A. WISSLER.

AIR GUN.

APPLICATION FILED JAN. 11, 1913.

1,233,944.

Patented July 17, 1917.

2 SHEETS—SHEET 1.

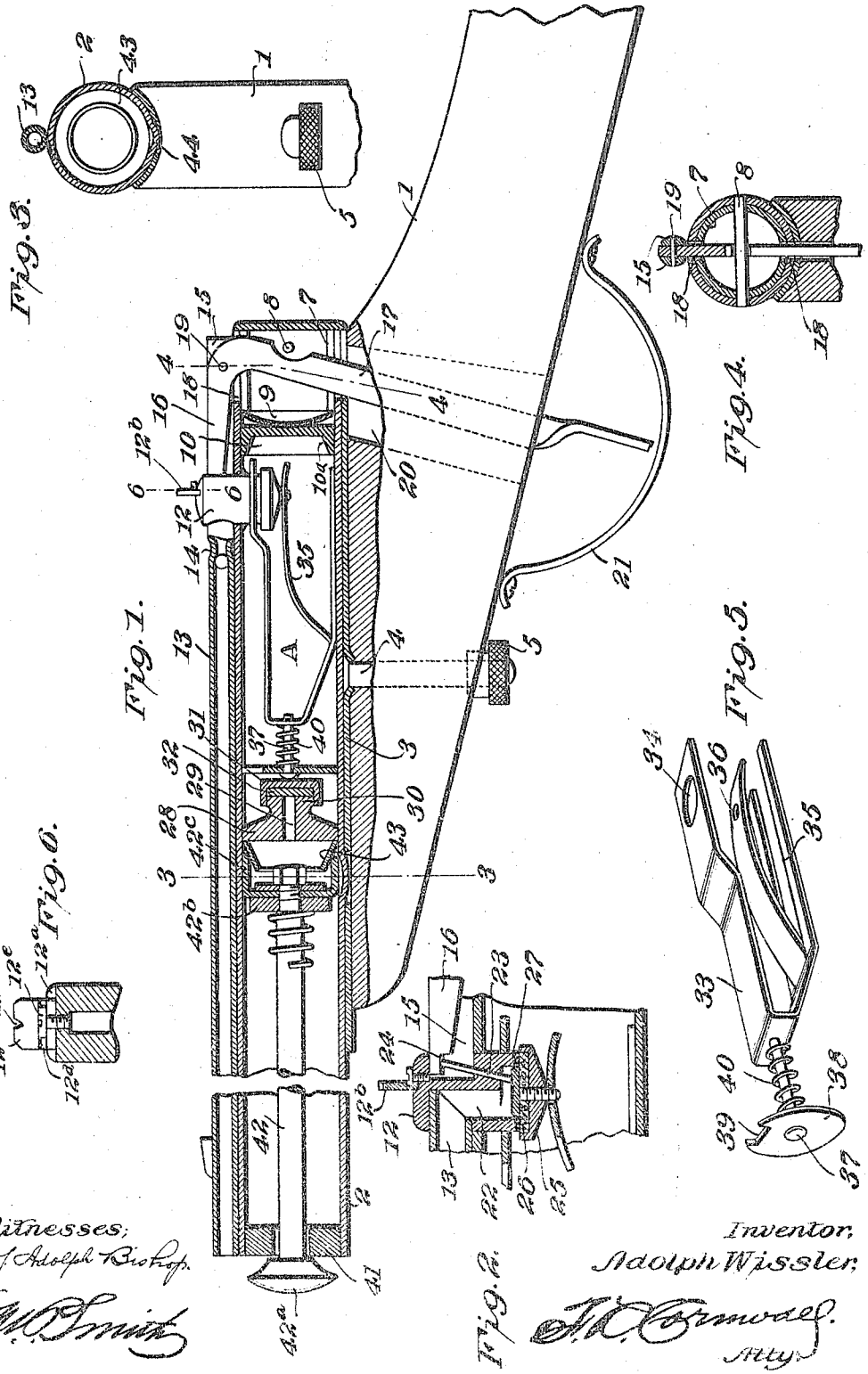


Fig. 1.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 7.

