

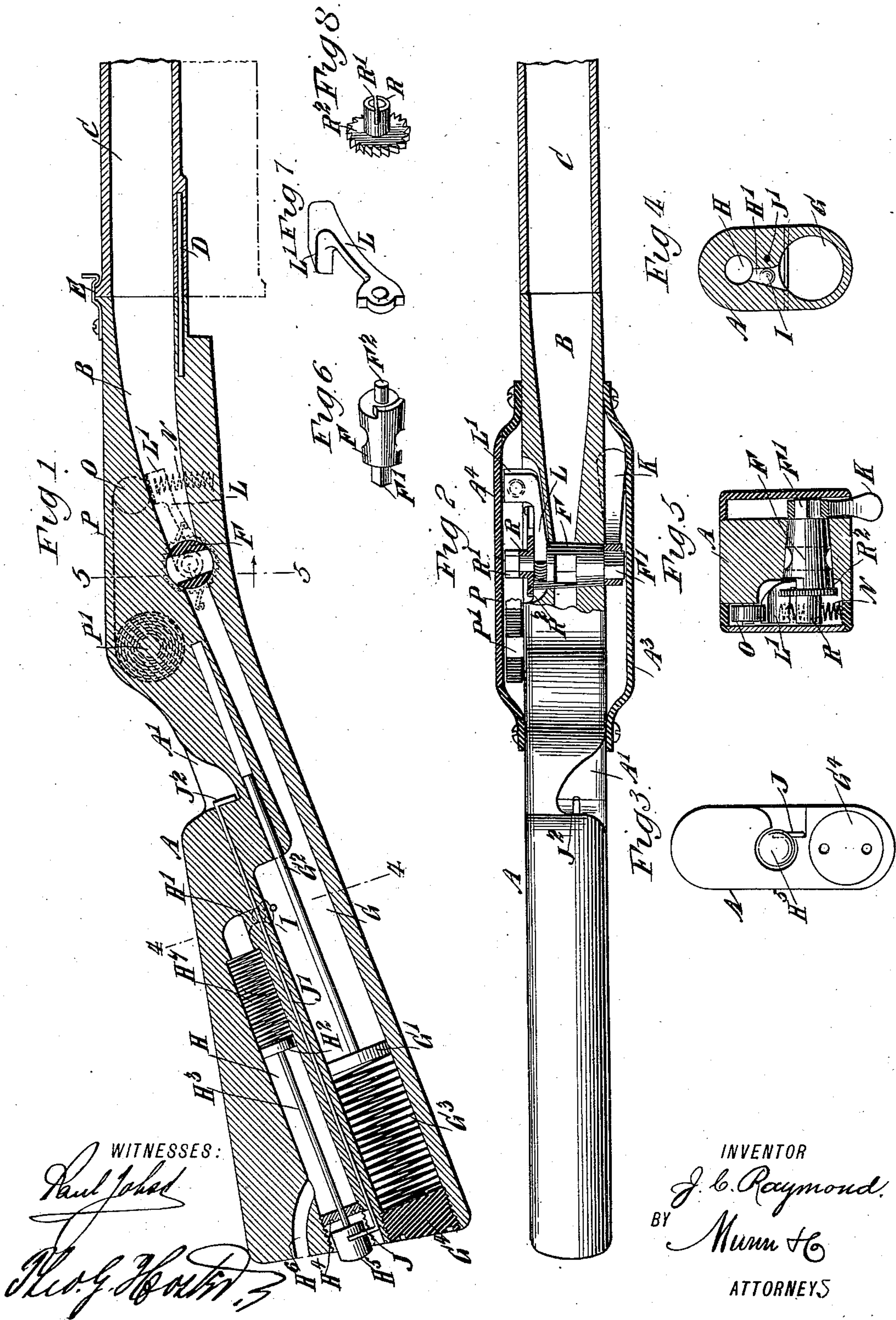
(No Model.)

2 Sheets—Sheet 1.

J. C. RAYMOND.
AIR GUN.

No. 558,841.

Patented Apr. 21, 1896.



