

June 9, 1925.

1,541,326

A. N. CLOUGH

LADDER

Filed March 28, 1923

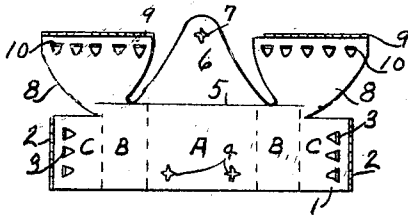


FIGURE 1

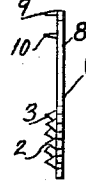


FIGURE 2

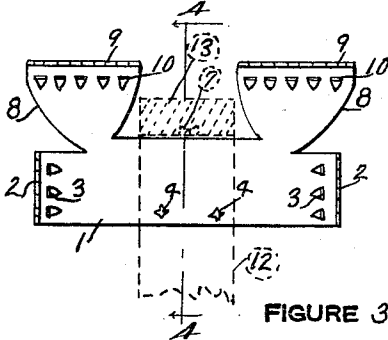


FIGURE 3

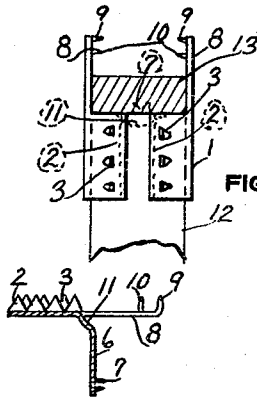


FIGURE 4

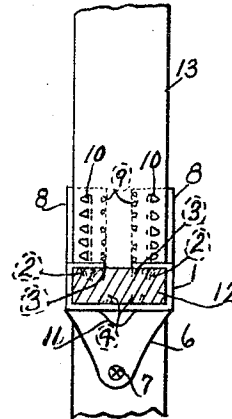


FIGURE 5

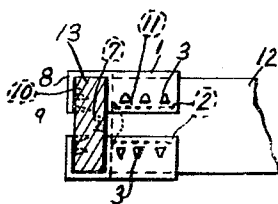


FIGURE 6

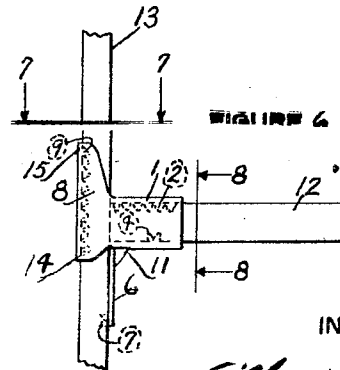


FIGURE 7

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LADDER.

Application filed March 28, 1923. Serial No. 628,294.

To all whom it may concern:

Be it known that I, ALFRED N. CLOUGH, a citizen of the United States, and a resident of San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Ladders, of which the following is a specification.

It is one object of my invention to provide a ladder construction in which the step is securely clamped to the leg in such a manner as to be immovable with relation thereto.

It is another object of my invention to provide a clamp for the purpose indicated that is so formed as to provide rigid support for the step without the use of bolts, webs or brackets.

It is still another object of my invention to provide a clamp or support of the nature indicated that may be made of sheet metal and so formed and moulded around the step and leg of the ladder as to grasp these parts snugly and securely.

It is still a further object of the invention to provide a sheet metal support of the character indicated that is provided with teeth or prongs so arranged as to enter the step and leg material in the process of mounting the support thereon thereby effectually joining the step and leg without the application or use of separate elements.

Finally it is an object of my invention to provide a device of the character indicated that will be simple in form, economical to manufacture, quickly and easily applied, strong and durable, and highly efficient in its practical application.

In the drawing:—

Figure 1 is a plan view of a blank ready to be bent into form and having prongs formed thereon and raised into position.

Figure 2 is an end view of the blank shown in Figure 1.

Figure 3 is a plan view of the device partly formed and in position to be wrapped around a step and leg of a ladder.

Figure 4 is a sectional view on line 4—4 of Figure 3.

Figure 5 is a plan view of the device partly wrapped around a step and leg of a ladder.

Figure 6 is a side elevation of the device in use.

Figure 7 is a view on line 7—7 of Figure 6.

Figure 8 is view on line 8—8 of Figure 6.

Referring more particularly to the drawing, I show a plate of sheet metal, the body portion 1 of which is oblong in shape and has teeth formed on the ends thereof as at 2; these teeth being bent at right angles to the plate as shown. For the purpose of explanation the body portion 1 is divided into central portion "A", side portions "B" and end portions "C".

Spaced back a distance from teeth 2 prongs 3 are punched out of the metal as shown and extend in a line parallel to teeth 2. The portion "A" also has prongs punched out of it on the same side of the metal as teeth 2 and prongs 3 as shown at 4.

From one side of body portion 1 and having a base line 5 of substantially the same width as portion "A" of body portion 1 extends a central ear 6 having prongs formed therein as at 7.

At 8—8 are a pair of ears, one on either side of ear 6, and joined to the edge of side portions B—B of body portion 1. Each of these ears 8—8 is of substantially the same length as ear 6 and terminates in a set of teeth 9 bent at right angles to its surface in the same manner as teeth 2. These ears 8—8 are also provided with prongs 10 as shown.

In applying this device to the construction of ladders the ear 6 is first bent at right angles to the body portion 1 and in a direction opposite to the several sets of teeth and prongs. At the same time a recess as 11 is formed in the metal at the point of junction of ear 6 and body portion 1, the forming of this recess raising a boss on the under side of the plate in the angle between the two parts 6 and 1. This boss being formed in the angle itself and of the metal of which the support is made effectually prevents movement of one part relative to the other and consequently prevents the support from cracking along this line of junction under repeated applications and removal of weights from step 12.

The support being positioned as described, and prongs 4 and 7 driven into the wood (the former into the bottom of the step and the latter into the inner side of the leg 13) the parts "B" are bent upwardly at right angles to part "A" as shown in Figure 5, and then the parts "C" are bent downwardly so that the teeth 2 and prongs 3 enter the

top of step 12 and ears 8—8 are bent inwardly so that the teeth 9 and prongs 10 enter the outer side of leg 13.

This construction is such that one portion 5 of the clamp almost encompasses step 12 and is immovably secured to it and another portion almost encompasses leg 13 and is immovably secured to it. The clamp is therefore immovably secured to both step 10 and leg without the use of bolts or other additional elements and, because of the construction of the clamp itself, the two parts of the clamp are immovable with relation to each other.

15 It may now be seen that I have provided a clamp or support that may be economically made out of sheet metal and may be quickly arranged in an operative position in such a manner as to (for all practical 20 purposes) become an integral part of the ladder itself. In order to secure the strongest and most rigid construction I

prefer to extend ears 8—8 below the level of step 12 as at 14, and also above its level as at 15, these ears therefore acting 25 both as hangers and as braces.

It is to be understood of course, that while I have herein shown and described one specific embodiment of my invention changes in form, construction and method 30 of application and operation may be made within the scope of the appended claim.

I claim:

A support comprising a sheet metal body portion adapted to be clamped around a 35 step end, an ear adapted to engage the inner side of a ladder leg below the step to be supported, and a pair of ears rising from said body portion and adapted to be clamped 40 around a ladder leg adjacent to said step end, said support having a boss formed therein in the angle formed by said body portion and said first mentioned ear.

ALFRED N. CLOUGH.