A. WISSLER.

AIR GUN.

APPLICATION FILED AUG. 14, 1911.

1,073,455. Patented Sept. 16, 1913.

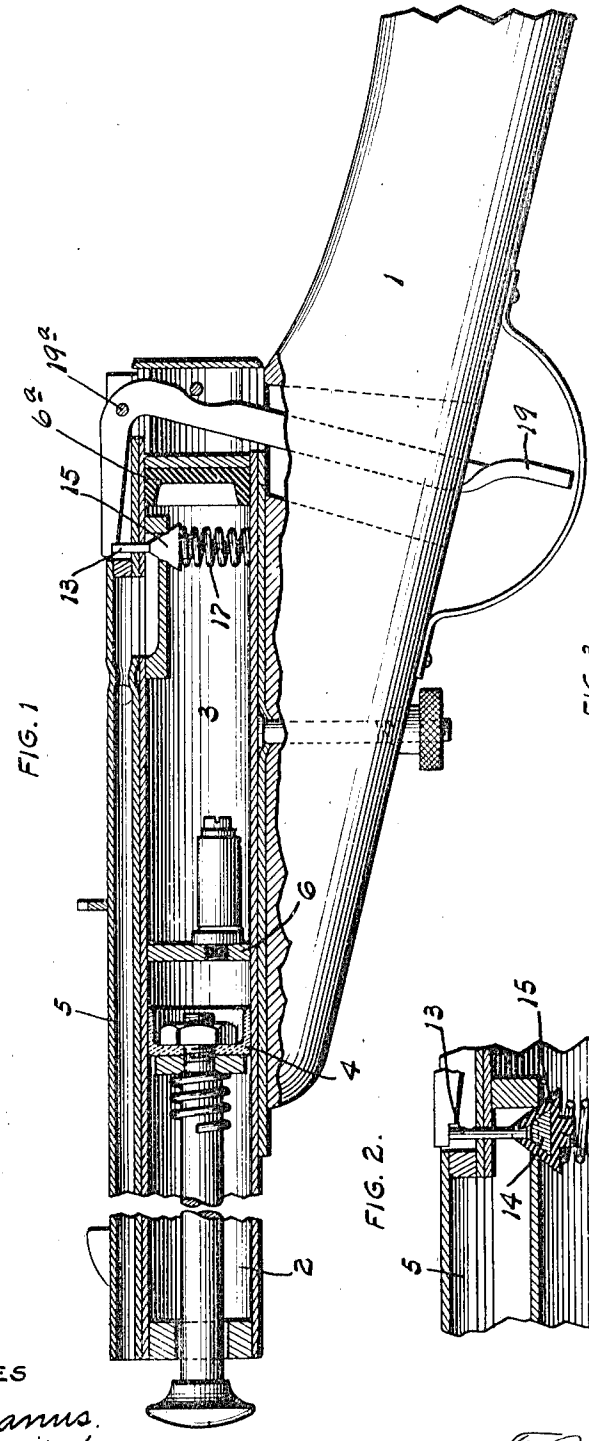


FIG. 1

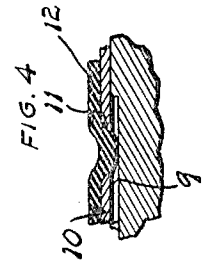


FIG. 4

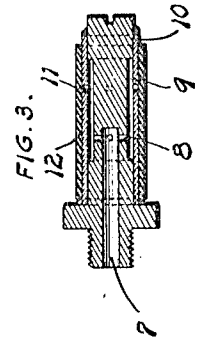


FIG. 3.

FIG. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

ADOLPH WISSLER, OF ST. LOUIS, MISSOURI.

AIR-GUN.

1,073,455. Specification of Letters Patent. Patented Sept. 16, 1913.

Application filed August 14, 1911. Serial No. 644,275.

To all whom it may concern:

Be it known that I, ADOLPH WISSLER, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Air-Guns, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view through my improved air gun. Fig. 2 is an enlarged sectional view showing the details of the valve which controls the egress of air from the compression chamber to the pellet barrel. Fig. 3 is a detailed view of the valve which controls the ingress of air to the compression chamber. Fig. 4 is an enlarged view illustrative of the action of the ingress valve.

This invention relates to a new and useful improvement in air-guns and particularly to the construction of the ingress and egress valve in the compression chamber for controlling the emission to, and discharge of air, therefrom.

My present invention is designed particularly as an improvement upon the air gun shown in the Benjamin Patent No. 822,645, dated June 5th, 1906, to which reference may be made for a fuller description of parts herein shown, but not described in detail.

