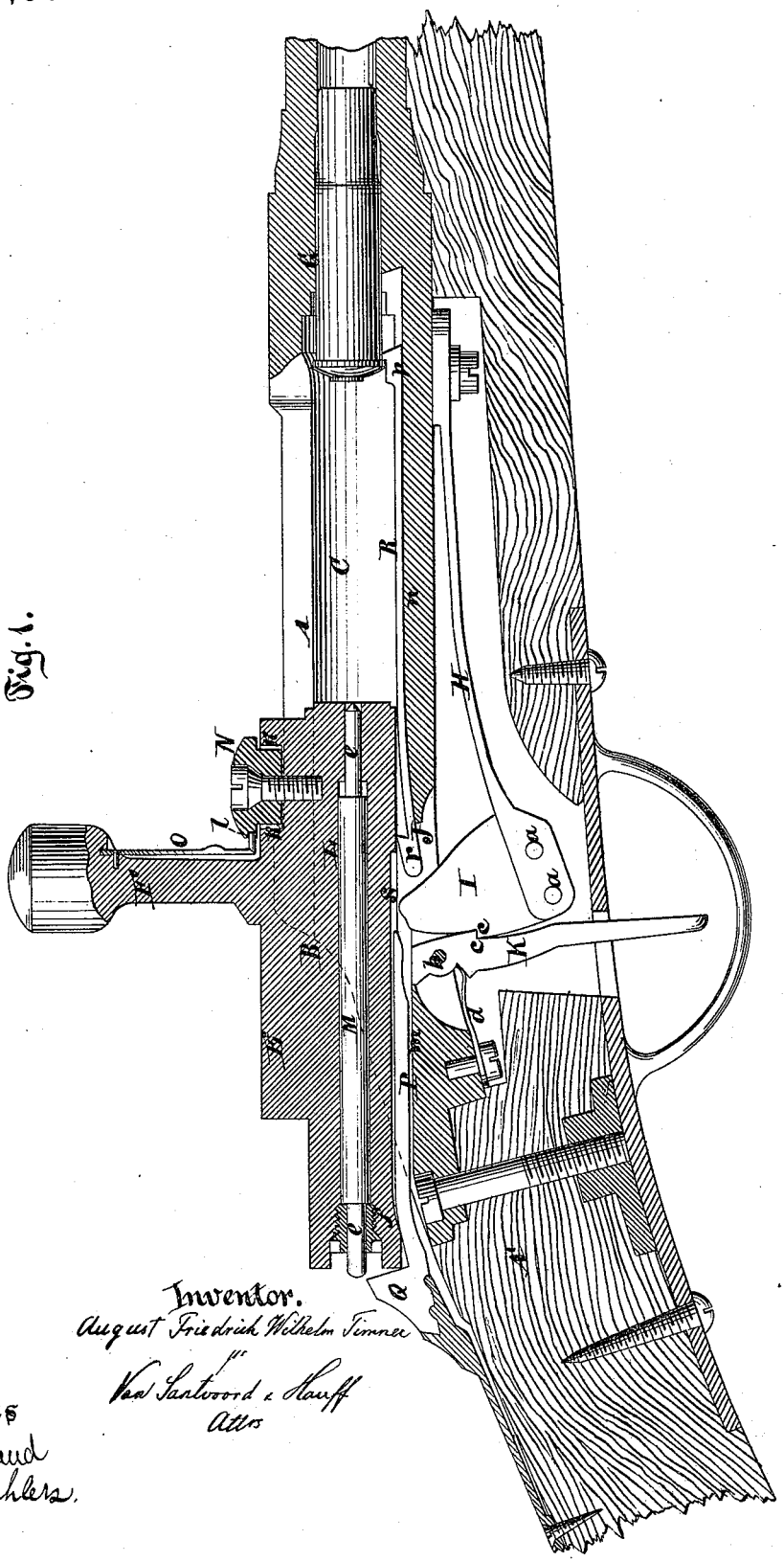
2 Sheets--Sheet 1.

A. F. W. TIMNER.

Breech-Loading Fire-Arms.

No. 165,892. Patented July 20, 1875.

Fig. 1.



Inventor.
August Friedrich Wilhelm Timner
per Van Santvoord & Hauff
Attys

Witnesses
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Chas. Wahlers.

