

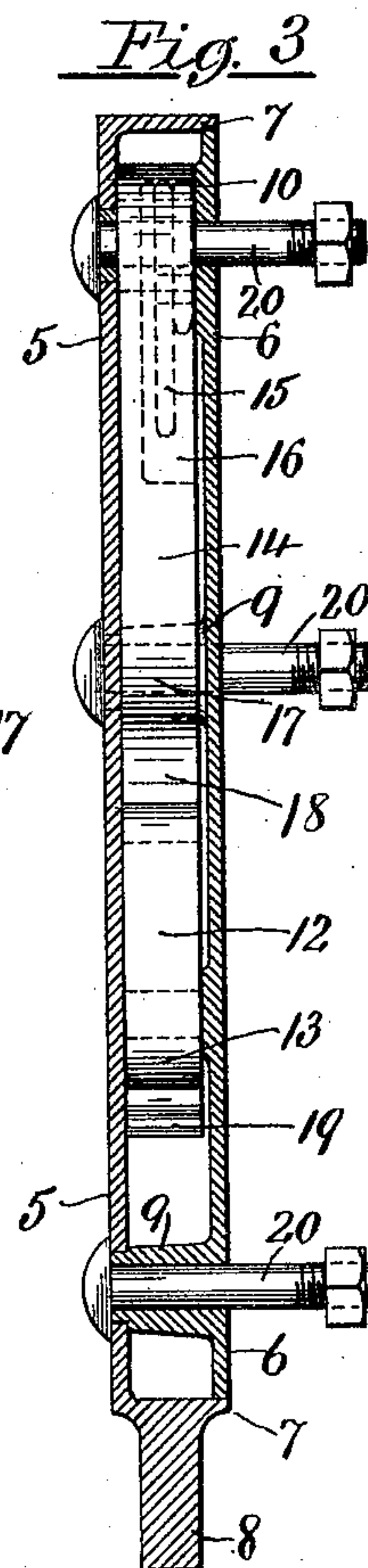
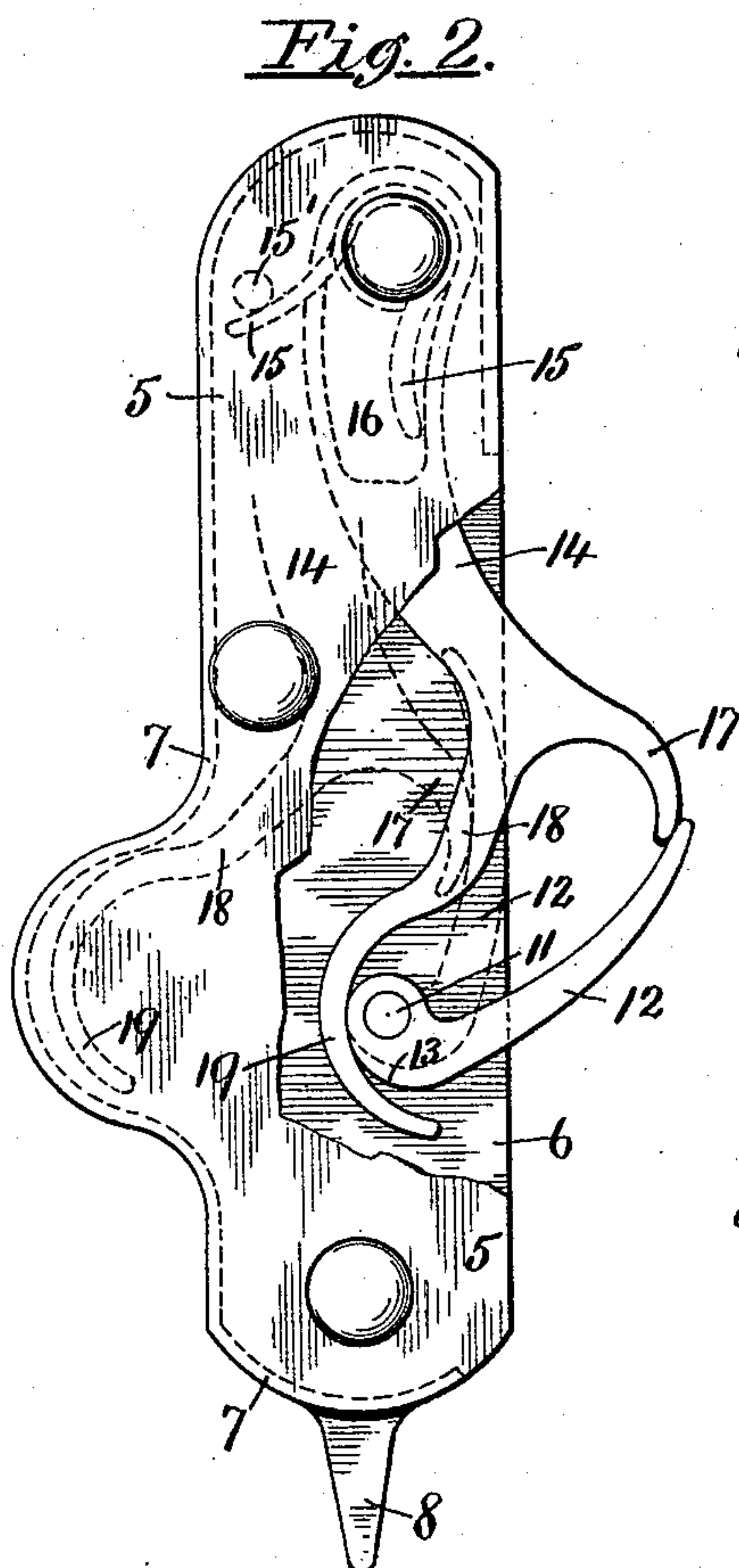