WITNESSES:

Paul Jones
Geo. H. Smith

INVENTOR

J. C. Raymond.
BY *Mum & Co*
ATTORNEYS

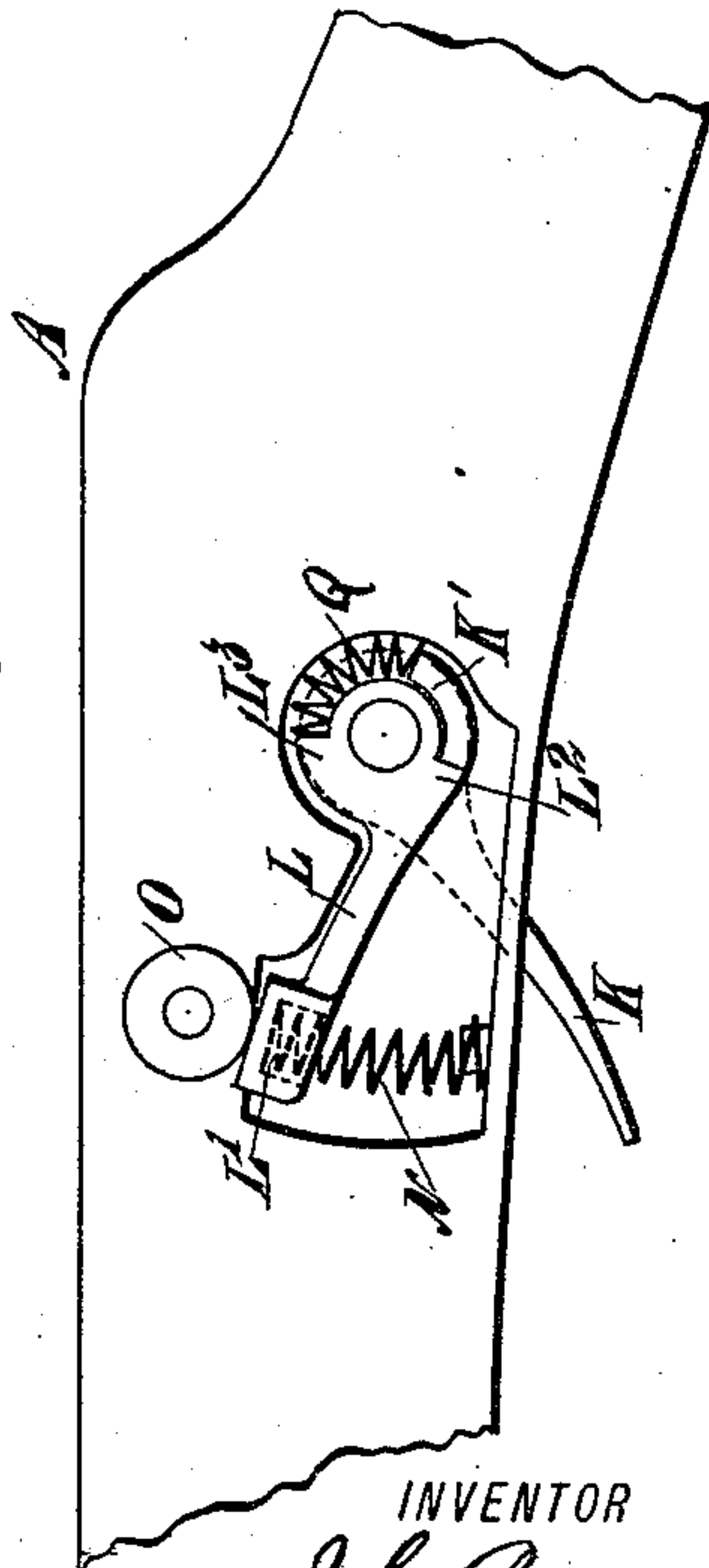
