(No Model.)

J. G. FOLSOM.

COMBINED FIRE ARM AND AIR GUN.

No. 370,329. Patented Sept. 20, 1887.

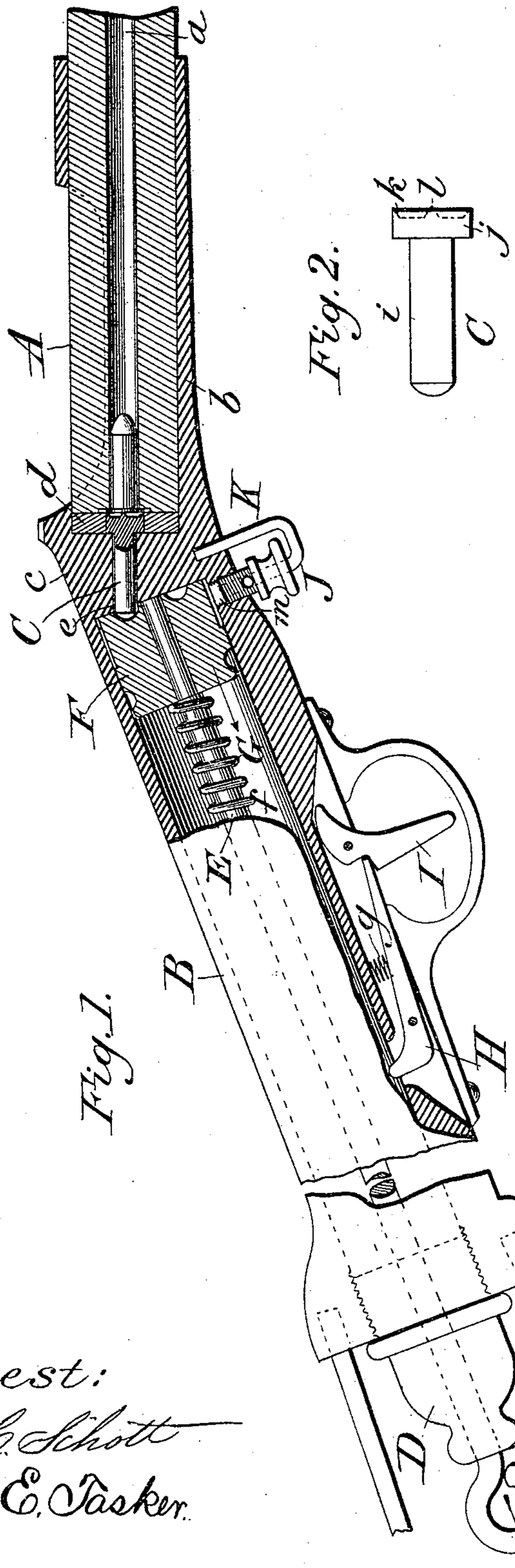

Fig. 1.

Fig. 2.

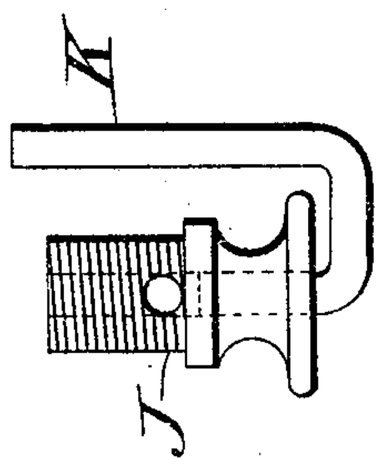

Fig. 3.

Attest:
F. H. Schott
Fred E. Tasker.

Inventor
John G. Folsom.
per F. E. Tasker.
atty.

UNITED STATES PATENT OFFICE.

JOHN G. FOLSOM, OF WINCHENDON, MASSACHUSETTS.

COMBINED FIRE-ARM AND AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 370,329, dated September 20, 1887.

Application filed April 10, 1886. Serial No. 198,407. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. FOLSOM, a citizen of the United States, residing at Winchendon, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Spring-Guns; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of devices known as "spring air-guns;" and it consists in the construction, arrangement, and combination of parts whereby a spring-gun is adapted to explode ordinary metallic cartridges, as will be hereinafter fully described.

In the annexed drawings, illustrating my invention, Figure 1 is a longitudinal section of the stock and barrel of a spring air-gun provided with my invention. Fig. 2 is a view of the removable firing-pin, and Fig. 3 is a view of the air-valve and staple with which the stock is provided.

Like letters of reference denote like parts in the several views.