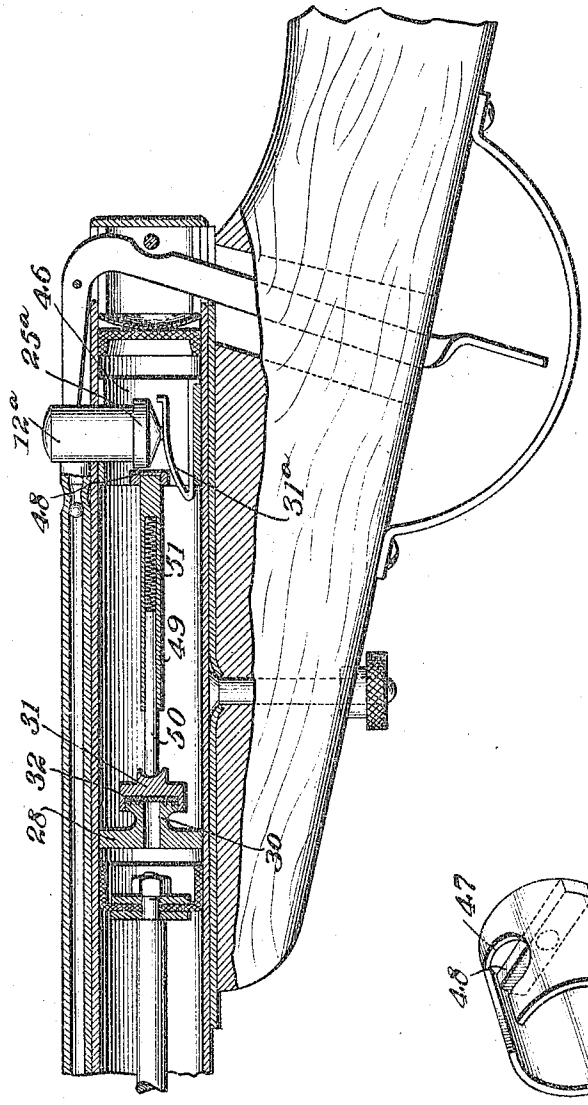


Fig. 9.

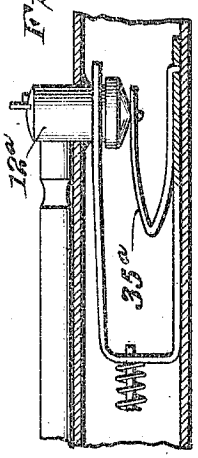


Fig. 8.

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UNITED STATES PATENT OFFICE.

ADOLPH WISSLER, OF ST. LOUIS, MISSOURI.

AIR-GUN.

1,233,944. Specification of Letters Patent. Patented July 17, 1917.

Application filed January 11, 1913. Serial No. 741,431.

To all whom it may concern:

Be it known that I, ADOLPH WISSLER, a citizen of the United States, residing at St. Louis, 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 vertical sectional view taken through the center of a gun of my improved construction, a portion of the stock thereof being shown in elevation.

Fig. 2 is an enlarged vertical sectional view taken through the center of the rear portion of the compression chamber and showing the valve controlling the egress of air from said compression chamber into the pellet tube.

Fig. 3 is a vertical section taken approximately on the line 3—3 of Fig. 1.

Fig. 4 is a vertical section taken approximately on the line 4—4 of Fig. 1.

Fig. 5 is a perspective view of a pair of springs and an anchoring member therefor, which parts are located within the compression chamber of the gun and are for the purpose of yieldingly and normally maintaining the ingress and egress valves closed.

Fig. 6 is an enlarged detail sectional view taken approximately on the line 6—6 of Fig. 1.

Fig. 7 is a vertical sectional view taken through the center of the breech portion of a modified form of the air gun.

Fig. 8 is a perspective view of a tubular member used in the compressed air chamber of the modified form of the gun.

Fig. 9 is a detail section illustrating a modified form of the spring used for holding the egress valve closed.

This invention relates to new and useful improvements in air guns, and the construction herein shown and described is an improvement on the air gun disclosed in my co-pending application, filed August 14, 1911, Serial #644,274.

