Oct. 8, 1957 A. W. HALEY 2,808,820

TOY PISTOL

Filed April 20, 1956

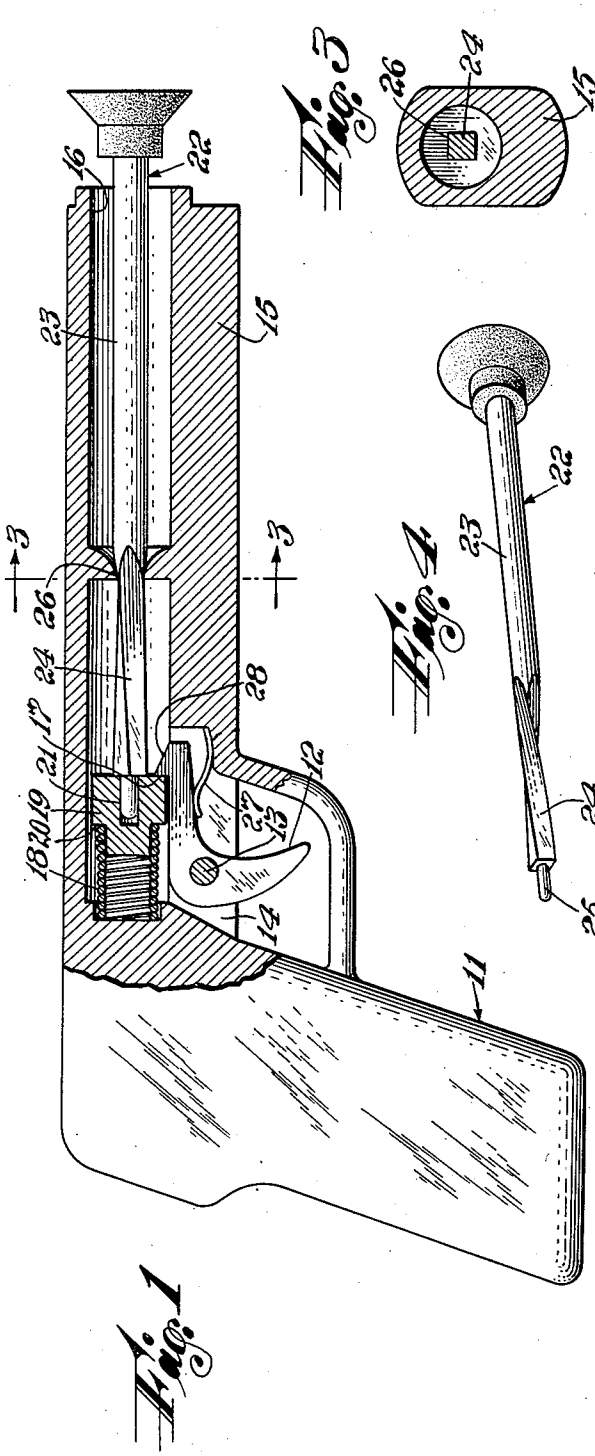


Fig. 1

Fig. 3

Fig. 4

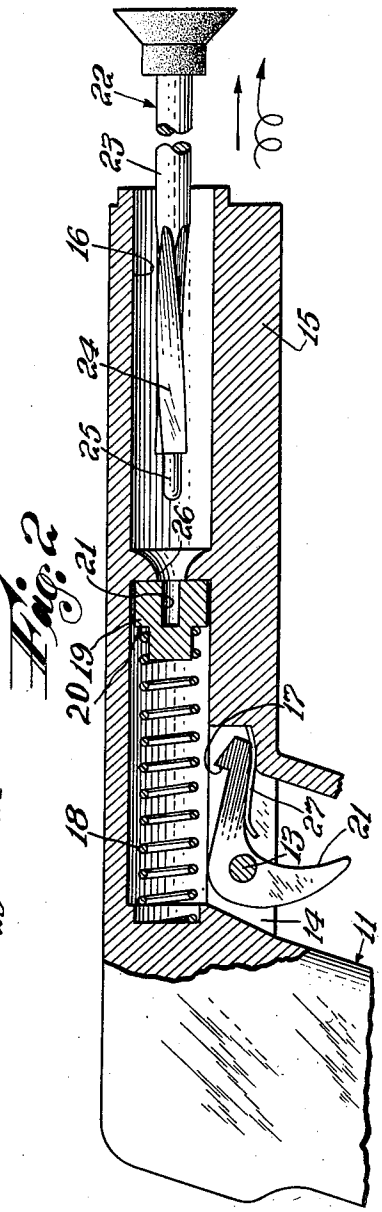


Fig. 2

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United States Patent Office 2,808,820 Patented Oct. 8, 1957

2,808,820

TOY PISTOL

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Application April 20, 1956, Serial No. 579,612

2 Claims. (Cl. 124—27)

My invention relates generally to toy pistols and specifically to toy pistols in which the discharged bullet is rotated as it is urged on its way.

It is among the objects of my invention to provide a toy pistol which discharges a bullet in a forceful and accurate manner.

Another object of my invention is to provide a toy pistol which discharges a bullet that has rotation imparted to it before it leaves the muzzle of the pistol.

Yet a further object of my invention is to provide a toy pistol which will rotate and discharge bullets, darts and rocket-like projectiles.

A still further object of my invention is to provide a toy pistol which is simple in form, attractive in appearance, durable and relatively inexpensive.

