

(No Model.)

2 Sheets—Sheet 1.

T. HORNHAUER.
MAGAZINE AIR GUN.

No. 578,820.

Patented Mar. 16, 1897.

Fig. 1

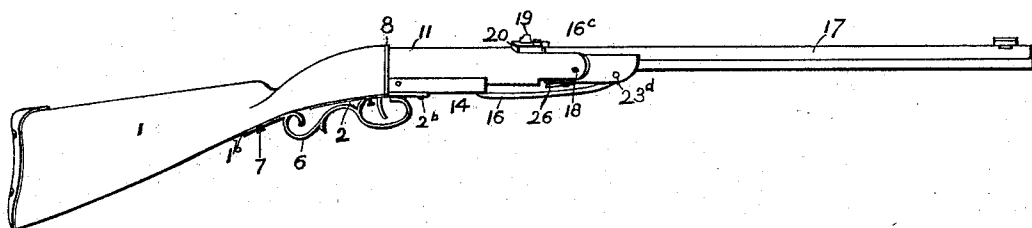


Fig. 2

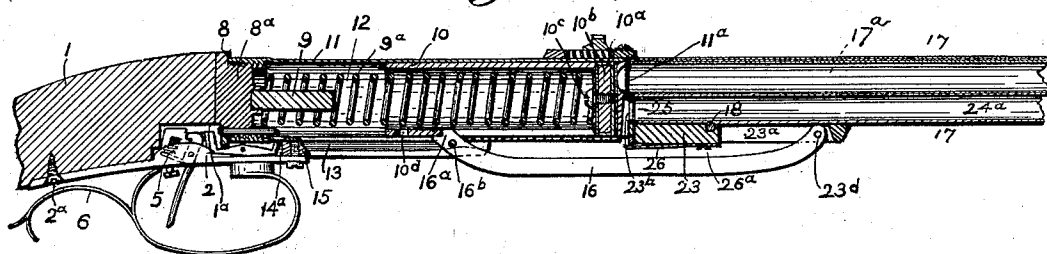
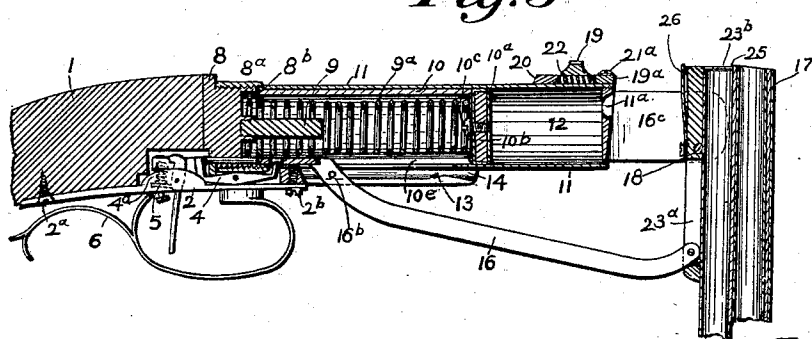


Fig. 3



Witnesses:

Wm. H. Rowe,
C. H. Schafer.

Inventor:—

Theodor Hornhauer,
By his Atty. C. B. Reichelt.

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2 Sheets—Sheet 2.

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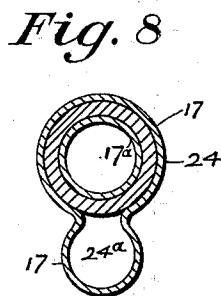
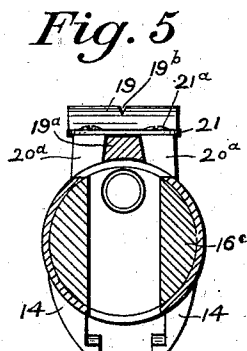
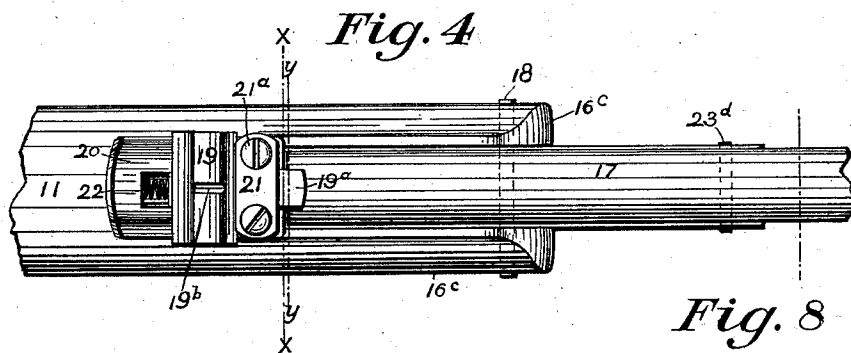


