2 Sheets--Sheet 1.

J. DEELY & J. S. EDGE, Jr.

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

No. 140,482. Patented July 1, 1873.

FIG I

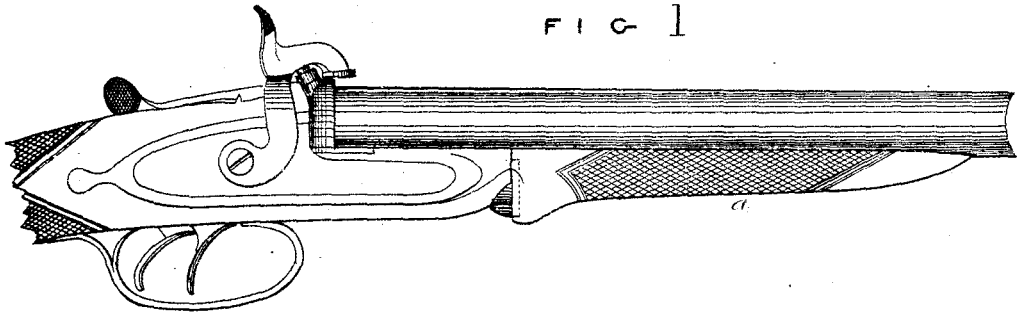

FIG II

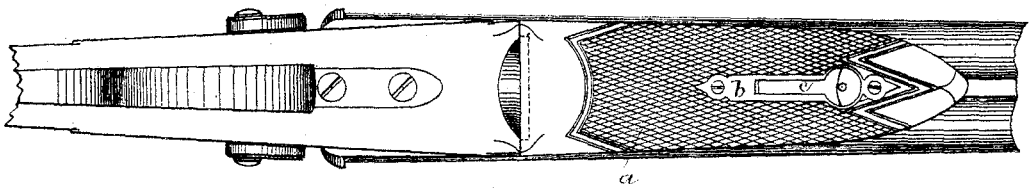

FIG III

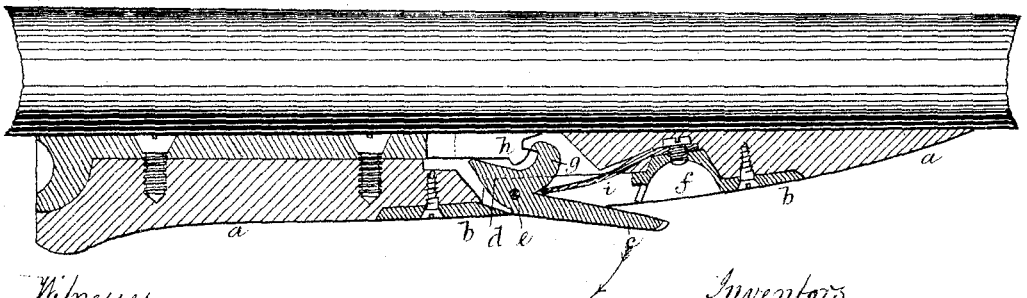

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FIG IV

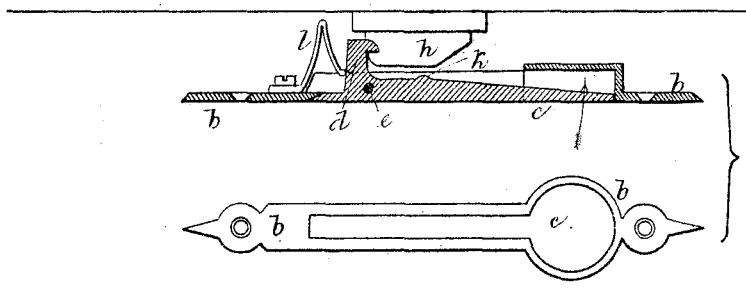


FIG V

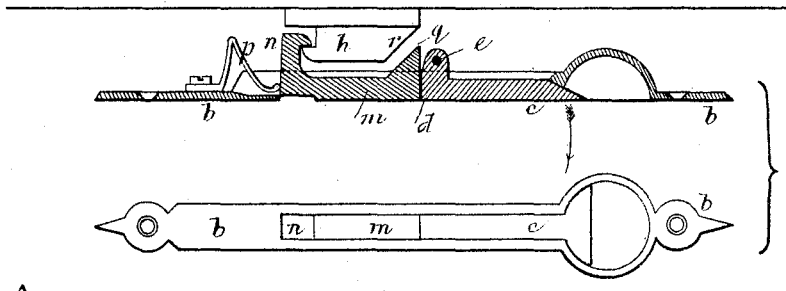
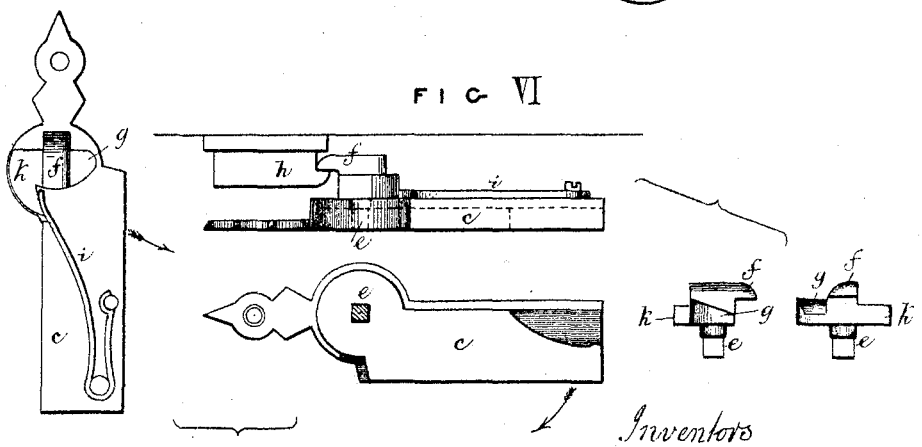


FIG VI



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

Specification forming part of Letters Patent No. **140,482**, dated July 1, 1873; application filed June 20, 1873.

To all whom it may concern:

Be it known that we, JOHN DEELEY, Yardley, in the county of Worcester, England, manager of works, and JAMES SIMEON EDGE, the younger, of Yardley aforesaid, mechanical engineer, have invented certain Improvements in Connecting and Disconnecting the Fore Ends of Small-Arms, of which the following is a specification:

Our invention consists of the mechanical arrangements, hereinafter described and illustrated in the accompanying drawings, for connecting and disconnecting the fore ends of breech-loading and muzzle-loading small-arms.

Figure 1 represents, in side elevation, and Fig. 2 in plan, of under side of the breech end of a breech-loading drop-down gun, drawn half the full size, the fore end of the said gun being connected to and disconnected from the barrels by mechanism constructed according to our invention. Fig. 3 represents the fore end in longitudinal vertical section, drawn of the full size. In Fig. 3 the fore end is represented unfastened, and in the act of being started from its place on the under side of the barrels.

The same letters indicate the same parts in Figs. 1, 2, 3.

