O. K. PUTNAM.

LADDER.

APPLICATION FILED NOV. 20, 1915.

1,188,013. Patented June 20, 1916.

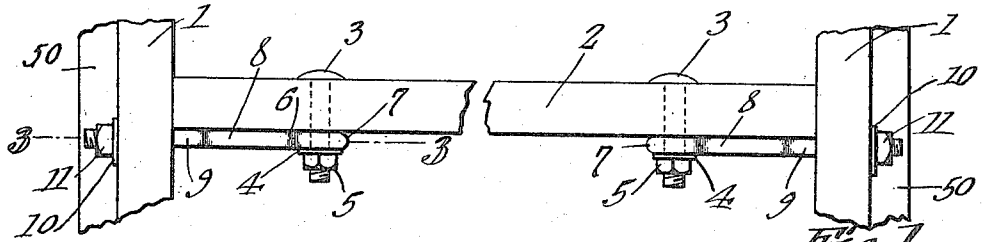


Fig. 1.

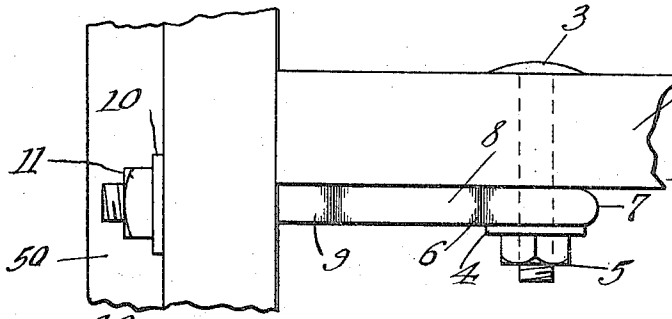


Fig. 2.

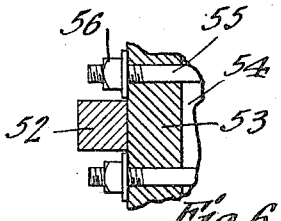


Fig. 6.

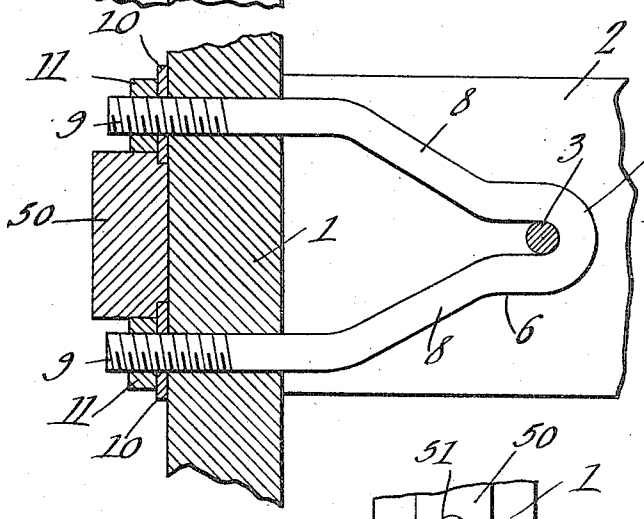


Fig. 3.

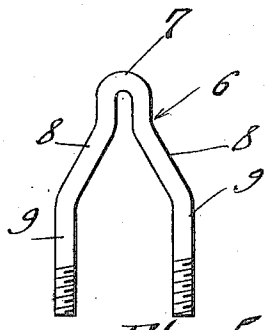


Fig. 5.

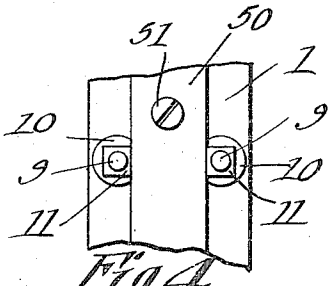


Fig. 4.

Witnesses

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LADDER.

1,188,013. Specification of Letters Patent. Patented June 20, 1916.

Application filed November 20, 1915. Serial No. 62,544.

To all whom it may concern:

Be it known that I, OLIVER K. PUTNAM, a citizen of the United States, residing at Orange, in the county of Orange and State of California, have invented a new and useful Ladder, of which the following is a specification.

It is the object of the present invention to provide a novel means whereby the tread of a ladder may be assembled readily with the stile of the ladder, and whereby the stile may be bound firmly on the end of the tread.

In the drawings:—Figure 1 shows in front elevation, a portion of a ladder wherewith the device forming the subject matter of this application has been assembled; Fig. 2 is a detail enlarged from Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 1; Fig. 4 is an elevation showing a portion of the stile; Fig. 5 is a plan of the support; Fig. 6 is a cross section showing a modified form of the invention.

In the drawings, the numeral 1 indicates the stiles of a ladder and the numeral 2 indicates one of the treads of the ladder. Inserted through the step 2 near to each end thereof is a bolt 3 which may carry a washer 4 and a nut 5,

The invention includes a support 6 of approximately U-shape, the support 6 comprising a bend 7 which embraces the bolt 3 closely above the washer 4, diverging arms 8 forming a broadened base for the tread 2, and parallel fingers 9 extended through the stile 1, the fingers 9 carrying washers 10 and nuts 11. By tightening up the nuts 11, the end of the tread 2 is bound against the stile 1, and by tightening up the nut 5, the support 6 is bound against the under face of the tread 2. One advantage in fashioning the support 6 of U-shape is that it can be straddled onto the bolt 3 without removing the nut 5. Since the fingers 9 are parallel, the support 6 can move endwise of the stile 1 to tighten up the tread 2 when the nuts 11 are rotated. If the upwardly projecting ends of the bolts 3 are considered objectionable, a skilled mechanic will be competent to countersink them into the tread 2. If desired, a strip 50 may be applied to the outer faces of the stiles 1, between the nuts 11, the strip being held in place by means of securing elements 51. The strips 50 serve to reinforce the ladder against side bending, and also prevent the nuts 11 from rotating.

One of the principal advantages of the present invention is that the device provides means whereby a worn step may be replaced readily by a new one, it being a matter of common knowledge that the lower steps of a ladder generally wear out before the upper ones.

In Fig. 6 of the drawings the stile is denoted by the numeral 53, the tread at 54, the support being shown at 55 and the nuts on the support at 56. The reinforcing strip appears at 52. In this form of the invention, the reinforcing strip is narrow enough so that it does not interfere with the rotation of the nuts 56. In other words, the strip 52, unlike the strip 50, does not constitute a holding means for the nuts.

Having thus described the invention, what is claimed is:—

1. In a ladder, a stile; a tread; a projection depending from the tread; a support on which the tread rests, the support embodying a bend which engages the projection closely, diverging arms forming a broadened base for the tread, and parallel fingers extended through the stile; and stile engaging tightening devices on the ends of the fingers.

2. In a ladder, a stile; a tread; a projection carried by the tread; a support on which the tread rests, the support embodying a band which is engaged in the projection, and arms projecting through the stile; nuts on the arms and coacting with the outer face of the stile; and a reinforcing strip extended longitudinally of the stile and adapted to prevent the stile from bending sidewise, the strip being engaged with the nuts to hold the latter against rotation.

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

OLIVER K. PUTNAM.

Witnesses:
DOROTHY HAYNES,
A. D. RHODES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."