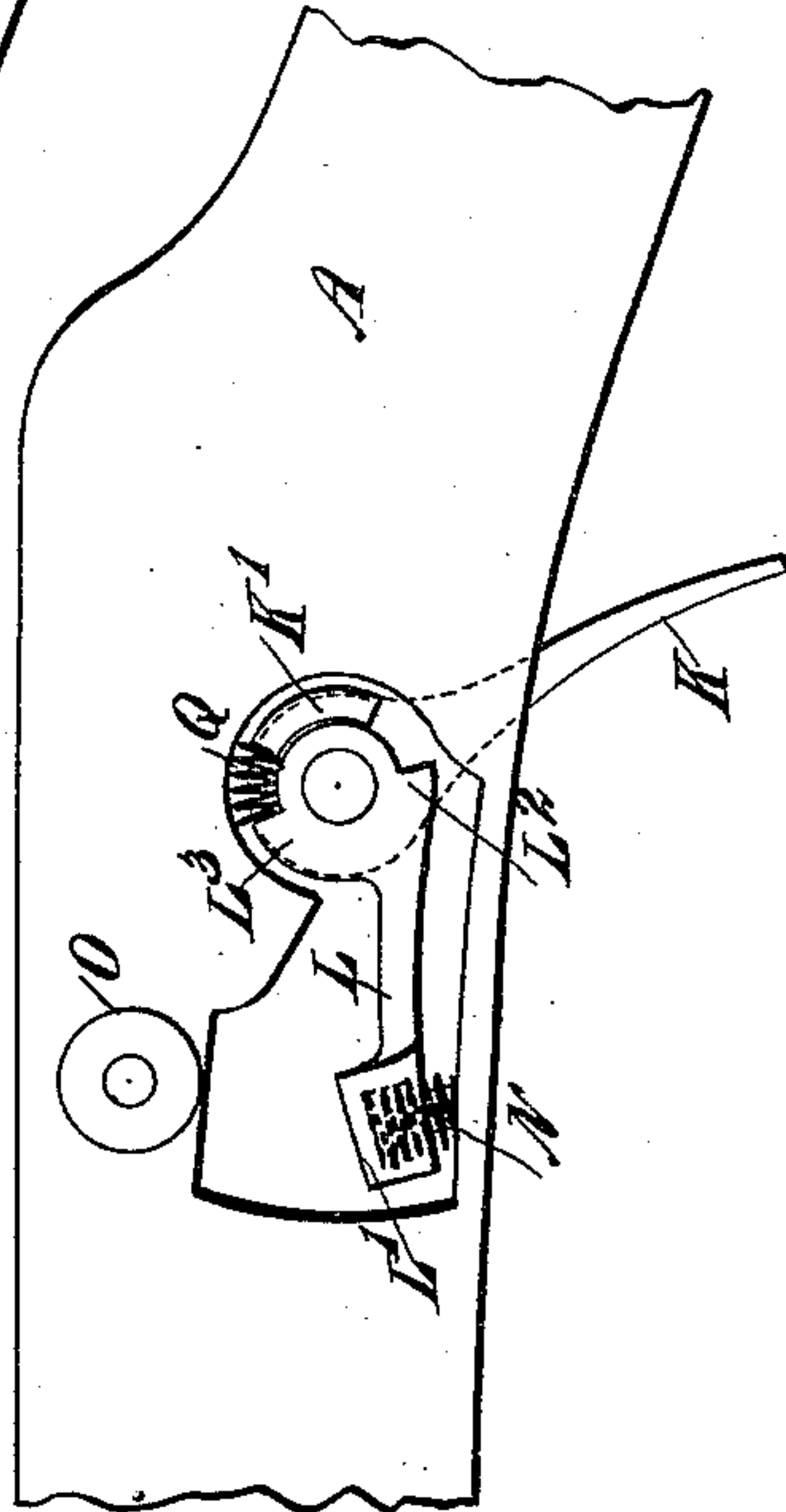
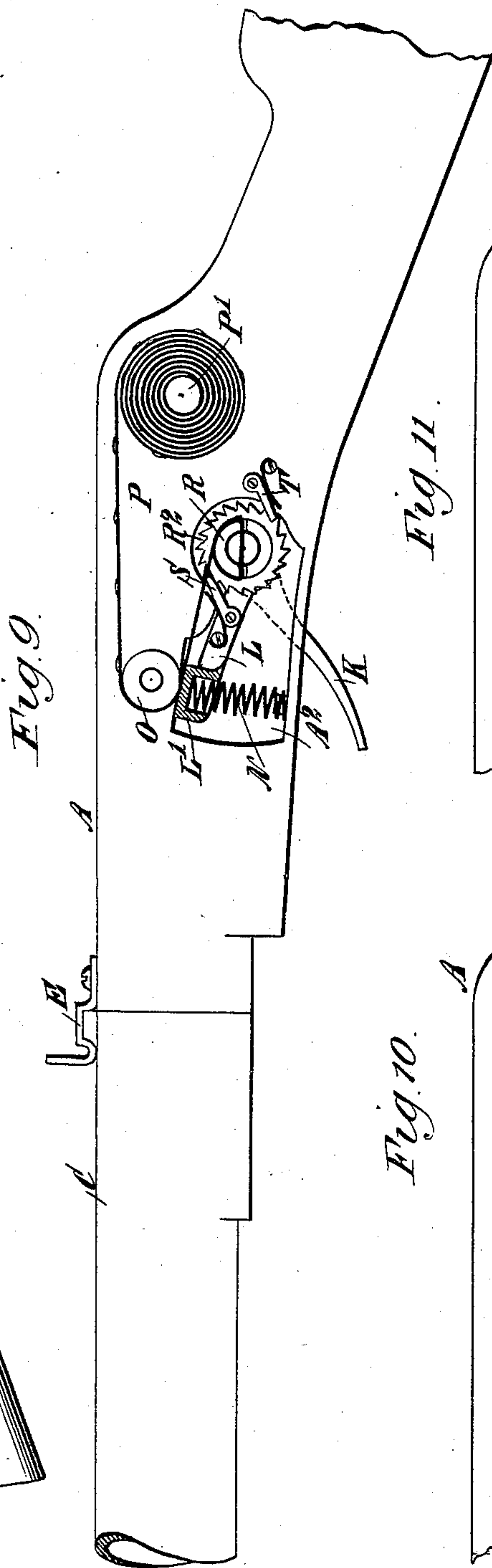
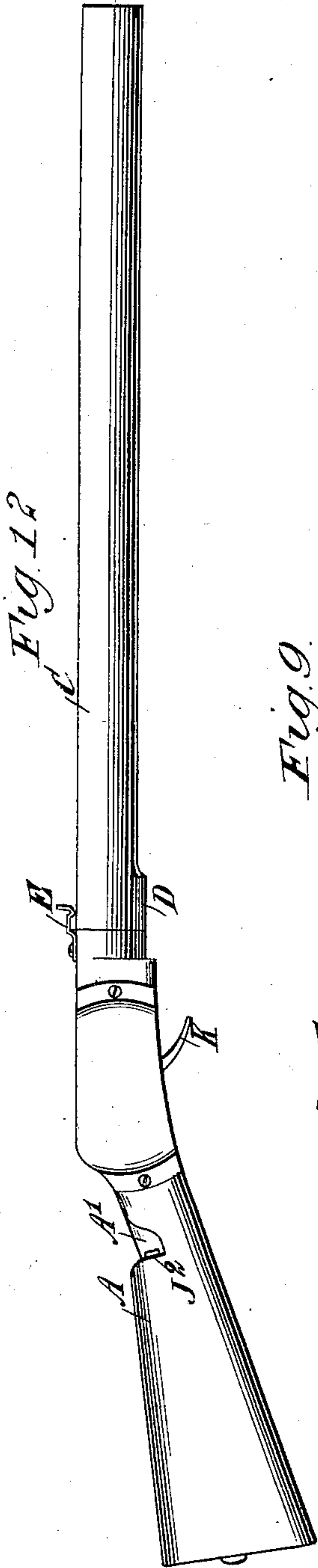
(No Model.)