a is the fore end, in a recess in which a metal frame, *b*, is fitted and fixed by screws. The said frame *b* carries a lever, marked *c d g*, which works in a slot in the said frame *b*. *e* is the center on which the lever turns. The said lever and its frame are flush with the surface of the fore end *a*. The thumb-plate end *c* of the lever is furnished with a cross-piece, c^2, on which the thumb or finger acts to lift the lever, a cup-shaped depression, *f*, in the frame *b* permitting the finger or thumb to readily act upon the lever. On the upper side of the lever is a hooked projection, *g*, which, when the lever lies in its slot in the frame *b*, engages with the front hooked end of the lump *h* on the under side of the barrels, and fixes the fore end in its place. A flat spring, *i*, acting on the back of the said hooked projection *g*, tends to keep the lever in its normal position in its slot.

In order to disconnect the fore end *a* from the barrels, the thumb-plate end *c* of the lever is lifted or brought into the position represented in Fig. 3. The hooked projection *g* of the lever is thereby disengaged from the lump *h*, and the fore end *a* is unfastened. By this lifting of the lever the short arm *d* of the said lever comes in contact with the under side of the lump *h* on the barrels. The said short arm *d* of the lever thus becomes a fulcrum, by which, on the further motion of the thumb-plate end *c* of the lever, the fore end *a* is started from its position, and its removal thereby made easy—that is to say, the first lifting of the lever *c* disengages the hooked projection *g* from the lump *h*, and the further motion of the said lever causes its short arm *d* to bear on the lump *h* and start the fore end—as will be understood by an examination of Fig. 3.

