No. 745,885. PATENTED DEC. 1, 1903.

O. F. MOSSBERG.

BREECH LOADING FIREARM.

APPLICATION FILED JAN. 14, 1903.

NO MODEL.

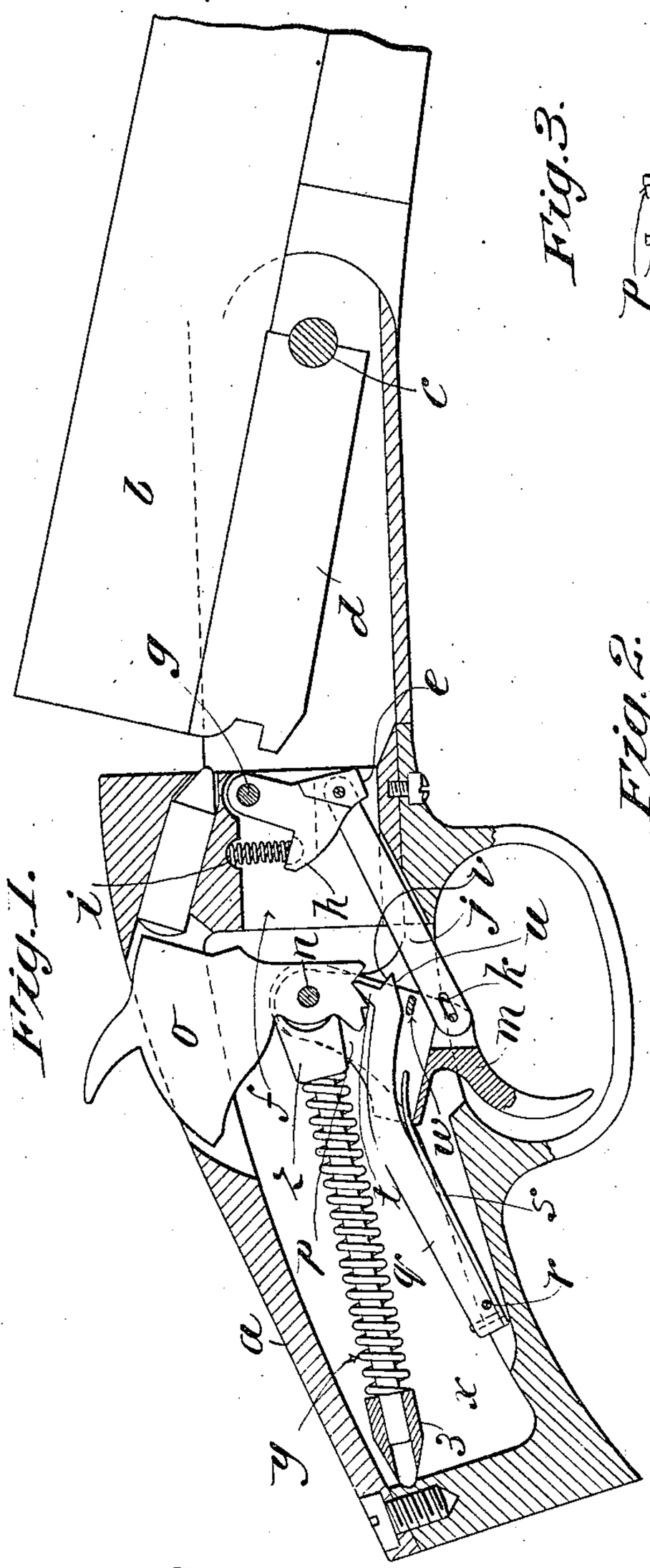

Fig. 1.

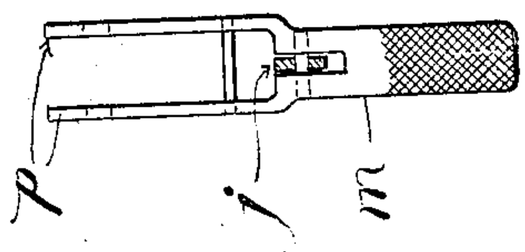

Fig. 3.

