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## (54) Magazine

(57) A magazine of the present invention includes a main body (10) and a plug member (20). The main body is formed with a trough (11) and a recess (12). The trough (11) is used for receiving bullets. The recess (12) has a lateral opening (121), a top portion (122) and a bottom portion (123). The recess (12) is provided to receive an air cartridge (1) between the top portion (122) and the bottom portion (123). The lateral opening (121) is used for the air cartridge (1) being put therethrough. The main body (10) is formed with a hole (13), and the hole (13) passes through the bottom portion (123) and communicates with the recess (12). A diameter of the hole (13) is smaller than a maximum diameter of the air cartridge (1). The plug member (20) is screwed into the hole (13) so as to press the air cartridge (1) toward the top portion (122). Accordingly, the plug member (20) of the present invention gradually presses the air cartridge (1) by screw action. Once the plug member (20) is completely screwed into the hole (13), the air cartridge (1) does not fall out from the recess (12).

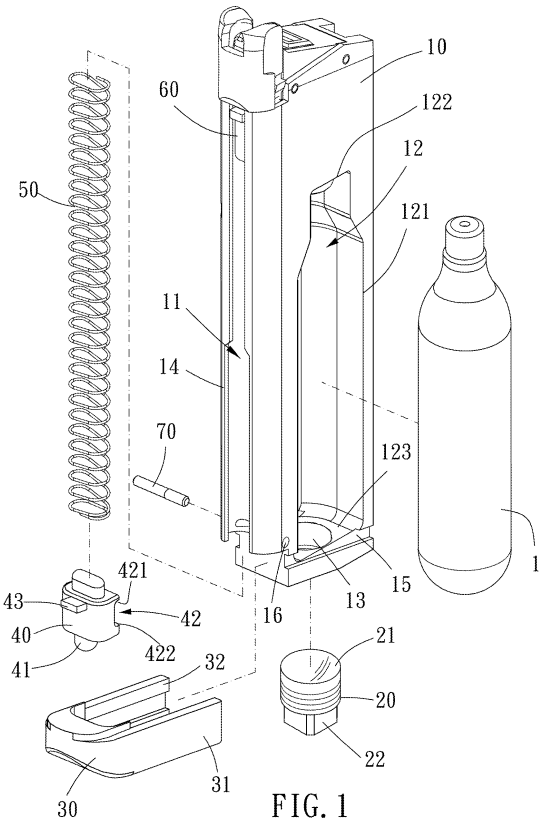


FIG. 1

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## Description

### BACKGROUND OF THE INVENTION

#### Field of the Invention

**[0001]** The present invention relates to a magazine, and more particularly to a magazine which is disposed with an air cartridge.

#### Description of the Prior Art

**[0002]** A conventional air gun includes a magazine for loading bullets, the bullets are fired by releasing a compressed air.

**[0003]** Said compressed air can be from an external device, such as an air compressor, which can provide a compressed air to project a bullet. The external device can provide stable and strong air pressure for the air gun, but the external device cannot be carried.

**[0004]** Further, said compressed air can be from an internal device, such as an air cartridge, which is disposed to the air gun. Therefore, the air gun can be portable. Some conventional air guns are equipped with an air cartridge in its magazine, as shown in TWM358289, wherein its FIG. 3 and FIG. 7 both disclose that an air cartridge is fixed to the bottom of the magazine. However, the means of fixing the air cartridge increases the volume of a gun, and changes a centroid of the gun, so that the stability of the gun is affected. Moreover, the air cartridge is easy to fall off from the magazine when the gun is impacted, and the air cartridge may be projected out by the remaining pressure in the air cartridge when a user unloads it. Furthermore, the FIG. 11 of said patent discloses that the air cartridge is put into a lateral recess of the magazine. The air cartridge is then fixed by an elastic piece, but the elastic force is not strong enough to firmly abut against the air cartridge. As a result, the air cartridge is likely to fall off if the user inadvertently hits the magazine or the magazine is hit with a lateral force.

### SUMMARY OF THE INVENTION

**[0005]** The main object of the present invention is to provide a magazine in which an air cartridge can be tightly fixed.

