. This arrangement also enables the barrel camming pin to be located above and in general vertical alignment with the trigger pivot pin while allowing for trigger bar movement between the latter pins. This close structural arrangement of parts relative to each other coupled with the lateral offset of the barrel cam lug enables construction of a compact breech loading handgun having an unusually low profile, which allows the barrel to be positioned close to the hand of the user to reduce what is commonly referred to in the industry as "muzzle flip" and recoil effects.

[0025] The U-shaped spacer which straddles the striker may be readily assembled with the striker with minimal dexterity so that the striker assembly may be rapidly taken apart and reassembled, when necessary, in cleaning and servicing the gun. The disclosed striker assembly performs its function with a minimal number of parts thereby reducing manufacturing and assembling cost.

Claims

1. A firearm having an elongate upward open receiver (12) including opposing laterally spaced apart sidewalls (14), a breech locking barrel (18) having a bore (22) extending axially therethrough and including a muzzle end and a breech end, said barrel having a depending cam lug (24) spaced in an axial direction from said muzzle end and extending downwardly within said receiver and between said sidewalls, said cam lug defining a cam surface (26), a barrel camming pin (38) mounted on said receiver and having a laterally extending camming pin axis, said camming pin engaging said cam surface to support said barrel for forward and rearward movement longitudinally of said receiver and for pivotal movement relative to said receiver between locked and unlocked positions, an operating slide (20) for moving said barrel between said locked and unlocked positions and for releasably securing said barrel in said locked position, and a firing mechanism including an operating trigger (16) mounted in said receiver below said barrel camming pin (38) and disposed below said cam lug (24) when said barrel is in its locked position,
characterized in that said cam lug is laterally offset

relative to the axis (28) of said bore (22) and a portion of said trigger is disposed generally adjacent said laterally offset cam lug and between said cam lug and an associated one of said sidewalls when said barrel is in its unlocked position.

2. A firearm as claimed in claim 1, wherein said trigger (16) is mounted on a trigger pivot pin (17) for pivotal movement about a trigger axis disposed below and in generally parallel alignment with said camming pin (38).
3. A firearm as claimed in claim 2, wherein said trigger pivot pin (17) is disposed below and in general vertical alignment with said camming pin (38).
4. A firearm as claimed in any preceding claim, wherein said firing mechanism includes a trigger bar (84) operably connected to said trigger (16) and disposed below said cam lug (24) when said barrel (18) is in its locked position, said trigger bar being disposed between said cam lug and said associated one of said sidewalls (14) when said barrel is in its unlocked position.
5. A firearm as claimed in claim 4, wherein said trigger bar (84) is connected to said trigger (16) for pivotal movement about a trigger bar axis (85) relative to said trigger.
6. A firearm as claimed in claim 5, wherein said trigger bar axis (85) is located below said camming pin (38) axis and above said trigger axis (17).
7. A firearm as claimed in claim 2 and any of claims 4 to 6, wherein said trigger bar (84) is supported for movement between said barrel camming pin (38) and said trigger pivot pin (17) in response to operative movement of said trigger (16).
8. A firearm as claimed in any preceding claim, wherein said cam lug (24) depends from said breech end of said barrel (18).
9. A firearm as claimed in any preceding claim wherein said slide (20) defines a forwardly facing breech face (42) for cooperating with said breech end when said barrel (18) is in said locked position.
10. A firearm as claimed in claim 9, wherein said slide (20) has a slide bore (50) opening through said breech face.
11. A firearm as claimed in claim 10, further comprising an inertia striker assembly (48) supported for reciprocal sliding movement within said slide bore (50) and including a striker (60) having a tip (66) at its forward end and supported for reciprocal axial

movement between cocked and firing position, said tip projecting through and forwardly beyond said breech face when said striker is in its firing position, a generally U-shaped spacer (62) straddling an associated portion of said striker, a spring (64) engaged with said spacer for urging said spacer and said striker in the direction of said firing position, and an abutment surface (58) on said slide for halting movement of said spacer toward said firing position before said striker reaches said firing position, said striker being freely moveable relative to said slide and said spacer in response to inertia during the final portion of its travel from said cocked position to said firing position.

12. A firearm as claimed in claim 11, wherein said striker (60) has an axially extending slot (67) therethrough and said spacer (62) extends through said slot.
13. A firearm as claimed in claim 11 or 12, wherein said abutment surface (58) is defined by a portion of said bore (50) and said U-shaped spacer (62) has a pair of forwardly extending legs (72) straddling said striker (60) and engageable with said abutment surface.
14. A firearm as claimed in any of claims 10 to 13, wherein said bore (50) is a stepped bore and said abutment surface (58) comprises an annular radially disposed surface of said bore.

Patentansprüche

1. Feuerwaffe mit einer länglichen, nach oben offenen Aufnahme (12) mit gegenüberliegenden, seitlich beabstandeten Seitenwänden (14), einer Gewehr-schloßtrommel (18) mit einer Bohrung (22), die sich axial dadurch erstreckt, mit einem Gewehrmündungs-ende und einem Geschützverschlußende, wobei die Trommel einen abhängenden Nockenansatz (24) aufweist, der in axialer Richtung von dem Gewehrmündungs-ende beabstandet ist und sich in der Aufnahme und zwischen den Seitenwänden nach unten erstreckt, wobei der Nockenansatz eine Nockenoberfläche (26) bestimmt, mit einem Trommel-nockenstift (38), der auf der Aufnahme befestigt ist und eine sich lateral erstreckende Nockenstift-achse aufweist, wobei der Nockenstift an die Nockenoberfläche angreift, um die Trommel für eine Vorwärts- und eine Rückwärtsbewegung longitudinal zu der Aufnahme und für eine Drehbewegung relativ zu der Aufnahme zwischen arretierter und entarretierter Position zu halten, mit einem Betätigungs-schieber (20) zum Bewegen der Trommel zwischen arretierter und entarretierter Position und zum lösbaren Sichern der Trommel in der arretierten Position, und einem Feuer bzw. Schießmecha-

nismus mit einem Betätigungsabzug (16), der in der Aufnahme unter dem Trommelnockenstift (38) befestigt ist und unter dem Nockenansatz (24) angeordnet ist, wenn die Trommel sich in ihrer arretierten Position befindet,

dadurch gekennzeichnet, daß der Nockenansatz seitlich versetzt zu der Achse (28) der Bohrung (22) ist und ein Abschnitt des Abzugs im wesentlichen an dem seitlich versetzten Nockenansatz anliegt und zwischen dem Nockenansatz und einer zugeordneten der Seitenwände angeordnet ist, wenn die Trommel sich in ihrer entarretierten Position befindet.

