

(No Model.)

E. M. MURRAY.
STORE LADDER SERVICE.

No. 533,484.

Patented Feb. 5, 1895.

Fig. 1.

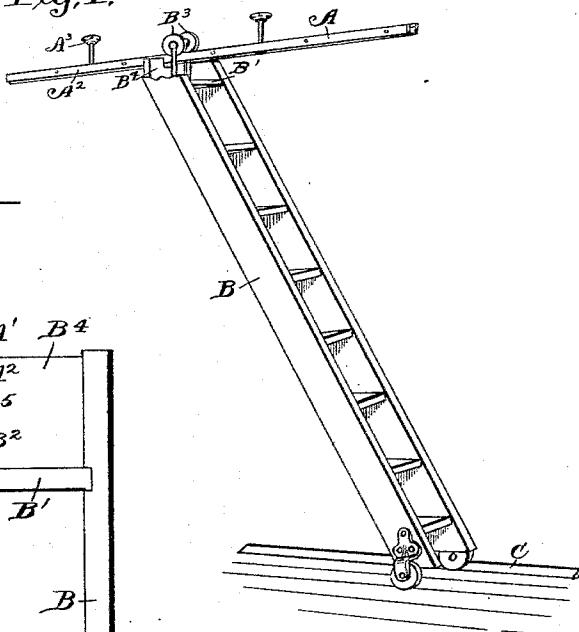


Fig. 2.

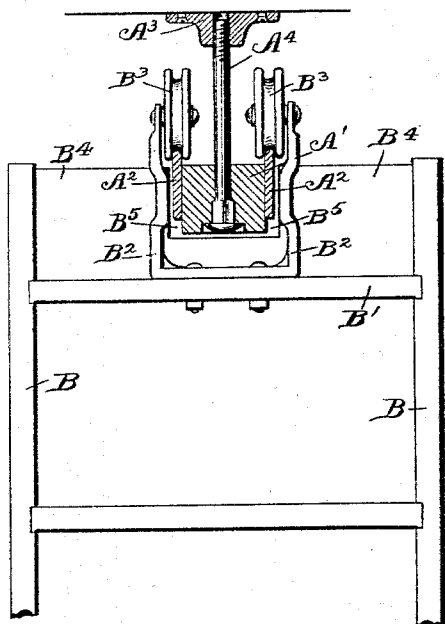
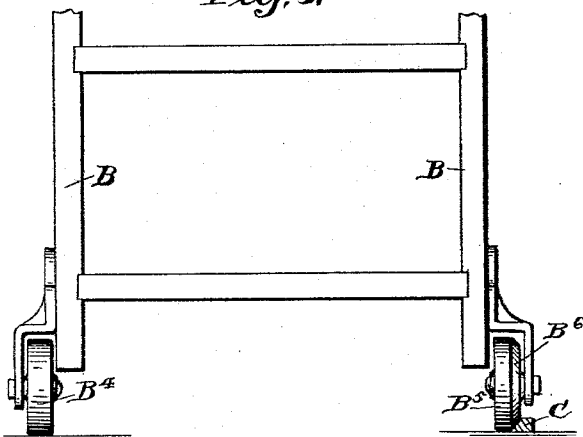


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWARD M. MURRAY, OF CHICAGO, ILLINOIS.

STORE-LADDER SERVICE.

SPECIFICATION forming part of Letters Patent No. 533,484, dated February 5, 1895.

Application filed November 14, 1894. Serial No. 528,727. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. MURRAY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented an Improved System of Store-Ladder Service; and I declare the following to be a full, clear, and concise description of the same, reference being had to the accompanying specification and drawings.

My purpose is to provide a simple, durable and neat device; one that is safe and secure when in use, it being practically impossible to derail the rollers or overturn the ladder.

Referring to the drawings: Figure 1 is a view in perspective of my system of store ladder service as it appears when in use. Fig. 2 is an elevation of the upper portion of the ladder, clearly showing the construction of the track and track hangers, and also the means by which the ladder is retained upon the track. Fig. 3 is an end elevation of the lower portion of the ladder, showing clearly the construction of the lower rollers, and also the bevel glide strip secured to the floor.

The herein described system of store ladder service consists of a suspended track A, ladder B, provided with rollers adapted to travel upon the said track, and the bevel guide strip C, adapted to be secured to the floor along the line of travel of the ladder.

