E. M. JUDD.

Magazine Fire-Arm.

No. 34,504. Patented Feb. 25, 1862.

Fig. 1.

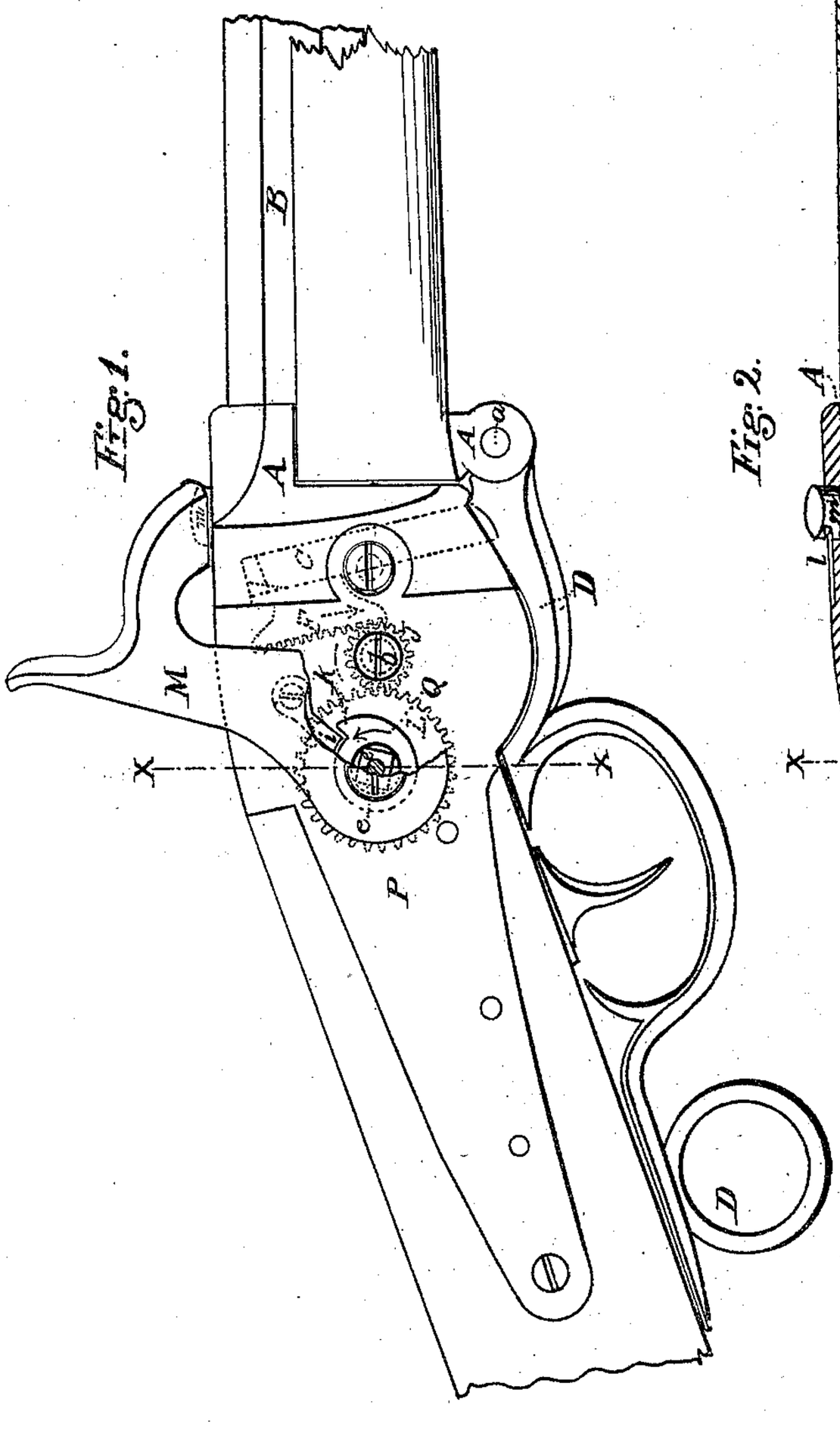


Fig. 2.

