Jan. 4, 1938. P. N. HOWARD 2,104,303

LADDER CONSTRUCTION

Filed May 16, 1934

Fig. 1

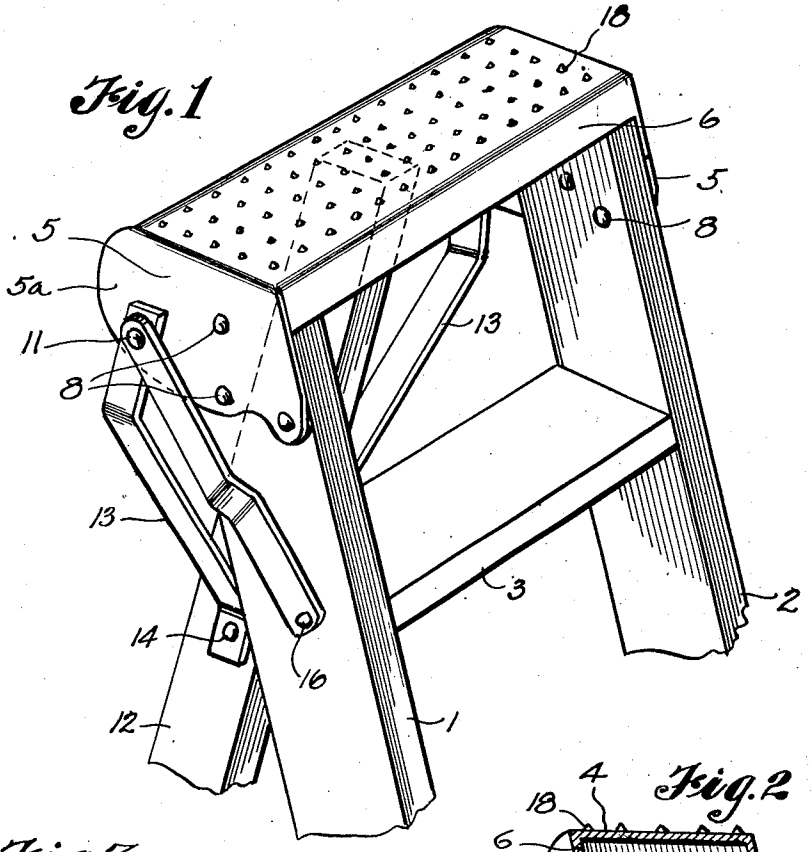


Fig. 3

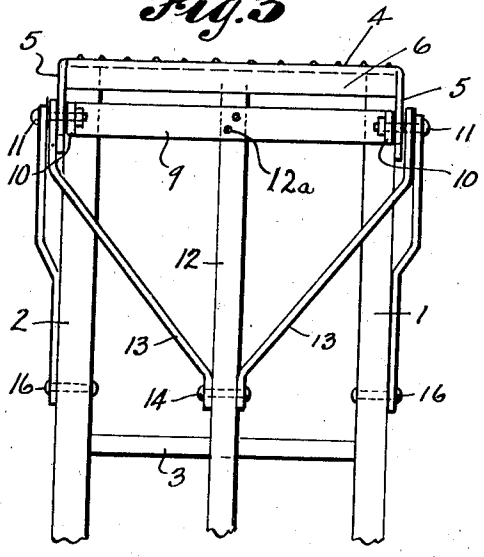
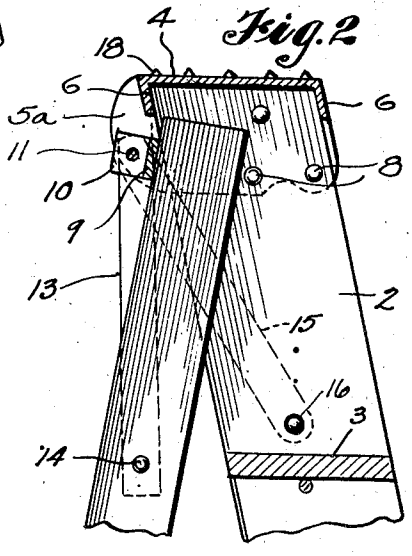


Fig. 2



INVENTOR
PAUL N. HOWARD,
BY
Cook & Robinson
ATTORNEY

Patented Jan. 4, 1938 2,104,303

UNITED STATES PATENT OFFICE

2,104,303

LADDER CONSTRUCTION

Paul N. Howard, Seattle, Wash.

