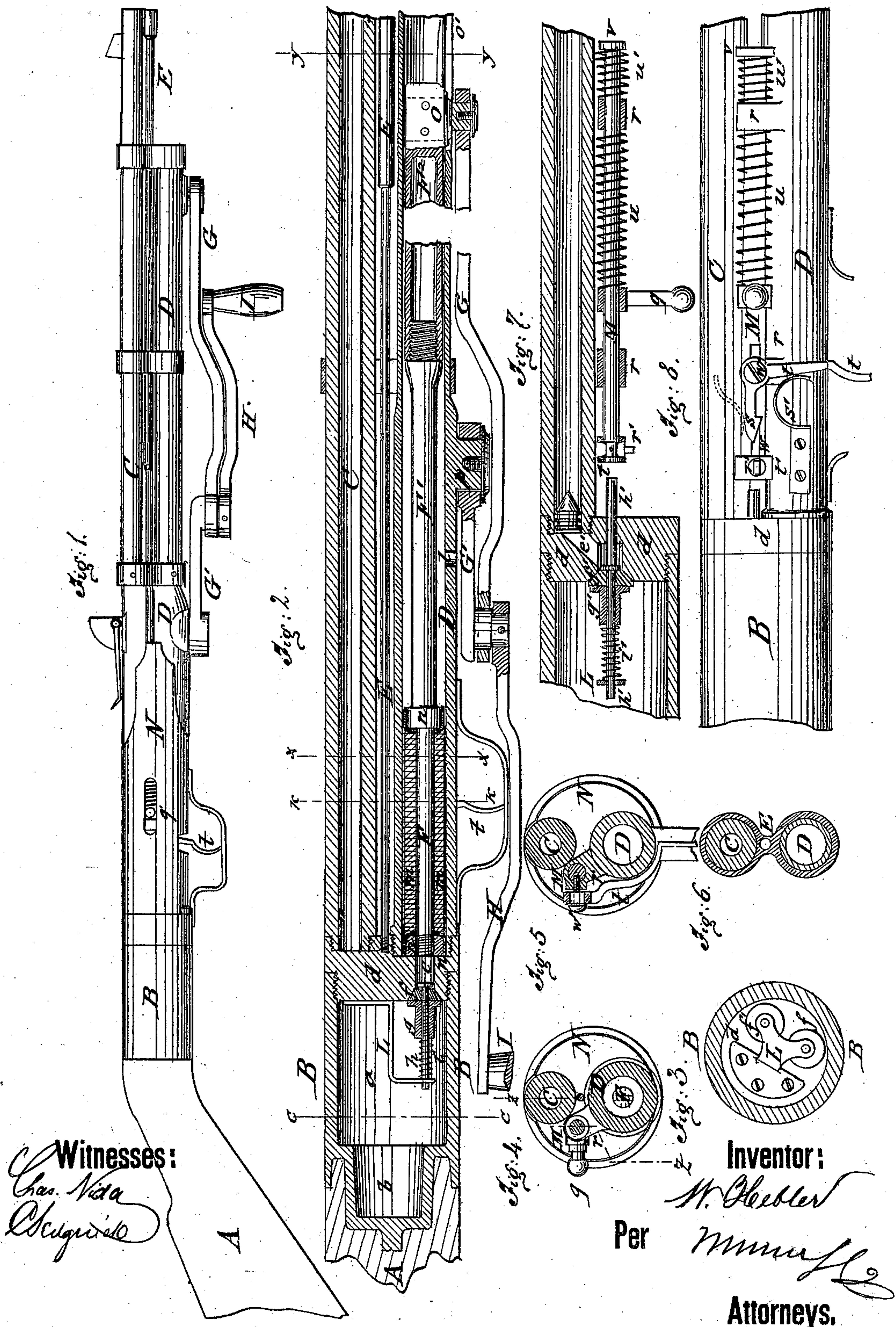


W. HEBLER.

AIR-GUN.

No. 173,540.

Patented Feb. 15, 1876.



UNITED STATES PATENT OFFICE.

WILHELM HEBLER, OF NEW YORK, N. Y.

IMPROVEMENT IN AIR-GUNS.

Specification forming part of Letters Patent No. **173,540**, dated February 15, 1876; application filed August 11, 1875.

To all whom it may concern:

Be it known that I, WILHELM HEBLER, of New York city, in the county and State of New York, have invented a new and Improved Air-Gun, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side view of my improved air-gun; Fig. 2, a vertical longitudinal section of the same, with parts cut off. Figs. 3, 4, 5, and 6 are vertical transverse sections on the lines *c c*, *k k*, *x x*, and *y y* of Fig. 2, respectively. Fig. 7 is a detail horizontal section on line *y y* of Fig. 4 of the lock mechanism; and Fig. 8 is a detail side view of the lock mechanism.

