(No Model.)

D. A. DRAPER & A. TONKS.

FIRE ARM.

No. 410,235. Patented Sept. 3, 1889.

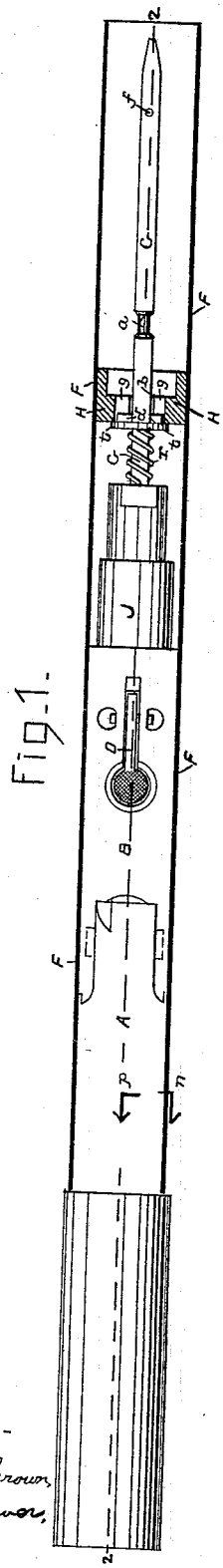


Fig. 1.

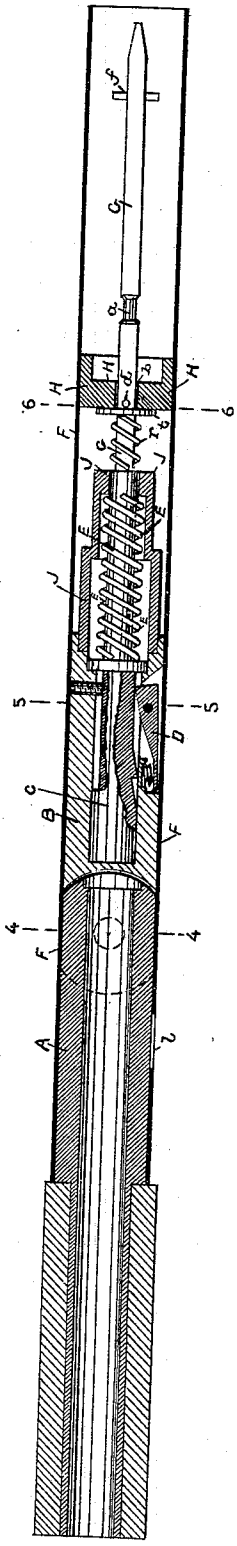


Fig. 2.

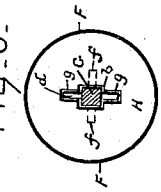


Fig. 6.

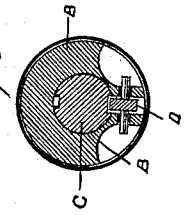


Fig. 5.

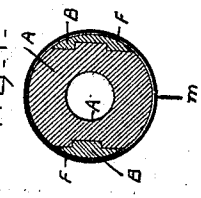


Fig. 4.

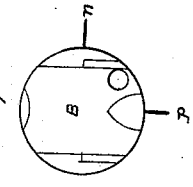


Fig. 3.

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UNITED STATES PATENT OFFICE.

DANIEL A. DRAPER, OF EAST CAMBRIDGE, AND ALFRED TONKS, OF MALDEN, MASSACHUSETTS.

FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 410,235, dated September 3, 1889.

Application filed January 30, 1889. Serial No. 298,152. (No model.)

To all whom it may concern:

Be it known that we, DANIEL A. DRAPER and ALFRED TONKS, citizens of the United States of America, residing, respectively, at East Cambridge and Malden, county of Middlesex, and State of Massachusetts, have jointly invented certain new and useful Improvements in Fire-Arms, of which the following is a full, clear, and exact description.

This improvement in fire-arms is more especially designed for combination with a walking cane or stick; and it particularly relates to a fire-arm of the class represented by Reissued Letters Patent of the United States, dated March 20, 1888, No. 10,910. The mechanism of this gun, as in said patent, consists, in substance, of a gun-barrel, (breech-loading,) a breech-block hinged on the barrel to be opened therefrom and closed thereon, a firing-pin extending and sliding lengthwise through the breech-block and adapted to be set for firing the gun and to be impelled against the cartridge with which the gun is charged by the action of a spring confined end to end thereon and in the breech-block, a trigger to hold the firing-pin when set and to release it to action, and a sleeve preferably detachably attachable to and to surround breech-block and barrel at its breech end and adapted to be rotated on and to be moved lengthwise of breech-block and barrel, so as thereby to be placed to lap the joint of breech-block and barrel, to allow the breech end of barrel to be opened and closed and the breech-block and barrel to be placed at an angle to each other by swinging the breech-block on the barrel, to withdraw the firing-pin against its spring, and to permit trigger to be operated to free the firing-pin for discharging the gun.