2. Feuerwaffe nach Anspruch 1, bei der der Abzug (16) auf einem Abzugsdrehstift (17) für eine Drehbewegung um eine Abzugsachse angebracht ist, die darunter und im wesentlichen parallel zu dem Nockenstift (38) ausgerichtet angeordnet ist.
3. Feuerwaffe nach Anspruch 2, bei der der Abzugsdrehstift (17) darunter und im wesentlichen in vertikaler Ausrichtung zu dem Nockenstift (38) angeordnet ist.
4. Feuerwaffe nach einem der vorstehenden Ansprüche, bei der der Schießmechanismus einen Abzugsstab bzw. Abzugsbolzen (84) aufweist, der wirksam mit dem Abzug (16) verbunden ist und unter dem Nockenansatz (24) angeordnet ist, wenn die Trommel (18) sich in ihrer entarretierten Position befindet, wobei der Abzugsbolzen zwischen dem Nockenansatz und der zugeordneten der Seitenwände (14) angeordnet ist, wenn die Trommel sich in ihrer entarretierten Position befindet.
5. Feuerwaffe nach Anspruch 4, bei der der Abzugsbolzen (84) mit dem Abzug (16) für eine Drehbewegung um eine Abzugsbolzensachse (85) relativ zu dem Abzug verbunden ist.
6. Feuerwaffe nach Anspruch 5, bei der die Abzugsbolzensachse (85) unter der Achse des Nockenstifts (38) und über der Abzugsachse (17) angeordnet ist.
7. Feuerwaffe nach Anspruch 2 und einem der Ansprüche 4 bis 6, bei der der Abzugsbolzen (84) für eine Bewegung zwischen dem Trommelnockenstift (38) und dem Abzugsdrehstift (17) als Reaktion auf eine wirksame Bewegung des Abzugs (16) gehalten ist.
8. Feuerwaffe nach einem der vorstehenden Ansprüche, bei der der Nockenansatz (24) von dem Geschützverschlußende der Trommel (18) abhängt.
9. Feuerwaffe nach einem der vorstehenden Ansprüche, bei der der Schieber (20) eine nach vorne ge-

richtete Geschützverschlußfläche (42) bestimmt, um mit dem Geschützverschlußende zusammenzuwirken, wenn die Trommel (18) sich in ihrer arretierten Position befindet.

10. Feuerwaffe nach Anspruch 9, bei der der Schieber (20) eine Öffnung mittels einer Schieberbohrung (50) durch die Geschützverschlußfläche aufweist.
11. Feuerwaffe nach Anspruch 10, die weiterhin eine Trägheitsanschlaganordnung (48) umfaßt, die für eine reziproke Schiebebewegung in der Schieberbohrung (50) gehalten ist und einen Anschlag (60) mit einer Spitze (66) an dessen vorderem Ende aufweist und für eine reziproke axiale Bewegung zwischen gespannter Position und Abschußposition gehalten ist, wobei die Spitze durch die Geschützverschlußfläche und nach vorne unter der Geschützverschlußfläche ragt, wenn der Anschlag sich in dessen Abschußposition befindet, und einen im wesentlichen U-förmigen Abstandhalter (62) umfaßt, der einen zugeordneten Abschnitt des Anschlags überspannt, eine Feder (64), die mit dem Abstandhalter verbunden ist, um den Abstandhalter und den Anschlag in die Richtung der Abschußposition zu bringen, und eine Widerlageroberfläche (58) auf dem Schieber für eine Haltebewegung des Abstandhalters hin zu der Abschußposition bevor der Anschlag die Abschußposition erreicht, wobei der Anschlag frei beweglich relativ zu dem Schieber und dem Abstandhalter als Reaktion auf die Trägheit während des finalen Abschnitts dessen Bewegung von der gespannten Position zu der Abschußposition ist.
12. Feuerwaffe nach Anspruch 11, bei der der Anschlag (60) einen sich axial erstreckenden Schlitz (67) durch diesen hat und der Abstandhalter (62) durch den Schlitz ragt.
13. Feuerwaffe nach Anspruch 11 oder 12, bei der die Widerlageroberfläche (58) durch einen Abschnitt der Bohrung (50) bestimmt ist und der U-förmige Abstandhalter (62) ein Paar von nach vorne ragenden Schenkeln (72) hat, die den Anschlag (60) überspannen und an die Widerlageroberfläche angreifen.
14. Feuerwaffe nach einem der Ansprüche 10 bis 13, bei der die Bohrung (50) eine abgesetzte Bohrung ist und die Widerlageroberfläche (58) eine ringförmige radial angeordnete Oberfläche der Bohrung umfaßt.

Revendications

1. Arme à feu comportant une boîte de culasse allon-

gée (12), ouverte vers le haut, incluant des parois latérales opposées (14), espacées latéralement, un canon (18) à verrouillage de la culasse comportant un perçage (29) qui s'étend axialement dans le canon et inclut une extrémité côté bouche et une extrémité côté culasse, ledit canon comportant une patte formant came dépendante (24) qui est distante de ladite extrémité côté bouche, dans la direction axiale, et s'étend vers le bas à l'intérieur de ladite boîte de culasse et entre lesdites parois latérales, ladite patte formant came définissant une surface de came (26), un téton à effet de came (38) du canon monté sur ladite boîte de culasse et possédant un axe s'étendant latéralement, ledit téton à effet de came coopérant avec ladite surface de came pour supporter ledit canon pour déplacer longitudinalement selon un mouvement longitudinal vers l'avant et vers l'arrière la boîte de culasse et pour un mouvement de pivotement par rapport à ladite boîte de culasse entre des positions verrouillée et déverrouillée, une glissière d'actionnement (20) pour déplacer ledit canon entre lesdites positions verrouillée et déverrouillée et pour fixer d'une manière libérable ledit canon dans ladite position verrouillée, et un mécanisme de mise à feu incluant une détente d'actionnement (16) montée dans ladite boîte de culasse au-dessous dudit téton à effet de came (38) du canon et disposé au-dessous de ladite patte formant came (24) lorsque ledit canon est dans sa position verrouillée, **caractérisée en ce que** ladite patte formant came est décalée latéralement par rapport à l'axe (28) dudit perçage (22) et une partie de ladite détente est disposée d'une manière générale au voisinage de ladite patte formant came décalée latéralement et entre ladite patte formant came et l'une associée desdites parois latérales lorsque ledit canon est dans sa position déverrouillée.

