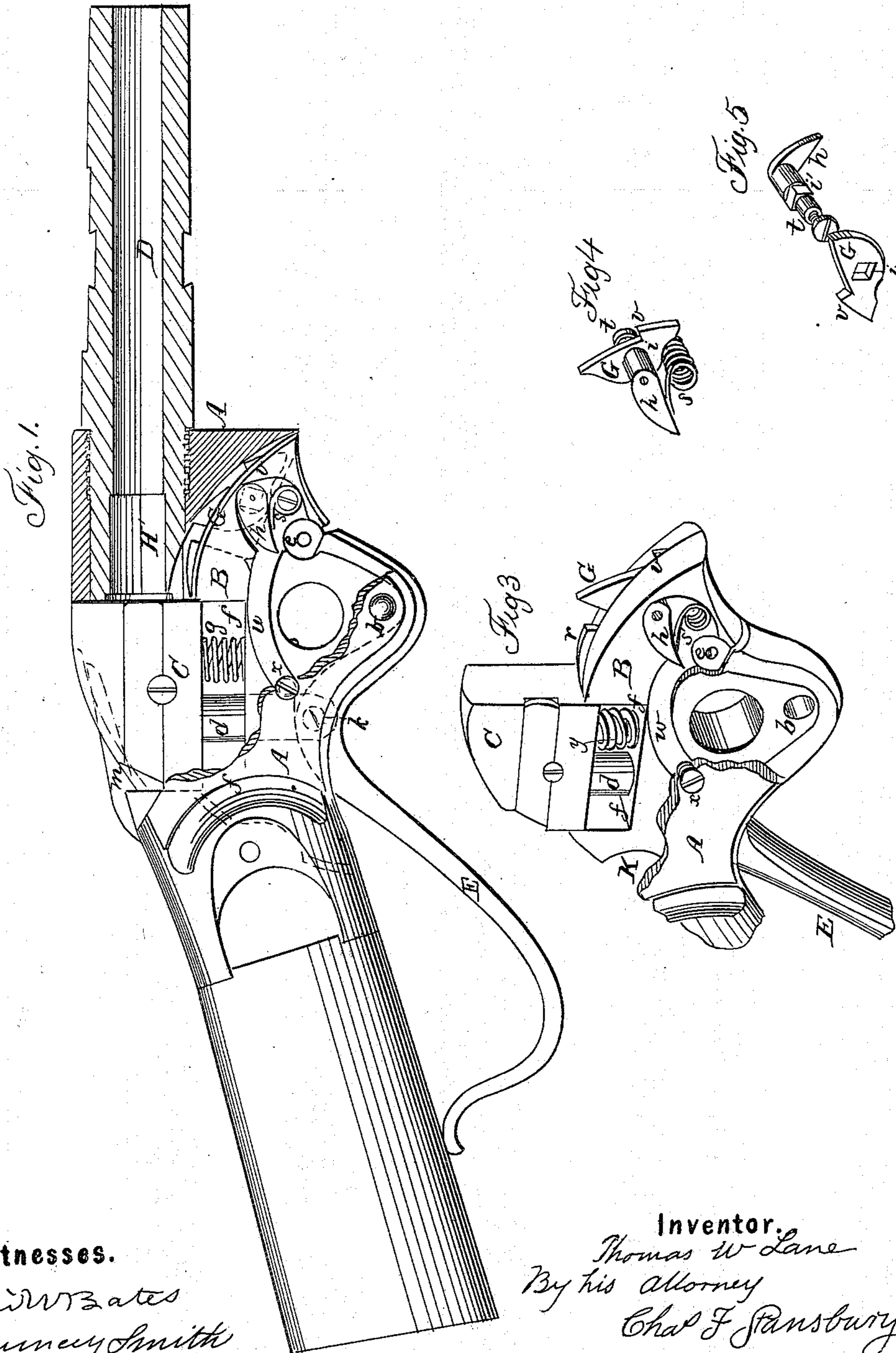


T. W. LANE.
Magazine Fire-Arm.

No. 60,910.

Patented Jan. 1, 1867.