The principal objects of my present invention are, first,—to provide a simple, inexpensive air gun comprising a minimum number of parts which may be readily assembled or taken apart; second,—to provide simple, effective valves for controlling the ingress and egress of air into and from the compression chamber, which valves are devoid of rubber, which, as is well known, deteriorates with greater rapidity than metal or leather, especially in the presence of oil; third,—to provide a gun which can be readily taken apart for shipping or storage purposes; fourth,—to provide means within the pumping chamber for expanding the cup leather on the valve of the piston; fifth,—to provide simple means for the release of the surplus compressed air at the end of the pumping-up stroke of the piston, thereby avoiding the tendency of the piston to be suddenly forced outward at the end of the pumping-up stroke; sixth, to provide a protected or safety trigger for the air gun; seventh, to provide in the rear end of the main barrel or air cylinder of the gun an air-tight breech cap or plug which can be readily removed or inserted in order that access may be readily gained to the interior of the compressed air chamber for the purpose of removing or repair of the valves and parts positioned therein; eighth, to arrange on the breech portion of the gun and preferably on the egress valve housing a transversely adjustable rear sight; ninth, to construct the ingress and egress valve seats and valves so as to materially prolong the life of the valves and lessening the necessity for frequent repairs, and tenth to arrange the egress valve push pin within the egress valve housing so that it is in a partially concealed position and unseats the egress valve with no appreciable loss of compressed air from the compression chamber through the seat or opening in which said push pin operates.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings, 1 designates the stock of the gun and 2 the pump barrel or cylinder thereof. The breech or rear portion of the barrel 2 is reinforced by a saddle plate 3, and positioned between this saddle plate and the

barrel 2 is the head of an attaching bolt 4 which passes through a suitably located aperture in the stock 1 and receives a clamping nut 5. This construction readily permits the stock to be detached from the barrel when the gun is packed for shipping or storage.

Removably positioned in the rear end of said barrel is a tubular breech cap or plug 7, the same being fixed to the barrel by means of a transversely disposed pin or screw 8.

Positioned in front of the plug 7 is a concavo-convex disk 9, preferably of metal, and positioned in front thereof against the concave face is a packing disk 10 of suitable flexible material provided on its edge with an annular flange 10^a, the same gradually tapering in thickness toward its outer edge.

The construction just described forms an air-tight wall at the rear end of the compression chamber, and the pressure of air within the compression chamber forces the body of the packing disk to take the form of the convex face of the metal disk 9 and forces the flange 10^a tightly against the wall of the compression chamber.

An egress valve housing 12 is seated in the top of the barrel 2 adjacent to the disks 9 and 10, and fixed to this valve housing and to the barrel 2 is a longitudinally disposed pellet tube 13 which extends to the forward end of the barrel 2. At a point immediately in front of the valve housing 12 this pellet tube is slightly compressed, as designated by 14 in order to form a seat for the pellet discharged through said tube.

Formed in the top of the valve housing 12 is a transverse groove 12^a, and arranged for sliding movement therein is the lower end of a small plate 12^b having a notch 12^c in its upper edge, which plate forms the rear sight of the gun. Formed in one of the faces of this plate adjacent to its lower edge is a horizontally disposed groove 12^d, and seated in the top of the housing 12 is a small flat headed screw 12^e, the edge of the head of which occupies the groove 12^d. This construction permits the plate 12^b to be adjusted transversely on the valve housing 12, thus providing an adjustable rear sight for the gun. When the screw 12^e is tightened the plate is locked in its adjusted position.

Extending rearwardly from the valve housing 12 is a pair of vertically disposed walls 15 between which is positioned the horizontally disposed upper portion 16 of a trigger 17, the main body portion of which extends downward through suitable slots 18 formed in the top and bottom of the rear portion of the barrel 2, the breech cap 7, and through the rear end of the saddle plate 3, said trigger being pivoted upon a transverse pin 19 seated in the rear portions of the walls 15.

By removing the pins 8 and 19 the breech cap in the rear end of the barrel 2 and the trigger 17 can be readily removed, when it is desired to repair or replace parts of the ingress and egress valves.

