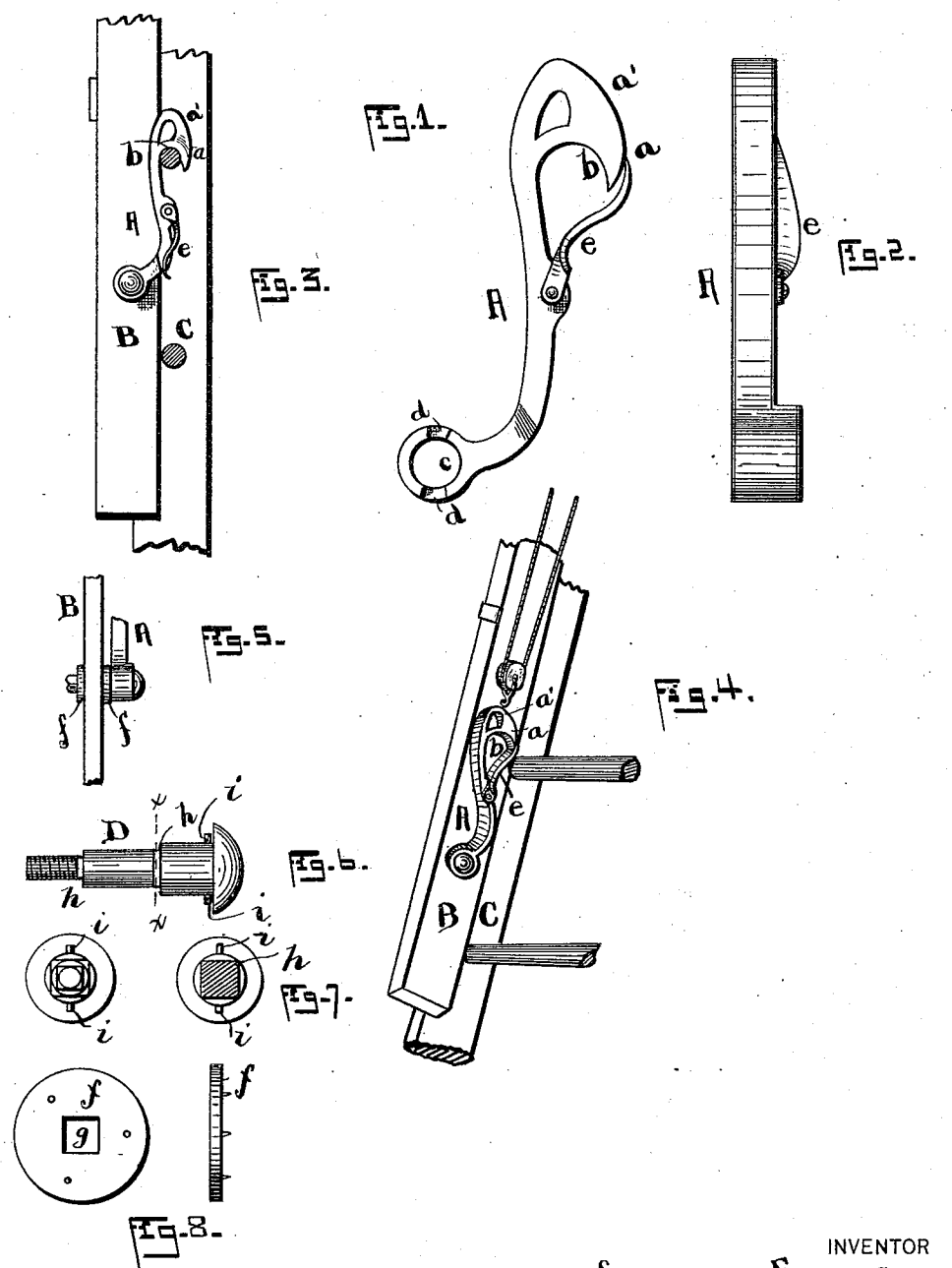


(No Model.)

L. FERGUSON.
LADDER HOOK.

No. 536,461.

Patented Mar. 26, 1895.



WITNESSES:

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LYMAN FERGUSON, OF SYRACUSE, ASSIGNOR TO FRANK DOOLITTLE AND
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LADDER-HOOK.

SPECIFICATION forming part of Letters Patent No. 536,461, dated March 26, 1895.

