

C. C. BLODGETT.  
Horse-Hay Fork.

No. 67,711.

Patented Aug. 13, 1867.

Fig. 1.

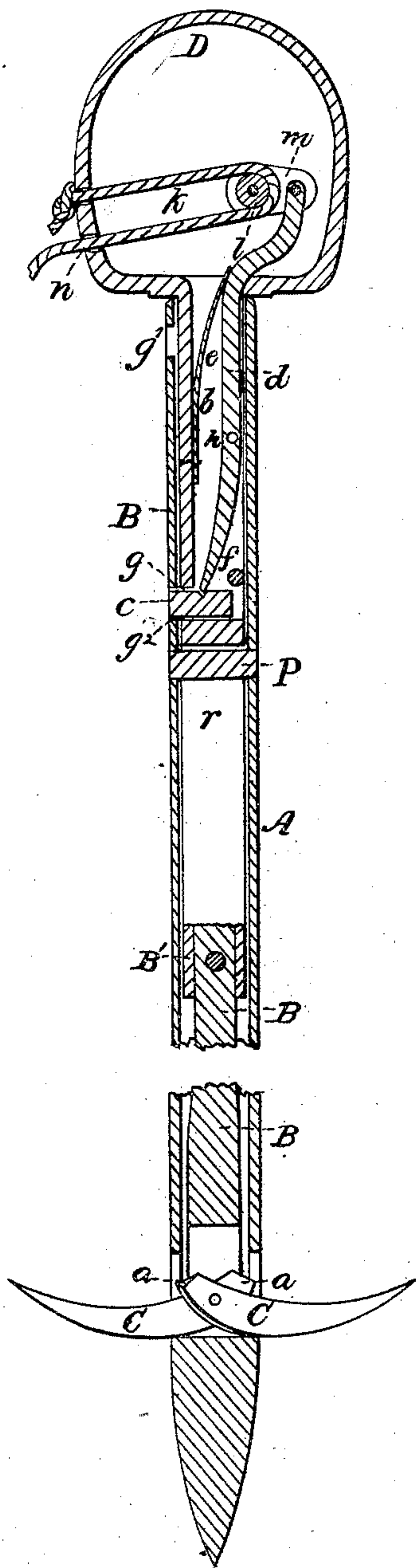


Fig. 2.

