Oct. 13, 1942. V. O. WILL 2,298,668

MULTIPLE SHOT WATER PISTOL

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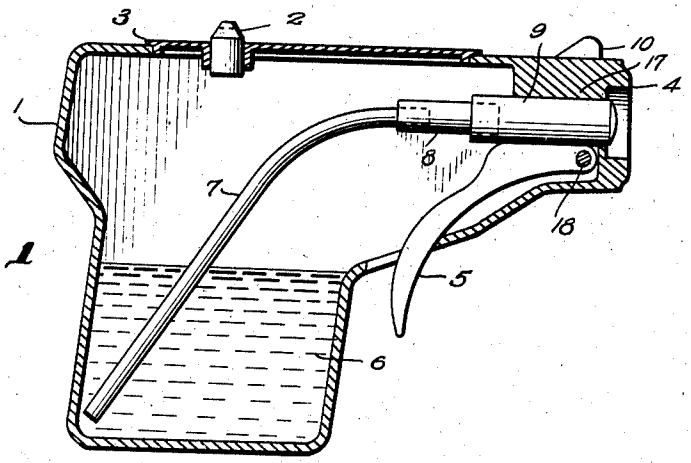


Fig. 1

Fig. 3

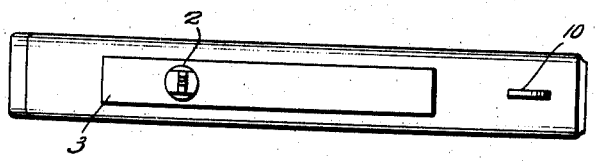
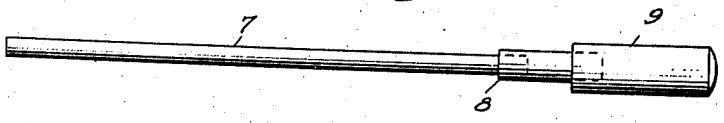


Fig. 4



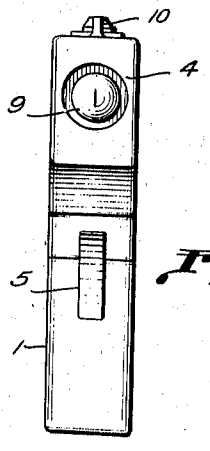
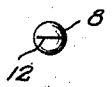


Fig. 2

Fig. 5



Fig. 6



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MULTIPLE SHOT WATER PISTOL

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Application May 1, 1939, Serial No. 271,000

1 Claim. (Cl. 221—31.5)

This invention relates to improvements in multiple shot water pistols. An important object of the invention is to provide water pistols of the type referred to, with simple and practical means for effecting the discharge of a jet of water by the mere pressure upon a trigger. The release of the trigger permits expansion of a flexible, expansible soft rubber cylinder, which is provided with a suitable valve and is in communication with a second cylinder having a valve arranged to be closed when the valve in the first mentioned cylinder is opened upon collapse of said cylinder, and vice versa. These, and other important objects of the invention are accomplished by the construction shown and described in the accompanying drawing, in which:

Figure 1 is a sectional side view of the pistol;

Figure 2 is an end elevation of the pistol from the muzzle end thereof looking toward the rear;

Figure 3 is a plan view of the pistol;

Figure 4 is a side view of the double collapsible valve and tubing;

Figure 5 is a view of the front end of the front collapsible valve; and

Figure 6 is a view of the front end of the rear collapsible valve.

The mechanism for pumping fluid from the reservoir 6 and for ejecting the fluid through the muzzle 4 of the pistol consists of a pair of soft rubber cylinder chambers 8 and 9 arranged coaxially with respect to one another and positioned within the muzzle 4 of the pistol. The cylindrical chamber 8 has a closed forward end in which there is positioned a horizontal slit 12. A rubber tube 7 is secured within the cylindrical chamber and is connected to the valve 8 and extends into the reservoir 6.

The cyindrical chamber or valve 8 is of smaller exterior diameter than the internal diameter of the cylinder or valve 9. The valve 8 extends through the rear wall of the valve 9 and is suitably secured therein. The forward wall of the valve 9 is provided with a vertical slit 11. The horizontal slit 12 in the valve 8 and the vertical slit 11 in the valve 9 are positioned with respect to each other in a manner to form a right angle to provide a pump and ejector assembly which operates in a manner hereinafter described.

The pump and ejector assembly consisting of the valves 8 and 9 is placed within the muzzle 4 of the pistol in a position between the anvil 17 and a trigger 5. The trigger 5 is pivotally carried upon the frame by means of the pivot pin 18. The pivot pin 18 for the trigger 5 is positioned substantially forwardly of the main arm of the trigger 5 so that a lever action is provided by the rear end of the trigger 5.

The pump and ejector assembly is placed between the anvil 17 and the trigger 5 so that the forward end of the rear valve 8 is positioned adjacent and between the anvil 17 and the trigger 5. The slit 12 in the rear valve 8 is arranged parallel to the bottom surface of the anvil 17. The slit 11 in the valve 9 is thus arranged normal to the bottom surface of the anvil 17 and to the slit 12 in the valve 8.

When the trigger 5 is pulled rearwardly the wall of the valve 9 is compressed to collapse upon the forward end of the valve 8. Since the slit 12 in the valve 8 is parallel with the bottom surface of the anvil 17 the slit will be pressed together to prevent fluid within the valve 9 from returning to the reservoir 6. The upward and forward compression of the valve 9 by the trigger 5 opens the slit 11 therein to permit water or other fluid to be ejected through the slit 11. When the trigger 5 is released the slit 11 in the valve 9 will immediately close due to the release of hydraulic pressure within the valve 9. When the slit 11 closes and the valve 9 is permitted to reexpand to its normal size a suction or vacuum will be created within the valve 9. When the walls of the valve 9 have removed pressure from the forward end of the valve 8 the suction within the valve 9 will draw fluid through the tube 7 and the slit 12 into the hollow body of the valve 9.

The forward ends of the valves 8 and 9 are shaped arcuately so that in effect the slits therein provide a one way valve action. Any pressure upon the external periphery of either of the valves 8 or 9 tends to seal the slits 12 and 11 respectively.

In this invention the pistol consists of a frame 1, having a liquid reservoir 6, together with operating mechanism for means for ejecting fluid from the pistol. The operating mechanism chamber which is located in the forward part of the pistol frame terminates in the muzzle 4 of the pistol. A fill opening is provided in a cap or cover 3 located in the top of the pistol frame, said opening being closed by means of a removable stopper 2 which has a V cut in the top edge thereof to provide a rear sight for the pistol. An anvil 17 is positioned inside of and adjacent the upper wall of the frame 1 in the muzzle portion of the pistol. A front sight 10 is positioned on the forward end of the muzzle 4.

I claim:

A water pistol comprising a frame, a fluid

reservoir therein, an ejector, said ejector comprising a collapsible chamber having a slit in one end thereof closed by the normal position of said chamber and forming a valve therein, a second valve positioned within said ejector formed by a collapsible chamber having a slit therein arranged normal to the first mentioned slit, means connecting said second mentioned chamber with the fluid reservoir, and means for collapsing said first mentioned chamber parallel with the plane of the slit in the second mentioned chamber to eject fluid through the first mentioned slit.

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