Witnesses.
Saml W Bates
Chauncy Smith

Inventor.
Thomas W Lane
 By his attorney
Chas F Mansbury

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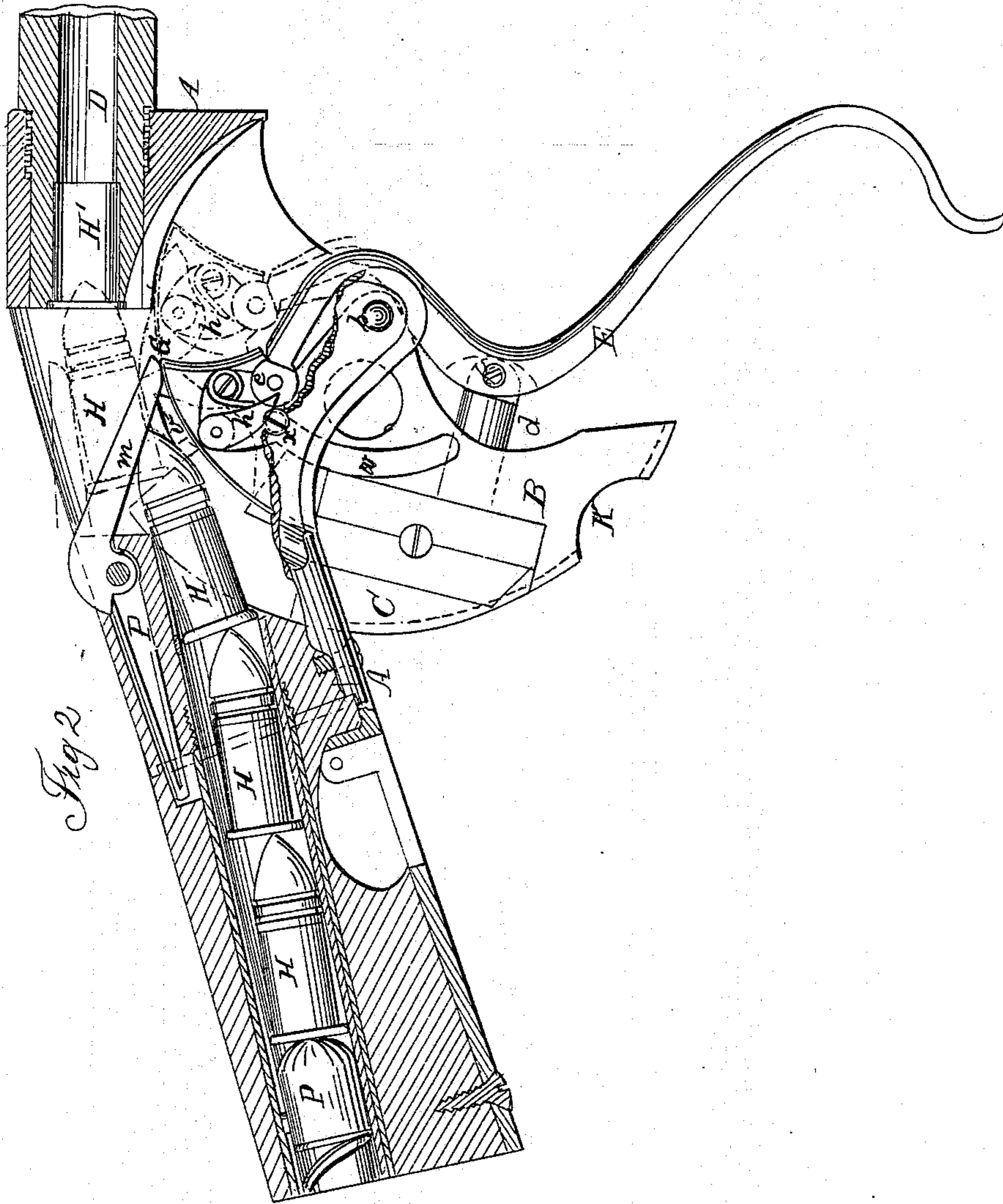


Fig 2

Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS W. LANE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
SPENCER REPEATING RIFLE COMPANY.

IMPROVEMENT IN MAGAZINE FIRE-ARMS.

Specification forming part of Letters Patent No. 60,910, dated January 1, 1867.

To all whom it may concern:

Be it known that I, THOMAS W. LANE, of the city of Boston, in the State of Massachusetts, have invented a new and useful Improvement in Shell-Drawers for Breech-Loading Fire-Arms; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the breech portion of a Spencer repeating-rifle with my improvement attached, part of the side of the receiver being removed to show the arrangement of the internal parts, and a portion of the barrel and receiver being shown in section. Fig. 2 is a longitudinal vertical section of a portion of the barrel and stock, the compound rotating breech being shown in elevation. Fig. 3 is a perspective view of the compound breech with my improved shell-drawer attached. Fig. 4 is a separate view in perspective of the shell-drawer with its shaft, arm, and spring. Fig. 5 is a similar view of the shell-drawer and its shaft detached from each other, showing the details of their construction.

