No. 646,513. Patented Apr. 3, 1900.

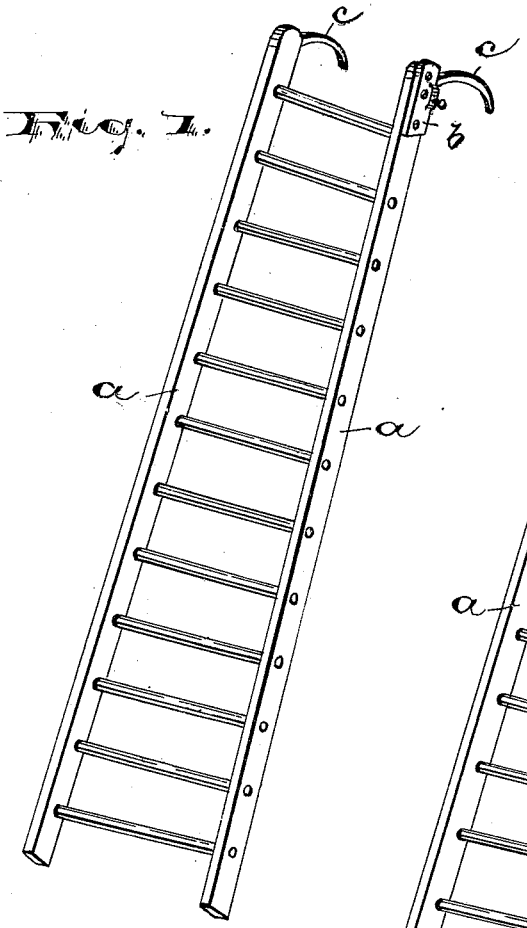
J. A. WESTON.

SCALING LADDER.

(Application filed May 24, 1899.

(No Model.) 2 Sheets—Sheet 1

Fig. 1.



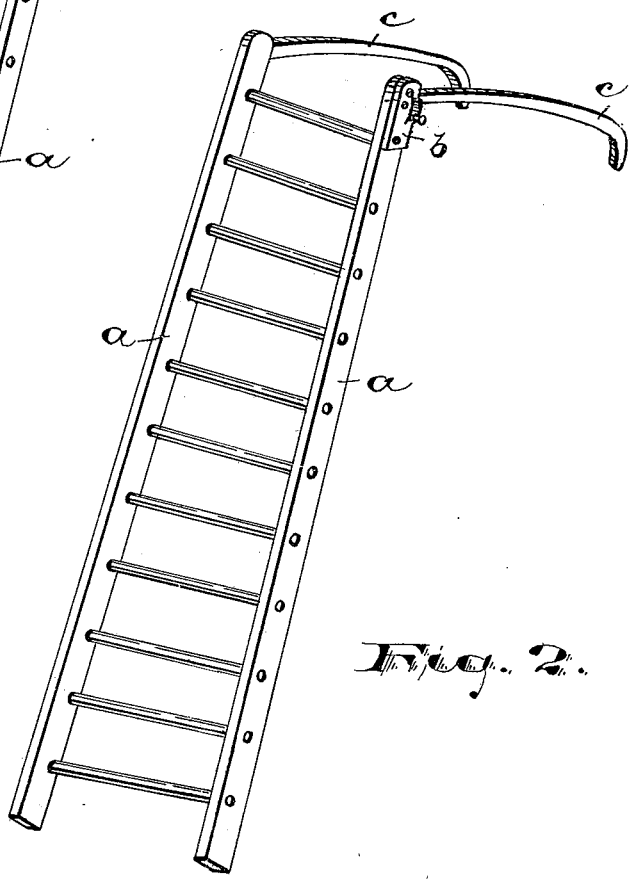


Fig. 2.

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Russell M. Everett

INVENTOR:

John A. Weston,

BY

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Fig. 3.

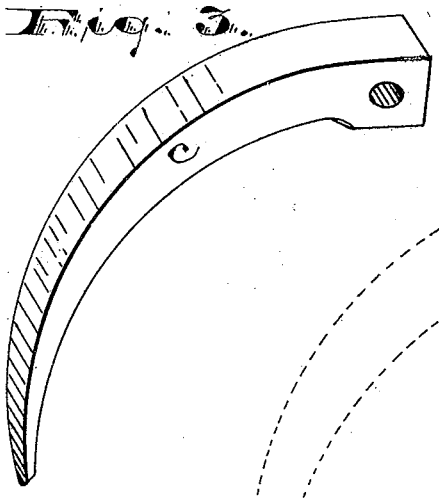


Fig. 4.