The trigger 17 extends through an opening 20 formed in the stock 1, and the projecting lower end of said trigger is protected by a suitable guard 21, the same being fixed to the underside of the stock.

Formed in the valve housing is a port 22, the upper end of which communicates with the interior of the pellet tube 13. Operating through the rear portion of the valve housing is a vertically disposed push pin 23, the same being slightly inclined, and the upper end of this pin engages in a notch 24 formed in the underside and forward end of the horizontally disposed portion 16 of the trigger. This horizontally disposed portion 16 of the trigger normally occupies a position below the upper edges of the walls 15, and the forward end of said horizontally disposed portion extends into an opening formed in the rear side of the housing 12 to the rear of the pellet tube 13, as shown in Fig. 2, and thus the trigger occupies a concealed position and is protected against blows from objects which might result in an accidental discharge of the gun.

Normally positioned against the lower end of the housing 12 is a shallow cup 25, the underside of which is slightly convex, and positioned within said cup is a packing disk 26 of suitable material. This packing disk is held in place by the head of a screw 27, the body of which latter passes through the center of the disk and through the center of the body of the cup 25. The top surface of the head of this screw is slightly concave or inclined toward the center, and bearing on said top surface is the lower end of the push pin 23.

The annular top surface of the packing disk 26 between the head of the screw 27 and the edge of the cup 25 normally bears directly against the underside of the valve housing 12, thus controlling the passage of compressed air into and through the port 22 to the interior of the pellet barrel 13. If desired, one or more small annular grooves may be formed in the underside of the housing 12, which grooves materially assist in forming a tight joint between the egress valve and lower end of the valve housing.

Fixed within the barrel 2 a short distance in front of the disks 9 and 10 and the egress valve housing 12 is a disk 28 provided with a centrally arranged aperture 29. A portion of this disk around the aperture projects rearwardly as designated by 30 to form a valve seat. The space "A" between the disk 28 and the disks 9 and 10 forms the compressed air chamber of my improved

gun. Positioned on the valve seat 30 is an ingress valve comprising a metallic cap 31 provided with an interiorly arranged packing disk 32 which is adapted to fit snugly against the valve seat 30 to normally close the opening 29. A spring supporting member 33 constructed of a flat strip of metal bent to form parallel legs is positioned within the chamber "A", and formed through the end of the top leg in an aperture 34 which receives the lower end of the valve housing 12. The lower leg of this member rests on the barrel 2 at the bottom of the chamber "A" and a tongue is struck up from said lower leg to form a flat spring 35 which normally bears against the underside of the valve 25 to maintain the same in position against the underside of the valve housing 12. Formed in this flat spring is an aperture 36 which receives the projecting lower end of the screw 27. By constructing the member 33 as just described, it can be readily placed in position or removed therefrom, and when in proper position the egress valve is normally held in closed position on the lower end of the valve housing 12. The point of the screw 27 engaging in aperture 36 provides a pivot for the valve 25, and thus when the spring 35 bears against said valve, the packing disk 26 will automatically adjust itself to the flat valve seat on the underside of the valve housing 12. If desired a separate flat spring 35[a] bent double, as shown in Fig. 9, may be detachably connected to the lower portion of the member 33 with the end of the upper leg of said spring bearing against the underside of the valve 25. The head of a pin 37 normally bears directly against the valve 31, and the opposite end of this pin is loosely seated in a suitable bearing in the end of the member 33. Loosely mounted on this pin adjacent to its head is a disk 38 provided in its edge with a notch 39, and mounted on the pin 37 and interposed between said disk and the end of the member 33 is a compression spring 40. This spring normally maintains the head of the pin 37 against the valve 31 to hold the same in closed position upon the ingress valve seat. The head or outer end of the pin 37 is rounded and acts as a pivot for the ingress valve 31, and thus the same automatically adjusts itself to the flat face of the ingress valve seat 30. The disk 38 is loosely mounted within the compression chamber and supports the outer end of the pin. The notch 39 in the edge of the disk permits the said disk to be moved past the projecting lower end of the valve housing 12 when the parts are removed or taken apart.