J. C. RAYMOND.
AIR GUN.

2 Sheets—Sheet 2.

No. 558,841.

Patented Apr. 21, 1896.



WITNESSES:

Paul J. Hoad
Thos. J. Hoad

INVENTOR

J. C. Raymond.
BY Munn & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN CARLYLE RAYMOND, OF NEW YORK, N. Y.

AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 558,841, dated April 21, 1896.

Application filed November 14, 1895. Serial No. 568,962. (No model.)

To all whom it may concern:

Be it known that I, JOHN CARLYLE RAYMOND, of New York city, in the county and State of New York, have invented a new and Improved Toy Gun, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved toy gun, more especially designed for propelling snow or other loose material by means of compressed air, at the same time making a noise by exploding a fulminate or the like.

The invention consists principally of a compressed-air reservoir and a valve for permitting the air stored in said reservoir to pass to and act on the charge and propel the latter through the barrel, at the same time making a noise by producing an explosion.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of the improvement. Fig. 2 is a plan view of the same with parts in section. Fig. 3 is an end elevation of the stock. Fig. 4 is a transverse section of the improvement on the line 4 4 of Fig. 1. Fig. 5 is a similar view of the same on the line 5 5 of Fig. 1. Fig. 6 is a perspective view of the valve. Fig. 7 is a perspective view of the hammer. Fig. 8 is a like view of the winding-drum for the percussion-cap strip. Fig. 9 is an enlarged side elevation of the improvement with part removed. Fig. 10 is a similar view of the same with part removed. Fig. 11 is a like view of the same with the parts in a different position, and Fig. 12 is a reduced side elevation of the improvement.