**[0006]** To achieve the above and other objects, a magazine of the present invention includes a main body and a plug member. The main body is formed with a trough and a recess. The trough is provided to receive bullets. The recess has a lateral opening, a top portion and a bottom portion. The recess is used for abutting an air cartridge between the top portion and bottom portion. The lateral opening is used for the air cartridge being put therethrough, and the main body further comprises a hole. The hole passes through the bottom portion and communicates with the recess. A diameter of the hole is smaller than a maximum diameter of the air cartridge. The plug member is screwed into the hole so as to press the air cartridge toward the top portion.

**[0007]** Thereby, the plug member gradually presses the air cartridge by screw action. Once the plug member is completely screwed into the hole, the air cartridge does not fall out from the recess.

**[0008]** The present invention will become more obvious from the following description when taken in connection with the accompanying drawings, which show, for purpose of illustrations only, the preferred embodiment (s) in accordance with the present invention.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0009]**

FIG. 1 is a breakdown drawing showing a preferred embodiment of the present invention.

FIG. 2 is a stereogram showing a preferred embodiment of the present invention;

FIG. 3 is a profile drawing showing a preferred embodiment of the present invention;

FIG. 4 is a side view drawing showing an air gun, which is adapted to be equipped with a preferred embodiment of the present invention;

FIG. 5 is a side view drawing showing an air gun, which is adapted to be equipped with a preferred embodiment of the present invention, wherein the slide cover slides backward.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

**[0010]** Please refer to FIG. 1 to FIG. 3 for a preferred embodiment of the present invention. A magazine of the present invention includes a main body (10), a plug member (20), a base (30), an anti-slide member (40), an elastic member (50), a support member (60), and a rod (70).

**[0011]** The main body (10) is formed with a trough (11), a recess (12), a hole (13), a groove (14) and a limit hole (16). The trough (11) is used for receiving bullets. The recess (12) has a lateral opening (121), a top portion (122), and a bottom portion (123). The recess (12) is provided to receive an air cartridge (1) between the top portion (122) and the bottom portion (123). The lateral opening (121) is used for the air cartridge (1) being put therethrough. The hole (13) passes through the bottom portion (123) and communicates with the recess (12). A diameter of the hole (13) is smaller than a maximum diameter of the air cartridge (1). In other words, the air cartridge (1) cannot pass through the hole (13) and then fall off from the recess (12). The groove (14) communicates with the trough (11). Preferably, an opening end is respectively formed at the bottom of the trough (11) and the groove (14). An axial direction of the limit hole (16) is vertical to a longitudinal direction of the trough (11), and the limit hole (16) communicates with the trough (11).

**[0012]** The plug member (20) is screwed into the hole

(13) so as to press the air cartridge (1) toward the top portion (122) of the recess (12). Preferably, the plug member (20) includes a first end and a second end opposite to the first end. The first end is formed with an abutting surface (21) for abutting the air cartridge (1). Preferably, the abutting surface (21) is formed as a shape corresponding to a bottom of the air cartridge (1). In the present embodiment, the abutting surface (21) is formed as a concave surface so as to completely abut against the bottom of the air cartridge (1). The second end is formed with a driving portion (22). The driving portion (22) can be formed as a polygonal column as shown in the FIG. 1, or as a polygonal hole, or a knob having a granular surface. In this way, the plug member can be rotated by hand or with a tool.

**[0013]** The base (30) is slidably disposed with respect to the main body (10). One of the base (30) and main body (10) is formed with at least one slide rail, and the other one of the base (30) and the main body (10) is formed with at least one slide chute. Thereby, the base (30) and the main body (10) can slides with respect to each other. In the present embodiment, the base (30) has two parallel arms (31). The base (30) further comprises a pair of slide rails (32) which is respectively located on an inner side surface of each of the arms (31). And the bottom of the main body (10) is disposed with a pair of slide chutes (15) corresponding to the rails (32). To prevent the plug member (20) from getting loose or being inadvertently slid out of the main body when reloading bullets, a sliding direction of the base (30) with respect to the main body (10) is unparallel to an axial direction of the hole (13). Preferably, the sliding direction is vertical to the axial direction of the hole (13), and at least one part of the base (30) covers at least one part of the driving portion (22). In the present embodiment, the arms (31) are used for clamping two sides of the driving portion (22). In other possible embodiments of the present invention, the base can further comprise a bottom plate so as to completely cover the driving portion (22). Further, the base (30) can be formed with a pin-hole (33) on its top, as shown in FIG. 3.