Fig. 6

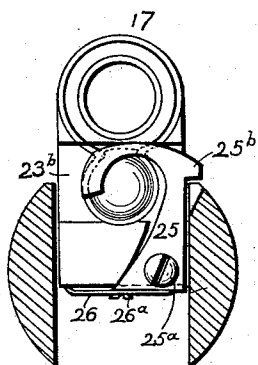


Fig. 7

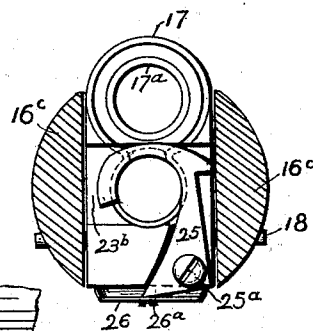
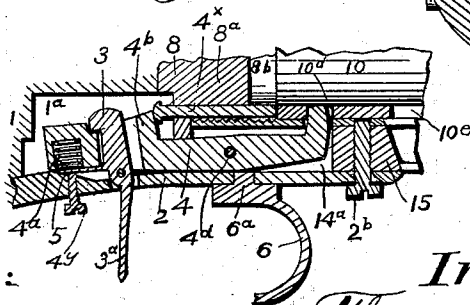


Fig. 9



UNITED STATES PATENT OFFICE.

THEODOR HORNHAUER, OF DRESDEN, GERMANY, ASSIGNOR OF ONE-FOURTH TO FREDERICK ARNO HULLER, OF SAME PLACE.

MAGAZINE AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 578,820, dated March 16, 1897.

Application filed November 29, 1895. Serial No. 570,349. (No model.) Patented in Austria March 13, 1895, No. 45/867.

To all whom it may concern:

Be it known that I, THEODOR HORNHAUER, a citizen of the Kingdom of Saxony, and a resident of Dresden, in the Kingdom of Saxony and German Empire, have invented certain new and useful Improvements in Magazine Air-Guns, (for which I have obtained Letters Patent in Austria, No. 45/867, dated March 13, 1895,) of which the following is a specification.

The object of my invention is to provide an air-gun especially adapted for target practice which will be light, neat, strong, and inexpensive, and which will have sufficient power to drive a ball with force and precision the usual distance for target and gallery practice, and which is also adapted to contain within a magazine-barrel any required number of balls which may be safely and easily transferred from the magazine-barrel to the breech-piece of the gun-barrel at each charging of the air-chamber.

The invention consists, primarily, in an air-gun having a stock, a breech-barrel secured thereto terminating in an air-cylinder, a spring-actuated plunger movable therein, a gun-barrel pivoted to the forward end of the breech-barrel, and a push-lever pivoted to the barrel forwardly of its pivot and connected with the plunger to retract the spring by breaking down the gun-barrel upon the breech-barrel at each time a new ball is placed in the breech of the gun-barrel.