The track A consists of a central wood portion A' having secured on either side thereof metallic track rails A². Secured to the ceiling by suitable means are brackets A³ adapted to receive the screw-threaded bolts A⁴; said bolts passing through openings in the wood portion A' of the track; said bolts being "squared" near the head in order to prevent them from turning when the wood portion A' of the track is forced down upon same. When the bolts A⁴ are screwed into the bracket A³, the track is elevated so as to come about midway of the bolt, thus allowing the use of a wrench on the squared portion of the bolt, in turning same.

The upper step B' of the ladder B has secured thereto the vertical standards B²; said standards being provided at their upper ends with the grooved rollers B³. The standards B² curve in toward the track just below the grooved rollers so that the distance between them is but little greater than the width of

the track. The upper portion of the ladder B is also provided with a cross-bar B⁴ having cut therein a central notch B⁵; said notch being but little wider than the track A and adapted to receive and embrace same.

The lower ends of the side bars of the ladder B are provided with rollers B⁴, B⁵ adapted to rest and travel upon the floor. In order to insure the ladder running in a straight course and especially to prevent it from running outwardly, the roller B⁵ is placed a little to the rear of the roller B⁴ and its face is provided with a beveled portion B⁶ adapted to bear upon and against the beveled guide strip C secured to the floor in the desired line of travel.

The operation of my invention is easily understood. It will be seen that if the track A be suspended from the ceiling by means of suitable hangers as A³, A⁴ and the grooved rollers B³ secured to the upper end of the ladder, be placed thereon and the beveled guide strip C be secured to the floor, the ladder may be readily moved to and fro. In order to prevent the grooved rollers from leaving the track I have curved the standards B² inwardly, so that normally they are but a slight distance from the track. In case the grooved rollers should attempt to leave the track, one of the standards would bear against the side thereof and prevent further movement in that direction. It is only possible to remove the grooved rollers B³ from the track A at the ends thereof. This arrangement obviates any chance of the rollers "jumping" the track when in operation.

In order to prevent the ladder overturning or twisting when the weight is thrown upon one side, I have provided at its upper end, a crossbar having the notch B⁵ centrally therein; said notch being adapted to receive and embrace the track A. The crossbar being placed at some distance from the standards B² and the sides of the notch being very close to sides of the track-rails, very little twisting or turning motion is possible to the ladder.

It has been found very difficult to get a ladder provided with ordinary rollers at the bottom to travel in a straight line, especially when being pushed. By placing the beveled guide roller a little rearward of the opposite roller and providing the beveled guide strip

secured to the floor, a perfectly true travel is secured to the ladder.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A system of store ladder service, consisting of a suspended track, a ladder having rollers adapted to run on said track, said ladder having a cross-bar provided with a notch adapted to receive said track, said ladder also having suitable rollers at its lower end adapted to travel upon the floor, and a beveled guide strip secured to the floor, all substantially as set forth.

2. A system of store ladder service consisting of a track composed of a central wood portion having track rails secured on the sides thereof, suitable hangers whereby said track is secured to the ceiling, a ladder provided at its upper end with standards having grooved rollers secured thereto, said standards adapted to embrace said track and retain said grooved rollers thereon, said ladder also having a cross-bar at its upper end provided with a suitable notch adapted to receive and embrace said track in order to prevent twisting of said ladder; said ladder also being provided at its lower end with a plain roller, a beveled roller, and a beveled guide strip adapted to guide said ladder, secured to the floor, all substantially as set forth.

3. In a system of store ladder service, the

combination with a track consisting of a central wood portion and metallic side rails secured to the sides thereof, hangers, consisting of a suitable bracket secured to the ceiling and a depending bolt-shaped rod adapted to pass through said track and enter said bracket, of a ladder having suitable standards secured to the top thereof, said standards having mounted thereon grooved rollers adapted to travel upon said track, a cross-bar provided with a suitable notch, said notch adapted to receive said track and prevent twisting of said ladder, said ladder also provided with suitable rollers at its lower end, the inside lower roller having its outer edge beveled, and a beveled guide strip, adapted to receive and guide said beveled roller, all substantially as set forth and shown.

4. In a system of store ladder service, the combination with a suitable track and track-hangers, of a ladder having its upper end provided with a crossbar having a suitable notch therein, said notch being adapted to receive and embrace said track and prevent twisting of said ladder, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD M. MURRAY.

Witnesses:

S. W. BRAINARD,
HELEN E. HUTCHINSON.