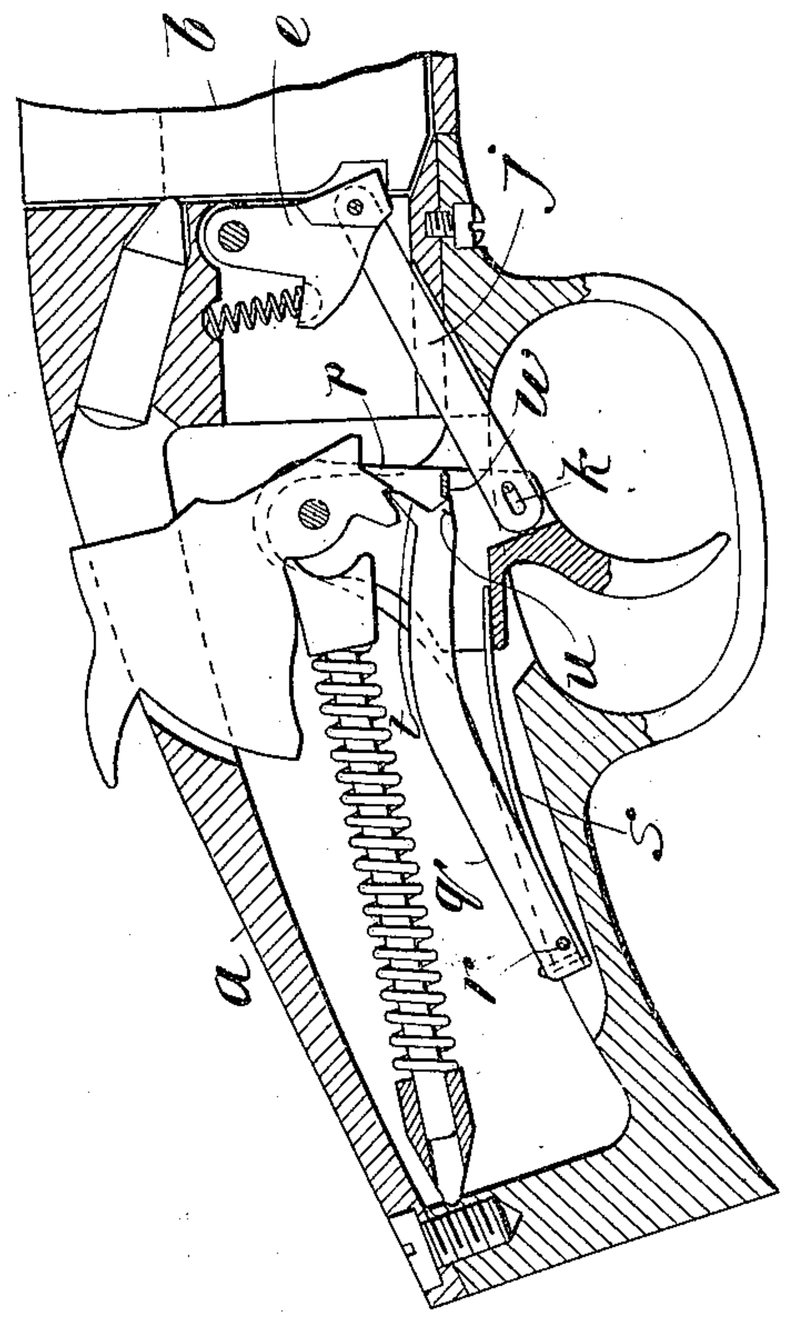

Fig. 2.

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No. 745,885. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

OSCAR F. MOSSBERG, OF CHICOPEE FALLS, MASSACHUSETTS.

BREECH-LOADING FIREARM.

SPECIFICATION forming part of Letters Patent No. 745,885, dated December 1, 1903.

Application filed January 14, 1903. Serial No. 139,047. (No model.)

To all whom it may concern.

Be it known that I, OSCAR F. MOSSBERG, a citizen of the United States of America, residing at Chicopee Falls, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Breech-Loading Firearms, of which the following is a specification.

This invention relates to firearms, and has special reference to the construction of a breech-loading arm of the breakdown type, the object of the invention being to improve the construction of the locking mechanism for the barrels of arms of this type, whereby a single trigger when pulled serves the usual purpose of releasing the hammer and upon a second movement of the trigger serves to withdraw a locking latch or bolt from engagement with the barrel, the parts being so arranged that the operation of the locking mechanism by the trigger is rendered impossible when the hammer is at full-cock.

In the drawings forming part of this application, Figure 1 is a sectional view of the frame of the firearm, showing the position of the parts when the trigger has been operated to unlock the barrel, the hammer being at half-cock, the line of the section being lengthwise of the arm. Fig. 2 is a similar view showing the hammer, trigger, and sear in their proper relation with the hammer when it is at full-cock. Fig. 3 is a front elevation of the trigger.

Referring now to the drawings, the frame of the firearm is indicated by *a*, the barrel by *b*, the latter being hung pivotally in the frame on a pin *c*, the breech tipping up to permit reloading. The under side of the breech end of the barrel is provided with a rib *d*, in the rear end of which is cut a notch with which a spring-actuated locking-latch *e* engages to secure the barrel in the frame in firing position. This latch *e* is secured in a vertically-disposed recess *f*, milled in the frame, the latch being hung on a pin *g*. On the rear side of the latch *e* is a step *h*, which receives one end of a spiral spring *i*, the opposite end of which bears against the upper wall of the recess *f*. This spring tends to force the lower end of the latch forwardly into position of engagement with the notch in the rib *d*.

