

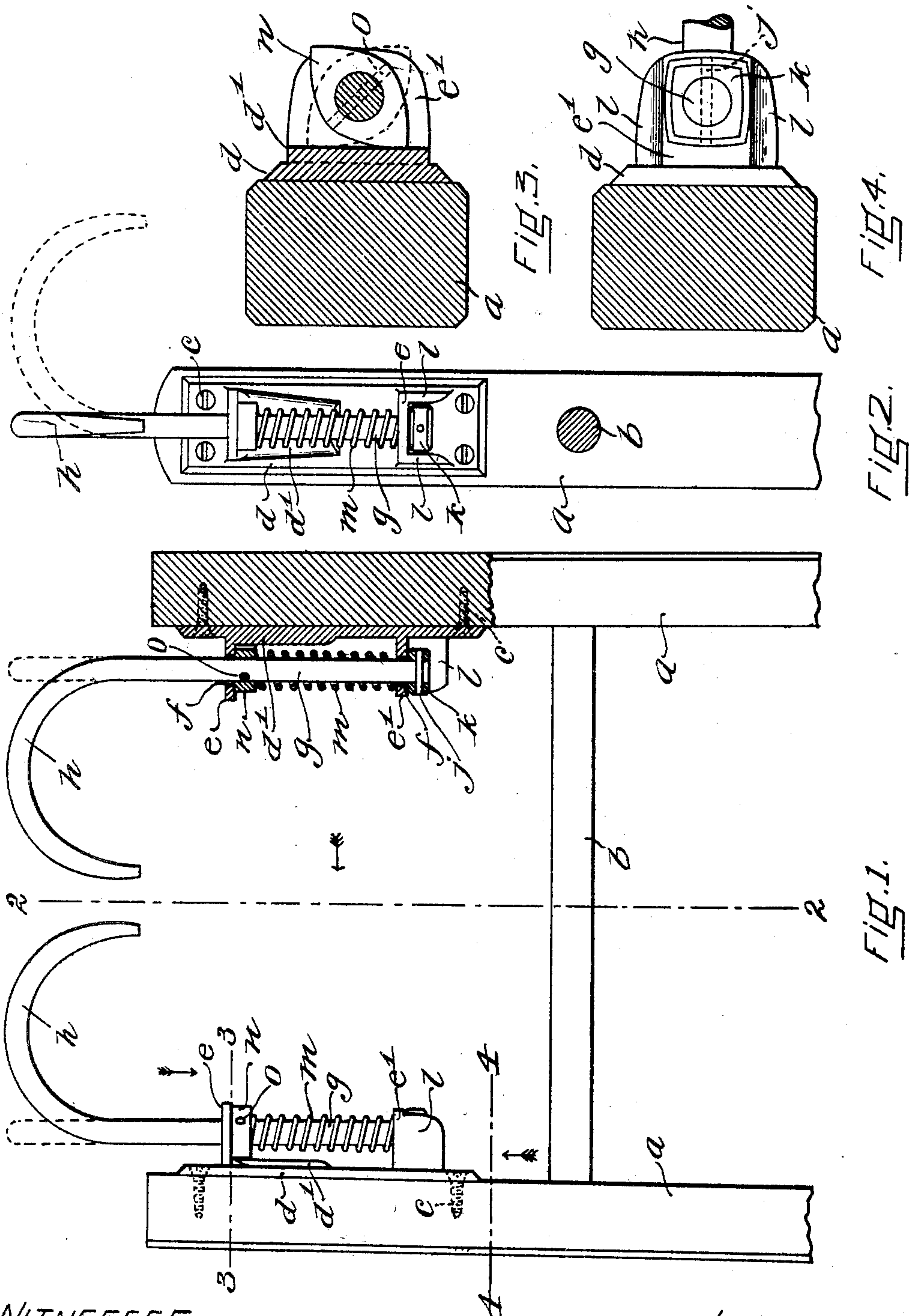
No. 675,545.

Patented June 4, 1901.

J. D. HATCH.
LADDER HOOK.

(Application filed Jan. 8, 1901.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

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TO JOSEPH J. VINCENT, OF SAME PLACE.

LADDER-HOOK.

SPECIFICATION forming part of Letters Patent No. 675,545, dated June 4, 1901.

Application filed January 8, 1901. Serial No. 42,492. (No model.)

To all whom it may concern:

Be it known that I, JACOB D. HATCH, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Ladder-Hooks; 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.

The present invention relates to ladder-hooks.

The object of the present invention is to construct a ladder-hook which may be folded into the plane of the ladder when not in use.

To the above end the present invention consists in the ladder-hook hereinafter to be described and claimed.

