(No Model.)

T. YATES.

Breech Loading Ordnance.

No. 243,421. Patented June 28, 1881.

Fig. 1.

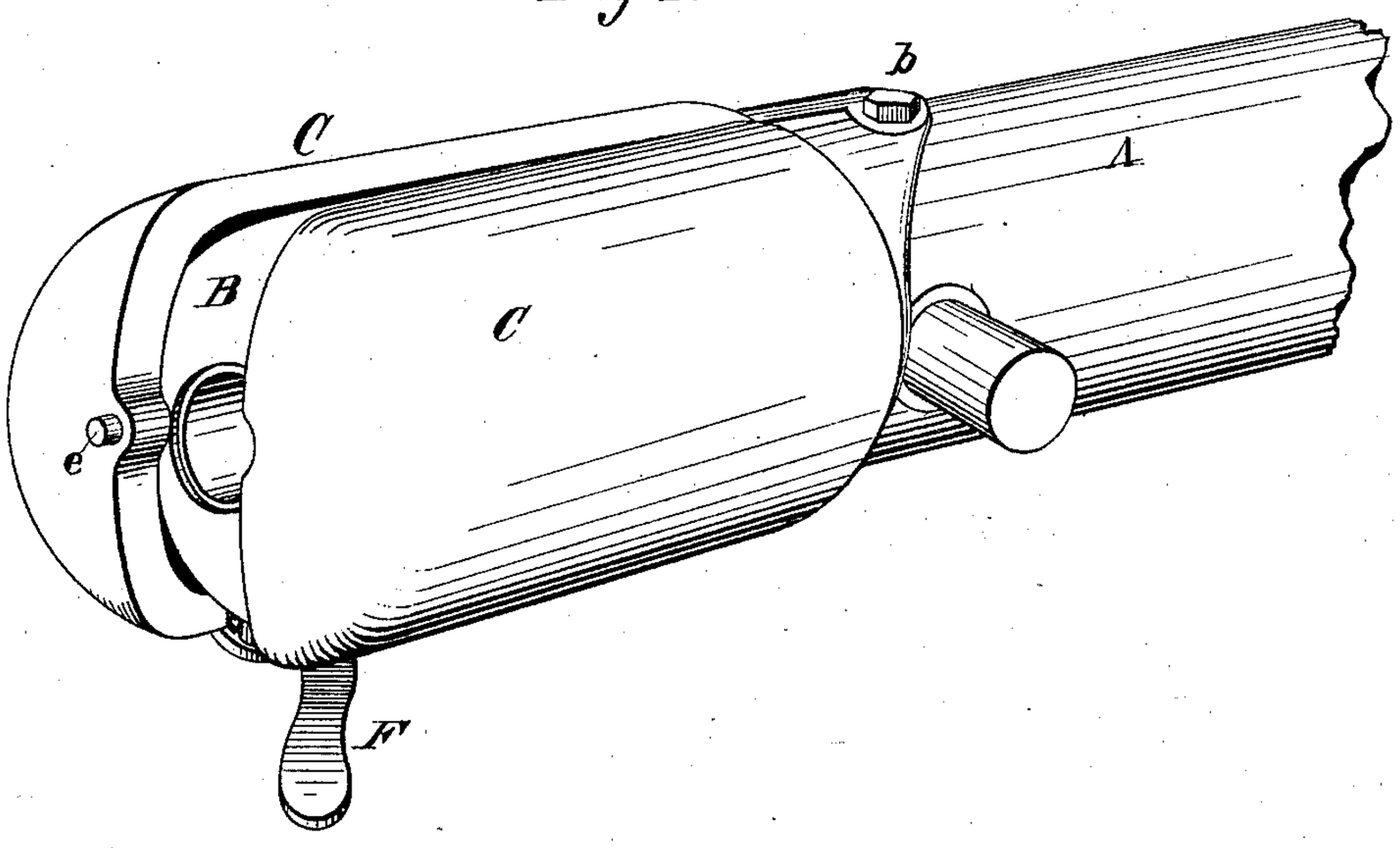
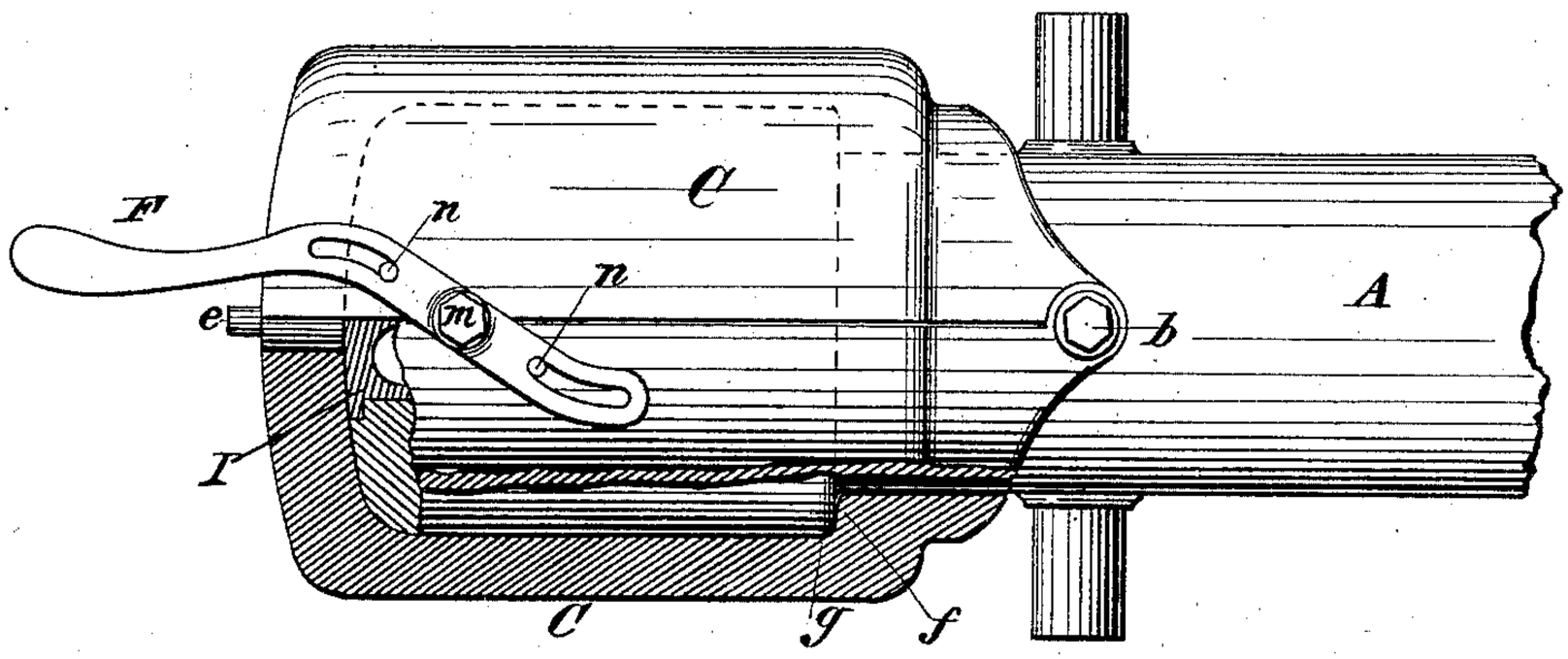