**[0014]** The anti-slide member (40) selectively couples to the base (30) so as to prevent the base (30) from sliding with respect to the main body (10). Preferably, the anti-slide member (40) is formed with a pin (41) on its bottom, and the pin (41) is used for selectively being inserted into the pin-hole (33). Consequently, the anti-slide member (40) couples to the base (30). Moreover, the support member (60), the elastic member (50), and the anti-slide member (40) are put through the opening end to the trough (11) one after another. The support member (60) is adapted to push the bullets in the trough (11) to a gun bore through another opening on another end of the trough (11). Two sides of the elastic member (50) respectively abut the support member (60) and the anti-slide member (40), so that the support member (60) has a tendency of moving toward the another opening of the trough (11), and the anti-slide member (40) has a tendency of moving toward the base (30), and the pin (41) can automatically be inserted into the pin-hole (33). One side of the anti-slide member (40) is disposed with a pair of notches (42) corresponding to the limit hole (16). Another side of the anti-slide member (40) is laterally formed with a convex portion (43). The convex portion (43) can slightly aslant penetrates through the groove (14), so that a user can slide the convex portion (43) to move the anti-slide member (40). Each of the notches (42) has a first notch end (421) and a second notch end (422). The rod (70) is inserted into the limit hole (16) and the notches (42) and selectively abuts against between the first and the second notch end (421, 422). Thereby the sliding of the anti-slide member (40) is limited, and the anti-slide member (40) does not come off the trough (11) by the push of the abutting member (50).

**[0015]** As shown in FIG. 4 and FIG. 5, the magazine of the present invention can be disposed into an air gun (2). The air cartridge, which is not fixed outside of the air gun (2), does not change a centroid of the air gun (2) or hinder the use of the air gun (2), or affect the appearance of the air gun (2). Preferably, a slide cover (3) of the air gun (2) can be made of steel, so that the air gun (2) has stronger recoil that makes its auto-reloading process be smoother.

**[0016]** Accordingly, the plug member of the present invention gradually presses the air cartridge by screw action and then firmly fixes the air cartridge in the recess once the plug member is completely screwed into the hole, so that the air cartridge does not fall off while shooting or reloading bullets. The remaining pressure in the air cartridge will be gradually released as the plug member is unscrewed from the hole, so that it is safe to detach the air cartridge. Furthermore, the base covers the driving portion of the plug member so as to prevent a user from inadvertently sliding the plug member. Besides, the anti-slide member selectively couples to the base, so that the base does not slide away from the main body. And the rod is adapted to prevent the anti-slide member from coming off the trough by the elastic member.

**[0017]** In addition, to have stronger recoil, the bolt of the gun can be made of steel, so that it can also increase the rigidity and the weight of the gun.

## Claims

**1.** A magazine, comprising:

a main body (10), formed with an trough (11) and a recess (12), the trough (11) being adapted to receive bullets, the recess (12) having a lateral opening (121), a top portion (122), and a bottom portion (123), the recess (12) being adapted to receive an air cartridge (1) between the top portion (122) and the bottom portion (123), the air cartridge (1) being put through the lateral opening (121), the main body (10) further

comprising a hole (13),
the hole (13) passing through the bottom portion (123) and communicating with the recess (12), a diameter of the hole (13) being smaller than a maximum diameter of the air cartridge (1);
a plug member (20), adapted to be screwed into the hole (13) so as to press the air cartridge (1) toward the top portion (122).

**2.** The magazine of claim 1, wherein the plug member (20) comprises a first end and a second end opposite to the first end, the first end is formed with an abutting surface (21) for abutting against the air cartridge (1), and the second end is formed with a driving portion (22).

**3.** The magazine of claim 2, wherein the magazine further comprises a base (30), the base (30) is slidably disposed with respect to the main body (10), a sliding direction of the base (30) is unparallel to an axial direction of the hole (13), and at least one part of the base (30) covers at least one part of the driving portion (22).

**4.** The magazine of claim 3, wherein one of the base (30) and the main body (10) is formed with at least one slide rail (32), and the other one of the base (30) and the main body (10) is formed with at least one slide chute (15), so that the base (30) and the main body (10) slides with respect to each other.

