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REPEATING AIR RIFLE.

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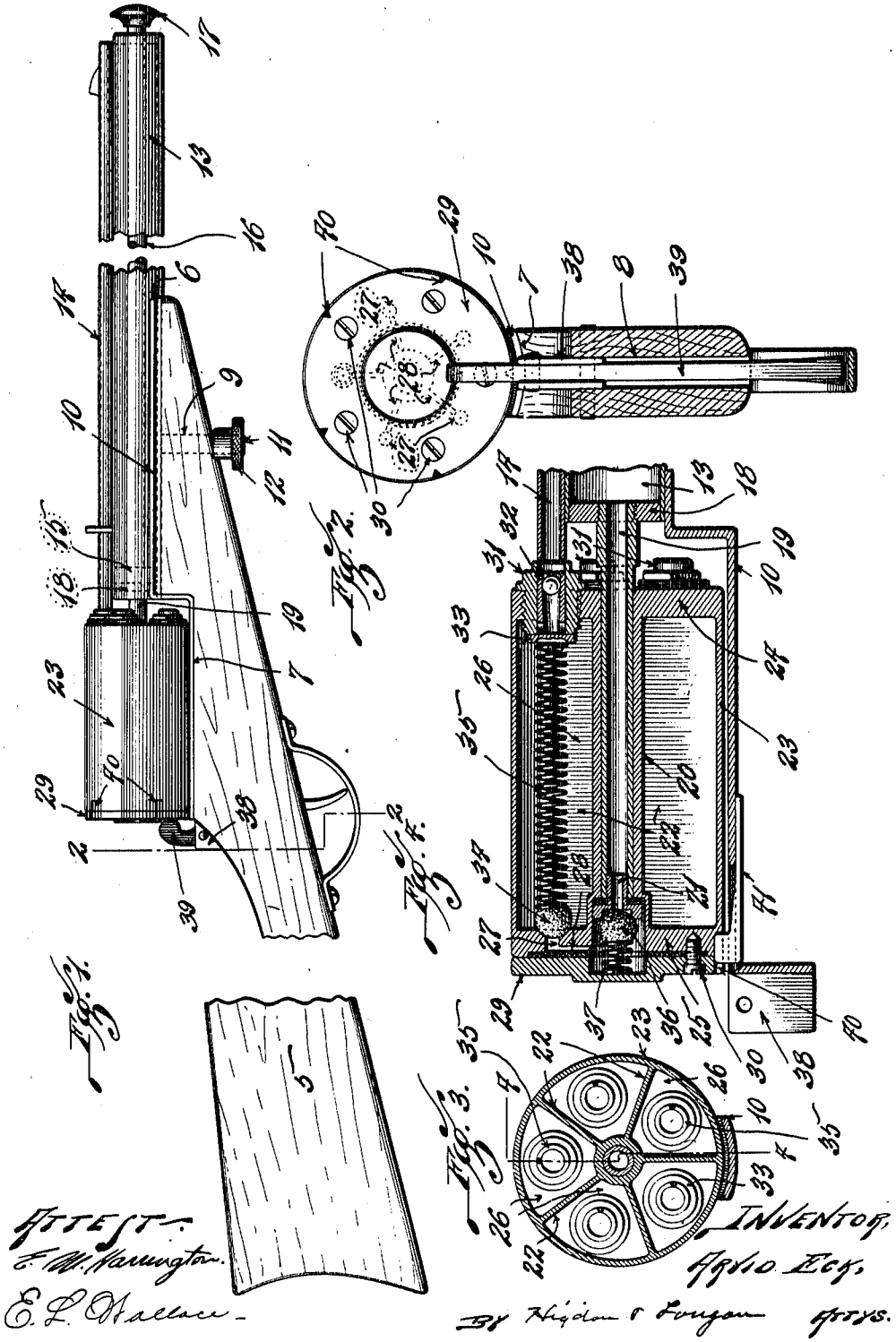


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

WITNESSES:

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## REPEATING AIR-RIFLE.

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Application filed November 10, 1913. Serial No. 800,108.

*To all whom it may concern:*

Be it known that I, ARVID ECK, a subject of the King of Sweden, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Repeating Air-Rifles, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in repeating air rifles, and the primary object of my invention is to construct an air rifle comprising an air pump with a valved chamber for the storage of air, and to arrange means for bodily moving said chamber for the operation of one of said valves to release the stored air; and a further object of my invention is to construct an air rifle comprising a pump with a plurality of valved chambers for the storage of air from said pump, and to arrange means whereby said chambers may be selectively brought to register with the barrel of the rifle and to arrange a trigger for moving said chambers for the release of the air in the selected chamber.

With the above purposes in view my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawings, in which—

Figure 1 shows in elevation a rifle constructed according to my invention, a portion of the cylinder and barrel and a portion of the stock being removed; Fig. 2 is an enlarged transverse sectional elevation taken on the line 2—2 of Fig. 1; Fig. 3 is a transverse sectional elevation taken through the plurality of air chambers; and Fig. 4 is a longitudinal, sectional elevation taken on the line 4—4 of Fig. 3, a portion of the cylinder and barrel being shown.