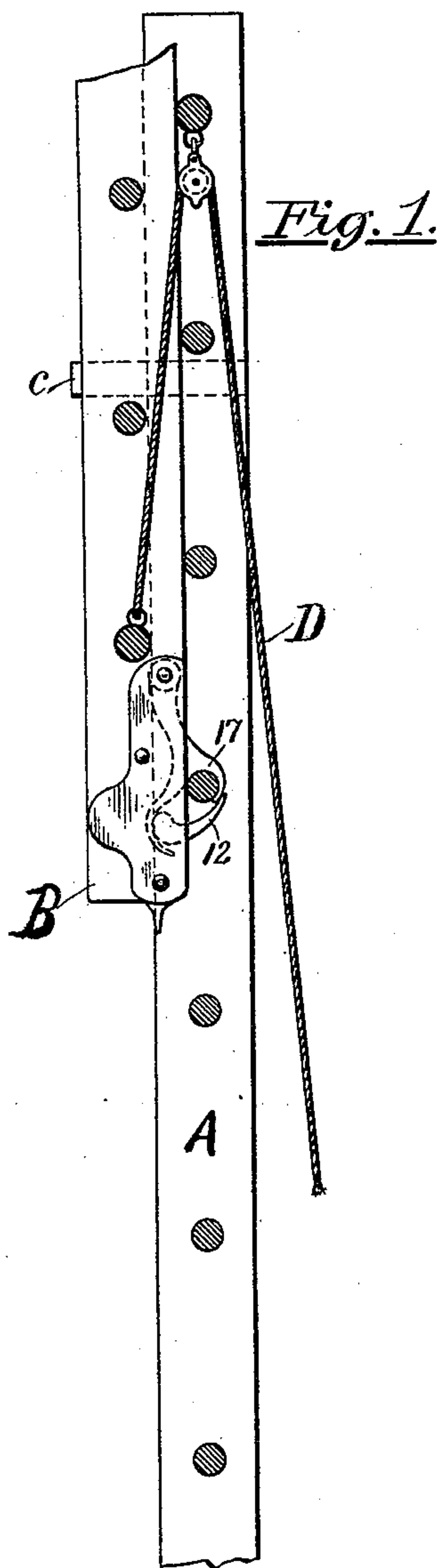
(No Model.)

