2 Sheets—Sheet 1.

G. HACKETT.

Means for Attaching the Fore-End Stock to Gun-Barrels.

No. 210,523. **Patented Dec. 3, 1878.**

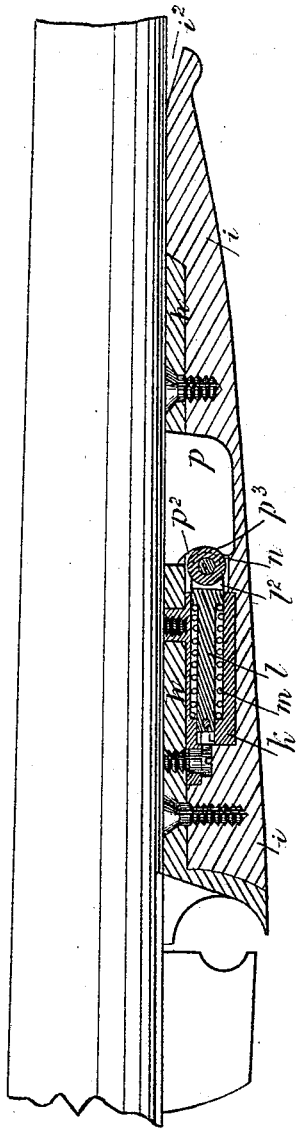


FIG 1

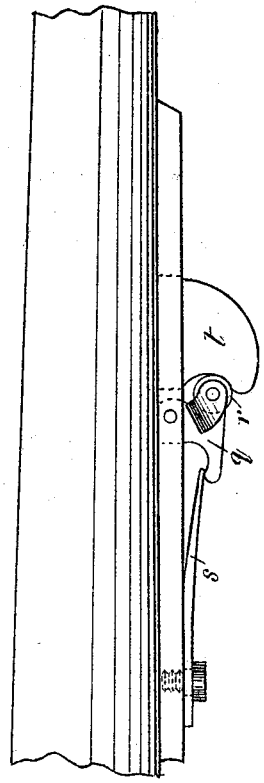


FIG II

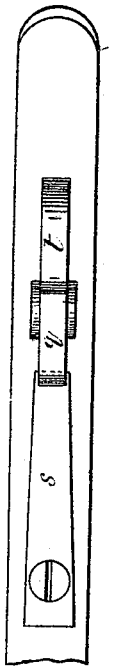


FIG III

Witnesses,
George Shaw
Richard Skerrett

Inventor
George Hackett

2 Sheets—Sheet 2.

G. HACKETT.

Means for Attaching the Fore-End Stock to Gun-Barrels.

No. 210,523. Patented Dec. 3, 1878.