**5.** The magazine of claim 4, wherein the base (30) comprises two parallel arms (31), the base (30) is formed with a pair of slide rails (32), the slide rails (32) are respectively located on an inner side surface of each of the arms (31), and the arms (31) are adapted to clamp two sides of the driving portion (22).

**6.** The magazine of claim 3, wherein the magazine further comprises an anti-slide member (40), the anti-slide member (40) selectively couples to the base (30) so as to prevent the base (30) from sliding with respect to the main body (10).

**7.** The magazine of claim 6, wherein the magazine further comprises an elastic member (50) and a support member (60), the elastic member (50), the support member (60) and the anti-slide member (40) are slidably disposed into the trough (11), two sides of the elastic member (50) respectively abut against the support member (60) and the anti-slide member (40) so as to make the anti-slide member (40) have a tendency of moving toward the base (30).

**8.** The magazine of claim 7, wherein the main body (10) further comprises a limit hole (16) and a rod (70), an axial direction of the limit hole (16) is vertical to a longitudinal direction of the trough (11), the limit hole (16) communicates with the trough (11), the anti-slide member (40) is laterally formed with a pair of notches (42) corresponding to the limit hole (16), each of the notches has a first notch end (421) and a second notch end (422); the rod (70) penetrates through the limit hole (16) and the notches, the rod (70) selectively abuts against between the first notch end (421) and the second notch end (422) so as to limit sliding of the anti-slide member (40).

**9.** The magazine of claim 7, wherein the main body (10) further comprises a groove (14), the groove (14) communicates with the trough (11), the anti-slide member (40) is laterally formed with a convex portion (43), the convex portion (43), which protrudes through the groove (14), is adapted to be slid so as to move the anti-slide member (40).

**10.** The magazine of claim 1, wherein the magazine further comprises a base (30), the base (30) is slidably disposed with respect to the main body (10), a sliding direction of the base (30) is unparallel to an axial direction of the hole (13), the plug member (20) has a driving portion (22) which is adapted to be rotated, and at least one part of the base (30) covers at least one part of the driving portion (22).

**11.** The magazine of claim 10, wherein one of the base (30) and the main body (10) is formed with at least one slide rail (32), and the other one of the base (30) and the main body (10) is formed with at least one slide chute (15), so that the base (30) and the main body (10) slides with respect to each other.

**12.** The magazine of claim 10, wherein the magazine further comprises an anti-slide member (40), the anti-slide member (40) selectively couples to the base (30) so as to prevent the base (30) from sliding with respect to the main body (10).

**13.** The magazine of claim 12, wherein the magazine further comprises an elastic member (50) and a support member (60), the elastic member (50), the support member (60) and the anti-slide member (40) are slidably disposed into the trough (11), two sides of the elastic member (50) respectively abut against the support member (60) and the anti-slide member (40) so as to make the anti-slide member (40) have a tendency of moving toward the base (30).

**14.** The magazine of claim 12, wherein the main body (10) further comprises a limit hole (16) and a rod (70), an axial direction of the limit hole (16) is vertical to a longitudinal direction of the trough (11), the limit hole (16) communicates with the trough (11), the anti-slide member (40) is laterally formed with a pair of notches corresponding to the limit hole (16), each of the notches has a first notch end (421) and a second

notch end (422); the rod (70) penetrates through the limit hole (16) and the notches, the rod (70) selectively abuts against between the first notch end (421) and the second notch end (422) so as to limit sliding of the anti-slide member (40).

**15.** A magazine, comprising:

a main body (10), formed with an trough (11) and a recess (12), the trough (11) being adapted to receive bullets, the recess (12) having a lateral opening (121), a top portion (122), and a bottom portion (123), the recess (12) being adapted to receive an air cartridge (1) between the top portion (122) and the bottom portion (123), the air cartridge (1) being put through the lateral opening (121), the main body (10) further comprising a hole (13),
the hole (13) passing through the bottom portion (123) and communicating with the recess (12), a diameter of the hole (13) being smaller than a maximum diameter of the air cartridge (1);
a plug member (20), adapted to be screwed into the hole (13) so as to press the air cartridge (1) toward the top portion (122);
wherein the plug member (20) comprises a first end and a second end opposite to the first end, the first end is formed with an abutting surface (21) for abutting against the air cartridge (1), the abutting surface (21) being formed as a shape corresponding to a bottom of the air cartridge (1) so as to completely abut against the bottom of the air cartridge (1), and the second end is formed with a driving portion (22), the driving portion is formed as a polygonal column;
wherein the magazine further comprises a base (30), the base (30) is slidably disposed with respect to the main body (10), a sliding direction of the base (30) is unparallel to an axial direction of the hole (13), and at least one part of the base (30) covers at least one part of the driving portion (22).