Referring by numerals to the accompanying drawings: 5 designates the stock, in the forward upper margin of which there is a recess 6 and to the rear of and in a plane beneath said recess is a recess 7, and extended vertically through the stock at a point immediately to the rear of the recess 7 is a trigger opening 8. Formed vertically through the stock at about the longitudinal center of the recess 6 is a vertical bore 9.

10 designates a plate shaped to seat in each of the recesses 6 and 7 and arranged to be removably secured to the stock by means of a bolt 11 which is fixed to the plate and arranged to be extended through the opening 9 in the stock and a knurled nut 12 arranged to be threaded to said bolt and engage the stock. Secured to the plate 10 and projecting forwardly beyond the end of said plate is a cylinder 13, and carried by the cylinder is a barrel 14 which projects rearwardly beyond the end of the cylinder 13. Fixed to said barrel are the usual sight and bead. Arranged for operation in the cylinder 13 is a piston 15, shown only by dotted lines in Fig. 1. Secured to the piston 15 is a rod 16, the end of which projects beyond the forward end of the cylinder and has secured thereto an operating knob 17. At the rear end of the cylinder there is a head 18 and secured to said head and preferably by threading is a tubular shaft 19 which is internally threaded at its free end.

20 designates a tubular sleeve arranged for rotation as well as longitudinal movements upon the tubular shaft 19. At its rearmost end the sleeve 20 is enlarged to receive the head of a tubular set screw 21 which serves to limit the rearward movement of the sleeve 20 relative to the tubular shaft. Radiating from the sleeve 20 is a plurality of webs 22 and connected with the outer ends of the webs is a cylinder 23 and at the ends of the cylinder 23 are the heads 24 and 25. It will thus be seen that there is provided a number of separate and distinct air chambers 26. In the head 25 there are formed ports 27 communicating with each chamber and formed in the outer face of the head 25 is a plurality of radiating channels 28 leading from the sleeve 20 to each port 27.

29 designates a cap plate for the head 25 which is removably secured by means of screws 30. Formed in the head 24 in communication with each of the chambers 26 is a screw threaded opening arranged to receive a threaded sleeve 31, comprising a combined ball holder and tubular valve stem 32. Arranged to seat against the inner end of the threaded sleeve 31 in each of the chambers 26 there is a disk valve 33, and arranged to seat in each port 27 there is a ball 34.

35 designates an extensile coil spring located in each chamber and designed to normally hold a ball such as 34 and a valve such as 33 seated. Arranged to seat in the rearmost end of the tubular set screw 21 is a ball 36 which is normally held seated by an extensile coil spring 37. Carried by the plate 10 and preferably formed integral therewith

is a pair of rearwardly extending perforated ears 38 in which is pivotally mounted a trigger 39.

As shown in Fig. 2 the cap plate 29 is provided with a plurality of notches 40 each of which is arranged on a median line of each air chamber 26. Carried by the plate 10 is a dog 41 which is spring actuated to normally engage in said notches 40. By this means the valved, threaded tubular sleeve 31 in each cylinder is brought to registration with the barrel 14.

It will thus be seen that when the piston 15 is operated by a manipulation of the knob 17 the air from the cylinder 13 will be forced through the tubular shaft 19, will unseat the ball 36, will pass through each of the channels 38 and through each of the ports 27 into the chambers 26, where it will be stored and held by the valves 34 and 33. A ball to be discharged is then inserted into one of the combined ball holders and tubular valve stems 32 and, by reason of the inner taper of said ball holder, the ball is frictionally held. The cylinder 23 is then rotated until the ball holder is brought to register with the barrel, the dog 41 maintaining such registration. The trigger is then manipulated which, in its movement, bears against the cap plate 29 and moves the entire cylinder forwardly which movement first firmly seats the end of the barrel 14 into the threaded tubular sleeve 31 until the end of the barrel engages the ball holder. A continued movement of the trigger causes further longitudinal movement of the entire cylinder which means that the barrel moves the ball holder in a position to unseat the valve 33, thus releasing the air from the chamber 26 and driving out the ball from the ball holder.

It is obvious that all of the chambers are simultaneously filled with compressed air and that, if it be desired to use the rifle as a repeating rifle, it is only necessary to supply a ball to each ball holder.

I claim:

1. An air rifle, comprising a barrel, a valved air chamber, and means for bodily moving the air chamber to effect a release of the air therein to discharge through said barrel.

2. An air rifle, comprising a barrel, a plurality of valved air chambers arranged to communicate one at a time with said barrel, and means for effecting a release of the air stored in the chamber in communication with the barrel.

3. In an air rifle, an air compressing means, a revoluble unit comprising a plurality of air chambers, means for selectively bringing any one of said chambers into communication with said barrel, and means for releasing the air from said selected chamber to discharge through said barrel.

4. In an air rifle, a piston, a cylinder, a tubular shaft supported by said cylinder, a unit comprising a number of valved air chambers rotatably mounted on said shaft, a ball holder in communication with each chamber, a barrel, means for selectively holding any one of said ball holders in parallelism with said barrel, and a trigger for bodily moving said unit to bring said ball holder to engage with said barrel to effect a release of the air from said selected chamber to discharge through said barrel.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

ARVID ECK.

Witnesses:
E. L. WALLACE,
N. G. BUTLER.