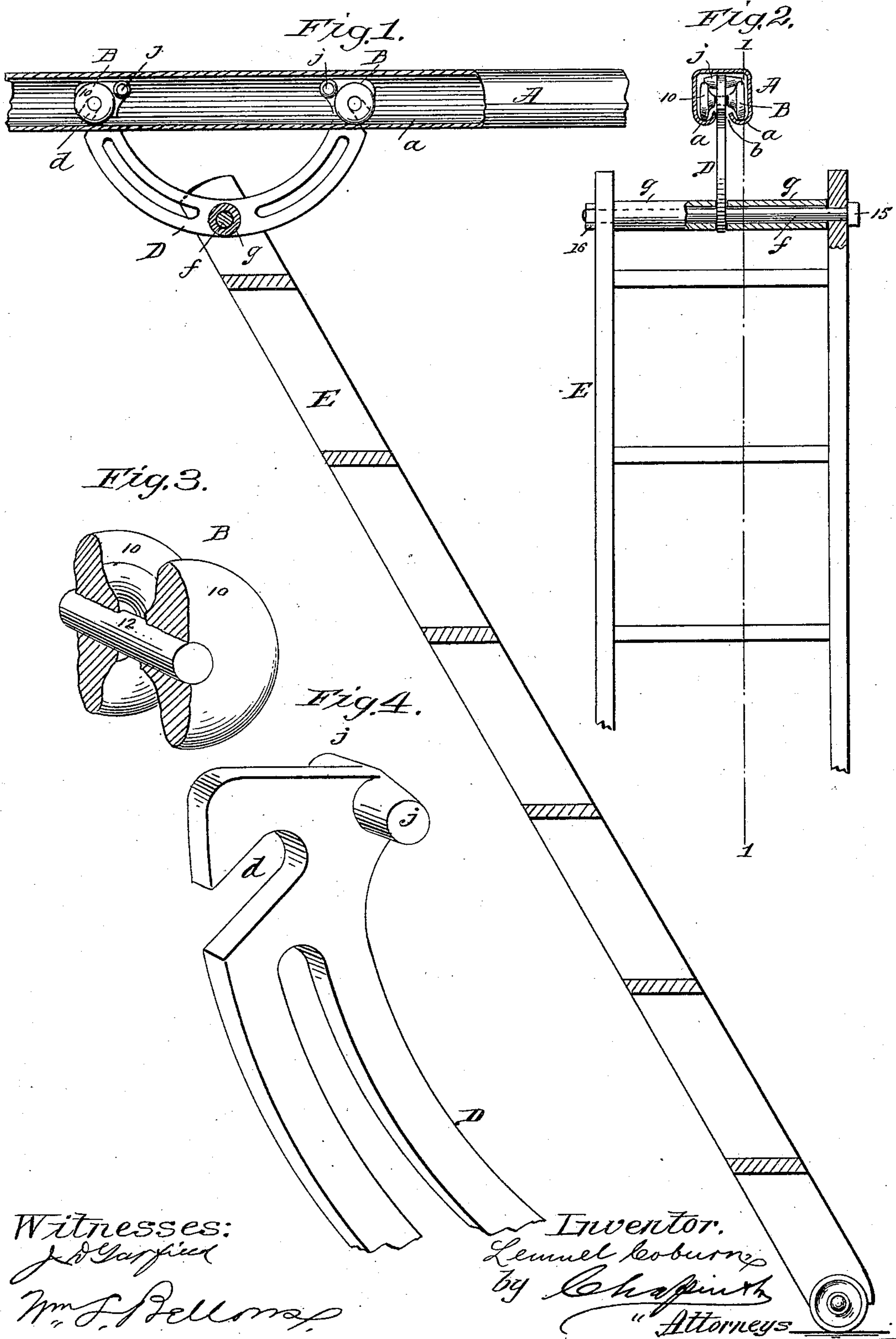


(No Model.)

L. COBURN.  
TROLLEY SUPPORT FOR STEP LADDERS.

No. 426,983.

Patented Apr. 29, 1890.



Witnesses:

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# UNITED STATES PATENT OFFICE.

LEMUEL COBURN, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR TO THE  
COBURN TROLLEY TRACK MANUFACTURING COMPANY, OF SAME  
PLACE.

## TROLLEY-SUPPORT FOR STEP-LADDERS.

SPECIFICATION forming part of Letters Patent No. 426,983, dated April 29, 1890.

Application filed July 15, 1889. Serial No. 317,585. (No model.)

*To all whom it may concern:*

Be it known that I, LEMUEL COBURN, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Trolley-Supports for Step-Ladders, of which the following is a specification.