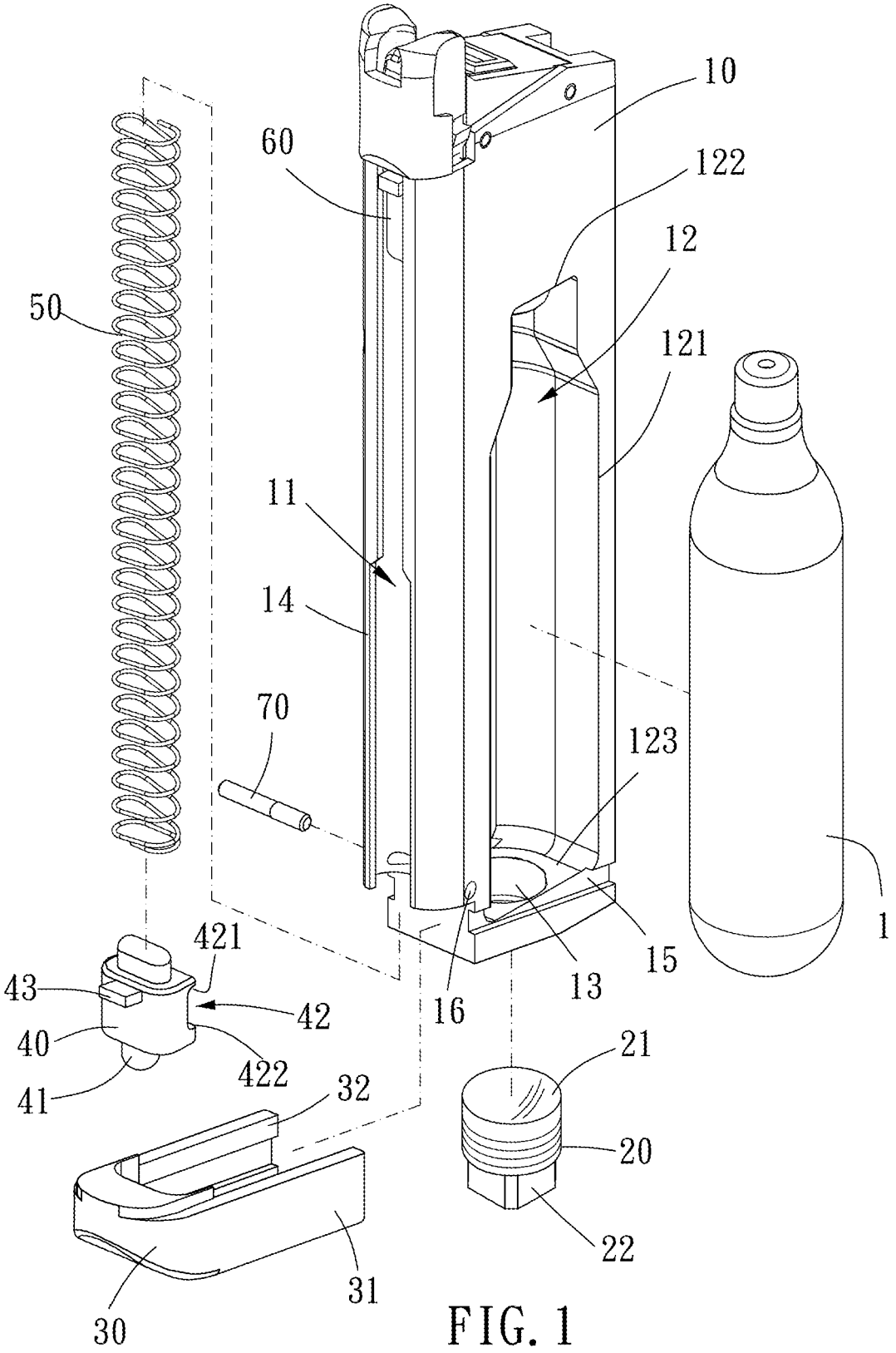
10
60
122
12
50
121
11
14
70
123
1
421
43
42
15
13
16
40
422
21
41
32
20
22
31
30

