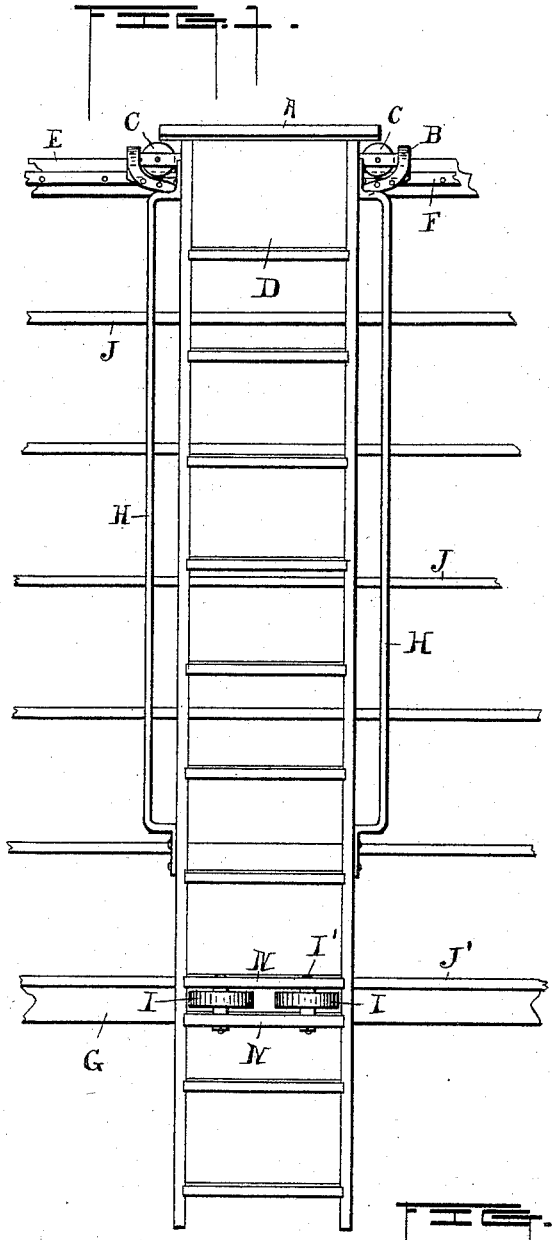
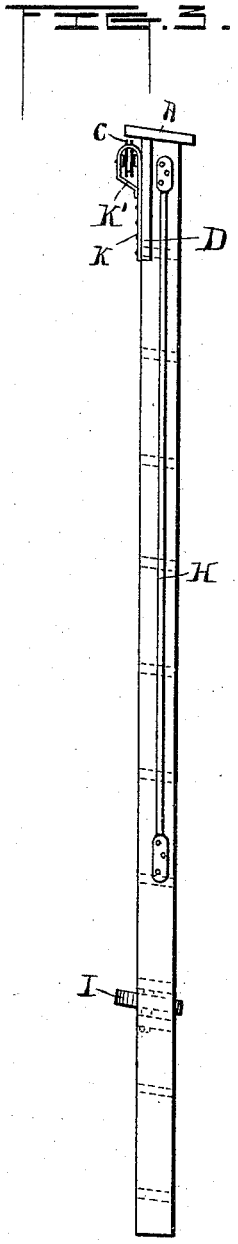
(No Model.)

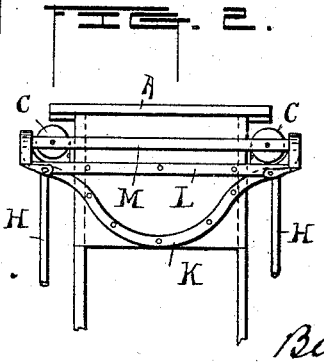
H. FRESH.

STORE SERVICE LADDER.

No. 493,861. Patented Mar. 21, 1893.







Witnesses
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[illegible]

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UNITED STATES PATENT OFFICE.

HENRY FRESH, OF FROSTBURG, MARYLAND.

STORE-SERVICE LADDER.

SPECIFICATION forming part of Letters Patent No. 493,861, dated March 21, 1893.

Application filed December 22, 1892. Serial No. 455,988. (No model.)

