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1,501,977

E. L. WEAVER

LADDER

Filed Sept. 14, 1923

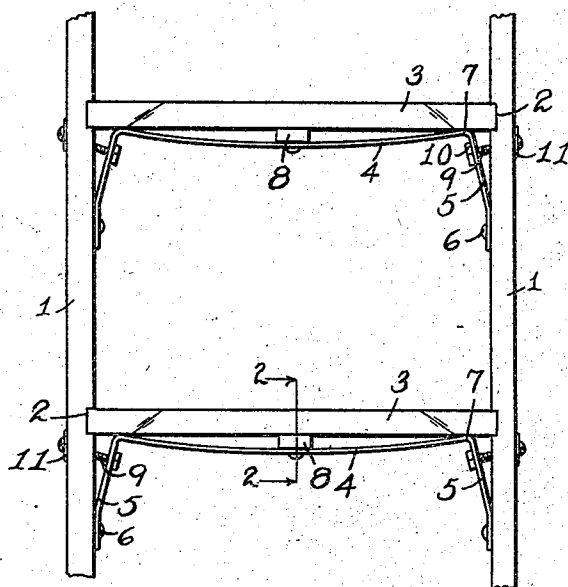


FIG. I.

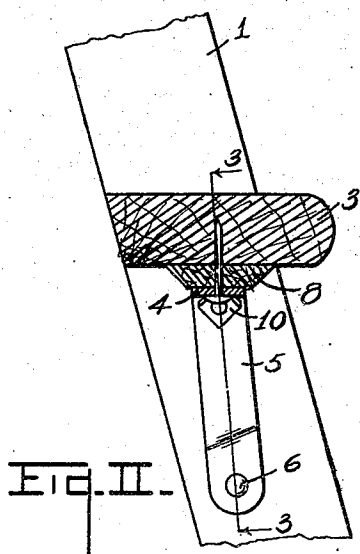


FIG. II.

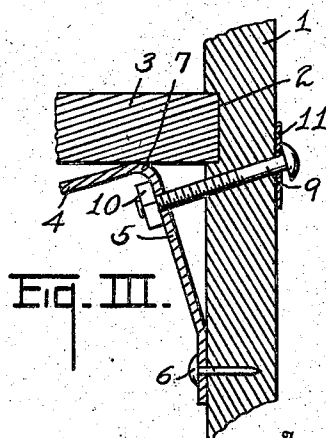


FIG. III.

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UNITED STATES PATENT OFFICE.

EARL L. WEAVER, OF GOSHEN, INDIANA, ASSIGNOR TO THE GOSHEN MANUFACTURING COMPANY, OF GOSHEN, INDIANA.

LADDER.

Application filed September 14, 1923. Serial No. 662,633.

To all whom it may concern:

Be it known that I, EARL L. WEAVER, a citizen of the United States, residing at Goshen, county of Elkhart, State of Indiana, have invented certain new and useful Improvements in Ladders, of which the following is a specification.

This invention relates to improvements in ladders.

My improvements are especially designed by me for use or embodiment in step ladders and I have illustrated the same in a ladder of that type, although they are desirable for and readily adapted to other types of ladders.

The main object of this invention is to provide an improved ladder which is very strong and rigid and at the same time economical in its parts and in the assembling thereof.

Further objects, and objects pertaining to details and economies of my improvements will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this application, in which:

Fig. I is a fragmentary elevation of a ladder embodying the features of my invention.

Fig. II is a detail vertical section on a line corresponding to line 2—2 of Fig. I.

Fig. III is a detail vertical section on a line corresponding to line 3—3 of Fig. II.

In the drawing similar reference numerals indicate similar parts in all of the views and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the risers 1 have mortises or gains 2 in the inner sides thereof suitably spaced to receive the steps 3. I provide bowed truss members 4 having downwardly diverging arms 5 at the ends thereof, the ends of the arms being secured to the inner sides of the risers as by the nail 6. These truss members are arranged with their ends, or the angles 7 thereof, imping-

ing the under sides of the steps 3 adjacent the ends of the steps, as clearly shown in the drawing.

Truss blocks 8 are arranged between the steps and the truss members, the truss blocks being centrally disposed. Tension bolts 9 are arranged in an inwardly inclined relation through the risers to engage the diverging arms 5 of the truss members adjacent the upper ends thereof, the nuts 10 being arranged on the inner sides of the arms 5. By turning up these nuts the truss member is placed under tension, and the risers are tied together through the truss member. Washers 11 are preferably provided for the bolts.

By this arrangement of parts I secure a structure which is light in weight and at the same time is very strong and rigid. The parts are simple, economical and very easily assembled.

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

1. A ladder comprising risers, a step having its ends mortised into the inner sides of said risers, a truss member having downwardly diverging arms at its ends disposed beneath said step with the angles thereof impinging the step adjacent its ends, the ends of the arms being secured to the inner sides of the risers, a truss block disposed centrally of said truss member, and bolts disposed through said risers to engage the arms of said truss member.

2. A ladder comprising risers, a step, a truss member having downwardly diverging arms disposed beneath said step to engage the same adjacent the ends thereof, a truss block between said step and truss member, and tension bolts disposed through said risers to engage the arms of said truss member.

3. A ladder comprising risers, a step, a truss member having arms at the ends thereof disposed beneath said step to engage the same adjacent the ends thereof, a truss block between said step and truss member, and tension members connecting the arms of said truss member to said risers.

In witness whereof, I have hereunto set my hand.

EARL L. WEAVER. [L. s.]