This invention relates to suspension and movable step-ladders for use particularly in stores and libraries and other places where ladders are constantly necessary to afford access in various parts of the room to shelves above and beyond the reach of the clerks or attendants, the object of the invention being particularly to provide means for supporting the ladder in a proper upright position and to permit of its being readily slid or moved over a given course and within proper limits with the expenditure of practically no exertion; and the invention consists in the construction and combination of parts, all substantially as will be hereinafter fully described, and finally set forth in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a sectional elevation of a trolley-track, roller-carriers supported and movable therein, a hanger suspended from the said carriers, and a step-ladder by its upper end connected to and supported from said hanger. Fig. 2 is a sectional elevation of the above-mentioned parts, taken at right angles to the view, Fig. 1. The line 1 1 on this figure indicates the plane on which the parts shown in section in Fig. 1 are drawn. Fig. 3 is a perspective view on a larger scale than the preceding figures, partly broken away and in section. Fig. 4 is a perspective view, also enlarged, of one end portion of the hanger.

The trolley-track A, which is to be supported horizontally in any proper manner at a suitable height in the room, comprises a pair of parallel trough-shaped ways *a a*, with an opening *b* between them, and as particularly shown the said trolley-track consists of a tube

generally of rectangular cross-section, having the lower edges curved in toward the median line and then turned upward, so that the bottom of the tube has the trough-shaped ways *a* at each side of the longitudinal opening *b*.

The roller-carrier B consists of a pair of rollers 10 10, united by a common axle 12, said rollers by their peripheries freely running in the troughs or ways *a a* of the trolley-track.

D represents the hanger, which consists of a semicircular or bow-shaped plate, at its end portions of a thickness sufficiently slight to permit of free passage of such portions through the longitudinal opening *b* between the double ways of the trolley-track, and provided at each end with a hook-shaped eye *d*, or an eye otherwise formed, for the engagement of the ends of said hanger with the axle 12 of the roller-carrier.

E represents the step-ladder, provided at its upper end with a cross-rod *f*, extended through the vertical side rails of the ladder, and said cross-rod also passes loosely through a perforation centrally located in said bow-shaped hanger, the said middle of the hanger being disposed on said rod intermediately thereof, and between the sides of said hanger and the inner sides of the side rails tubular sections *g g* are placed over the said cross-rod and maintain the connection between the hanger and said cross-rod centrally with relation to the length of the latter. Said cross-rod at one end is provided with a head 15, to lie against the outer side of one rail, while its end which is passed through the other rail is screw-threaded and receives a nut 16, whereby it is held against any endwise movement.

The step-ladder may, if desired, be, as shown in Fig. 1, a little longer than the distance between its hanger-connection and the floor, and made to stand in an oblique direction with its lower end supported on the floor, which lower end is preferably provided with rollers, and thereby the weight of the ladder and of a person thereon is practically sustained from the floor; but plainly, if desired,



the ladder may be made shorter and hang vertically and be entirely supported from the trolley-track. The said hanger at each end near but at one side of the eye for engaging  
5 the axle of the roller-carrier is to be provided with lateral bosses *j j*, to lie within the longitudinal chamber of the trolley-track above the inner edges of the troughways *a a*. As the rollers of the carriers B in many cases  
10 are to be made of a composition of rubber vulcanized to a proper degree of induration, and perhaps under protracted and hard usage liable to break, in the event of any breakage of a roller-carrier the said bosses *j j* on the  
15 hanger will come to a bearing on the said inner edges of the troughways and prevent a falling of the hanger, or an end thereof, from and out of the support therefor by the said troughways, thus rendering the supported  
20 ladder entirely safe.

What I claim as my invention is—

1. In combination, a trolley-track comprising double longitudinal troughways and an intermediate opening, a pair of roller-carriers,  
25 each consisting of two separated rollers, and a hanger of bowed form removably supported from the axles of said roller-carriers by its extremities, and a step-ladder supported from the pending intermediate portion of said  
30 hanger, substantially as described.

2. In combination, a trolley-track compris-

ing double longitudinal troughways with an intermediate opening, a pair of roller-carriers, each consisting of two separated rollers, and a hanger of bowed form having at its ex- 35 tremities open or hook-shaped eyes for engaging the axles of said roller-carriers, substantially as described.

3. The combination, with a trolley-track comprising double longitudinal troughways 40 with an opening intermediate thereof, of a roller-carrier consisting of a pair of rollers and a uniting-axle, and a hanger engaging for its support thereon the axle of said roller-carrier and provided with the laterally-ex- 45 tending bosses *j j*.

4. The combination, with a trolley-track comprising double longitudinal troughways with an opening intermediate thereof, of a pair of roller-carriers, each consisting of two 50 rollers and a uniting-axle, a hanger of bowed form having eyes for engaging the axles of said roller-carriers, a step-ladder having a cross-rod passed through and by its middle portion disposed intermediately on said cross- 55 rod, and the tubular sections *g*, substantially as and for the purpose described.

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Witnesses:

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