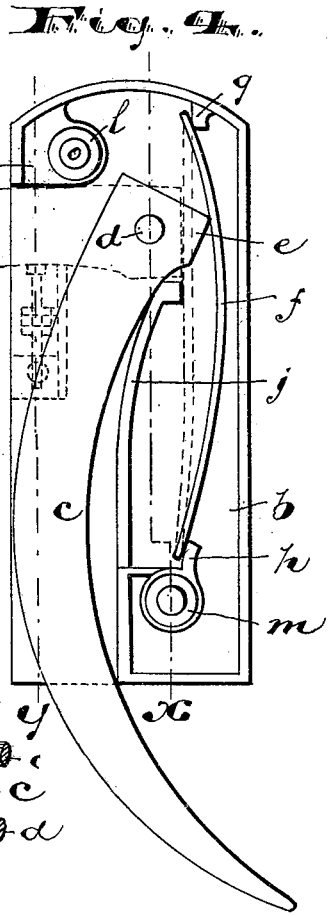
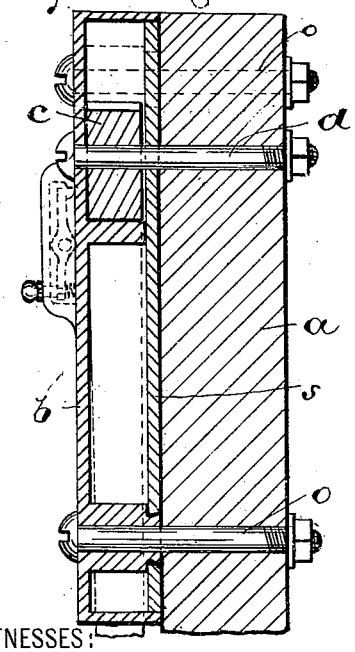


Fig. 5.



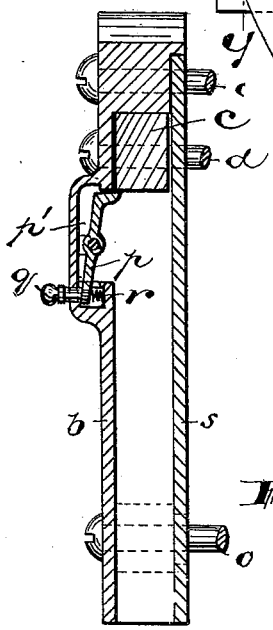


Fig. 6.

WITNESSES:

Alfred R. Krouse.

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN A. WESTON, OF NEWARK, NEW JERSEY.

SCALING-LADDER.

SPECIFICATION forming part of Letters Patent No. 646,513, dated April 3, 1900.

Application filed May 24, 1899. Serial No. 718,000. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. WESTON, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Scaling-Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to that class of ladders adapted for use in scaling walls and roofs at fires or for service under any other emergencies, the objects of the present improvements being to secure greater safety in connection with the scaling operations, to provide means better adapted to enable the ladder to be packed away upon its carriage, to provide an adjustable hook for said ladder which will be of more simple construction and easy to operate preparatory to using the ladder, and to secure other advantanges and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved scaling-ladder, in the hook attachment therefor, and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a perspective view of the upper portion of a ladder having my improvement attached thereto. Fig. 2 is a similar view showing a modification of construction. Fig. 3 is a perspective view of a scaling-hook detached from the ladder and the pivotal plate upon which the hook is secured. Fig. 4 is a side elevation of said hook, one of the side plates of said case being removed to show the interior construction more clearly. Fig. 5 is a sectional view at line x in Fig. 4, showing the case attached to a ladder; and Fig. 6 is a similar sectional view taken at line y, Fig. 4.

In said drawings, a indicates an ordinary fire-ladder of any suitable construction. $b\ b$ are boxes or cases attached to the upper ends of the uprights of the said ladder at either of the sides, and $c\ c$ indicate hooks or pawls pivoted or bolted within the said cases $b\ b$, the pivots d being either bolts adapted to serve in fastening the case to the ladder, as indicated in Fig. 5, or lugs cast within said case, the lugs when employed preferably being hollow to permit the passage of the bolt therethrough. At their inner ends the hooks or pawls are provided with eccentric bearing edges e, which may be of angular form, as shown, and adapted to bear against a spring f, arranged within the case and held in proper position by suitable lugs or projections $g\ h$, formed within the said case and holding the spring f, so that the latter presses against the bearing of the hook to hold the same either in the closed position (shown in full lines in Fig. 4) or in the open position. (Shown in outline in said figure.)

