C. W. MATZ & C. H. HALE.

AIR PISTOL.

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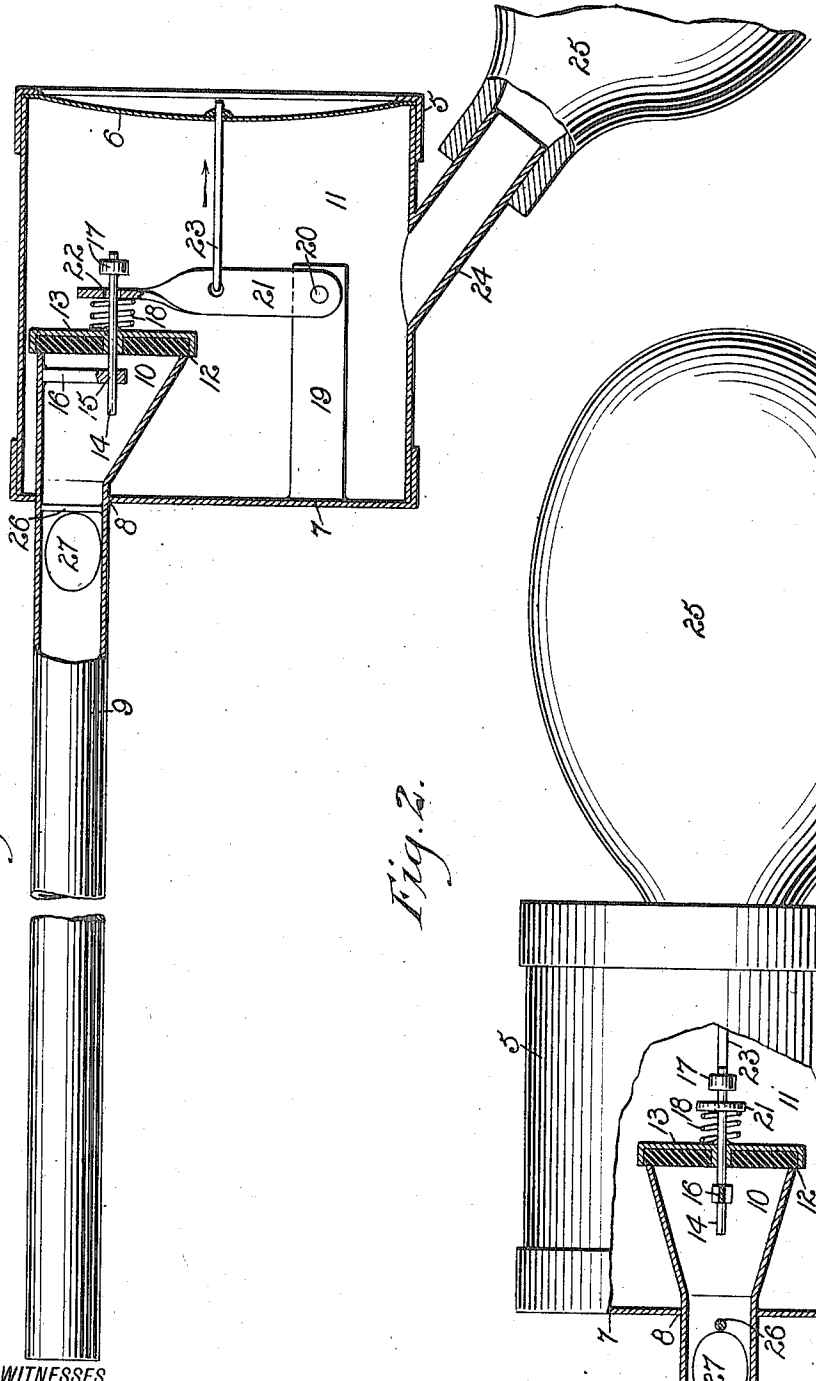


Fig. 1.

Fig. 2.

WITNESSES

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AIR-PISTOL.

1,234,062. Specification of Letters Patent. Patented July 17, 1917.

Application filed September 29, 1916. Serial No. 122,844.

To all whom it may concern:

Be it known that we, CHARLES W. MATZ and CLYDE H. HALE, both citizens of the United States, and residents of Evanston, in the county of Cook and State of Illinois, have invented a new and Improved Air-Pistol, of which the following is a full, clear, and exact description.

Our invention has for its object to provide an air pistol cheap in construction, and which has a cylinder with a chamber, at one end of which there is a diaphragm movable outwardly when the air pressure in the chamber reaches a predetermined point, the diaphragm being connected with a valve commanding communication between the chamber and the pistol barrel so that when the pressure in the chamber is increased, as stated, the valve will be operated to permit the escape of the air under pressure in the pistol barrel.

Additional objects of the invention will appear in the following specification in which the preferred form of the invention is disclosed.