Located in the forward end of the barrel 2 is a disk 41, preferably of hard fiber, provided with a centrally arranged aperture. Arranged to slide through said aperture is a piston 42 provided on its forward end with a head or button 42[a], and on its rear end with a piston 42[b], provided with an ordinary cup leather 42[c]. In order to maintain this cup leather in operative condition and prevent the same from sagging inwardly, which permits air to escape past the piston during the pumping-up movement, I arrange within the barrel 2 immediately in front of the disk 28 a cup leather expanding member 43 in the form of a conical ring or washer, the base of which is seated against the disk 28 so that the small end is presented toward the piston carrying the cup leather. Each inward movement of the piston during the pumping action causes the forward edge of the flange portion of the cup leather to engage against the inclined or beveled wall of the expander 43, thereby forcing the projecting portion of said cup leather outward against the wall of the barrel 2 and causing said cup leather to maintain its proper shape.

Very frequently where air guns are laid aside for a considerable period of time, or where the guns are lying upon a dealer's shelf, the projecting portions of the cup leathers sag downwardly from the top, and as a result, air will escape from in front of the piston past the sagging portion of the cup leather during the pumping-up operation, but by providing an expander within the barrel this defect is readily overcome, for the first time the piston is forced toward the compressed air chamber, the cup leather will be forced outward against the inner surface of the barrel 2, and thus be restored to operative condition.

In order to release the surplus air in front of the piston during each pumping-up stroke a short, longitudinally extending groove or pocket 44 is formed in the inner face of the barrel at a point immediately adjacent the expander 43 and in front of the disk 28. When the piston reaches the limit of its inward movement on the pumping-up stroke the cup leather 42[c] is positioned directly over the central portion of this groove or pocket, and that portion of the compressed air between the piston 42[b] and the disk 28 is free to escape through the groove or pocket into the barrel behind the piston. As long as the piston is in front of this groove or pocket 44 the air under compression will be forced through the aperture 29 past the inlet valve on the inner end thereof into the chamber "A." By providing this release for the surplus air the piston and piston rod are prevented from being forcibly moved outward through the barrel 2 at the end of the forward or pumping-up stroke.

The operation of storing compressed air within the chamber "A" is as follows:

The rod 42 is reciprocated, and on each

inward stroke air in front of the piston is forced through the aperture 29 and the pressure of said air causes the ingress valve housing to move away from the valve seat 30, thereby admitting compressed air to the chamber "A." As the piston moves inward toward the disk 28 on the compression stroke and the ingress valve is unseated to permit the compressed air to enter the chamber "A," the pin 37 is necessarily moved inward a short distance, thereby overcoming the resistance offered by the spring 40.

When the piston rod has been reciprocated several times and sufficient air has been compressed within the chamber "A", the gun is moved into a vertical position and a pellet in the form of a small bullet or shot is dropped into the upper end of the pellet tube. When this shot strikes the contracted portion 14 of said tube the shot will lodge therein, and to discharge the gun the operator pulls the trigger 17, thereby forcing the push pin 23 downward and the lower end thereof bearing upon the head of the screw 27 moves the same and the egress valve 25 downward away from the lower end of the valve housing 12, thus permitting the compressed air to pass through the port 22 and expel the pellet with considerable force through the tube 13.

The push pin 23 bears upon the head of the screw 27 to one side of the center thereof, and as said push pin is inclined and the top of said screw is concave, the lower end of said pin tends to ride toward the center of said screws, but the initial pressure upon the head of the screw tends to tilt the egress valve during its initial opening movement.

This tilting of the egress valve during its initial opening movement is desirable for two reasons. First, that it permits the egress valve to be unseated with a comparatively little pressure of the finger upon the trigger as compared to a valve which is moved over from its seat against which it is normally held by both spring and air pressure, and, second, it provides for the gradual increase in the size of the exit opening into the housing 12 and which gradually increasing exit opening permits the force of the compressed air to be applied to the pellet for a longer period of time than where the valve is opened on all sides at once, which latter action permits the full force of the compressed air to be expanded against the pellet for a comparatively short period of time following the complete unseating of the valve.

During the unseating of the egress valve, the lower end of the screw 27 and the under side of the valve 25 bear directly upon the flat spring 35 and in opening overcome the resistance offered by said spring. As soon as the pressure upon the push pin is relieved, the spring 35 will act to instantly close the egress valve.

