H. A. COOPER.

LADDER.

APPLICATION FILED JULY 14, 1917.

1,346,299. **Patented July 13, 1920.**

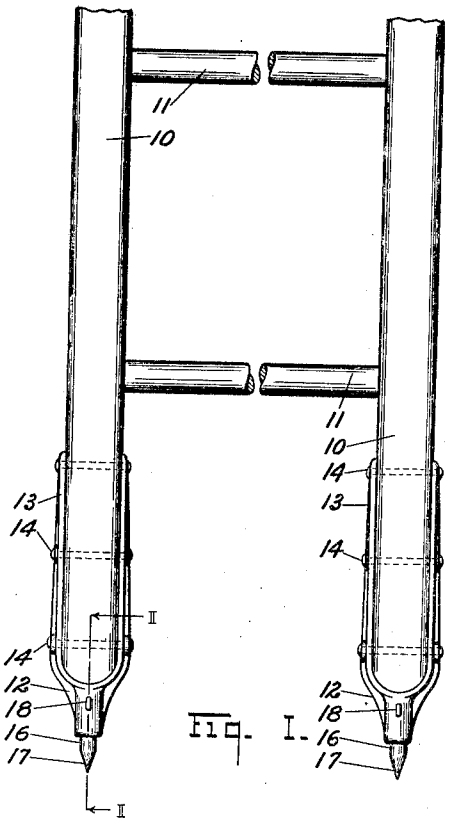


Fig. I.

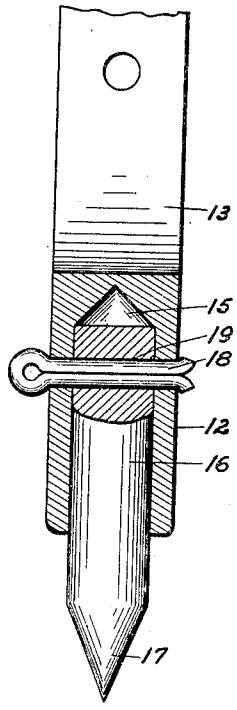


Fig. II.

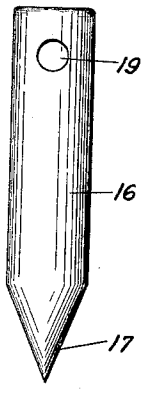


Fig. III.

Inventor

Hamilton A. Cooper

Chester H. Braselton

Attorney

UNITED STATES PATENT OFFICE.

HAMILTON A. COOPER, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO CHARLES A. BRIGGS, OF TOLEDO, OHIO.

LADDER.

1,346,299. Specification of Letters Patent. Patented July 13, 1920.

Application filed July 14, 1917. Serial No. 180,671.

To all whom it may concern:

Be it known that I, HAMILTON A. COOPER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Ladders, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in ladders. The principal object of this invention is to provide a ladder having improved floor engaging devices and quickly detachable means for connecting said floor engaging devices with the ladder.

Further objects, and objects relating to details of manufacture and economies of construction, 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. My invention is clearly defined and pointed out in the appended claim.

A structure constituting a preferred embodiment of my invention is illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure I is a fragmentary elevation of a ladder embodying my invention.

Fig. II is a detail, sectional view, taken substantially on the line II—II of Fig. I.

Fig. III is a view in side elevation of one of the removable points for engaging the floor.

In the drawings, similar reference numerals refer to similar parts throughout the several views, and the sectional view is taken looking in the direction of the little arrows at the ends of the section line.

Considering the numbered parts of the drawing, I have shown a ladder comprising the side members 10, and the rungs 11, all constructed in the usual manner. To the lower ends of the side members 10 are secured the shoes 12, having the straps 13 which engage the opposite sides of the side member 10 of the ladder, and are secured thereto by means of the bolts 14 passing through said straps 13 and through the side member 10. Each shoe 12 has a socket 15 therein, as shown in Fig. II of the drawing, said socket being adapted to detachably and removably receive a floor engaging member. In Figs. I, II and III, I have shown one form of floor engaging member 16, which is preferably made of steel and provided with a point 17 and a transverse opening 19 at its upper end, the floor engaging member 16 being secured in place in the socket of the shoe 12 by means of a cotter pin 18, which passes through said transverse opening 19 and alined openings provided in the shoe 12.

From the description of the parts given above, the operation of my device should be very readily understood. In order to promote safety in factories, shops and similar places, it is very essential to provide on the ladders which are used in such places, some device for engaging the floor, or surface on which the lower end of the ladder rests, so as to prevent the ladder from slipping. Many accidents are caused by the slipping of ladders, throwing the workman from his position and causing injury. Such floor engaging means should be kept in good condition, because they very rapidly deteriorate, and may let the ladder slip so as to cause an accident. In some cases, it is desirable to provide a sharp point on the bottom of the ladder to engage on the surface on which the ladder rests, and, if such a point is used, it must be seen that it is kept sharp or otherwise it will gradually become dulled and let the ladder slip, and, for that reason, it is essential that ladders in use about a factory or shop be inspected frequently to see that the points are in good condition. However, if it is necessary to remove the entire ladder, to a shop, in order to sharpen the points and put them in condition for use, there will be a tendency to let the points go without sharpening rather than to take the ladder out of use, and, for this reason, my invention is especially desirable, as it provides means whereby the points can be very quickly and readily removed and new sharp points substituted without taking the ladder out of use for any substantial length of time.

I am aware that the particular embodiment of my invention here shown and described is susceptible of considerable variation without departing from the spirit of my invention, but I have found that this particular embodiment is desirable from many standpoints.

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

In a device of the class described, the

combination with a member to be supported, of a shoe comprising spaced straps extending upon opposite sides of said member and connected by a transverse end wall carrying a bracket portion having a longitudinal recess formed therein provided with a tapered end, a floor engaging device having a square cut end adapted to seat upon the tapered portion of the recess and a pointed end for engaging the floor, and means for retaining the floor engaging device within the socket portion.

In testimony whereof I affix my signature.

HAMILTON A. COOPER.