J. A. WESTON.

AUTOMATIC LATCH FOR EXTENSION LADDERS.

No. 477,393.

Patented June 21, 1892.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN A. WESTON, OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC LATCH FOR EXTENSION-LADDERS.

SPECIFICATION forming part of Letters Patent No. 477,393, dated June 21, 1892.

Application filed March 8, 1892. Serial No. 424,209. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. WESTON, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Automatic Latches for Extension-Ladders; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in automatic latches, which may be secured to one of a pair of ladders, and is adapted to engage the rounds of the other ladder in order that the ladder carrying the latch may be held as an extension of the base-ladder.

The objects of the invention are to produce a latch of the nature described, which will be strong and durable in construction and effective in operation.

The invention consists in the peculiar construction of the spring-operated thrust latch-bar and of its co-operating pawl and their novel combination with the peculiar case in which they are pivoted, and by the use of which the effectiveness of their operation is increased, as will be more fully set forth hereinafter, and pointed out in the claims.

Figure 1 represents a longitudinal sectional view of a pair of ladders, showing the latch secured to one of the ladders and the latch-bar engaging a round of the other ladder. Fig. 2 represents an enlarged view of the latch and of the case, partly broken away to show the construction of the thrust latch-bar and its pawl, also indicating in dotted lines the location of these parts when pushed inward by the rounds of a ladder when the latch is being moved downward. Fig. 3 represents a vertical sectional view of the case to more clearly indicate the construction thereof, presenting, also, an edge view of the latch-bar and pawl.

Similar letters and numbers of reference designate corresponding parts throughout.

In the drawings, A is a base-ladder, and B an extension-ladder, which is generally of a width to freely move between the side frames of the base-ladder. At the upper portion of the ladder A is sometimes secured the guide-hook C, which prevents the extension-ladder from falling outward, and a rope D may be

secured at one end to a lower round of the ladder B and pass through a pulley secured to an upper round of the ladder A. By the use of this rope the ladder may be raised or lowered and is automatically locked to any round of the ladder A by the improved latch.

In carrying out my invention I form a case provided with a top or cover 5 and a base-plate 6. These are of the general shape shown in the drawings to form a protecting-case having a rearwardly-extending chamber into which the lower portion of the latch-bar may extend. The cover 5 has a depending rim 7 extending around the back and ends thereof, but being dispensed with for the greater portion of the front edge to leave an opening through which the latch-bar and pawl may extend. The lower end of this cover 5 is also furnished with a spike 8 to prevent the lower end of the ladder B from slipping when removed from the ladder A.

The base-plate 6 is formed to fit inside the edge of the rim 7, and is furnished with the tubular posts 9 9 and 10, the upper ends of which are cut away to form shoulders on which the cover may rest, and above these shoulders the posts extend through perforations in the cover and are expanded to firmly secure the base-plate and cover together. The base-plate is also provided with the small post 11, on which the pawl 12, having the cam-shoulder 13, is free to move in a plane parallel to that of the base-plate.

The latch-bar 14 is pivoted on the post 10 at the upper portion of the case and is thrown outward by the spring 15, encircling the post 10 and almost wholly contained within the cavity 16, formed in the under surface of the pivoted end of the latch-bar, against which one end operates while the other end is held by the rim of the case or by a stop 15'. This bar extends downward and at its lower portion is furnished with the outwardly-curved jaw 17 and the inwardly-curved member 18, the lower end of which is curved outwardly to form the cam-hook 19 to engage and operate the cam-shoulder 13 of the pawl to throw said pawl upward and close the entrance to the jaw 17, this pawl, when thus thrown upward, also serving as a depressing finger to press the latch-bar back into the case as the latch moves down over the rounds of the ladder A. When

the latch is being moved upward, the curved outer edge of the latch-bar rides over the rounds of the ladder and the pawl is allowed to drop back out of the way.

5 By the construction thus shown and described I am able to produce a latch for extension-ladders which in itself forms a marketable article, the parts of which cannot become loosened and lost, and the latch cannot
10 be effected by the swelling of the ladder-frame to which it is attached, as the base-plate 6 is interposed between the movable parts of the latch and the frame of the ladder to which the same is secured by the bolts 20 20, extending
15 through the tubular posts of the casing.

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

20 1. In a latch for extension-ladders, the combination, with the spring-operated pivoted latch-bar 14, having a cavity 16 for containing the spring, an outwardly-curved latching-jaw 17, an inwardly-curved member 18, and a cam-hook 19 at the lower end of this member, of

the pivoted pawl 12, having the cam-shoulder 25 13, adapted to be engaged by the cam-hook 19, as and for the purpose described.

2. In a latch for extension-ladders, the combination, with a case having the base-plate 6, furnished with the tubular posts 9 9 and 10 30 and the pivot 11, the cover 5, having the rim 7 and the spur 8 and perforations through which the ends of the posts 9 9 and 10 extend and are secured, of the thrust latch-bar 14, pivoted on the post 10 and having a cavity 35 16, a spring 15, partially contained therein, the outwardly-curved jaw 17 and the member 18, forming the lower part of said latch-bar, the cam-hook 19, extending from the member 18, and the pawl 12, having the cam-shoulder 40 13, movable on the pivot 11, as and for the purpose described.

In witness whereof I have hereunto set my hand.

JOHN A. WESTON.

Witnesses:

JOSEPH A. MILLER,
HENRY J. MILLER.