The ingress and egress valves of my improved gun are located within the compression chamber, and when the breech plug or cap and the disks 9 and 10 are removed from the breech of the gun, it is a comparatively easy matter to remove the member 33 for the purpose of repairing the valves or renewing parts thereof.

By providing a construction wherein flat bearings are formed between the parts of the valves, that is between the valve seats and the packing disks, the life of the packing disks is materially prolonged and they are prevented from becoming quickly worn out and useless. Where conical or round valves are utilized the same tend to wear rapidly and as a result they must be frequently replaced with new valves, and this objection is overcome by providing valves having flat seats and flat packing disks.

In the modified construction illustrated in Figs. 7 and 8, a short tubular member 46 is removably positioned in the rear end of the compression chamber, which tubular member is provided with an L-shaped notch or opening 47 in which the valve housing 12^a engages and the egress valve 25^a is seated on the lower end of this valve housing 12^a. A spring 31^a is positioned between the lower portion of the member 46 and the egress valve 25^a.

Carried by the member 46 is a transversely disposed bar 48 in which is seated one end of a tubular member 49, and arranged to slide freely in the outer portion of said tubular member is a short rod 50, the outer end of which normally bears against the ingress valve 31. Located within the tubular member 49 behind the rod 50 is a compression spring 51.

Where the construction as just described is utilized, air that is pumped up in front of the piston passes through the aperture 29, thereby forcing the ingress valve 31 from its seat and in so doing the resistance offered by the spring 51 is overcome. In this construction, the number of parts within the compression chamber is materially reduced, consequently reducing initial cost and cost of repairs.

It will be readily understood that minor changes in the size, form, and construction of the various parts of my improved air gun may be made and substituted for those herein 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, a compression barrel, a pellet tube, ingress and egress valves for controlling the inlet of air into the compres-

sion barrel and into the pellet tube, a removable plug in the rear end of the compression barrel to the rear of said valves and a packing arranged at the inner end of said plug, which packing comprises a rigid concavo-convex disk arranged with its concave face outwardly presented, and a flexible disk positioned against the inner convex face of said rigid disk.

2. In an air gun having a compression chamber and a pellet tube, an egress valve housing extending from the pellet tube into the compression chamber, and a valve for closing the lower end of said valve housing, which valve comprises a disk, a packing member positioned on top of said disk and adapted to engage the underside of the egress valve housing, and a screw seated in said disk, the head of which screw bears on top of said packing member.

3. In an air gun, a barrel provided with a compression chamber, a pellet tube positioned on the barrel, an egress valve controlling communication from the compression chamber to the pellet tube, the housing of which valve extends downward into the compression chamber, a skeleton frame detachably positioned on the end of the valve housing within the compression chamber, a spring forming a part of said skeleton frame, which spring bears against the egress valve to hold the same in closed position, an ingress valve at the forward end of the compression chamber, and a spring-held pin carried by the skeleton frame for normally holding the ingress valve closed.

4. In an air gun, the combination with a compression barrel having a partition near one end to form a compression chamber, of a piston and piston rod operating in said compression barrel for forcing air under pressure into the compression chamber, which piston is provided with a cup leather, and an annular inclined wall on the interior of the compression barrel against the partition therein for expanding said cup leather.

5. In an air gun, the combination with a compression barrel provided near one end with a partition to form a compression chamber at one end of said barrel, a piston rod arranged for operation in the compression barrel, a piston carried by said rod, which piston is provided with a cup leather, and a separate conical ring within the compression barrel in front of the piston for expanding said cup leather.

6. In an air gun, the combination with a compression barrel having a compression chamber, of a piston arranged for operation within the compression barrel for forcing air under pressure into the compression chamber, which piston is provided with a cup leather, and a separate conical means on the interior of the compression barrel adjacent to the end of the compression chamber for expanding the cup leather of the piston.

7. The combination with an air gun having a compression chamber and a pellet tube, of a valve housing between said compression chamber and pellet tube, a valve normally seated on said valve housing, which valve comprises a plate, a packing member carried thereby and a screw for holding the packing member on the plate, and a push pin located wholly within and operating through the valve housing and bearing on the head of the screw for unseating said valve.