FIG IV

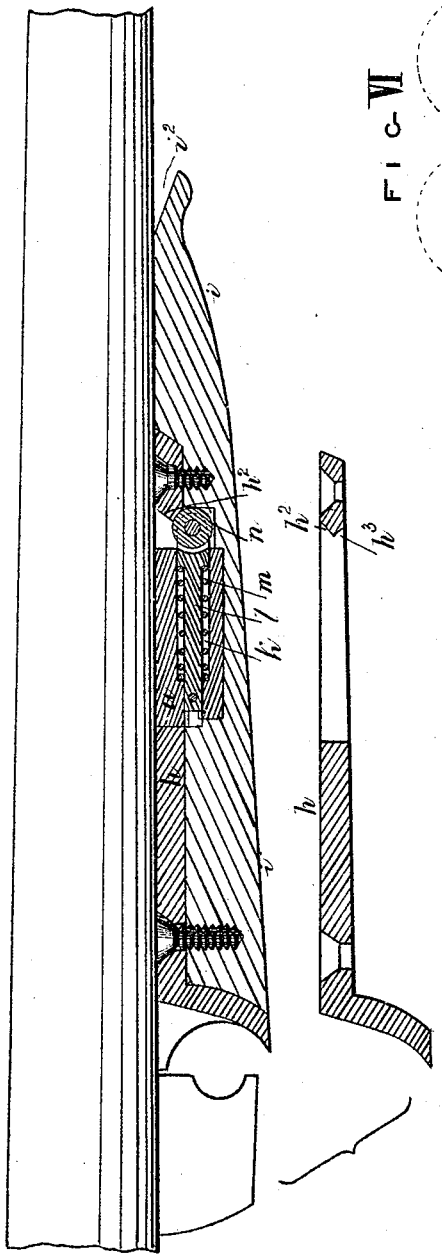


FIG VI

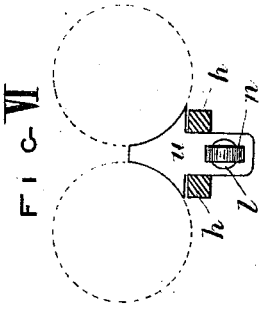


FIG VIII

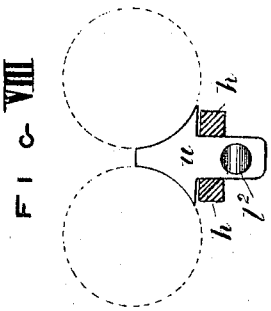


FIG V

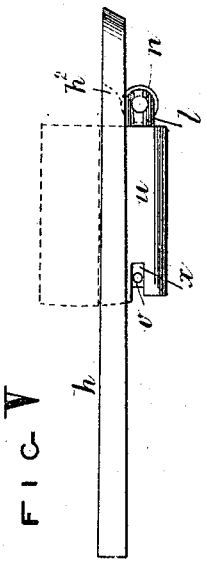
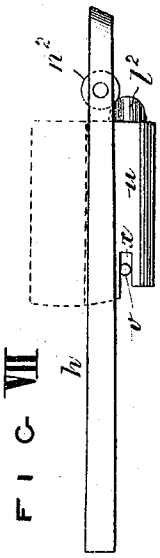


FIG VII



Witnesses,
George Shaw
Richard Skerrett

Inventor
George Hackett

UNITED STATES PATENT OFFICE.

GEORGE HACKETT, OF BIRMINGHAM, ENGLAND.

IMPROVEMENT IN MEANS FOR ATTACHING THE FORE-END STOCK TO GUN-BARRELS.

Specification forming part of Letters Patent No. **210,523**, dated December 3, 1878; application filed October 26, 1878; patented in England, March 9, 1878.

To all whom it may concern:

Be it known that I, GEORGE HACKETT, of Birmingham, in the county of Warwick, England, gun manufacturer, have invented new and useful Improvements in the Fore-End Fastenings of the Drop-Down Guns, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to breech-loading small arms of the kind commonly called "drop-down guns;" and my said invention consists of the arrangements of parts hereinafter described for facilitating the attachment and detachment of the fore end.

In constructing a fore-end fastening according to my invention, I fix on the metal plate or bar let into the under or inner side of the fore end a strong tube or hollow cylinder, in the axis of which a rod slides. A coiled spring around the said rod urges one of its ends out of the end of the cylinder in the direction proper for fastening the fore end. The projecting end of the rod is made by preference to carry an anti-friction roller. The said roller facilitates, but is not necessary to, the action of the mechanism. When the fore end is put in its place on the gun the loop on the under side of the barrels passes through a slot in the metal plate or bar carrying the cylinder described, one end of the loop being presented to the roller on the end of the spring-rod. The said end of the loop is made concave, and when the fore end is put in its place and pressed home close to the barrels the said loop first comes against and presses back the roller and spring-rod; but when its concave part is brought opposite the roller the said roller snaps into the concavity in the loop, and the fore end is fastened in its place.

In order to remove the fore end it is only necessary to apply the thumb or forefinger to the fore end and press it from the barrels with sufficient pressure to raise the roller out of the concavity in the loop, when the fore end becomes disconnected from the barrels and can be removed.

Instead of the spring-rod and roller described, a short lever, with or without a roller, may be made to press into the concavity in the loop by a flat or other spring. The concavity in the loop in which the spring rod or lever engages may be made either in the front or back of the loop or in the side.

I will now proceed to describe, with reference to the accompanying drawings, the manner in which my invention is to be performed.

Figure 1 represents, in longitudinal section, a fore-end fastening constructed according to my invention, by the use of which fastening the attachment and detachment of the fore end of drop-down guns is much facilitated.

On the metal plate or bar h, let into the under or inner side of the wooden part i of the fore end, I fix by screws (or in any other convenient way) a strong tube or hollow cylinder, k. In the axis of the said tube or cylinder k a rod, l, slides. A strong coiled spring, m, around the rod l urges its end l^2 out of the end of the tube k in the direction proper for fastening the fore end. The projecting end l^2 of the rod l carries an anti-friction roller, n. The said roller n may be dispensed with and the end l^2 of the rod l rounded; but I prefer to use the roller n on the end of the rod. The loop p on the under side of the barrels has a concavity, p^2, in that face of it opposed to the end of the tube k, the radius of the concavity p^2 being by preference equal to or greater than the radius of the roller n. When the fore end is put in its place on the under side of the barrels the loop p passes through the slot in the plate or bar at h^2. The nose of the loop, as the loop descends through the slot at h^2, presses back the roller n, forcing the rod l into the barrel k and compressing the spring m. As the fore end seats itself close upon the barrels the roller n is brought immediately opposite the concavity p^2 in the loop p, and the spring forces the said roller into the said concavity with a snapping action, and the fore end is securely fixed in its place on the barrels.

In order to detach the fore end it is only necessary to insert the forefinger under the free end i^2 of the fore end, (in which a slight recess is made for the introduction of the finger,) and with moderate pressure to prize or raise the fore end a short distance from its seat against the barrels. During this motion the roller n, traveling against the inclined part p^3 of the concavity p^2 in the loop, is forced back, and as soon as the center on which the roller n turns has passed from the concavity and over the nose of the loop it is free, and the fore

end can be removed. The detaching of the fore end is thus effected in the simplest manner. For its attachment, it is only necessary to put it in its place on the barrels and press it to its seat with moderate pressure, when it fixes itself by a snapping action; and to remove it, it is only necessary to lift or prize it with moderate pressure from its seat, by which action it may readily be detached.