2. Arme à feu selon la revendication 1, dans laquelle ladite détente (16) est montée sur un axe formant pivot de détente (17) de manière à pouvoir effectuer un mouvement de pivotement autour d'un axe de détente disposé au-dessous dudit téton à effet de came (38) et en étant aligné d'une manière générale parallèle à ce téton.
3. Arme à feu selon la revendication 2, dans laquelle l'axe de pivot de détente (17) est disposé au-dessous dudit téton à effet de came (38) et en étant aligné d'une manière générale verticalement avec ce téton.
4. Arme à feu selon l'une quelconque des revendications précédentes, dans laquelle ledit mécanisme de mise à feu inclut une barre de détente (84) raccordée de façon opérationnelle à ladite détente (16) et disposée au-dessous de ladite patte formant ca-

me (24) lorsque ledit canon (18) est dans sa position verrouillée, ladite barre de détente étant disposée entre ladite patte formant came et ladite paroi latérale associée parmi lesdites parois latérales (14), lorsque ledit canon est dans sa position déverrouillée.

5. Arme à feu selon la revendication 4, dans laquelle la barre de détente (84) est raccordée à ladite détente (16) de manière à pouvoir pivoter autour d'un axe (85) de la barre de détente par rapport à ladite détente. 5
6. Arme à feu selon la revendication 5, dans laquelle ledit axe (85) de la barre de détente est disposé au-dessous dudit axe du téton à effet de came (38) et au-dessus dudit axe (17) de la détente. 10
7. Arme à feu selon la revendication 2 et l'une quelconque des revendications 4 à 6, dans laquelle ladite barre de détente (84) est supportée de manière à se déplacer entre ledit téton à effet de came (38) du canon et ledit axe formant pivot de détente (17) en réponse à un mouvement d'actionnement opérationnel de ladite détente (16). 15
8. Arme à feu selon l'une quelconque des revendications précédentes, dans laquelle ladite patte formant came (24) est solidaire de ladite extrémité côté culasse dudit canon (18). 20
9. Arme à feu selon l'une quelconque des revendications précédentes, dans laquelle ladite glissière (20) définit une face de culasse (42) tournée vers l'avant et destinée à coopérer avec ladite extrémité côté culasse lorsque ledit canon (18) est dans ladite position verrouillée. 25
10. Arme à feu selon la revendication 9, dans laquelle ladite glissière (20) possède un perçage de glissière (50) débouchant dans ladite face de culasse. 30
11. Arme à feu selon la revendication 10, comprenant en outre un ensemble de percuteur à inertie (48) supporté de manière à exécuter un déplacement de glissement en va-et-vient à l'intérieur dudit perçage de glissière (50) et incluant un percuteur (60) comportant une pointe (66) à son extrémité avant et supporté de manière à exécuter un déplacement axial en va-et-vient entre une position armée et une position de tir, ladite pointe faisant saillie à travers et vers l'avant au-delà de ladite face de culasse lorsque ledit percuteur est dans sa position de tir, une entretoise en forme générale de U (62) recouvrant une partie associée dudit percuteur, un ressort (64) coopérant avec ladite entretoise pour solliciter ladite entretoise et ledit percuteur en direction de ladite position de tir, et une surface de butée (58) située 35

sur ladite glissière pour arrêter le déplacement de ladite entretoise en direction de ladite position de tir avant que ledit percuteur atteigne ladite position de tir, ledit percuteur étant librement mobile par rapport à ladite glissière et ladite entretoise sous l'effet de l'inertie pendant la partie finale de son déplacement depuis ladite position armée jusqu'à ladite position de tir.

12. Arme à feu selon la revendication 11, dans laquelle ledit percuteur (60) possède une fente axiale (67) qui le traverse, et ladite entretoise (62) s'étend à travers ladite fente. 40
13. Arme à feu selon la revendication 11 ou 12, dans laquelle ladite surface de butée (58) est définie par une partie dudit perçage (50), et ladite entretoise en forme de U (62) possède une paire de bras (72) qui s'étendent vers l'avant, recouvrent ledit percuteur (60) et peuvent coopérer avec ladite surface de butée. 45
14. Arme à feu selon l'une quelconque des revendications 10 à 13, dans laquelle ledit perçage (50) est un perçage étagé et ladite surface de butée (58) comprend une surface annulaire dudit perçage, qui est disposée radialement. 50