The same part is indicated by the same letter of reference wherever it occurs.

This invention relates to the breech-loading repeating fire-arm known as the "Spencer repeating-rifle," and is applicable to any arm operating, as regards the rotation of the breech, on substantially the same principle.

It consists in combining with the rotating breech of such a fire-arm a shell-drawer fixed upon a shaft working in the breech, and operated by a spring counteracted by an arm affixed to the end of the drawer-shaft, which receives motion, when the breech is depressed, by contact with a pin projecting from the interior face of the receiver into a groove in the rolling breech, all as hereinafter more particularly set forth.

To enable others skilled in the art to make and use my improvement, I will proceed to describe its construction and operation, referring to the drawings, and describing so much of the mechanism of the Spencer arm as may be necessary to a full explanation of the device which constitutes my improvement.

A marks the receiver which contains the compound breech, consisting of the parts B

and C, and connects the barrel D to the stock. The breech rotates on pin *b* in a parallel-sided slot in the receiver, being operated by the guard-lever E, the depression of which first unlocks and then rotates the breech in the well-known mode.

The cartridges H may be supplied to the chamber H' either from the magazine in the stock of the gun or by inserting them by hand through the upper opening in the slot of the receiver. After the discharge of the piece it becomes necessary to withdraw from the chamber H' the empty cartridge-shell, which is often so expanded by the violence of the explosion that its retraction requires the exertion of considerable force, and the performance of this operation by a simple and efficient mechanical device has long been regarded as a desideratum in arms which employ the metallic cartridge.

In the piece B of the compound breech I cut a slit of sufficient width to receive the shell-drawer G, which I make of the shape shown in Figs. 4 and 5, and of a sufficient thickness to have all the strength that its function is ever likely to demand. It is perforated with a square hole, *i*, of a size to fit the square shoulder *i'* on shaft *t*. This shaft passes through and turns in the breech-block B. Affixed to one end of it is arm *h*, and the other end receives a flat-headed screw to keep the shaft from falling out when the breech-block is removed from the receiver. Against the lower surface of arm *h* the spring *s* operates to raise that arm and to support the drawer G in the upright position shown in Figs. 1 and 3. In the side of block B a groove, *w*, is cut in the arc of a circle, having the pin *b* for a center and the distance *bw* for its radius. A screw-pin, *x*, passing through the side of the receiver A, projects into the groove *w*, into which also projects the lower end of arm *h*, as clearly shown in the drawings. It results from this construction that when the breech is so far rotated backward that the lower end of arm *h* comes into contact with the pin *x*, that arm will compress the spring *s* and depress the drawer G till it passes below the level of the arched face of block B, from which it previously projected. The projection *v* on the lower end of G co-operates with projection

r to support the cartridge in its passage from the magazine to the chamber, and may also, if desired, serve, in conjunction with the fork in the free end of guide *m*, as a stop to control the backward rotation of the breech.

The operation is as follows: At the discharge of the piece the parts are in the position shown in Fig. 1, the drawer *G* being erect, ready to engage the flange of the cartridge-shell which remains in the chamber *H'*. As the lever *E* is depressed the breech is unlocked and rotated backward till the point of *G* comes in contact with the lowermost part of the flange of the cartridge-shell, which it withdraws from the chamber with a force due to the powerful leverage obtained by the length of the guard-lever *E*. The shell may thus be forcibly thrown out from the upper opening of the slot in the receiver. Having performed this operation, the drawer *G* is depressed so as to be out of the way of the entering cartridge by reason of the arm *h* being brought, by the further rotation of the breech, into contact with the pin *x*, as shown in Fig. 2. As the lever *E* is raised, after the discharge of the shell, to reload the

chamber, the projection *v* is in a position to co-operate with the guide *m* in supporting and directing the entering cartridge as it passes from the magazine to the chamber. This is clearly illustrated by the red lines in Fig. 2.

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

1. An oscillating retractor working in the body of the rolling breech, and which is depressed during the backward rotation of the breech by a positive movement, and elevated by a spring when the breech is rolled forward into its locked position, as described.

2. The combination and arrangement of the shaft *t*, arm *h*, groove *w*, and pin *x*, in the manner and for the purpose set forth.

The above specification of my invention signed and witnessed at Boston this 27th day of October, A. D. 1866.

THOS. W. LANE.

Witnesses:

CHAS. F. STANSBURY,
SAM. W. BATES.