2 Sheets--Sheet 2.

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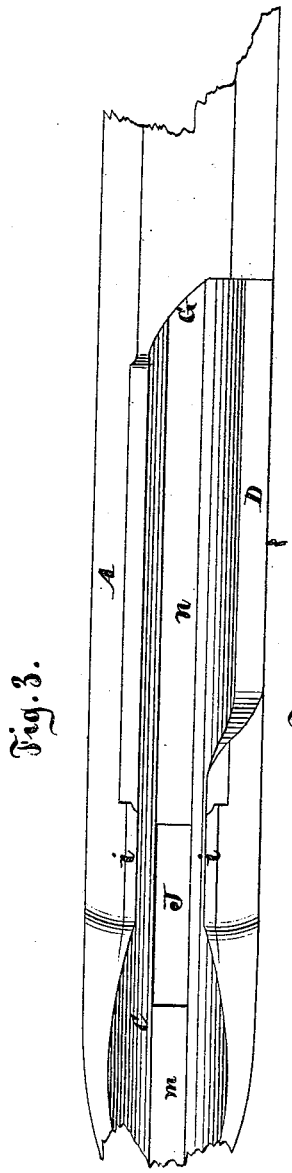

Fig. 3.

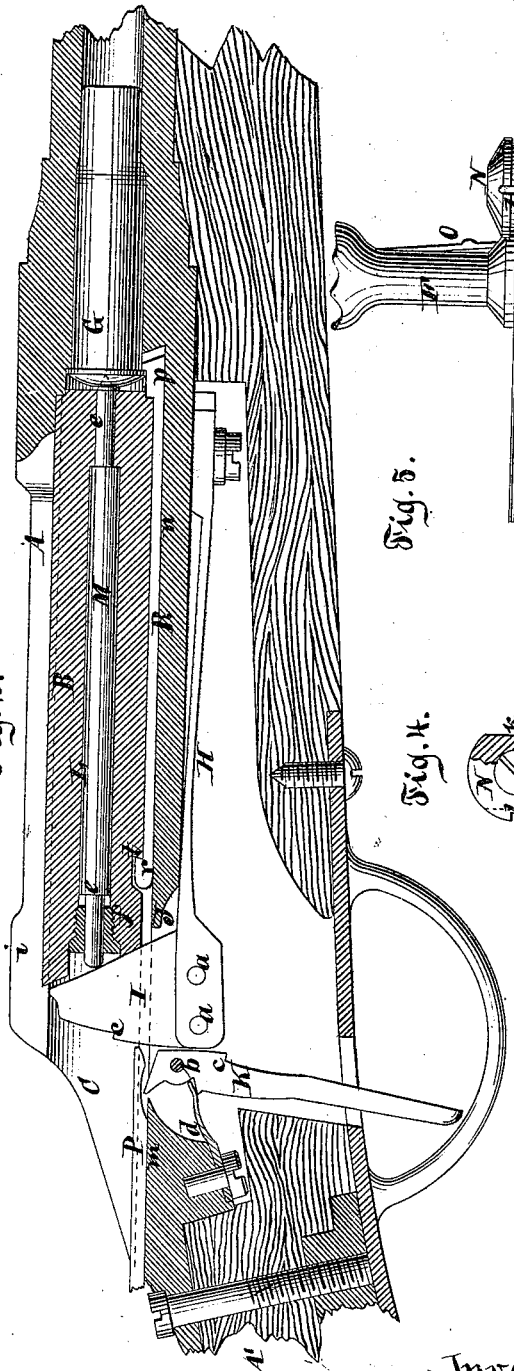

Fig. 2.

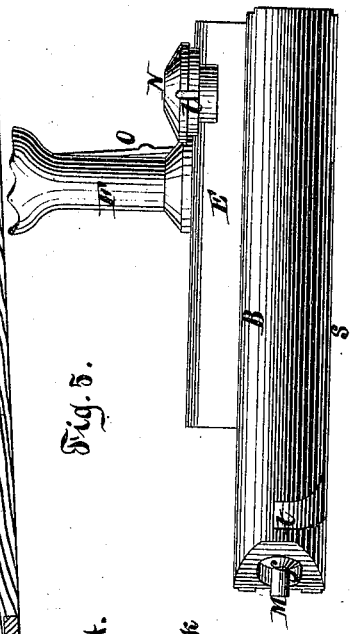

Fig. 5.

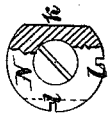

Fig. 4.

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UNITED STATES PATENT OFFICE.

AUGUST F. W. TIMNER, OF COBLENCE, GERMANY.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **165,892**, dated July 20, 1875; application filed May 26, 1875.