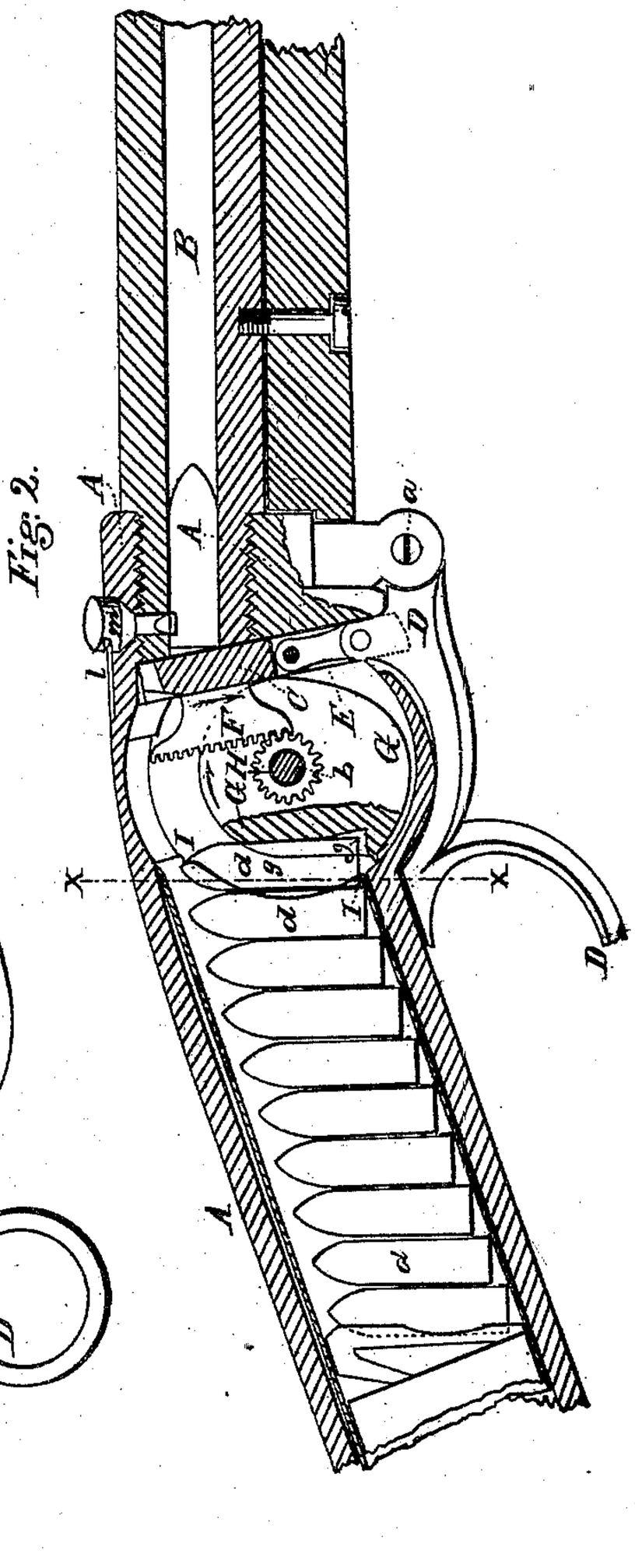
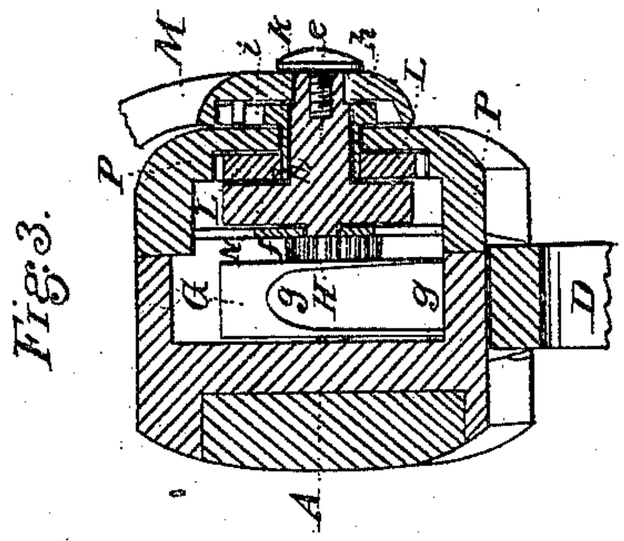


Fig. 3.



WITNESSES:

J. W. Coombs

G. A. Reed

INVENTOR:

E. M. Judd

per Munn & Co

Attorneys

UNITED STATES PATENT OFFICE.

EDWARD M. JUDD, OF NEW BRITAIN, CONNECTICUT.

IMPROVEMENT IN REPEATING FIRE-ARMS.

Specification forming part of Letters Patent No. **34,504**, dated February 25, 1862.

To all whom it may concern:

Be it known that I, EDWARD M. JUDD, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Repeating Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of the breech part and portions of the stock and barrel of a rifle with my improvements. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a transverse section of the same in the line *x x* of Figs. 1 and 2.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to effecting the loading at the breech from a magazine of cartridges in the stock of the fire-arm by the act of withdrawing a slide by which the breech is closed for firing.

It consists, first, in certain means, operating, in combination with the said slide, to transfer the cartridges one at a time from the magazine to the barrel.