FIG. 1

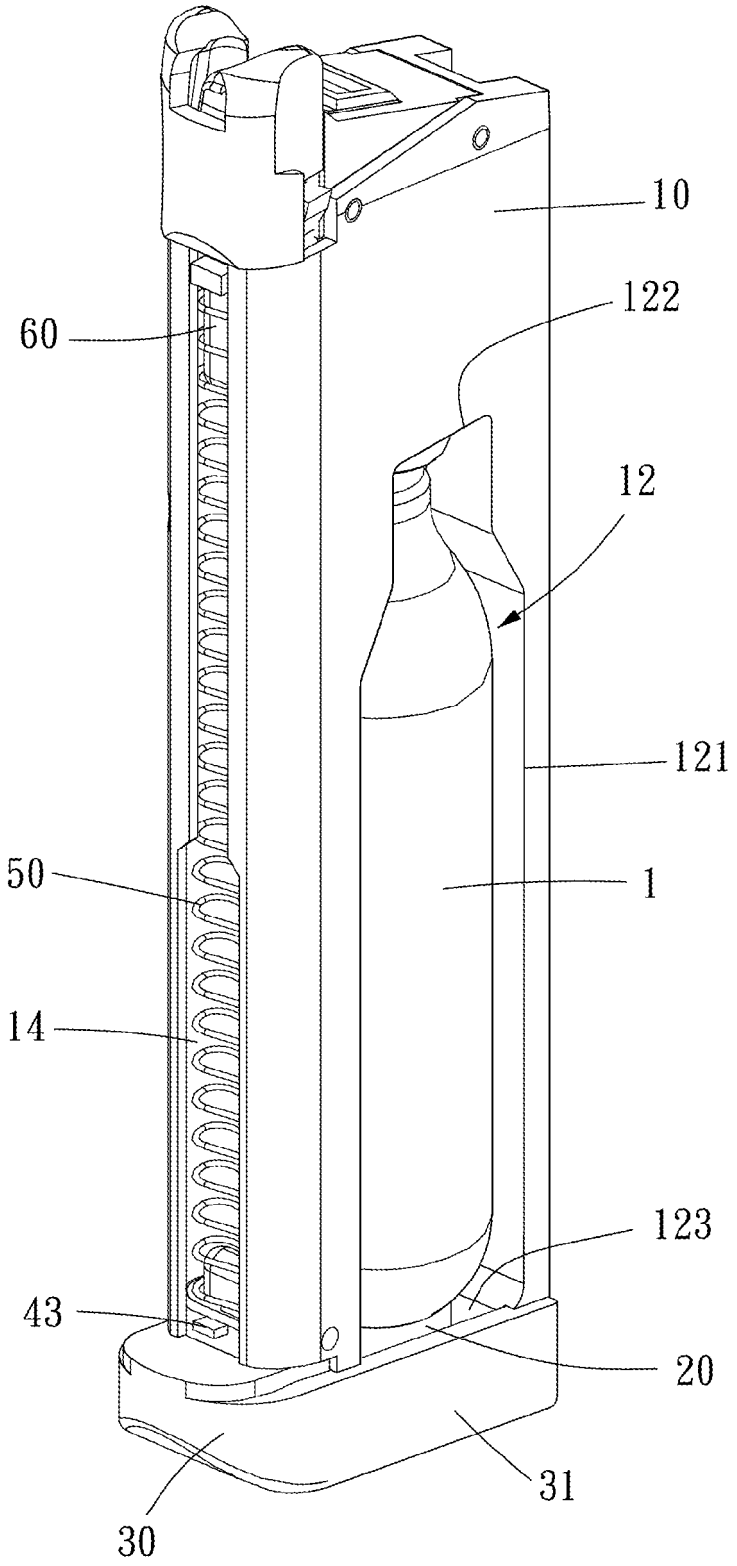


FIG. 2