To all whom it may concern:

Be it known that I, AUGUST FRIEDRICH WILHELM TIMNER, of Coblence, in the Empire of Germany, have invented a new and useful Improvement in Breech-Loading Fire-Arms, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal section, showing the breech-block in its rear position. Fig. 2 is a similar section, showing the breech-block in its forward position. Fig. 3 is a top view of the breech. Fig. 4 shows a form of stop for the breech-block. Fig. 5 is a side view of the breech-block detached.

Similar letters indicate corresponding parts.

My invention relates to certain improvements in breech-loading fire-arms, the breech-block of which is locked or unlocked in the breech by a partial rotation in oblique bearings. The breech-block has the form of a hollow cylinder, and contains a suitable firing-pin.

My invention consists in a peculiar arrangement of the hammer, by the action of which the firing-pin is driven forward in order to penetrate the cartridge. The novel feature of this hammer consists in its being supported by means of a spring, whereby it acquires a tendency to act on the firing-pin, and in its being combined with a trigger, and, moreover, being arranged to pass through an opening in the breech formed in the path of the breech-block, in such a manner that when the breech-block is moved backward, in order to admit of a renewal of the cartridge in the chamber, the hammer is displaced, is caught by the trigger, and becomes cocked simultaneously with the renewal of the cartridge, said parts operating in conjunction with a slide arranged in a guide-groove in the aforesaid breech, so that by a proper adjustment the hammer may be held in a stationary position when released by the trigger, and its action on the firing-pin prevented. It consists, further, in the combination of an adjustable stop with the breech-block, and with counter-stops formed on the breech, in such a manner that when the adjustable stop is turned to one of its positions it prevents a complete withdrawal of the breech-block, while in another position it admits of such withdrawal. It consists, also, in an ejector for ejecting the spent cartridges, in the form of a slide arranged longitudinally in the breech, and beneath the breech-block, the slide having a hook which catches behind the flange of the cartridge, and having a projection which enters a channel in the breech-block. This channel has an oblique branch channel, in order to admit of the rotation or locking and unlocking of the block, and by the action of which the ejector is pushed home, or partially withdrawn from the chamber, as the case may be, when the block is locked or unlocked. The ejector is withdrawn to its full extent when the breech-block is moved rearward, and the end of the channel catches the projection of the ejector, whereby the latter is caused to partake of the movement of the block.

In the drawing, the letter A designates the breech, and B the breech-block, of my fire-arm. The breech A is fastened to the stock A′, and has a longitudinal opening, C, which admits of a to-and-fro movement of the breech-block. From the front portion of the longitudinal opening C extends a lateral recess, D, Fig. 3, which serves to receive in it the breech-block at the time of firing, and thus to hold the block in place, the breech-block being provided with a raised back, E, which is fitted to the recess. The sides of this back E, furthermore, are fitted to the sides of the longitudinal opening C of the breech. From the breech-block projects a knob, F, by means of which it may be rotated—that is to say, rotated toward or from the recess D. Part of the edges of the recess D are made oblique, as shown in Fig. 3, against which oblique edges the ends of the back E abut when the breech-block is turned in or out of the recess D. Thus, when the breech-block is turned away from the recess, it at the same time becomes partially withdrawn from the chamber G, or unlocked, while, when the block is turned toward the recess, it is pushed home, or becomes locked. To the lower and outer surface of the breech A is fastened a spring, H, of flat steel or other suitable metal, which forms the support of the hammer I, the latter being secured to the spring by means of riv-

ets *a*, or by any other suitable means. At the point of the hammer I the breech is provided with an opening, J, through which the hammer is allowed to pass and repass. A tendency is given to the hammer to force its way up through the opening J by its supporting-spring H, and the position of the hammer and of the opening is such, relatively to the breech-block B, that the hammer is brought immediately in the rear of the block and of the firing-pin, hereinafter described, when the block occupies its forward position. K designates a trigger, by means of which the hammer I is held against the action of its supporting-spring H, or is held in a cocked position. This trigger has its fulcrum in a pivot, *b*, in the breech-opening J, while both it and the hammer I are provided with catches *c c*, which interlock with each other when the hammer is moved downward, and by this means the hammer becomes cocked.

The trigger is subjected to the action of a spring, *d*, which has a tendency to push the same toward the hammer, and thus the interlocking of the catches *c c* is insured.

The hammer is moved downward by the action of the breech-block B, when the latter is slid to its rear position, inasmuch as the opening J, through which the hammer protrudes, is formed directly in the path of the breech-block. Thus, when the block is moved backward, and again moved to its forward position, the hammer becomes cocked.