The improved toy gun is provided with a stock A, formed in its forward end with a charge-chamber B, adapted to receive the charge in the form of snow or other suitable loose material. The charge-chamber B is adapted to register with the barrel C, connected with the stock by a pivot D, to permit of turning the stock A out of alinement with the charge-chamber B, and enable the

user to pack the charge-chamber with the loose material as a charge. The barrel C, when in its forward closed position, as shown in the drawings, is locked in place by a suitable spring-catch E, held on the stock. The charge-chamber B contracts rearwardly, and is adapted to be connected at its rear end by a valve F with a compressed-air reservoir G, formed in the stock, and receiving compressed air from a hand-pump, likewise arranged in the stock. The valve F is preferably in the form of a plug-valve, and is mounted in suitable bearings in the stock and controlled from the trigger, as hereinafter more fully described.

The air-reservoir G contains a piston G', held on a piston-rod G², fitted to slide in suitable bearings in the stock A. On the outer face of the said piston G' presses a spring G³, resting on a plug G⁴, adapted to close the outer end of the said air-reservoir G.

The compressed-air reservoir G communicates by a port H' with the barrel H of the hand-pump, and in the port H' is arranged a ball check-valve I for closing the said pump-barrel port after the reservoir has been filled with a sufficient quantity of compressed air. The plunger H² of the pump is provided with a port and valve to permit air to pass in front of it, and from the plunger projects a rod H³, passing through a head H⁴, screwing in the outer end of the pump-barrel; and on the extreme outer end of said rod H³ is held a handle H⁵, adapted to be taken hold of by the operator to work the plunger H², so as to pump air into the air-reservoir G. When the handle H⁵ is drawn into an outermost position, then the plunger H² is close to the head H⁴, and air can now pass from the outside through an inlet H⁶ to the barrel H. When the plunger H² is now pushed inward, then it passes the inner end of said inlet-port H⁶ and compresses the air contained in the forward end of the barrel, the air then passing through the port H' past the valve I into the compressed-air reservoir G. A spring H⁷ presses against the plunger H² to facilitate the outward movement thereof when the pump is in use.

In order to lock the plunger H² in an innermost position, as shown in Fig. 1, I provide an arm J, adapted to engage a recess in the

handle H^5 , said arm being formed on a rod J' , mounted in the stock A and provided at its forward end with a handle J^2 , extending in a recess or cavity A' , formed in the stock, as is plainly shown in Fig. 1. By this arrangement the operator can take hold of the handle J^2 to turn the rod J' and disengage the arm J on the handle H^5 , to admit the user to operate the pump, as previously explained.

The valve F is provided at one end with a square offset F' , engaged by the trigger K , extended through a slot in the bottom of the stock A , to permit the operator to press said trigger K and open the valve F , so as to permit the compressed air from the reservoir G to pass through the valve against the charge in the chamber B , so as to force said charge through the barrel C . On the base of the valve F is formed a stud F^2 , on which is mounted to turn loosely a hammer L , pressed on at its free end L' by a spring N , set in a recess A^2 in the stock, as plainly indicated in Figs. 9, 10, and 11. The free end L' of the hammer L is in alinement with a firing-anvil O , preferably made in the shape of a roller, over which passes a tape or strip P , carrying fulminates placed equidistant apart, said strip being preferably in a roll held on a stud P' , arranged on one side of the stock A . The outer end of the strip, after passing over the anvil O , engages a slot R' on a drum R , which serves to wind up the said strip.

Now in order to impart an intermittent rotary motion to the drum R , I provide the latter with a ratchet-wheel R^2 , engaged by a spring-pressed pawl S , held on the hammer L , so that when the latter swings upward by the action of the spring N , then the pawl S turns the ratchet-wheel R^2 and the drum R , to wind up the strip P and bring a new fulminate in alinement with the free end L' of the hammer L at the anvil O , to permit the free end to fire said fulminate. A spring-pressed dog T , held on the stock A , engages the ratchet-wheel R^2 , to prevent an accidental return movement of the drum R and a consequent unwinding of the strip P .

The hammer L is moved into a lowermost or cocked position from the valve K , and for this purpose the trigger is provided with a segmental arm K' , adapted to be engaged by a shoulder L^2 , formed on the hub of the hammer L . The segmental arm K' is connected by a spring Q with a shoulder L^3 opposite the shoulder L^2 on the hub of the hammer L .