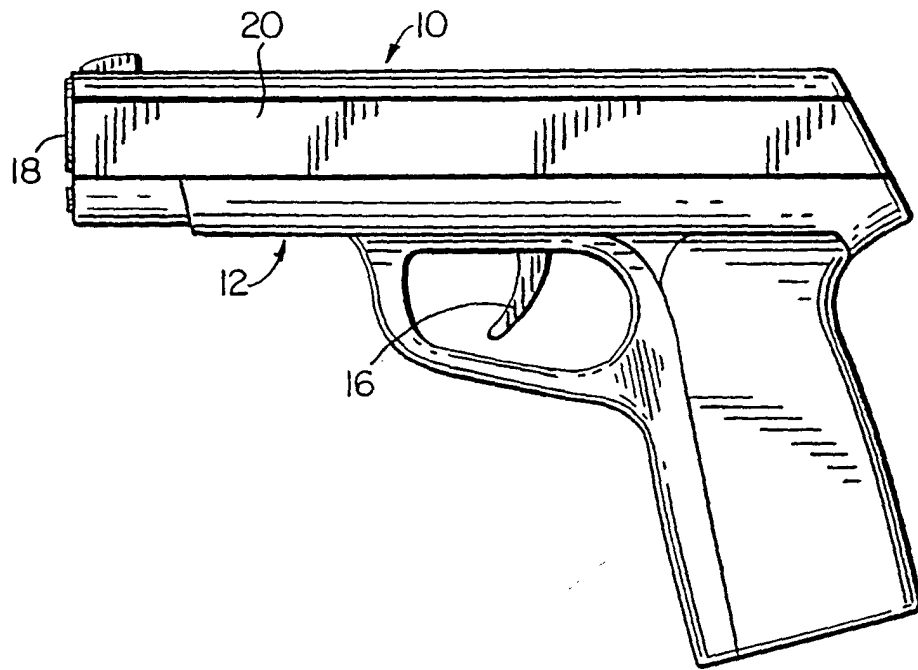


FIG. 1

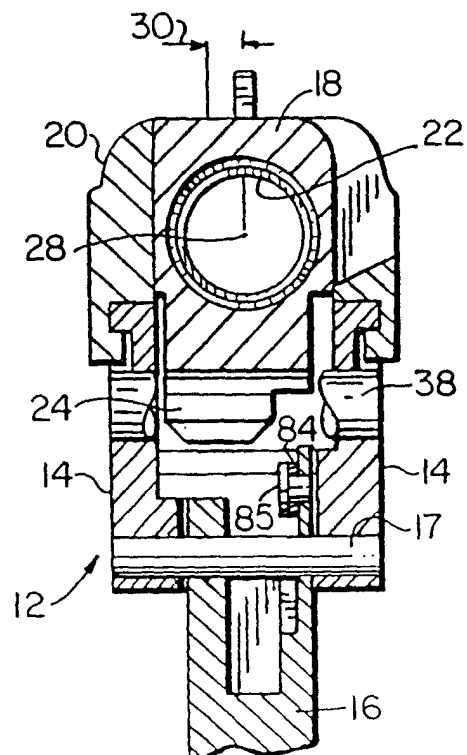


FIG. 3

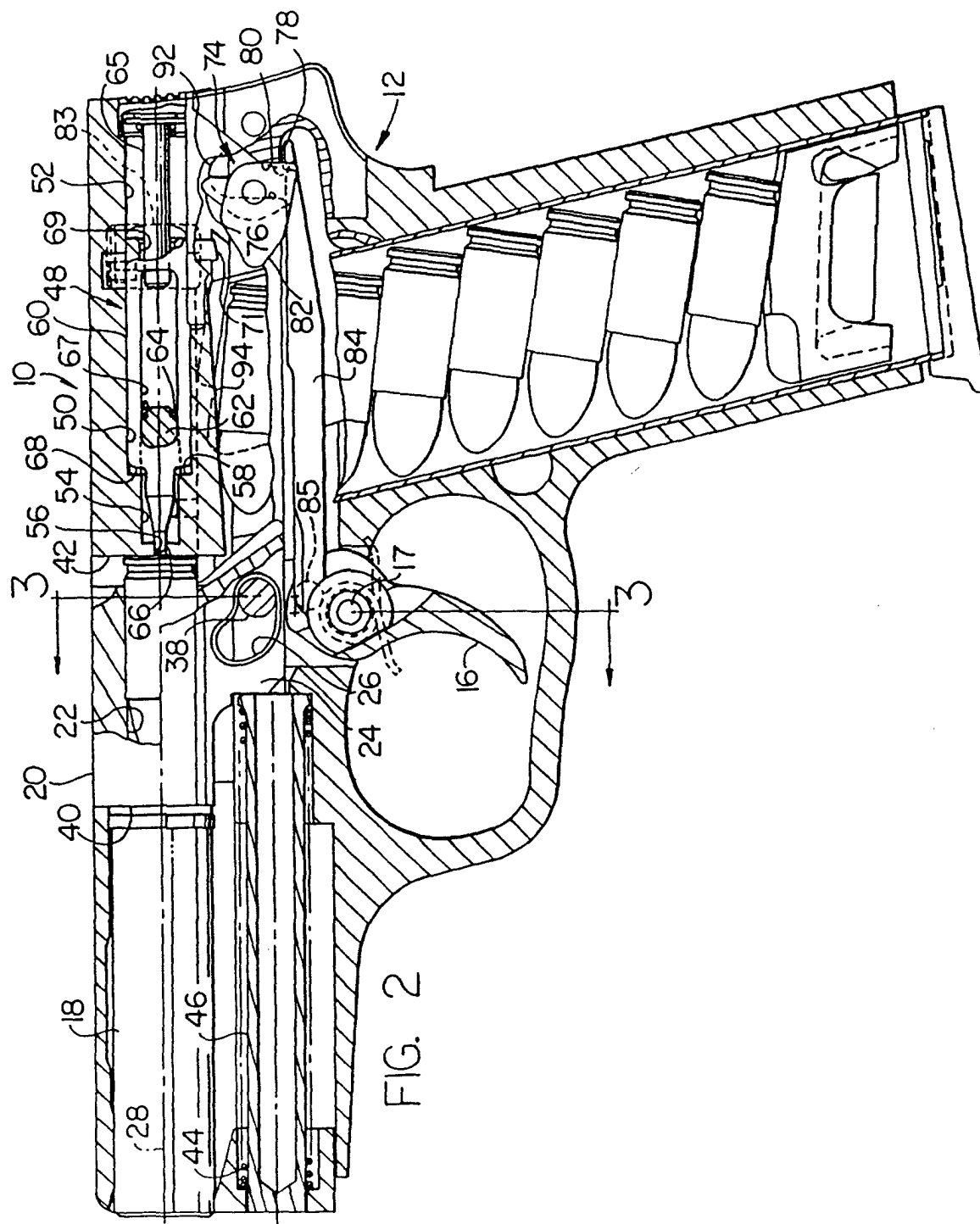


