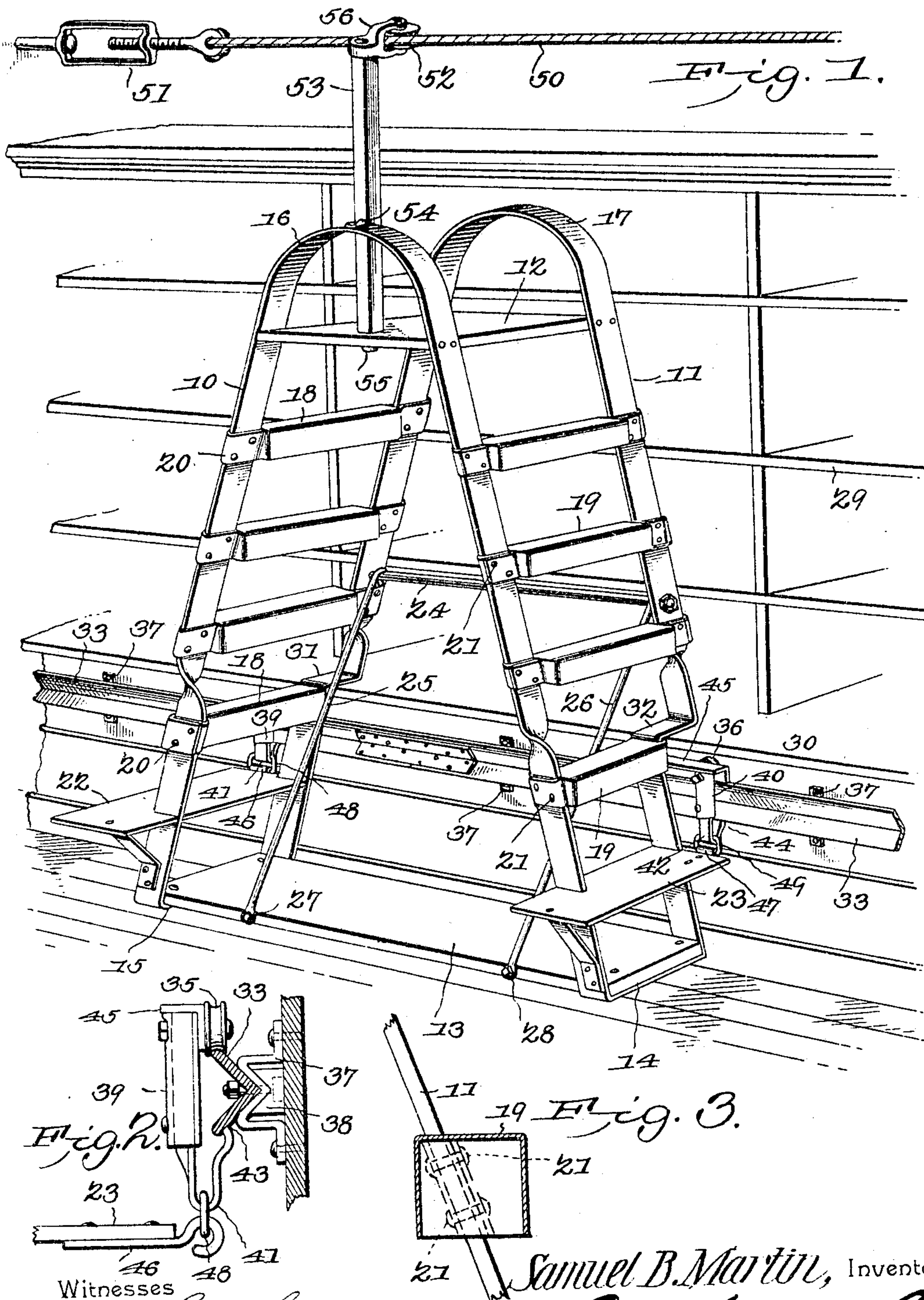


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S. B. MARTIN.
STORE SERVICE LADDER.
APPLICATION FILED DEC. 31, 1904.