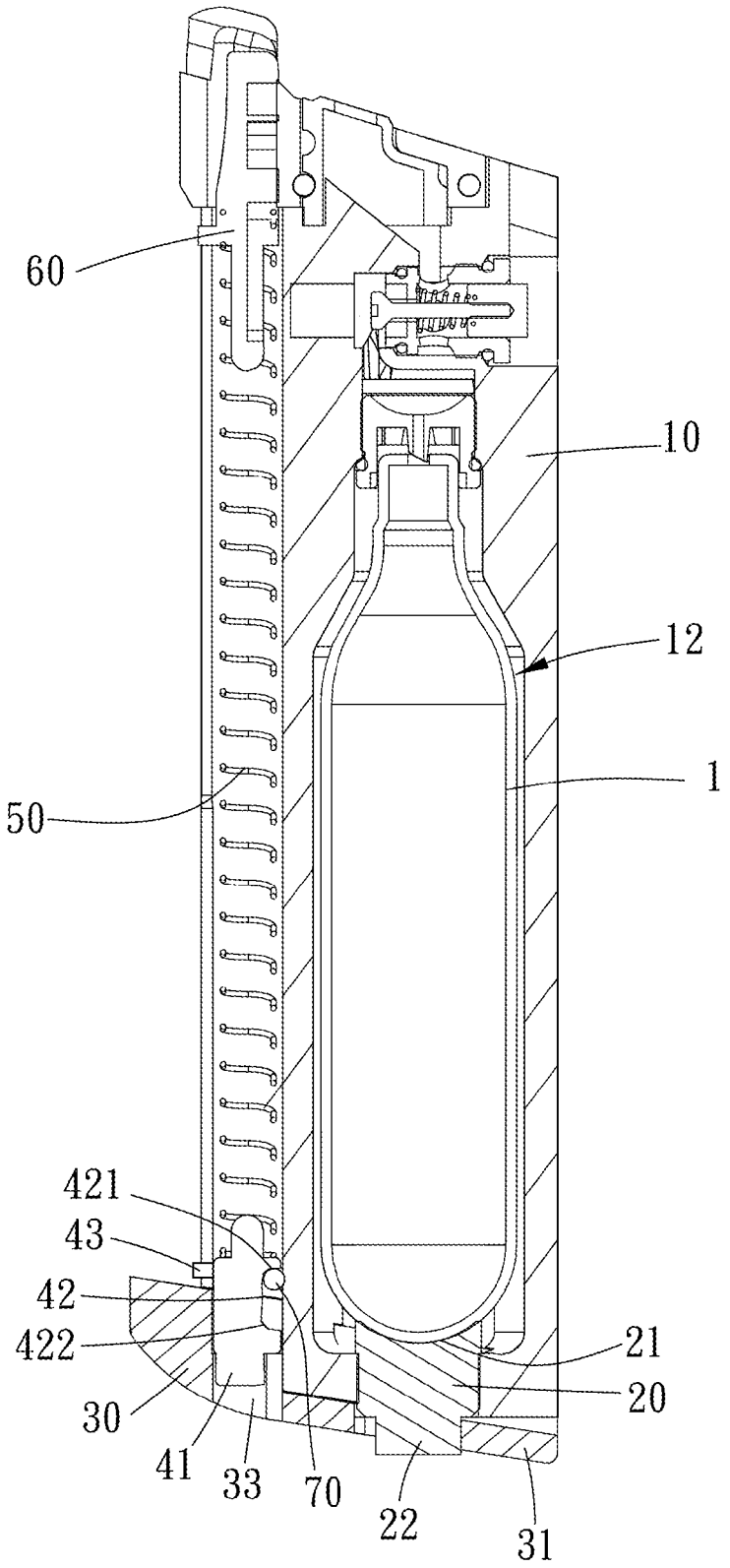


FIG. 3

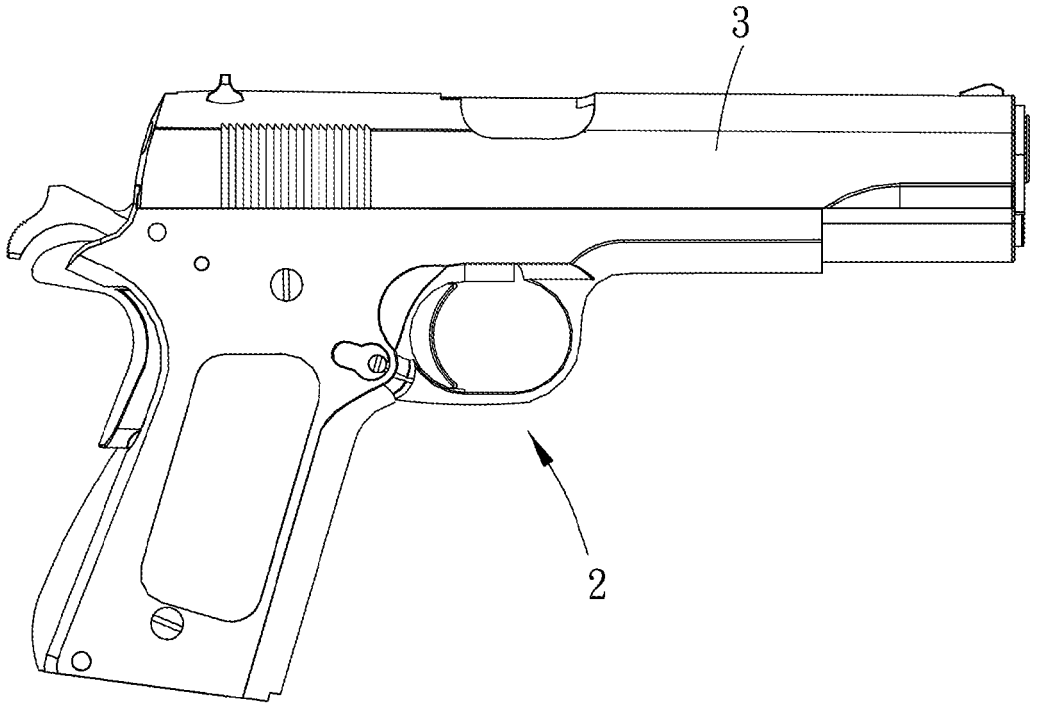


