

No. 842,324.

PATENTED JAN. 29, 1907.

W. F. MARKHAM.
AIR GUN.

APPLICATION FILED FEB. 23, 1906.

FIG. 1.

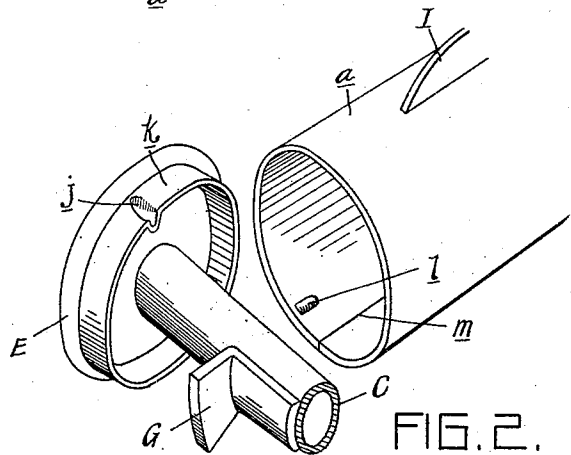
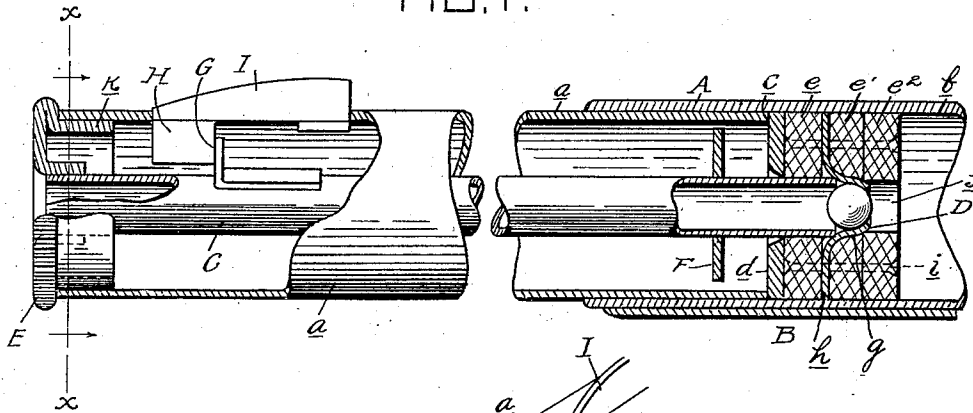


FIG. 2.

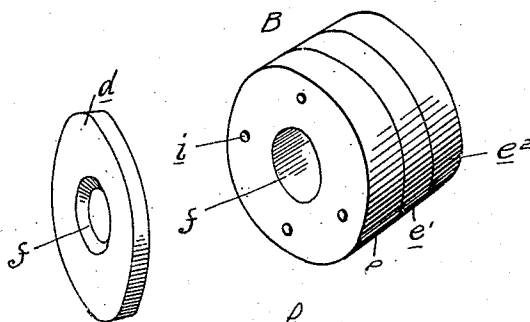


FIG. 4.

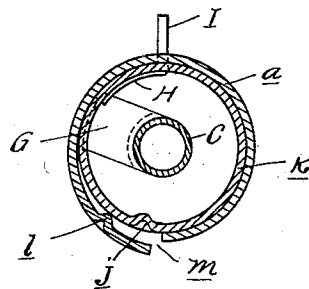


FIG. 3.

WITNESSES
Geo. W. L. L. L.
Melba Williams
BY

INVENTOR
WILLIAM F. MARKHAM.
Whittier Hulbert & Whittier
ATTYS.

UNITED STATES PATENT OFFICE.

WILLIAM F. MARKHAM, OF PLYMOUTH, MICHIGAN, ASSIGNOR TO THE
MARKHAM AIR RIFLE COMPANY, OF PLYMOUTH, MICHIGAN, A
CORPORATION OF MICHIGAN.

AIR-GUN.

No. 842,324.

Specification of Letters Patent.

Patented Jan. 29, 1907.