These objects and advantages, as well as other objects and advantages, may be achieved by the device illustrated in the drawings in which:

Figure 1 is a side elevational view of a cocked toy pistol with part of the side wall exploded away;

Figure 2 is a similar partial side elevational view of the uncocked toy pistol;

Figure 3 is a vertical cross-section taken on the lines 3—3 in Figure 1 looking in the direction of the arrows; and

Figure 4 is a view in perspective of a dart-type projectile.

Referring now to the drawings in detail, my toy pistol **11** is provided with a trigger **12** mounted pivotally on a pin **13** which is positioned in a slot **14** in the bottom of the barrel **15**. There is a passage or bore **16** extending from the muzzle toward the rear end of the pistol **11**. The trigger **12** has a latch or detent **17** which extends into the bore **16**. A spring **18** is positioned in the bore and is frictionally engaged with a piston **19** which it normally urges toward the muzzle. The piston fits the bore **16** somewhat loosely so that it may slightly tilt. The rear of the piston **19** is provided with a shoulder **20** which serves as a seat for the spring. The front of the piston **19** is provided with an axial passage or socket **21** which will receive the end of a projectile dart **22**. The dart is provided with a shaft **23**, the end **24** of which has a twisted square, uniform cross-section. An axial pin **25** extends from the end **24** and is intended to enter the passage **21** in the piston **19**. A construction is provided with a square opening closely conforming in its dimensions with the twisted square end **24** of the projectile. Thus, as the twisted end **24** of the dart is inserted into the pistol, it will be rotated as that end **24** passes through the constriction **26** and likewise, when the dart is expelled from the pistol, it will be caused to rotate as the end traverses the construction **26**.

It has been noted that the piston **19** loosely fits in the bore **16**, but the pin **25** fits quite precisely into the passage **21**. Thus, when a dart **22** is inserted into the bore **16** and moves the piston **19** rearwardly to compress the spring **18**, the trigger **12** will be urged upwardly by the spring **27**. When the head of the piston engages the

slanting face **28** of the detent **17**, it presses it downwardly into the slot **14** until the detent **17** snaps up in front of the head of the piston **19**. Since only the lower edge of the piston **19** is engaged by the detent, the pressure so exerted tends to permit the spring to press the upper front edge to move forwardly of the lower front edge of the piston **19**. This will cause the axial passage **21** to have a tendency to move out of its normal axial position and in so doing, it will frictionally engage the pin **25** and hold the dart **22** from falling out of the pistol.

Upon pressure being exerted on the trigger **12**, the detent disengages the lower front edge of the piston and the spring **18** urges the piston **19** forwardly until it engages the constriction **26**. The twisted shaft **24** on the projectile **22**, in traversing the constriction **26**, has imparted to it a twisting motion so that the discharged dart will, in accordance with well-known principles, follow a relatively straight trajectory without any wobbling or veering. While I have referred to the end **24** of the projectile as having a uniform, square twisted cross-section, it is to be understood that variations in the uniformity in the twist will not impair the operability of my invention. It is to be further understood that the exact configuration of the twisted end is a matter of choice as long as it is non-circular. Thus, the twisted end of the dart **22** may be octagonal, hexagonal or oval as long as it closely conforms to the shape of the constriction **26**. Of course, a round shaft would pass through a round constriction without imparting rotation to the shaft **23**.

While I have referred to a dart specifically, it is to be understood that the projectile may be in the shape of a rocket, in the shape of a finned bomb or it may have any other projectile-like shape as long as it is provided with an integral or attached shaft having a non-circular cross section corresponding with a constriction in the bore. If the shaft is separate from the projectile, it must, of course, affirmatively engage the projectile so that the rotation of the shaft will be imparted to the projectile.

The foregoing description is merely intended to illustrate an embodiment of the invention. The component parts have been shown and described. They each may have substitutes which may perform a substantially similar function; such substitutes may be known as proper substitutes for the said components and may have actually been known or invented before the present invention; these substitutes are contemplated as being within the scope of the appended claims, although they are not specifically catalogued herein.

I claim:

1. A toy gun comprising a gun-barrel, a muzzle on one end of the gun-barrel having a bore extending toward the opposite end of the barrel, a constricted portion of the barrel having an aperture with a non-circular cross-section, a piston disposed in the bore beyond the constricted portion, a spring engaged with the end of the bore and normally urging the piston toward the muzzle into contact with the constriction, a projectile positioned in the bore between the muzzle and the constriction, an end portion on the projectile having a non-circular, uniform, twisted cross-section closely conforming to the non-circular cross-section of the constriction and that end extending through the constriction, a pivotally mounted trigger extending into the bore between the end thereof and the constriction, a detent on the trigger, a trigger-spring normally urging the detent into detaining engagement with one edge of the piston, an axial socket in the face of the piston, an extension on the end portion of the projectile closely conforming to the axial socket in the face of the piston, the detent when engaged with the piston normally tending to displace the normal axial position of the socket and thereby bring the said socket

into frictional engagement with the extension on the end of the projectile.

2. A toy gun comprising a barrel with a muzzle having a bore extending into the barrel, a constriction in the bore having an aperture with a non-circular cross-section, a piston disposed in the bore, a spring normally urging the piston toward the muzzle and the constriction, a projectile positioned in the bore, an end portion of the projectile having a non-circular, uniform, twisted cross-section in conformity with the constriction with said end extended through the constriction and in contact with the piston, a socket in the face of the piston, a cooperative extension on the end of the projectile, normally frictionally engaged with the socket when the detent engages the piston.

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