FIG. 4

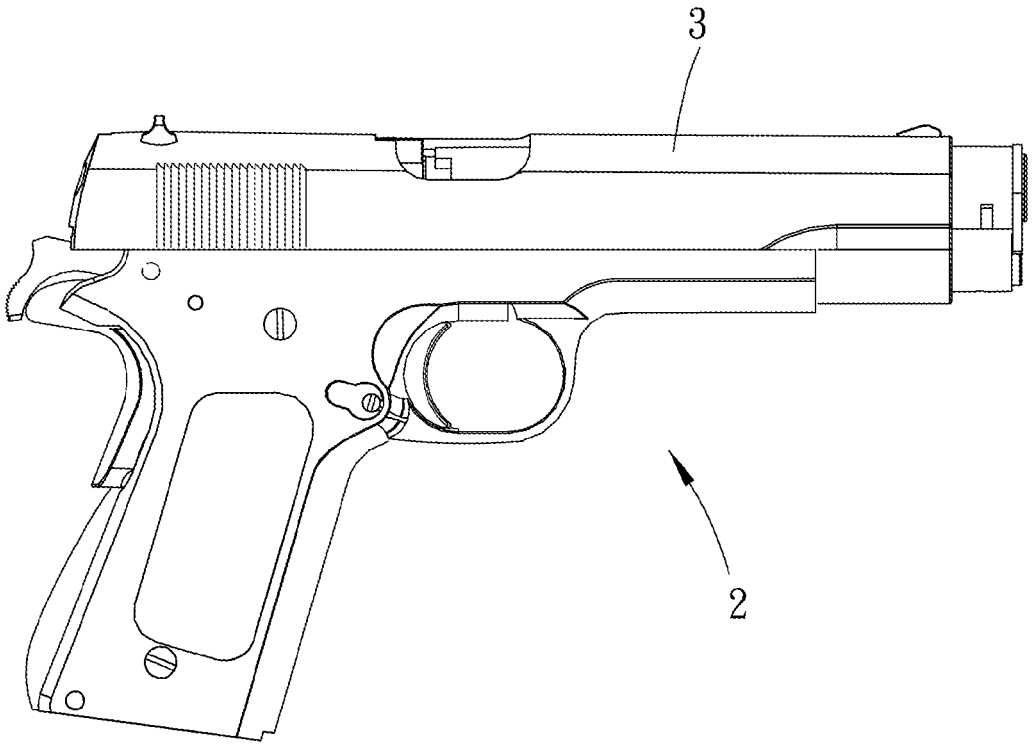


FIG. 5