Application filed July 3, 1894. Serial No. 516,514. (No model.)

To all whom it may concern:

Be it known that I, LYMAN FERGUSON, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Ladder-Hooks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to extension ladders and more particularly to the hooks by which they are automatically extended or contracted.

My object is to produce a ladder hook adapted to be detachably secured to the frame of the ladder so as to enable the sections to be extended or contracted at will, as a new article of manufacture, cheap and durable in its construction and of great utility; and to that end my invention consists in the several new and novel features and combination of parts hereinafter described and which are specifically set forth in the claim hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is an inside face view of the hook detached. Fig. 2, is an edge view thereof. Fig. 3, is a view of a portion of both sections of one side of the ladder showing the hook in use. Fig. 4, is a substantial and similar view showing the hook out of engagement with the round as it appears when the sections are being contradicted. Fig. 5, shows an edge view of a portion of one section of the ladder showing how the hook is secured thereto. Fig. 6, is a view of the bolt that secures the hook to the frame. Fig. 7, is a cross section on line *x-x*, in Fig. 6, looking at it from the left. Fig. 8, shows face edge views of the plate which surrounds the opening through which the bolt shown in Fig. 6 passes.

Similar letters of reference indicate corresponding parts.

—A— is a hook constructed goose-neck shaped, substantially as shown, having the forwardly and downwardly extending hook —a— forming the recess —b— and the rearwardly extending eye —c—, having upon its inner face, recesses —d— for the purposes hereinafter specified. It is also provided upon its front edge with a substantially —S— shaped guard —e—, the upper end of which

is adapted to lap over the front edge of the hook —a— as hereinafter specified.

—B— and —C— are sections of the ladders, one constructed a little narrower than the other so as to set inside of the frame of the other and all provided with rounds in the ordinary way. Upon the inner face of the inner section of the ladder, I secure the hook —A— by first perforating the frame then securing a plate —f— having burrs upon its inner side about such opening, the said plate having rectangular openings —g—. —D— is a bolt adapted to pass through said plate and said opening in the section of the ladder and provided with rectangular shoulders —h—, adapted to engage with the rectangular openings —g— in the plate —f—, when they are inserted through the opening in the section of the ladder after said bolt has been passed through the eye —c— of the hook —A— as shown in Fig. 4. This is for the purpose of preventing the bolt —D— from rotating in the frame of the ladder. The bolt —D— is also provided near its head with lugs or pintles —i— adapted to engage with the recesses —d— in the hook, for the purpose of allowing the hook to play backward and forward just enough to allow it to pass over the round when the ladder is being contracted.

It will be observed that inasmuch as the hook is held in substantial and upright positions when the section of the ladder to which it is attached is forced upward, the inner edge at substantially the point —a'— will come in contact with each round and pass over it as long as the section is being forced upward, the arm or guard —e— taking the position shown in Fig. 3. When it is desired to locate the ladder or section at any particular point, I then allow the section to drop back far enough to allow the round to pass in the recess —b— as shown in Fig. 3. It will also be observed that when I desire to collapse or contract the section, the moving section is allowed to drop down. The arm —e— striking against the round, throws it up in position shown in Figs. 1 and 4 and serves as a guard to throw the end of the hook over the successive rounds. It will also be observed that by contracting the shoulder —h— rectangular upon the bolt and the opening in the plate to

conform with them, the strain will be all upon the plate and not upon the opening through the frame. In other words the strain will be distributed upon the surface of the frame of the ladder. It will also be observed, that by
5 adapting the pins or lugs, —*i*— to travel in the slot-way or recesses —*d*—, the oscillatory movement of the hook is limited.

What I claim as my invention, and desire
10 to secure by Letters Patent, is—

The combination with an extension ladder composed of two or more sections of an automatic locking device, comprising a goose-neck body, having upon its upper end a down-
15 wardly extending hook and upon its opposite

end having recesses upon one edge, the guard secured loosely upon said body, and means for securing the said hook body to the frame, comprising plates having rectangular openings; a bolt having similar rectangular shoulders adapted to engage therewith and lugs or pins adapted to engage with the recesses upon the edge of it and for the purpose of limiting the oscillatory movement of the hook body.

In witness whereof I have hereunto set my
hand this 20th day of June, 1894.

LYMAN FERGUSON.

In presence of—

C. W. SMITH,

HOWARD P. DENISON.