The lower end of the latch *e* is slotted vertically to receive the end of an arm *j*, which is pivotally secured therein, the opposite end thereof being likewise pivotally secured to the trigger, its connection with the trigger, however, being such that the latter may swing more or less on its pivot without imparting any movement to said arm and latch. This is provided for by means of a slot *k* in the arm at the point of its connection with the trigger.

The trigger is indicated by *m*, its pivotal point *n* being the same as that of the hammer *o*. As shown in Fig. 3, the upper end of the trigger is milled out, leaving two upstanding arms *p*, between which the hammer is mounted and between which also the forward end of the sear *q* is located. This sear is pivotally supported on a pin *r* in the frame and is held in engagement with the under side of the hammer by means of a spring *s*, secured to the rear end of the sear and extending forwardly therefrom to the rear end of the trigger, on which it bears. The fixed end of the spring *s* follows the contour of the under side of the sear forwardly of the pin *r* for a certain distance, whereby the sear is pressed upwardly when the forward end of the spring rests on the trigger.

The forward end of the sear *q* is forked to provide two projections thereof, one longer than the other and indicated by *t*, the other and lower one being indicated by *u*, which are so formed as to provide a V-shaped notch in the end of the sear, whereby the inclined surface *v* is provided on the upper side of the finger *u*.

A bar *w* is located transversely between the two upstanding arms *p* of the trigger in such position that when the trigger is in its most forwardly position, as in Fig. 2, the bar will lie in a plane just above the point of the finger *u* on the sear *q*. This position of the parts results from the fact that the half-cock notch is made much deeper than the full-cock notch—that is, the bottom of the latter lies at a greater distance from the axis of the hammer, and consequently when the hammer is raised from half to full cock position the sear when engaging the full-cock notch will lie in a lower position than when resting in the half-cock notch, and as this cocking movement of the hammer takes place when the

trigger is released and in its foremost position the finger *u* of the sear is by this cocking movement thus depressed far enough to be engaged by the bar *w*, which when the trigger is pulled will ride upward on the inclined surface *v* and will pull the sear out of the full-cock notch in the hammer. Then as the hammer falls and the trigger is released the sear on the rebound of the hammer flies into the half-cock notch, which carries the point of the finger *u* above the plane of the bar *w*, and consequently the next pull on the trigger causes the bar *w* to slide under this finger *u* instead of engaging it, and thus through the arm *j* the swinging latch *e* is withdrawn from the notch in the end of the rib *d* under the barrel, permitting the gun to be opened. It is thus seen that in a certain position the spring *i* of the latch *e* may serve as a trigger-spring.

A mainspring for the hammer is provided, consisting of a coiled spring *x*, wound loosely around a post *y*, on the forward end of which is secured a shoe *z*, having a two-pronged end, one of said prongs engaging the hammer above the axis of the latter and the other below it when the hammer is at half-cock. When the hammer is drawn back, only the upper prong of the shoe bears thereon. When the hammer falls, only the lower prong bears thereon below its pivotal point after the hammer passes the half-cock position. Hence this contact of the lower prong of the shoe serves to effect the rebound of the hammer. The post *y* fits loosely in a piece 3, the spring *x* bearing against the end of this piece 3 and the end of the shoe *z*. The piece 3 has a bearing on the frame, and when the spring *x* is compressed and released the post *y* will have a slight movement in said piece 3.

From the foregoing description it is obvious that until the hammer has been brought to full-cock it will be impossible for the trigger to trip the sear, and after the hammer has been brought to full-cock it is likewise impossible for the trigger to operate the locking-latch *e*, for the trigger has sufficient play in the slot *k* to effect the tripping movement of the sear before it reaches the limit of its movement in said slot.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a breech-loading firearm of the break-down type, a hammer, a trigger, a locking-latch for the barrel, and an arm pivotally connected to the trigger and to the latch, the trigger being free to move more or less relative to said arm; a sear, and means on the hammer, operable when the latter is brought to cocked position, to move the sear in position to be engaged by the initial movement of the trigger.

2. In a breech-loading firearm of the break-down type, a hammer, a trigger, a locking-latch for the barrel, and an arm pivotally connected to the trigger and to the latch whereby a pull on the trigger may operate the latch, together with a sear, and means operated only by the cocking movement of the hammer to swing said sear into position to be engaged by the initial movement of the trigger.

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