My invention also consists in certain special forms and details of construction hereinafter particularly described and claimed.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation of the gun in firing position; Fig. 2, an enlarged longitudinal section of the breech-cylinder and its connections with the air-cylinder when discharged; Fig. 3, a similar view of the parts shown in Fig. 2 with the barrel broken down, the spring-plunger pushed back; Fig. 4, a plan of the combined sight and spring-bolt and of the hinged connection between the breech-barrel and gun-barrel; Fig. 5, a transverse section looking toward the stock or butt-end of the gun in line *xx* of Fig. 4. Figs. 6 and 7 are cross-sections in line *yy* of Fig. 4, looking toward the

muzzle of the gun and representing the ball retaining and releasing breech-plate for the magazine in its two positions; Fig. 8, an enlarged cross-section through the barrel, showing the several barrels and the outer skein; and Fig. 9, an enlarged detail section of the lock mechanism.

The stock 1 is mortised at its forward and under side 1^a to receive the trigger-plate 2, upper trigger extension 3, sear 4, and spring 5, and a smaller triangular mortise 1^b in the stock receives the rear foot of the trigger-guard 6, which latter is securely held to the stock by a wood-screw 7 and is secured to the trigger-plate 2 by a stud-screw 6^a made integral with the forward end or foot of said trigger-guard.

The forward end of the stock 1 is cut square off, and a breech-barrel hub-block 8 is fixedly secured thereto and provides a screw-threaded hub 8^a, upon which the breech-barrel 11 is fitted and by which means it may be secured to the gun-stock. A stud-pin 9, fixed into the block 8, receives the rear end of a strong steel spiral spring 9^a, which sets within the recessed end 8^b of the hub 8^a and also fits within and extends to the forward end of a hollow cylindrical plunger 10. The plunger 10 fits snugly within the cylinder-bore 12 of the breech-barrel 11, and the forward end of said barrel 11 is truly and smoothly bored to receive the plunger.

A packing-disk 10^a is secured to the end of the plunger 10 by a follower-disk 10^b and a screw 10^c, fitted through the follower and screwed into the plunger in such manner that the packing may be expanded to closely fit the air-cylinder bore 12 of the breech-barrel. The rear end of the breech-barrel is slotted at 13 to receive the jaw 16^a of a lever 16, which is pivotally connected with the barrel at 23^d, and longitudinal dovetailed flanges 14 14 at the forward or middle of the breech-barrel and upon either side of the slot 13 receive a pin 16^b, which projects from the end of the lever to hold the same securely between said guide-flanges and by engaging with the end of the slot 10^c therein pushing the plunger back from the forward to the back end of the air-cylinder, where it is caught by a pivoted sear 4. One end of the sear 4 is

acted upon by a spiral spring 4^a to engage with a notch 10^d in the extreme rear end of the plunger, and the other end of said sear is acted upon by the trigger to release the plunger when the barrel is in firing position and by compressing the air-cylinder 12 project the ball forcibly therefrom.

The sear 4 has a rear and upwardly-projecting shoulder-abutment 4^b, against which a push-pin 4^x, passing through the breech, presses and is acted upon at its forward end by the plunger 10 in the last part of its movement to lift the forward end of the sear against the pressure of the spiral spring 4^a and engage the said end of the sear within the notch of the plunger and thus hold the latter and press against the said spring-actuated sear 4 to engage with the trigger and thus hold the plunger securely. The pressure upon the trigger 3 pushes up the heel-plate 3^a thereon and positively presses down the forward end of the sear to release it from the rear notch of the plunger, and a set-screw 4^y, fitted in the trigger-plate, limits the movement of the trigger. The sear 4 is contained within the mortise 1^a and between the flanges 14^a, which extend rearwardly from the flanges 14, and is separated therefrom by a division-wall 15 and is pivoted thereto by a pin 4^a to rock thereon. The plate 2 covers the mortise 1^a and also the recess between the flanges 14 and is secured at its rear end to the stock by a screw 2^a and at its forward end by a bolt 2^b, fitted in a threaded hole in the division-wall 15 at the butt-end of the breech-barrel.