A represents the barrel, constructed of any desired size, provided with a central bore, *a*, and having its rear portion inserted within a tubular socket, *b*, with which the stock B is provided in front of its breech or abutment *c*, said barrel being so inserted within the socket that its end may rest against a leather annulus or washer, *d*, and make a close joint at the breech.

Through the breech or abutment *c* and the leather annulus (which is preferably provided) is a hole, *e*, which is placed directly in line with the barrel-bore *a*, and is for the purpose of holding a removable firing-pin, C, to be hereinafter described. In the rear of the breech there is in the stock B a long cylindrical air-chamber, *f*, which has in its rear end a screw-plug or head, D, through which the rod E of a piston extends. Around such rod, and between the piston-head F and the plug D, one or more springs, G, are arranged. Furthermore, there is arranged in the stock, in the manner shown, a catch or lever, H, provided with a spring, *g*, to force it upward. A trigger, I, formed and arranged with the lever and pivoted to the stock, serves to trip the catch or lever. On drawing back the piston its head will pass and depress the catch, which instantly afterward will be forced upward by its spring, so as to stop the advance of the piston. On pulling the trigger the catch will be moved so as to set the piston free and enable the retracted spring or springs to drive it forward up to the breech with great velocity and force.

Thus far I have been describing the construction and arrangement of parts of a spring air-gun, for it is evident that the air compressed in advance of the piston-head by the velocity of the latter when the trigger is pulled will be sufficient to drive a dart or other projectile from the barrel very forcibly. My improvement, however, does not consist in the use of the device as an air-gun, but in its adaptation for use in exploding the cartridges which are used in ordinary fire-arms.

It has already been seen that the breech *c* is provided with a hole, *e*, located in line with the bore *a* of the barrel. Into this hole, the barrel being removed for the purpose, I place a firing-pin, C, of a peculiar form and pattern, as shown in Fig. 2. It consists of a shank, *i*, provided with an enlarged circular head, *j*, whose outer face is formed with a central projection, *l*, and a projecting peripheral rim, *k*. When the firing-pin is in place within the breech, the face of the head will be toward the bore *a*, and consequently toward the end of the cartridge, while the end of the shank will project into the chamber *f* a short distance, so that it may be struck by the piston-head when the latter is driven forward under the influence of the spring. It is evident, therefore, that when the gun is loaded by placing a cartridge into the rear end of the barrel, and the barrel is fixed in position within the stock, the end of the cartridge will be in close proximity to the face of the firing-pin, so that any sharp concussion between them would have the effect of exploding the cartridge.

The face of the firing-pin is formed with central and peripheral projections for adapting it for use with "rim-fire" cartridges, or those having the fulminate arranged within a cavity around the interior of the flange, and also

"center-fire" cartridges, which have the fulminate at the center of the head or base.

In the arrangement of parts heretofore described as being that of an air-gun the compression of the air was the thing desired; but in adapting the same for use as a fire-arm the violent movement of the piston is the essential thing, and it becomes necessary to provide a means of escape for the air which it compresses in advance of itself. This is done by piercing the barrel near the breech with a hole, *m*, and inserting therein a screw-plug valve, J, which is held in place when unscrewed by means of a bent rod, K, secured to the gun. This valve will therefore be kept unscrewed and open while the gun is in use as a fire-arm, although it may be screwed tight and closed to convert the weapon into an air-gun.

The operation of my improved spring-gun fire-arm will be evident from what has already been said, the chief point thereof being the sudden and violent impact of the head F upon the pin *e*, and the transmitted concussion upon the explosive projectile.

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

1. In a spring air-gun, the herein-described firing-pin provided on its forward face with a central projection and a projecting peripheral rim, substantially as described.

2. The combination, with a spring air-gun, of a removable firing-pin, C, having central and peripheral projections on its forward face and located within the perforated breech *c*, and an outlet-valve, J, in the air-chamber near said breech, whereby the gun may be used as a fire-arm, substantially as described.

3. The combination of the gun-barrel, the stock having a socket for said barrel, the perforated abutment in the forward end of the stock, the removable firing-pin having central and peripheral projections on its face and located in the abutment, the piston-chamber in the stock having a plug-piston and an air-outlet valve in its forward end, the operative springs for said piston, the catch-lever and its spring, and trigger, all arranged and operated substantially as shown and described.

4. The combination, with the barrel, air-chamber, and piston of an air-gun, the perforated abutment between the barrel and chamber, and a firing-pin seated in the aperture in said abutment, of a valve controlling an outward vent at the end of the air-chamber next the abutment, substantially as described.

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

JOHN G. FOLSOM.

Witnesses:

FRANK B. SPALTER,

ROLLO HALE.