This invention as to the mechanism described in substance consists, first, of a rod which is in extension of the firing-pin beyond the rear of the breech-block and has a lateral projecting shoulder, in combination with the sleeve, which is arranged to slide lengthwise of said rod-extension, and preferably over the breech-block and barrel, and has a cross-partition in position as the sleeve is drawn backward lengthwise of said extension to abut against the shoulder thereof, and thereby withdraw the firing-pin against its spring, setting it for a discharge of the gun; second, of a rod of polygonal shape in cross-section, which is in extension of the firing-pin beyond the rear of the breech-block and has a lateral projecting shoulder and a depression between its said shoulder and the firing-pin, in combination with the sleeve, which is arranged to slide lengthwise of said extension and has a cross-partition having a polygonal-shaped opening to fit said polygonal-shaped extension and to receive its lateral projecting shoulder, and also that the partition of the sleeve and depression of said extension registered or in line with each other. The sleeve can be rotated about the extension, and thereby the opening thereof registered with the shoulder of the extension for the sleeve to be moved lengthwise of and detached from the extension, or said opening placed out of said register for its partition on then drawing the sleeve backward along the extension to abut against the shoulder thereof, and thereby withdraw the firing-pin against its spring to set it for a discharge of the gun.

In the drawings forming part of this specification, Figure 1 is a side view of the barrel, breech-block, and rod in extension of firing-pin, and showing the breech-block closed on the barrel, the firing-pin in its normal position, and a central longitudinal section of the sleeve surrounding both barrel and breech-block and in a position, if then drawn lengthwise backward over the barrel and breech-block, to withdraw the firing-pin against its spring, and thus to set it preparatory to firing the gun by operating the trigger. Fig. 2 is a central longitudinal section, line 2 2, Fig. 1. Fig. 3 is an end view of the breech-block with the barrel detached. Figs. 4, 5, and 6 are cross-sections, lines 4 4, 5 5, and 6 6, respectively, Fig. 2.

In the drawings, A is the barrel, breech-loading.

B is the breech piece or block, pivoted or hinged to breech end of barrel, so as to be registered with to close or to be placed at an angle to open the barrel.

C is the firing-pin.

E is a spiral spring for forcing the firing-pin C forward to discharge the cartridge with which the barrel is charged.

D is the catch or trigger to hold the firing-pin retracted preparatory to discharging the gun, and F is a sleeve surrounding barrel and breech-block and arranged to be rotated on and to be moved lengthwise of barrel and breech-block, all as described in said Reissued Letters Patent, except as hereinafter particularly explained.

G is a rod in extension of the firing-pin C, and projecting from the rear end of the shell or casing J in extension of the breech-block. This shell contains a coiled spring E, confined end to end on firing-pin C, which on withdrawing the firing-pin is compressed and acts to force the firing-pin forward to discharge the cartridge with which the gun is loaded, as described in said patent. The rod-extension G of firing-pin C is of polygonal shape in cross-section, particularly shown as square-sided, and passes loosely through a corresponding-shaped hole *b* of a fixed cross-partition H of the sleeve F, and thus the sleeve is held against turning about, but is free, all otherwise being suitable, to be moved lengthwise of said rod G.

f is a fixed radial pin at the outer end portion of the extension G of the firing-pin.

a is a depression around the firing-pin extension G and between it and the firing-pin. This depression *a*, as particularly shown and in cross-section, is round and of a length equal, at least, to the thickness of the sleeve-partition H.

With the partition H registered with the depression *a* of rod G, or, in other words, with the partition and said depression in the same transverse plane, the sleeve can then be turned about the rod G.

g is a radial or diametrical slot of the sleeve-partition H, and it is of suitable dimensions to receive the radial pin *f* of the rod G when it is registered, or, in other words, it is in the same direction as that of the pin *f*.

l is an aperture at one side and intermediate of the length of the sleeve F, and of suitable size when registered with or opposite to the finger-piece of the trigger D to expose it for being pressed upon by the finger to release the trigger from the firing-pin, and thereby to release the firing-pin to the action of its spring E for the discharge of the gun.