Now it will be seen that when the trigger K is drawn rearwardly from the position shown in Fig. 10 to that shown in Fig. 11, then the arm K' , by the spring Q and shoulder L^3 , causes a downward swinging of the hammer L , to compress the spring N ; and when the operator releases the trigger K , then the spring N causes an upward swinging of the hammer L , to fire the fulminate on the anvil O , as previously explained. At the same time the upwardly-swinging hammer L , by the spring Q , presses the segmental arm K' to return

the trigger K to its former normal position. (Shown in Figs. 9 and 10.)

Now it will be understood that when the trigger K is pressed rearwardly by the operator, the valve F is opened to permit the compressed air to propel the charge through the barrel C , and as the operator at this time releases the trigger K the hammer L fires the fulminate on the anvil O , whereby an explosion is produced at the time the charge passes out of the barrel and the valve F closed. It is further understood that the air-reservoir G can be made sufficiently large to contain a sufficient quantity of air for a number of shots before requiring refilling by the pump. It is also understood that the piston G' keeps up the required pressure by the action of the spring G^3 for successive shots. Suitable cover-plates A^3 and A^4 are attached to the sides of the stock for covering the working parts.

It is expressly understood that it is of great importance, as far as the practical value of the gun is concerned, that a noise (an explosion) be produced at the time the charge is propelled out of the barrel.

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

1. In a toy gun, the combination with a compressed-air reservoir, of a valve for controlling the exit of air from the reservoir, a spring-pressed trigger secured to one end of the valve, a spring-pressed hammer mounted loosely on the other end of the valve, and a connection between the trigger and hammer, whereby the hammer will be swung to compress its spring when the trigger is moved rearwardly and released, upon the release of the trigger, substantially as described.

2. In a toy gun, the combination with a compressed-air reservoir, of a valve for controlling the exit of air from the reservoir, provided at one end with a segmental arm a spring-pressed trigger secured to one end of the valve, a spring-pressed hammer loosely mounted on the other end of the valve and provided with a shoulder adapted to be engaged by the segmental arm of the valve, substantially as and for the purpose set forth.

3. In a toy gun, the combination with a stock provided with a compressed-air reservoir, a valve for controlling the exit of air from the reservoir, and a trigger for operating the valve, of a drum on which winds a fulminate strip, an anvil over which the fulminate passes, a drum to which one end of the fulminate strip is attached, a spring-pressed hammer, and means for operating the last-named drum from the hammer, substantially as described.

4. In a toy gun, the combination with a stock provided with a compressed-air reservoir, a valve for controlling the exit of air from the reservoir, and a trigger for operating the valve, of a drum on which winds a fulminate strip, an anvil over which the ful-

minate strip passes, a drum to which one end of the fulminate strip is attached, a spring-pressed hammer connected with and operated by the movement of the valve, and
5 means for operating the last-named drum from the hammer, substantially as described.

5. In a toy gun, the combination with a stock provided with an air-reservoir, of a plug-valve for controlling the exit of air from the
10 reservoir, said valve being provided with a stud projecting from one end, a trigger secured to the valve, a spring-pressed hammer loose on the stud of the valve, a drum carrying a fulminate strip, an anvil over which the
15 fulminate strip passes, a drum on which the fulminate strip is adapted to be wound, and a pawl-and-ratchet mechanism between the hammer and last-named drum, substantially as described.

20 6. In a toy gun, the combination with a stock provided with an air-reservoir, of a plug-valve for controlling the exit of air from the reservoir, said valve being provided with a stud projecting from each end, a trigger se-
25 cured to one stud of the valve, a spring-pressed hammer loose on the other stud of the said valve, a drum carrying a fulminate strip, an anvil over which the fulminate strip passes,

a second drum slotted to receive the end of the fulminate strip and provided with a ratchet-
30 wheel, and a pawl carried by the hammer and engaging the said ratchet-wheel, substantially as described.

7. In a toy gun, the combination with a stock provided with an air-reservoir, and a
35 valve for controlling the exit of air from the reservoir, of a spring-pressed piston in the air-reservoir, a barrel in the stock and communicating with the air-reservoir by a valved port, a port leading into the barrel through
40 the stock, a plunger in the barrel, and a spring between the plunger and the inner end of the barrel, substantially as described.

8. In a toy gun, the combination with a stock provided with an air-reservoir, a barrel
45 communicating with the reservoir by a valved port, and a plunger in the barrel, of a rod mounted in the stock and provided with an arm for engaging the handle of the plunger for locking the plunger in its innermost posi-
50 tion, substantially as described.

JOHN CARLYLE RAYMOND.

Witnesses:

JNO. M. RITTER,
THEO. G. HOSTER.