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To all whom it may concern:

Be it known that I, WILLIAM F. MARKHAM, a citizen of the United States of America, residing at Plymouth, in the county of Wayne and State of Michigan, have invented certain new useful Improvements in Air-Guns, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates to air-guns more particularly of the type adapted for shooting either bullets or darts; and the invention consists in certain novel features of construction, as hereinafter set forth.

15 In the drawings, Figure 1 is a central longitudinal section through the barrel of the gun. Fig. 2 is a perspective view of the forward end portions of the false barrel and the detachable shooting-barrel. Fig. 3 is a cross-section on line *x x*, Fig. 1. Fig. 4 is a perspective view of the several parts constituting the piston-abutment.

20 In the construction of air-guns of the type referred to the shooting-barrel is detachably secured within the false barrel, so that it may be removed for the placing of a dart therein. On the other hand, where the gun is used for shooting bullets or shot the latter are dropped in the muzzle and are retained by engaging a tapering seat, which seat is usually formed in the abutment for the piston which compresses the air.

25 In the present invention a novel construction of piston-abutment is employed which may be cheaply constructed and which forms both a seat for the shot and an air-tight bearing for the end of the true barrel in alinement with said seat.

30 The invention further includes a novel construction of means for locking the true barrel in engagement with the false barrel.

35 In detail, A is the false barrel, which has a forward portion *a*, in which the true barrel is located, and a rear portion *b*, constituting the air-compression cylinder. These two portions are preferably formed of tubes of different diameters, which are connected to form at their juncture an annular shoulder *c*, against which the piston-abutment bears. 40 This piston-abutment B is formed of a plurality of disks. One of these disks *d* is pref-

erably formed of metal and of a size to fit within the cylinder and bearing against the shoulder *c*. The remaining disks *e e' e''* are preferably formed of leather, so as to constitute a cushion against which the piston in the barrel or cylinder *b* may strike. All of the disks *d e*, &c., are centrally apertured at *f* for the reception of the inner end of the true barrel C. To form a seat for the shot within this piston-abutment and to avoid the restriction of the central aperture therein by compression of the leather, due to the impact of the piston, a metallic bushing is preferably placed therein. This bushing D may be struck up from a piece of sheet metal into the form illustrated in Fig. 4, having the tapering cup-shaped portion *g* and the oppositely-extending flanges *h*. The bushing is placed within the central aperture *f* of the abutment, and the flanges *h* are inserted between plies of the leather, after which all of the leather disks are secured together by pins or rivets *i*. When in place, the bushing D forms a tapering seat for the reception and the holding of the shot. It also forms the bearing for the end of the true barrel, which is inserted in the aperture *f*, while the foremost leather disk will tightly surround said true barrel and form an air-tight connection therewith.

45 The true barrel is removably secured within the false barrel, preferably by attaching it at its forward end to a cap E, which detachably engages the end of the false barrel, and a guide F for centering the inner end of the true barrel so as to engage the aperture *f*. For locking the true barrel in position it is preferably provided with a projecting flange or fitting G, which extends adjacent to the inner face of the false barrel and is adapted to engage a locking-lug thereon—such, for instance, as the lug H—which is formed by the securing-flange on the sight member I at the forward end of the false barrel. Thus by inserting the true barrel into the false barrel, with the flange G turned out of registration with the lug H, and after said true barrel is pressed to its seat by rotating the cap, the flange G may be turned in rear of the lug H and will be held thereby from outward movement.

With the construction just described the true barrel may be locked in engagement with the false barrel; but it is necessary that it should be turned to a proper position, as otherwise the flange G will not engage with the lug H. To insure such an engagement, I have provided means by which the operator can engage the parts without special care or observation and at the same time with absolute certainty that the flange G and lug H are in engagement. To accomplish this, cooperating detents are formed on the false barrel and the flange of the cap E—such, for instance, as the depression *j* in the flange *k* of said cap and the projection *l* on the inner face of the false barrel. These detents are so formed as not to interfere with the rotation of the cap within the barrel; but when in registration they will engage so as to offer a slight resistance to the further turning of the cap. Thus the operator is made aware of the fact that the parts are in proper locking engagement.