The barrel and breech-block in line with each other, the sleeve F, Figs. 1 and 2, in its normal position surrounds the barrel at its breech end, the breech-block, the shell E, in extension of the breech-block, and the rod-extension G of firing-pin, and its partition H is engaged with the rod-extension, and the radial slot of said partition is out of line with the pin *f* of said extension, and its aperture *l* is forward of the trigger. Now, drawing the sleeve over the barrel and breech-block, the hinge of barrel and breech-block is first exposed, so that the breech of the barrel can be opened to insert a cartridge and closed, and, second, the sleeve-partition H is brought against the pin *f* of the rod-extension of firing-pin C, on which the firing-pin is carried along with the sleeve and against its spring, and thereby set for a discharge of the gun, and the sleeve is returned sufficiently to register its aperture *l* with the finger-piece of the trigger D for a then release of the firing-pin to its spring to discharge the gun, on which the sleeve is returned to its normal position, Figs. 1 and 2, to be again manipulated, as before.

The sleeve F, in the position described and shown, Figs. 1 and 2, plainly, is held on the rod-extension G of firing-pin C and moved lengthwise of said rod G. The barrel and breech-block are exposed to be opened and closed or otherwise adjusted as to each other, the firing-pin set, and the discharge of the gun secured, all as has been explained.

To remove the sleeve from the rod-extension G of firing-pin C, first draw the sleeve backward sufficiently to register its partition H with the depression *a* of said rod G, and having then turned the sleeve one-quarter round continue to draw it back sufficiently to pass its partition H by its slot *g* over the pin *f* of the rod G, when the sleeve is set free. A quarter-turn of the sleeve F, as explained, places the slot *g* of its partition H in a corresponding radial direction, or, in other words, registers it with the pin *f* of the rod-extension G of firing-pin C.

To place the sleeve F on the rod-extension G of firing-pin C, first register the slot *g* of its partition H with the pin *f* of said rod G, and then move the sleeve forward, and, having registered its partition with the depression *a* of said rod G, turn the sleeve one-quarter round, which places the slot *g* of its partition out of register, and then move it forward into the position shown in Figs. 1 and 2, and the attachment of sleeve F to rod G is completed.

As guides for registering the slot *g* of sleeve-partition H, as explained, the barrel A has two parallel lines at two points *p n* of its perimeter, Figs. 1 and 3, running lengthwise of it, and the sleeve has one line at the point *m* of its perimeter, Fig. 4, running lengthwise of it and from its end which is toward the barrel A. The points *p n* are quartering as to the circumference of the barrel, and the point *p* is coincident with the pin *f* of the rod-extension of firing-pin. To draw the sleeve backward to set the firing-pin, as described, the line at the point *m* of the sleeve F must coincide with the line at the point *p* of the barrel, and to remove the sleeve from the rod-extension G of firing-pin C the line at the point *m* of the sleeve must coincide with the line at the point *n* of the barrel. The change of register of the sleeve as to the lines at points *p n* of the barrel is secured by a quarter-turn of the sleeve, and for this quarter-turn the sleeve-partition is registered with the depression *a* of said rod G. This registering is determined with guide-lines running

at right angles to the line through the points *p n* of the barrel, and with which the end of the sleeve which is toward the barrel is made to coincide before turning the sleeve.

r is a spring coiled about the rod-extension G of firing-pin C, and confined, end to end, between the rear end of shell J of breech-block B and a washer *t* on said rod G, and resting against a cross-pin *d* of said rod, Figs. 1 and 2. This spring *r* acts as a buffer on the sleeve-partition when the sleeve is moved forward to position, Figs. 1 and 2, and while it is desirable to use it, yet it is in no way essential or requisite otherwise than as just stated.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with a barrel A, a breech-block B to open and close the barrel, and having a firing-pin C, a spring E, to actuate said firing-pin, and a trigger D, all substantially as described, of an extension G of the firing-pin, having a projection *f*, and a sleeve F, having a partition H, to slide on and to abut against the projection *f* of said extension, substantially as described, for the purpose specified.

2. The combination, with a barrel A, a breech-block B to open and close the barrel, and having a firing-pin C, a spring E, to actuate said firing-pin, and a trigger D, all substantially as described, of an extension G of the firing-pin, and which is of polygonal shape in cross-section, and has a projection *f* and a depression *a* between said projection *f* and the firing-pin, and of a sleeve F, having a partition H, with a hole *b* to fit said extension and its projection *f*, and to slide and rotate on said extension and to abut against and pass over its projection *f*, substantially as described, for the purposes specified.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

DANIEL A. DRAPER.
ALFRED TONKS.

Witnesses:
ALBERT W. BROWN,
HENRY F. MCKEEVER.