In a companion application filed of even date herewith, I have also claimed the combination arrangement of several of the parts herein shown, and therefore said parts will not be claimed herein.

In the drawings: 1 indicates the stock, and 2 the compression barrel in which operates a piston 4 for compressing the air and forcing same into the compression chamber 3.

5 is the pellet barrel secured to the compression barrel and being contracted near its rear end for arresting and holding in position the leaden pellet (shown in dotted lines) which is dropped thereinto through the muzzle of the pellet barrel.

6 is the front wall of the compression chamber, the rear wall of said chamber being formed by a cup-shaped rubber washer 6^a held in position by a metal disk washer and a slotted hollow plug which are more fully described in said companion application.

7 is the ingress valve stem which is hollow throughout part of its length and provided with a threaded portion for engagement with the partition wall 6. There is a flange adjacent this threaded portion. The bore of the stem communicates with ports 8 which lead into a reduced portion 9 formed by turning down stem 7 slightly, as shown. The head of the stem is preferably slotted for engagement of a screw driver by which it may be introduced into and removed from position.

10 is a sleeve preferably made of thin metal and extending over and around the reduced portion 9 so as to form a closed annular chamber. This sleeve is preferably soldered at each end of the stem 7, and is provided with ports 11 displaced or out of register with respect to the ports 8.

12 is a rubber tube which is arranged over the sleeve 10, its elasticity holding it in position.

In operation, the air is compressed in the compressing barrel and forced past the rubber sleeve 12 which will be raised to permit this. As the pressure is confined within the compression chamber, it will tend to force the rubber sleeve 12 through the ports 11 and the purpose of making the metal sleeve 10 thin and the chamber 9 narrow is to enable the wall of the stem 7 opposite the ports 11 to support the rubber forced through ports 11, as shown in Fig. 4. In this manner "blow outs" are practically impossible, as the rubber teats forced through the ports 11 are supported at their inner end by the solid opposing walls of the stem of the valve. The piston may be reciprocated as many times as necessary to secure the desired compression, after which the pellet is dropped into position and the trigger pulled to release the compression charge in the compression chamber and admit it behind the pellet in the pellet barrel. This egress valve is part of my present invention and consists of a valve operating rod 13 having a conical head 14 on its inner end around which is preferably molded a rubber facing 15 having a teat 16 in line with the rod 13. The purpose of this teat is to support in position a coil spring 17 which holds the egress valve at its seat.

19 is the trigger pivoted at 19^a.

It will be readily understood that minor

changes in the size, form and construction of the various parts of my improved air rifle may be made and substituted for those herewith shown and described without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim:

1. In an air gun, the combination of a compression chamber, an ingress valve having a chamber or passage communicating with ports displaced with respect to each other, and a rubber wall over the outlet port of said chamber; said outlet port being opposite a solid wall for supporting the rubber teat forced through the outlet port by back pressure.

2. In an air gun, an ingress valve comprising a stem having an annular shallow chamber with inlet and outlet ports displaced with respect to each other, and a rubber tube surrounding said outlet ports.

3. In an air gun, an ingress valve comprising a stem whose periphery is reduced, a sleeve surrounding said reduced portion and forming a shallow chamber, inlet ports formed in the valve stem leading into said chamber and outlet ports in said sleeve displaced with respect to said inlet ports, and a rubber tube surrounding said outlet ports.

4. In an air gun, a stem threaded at one end provided with a transverse slot at its opposite end; said stem having a reduced portion and provided with a bore communicating with said reduced portion by means of a port, a thin metal sleeve covering said reduced portion and being provided with ports displaced with respect to the first mentioned port, and a rubber tube surrounding said sleeve and covering the ports therein.

5. In an air gun of the class described, a valve having an ingress port, and an elastic sleeve on said valve, which sleeve normally closes said port.

6. In an air gun, a valve having an annular chamber, there being a series of ingress ports leading from said chamber, and an elastic sleeve located on the valve and normally closing the ingress ports.

7. In an air gun of the class described, a valve comprising a body having an annular chamber, there being inlet ports into said chamber and outlet ports from said chamber, and an elastic sleeve inclosing the body and normally closing the outlet ports.

8. In an air gun, an egress valve comprising a stem, a solid conical head fixed to one end of said stem, an elastic covering wholly inclosing said head, and an integral lug on said elastic covering, which lug is adapted to receive one end of a compression spring.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 9th day of Aug., 1911.

ADOLPH WISSLER.

Witnesses:
M. P. SMITH,
JOY HUTTON.