Fig. 2 represents in longitudinal section, and Fig. 3 in plan, a modification of the mechanism for attaching and detaching the fore end. In this modification a small cranked lever, *q*, carries at the end of one of its arms a small roller, *r*. The other arm is acted upon by the flat spring *s*, by the action of which the roller is pressed into the recess or concavity in the loop *t*, and the attaching and detaching of the fore end is effected in a way essentially the same as that described with respect to the first-described arrangement, Fig. 1.

The roller *r*, Figs. 2 and 3, may be dispensed with, and the rounded end of the arm of the lever pressed into the concavity of the loop *t;* but I prefer to employ a roller, as represented in the drawing.

The concavity in the loop in which the roller or rod of the arrangement Fig. 1 engages, or in which the roller or lever of the arrangement Figs. 2 and 3 engages, is most conveniently placed in that part of the loop in which I have represented it; but the concavity may be made in other parts of the loop—for example, in the front or in either side of the loop—the positions of the rod *l* or lever *q*, with their actuating-springs and parts connected therewith, being so changed as to cause them to engage in the concavity in the front or side of the loop, as the case may be.

Instead of arranging the parts of the fore-end fastening in the manner illustrated with respect to Figs. 1, 2, and 3, the said parts may be inverted, with the same, or nearly the same, effect—that is to say, instead of placing the fore-end fastening in the tube or barrel fixed to the bar of the fore end, the said fastening may be placed in the loop on the under side of the barrels, and the part engaging with the fastening may be carried by or form part of the fore-end bar.

This modification of my invention is illustrated in Figs. 4, 5, and 6 of the drawings, Fig. 4 representing a longitudinal section of a complete fore end applied to the barrels; Fig. 5, the loop, the fastening, and the bar of the fore end in elevation; and Fig. 6, a cross-section, partly in elevation, of the same. In this arrangement a tube or barrel, *k*, is bored in the loop *u*, in which tube or barrel the rod *l* and coiled spring *m* work, the head of the said rod projecting from the said loop and carrying the anti-friction roller *n*. The fore-end bar *h* is slotted, as seen in Fig. 6, for allowing of the passage through it of the loop *u*. The rod *l* is prevented from rotating in the tube or barrel *k* in the loop by the pin *v*, passed through the said rod, working in the slots *x* in the said loop. The front end of the slot in the fore-end bar *h* is inclined at h^2, and under the end h^2 is a seat at h^3 for the roller of the spring-rod *l* to engage with or seat itself against for fastening the fore end to the loop. When the fore end *i* is pressed toward the barrels the spring-rod *l* is forced back by the incline h^2 on the fore-end bar *h*, bearing against the roller *n;* and when the said fore end has reached the under side of the barrels, the roller *n*, by the action of the spring-rod *l*, snaps under the fore-end bar at h^3, and the fore end is securely fastened in its place, as represented in Fig. 4.

To detach the fore end, the free end i^2 is lifted or prized, when the part h^3 of the fore-end bar *h*, bearing against the roller *n*, forces it back; and when the fore end has descended sufficiently far to bring the roller *n* into the slot in the fore-end bar *h*, the fore end is released, and may be removed.

The end of the spring-rod of the fastening may be rounded and the roller be carried by the fore-end bar, as illustrated in elevation in Fig. 7 and cross-section in Fig. 8, where the roller on the fore-end bar *h* is marked n^2 and the rounded end of the spring-rod is marked l^2.

The arrangement of parts represented in Figs. 2 and 3, where a cranked lever is used, may be applied to the loop instead of to the fore-end bar.

In place of, or in addition to, the recess at i^2, for prizing or lifting the fore end from the barrels, recesses may be made at opposite sides of the fore end, and near the free end at i^2, for the purpose of prizing or lifting the fore end by means of the thumb and finger.

By my invention the mechanisms ordinarily employed for unfastening the fore end before it can be raised or removed from the barrels are dispensed with, the act of raising or prizing the fore end itself effecting the unfastening of the parts by which the said fore end is attached to the barrels.

My improvements are applicable to single and double barreled guns.

Having now described the nature of my invention, and the manner in which the same is to be performed, I wish it to be understood that I claim as my invention—

As a fore-end fastening for drop-down guns, the combination, with the fore end and projection or loop on the under side of the gun-barrel, of a spring and locking-pin, or its equivalent, pressed forward by the said spring to engage in a recess to secure the barrel to the fore end, the said recess being provided with an incline to act against the end of the locking-pin and cause its retraction against the pressure of the spring, to release the barrel from the fore end, by force applied to prize apart the barrel and fore end, substantially as set forth.

GEORGE HACKETT. [L. S.]

Witnesses:

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RICHARD SKERRETT,

Both of 37 Temple Street, Birmingham.