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UNITED STATES PATENT OFFICE.

SAMUEL B. MARTIN, OF DALTON, OHIO.

STORE-SERVICE LADDER.

No. 799,068.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL B. MARTIN, a citizen of the United States, residing at Dalton, in the county of Wayne and State of Ohio, have invented a new and useful Store-Service Ladder, of which the following is a specification.

This invention relates to ladders employed in stores for movement along the shelving to enable the clerks to conveniently reach the goods upon the higher shelves, and has for its object to improve the construction and increase the efficiency of devices of this character.

Another object of the invention is to produce a device of this character which may be employed by two persons at the same time and also utilized to transport goods from place to place in the store.

With these and other objects in view, which will appear as the nature of the invention is better understood, the same consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation, it being understood that the invention is not necessarily limited thereto, as various changes in the shape, proportions, and general assemblage of the parts may be resorted to without departing from the principle of the invention or sacrificing any of its advantages.

In the drawings thus employed, Figure 1 is a perspective view of the improved apparatus in operative position relative to the adjacent shelving. Fig. 2 is an enlarged sectional detail of the carrier mechanism and the track upon which it operates. Fig. 3 is a transverse section, enlarged, of one of the steps of the ladder portion of the device.

The improved device comprises two ladders represented, respectively, at 10 and 11 and spaced apart and connected near their upper ends by a horizontal platform 12 and at or near their lower ends by a platform 13 and preferably of iron or steel.

The ladder members will preferably be inclined reversely, with the lower platform 13 larger than the upper platform 12.

The ladder members are preferably con-

structed with the side rails of one ladder connected together transversely at the lower ends, as at 14, and the side rails of the other ladder likewise connected at 15, while the outer rails of one ladder are connected at the upper ends by an arched frame 16 and the inner rails likewise connected by an arched frame 17.

The transverse spaced steps 18 19 of the respective ladders are each pressed or bent from a single sheet of metal, preferably steel, in box-like form open at the bottom, as represented in Fig. 3, and with the ends bent for inclosing the side rails of the ladders and riveted thereto, as at 20 21. This forms a very strong and rigid step and adds materially to the strength and rigidity of the structure.

The lower step of each ladder, as at 22 23, is extended, as shown in Fig. 1, to assist a person in passing from the ladder members to the platform 13 or from the platform to the ladders and without dismounting therefrom.

The ladder members are connected at one side by a stay member 24 and with diagonal braces 25 26, extending from the stay member to the outer side of the lower platform 13, to which they are connected, as at 27 28.

The ladders thus constructed are mounted for movement along the shelving, (represented at 29,) generally with the ledge 30, and the ladder members when employed in connection with shelving of this character will be provided with offsets, as at 31 32, to bring the upper portions of the ladders closer to the narrower upper shelves. A track 33 is connected to the shelving 30 parallel to and relatively near the floor, and running upon this track are guide sheaves or trolleys 35 36, connected to the ladder members. The ladder members can thus be moved along the shelving and without engaging the floor and without the necessity for a track upon the floor.

The track member is formed from sections of L iron or steel set with the apex next the shelving and connected thereto by brackets 37, placed at suitable intervals and reinforced by blocks 38, the trolleys 35 36 running upon the upper angularly-disposed edge of the track.

The trolleys 35 36 are connected, respectively, to hanger-plates 39 40, having hooks 41 42 at their lower ends, with the terminals of the hooks extended upwardly and engaging the rear face of the lower side of the track 33.

A section of L iron or steel 45 is also con-

nected to each of the upper ends of the hanger-plates 39 40 and bearing against the adjacent faces of the ladder members to form guards to the same.

5 Attached to the lower steps 22 23 are brackets 46 47, and coupled to the hooks 41 42 by links 48 49 to provide a flexible coupling means between the ladders and tracks.

10 Suspended from the walls of the building, preferably near the ceiling, is a cable 50, preferably with means such as a turnbuckle 51 for straining the same, and the connected ladder members are suspended from this cable by a trolley or sheave 52 and arm or mast 53, the
15 latter rigidly connected to the ladder members, as at 54 55.