To all whom it may concern:

Be it known that I, HENRY FRESH, a resident of Frostburg, in the county of Allegany and State of Maryland, have invented certain new and useful Improvements in Store-Service Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

The invention relates to store service ladders and has for its object to simplify such devices and diminish their weight, cost and liability to get out of repair; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings Figure 1 is a front elevation of a ladder and shelving the latter being partly broken away. Fig. 2 is a partial rear elevation of the ladder; and Fig. 3 is a side elevation of the same.

The ladder having side bars or steps of any usual or convenient form is provided with a truck frame at or near its top whereby it is suspended so as to be moved laterally on a rail or track F. This preferably is a strip of steel fastened by screws or otherwise upon a beam or plank E. For this a piece of strong wood such as oak three and one-half by two or more inches will be suitable. This is supported in any convenient manner near the top or above the shelves.

C C denote ladder supporting wheels adapted to run over the rail F. Their axes or spindles are made of steel and are supported to turn in bearings in a frame B. Said frame consists of steel straps K, L and M which are bent and disposed as shown and secured to the rear face of a panel D fastened in the ladder. The downwardly curved strap K is secured to this panel or board and to the ladder rails by screws and to it and to said panel the straight strap L is also fastened in like manner. The strap K is extended beyond the sides of the ladder and its ends are bent in a U form and made to support two bars or straps M between and in which the wheels C are journaled. The extreme end of the U part of the strap K can be advantageously connected by a lateral extension K′ to the cross bar L though this is not essential.

To the upper ends of the side bars of the ladder and the edge of the panel D is secured a cover A which both adds to the strength and rigidity of the structure and furnishes a convenient table or shelf upon which to temporarily deposit goods.

H H denote hand rails made preferably of brass or steel tubing and securely fastened to the side rails of the ladder. They are attached near the top of the ladder for the convenience of the user and because that part is benefited by the strength imparted by said rails and for similar reasons they extend down below the middle of the ladder. At the foot they are not required either as braces or hand rails and they are therefore not extended to that part but are there omitted to save weight and cost.

J, J denote a series of shelves of any convenient number and length and G is a facing strip or plate situated under a shelf or shelf counter J′. It is by preference made of hard wood and is adapted to act as a bearing plate for the wheels I. These wheels may have tubular thimbles or axes adapted to receive and turn upon the bolts I′ secured in cross bars N by means of their screw threaded ends and suitable nuts. The cross bars N have substantially the same arrangement as the steps of the ladder and take the place of one of them. The wheels and their axes are inclined to the direction of the sides of the ladder as indicated and may be made five or more inches in diameter to hold the foot of the ladder away from the goods on the shelves and give it a suitable pitch. The inclination of the wheels brings them in or near the proper plane for bearing directly against the face of the plate G.

The several parts of the ladder and its adjuncts are made of strong material and thoroughly braced and strengthened as above set forth and can be made comparatively light with safety. A lower track is dispensed with. The wheels I are supported in a very strong and economical manner. The hand rails brace the ladder so that lighter material may be used and the various braces and stiffening devices at the top impart great firmness to that portion of the structure which sustains the main strains and one of these devices serves as a table convenient for the deposit of goods.

The invention is adapted to be conveniently applied to ordinary shelving in stores and the like and for this reason and because of its light weight and simplicity of structure is suitable for general use.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a store service ladder the frame consisting of the straps secured to the ladder one of said straps having its ends extending outside the ladder and bent in U form, the cross bars M secured in said bent ends and the wheels having bearings in said bars substantially as set forth.

2. In a store service ladder the panel fastened in the ladder, the cap secured on its upper end, the frame consisting of the straps secured to the panel and side bars of the ladder one of said straps having its ends extended outside the ladder and bent in U form, the cross bars M secured in said bent ends and the wheels having bearings in said bars substantially as set forth.

3. In a store service ladder the cross bars N constituting a ladder step and the fender wheels having journals in said bars substantially as set forth.

4. In a store service ladder the cross bars N constituting a ladder step and the fender wheels having journals in said bars inclined to the lengthwise direction of the side bars and having a diameter greater than their width in combination with a vertical bearing plate substantially as set forth.

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

HENRY FRESH.

Witnesses:
J. J. FOSTER,
E. N. MICHAEL.