No. 627,320. Patented June 20, 1899.

# W. R. BENJAMIN.

## AIR RIFLE.

(Application filed July 18, 1898.)

(No Model.)

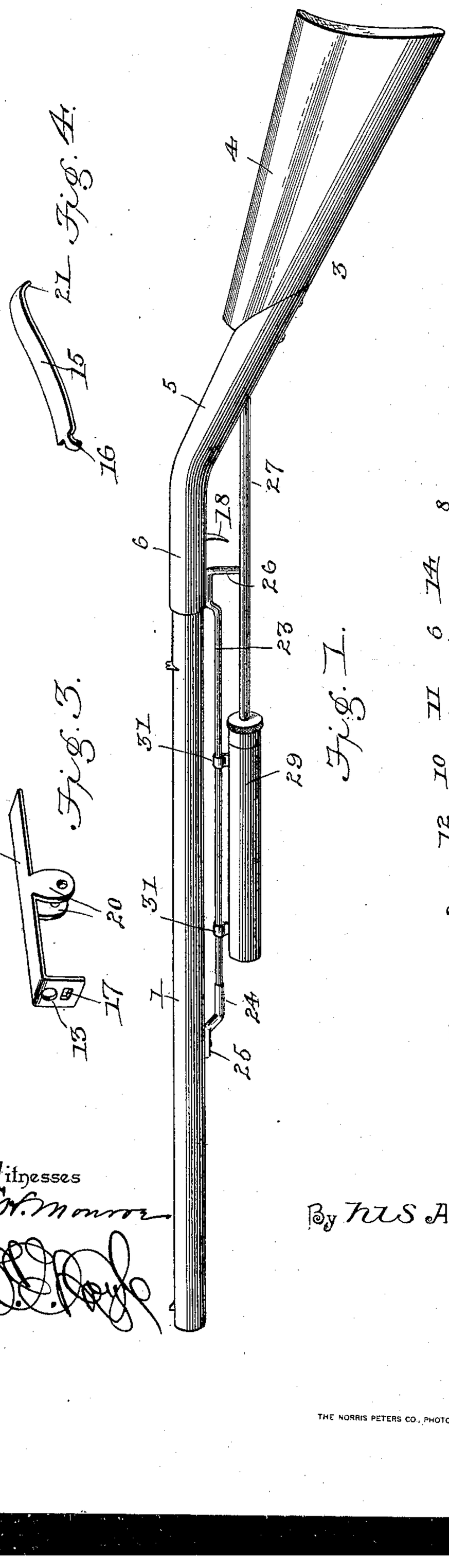


Fig. 1.