The hanger 56 for the trolley-wheel 52 is disposed for extension laterally from the mast 53, so that the strains upon the cable are lateral and the downward strain on the cable reduced to a minimum and the "sagging" of the cable effectually prevented. By this means the ladder is suspended flexibly or outwardly yieldably relative to the track and shelving to
25 decrease the friction when moving along the same, and thus correspondingly decrease the power required to operate the device. By this simple arrangement it will be obvious that two persons can use the ladder at the same time
30 and on that account will be found very convenient and of increased efficiency in handling many lines of goods.

The device may also be employed to advantage in displaying certain lines of goods to
35 customers without removal from the shelves, the customer standing upon one ladder and the clerk upon the other and moving along the shelves as required.

The platforms 12 13 are an essential and useful part of the invention, as they afford a convenient means for transporting goods from one portion of the store to the other or for temporary storage while placing the goods in
45 position or the like or for any other desired purpose.

The ladder members may be of any desired size or material; but the framework and steps will preferably be of iron or steel, as before noted.

50 Having thus described the invention, what is claimed is--

1. Two ladders spaced apart and connected near their ends by horizontally-disposed platforms, a guide-cable suspended from a ceiling
55 contiguous to a line of shelving and parallel therewith, a guide-track for attachment to said shelving and extending longitudinally thereof, a mast extending from the outer side of said ladder and terminating in a guide-pulley for movement on said cable, and guide-pulleys for movement on said track and connected to the inner sides of said ladder members.

2. Two arched frames connected by spaced
65 steps to form two ladders spaced apart and

connected by their side members at one end and with horizontal platforms connecting the ladders near the ends.

3. Two ladder members spaced apart and connected near their ends by horizontally-disposed platforms, a tie member connecting said
70 ladder members at one side, and diagonally-disposed brace members connecting said tie member with the opposite side of said lower platform.

4. Two arched frames spaced apart and connected at their lower ends and with spaced steps connecting the frames at intervals, said steps each consisting of a single piece of sheet metal shaped into box-like form open at the
80 lower side and with the ends bent around the side members and riveted thereto.

5. Ladder side members connected at intervals by transverse steps each consisting of a single piece of sheet metal shaped into box-like form open at the lower side and with the ends bent for encircling the side members and riveted thereto.

6. Two ladder members spaced apart and connected near the ends, a guide-cable supported above said ladders, a guide-track disposed parallel with the path of said ladders, a trolley connected to said ladders and bearing laterally upon said cable, hanger-frames carrying trolleys bearing upon said track, brackets connected to said ladders, and links movably connecting said brackets and hangers.

7. Two ladder members spaced apart and connected near the ends, a guide-cable supported above said ladders, a guide-track disposed parallel with the path of said ladders, a trolley connected to said ladders and bearing laterally upon said cable, hanger-frames carrying trolleys bearing upon said track, brackets connected to said ladders, links movably connecting said brackets and hangers, and guard members carried by said hangers for bearing against said ladders.

8. Two ladder members spaced apart and connected near the ends, a guide-cable supported above said ladders, a guide-track disposed parallel with the path of said ladders, a trolley connected to said ladders and bearing laterally upon said cable, hanger-frames carrying trolleys bearing upon said track, and with standards depending therefrom, hooks at the terminals of said standards, brackets connected to said ladders, and links connecting said brackets with the hooks upon said standards.

9. Two ladder members spaced apart and connected near the ends, a guide-cable supported above said ladders, a guide-track disposed parallel with the path of said ladders, a trolley connected to said ladders and bearing laterally upon said cable, hanger-frames carrying trolleys bearing upon said track, and with standards depending therefrom, hooks at the terminals of said standards and extended for slidably bearing against the rear face of
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said track, brackets connected to said ladders, and links movably connected between said brackets and hooks.

10. Two ladder members spaced apart and
5 connected near their ends by horizontally-disposed platforms, with the lower steps of said ladder members extended laterally.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL B. MARTIN.

Witnesses:

F. F. H. POPE,
O. W. HORN.