Similar letters of reference indicate corresponding parts.

The object of my invention is to furnish for the use of sportsmen and lovers of target-shooting an improved air-gun, designed to reach the range of an ordinary rifle.

My invention consists in a novel combination and arrangement of valves and other devices, in connection with the air-compressing chamber, as hereinafter described.

In the drawing, A represents the stock of the air-gun; B, the air-compressing chamber; C, the barrel; D, the air-cylinder, and E the ramrod. The barrel C, air-cylinder, and rod are arranged in front of the air-chamber B vertically, one below the other, as shown in the drawing. The air-cylinder D guides the piston F, with piston-rod F¹, which is operated by rotary levers G G' and crank H, having handle I. The barrel C is provided with sights, which are adjustable for the distance desired, and are also corresponding with the rotations of the crank and the degree of compression of the air in the air-chamber.

If a large amount of air be forced into the air-chamber, the expansive force of the air will drive the ball or shot as far as any other rifle.

The air-chamber B consists of a wider part, *a*, and a narrower part, *b*, which extends back into the stock. It is made of sufficient strength for the pressure of the compressed air therein, and screwed or otherwise firmly connected to the partition or socket *d*, which is perforated by channels *e e'*, which connect the air-chamber with the air-cylinder D and barrel C. These channels *e e'* are closed by two conical

valves, *f f'*, of leather or other suitable material, which are secured by collars *g g'* on pins or shafts *h h'*. These shafts *h h'* are guided by the perforated arms of support or standard L, which is screwed to socket *d*. Spiral springs *i i'* are placed between standards L and collars *g g'*, and press the valves *f f'* against the channel-openings, closing them accurately and tightly. The valve *f'* of the barrel-channel *e'* is placed sidewise of valve *f*, so that the channel *e'* extends obliquely through socket *d*, to connect with barrel C. The shaft *h'* of valve *f'* extends through the socket *d*, and projects beyond it, to be operated upon by the lock mechanism on discharging the gun. The ball or shot is set into the barrel C by the ramrod E in the usual manner. The air-cylinder D has an opening, *l*, through which the air enters on the upward stroke of piston F as the same passes beyond it. The downward stroke compresses the air, and forces the same, on the receding of valve *f*, into air-chamber B. The piston F is made of a series of layers, *m*, of leather or other packing, firmly wedged between the shoulders *n*. The piston-rod F¹ has a tubular extension, F², to the head *o* of which is suitably pivoted the lever *g*. The projecting part of head *o* slides in slot *o'* of air-cylinder. The shorter lever G' is pivoted at *p* to the lower side of air-cylinder D. To its end are connected lever G and crank H, so that by the rotation of the latter the strokes of the piston are produced, and the air accordingly forced into the air-chamber B. The lock mechanism is secured sidewardly to projecting lugs *r* of the air-cylinder D, which carry the lock-bolt M. A short handle, *q*, of bolt M, projects sidewise, and serves to press the same forward till a hook-shaped arm, *s*, of trigger *t*, which is suitably acted upon by spring *s'*, locks over a lug, *r'*, of the broad head *t'* of bolt M. The bolt M passes, by means of slot *m*, over pivot *m'* of trigger *t*. Spiral springs *u* and *u'* are placed between handle *q* and lug *r* and lug *r'* and the shoulder *v* on bolt M, so that on the release of the trigger-arm the bolt M is pressed forward by the stronger spring *u* till it strikes the valve-pin or shaft *h'*, being then instantly withdrawn again by the second spring *u'*. The valve *f'* is therefore momentarily disconnected

from channel *c'*, and, by the action of the air, the ball discharged. The air-chamber is then charged again with compressed air by the turning of the crank-levers, another ball inserted, and the trigger set, which operations are attended to easily and quickly, as no parts need to be separated.

The lock mechanism is protected by a casing, N, which is slotted for lever *q*.

As the lock mechanism will be patented separately, no claim is here made to it.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the piston F, shafts *h h'*, valves *f f'*, and springs *i i'*, with air-chamber B, as shown and described.

2. The air-chamber B, having support L for valve-shafts *h h'* and socket *d*, with channels *e e'*, for the purpose set forth.

3. In combination with air-chamber B, the valves *f f'*, having collars *g g'* and springs *i i'*, as described.

WILHELM HEBLER.

Witnesses:

DANIEL HUG,

PAUL GOEPEL.