8. The combination with an air gun having a compression chamber and a pellet tube, of a valve housing between said compression chamber and pellet tube, a valve normally seated on said valve housing, which valve comprises a plate, a packing member carried thereby and a screw for holding the packing member on the plate, a push pin located wholly within and operating through the valve housing and bearing on the head of the screw for unseating said valve, and means for actuating said push pin a portion of which actuating means projects into the valve housing and bears upon said push pin.

9. In an air gun having a compression chamber, an egress valve housing, a valve normally closing the passageway through said valve housing, and a push pin located wholly within and operating through the valve housing for unseating the valve.

10. In an air gun having a compression chamber, an egress valve housing, a valve normally closing the passage-way through said valve housing, a push pin located wholly within and operatively through the valve housing for unseating the valve, and means projecting into an opening in said valve housing and bearing upon the push pin for actuating the latter.

11. In an air gun, a compression barrel provided with a compression chamber, a concavo-convex disk positioned in said barrel to the rear of the chamber, and a packing disk in front of said concavo-convex disk, which disks form the rear wall of the compression chamber.

12. In an air gun, a compression barrel having a compression chamber, a disk seated in the rear portion of the barrel to the rear of said chamber, which disk has a convex face, and a packing disk positioned within the chamber against the convex face of the first mentioned disk.

13. In an air gun, a compression barrel having a compression chamber, a disk seated in the rear portion of the barrel to the rear of said chamber, which disk has a convex face, a packing disk positioned within the chamber against the convex face of the first

mentioned disk, and a breech cap removably seated in the barrel to the rear of said disks.

14. In an air gun having a compression chamber, an egress valve housing extending into said chamber, an egress valve normally positioned on the seat of said housing, an ingress valve for controlling the passage of air into the compression chamber, a member located within the compression chamber which member is detachably connected to the egress valve housing, and springs supported by said member for engaging the ingress and egress valves to normally hold the same upon their seats.

15. In an air gun having a compression chamber, ingress and egress valves for controlling the passage of air into and from said compression chamber, a member positioned within the compression chamber and detachably connected to the egress valve housing, and springs carried by said member for normally holding the ingress and egress valves closed.

16. In an air gun having a compression chamber, ingress and egress valves for controlling the passage of air into and from said compression chamber, a member removably positioned in the chamber and detachably connected to the egress valve housing, a spring carried by said member for normally holding the egress valve closed, and a second spring carried by said member for normally holding the ingress valve closed.

17. In an air gun having a compression chamber, an egress valve housing extending into said chamber, which valve housing is provided with an egress port, a valve yieldingly seated upon the valve housing for closing the port therethrough, and a push pin concealed within and operating through the valve housing and bearing upon the valve, which egress port and push pin are eccentrically arranged with respect to the axis of the valve housing.

18. In an air gun having a compression chamber, an egress valve housing extending into said chamber, which valve housing is provided with an egress port, a valve yieldingly seated upon the valve housing for closing the port therethrough, a push pin concealed within and operating through the valve housing and bearing upon the valve, which egress port and push pin are eccentrically arranged with respect to the axis of the valve housing, and means for actuating the push pin.

19. In an air gun having a compression chamber, a valve housing extending into the compression chamber, a valve positioned on the end of the valve housing within the compression chamber, which valve comprises a cup and a flat packing disk, a member removably positioned in the compression chamber and detachably connected to the valve housing, and a flat spring carried by said removable member, the free end of which flat spring bears against the valve to hold the same on the projecting end of the valve housing.

20. In an air gun, a compression barrel, a pellet tube fixed thereto, the rear end of which barrel is slotted, a valve controlling the discharge of air from a chamber within the compression barrel to the pellet tube, a pair of walls attached to the compression barrel and extending rearwardly from the valve housing in alinement with the pellet tube, a stock detachably secured to the compression barrel, which stock is provided with an opening which coincides with the slot in the rear portion of the compression barrel and the space between the walls to the rear of the valve housing, and a trigger for actuating the egress valve, the upper portion of which trigger is located wholly within the slot in the rear portion of the compression barrel and the space between the walls to the rear of the valve housing and the lower portion of which trigger is positioned in the opening through the stock.

