(No Model.)

G. J. LEACH.

STEP LADDER EXTENSION AND SHELF.

No. 523,709. Patented July 31, 1894.

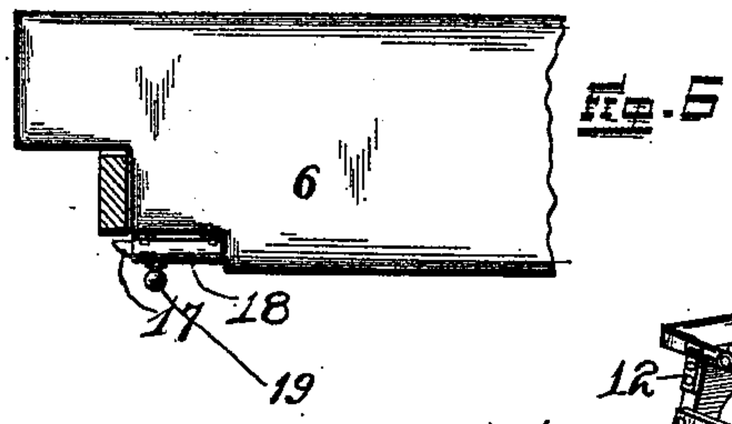


Fig. 6

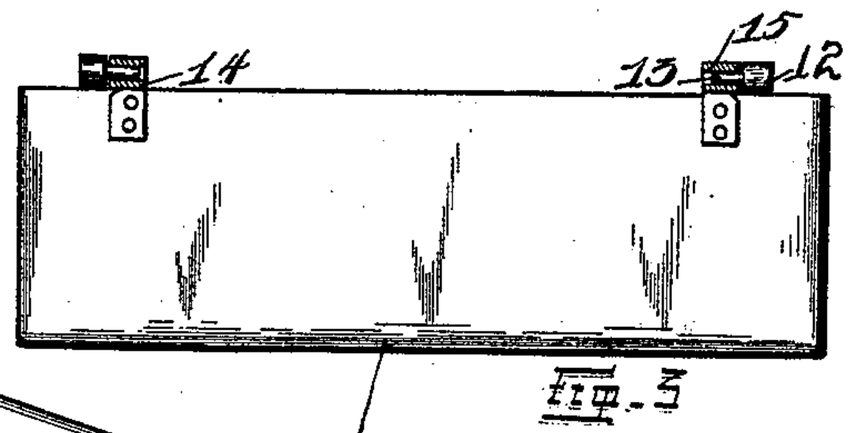


Fig. 3

Fig. 4

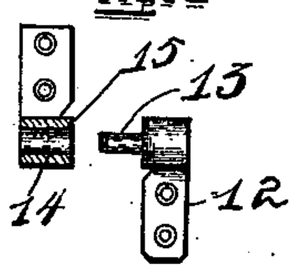


Fig. 1

Fig. 2

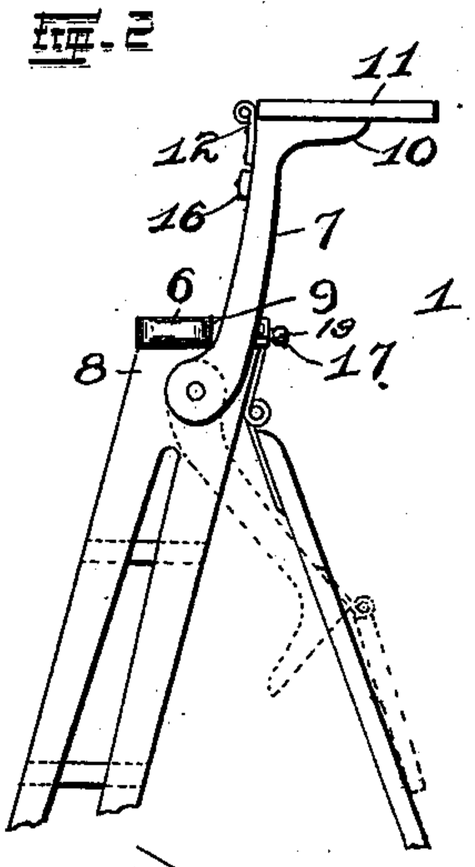
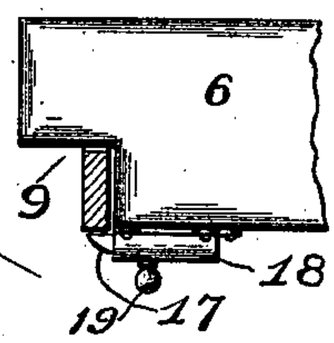


Fig. 5



WITNESSES

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STEP-LADDER EXTENSION AND SHELF.

SPECIFICATION forming part of Letters Patent No. 523,709, dated July 31, 1894.