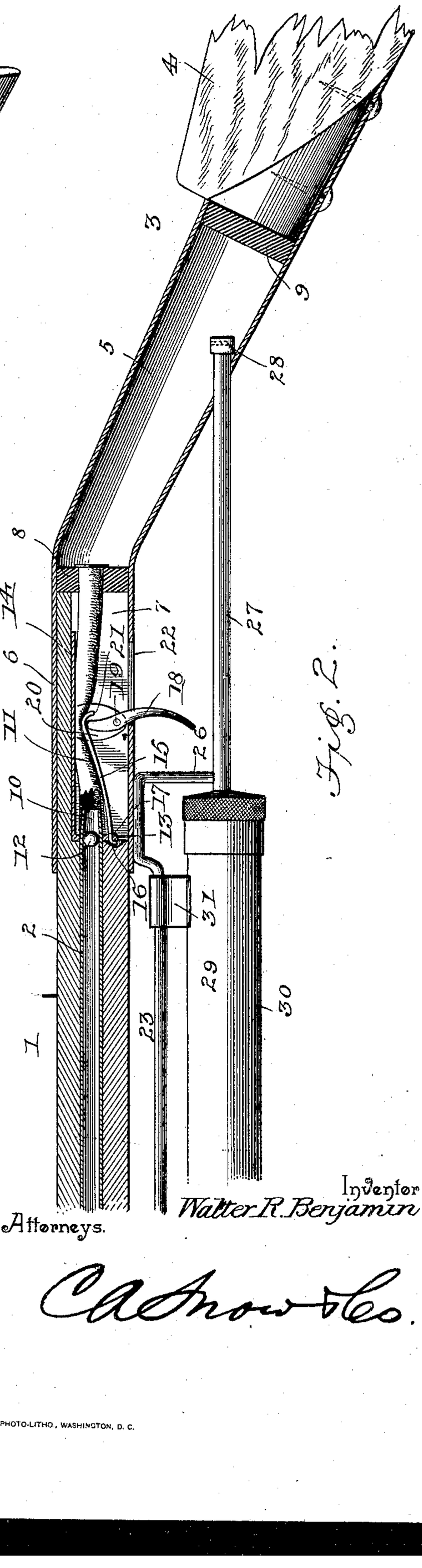


Fig. 2.




Fig. 3.

Witnesses
E. F. Monroe
C. E. Doyle

Inventor
Walter R. Benjamin
By his Attorneys.
C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

WALTER ROGERS BENJAMIN, OF GRAND TOWER, ILLINOIS.

## AIR-RIFLE.

SPECIFICATION forming part of Letters Patent No. 627,320, dated June 20, 1899.

Application filed July 18, 1898. Serial No. 686,310. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER ROGERS BENJAMIN, a citizen of the United States, residing at Grand Tower, State of Illinois, have invented a new and useful Air-Rifle, of which the following is a full and exact description.

My invention relates to pneumatic guns, and has for its object to provide a compressed-air rifle having improved means for charging the air-reservoir, having its air-reservoir located in and forming part of the stock, and also having improved means for holding the compressed air in check and releasing the same to discharge a projectile.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view of a gun constructed in accordance with my invention. Fig. 2 is a longitudinal section of a portion thereof. Figs. 3 and 4 are detail perspective views, respectively, of the tube-seat and bearing-plate.

Similar reference characters indicate corresponding parts in all the figures of the drawings.

The barrel 1 may, as illustrated in the drawings, be provided with a bore wall or lining 2, and detachably secured to the barrel, as by a slip-joint, is a stock 3, of which the body portion 4 (constructed preferably of wood) is secured to a tubular grip portion 5, forming the reservoir for the compressed air, and is extended forwardly to form a tubular seat 6, in which the rear end of the barrel is fitted. The lower side of the barrel, within the tubular seat 6, is cut away or slotted, as shown at 7, and the front end of the reservoir 5 is separated from this slotted portion of the barrel by means of a head or partition 8, the rear end of said reservoir also being closed by a head 9 and either or both of these heads being constructed of hard rubber or the equivalent thereof. The bore-lining 2 is extended rearwardly into the cavity 7 of the barrel to form a nipple 10, upon which is fitted the front end of a transversely-compressible conveyer 11, consisting of rubber tubing or the equivalent thereof, and the rear end of this conveyer is secured in the front head or partition 8 in communication with the air-reservoir 5. Also the bore of the barrel or the interior diameter of the bore-lining 2 is reduced at its rear end, as in said nipple 10, to form a projectile-seat, whereby when a ball or shot 12 is dropped into the muzzle of the gun it passes rearwardly to said contracted or seat portion and is there caught and frictionally held to prevent subsequent displacement prior to the proper discharge thereof by the liberation of the compressed contents of the reservoir. Also arranged within the cavity 7 and secured to the nipple 10 by means of a front depending ear 13 is a seat-plate 14, which extends rearwardly above the compressible conveyer 11 to form a seat for the latter when compressed and in operative relation with the conveyer, and below the same is mounted a vertically-swinging bearing-plate 15, preferably fulcrumed at its front end upon the depending ear 13 of the seat-plate 14 by means of a tongue 16, engaged with a perforation 17 in said ear. The rear free end of this seat-plate is downwardly bent or deflected to form a trigger-seat, in which is fitted the upper extremity of the trigger 18, fulcrumed, as at 19, between depending intermediate ears 20 of the seat-plate 14. The depending extremity 21 of said bearing-plate forms a stop to limit the rearward swinging movement of the upper arm of the trigger, and the convexed upper side of the bearing-plate is designed for contact with the compressible conveyer 11 to force the latter toward the seat-plate, and thus close the bore of the conveyer to prevent the escape of compressed air from the reservoir 5 preparatory to the operation of the trigger. Also the trigger extends downwardly through a slot 22 in the tubular extension 6 of the grip.