The forward end of the breech-barrel has parallel jaws 16^c, which receive the butt-end of the gun-barrel 17, which is pivotally secured thereto by a pivot-pin 18, passing through them at a suitable distance from the rear end of the gun-barrel, by which means the latter may break or be turned from alignment with the breech-barrel and operate the lever 16, as shown in Fig. 3, to push back the spring-actuated plunger ready for the next discharge. The gun-barrel is held securely in its place against the forward end of the breech-barrel and in alignment therewith by means of a spring-bolt sight 19, fitted upon a recessed block 20, fixed to or made integral with the breech-barrel. The bolt 19^a of the bolt-sight is dovetailed and is held securely in place between two corresponding flanges 20^a by a cap-plate 21 and screw-bolts 21^a, and the sight 19^b of the sight-block is pressed against at its rear side by a spiral spring 22, fitted into the rear end of the recess in the block 20 to hold the bolt 19^a over the end of the gun-barrel and thus hold the latter firmly in alignment with the breech-barrel.

The breech of the gun-barrel is fitted on its under side with a block 23, solid at its rear end to receive the pivot-pin 18, which holds it to the breech, and a recess 23^a at its forward end to receive the forward end of lever 16, which is connected therewith by a pivot-

pin 23^d, thus allowing the lever to fold up closely against the under side of the gun when the gun-barrel is in working position.

The gun-barrel 17 is bored to receive an inner shell 17^a and is partly enveloped with a thinner shell or skein 24, securely brazed thereon, creased slightly below its middle diameter and formed into a parallel supplemental magazine-cylinder 24^a, extending the entire length of the gun-barrel and serving to hold the balls which are dropped one at a time into the cupped recess 11^a in the forward end of the breech-barrel and when in working position directly in line with the bore of the gun-barrel. This is effected in the following-described manner: The rear end of the block 23 or face of the breech end of the barrel is recessed at 23^b to receive a cut-off plate 25, pivoted at its lower extremity to said block by a screw 25^a, the said plate 25 having a flat bottom edge which is pressed against by a plate-spring 26, secured by a screw 26^a to the under side of the barrel to hold the throat of the cut-off plate angularly across the bore of the magazine-barrel, as shown in Fig. 6, with a lug 25^b upon said cut-off plate which will project outside the face of the adjacent lug, when the breech of the gun-barrel is thrown up and which will be pushed within said face when the breech of the barrel is pressed down below the upper edge of said face and bring the bore of the magazine-barrel and the open throat of the cut-off plate to coincide and thus allow a ball to pass from the magazine-barrel into the cup-recess 11^a in the forward abutting-face of the breech-barrel, a further downward movement of the barrel serving to bring the said cup-recess 11^a with the ball contained therein truly opposite the bore of the gun-barrel, at which juncture the spring-sight bolt will be sprung across the top of the barrel and lock the breech securely, ready to discharge the ball.

The operation of the gun as a whole will be readily understood, as the operation of each of the parts has been particularly described, and needs no further description.

I claim as my invention and desire to secure by Letters Patent—

1. In an air-gun, a breech-barrel, having a slot in its lower side, a tubular plunger placed therein, a spring for driving the plunger forward, a sear which engages with the plunger, the pivoted gun-barrel, combined with a lever pivoted to the gun-barrel at its forward end, and connected at its rear end to the rear end of the plunger, and provided at its rear end with a cross-pin, and a guideway formed under the breech-barrel for the pin to slide in, substantially as described.

2. In an air-gun, the combination with the stock, of the hub-block, the breech-barrel having an air-chamber at its forward end, a spring-actuated plunger-cylinder fitted therein, a longitudinal slot at the under side of the said plunger-cylinder, parallel grooved guide-plates upon the under side of the breech-bar-

rel, a gun-barrel pivoted to the breech-barrel and a lever pivoted to the breech-barrel and having a head fitted to slide and be retained between said guide-plates, substantially as described.

3. The breech, and a push-pin which passes therethrough, combined with the plunger, the sear having a shoulder against which the pin presses, a spring placed under the rear end of the sear to disengage it from the plunger when

released by the trigger, and the trigger, substantially as shown.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

THEODOR HORNHAUER.

Witnesses:

HERNANDO DE SOTO,
EMIL REICHELT.