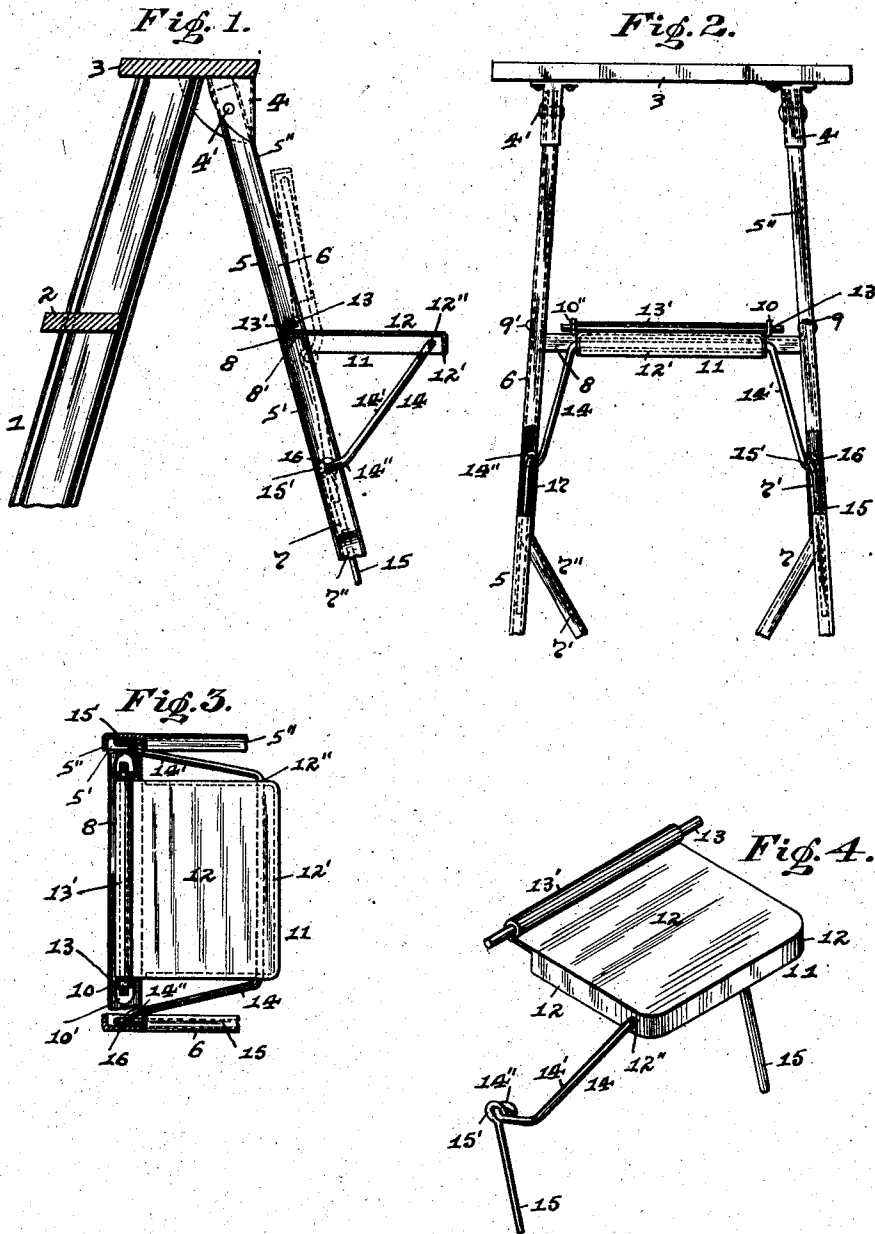


No. 839,087.

PATENTED DEC. 25, 1906.

H. ADLER.
LADDER.

APPLICATION FILED FEB. 23, 1906.



WITNESSES

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LADDER.

No. 839,087.

Specification of Letters Patent.

Patented Dec. 25, 1906.

Application filed February 23, 1906. Serial No. 302,326.

To all whom it may concern:

Be it known that I, HENRY ADLER, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Ladders; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to ladders, and has special reference to the class of ladders shown in my application for United States Letters Patent filed August 12, 1905, Serial No. 273,872.

The object of my invention is to provide for a cheap, simple, and effective form of a shelf to be used with such a ladder and one that can easily and quickly be attached and detached therefrom when desired.

My invention consists, generally stated, in the novel arrangement, construction, and combination of parts, as hereinafter set forth and described, and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved ladder, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a vertical section of the upper portion of a ladder, showing my invention applied thereto. Fig. 2 is a rear elevation of the same. Fig. 3 is a cross-section of the supporting-legs of the ladder looking down on top of the shelf. Fig. 4 is a perspective view of the shelf ready to be applied to the ladder.

Like symbols of reference herein indicate like parts in each of the figures of the drawings.

The ladder proper illustrated in the drawings is generally formed of thin sheet-metal parts which are bent to shape and comprise the metallic front standards or side rails 1, on which the steps 2 are attached in any suitable manner, and such steps are preferably formed of wood. The side rails 1 have a platform 3, preferably formed of wood, secured at the top of the same, and on this platform depend the metallic U-shaped clamping-pieces 4, which are secured thereto in any suitable manner and have the metallic rear supporting standards or legs 5 pivoted thereto, as at 4', and formed in channel shape.