FIG. 4

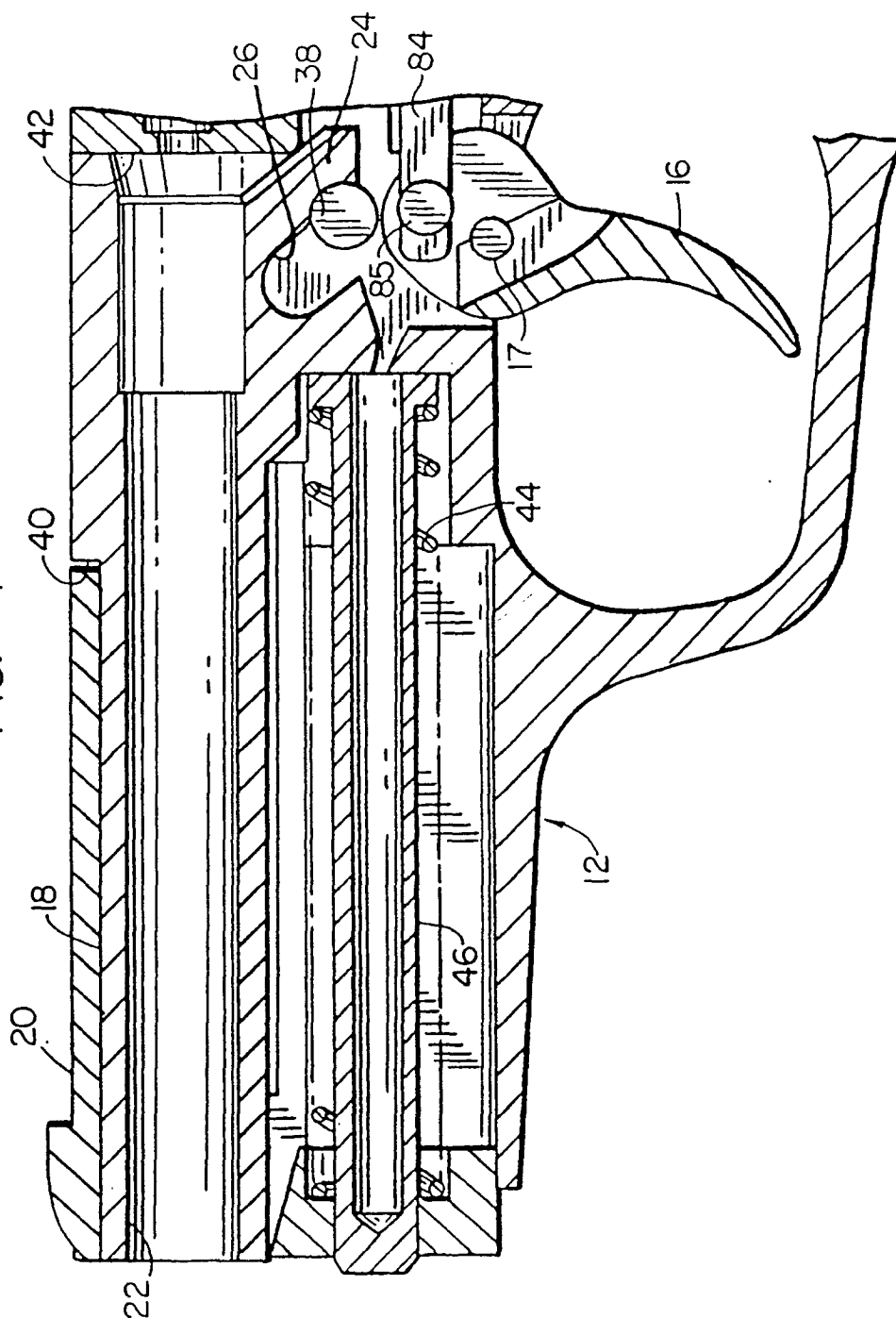


FIG. 6

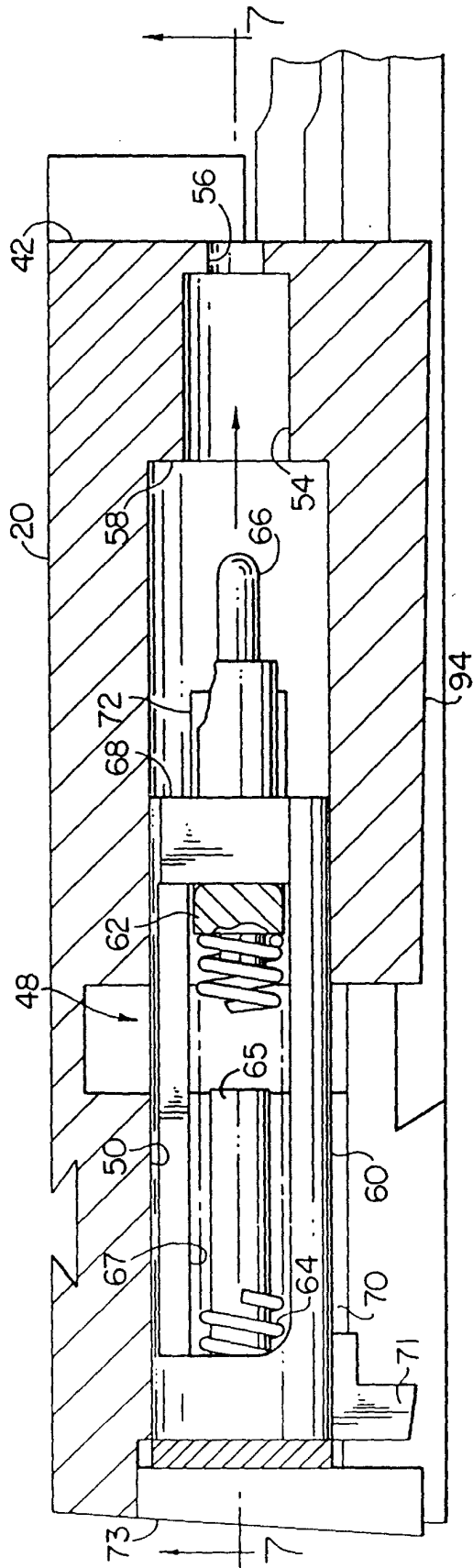


FIG. 7