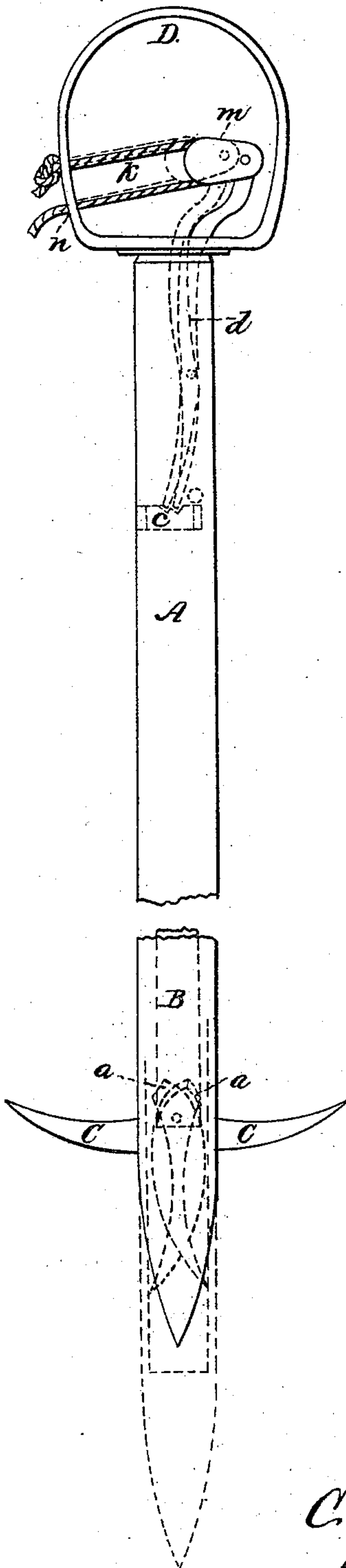
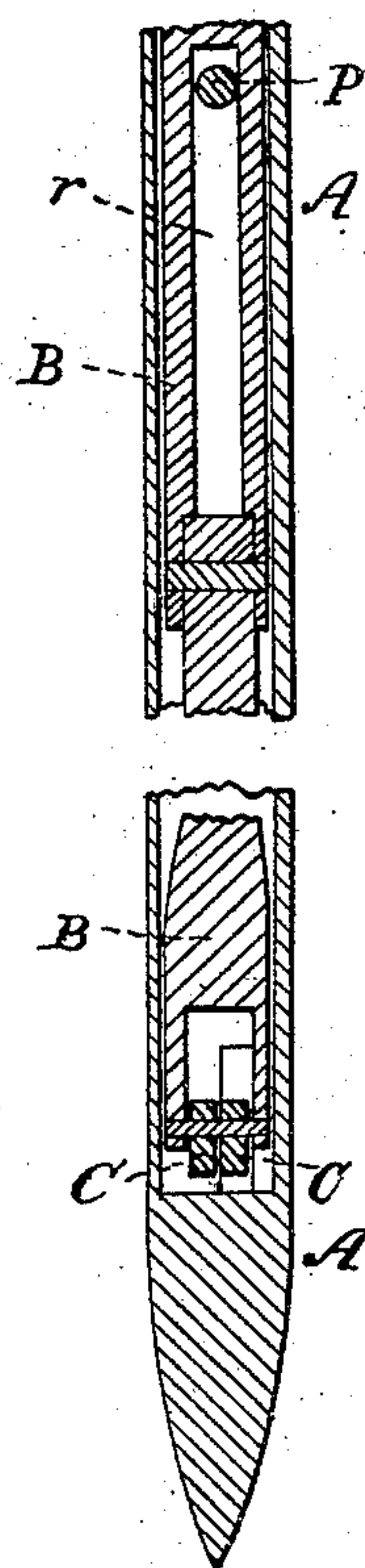


Fig. 3.



Witnesses

*M. Bailey*  
*Chas. G. Page Jr.*

Inventor:

*C. C. Blodgett*  
*by J. Pollard*  
*his atty.*

# United States Patent Office.

C. C. BLODGETT, OF WATERTOWN, NEW YORK.

*Letters Patent No. 67,711, dated August 13, 1867.*

## IMPROVEMENT IN HORSE HAY-FORKS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO WHOM IT MAY CONCERN:

Be it known that I, C. C. BLODGETT, of Watertown, in the county of Jefferson, and State of New York, have invented certain new and useful improvements in Horse Hay-Forks; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My invention relates to that class of hay-forks known as harpoon-forks, or forks in which the centre-bar and claws are enclosed within a sheath, pointed or provided with a "penetrator" at its lower end to facilitate its entrance into the hay. In forks of this kind the sheath and centre-bar are connected by mechanism which is arranged and operated so as to hold the claws in one of two positions, either projected from the sheath or withdrawn within it.

My main object is to effect an improved arrangement of this mechanism, which, in ordinary forks, is not only complicated, but oftentimes, from its position on the fork, cannot be operated with facility, becoming entangled and clogged at the very time it should be in perfect operative order. I also have in view to simplify, and at the same time to render more effective, the combination of the centre-bar and claws with the sheath which encloses them, both with respect to the method of guiding and centring the bar and steadying the claws, and also to that of allowing for the movement of the bar, and its separation from the sheath.

To this end my invention principally consists in the arrangement of the locking bolt and its operative mechanism so that both shall be carried by the centre-bar, or within the centre-bar and handle. Thus, instead of having the locking and unlocking mechanism upon the exterior of the fork, as is ordinarily the case, where it is entirely exposed and liable to be damaged or broken at any time, I surround it not only by the centre-bar, but also by the exterior sheath, and in this manner render the danger of its being injured by collision or by being brought into any contact with other bodies very remote and improbable.