21. In an air gun, a compression barrel provided with a compression chamber, a disk having a convex face at the rear end of said compression chamber, and a packing disk in front of said disk, the edge of which disk is provided with an annular flange.

22. In an air gun, a compression barrel provided with a compression chamber, a disk having a convex face at the rear end of said compression chamber, and a packing disk in front of said disk, the edge of which disk is provided with an annular flange which gradually tapers in thickness toward its outer edge.

23. In an air gun, a compression barrel, a pellet tube fixed thereto, the rear end of which barrel is slotted, a valve controlling the discharge of air from a chamber within the compression barrel, to the pellet tube, parallel walls extending from the valve housing rearwardly over the slot in the end of the compression barrel, a stock detachably secured to the compression barrel, which stock is provided with an opening which coincides with the slot in the rear portion of the compression barrel, and a trigger for actuating the valve, which trigger passes through the opening in the stock, and the upper portion of which trigger occupies the slotted rear end of the compression barrel and the space between the parallel walls to the rear of the valve housing.

24. In an air gun, a compression barrel, a pellet tube fixed thereto, the rear end of which barrel is slotted, a valve controlling the discharge of air from a chamber within the compression barrel, to the pellet tube, parallel walls extending from the valve

housing rearwardly over the slot in the end of the compression barrel, a stock detachably secured to the compression barrel, which stock is provided with an opening which coincides with the slot in the rear portion of the compression barrel, a trigger for actuating the valve, which trigger passes through the opening in the stock, and the upper portion of which trigger occupies the slotted rear end of the compression barrel, and the space between the parallel walls to the rear of the valve housing, and a valve operating pin located within the valve housing, which pin is engaged by the upper forward end of the trigger.

25. In an air gun having a compression chamber, and a pellet tube, a valve controlling the passage of air from the compression chamber into the pellet tube, the housing of which valve extends into the compression chamber, a skeleton frame detachably positioned in the compression chamber, and connected to the valve housing therein, and a spring carried by said frame for normally holding the movable portion of said valve on its seat.

26. In an air gun having a compression chamber and a pellet tube, a valve controlling the passage of air from the compression chamber into the pellet tube, the housing of which valve extends into the compression chamber, a skeleton frame detachably positioned in the compression chamber and connected to the valve housing therein, a spring carried by said frame for normally holding the movable portion of said valve on its seat, and a push pin operating through the valve housing for unseating said valve.

27. In an air gun having a compression chamber and a pellet tube, a valve controlling the passage of air from the compression chamber into the pellet tube, the housing of which valve extends into the compression chamber, a skeleton frame detachably positioned in the compression chamber and connected to the valve housing therein, a spring carried by said frame for normally holding the movable portion of said valve on its seat, a push pin operating through the valve housing for unseating said valve, and a trigger, one end of which engages the push pin within the valve housing.

28. In an air gun, a tube provided at its rear end with a compression chamber, a pellet tube on said first mentioned tube, a valve for controlling the discharge of air from the compression chamber into the pellet tube, a plug seated in the rear end of the first mentioned tube for closing the compression chamber therein, which plug and tube are slotted, a stock on which the tube is positioned, an inlet valve located at the forward end of the compression chamber, a spring held pin for normally holding said valve closed, a guide for said pin, and a trigger passing through said stock and through the slot in the rear end of the tube and the plug, a portion of which trigger coöperates with the valve for actuating the same.

29. In an air gun having a compression chamber and a pellet tube, an egress valve housing extending from the pellet tube into the compression chamber, and a valve for closing the lower end of said valve housing, which valve comprises a disk, a packing member positioned on top of said disk and adapted to engage the underside of the egress valve housing, a screw seated in said disk, the head of which screw bears on top of said packing member, and the lower portion of which screw projects a substantial distance below the disk to serve as a bearing point for a resilient member which maintains the valve in position against the valve housing.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 19th day of December, 1912.

ADOLPH WISSLER.

Witnesses:
M. P. SMITH,
M. A. HANDEL.

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