Parallel with the barrel is arranged a guide-rod 23, fitted at its front end in a socket 24, carried by a bracket 25, secured to the barrel, said guide-rod being secured at its rear end to the tubular extension 6, and thence being extended downwardly to form a hanger 26, which is attached to the tubular piston-rod 27 of the pump or air-compressing mechanism, said piston-rod extending longitudinally of the barrel beneath the free end of the trigger 18 and forming a trigger-guard, with its rear end extending through a suitable opening in the wall of the air-reservoir 5 and ter-

minally fitted with a check-valve 28 to allow air to be forced into the reservoir and prevent the escape thereof through the same channel. In coöperative relation with the piston 29, which is attached to the front end of the rod 27, is an axially-movable cylinder 30, forming the movable member of the pump mechanism, and also constituting a fore grip, said cylinder being provided with slides 31, arranged upon the guide-rod 23.

To charge the reservoir, it is necessary simply to reciprocate the cylinder 31 or movable member of the pump mechanism the desired number of times to suit the compression which is desired in the reservoir, the trigger having previously been disposed, as indicated in Fig. 2, with its upper extremity in the seat of the bearing-plate 15 to hold the free end of said bearing-plate elevated and the conveyer 11 compressed, and when the projectile which has been introduced through the muzzle of the barrel is to be discharged said cylinder forms a suitable and convenient grip for the fore hand of the operator, the same being adjustable longitudinally of the barrel or being adapted to be positioned, as desired, with relation thereto to suit the length of arm and preferences of the operator. Furthermore, it will be seen that the depending ears 20 of the seat-plate are arranged at opposite sides of the free end of the bearing-plate 15, and thus hold the latter against lateral vibration and guide it in its movement toward and from the compressible conveyer, whereby the application of pressure of the trigger to the bearing-plate is direct and efficient in causing the compression of the conveyer.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having described my invention, what I claim is—

1. In a pneumatic gun having an air-reservoir, and means, including a trigger, for releasing the charge in the air-reservoir, a pump mechanism having a movable member mounted for reciprocatory movement in advance of said trigger, and a stationary air-conveyer extending rearwardly from said movable member beneath the trigger to form a trigger-guard, substantially as specified.

2. In a pneumatic gun having an air-reservoir, and means, including a trigger, for releasing the charge in the air-reservoir, a pump mechanism having a reciprocatory cylinder mounted for movement parallel with the barrel in advance of the trigger, and a tubular piston-rod extending rearwardly from said movable part and communicating with the air-reservoir, said piston-rod extending longitudinally beneath the trigger to form a trigger-guard, substantially as specified.

3. In a pneumatic gun having an air-reservoir, and means, including a trigger, for releasing the charge in the air-reservoir, a pump mechanism having a guide disposed longitudinally of the barrel, a cylinder mounted for reciprocation upon said guide, and a tubular piston-rod extending rearwardly from said cylinder and communicating with the air-reservoir, substantially as specified.

4. In a pneumatic gun having an air-reservoir, and means, including a trigger, for releasing the charge in the air-reservoir, a pump mechanism consisting of a reciprocatory cylinder, a piston, and a tubular piston-rod communicating with the air-reservoir, substantially as specified.