In order to guide and centre the bar which carries the claws, I make the upper part of it cylindrical, or of other suitable form to fit the interior of the sheath. To prevent the bar from turning in the sheath, and at the same time to hold the two together, a longitudinal slot is formed in this part of the bar, through which a pin passes whose ends are held in the sides of the sheath. This pin prevents the rotation of the centre-bar and limits its sliding movement, which, by reason of this arrangement, cannot exceed the length of the slot. The lower end of the bar is recessed, so as to form jaws between which the claws are pivoted, and these jaws are so shaped as to follow the contour of the sheath in which they fit. The upper ends of the claws are of such length that when the centre-bar is down in the sheath and the claws projected therefrom, these ends shall be forced against the sides of the sheath, so as to hold the claws steady and motionless. And in furtherance of this object that part of the end of each claw which comes in contact with the sheath is made in a curved form, so as to fit closely the part of the interior surface of the sheath with which it is brought in contact.

In Letters Patent heretofore granted me I have shown and described claws, the upper ends of which, at the point where they are pivoted to the bar, are slotted so as to effect the results above named. Having found, however, upon experiment, that these slots are not essential, and besides tend to increase the labor and expense of making the claws, I have adopted the construction herein described, which admits of the slots being dispensed with.

To enable those skilled in the art to understand and use my invention, I will now proceed to describe the manner in which the same is or may be carried into effect by reference to the accompanying drawings, in which—

Figure 1 is an elevation of my improved fork.

Figure 2 is a vertical central section of the same, and

Figure 3 is a section at right angles to that shown in fig. 2 of detached parts of the fork.

The fork consists of the tubular sheath and "penetrator" A, centre-bar B, and claws C. The sheath, near its bottom, has two slots formed in it, through which the claws C are projected. The latter are pivoted to the lower end of the bar, (see fig. 3,) and their ends above the pivotal point are of such length that when the claws are thrust from the sheath they shall be pressed tightly against the sides of the sheath, as seen at *a a*, fig. 3, thus holding the claws firmly and preventing their swinging upward in their slots in the sheath. As shown in fig. 2, the ends of the claws may be slightly curved or convexed, so as to fit more exactly the sheath. This end of the bar is of sufficient diameter to be in contact with the interior surface of the sheath, and it thus forms a



means for guiding the claws to the slots from which they are projected, as well as for steadying and centring the bar. The centre-bar above its lower end decreases in diameter, forming in reality a connecting-rod, which may be either cast or forged in one piece with, or, as shown in the drawings, riveted or otherwise suitably secured to, the upper end of the bar B', which will now be described. This part of the bar is cylindrical, and is of such size as to fit exactly, or as nearly so as is necessary for practical purposes, the interior of the sheath, and to it is attached the ring or handle D to which the hoisting-rope is fastened. A recess, *b*, of suitable dimensions, is formed in the handle D and in the upper part of the cylindrical piece-B', in which the locking-bolt *c*, lever *d*, and spring *e* are received. The bolt *c* rests on the bottom of the recess, sliding between its sides, which, together with the pin *f* and opening *g* in the front side of the bar, constitute the guides by which the motion of the bolt is directed and limited. The bolt *c* projects through the opening *g*; and when caught in the slots *g*<sup>1</sup> or *g*<sup>2</sup> of the sheath, holds the latter in one of the two positions shown in fig. 1. The bolt is operated by means of a lever, *d*, pivoted to the bar within the recess *b* at *h*. Its lower end is inserted in a notch formed in the top of the bolt, and its upper end, projecting up through the bar and handle D, has attached to it the rope or cord *k*, which is pulled by the operator when he wishes to draw the bolt back from the sheath. A spring, *e*, which is fastened to the back of the recess *b*, presses against the upper end of the lever, so as to throw the bolt *c* forward whenever superior pressure or force is not exerted to move the lever in the opposite direction. In order to increase the power used in operating the lever, the cord *k*, instead of being attached directly to the end of the lever, is fastened to the handle, and then passing around a pulley, *l*, attached by links or ears *m* to the end of the lever, passes out through a hole, *n*, formed in the handle.

