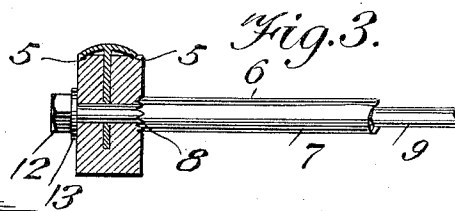
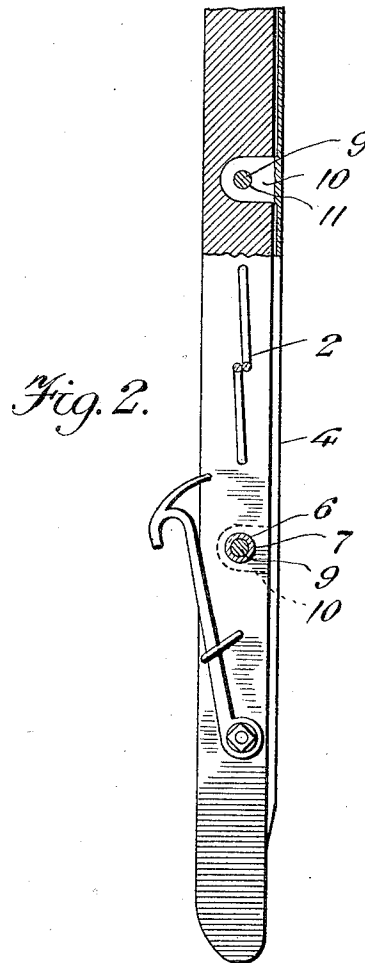
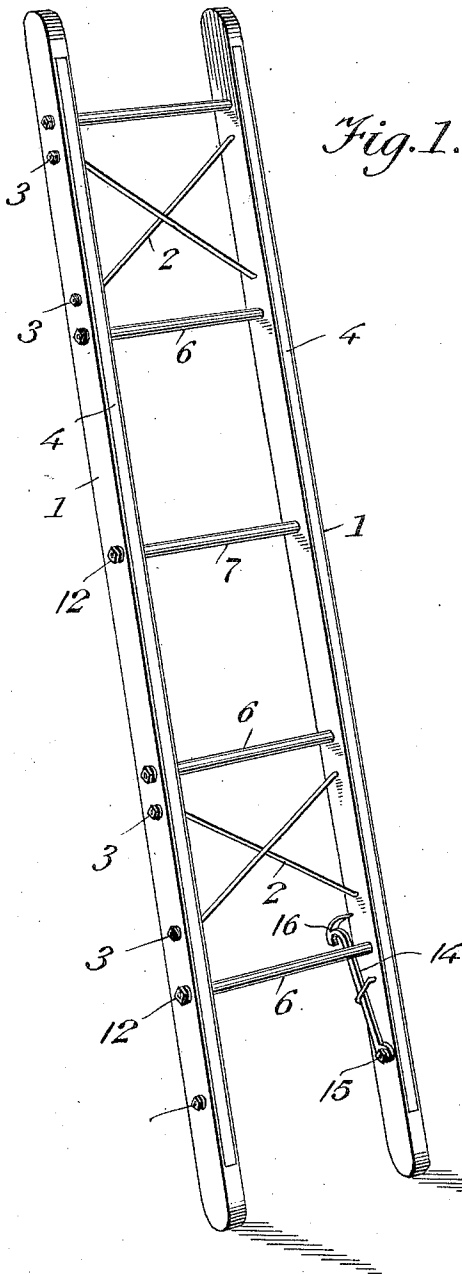


A. SCHREINER.
LADDER.

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1,051,275.

Patented Jan. 21, 1913.



Witnesses:
Geo. Ackmann Jr.
Rud. Bredenkamp

Inventor:
Albert Schreiner,
By C. C. Hines,
Atty.

UNITED STATES PATENT OFFICE.

ALBERT SCHREINER, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO JAMES S. DENNIS, OF DENVER, COLORADO.

LADDER.

1,051,275.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed April 21, 1911, Serial No. 622,522. Renewed November 9, 1912. Serial No. 730,498.

To all whom it may concern:

Be it known that I, ALBERT SCHREINER, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Ladders, of which the following is a specification.

This invention relates to ladders and particularly to one designed for universal use, the object of the invention being to provide a ladder having improved forms of rounds which will include hollow outer members of substantially cylindrical form and inner members of bolt form, the latter being extended through the side members of the ladder and being clamped thereto so as to hold the outer sections securely clamped to and partly embedded in the side members of the ladder.

Another object of the invention is to provide metal reinforcing plates or facing strips for the side members of the ladder and to construct them with means, whereby they will be engaged by portions of the rounds and held through such engagements in their applied positions.

In the drawing, forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views:—Figure 1 is a perspective view of the ladder. Fig. 2 is a longitudinal section through a portion thereof. Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

My improved ladder includes identical side members 1 which are spaced from each other and braced by the cross rods 2, the ends of the rods being extended horizontally through the side members and threaded for the reception of the retaining nuts 3. Any suitable number of braces such as those described may be employed, depending upon the size of the ladder.

The side members 1 are each provided on their outer edge with a metal facing or wear strip 4 which is preferably of concavo-convex form so as to present relatively sharp surfaces 5 to be slightly embedded in the material of the side member as will be understood. The rounds 6 include outer substantially cylindrical members 7 in the form of tubes or sleeves, as shown, and which are

provided with end toothed or serrated gripping surfaces 8 which are adapted to bite into the members 1 and to become sufficiently embedded therein to hold the rounds against rotating when stepped upon. Clamping bolts 9 extend through the outer sections 7 of the rounds and through the side members 1. The facing strips 4 are provided with integral apertured ears 10, and as illustrated, the portions of the bolts 9 which extend through the members 1 are extended through passages 11 in the ears so that the facing strips are held securely applied to the side members 1 of the ladder wholly through their engagement with the round bolts. The ends of the bolts are suitably threaded for the reception of the clamping nuts 12. These nuts are arranged in frictional contact with washers 13 which bear against the outer surfaces of the side members.

The side members 1 are provided, adjacent to their lower ends, with hooks 14, the lower ends of which being pivotally mounted on the bolts 15 which are suitably secured in the side members. These hooks are adapted to gravitate into positions where the portions 16 thereof will be exposed for effective engagement with one of the rounds of another ladder section, it being understood that any suitable number of sections may be provided and slidably connected with each other.

I claim:

A ladder including side members, fastening members passing through and connecting the side members, concavo-convex facing strips protecting the edges of the side members, said strips having their concaved sides facing said side members and their longitudinal edges bearing thereon, and ears carried by said strips and embedded in the side members and apertured for the passage of said fastening members, whereby said strips are fastened in position.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT SCHREINER.

Witnesses:

LOUIS F. NELL,
L. B. HUNGERFORD.