Application May 16, 1934, Serial No. 725,909

1 Claim. (Cl. 228—32)

This invention relates to improvements in ladders, and more particularly to step ladders of a type especially designed for orchard use; it being the principal object of this invention to provide an improved form of top for orchard ladders and the like, whereby rigidity and durability is insured; which provides for easy assembly of the parts of the ladder therewith, and permits ready disassembly for repair or replacement of parts associated therewith should this become necessary.

More specifically stated, the invention resides in the provision of an "all metal" top plate for a step ladder, or the like, comprising a top or step portion of substantial width having downturned, opposite end flanges, integral therewith, and to which the ladder legs may be securely and rigidly attached.

It is also an object of the invention to add strength and durability to the ladder top by the provision of downturned flanges along its opposite, longitudinal edges, which cooperate with the end flanges previously mentioned, to provide pockets within which the upper ends of the opposite side legs of the ladder are received.

It is also an object of the invention to provide a top plate that will not split or crack, and which has its upper surface provided with upwardly pressed bosses which will prevent one's slipping while standing on the top.

Other objects of the invention reside in the details of construction and combination of parts, as will hereinafter be described.

In accomplishing these and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawing, wherein—

Fig. 1 is a perspective view of the upper end portion of a ladder equipped with a top embodied by the present invention.

Fig. 2 is a vertical, cross sectional view of the upper end portion of the ladder, particularly illustrating the flanges.

Fig. 3 is a back elevation of the upper part of the ladder.

Referring more in detail to the drawing—

1 and 2 designate the opposite side legs of the ladder and 3 designates the horizontal steps that are mounted between the legs 1 and 2. If it is desired, the ladder legs 1 and 2 may be slightly diverging from their upper toward their lower ends. At their upper ends the legs 1 and 2 are joined by the ladder top 4 embodied by this invention. This top comprises a metal plate with integral, downturned, opposite end flanges 5—5 and with downturned, longitudinal flanges 6—6 at opposite edges which extend the length of the step between flanges 5—5.

The upper ends of the ladder legs 1 and 2 are disposed flatly against the under side of the top, and are fitted between the longitudinal flanges 6—6 and flatly against the end flanges 5 and are secured permanently to the latter by bolts or rivets 8.

At their rear edges, the flanges 5—5 have rearwardly extending portions 5a between which a flat, horizontal bar 9 is extended; the bar has outturned ends 10 lying parallel with the flanges 5a and secured pivotally thereto by pivot bolts 11. The rear leg 12 of the ladder has its upper end centrally attached to the cross bar 9 by screws or the like 12a as shown in Fig. 3 and there are braces 13—13 with their upper ends pivotally secured by the bolts 11 to the flanges 5a and with the lower ends bent inwardly and secured by a bolt 14 to the leg 12 at a distance below the cross bar 9. Also, there are braces 15 secured by the bolts 11 and to the legs 1 and 2 by bolts 16 at a distance below the upper ends of the legs.

With this form of top plate, the legs 1 and 2 may be firmly and securely held against spreading or looseness. The top is durable and will not be affected by weather conditions. The end flanges 5a serve as secure means for pivotal attachment of the braces and for the mounting of the rear, or swinging leg 12.

To prevent one's slipping from the top when standing thereon, it is provided with closely located, upstanding bosses 18 stamped upwardly therefrom and preferably pointed.

While the drawing illustrates the ladder as having but one swinging leg, it is understood that two could be provided if such was desired and the same metal top construction applied.

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

In a ladder of the character described, a one piece metal top plate formed with integral, downturned flanges at its opposite ends and along its opposite longitudinal edges; said end flanges having parts extended rearwardly beyond the top plate, ladder legs fitted at their upper ends against the under side of the plate and against the end flanges thereof and between the opposite edge flanges, bolts securing the legs to said flanges, a cross bar extended between the rearward extensions of the end flanges of the plate and having out-turned end portions parallel with the extensions, bolts pivotally connecting the outturned ends with the flange extensions, a ladder leg attached centrally to the cross bar, brace bars for the leg attached thereto at opposite sides and having ends pivotally mounted on said bolts, and other braces extending from the ladder legs and fixed at their ends to said bolts.

PAUL N. HOWARD.