In order to connect the fore end to the barrels, it is only necessary to place the rear part of the fore end against the joint of the barrels and press the fore end upon the barrels. As the fore end is pressed down the lever is first turned on its joint by coming against the lump *h*, and takes the position represented in Fig. 3, and its hooked projection *g* is afterwards made to snap into the hook of the lump *h* by the action of the spring *i*, and fasten the fore end to the barrels.

Instead of the flat spring *i* represented, a coiled spring or a double or V-spring may be used to press the lever *c d g* to its normal position.

The hook may be made on the back end of the lump *h*, instead of on its front end. In this arrangement we make the hooked part to take into the lump on the short arm of the lever, and the lever is actuated and the fore end unfastened by pressing upon the thumb-plate end of the lever, instead of by raising it.

This arrangement of our invention is illustrated in longitudinal section and plan of under side in Fig. 4, where *d* is the hooked end of the lever, engaging with the hook on the lump *h*, and *c* the thumb-plate end of the lever. *e* is the center on which the lever turns. The part of the lever for starting the fore end, after the hooked end *d* has been disengaged from the hook of the lump *h*, is marked *k*. The lever is pressed to its normal position by the double spring *l* acting upon the hooked end of the lever.

The fore end is released by pressing inward or upward the thumb-plate end *c* of the lever,

as indicated by the arrow. On the withdrawal of the hooked short end *d* from the lump the projection *k* bears against the lump *h*, and starts the fore end from its place.

The arrangement represented in Fig. 4 may be modified, so as to cause the fore end to be unfastened and started by raising the lever. This arrangement is represented in longitudinal section and plan of under side in Fig. 5. In this arrangement the hook *n*, engaging with the lump *h* on the barrels, is made on the end of the sliding bar *m*, pressed home by the spring *p*, and the said bar *m* is actuated by the lever *c* turning on the center *e*. On the front end of the sliding hooked bar *m* is an incline, *q*, which acts against an incline, *r*, on the lump *h*, for starting the fore end from its place.

The action of this mechanism is as follows: On lifting the lever *c* from the fore end in the direction indicated by the arrow, the shoulder *d* of the said lever bears against the front of the sliding bar *m*, and, by pressing back the said bar, releases its hooked end *n* from the hook of the lump *h*. When the hooked end of the bar *m* is disengaged from the lump *h*, the incline *q* on the said bar is brought against the incline *r* on the lump *h*, and the further motion of the said bar *m* causes the fore end to be started from its place.

Instead of making the lever move vertically, it may move laterally with the same effect.

This arrangement of our invention is illustrated in side elevation and plan of under side and upper side, and a portion of the same in Fig. 6. *c* is the lever, turning in a horizontal plane on the axis *e*, the fore end being cut away to permit the lateral motion of the lever. On the axis *e* is a hooked arm, *f*, which takes upon the hook of the lump *h*. The said hooked arm *f* has on one side of it an inclined projection, *g*, by which the starting of the fore end is effected. The lever *c* is maintained in its normal position by the double spring *i* acting on the tail *k* of the arm of the lever. On turning aside the lever *c*, in the direction indicated by the arrow, its hooked arm *f* is removed from off the hook of the lump *h* on the barrels, and the fore end is thereby released. After the hooked arm *f* has been removed from the lump *h* the inclined projection *g* is brought against the under side of the said lump, and, by the further motion of the lever, the said projection *g* bears against the said lump, and starts the fore end from its place.

Our improvements are applicable to the connecting and disconnecting of the fore ends of muzzle-loading as well as breech-loading small-arms, and to both single and double barrel small-arms.

Having now described the nature of our invention, and the manner in which the same is to be performed, we wish it to be understood that we do not limit ourselves to the precise details herein described and illustrated, as the same may be varied without departing from the nature of our invention; but

We claim as our invention—

The combination, with the fore end and the barrel or barrels of small arms, of a spring-catch, carried by the fore end, and arranged and operated to engage with, and to be disengaged from, a lump or its equivalent on the barrel or barrels, substantially as and for the purposes herein shown and described.

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JAMES SIMEON EDGE, JUN.

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