It also consists in certain means operating, in combination with the said slide and the loading apparatus, for the purpose of effecting the cocking of the hammer, that the loading and cocking operations may be effected by the movement of the trigger-guard lever.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A is the breech-frame, having the barrel B screwed into it, and being secured to the stock by screws in a suitable manner. C is the breech-slide, fitted to suitable guides in the sides of the frame A, and operated to open and close the rear end of the barrel by means of a trigger-guard lever, D, which works upon a fulcrum-pin, *a*, secured in the lower part of the frame A, the connection of the said slide and lever being made by a stirrup, E. Upon the back of the slide C there is formed or rigidly secured a toothed rack, F, which serves to operate the loading and cocking devices.

G is what I will term the "loader," composed of an eccentric or cam-like plate, of a width greater than the diameter of the bore of the fire-arm, having a recess, *g*, in its periphery for the reception of the cartridges from the magazine. This loader works upon a fixed pin, *b*, which is placed transversely in the breech-frame A, and it has firmly secured to it on one side a toothed pinion, H, which gears with the rack F on the breech-slide. By the movement of the slide C, produced by the trigger-guard lever, the rack F is caused to act upon the pinion H in such manner as to turn the loader on the pin *b*.

When the trigger-guard lever is close up to the stock and the slide C is closed, as shown in Fig. 2, the recess *g* in the loader is opposite to the magazine I, that is provided in the stock, and the foremost cartridge enters the recess *g* in the loader; but the act of withdrawing or opening the breech-slide by means of the lever D causes the loader to turn in the direction of the arrow shown upon it in 2, and to carry round the said cartridge into the chamber of the barrel. To permit this operation the breech-slide must move down some distance beyond the position in which it opens the chamber, as the movement of the loader has to be continued after the chamber has been opened.

The cartridges *d d* are arranged in the stock in a nearly upright position, side by side, as shown in red outline in Fig. 2, and it is in permitting such an arrangement that one great advantage of my invention consists, for with such arrangement a much larger number of cartridges can be contained in the magazine than when they are arranged end to end therein. The cartridges are fed forward to the loader by a spring in the back of the magazine, and the front one always rests against the back of the loader; and when the loader is moved back by the closing of the breech after loading, a new cartridge is pushed into its recess *g*, in readiness to be pushed forward into the barrel when the next opening movement of the breech takes place.

The cartridges which I propose to use in connection with the above-described means of loading have metallic cases, and a metallic priming is contained in a recess formed within and around the rear portion of the case. The hammer acts upon the priming through a pin,

m, working through a hole provided for it in the frame A and the barrel, and a spring, *l*, is applied to this pin to draw it back a little way after the action of the hammer, for the purpose of preventing it from interfering with the loading.

Besides the pinion H there is a second pinion, J, secured to the loader, for the purpose of effecting the cocking of the hammer by the opening movement of the breech-slide. This pinion J gears with a spur-gear, L, which is carried by a sleeve, *h*, which is loose on the arbor *e*, to which the hammer M and tumbler N are both firmly secured, the said arbor turning in one bearing in the sleeve *h* and in another bearing in a plate, *f*, screwed to the lock-plate P, on the inside thereof. The sleeve *h* works in a bearing in the lock-plate P. All the parts of the lock and the spur-gear L are attached to the lock-plate, so as to be all capable of removal with the said plate, and the construction of the lock is essentially the same as that of an ordinary muzzle-loading fire-arm. The gear L fits close against the interior of the lock-plate in a recess provided for it therein; and the sleeve *h*, to which it is secured, has also fast upon it a dog, Q, arranged outside of the lock-plate and within a recess formed in the inner side of the hammer. This dog, which is represented in Fig. 1 as exposed to view by breaking out part of the hammer, is constructed and arranged to act upon a tooth, *i*, which is rigidly secured to the hammer within the above-mentioned recess.

The opening movement of the breech-slide causes the pinion J to turn with the loader in the direction of the arrow shown upon it in Fig. 1, and causes the said pinion to turn the gear L and dog Q in the opposite direction, and so cause the tooth *k* of the dog to press back the tooth *i* of the hammer, and thereby throw back the hammer itself to the position of full-cock. When the lever D is moved back again to close the breech the dog *k* moves back again without interfering in any way with the lock. These means of cocking the hammer by the act of opening the breech-slide do not interfere with the cocking by applying the hand directly to the hammer, in the way common to ordinary muzzle-loading fire-arms.

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

1. The loader G, constructed and applied, in combination with the magazine and barrel, as herein described, and combined with the breech-slide C by means of a rack and pinion, to be operated by the act of opening the slide, substantially as herein set forth.

2. Combining the hammer with the breech-slide C and the loader G by means of a dog, *k*, tooth *i*, and a system of rack-and-pinion gearing, substantially as and for the purpose herein specified.

EDWARD M. JUDD.

Witnesses:
S. E. CASE,
WM. H. SMITH.