Fig. 2.



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BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 243,421, dated June 28, 1881.

Application filed May 9, 1881. (No model.)

To all whom it may concern:

Be it known that I, THEODORE YATES, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain Improvements in Breech-Loading Ordnance, of which the following is a specification.

My invention relates to breech-loading ordnance; and the invention consists in a novel construction of the breech mechanism, as hereinafter more fully set forth.

Figure 1 is a perspective view of a cannon made on my plan, with the breech open ready to receive its charge. Fig. 2 is an under face view, partly in section, showing the breech closed.

In the drawings, A represents the barrel or body of the gun, which may be made of any suitable metal and in the usual form, except that the breech portion is enlarged in diameter in such a manner as to form an annular shoulder, *g*, as represented in Fig. 2, this shoulder being located at any desired point in rear of the trunnions. The bore extends entirely through the barrel A, so that the charge can be inserted at the rear end, as shown in Fig. 1. The rear end of the bore is to be closed by any suitable device which will act as a gas-check, the one that I propose to use being made in the form of a solid-headed cartridge-shell, as represented at I, Fig. 2, and which, in the smaller-sized guns, may be made of sufficient length to contain the entire charge, if desired.

The breech-closing mechanism consists of a shell or case divided longitudinally into two parts, C C, of such a form and size as to entirely fit over and inclose the enlarged or rear portion of the gun, as shown in Figs. 1 and 2. These parts C are provided internally with an annular shoulder, *f*, which engages with or locks against the front of shoulder *g* of the gun, as represented in Fig. 2, and from thence extend forward a short distance, their forward extremities on each side being provided with a hinge-joint, through which bolts *b* pass, and by which the parts C are pivoted to the gun. One side of the shell C may be provided with a lip or flange to shut over the other, so as to exclude rain, dust, &c., said lip extending from the pivot *b* on top along back and down to the firing-pin. It may be a separate piece or strip of thin metal, or it may be made integral with the part C, as preferred.

To open and close the breech I provide a lever, F, which is pivoted upon a bolt, *m*, which projects from the under side of the barrel, near its rear end, as shown in Fig. 2, this lever being provided with a slot on each side of its pivot *b*, as shown, in each of which slots fits a pin, *n*, one of said pins projecting from one of the parts C and the other from the other part C, as clearly shown in Fig. 2.

It will readily be seen that when the hand-lever F is moved in one direction it will open the breech by causing the parts C to swing apart at their rear ends, as represented in Fig. 1, and that when moved in the reverse direction it will bring them together, as shown in Fig. 2.

The parts C should be arranged to separate far enough to entirely uncover the head of the shell I and afford plenty of room for all necessary operations in loading, removing the shell or charge, cleaning the gun, &c.

It is obvious that, instead of the slots and pins, links may be used for connecting the lever F to the parts C, and be made to operate the same.

It is designed to use a center-fire shell with this gun, and I have shown a firing-pin, *e*, seated in the rear end of one of the parts C in such a position that when the breech is closed the pin *e* will come directly opposite the center of the bore, in the proper position to ignite the central primer or cap, the pin *e* being provided with a spring to hold its point back away from the primer except when struck to ignite the charge. It is obvious that instead of this firing-pin any suitable style of lock may be substituted, and, if made detachable, it will afford a convenient means of disabling the gun and preventing it from being fired when desired.

It will be observed that, unlike most guns which have hinged or swinging breech-closing devices, I so arrange the parts C as to cause them to swing or move in a horizontal plane, and by this arrangement I prevent the liability of obstruction to the closing of the breech by the accidental entrance of any débris or material of any kind between the moving parts C C, or between them and the body of the gun, because, the opening between the parts C being in the vertical plane, there is no chance for anything to lodge or be held there, and

even the rain which may enter the joint at the top will as readily pass out below.

The operating-lever F, being located at the under side, is not only in a convenient position for use, but is also out of the way and less liable to be hit than it would be if located above or at the side. By this arrangement, also, the head of the bolt *m*, which may be of any required size, is brought into the proper position to rest upon the elevating-screw of the gun-carriage, which will thus not interfere with the movements of the parts C.

It will be seen that by this construction of the breech mechanism the strain produced by the discharge is equally distributed all around the gun on the shoulder *g*, and that by extending the parts C so as to inclose the entire breech part and bear against the shoulder all around they can be made comparatively thin and light and still have the requisite strength, especially when made of steel or bronze, as they should be; and, besides, the gun is left in a symmetrical form when completed.

This improvement is specially adapted, also, to the alteration of muzzle-loaders to breech-loaders, as it is only necessary to cut off the breech and turn down the body so as to form the shoulder *g*, and apply the parts C, the bore being retained of its original length. New guns may be so made as to require no cutting away of any part of the metal except to give the requisite finish, aside from the bore; and whether new or altered, there will be no screws or threads, springs, or detached parts. A single movement of the lever opens or closes the breech. No more space is required in rear than is necessary to insert the charge. There is nothing to jam or bind, nor can dirt or rain hurt it or interfere with its operation. It is exceedingly simple in its construction and operation, and can be manipulated with the greatest ease and rapidity. Another advantage is that the body of the gun, when once sighted, does not require to be moved at all in order to load it or to remove the shell.

Having thus described my invention, what I claim is—

1. In combination with the barrel A, provided with the shoulder *g*, the breech-closing device consisting of the two semicircular shells or cases C, provided with the shoulder *f*, constructed and arranged to operate substantially as shown and described.

2. In combination with the two hinged semicircular shells or cases C, arranged to operate in connection with the barrel A, the lever F, pivoted to the barrel and connected to the parts C, substantially as described.

THEODORE YATES.

Witnesses:
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