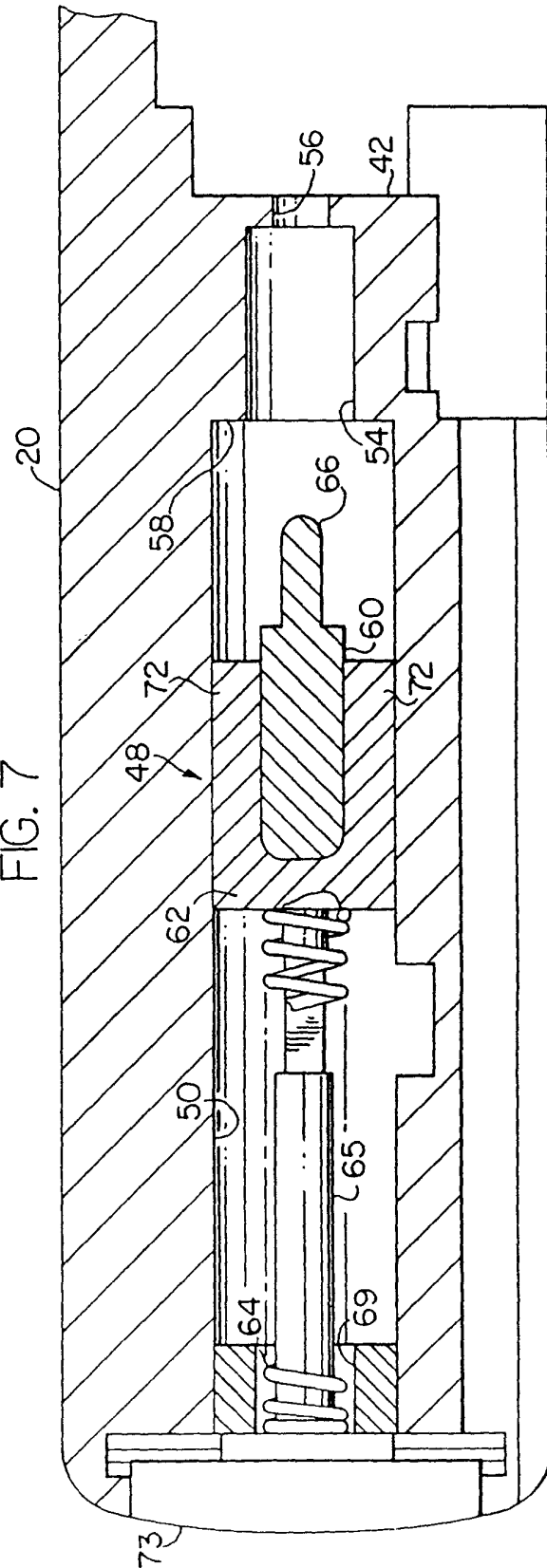


FIG. 8

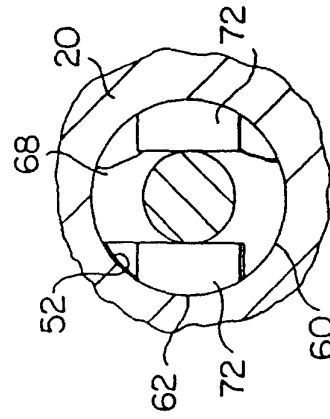
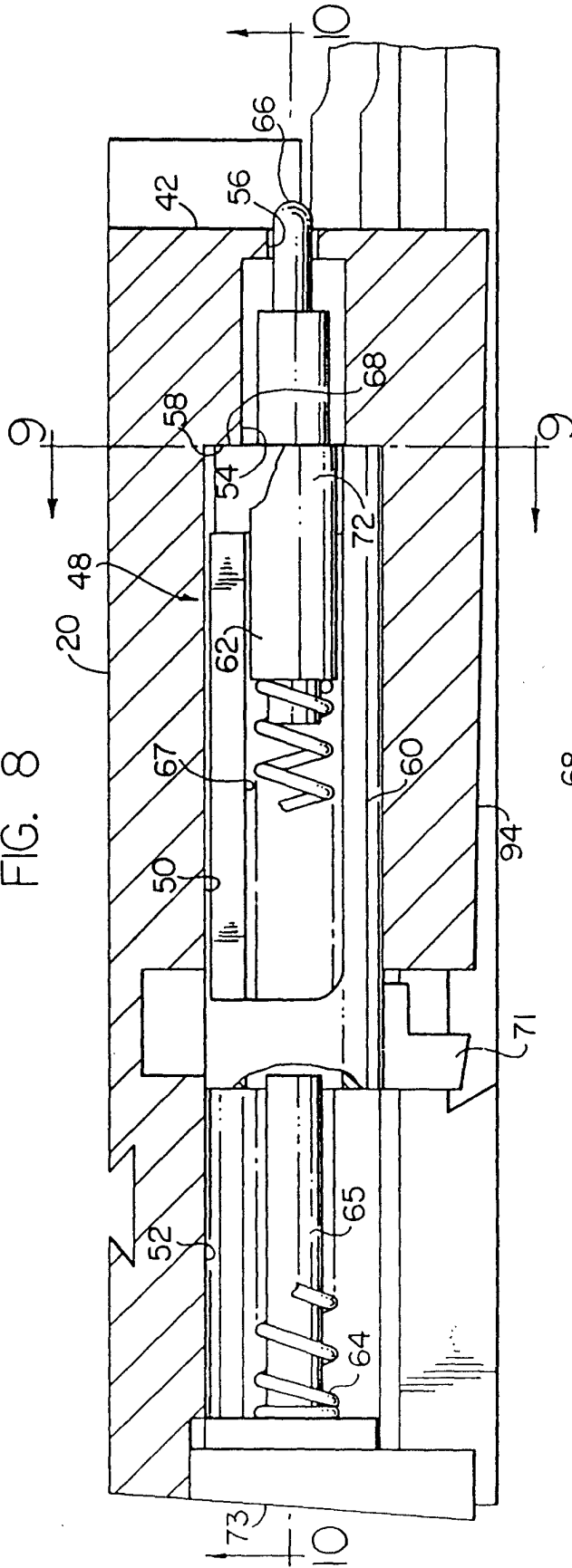