To permit the engagement just described, either the flange *k* or the false barrel must be capable of springing. This is possible by forming the false barrel of a "cold-shut" tube—*i. e.*, it is formed from a sheet-metal blank the opposite edges of which abut, but are not brazed or soldered to each other. Thus when the cap E is inserted in the barrel the engagement of the flange *k* with the inwardly-projecting detent *l* will cause a slight springing of the barrel, opening the seam thereof, as illustrated at *m*, Fig. 3; but when the cap is turned to register the recess *j* with said detent the metal of the barrel will spring back into normal position. Thus a very simple and effective locking device is formed and one which adds nothing to the cost of construction, as the detent *l* and recess *j* may be formed simultaneously with the operations for forming the barrel and cap.

What I claim as my invention is—

1. In an air-gun a piston-abutment formed of yieldable material having a central aperture therein and a metallic bushing sleeved within said aperture.

2. In an air-gun a piston-abutment formed of yieldable material centrally apertured for the reception of the end of the true barrel and the shot, and a metallic bushing sleeved within said aperture constituting a seat for the shot and end of the true barrel.

3. In an air-gun a piston-abutment comprising a plurality of disks formed of yieldable material and centrally apertured, and a metallic bushing sleeved within the aperture having oppositely-extending flanges secured between adjacent disks.

4. In an air-gun a piston-abutment formed of a plurality of leather washers centrally apertured, and a metallic bushing having a laterally-extending flange arranged with said

flange between adjacent washers and the bushing within the central aperture.

5. In an air-gun the combination with a false barrel having an annular shoulder formed therein, of a piston-abutment comprising a metallic washer fitting against said annular shoulder, a plurality of leather washers in rear of said metallic washer, all of said washers being centrally apertured in alignment, and a metallic bushing fitting within said leather washers.

6. In an air-gun the combination with a false barrel and a true barrel removably secured therein, of a cap on said true barrel fitting the end of said false barrel, cooperating members upon said false and true barrels for interlocking by a rotation of said true barrel, and cooperating members on said false barrel and cap for determining the point of engagement of said interlocking members.

7. In an air-gun the combination with a false barrel and a true barrel removably secured therein, of a cap secured to said true barrel having a flange for engaging the end of said false barrel, cooperating members on said false and true barrels for interlocking by a rotary movement of the one in relation to the other to prevent longitudinal movement of the true barrel, and cooperating detents on the flange of said cap and on said false barrel adapted to engage by the resiliency of the metal during the rotation of said cap to indicate the position of engagement of said interlocking members.

8. In an air-gun the combination with a false barrel and a true barrel removably secured therein, of a cap on the end of said true barrel having a flange for fitting within the end of said false barrel, cooperating members on said true and false barrels for interlocking by a rotation of one in relation to the other to hold said true barrel from longitudinal movement, male and female detents formed the one on said false barrel and the other on the flange of said cap, adapted for automatic engagement upon the rotation of said cap, due to the resiliency of the metal.

9. In an air-gun the combination with a true barrel provided with an end cap, of a false barrel with the end of which said cap engages, said barrel being formed from a sheet-metal blank having a seam formed by abutting unattached edges, male and female detents formed on said cap and false barrel adapted for engagement with each other upon the rotation of the cap, the engagement of said cap and barrel being permitted when said detents are out of registration by the opening of the seam in said false barrel.

10. In an air-gun the combination with a false barrel formed from a sheet-metal blank, the seam being formed by abutting unattached edges of said blank, of a true barrel removably secured within said false barrel, a

cap on the end of said true barrel, male and female detents, the one on said false barrel and the other on said cap, the detent of said false barrel being located in proximity to said
5 seam, whereby the resiliency of the metal will permit the engagement of said cap with said barrel when said detents are out of registration.

11. In an air-gun, the combination with a

piston-abutment having a central aperture, 10 of a metallic bushing secured to said abutment and sleeved within said aperture.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. MARKHAM.

Witnesses:

FRANK W. BEALS,

C. B. SHORTMAN.