(No Model.)

J. H. STUPP.

FIREMAN'S LADDER.

No. 439,361. Patented Oct. 28, 1890.

Fig. 1.

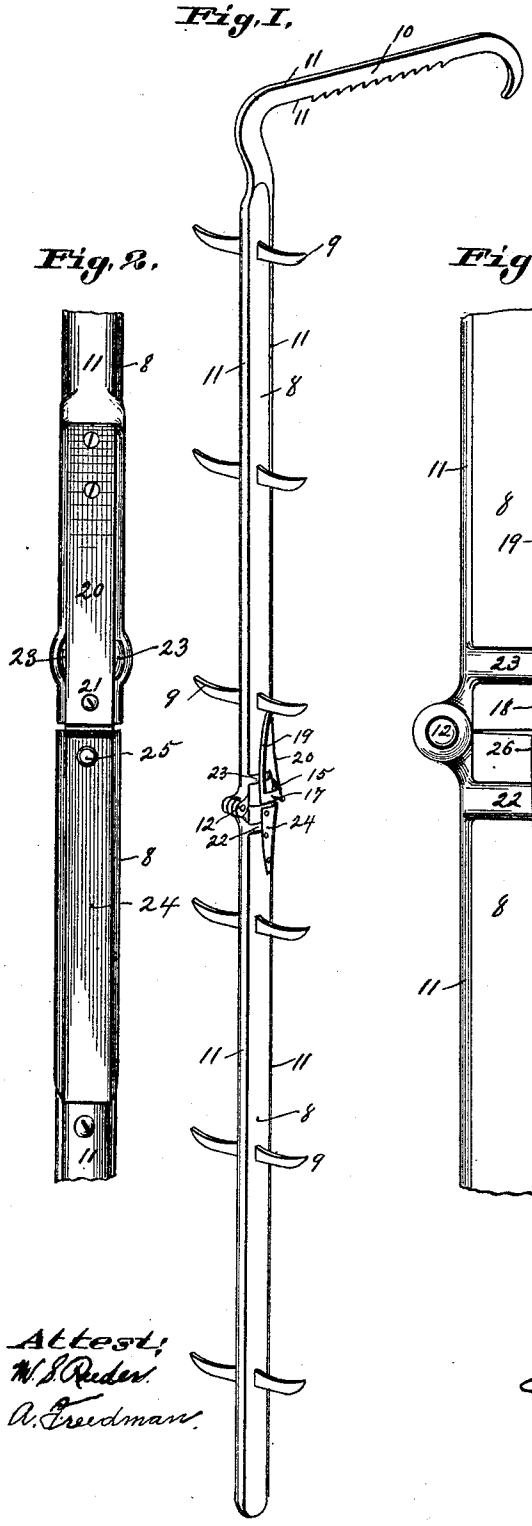


Fig. 2.

Fig. 3.

Fig. 5.

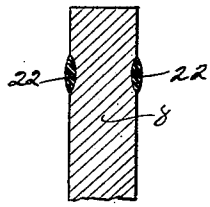
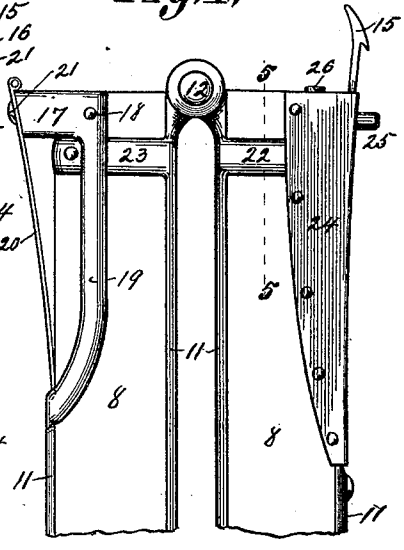


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN H. STUPP, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CHRIST. G. LOOS, OF SAME PLACE.

FIREMAN'S LADDER.

SPECIFICATION forming part of Letters Patent No. 439,361, dated October 28, 1890.

Application filed April 15, 1890. Serial No. 347,958. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. STUPP, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Firemen's Ladders, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improvement upon an invention for fire-escape ladders, covered by Letters Patent of the United States No. 317,534, granted to Christ. Hoell on May 12, 1885.

The object of the present invention is to render more portable the fireman's ladder or fire-escape covered by said Letters Patent without affecting its usefulness.

The invention consists in making in two parts the said patented ladder or fire-escape, and in providing a hinge and spring-lock of special construction for said parts, together with a flexible connection, all of which render the said ladder more portable without interfering with its useful functions.

The invention will be best understood by referring to the accompanying drawings, in which—

Figure 1 is a perspective of the said patented ladder with my improvement applied thereto. Fig. 2 is a rear elevation of a portion of the same on an enlarged scale; Fig. 3, a side elevation corresponding to Fig. 2, showing the two parts of the ladder locked together and the hinge closed; Fig. 4, a side elevation corresponding to Fig. 3, showing the hinge open and the two parts of the ladder unlocked; Fig. 5, a section on the line 5 5 of Fig. 4.

