

(No Model.)

A. A. COBURN.
TROLLEY SUPPORT FOR STEP LADDERS.

No. 463,217.

Patented Nov. 17, 1891.

Fig. 1.

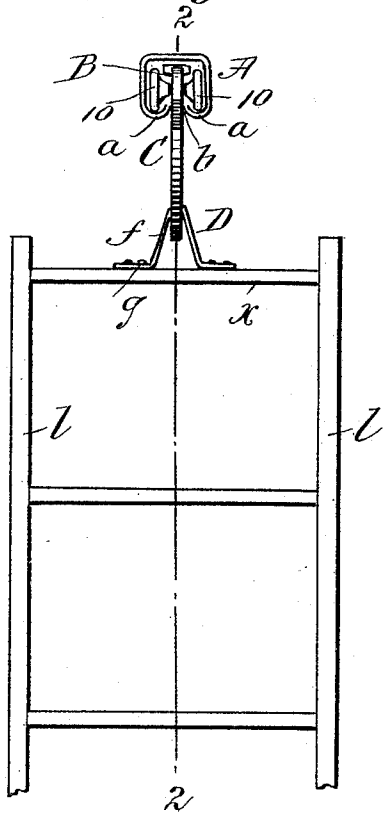


Fig. 2.

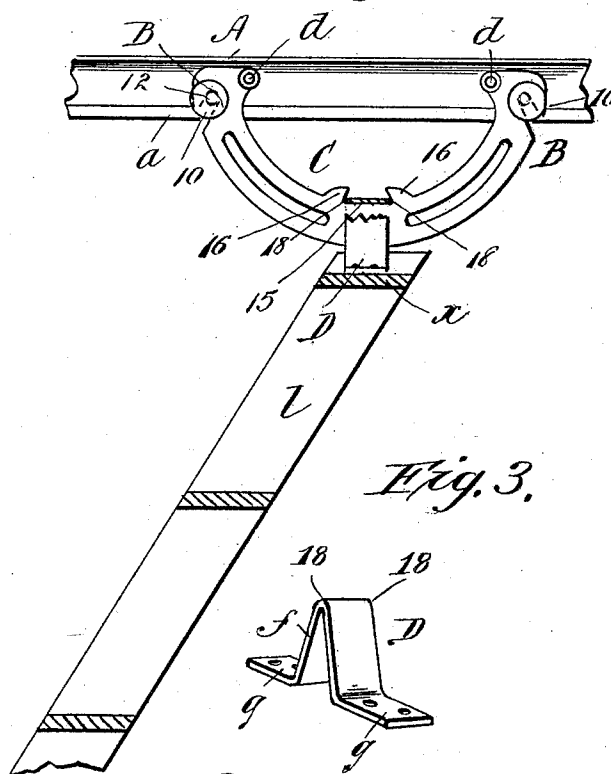


Fig. 3.

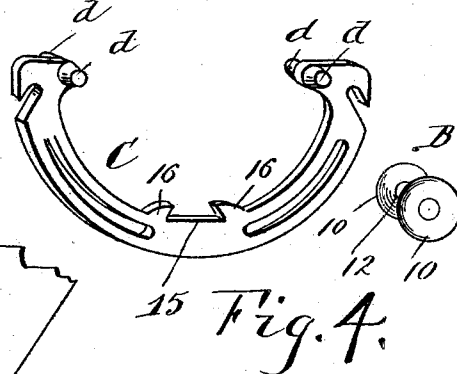
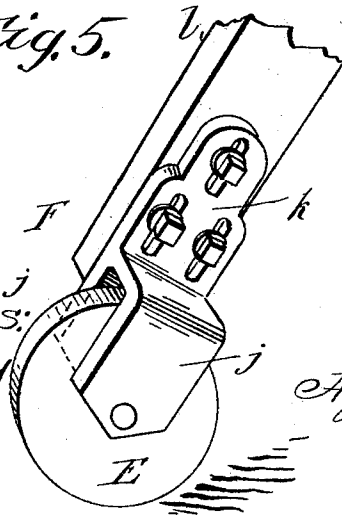


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

AZRO A. 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. 463,217, dated November 17, 1891.

Application filed March 2, 1891. Serial No. 383,502. (No model.)

To all whom it may concern:

Be it known that I, AZRO A. 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, libraries, and other places where ladders are constantly necessary to afford access to shelves in various parts of the room above and beyond the reach of the clerks or attendants, the invention most particularly relating to the form of connection between the upper part of the ladder and the roller-supported carrier, which is mounted on the overhead track, whereby the utmost simplicity and efficiency is insured.