In the drawings similar reference characters denote similar parts in all the views, in which—

Figure 1 is a side elevation of the pistol, parts being broken away to illustrate the construction; and

Fig. 2 is a plan view of the cylinder and the operating bulb, the top of the cylinder being broken away to illustrate the construction of the valve.

By referring to the drawings it will be seen that the pistol is constructed with a cylinder 5 having a diaphragm 6 at its rear end, this diaphragm 6 being preferably constructed of metal and being normally disposed inwardly, as illustrated in Fig. 1 of the drawings. At the top of the front 7 of the cylinder there is an opening 8 through which a barrel 9 is disposed, the rear end 10 of this barrel 9 within the cylinder chamber 11 forming a valve seat at 12, against which is normally disposed a valve 13. This valve 13 is secured to a valve spindle 14, the forward end of which is disposed in a guideway 15 in a depending member 16. To the rear of the valve spindle 14 there is secured a stop 17, a spring 18 being mounted on the valve spindle 14 between the stop 17 and the valve 13.

Disposed in the chamber 11 and secured to the cylinder 5, there is a bracket 19 to which is fulcrumed at 20 a lever 21, this lever 21 being disposed between the spring 18 and the stop 17, and having an orifice 22 through which the valve spindle 14 is disposed. The diaphragm 6 is connected with the lever 21 by means of a link 23.

Depending from the bottom of the cylinder 5 there is a neck 24, a bulb 25 being mounted on this neck.

In the barrel 9 there is preferably a stop 26 to limit the rearward movement of a bean 27 which may be fired with the pistol.

When a bean 27 is disposed in the pistol barrel 9 adjacent the stop 26, and the bulb is quickly compressed, the increase in air pressure in the chamber 11 will move the diaphragm 6 rearwardly, which, by means of the link 23, will move the lever 21 rearwardly, the lever 21 when it engages the stop 17, serving to move the valve 13, thereby permitting the air under pressure in the chamber to force the bean 27 forwardly and out of the barrel 9. The spring 18 makes it possible for the valve 13 to remain unseated sufficiently long to permit air to enter the chamber 11 and the bulb 25, so that the pistol may be fired a second time.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. In an air pistol, a cylinder with a chamber having an outlet, a valve for commanding the outlet, a diaphragm having a surface exposed in the chamber, means by which the valve is adapted to be operated by the diaphragm, and means to increase the air pressure in the chamber.

2. In an air pistol, a cylinder with a chamber having an outlet, a diaphragm having a surface exposed in the chamber, a valve commanding the outlet and provided with a valve spindle, a stop on the valve spindle, a spring on the valve spindle between the valve and the stop, means operable by the diaphragm and engaging the valve spindle between the spring and the stop for operating the valve, and means for increasing the air pressure in the chamber.

3. In an air pistol, a cylinder with a chamber having an outlet, a diaphragm having a surface exposed in the chamber, a valve commanding the outlet and provided with a valve spindle extending in the direction of the diaphragm, a stop on the valve spindle, a spring on the valve spindle between the valve and the stop, means operable

by the diaphragm and engaging the valve spindle between the spring and the stop for operating the valve, and means for increasing the air pressure in the chamber.

4. In an air pistol, a cylinder with a chamber having an outlet, a diaphragm having a surface exposed in the chamber, a valve commanding the outlet and provided with a valve spindle, a stop on the valve spindle, a spring on the valve spindle between the stop and the valve, a lever engaging the valve spindle between the spring and the stop, a link connecting the diaphragm with the lever, and means for increasing the air pressure in the chamber.

5. In an air pistol, a cylinder with a chamber having an outlet, a valve commanding the outlet, a diaphragm having a surface exposed in the chamber, a lever, means by which the lever is adapted to operate the valve, a link connecting the diaphragm with the lever, and means to increase the air pressure in the chamber.

6. In an air pistol, a cylinder with a chamber having an outlet, a diaphragm having a surface exposed in the chamber, a valve commanding the outlet and having a valve spindle extending in the direction of the diaphragm, a stop on the valve spindle, a spring on the valve spindle between the stop and the valve, a lever fulcrumed at one end and engaging the valve spindle at its other end between the spring and the stop, a link connecting the diaphragm with the lever, and means for increasing air pressure in the chamber.

7. In an air pistol, a cylinder having a chamber, a diaphragm at the rear of the chamber, a barrel extending from a point adjacent the top of the front of the cylinder, means at the bottom of the cylinder for increasing air pressure in the chamber, valve means commanding communication between the chamber and the barrel, and means by which the diaphragm is adapted to operate the valve means.

8. In an air pistol, a cylinder having a chamber, a diaphragm at the rear of the chamber, a barrel extending from a point adjacent the top of the cylinder, means at the bottom of the cylinder for increasing the air pressure in the chamber, a valve commanding communication between the chamber and the barrel and provided with a valve spindle, a stop on the valve spindle, a spring disposed on the valve spindle between the valve and the stop, a lever having its upper end engaging the valve spindle between the spindle and the stop, and a link connecting the diaphragm with the lever.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."