In the illustrated embodiment of my invention, Figure 1 is a top plan view of a ladder provided with my improved hooks, the support for one hook being shown in section. The normal or folded position of the hooks is indicated in full lines and the operative position in dotted lines. Fig. 2 is a sectional view on line 2 2, Fig. 1, looking toward the left. Fig. 3 is a sectional view on line 3 3, Fig. 1, looking in the direction of the arrow; and Fig. 4 is another sectional view on line 4 4, Fig. 1, looking in the direction of the arrow.

In the drawings, which illustrate the preferred form of my invention, *a a* are the up-rights or side rails of a ladder, and *b* a rung thereof. Firmly secured to the inside of the rails *a* by means of the screws *c* are the ladder-hook supports, which comprise a base *d*, from which the ears *e* and *e'* are rigidly projected. These ears are provided with bearings *f*, in which the shank *g* of the hook *h* is rotatably and slidingly mounted. Fixedly secured to the end of the shank *g* by means of the pin *j* is the square block *k*, which normally engages the flanges *l l* on the ear *e'* and positively prevents rotation of the hook in its bearings. A coiled spring *m*, engaging at one end the ear *e'* and at the other the stop-block *n*, secured to the shank *g* by means of the pin *o*, acts normally to hold the hook in

its advanced position, as shown in the drawings, with the square block *k* between the flanges *l* of the ear *e'*. The hook may be turned, however, by first moving it longitudinally in its bearings against the tension of spring *m* until the block *k* is clear of the flanges *l*. Upon releasing the hook after it has been turned the spring *m* will immediately move the hook longitudinally, carrying the block *k* between the flanges *l*, which, as shown in Fig. 2, are flaring, so that the block *k* will not catch on them if the hook should be turned through a little less than a right angle.

My improved ladder-hook is especially useful on firemen's ladders, and in order to avoid all possibility of mistake at night or during the excitement of a fire and turning of the hook in the wrong direction or through more than a right angle I have so shaped the stop-block *n* that it will engage the raised portion *d'* of the base *d* in the manner shown in Fig. 3. When the block *k* is clear of the flanges *l*, this stop-block will still engage the raised portion *d'* and will prevent the hook being turned in the wrong direction. After it has been turned in the right direction, however, through a right angle the stop-block *n* will be in the position shown in Fig. 3 in dotted outline and will thus prevent further turning of the hook.

The operation of my device is as follows: Assuming the hook to be in its folded or normal position, it is moved longitudinally in its bearings against the tension of the spring, turned in whichever direction it will turn and as far as it will turn, and then released, when the spring will immediately carry it forward, the block *k* engaging the flanges *l* and positively preventing rotation of the hook in its advanced position. The hook is folded down into its inoperative position by the reverse cycle of operations.

I am aware that it is not broadly new to construct a ladder-hook which must be moved longitudinally in its bearings before it may be turned from inoperative into operative position, and vice versa; but so far as I know the prior art I am the first to provide such a hook with a stop-block which shall positively

prevent turning in the wrong direction or through more than a right angle in the right direction after such longitudinal movement.

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

1. A ladder-hook, having, in combination, a support provided with bearings, a hook rotatably mounted in said bearings, means positively preventing rotation of the hook through more than a right angle, and independent means acting normally to positively prevent all rotation of the hook in its bearings, substantially as described.

2. A ladder-hook, having, in combination, a support provided with bearings, a hook rotatably and slidingly mounted in said bearings, means positively preventing rotation of the hook through more than a right angle, means acting normally to move the hook longitudinally in its bearings in the direction in which it tends to move when under strain, and means positively preventing rotation of the hook when it has been moved longitudinally in said direction, substantially as described.

3. A ladder-hook, having, in combination, a support, bearings in the same, a hook provided with a shank rotatably and slidingly mounted in said bearings, means positively preventing rotation of the hook through more than a right angle, a square block fixedly secured to said shank, means engaged by said block when the hook has been moved longitudinally in the direction in which it tends to move when under strain to positively prevent rotation of the hook in its bearings, and

disengaged by said block when the hook has been moved longitudinally in the opposite direction to permit rotation of the hook in its bearings, substantially as described.

4. A ladder-hook, having, in combination, a base, ears projected therefrom and provided with bearings, one of said ears having side flanges, a hook provided with a shank rotatably and slidingly mounted in said bearings, a stop-block mounted on said shank and positively preventing rotation through more than a right angle, a square block mounted on said shank and arranged to engage said flanges when the hook has been moved longitudinally in the direction in which it tends to move when under strain to positively prevent rotation of the hook in its bearings, and arranged to disengage said flanges when the hook is moved longitudinally in the opposite direction to permit rotation of the hook in its bearings, and a spring acting normally to move the hook in the former direction, substantially as described.

5. A ladder-hook, having, in combination, a support provided with bearings, a hook rotatably and slidingly mounted in said bearings and means positively preventing all rotation of the hook when it has been moved longitudinally in the direction in which it tends to move when under strain, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses:

JACOB D. HATCH.

Witnesses:

FRED O. FISH,
ALFRED H. HILDRETH.