The invention consists in the combination with the hanger, substantially such as will hereinafter more fully appear, of the ladder provided with a peculiarly-formed clip or yoke for engaging the hanger, which latter is also peculiarly formed to permit of or insure such engagement, and all substantially as and for the purpose hereinafter fully set forth.

The claims will also define the invention.

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 front view of the upper portion of a step-ladder and a cross-sectional view of a trolley-track with a roller-carrier thereon, from which carrier the said ladder is supported. Fig. 2 is a sectional elevation of the same parts, taken on the line 2 2, Fig. 1. Fig. 3 is a perspective view of the yoke or clip to be attached to the ladder, and Fig. 4 is a perspective illustration of the roller-carrier. Fig. 5 is an enlarged perspective view of a bottom part of the ladder.

The trolley-track A, which is to be supported horizontally in any proper manner at a suitable height in the room, comprises, under the preferred form thereof, a pair of parallel trough-shaped ways *a a*, with an opening between them, which ranges longitudinally throughout the entire length of the track.

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

C represents the hanger, which is of a semi-circular or bowed form, and consists of a plate of cast-iron or other suitable metal or material, substantially as shown, and has a thickness sufficiently slight to permit of the free passage of substantially all portions of the same through and within the longitudinal opening *b* of the track. This hanger is provided at each end with a hook-shaped eye for the engagement of the ends of said hanger with the axles 12 of roller-carriers respectively provided therefor.

d d are safety lugs or laterally-extended bosses, serving in the event of the breakage or giving out of one or both of the roller-carriers to prevent the hanger from falling from the track. The hanger at the intermediate upper portion of its edge is formed with a substantially flat bearing 15, with abutments or shoulders 16 16 at the front and rear thereof.

D represents a strap, clip, or yoke consisting of a loop or V-shaped intermediate portion *f* and outwardly-extended feet *g g*, whereby the said yoke may be securely screwed, bolted, or otherwise secured to the top step *x* of the ladder. The width of the said strap or yoke is about equal to the length of the bearing-surface 15 of the hanger, and the front and rear top edges 18 18 of the yoke-strap engage with the shoulders 16 16 of the hanger.

The ladder is preferably provided at each of its feet with a roller E, such as indicated in the enlarged view, Fig. 5. Each of the rollers E is, as shown, carried on the bifurcated members *j j* of a casting F, which by the slotted portion *k* is adjustably confined on the side rail *l* of the ladder.

The ladder is usually supported in an oblique position more or less, as indicated in Fig. 2, for, having a length between its bottom and the place of the connection with the hanger greater than the perpendicular distance between the hanger and the floor, it is necessarily maintained as stated, and due to the form of connection described the hanger

and the rollers therefor, together with the ladder, must move together, and due to any inequality of the floor as the ladder rolls thereover and is slightly raised the top of the strap-yoke D may slightly rise away from the bearing portion 15 of the hanger, still, nevertheless, having such an engagement with the hanger that as the ladder is moved longitudinally relative to the track the hanger will correspondingly be moved, or vice versa.

What I claim as my invention is—

1. The combination, with a pair of roller-carriers having axles substantially as described and adapted to run upon a trolley-track, of a bow-shaped hanger supported on and pending from said roller-carriers, and a ladder having secured thereon a loop-shaped part or yoke, which is interlocked with the said bowed hanger, for the purpose set forth.
2. The combination, with a pair of roller-carriers having axles and adapted to run upon a trolley-track, substantially as described, and a bow-shaped hanger supported on and pending from said roller-carriers and formed at its

upper edge with an intermediate bearing-surface 15 and the shoulders 16 16 at the front and rear thereof, as described, of a strap or yoke D, adapted to be secured on the ladder and by the loop part thereof to engage said hanger between the shouldered portions thereof, substantially as described and shown.

3. The combination, with a pair of roller-carriers having uniting axles and a tubular double-way trolley-track having between the ways thereof a longitudinal slot *b* and a hanger C of bow form, provided at its end with hook-formed eyes and at the top edge thereof with the separated shoulders 16 16, of a ladder having rollers on its bottom, which are vertically adjustable thereon, and also having at its top a strap-yoke D, which engages the said hanger, all in the manner substantially as described and shown, and for the purposes set forth.

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Witnesses:

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