The hook or pawl c is curved and tapers toward its outer extremity, where said hook is more or less pointed to catch into wood trimmings, window-casings, &c., or pass through the tin of roofs when the ladder is raised to scaling position. Within the case the same is provided with a stop-bearing i, which serves to limit the opening movement of the pawl and to hold the latter in proper hooking or operative position on the ladder. The said bearing i coöperates with the spring f to hold the said hook in said position. Another bearing j is provided on the interior of the case to limit the movement of the pawl in its folding or closing movement, so that the said pawl will lie when closed or folded in a position approximately parallel with the ladder-upright and be protected thereby, so that said hook will not readily catch upon or engage parts of the carriage when withdrawn therefrom or on persons passing the ladder in walking through narrow spaces, such as stairs or hallways, or when the ladder is being packed away on its carriage or transported to or from the fire. The partition having the bearing j also serves as an inclosure, more or less perfectly protecting the spring from dampness, dust, or ice. The interior of the box is also provided with lugs or studs $l\ m$, having their extremities reduced to enter per-

forations in the removable side plates, shoulders being thus formed on the stud, upon which the said side plates may rest. The upper end of said partition *j* also serves as a support or bearing for the hook *c* in its open position, reinforcing the bolt or pivot *d* when subjected to the strain brought thereon in scaling operations, as will be understood upon reference to Fig. 4.

The box or case is provided with the side plate *s*, which rests upon the perforated or hollow studs or posts *l m*, as described, the said plate being held in place by means of bolts *o*, or, and preferably, by expanding the hollow studs where they pass through the plate, as indicated in Fig. 5, the plate being thus held in position when detached from the ladder for transportation.

To lock the hook *c* in its open position more positively than by the spring, I may employ a locking-detent *p*, as indicated in Fig. 6, where the case is shown to have a small recess or chamber *p'*, into which is arranged the detent *p*, which consists of a lever adapted at one end to enter beneath the open hook *c*. At its opposite end said lever is provided with a push-button *q* and spring *r* and is thus adapted to enter automatically into locking relation to the hook *c* when opened, and when it is desired to fold up the said hook the push-button *q* is thrush inward by pressure of the finger upon the push-button to throw said lever away from the pawl. Other means may be employed for locking the hook, as may be evident. The hook as arranged in the case is attached to the ladder and may be opened and closed in a direction at right angles to the plane of the ladder and is easily held in place on the ladder without detriment to the sightliness of the said ladder or inconvenience in using the ladder for other purposes than scaling, all as will be evident.

It is evident that the shape of the hook may be varied, increased in size, or otherwise adapted for special purposes. In Fig. 2 I have shown the hook of considerable length, whereby it is especially adapted for thick walls or overreaching broad window-sills.

Having thus described the invention, what I claim as new is—

1. A scaling-hook for ladders, comprising a case open along the front and having a partition set in or back from the said open front, a hook having one end pivoted in said case near the end of said partition, and a spring inclosed behind said partition and controlling the hook, substantially as set forth.

2. A scaling-hook for ladders, comprising a case adapted to be secured to the side of the ladder, a curved hook having one end pivoted in said case, a partition extending lengthwise of said case intermediate of the front and back, said partition terminating near the point of pivoting of said hook and forming a forward chamber open at the front and into which the hook may be folded, an inclosed chamber being formed at the back of said partition, and a spring arranged inside said closed chamber for controlling the hook, substantially as set forth.

3. As an article of manufacture, a scaling-hook for ladders comprising a case adapted to be secured to the side of the ladder, said case having the front and a portion of one end open, a partition extending from said partially-open end toward the opposite end and terminating short of said opposite end, a hook having one end pivoted between the end of said partition and the adjacent end wall of the case and adapted to stand out from the case or to be folded inward against the partition, and a leaf-spring inclosed back of the partition and engaging the end of the hook, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of May, 1899.

JOHN A. WESTON.

Witnesses:
CHARLES H. PELL,
C. B. PITNEY.