Metallic bracing-bars 7, formed in channel shape, are connected to and are adapted to fit by their bent or flanged side edges 7' within the flanges 5'', forming the hollow or grooved portion 5' of the legs 5, and such bars have the inwardly-extending portions 7'' thereon, which are connected together midway between said legs in any suitable manner. (Not shown.)

Extending across between the legs 5 is the metallic cross-bar 8, which is formed in channel shape and has flanges 9 bent upwardly from its body portion 8' for being riveted to the body portion 6 of said legs by the rivets 9' to hold the same in place. The body portion 8' of said cross-bar 8 is slit to form the ears or flanges 10, which are bent upwardly from said body portion, and thereby form openings 10' through said body portion.

The shelf is shown at 11 and comprises the main supporting portion 12, which is formed from sheet metal and is preferably corrugated to stiffen the same, while depending from its sides and outer edge is a flange 12'. The rear edge of said portion 12 is bent to form a tubular portion 13', within which is confined a rod 13, the ends of which are adapted to fit within holes 10'', formed in the flanges 10 in order to hinge the shelf 11 on the cross-bar 8. Passing pivotally through holes 12'', formed in the depending flange 12', and on each side of the portion 12 is the supporting-rod 14, which extends under said portion 12 and has the angular or depending portions 14' thereon. These depending portions 14' have a hooked portion 14'', bent at their lower ends, to which a looped portion 15' on the upper ends of the loose rods 15 are connected to form the loose joints 16, such rods 15 being adapted to fit within the openings 17, formed by the flanges 5' on the legs 5 and by the like flanges on the bracing-bars 7 when these parts are connected together, while such loose joints 16 are adapted to rest upon the upper edge of said bracing-bars 7 to support the shelf 11 in position.

It will be evident that when the shelf 11 is in its place for performing its work the depending portions 14' on the supporting-rod 14 will assume an angular position, and so make a very rigid and strong support for such shelf thereby, as well as by the joints 16, resting upon the edge of the openings 17.

When the ladder is in its folded position or when it is desired to fold up the shelf 11, the supporting portion 12 can be raised on its hinged rod 13 within the holes 10'' on the flanges 10, as is shown by the dotted lines in Fig. 2, which will allow the rod 14 to turn on its pivot-holes 12'' and cause the depending and hooked portions 14' and 14'' to assume substantially a vertical position, as well as allowing the hooked portions to move along through the openings 17, formed by the legs 5 and bracing-bars 7.

When it is desired to remove the shelf 11 from the ladder, all that is necessary is to move the hinge-rod 13 along the tubular portion 13' on the shelf, so that one end thereof is freed from one of the holes 10'' in the flanges 10, and then the other end can be freed from the opposite hole 10, thereby enabling such shelf to be taken out of the ladder. The shelf 11 can be easily replaced by inserting one of the ends of the rod 13 in one of the holes 10'', and then such rod can be pushed through the tubular portion 13' and into the other hole 10'' to hold the shelf in place.

It will be obvious that my improved form of a shelf for ladders is supported entirely by the rear or ladder-supporting legs, and it can have its main supporting portion formed of corrugated metal and galvanized in order to strengthen and stiffen the same, while the other parts of the same can also be galvanized in order to protect the same from rusting, &c. The shelf as constructed is capable of sustaining great weight and can be easily and conveniently folded up when not in use or when the ladder is in its folded position. It contains few parts, and none of the parts of the same are required to be separated at any time, while it is also so constructed as to be strong and durable and not liable to become injured or impaired for its use and will not get out of order.

Various modifications and changes in the

construction and design of the various parts of my improved ladder-shelf may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

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

1. In a ladder, the combination with the supporting-legs having openings therein, of a shelf hinged on said legs, and jointed rods pivotally connected to said shelf and adapted to fit within and be engaged by said openings for supporting said shelf in position.

2. In a ladder, the combination with the supporting-legs having openings therein, of a shelf hinged on said legs, rods pivotally connected to said shelf, and looped joints on said rods for forming portions for fitting within and engaging with said openings and for supporting said shelf in position.

3. In a ladder, the combination with the supporting-legs having openings therein, of a shelf having a movable rod thereon, rods pivotally connected to said shelf and adapted to fit within and be engaged by said openings for supporting said shelf in position, a cross-bar on said legs, and flanges on said cross-bar having holes therein for said movable rod to hinge said shelf in place.

4. In a ladder, the combination with the supporting-legs having openings therein, of a shelf having a movable rod thereon, rods pivotally connected to said shelf and adapted to fit within and be engaged by said openings for supporting said shelf in position, a cross-bar on said legs, and flanges bent out of said cross-bar and having holes therein for said movable rod to hinge said shelf in place.

In testimony whereof I, the said HENRY ADLER, have hereunto set my hand.

HENRY ADLER.

Witnesses:

J. N. COOKE,
R. H. AXTHELM.