5. In a pneumatic gun having an air-reservoir, and means, including a trigger, for releasing the charge in the air-reservoir, a pump mechanism located beneath the barrel and including a guide-rod disposed longitudinally of the barrel in advance of said trigger, a reciprocatory cylinder mounted upon said guide-rod, a stationary hanger depending from the barrel in front of the trigger, a piston, and a tubular piston-rod, communicating at its rear end with the air-reservoir, supported at an intermediate point by said hanger, and extending longitudinally under the trigger to form a trigger-guard, substantially as specified.

6. A pneumatic gun having its stock provided with a hollow rear grip forming an air-reservoir, means, including a trigger, for releasing the contents of the air-reservoir into the barrel to discharge a projectile, a pump mechanism having a stationary member arranged beneath the barrel, in relation with said trigger to form a trigger-guard, and a movable member for coöperation with said stationary member, substantially as specified.

7. A pneumatic gun having a barrel and an air-reservoir, a transversely-compressible conveyer connecting the air-reservoir with the barrel, a pivotal trigger for compressing said conveyer, and a bearing-plate interposed between the trigger and said conveyer and movable transversely toward and from the latter, for communicating the pressure of the trigger thereto, substantially as specified.

8. A pneumatic gun having a barrel and an air-reservoir, a transversely-compressible conveyer connecting the air-reservoir with the barrel, a pivotal bearing-plate for contact at its free end with the conveyer and provided adjacent to its free end with a trigger-seat, and a trigger for actuating said bearing-plate, and adapted to be terminally fitted in said seat to compress the conveyer, substantially as specified.

9. A pneumatic gun having a barrel and an air-reservoir, a transversely-compressible conveyer connecting the air-reservoir with the barrel, a bearing-plate fulcrumed at one end and provided at its free end with a convex bearing-surface for contact with said conveyer, and opposite to said convex bearing-surface with a concave seat, and a pivotal trigger having an arm arranged in operative

relation with the bearing-plate, to force the same toward the conveyer and adapted to be terminally fitted in said seat of the bearing-plate, substantially as specified.

10. A pneumatic gun having a barrel and an air-reservoir, a transversely-compressible conveyer connecting the air-reservoir with the barrel, a seat-plate arranged at one side of the conveyer, a bearing-plate mounted at the opposite side of said conveyer for movement toward and from the seat-plate, and a trigger arranged in operative relation with said bearing-plate for forcing the same toward the seat-plate to compress the conveyer, substantially as specified.

11. A pneumatic gun having a barrel and an air-reservoir, a transversely-compressible conveyer connecting the air-reservoir with the barrel, a seat-plate arranged at one side of the conveyer and having a depending ear, a bearing-plate fulcrumed at one end upon said ear of the seat-plate and adapted at the other end for contact with the conveyer, and a trigger for actuating the bearing-plate, substantially as specified.

12. A pneumatic gun having a barrel and an air-reservoir, a transversely-compressible conveyer connecting the air-reservoir with the barrel, a seat-plate arranged at one side of said conveyer and provided with a terminal depending ear, a bearing-plate pivotally mounted at one end upon said ear of the seat-plate, and adapted at the other end for movement toward and from the seat-plate to compress the conveyer, guide-ears depending from the seat-plate at opposite sides of the free end of the bearing-plate, and a trigger mounted between said guide-ears for actuating the bearing-plate, substantially as specified.

13. A pneumatic gun having a stock provided with a hollow rear grip forming an air-reservoir, and also provided with a forward tubular extension, a barrel removably fitted in said tubular extension, and cut away at its lower side in communication with its bore, front and rear heads fitted in said grip, a pump mechanism in communication with the air-reservoir, and means, located in said cut-away portion of the barrel, for liberating the contents of the air-reservoir into the bore of the barrel, substantially as specified.

WALTER ROGERS BENJAMIN.

Witnesses:
J. T. EVANS,
J. J. VASTINE.