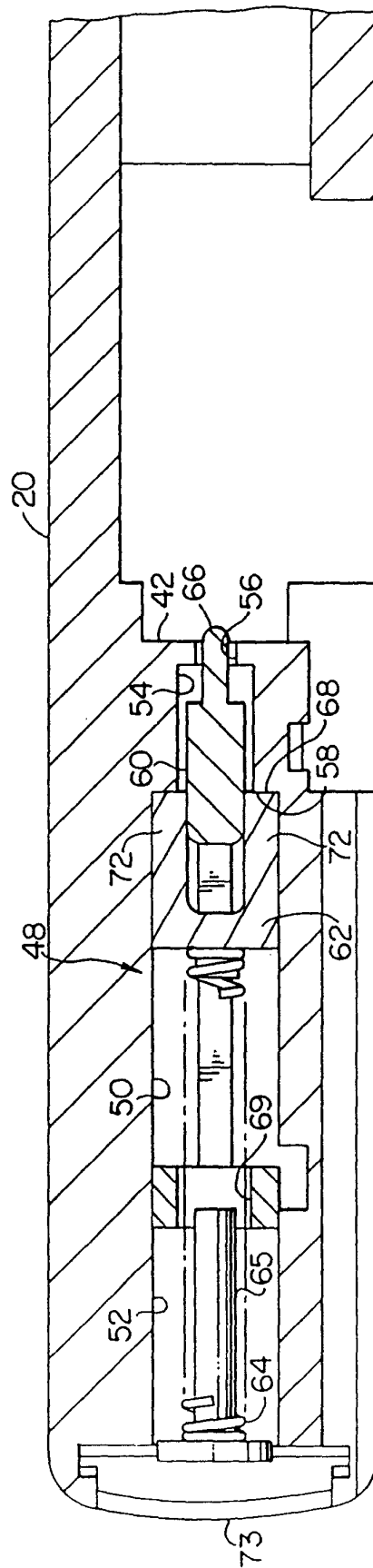
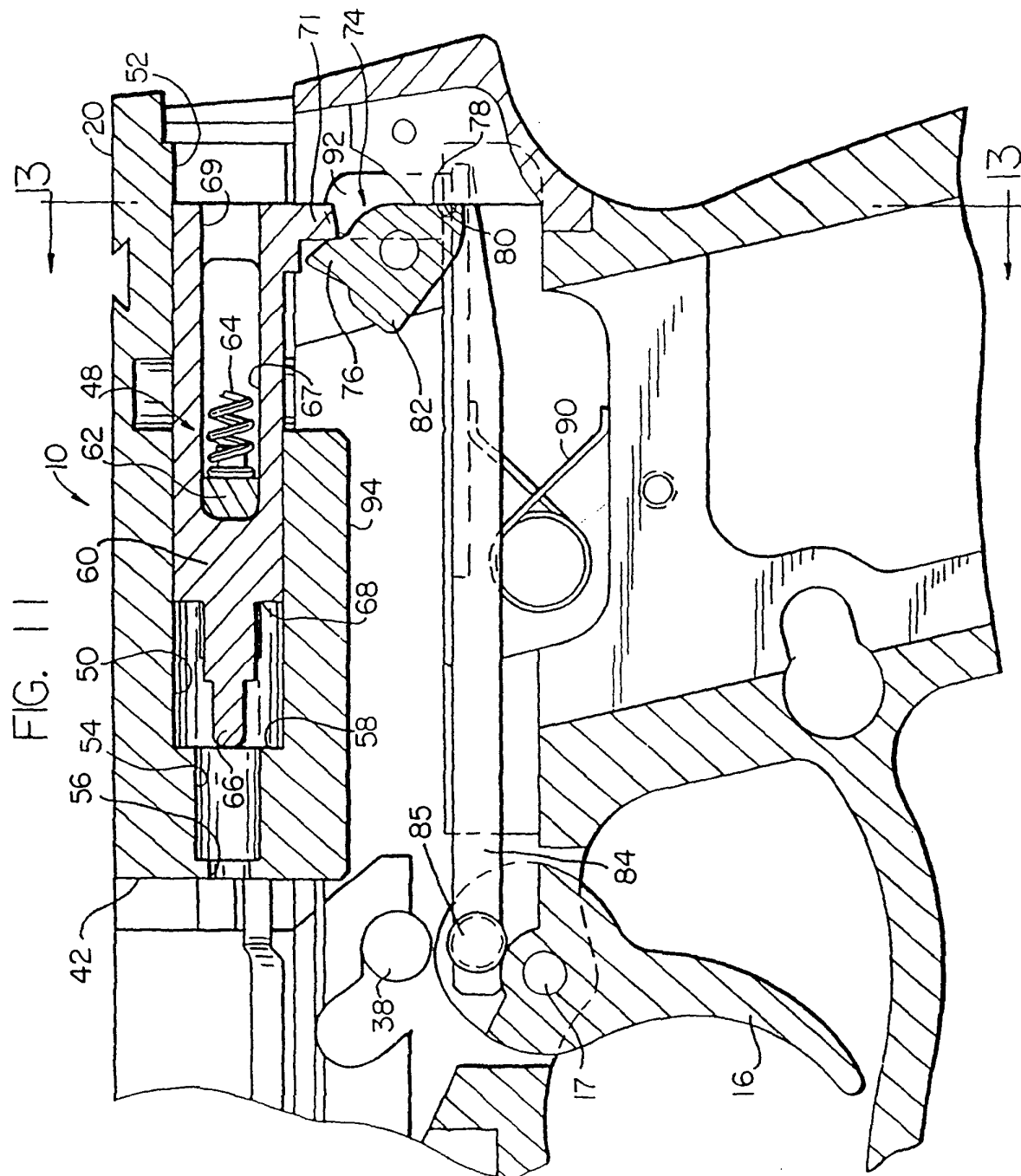
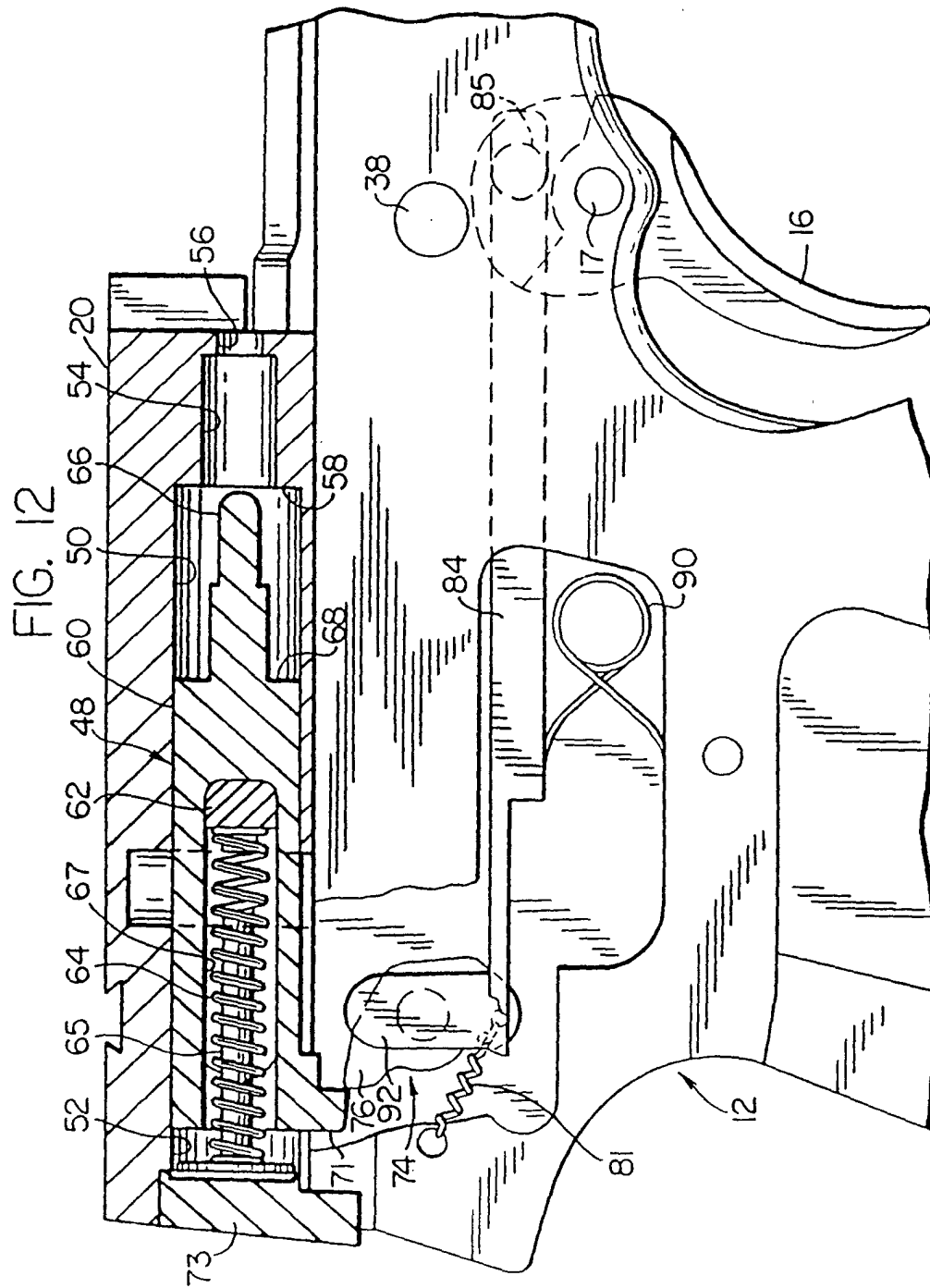