The same figures of reference indicate the same parts throughout the several views.

The said ladder, as covered by the aforesaid Letters Patent, consists of a single beam 8, continuous throughout its entire length and provided with rungs 9, which extend from each side thereof. The upper part of said ladder is provided with a hooked arm 10 for the purpose of taking over the sills of windows, and the whole ladder is bound by a continuous metal band 11, flush with the surface of the beam. These fire-escape ladders are carried by the hose-carriage in order that they may be on hand at fires as soon as possible, and previous to the "hook and ladder," so that occupants of buildings may be promptly rescued in time of danger. They are made of a length to reach from story to story; hence are of considerable length and not easily carried by the hose-carriage. In order to increase the portability of such fire-escape ladders, I divide the beam transversely in two parts and hinge said parts together. The hinge 12 thereof I form in the continuous band 11 at the front side of the ladder. At the rear side of the ladder I cut away the continuous metal band 11 near the transverse division-line of the beam 8 and provide one-half of said beam with a spring-latch 13, which is fastened to the beam at 14, and has the free end 15 thereof adapted to engage a keeper-plate 16, carried by a clip 17 on the lower end of the upper half of the beam 8. The two parts of said clip on opposite sides of the beam are fastened together by a rivet 18, and further held in place by curved arms 19, extending on each side of the beam from the band 11. The clip is further held in place and braced by a strip of metal 20, which is fastened by a screw 21 to the keeper-plate 16 of the clip and to the upper half of the beam 8. This strip of metal serves to cover the free end of the spring-latch 15 when in engagement with the keeper-plate 17 and prevent the said latch from being struck by anything and possibly disengaged from the keeper-plate. To further strengthen the beam at the hinged joint, I provide clips 22 and 23, which embrace the beam and are joined to the band at the front side of the beam near the hinge. Around the lower half of the beam and embracing the spring-latch is a metal sheath 24, which forms a cover for the said spring-latch and keeps dirt from getting back of the same and preventing its operating properly. The spring-latch is also provided with a thumb-piece 25, which extends through the metal sheath 24, whereby the spring-latch can be manipulated.

If the ladder were to receive a severe jar or the thumb-piece 25 were to strike against anything when the ladder was placed against a building, the latch would ordinarily become disengaged and fail to hold the two parts of the beam together. This might even be caused by the shock incident to the upper part of the beam being hooked over the sill of a window. It is necessary, therefore, that the spring-latch be held in engagement with the keeper-plate at all times, so that no jar will disengage the latch from the keeper-plate. To effect this purpose, I place between the two parts of the beam where they come together when locked to each other a small washer 26 of rubber or other flexible compressible material. This tends to force apart the two parts of the beam when locked together and thus firmly hold the locked parts into engagement with each other, and no amount of reasonable jar or shock can disengage the parts from each other. This rubber acts, also, to take up any play that would exist when the parts became worn. A slight amount of play must of necessity exist between the latch and the keeper-plate in order that said parts may engage and disengage each other, and this play the flexible washer takes up. To disengage the latch from the keeper-plate and swing back the two parts of the beam on each other, they must be drawn toward each other with great force, so as to compress the flexible washer, and at the same time the finger-button must be manipulated to disengage the latch from the keeper-plate. The compression of the flexible washer itself will not be sufficient to permit the latch to disengage the keeper-plate, nor will the manipulation of the finger-button alone be sufficient to unlock the parts. To accomplish this, the two operations must be gone through with simultaneously.

This improvement makes the ladder much more portable, as when in transit it need only be half the length, and when locked together is as strong and liable to hold together as if the beam were made in one continuous piece. It will be obvious, of course, that the present invention may be applied to two beam-ladders without departing from my invention.

Having fully set forth my improvement, what I desire to claim, and secure by Letters Patent of the United States as my invention, is—

1. A fireman's ladder having a hook at the upper part thereof, for the purpose described, and provided at or near its center with a hinged joint and an automatic spring locking-latch, whereby the portability of said ladder is increased and the parts thereof locked readily and firmly together when put in use.

2. A fireman's ladder having a hook at the upper part thereof, as described, and provided with a hinged joint at or near its center, and having also a compressible washer between the parts thereof, for the purpose set forth.

3. A fireman's ladder having a hook at the upper part thereof, for the purpose described, a hinged joint intermediate the ends of the same and suitably strengthened at said joint, a spring-latch and keeper-plate for locking the parts together, and a thumb-button for manipulating said latch.

4. A fireman's ladder having a hook at the upper part thereof, for the purpose described, a hinged joint intermediate the ends of the same and suitably strengthened at said joint, a spring-latch and keeper-plate for locking the parts together, a thumb-button for manipulating said latch, and a flexible washer at the hinged joint for taking up the play between the parts and preventing accidental disengagement thereof.

In testimony whereof I have hereunto set my hand and affixed my seal, this 12th day of April, 1890, in the presence of two subscribing witnesses.

JOHN H. STUPP. [L. S.]

Witnesses:
CHRIST. G. LOOS,
A. C. FOWLER.