It will be seen that I am thus enabled to arrange the locking mechanism, consisting in this case of the lever-spring and locking-bolt, so that it shall be contained entirely within the centre-bar, excepting that part of the lever which must necessarily be exposed to admit of its being connected with the rope or cord *k*. Other mechanism than that which I have shown may be arranged similarly, and I do not limit myself to the precise parts shown, as the main feature of this portion of my invention consists in enclosing the locking mechanism, whether like or unlike that shown in the drawings, within the centre-bar, whereby all danger of breaking or injuring or entangling the same is avoided, so that it may at all times be maintained in complete order and readiness for use.

I may say here that the spring *e* may be located in different positions from that which I have shown, as, for instance, it may be applied to the lower end of the lever, or it can be as a spiral spring arranged in the handle D, one end of the spring being attached to the back of the lever, and the other to the contiguous or neighboring part of the handle or ring. While, therefore, I prefer to enclose the locking mechanism as far as possible within the centre-bar, this is not absolutely necessary, for, as just indicated, the parts may be otherwise arranged and still be carried by the bar.

The sheath A has an open top, and in order to prevent it and the centre-bar from dropping apart, I unite them by means of a pin, *p*, which passes through a slot, *r*, formed in the upper part of the bar below the recess *b*, and is held or received in the sides of the sheath. The length of the slot is about equal to the distance between the slots *g*<sup>1</sup> *g*<sup>2</sup> in the sheath, so that when the locking-bolt is drawn back from the latter, the sheath and bar are free to slide from or toward one-another within the limits just mentioned, the pin *p* preventing any movement beyond.

The combination of the sheath and bar by means of the slot *r* and pin *p* is not only advantageous in the respect above mentioned, but in another, for as the pin *p*, after passing through the slot *r*, is held in the sides of the sheath, it prevents the centre-bar from rotating or turning in the sheath, which from its cylindrical form it would otherwise be very apt to do upon the withdrawal of the claws from their slots.

The method of operating the fork is too well understood to need any detailed explanation.

After the fork is loaded and has been elevated and carried to the desired position, the load is dropped by pulling on the cord *k*, which forces back the lower end of the lever and draws back the bolt. The sheath and centre-bar being now disconnected, the former drops down to the position shown in red lines, fig. 1, folding up the claws, and causing the load to fall to the ground. The pin *p*, which strikes against the upper end of the slot *r*, prevents the complete withdrawal of the bar from the sheath, and the pressure upon the cord *k* being removed, the spring *e* forces back the lever and bolt until the latter is inserted in the upper hole *g*<sup>1</sup> of the sheath. If at any time it be desired to take the fork to pieces, this can be readily done by removing the pin *p*, after which there is nothing to prevent the complete separation of the centre-bar from the sheath.

Having now described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. A hay-fork having a centre-bar combined with an enclosing sheath, substantially as herein described, in which the mechanism for holding the claws in position is carried by or contained within the bar or rod by which the said claws are operated or carried.
2. The combination, with the centre-bar and its enclosing sheath, of the locking-bolt and mechanism for operating the same, under such an arrangement that the said bolt and mechanism shall be contained within the centre-bar, as set forth.
3. The combination with the bar or rod for operating or carrying the claws of the locking-bolt and its actuating lever and spring, arranged for operation as herein described.
4. The combination with the locking mechanism of the pulley and rope or cord for operation, the said mechanism arranged within the handle of the fork as herein shown and for the purposes set forth.
5. The method of connecting the slotted centre-bar with its enclosing sheath by means of a pin, or equivalent device passing through both sheath and centre-bar, and forming the means whereby the motion of the centre-bar within the sheath is limited and stopped, substantially in the manner herein specified.

6. The combination with the sheath and centre-bar of the claws elongated above their pivotal point, so that when the same are projected from the sheath, their upper ends shall bear against the sides of the said sheath, substantially as and for the purposes set forth.

7. The combination, with the locking-bolt and lever, of a spring arranged within the centre-bar or handle in such manner that the recoil of the said spring shall force the bolt forward into place as set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

C. C. BLODGETT.

Witnesses:

JNO. C. McCARTIN,  
H. F. INGLEHART.