Application filed August 17, 1893. Serial No. 483,335. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. LEACH, a resident of St. Louis, State of Missouri, have invented certain new and useful Improvements in Step-Ladder Extensions and Shelves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in a "step ladder extension and shelf," and consists in the novel construction and combination of parts, as will be more fully hereinafter described and set forth in the claims.

The object of my invention is to construct an attachment for step ladders, by means of which the same may be made longer in some instances to enable the user to reach a greater height, and which may also be placed in position to act as a shelf for tools, &c.

I am aware that there are devices on the market for this purpose but find none which enable the lengthening of the ladder, their function consisting alone in the provision of a shelf for the purposes above stated.

In constructing this improvement it is necessary to take into consideration the fact that it must be extremely simple in its construction and similarly so in its operation and it is believed that I have adhered to both points in the construction of my invention.

In the drawings: Figure 1 is a perspective view of a step ladder with my invention applied thereto. Fig. 2 is a side elevation of the upper portion of the ladder, showing the attachment in its upright position and its alternate position by dotted lines. Fig. 3 is an enlarged top plan view of the shelf, showing its two hinge members in section. Fig. 4 is an enlarged detached sectional view of the two hinge members. Fig. 5 is an enlarged top plan sectional view of a portion of the top of the ladder and one of the arms of the attachment, showing the relative location of the spring-bolt made use of to hold the arm in an upright position. Fig. 6 is a view similar to Fig. 5 except that a different manner of applying the bolt is shown.

Referring to the drawings: 1 indicates a step ladder of the ordinary construction, consisting of a member 2 provided with rising steps 3 and the back supporting, swinging frame 4, the two side strips 5 of which are hinged to the back of the member 2 and under the shelf board 6.

The invention proper consists of two slightly curved arms 7 the lower ends of which are pivoted to the outer surfaces of the sides 8 of the ladder. In order that this may be accomplished, it is necessary to provide rectilinear cut-out portions 9 in the rear end corners to admit of the location of the arms 7 when in an upright position. The arms 7 are provided at their upper ends with rearwardly projecting portions 10, adapted to support the swinging shelf 11 of the attachment. Although said shelf can be hinged to the arms in any desirable and mechanical manner, still I prefer to construct the same as herein shown, wherein it will be seen that the arms 7 are provided with members 12, each having a pin-lug 13 projecting horizontally toward the other. These pin-lugs are adapted to fit into members 14 secured to the shelf 11 and inside of the members 12, said members 14 having openings 15 to receive the pin-lugs 13.

In order to provide an additional brace for the two arms 7, said arms are connected by a strip 16 which prevents their coming out of alignment.

By referring to Fig. 2 it will be seen that the position of the attachment when not in use is with the arms 7 against the side pieces 5 of the back 4 and the shelf 11 lying against said strips, and this position is maintained whether the ladder is open or closed.

Secured to the rear edge of the shelf-board 6, with the bolt 17 projecting beyond the line of the cut-out portions 9, are spring bolts 18 adapted to clasp and hold the attachment in an upright position when the same is lifted from its normal location.

In Fig. 6 is shown a modification of the manner of locating the bolt 18, which shows that said bolt is set in flush with the edge of the shelf.

The outer face of the bolts proper are rounded in order that the arms will force them in until they have passed to their upright position, at which time said bolts spring out and confine the arms 7 against the edges of the cut-out portions 9.

It is now believed that a detailed descrip-

tion of the construction of the invention has been given and I will therefore give its operation.

Premising that the ladder is standing in a closet or other place of storage and it is desired to use the same, the operator would probably take the ladder to the desired place and open out the supporting back 4 to enable the use of the ladder. If the ladder is too short or it is desired to provide additional shelf-room upon the ladder, the operator simply reaches down, grasps one of the arms 7 and draws the attachment up, said arms passing the bolts 17 and throwing them back into their boxes, until said arms are past, at which time said bolts spring out and hold the arms against moving. If the attachment is up in position and it is desired to throw the same out of position, the operator grasps the two catches 19 of the bolts 18 and disengages the bolt-pins 17 from their position back of the arm 7 at which time said arms drop back into position against the supporting frame 4.

The construction and operation of the attachment are extremely simple and it is believed that the same is an improvement over other step-ladders as now constructed.

Having fully described my invention, what I claim is—

1. An improved step ladder extension and shelf normally located out of line with the ladder steps but adjustable into alignment with said ladder, substantially as set forth.

2. A swinging attachment for step-ladders adapted to heighten the same and provide a shelf higher than the shelf-board of the ladder, substantially as set forth.

3. An improved step-ladder having a vertically adjustable, pivoted, swinging attachment adapted to heighten the ladder, provide a shelf above the ordinary shelf of the ladder and a means for holding the attachment in an upright position, substantially as set forth.

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

GEORGE J. LEACH.

Witnesses:
HERBERT S. ROBINSON,
ALFRED A. EICKS.