FIG. 9

FIG. 10







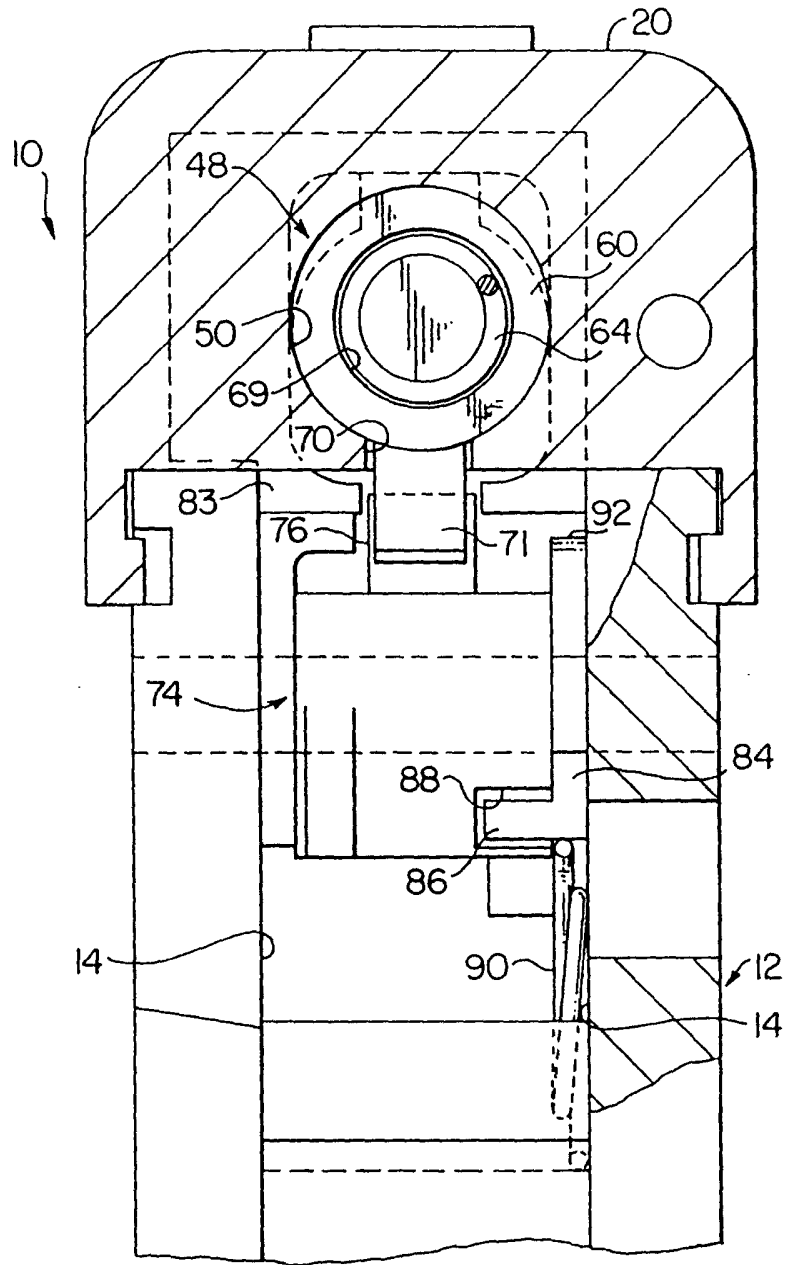


FIG. 13

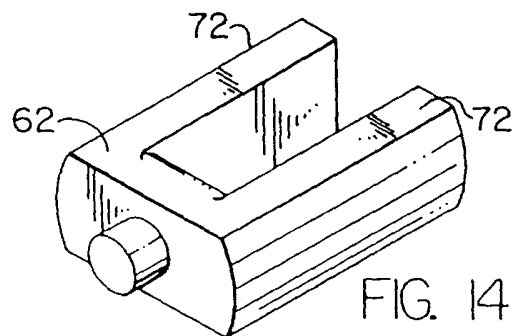


FIG. 14