The breech-block B has a bore, L, or, in other words, has the form of a hollow cylinder, and it contains a firing-pin in the form of a bolt, M. This firing-pin is thinned at its two ends, as at *e e*, one of the ends being pointed, and the bore L is shouldered to correspond to the shape of the pin. The rear end of the bore L is closed by means of a nut, *f*, which is so adjusted as to admit of a movement of the firing-pin, and to admit of a projection thereof at either end of the breech-block.

Instead of the nut *f* other means may be used to effect its object. Thus, if the firing-pin M projects on the rear end of the breech-block B, if the latter is shut in the breech, and the hammer I is released, (a cartridge having previously been placed in the chamber G,) the firing-pin M is shot forward by the action of the hammer, and the cartridge is ignited.

The letter N designates a button secured to the back E of the breech-block. This button has a circular outline, and its diameter is greater than the width of the back E, so that the button projects beyond the sides of the back. When the breech-block is moved backward or forward in the breech, the button N slides on the longitudinal edges of the breech. This button is intended to form a stop to the complete withdrawal of the breech-block from the breech A, in connection with counter-stops *i i*, formed on the longitudinal edges of the breech. When the button N reaches the point of the counter-stops *i* in the backward movement of the breech-block the passage of the latter is interrupted, and its passage from the breech is prevented.

The advantage of this arrangement is obvious; but, for the purpose of cleaning, &c., it is desirable that the breech-block should be removable. To this end the button N is provided on opposite sides with squared portions *k*, which, by a proper adjustment of the button, may be brought parallel with the sides of the back E, and thus the breech-block is allowed to pass the stops *i i* without interruption. With the button N is combined a spring, O, which is fastened to a suitable part of the breech-block, and catches in notches *l*, formed in the circumference of the button. By this spring O the button is firmly retained in its respective positions.

The letter P designates a slide, by means of which I am enabled to intercept an upward movement of the hammer I. and to prevent its action on the firing-pin. This slide has the form of a slide, which is preferably dovetailed, and is arranged in a corresponding groove, *m*, in the breech A. By sliding the slide P forward it covers up the breech-opening J for a sufficient part of its length to debar the hammer I, notwithstanding the release of the hammer by the trigger K. By this means an accidental discharge of the arm is effectually prevented. By sliding the slide backward the hammer I again acquires its freedom of movement.

To facilitate the adjustment of the slide P it is provided with a knob, Q, which may be conveniently grasped by the hand. The knob Q forms also a stop, to the breech-block, in addition to the stops *i i* before described.

R designates the ejector of my fire-arm. This ejector, like the trigger P, has the form of a slide, and is arranged in a groove, *n*, of the breech A. The front end of the ejector is provided with a hook, *p*, which is so shaped that it forms a continuation of a shoulder formed on the inner edge of the gun-barrel when the ejector occupies a forward position, and when a cartridge is placed in the chamber G the hook *p* catches behind the flange of the cartridge. The rear part or end of the ejector has a projection, *r*, through which it receives a backward and forward movement by the breech-block. This projection *r* is fitted to and enters a channel, *s*, formed longitudinally in the under and outer surface of the breech-block. From the rear end of the channel *s* projects an oblique channel, *t*, which is so arranged relatively to the projection *r*, and to the point of the rotation of the breech-block, that when the latter is locked in the breech the projection *r* enters the branch channel *t*, and, by the screw-like action thereof, the projection on the ejector R is pushed to its forward position.

When the breech-block is unlocked the action of the oblique channel *t* in an opposite direction to the one described causes a partial withdrawal of the ejector. The ejector, however, becomes withdrawn only to its full extent when the front end of the channel *s* catches

the projection *r*, and the ejector is carried with the breech-block in its rearward movement.

What I claim as new, and desire to secure by Letters Patent, is—

1. The button N, having square edges *k*, in combination with the breech-block, and the breech having the counter-stops *i*, constructed to operate substantially as described.

2. The button N, having square edges *k* and notches *l*, in combination with the spring-catch *o*, breech-block, and the breech having the counter-stops *i*, constructed to operate substantially as described.

3. The ejector R, having the hook *p* and projection *r*, in combination with the breech A, and with the breech-block B, having the channels *s* and the oblique channel *t*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of March, 1875.

AUGUST FRIEDRICH WILHELM TIMNER.

Witnesses:
FRANZ WIRTH,
FRANZ HASSLACHER.