L. I. YOUNG.

FOOT SUPPORT FOR ENGAGING LADDER RUNGS.

APPLICATION FILED SEPT. 26, 1921.

1,437,376. Patented Nov. 28, 1922.

Fig. 1.

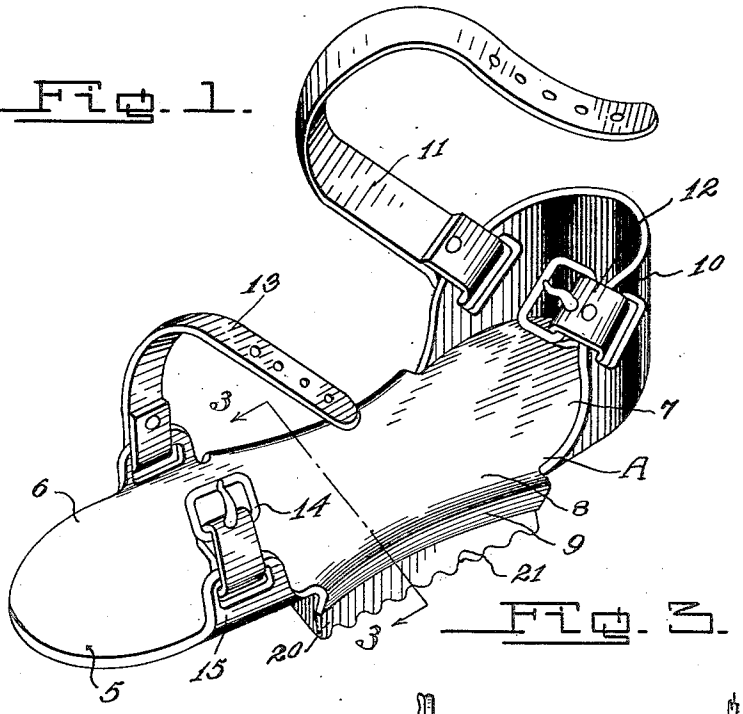


Fig. 3.

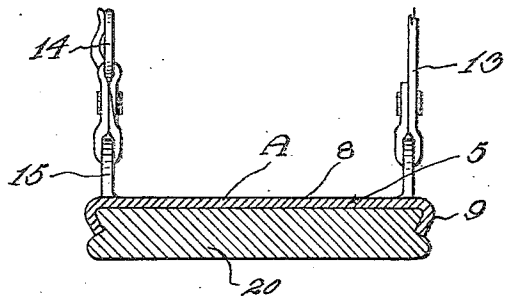
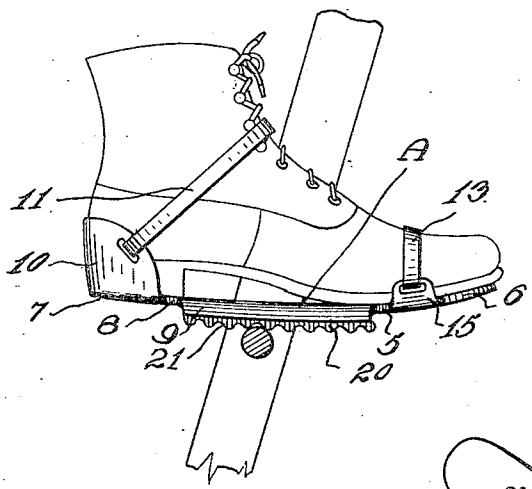


Fig. 2.



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UNITED STATES PATENT OFFICE.

LEONARD I. YOUNG, OF FREDONIA, NEW YORK.

FOOT SUPPORT FOR ENGAGING LADDER RUNGS.

Application filed September 26, 1921. Serial No. 503,170.

To all whom it may concern:

Be it known that I, LEONARD I. YOUNG, a citizen of the United States, residing at Fredonia, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Foot Supports for Engaging Ladder Rungs, of which the following is a specification.

This invention relates to attachments for shoes, and the primary object of the invention is to provide an improved device for facilitating the standing of persons on the rungs of ladders and the climbing of ladders, such device being so formed as to distribute the strain of standing on a ladder rung throughout the entire lower surface of the shoe, thereby eliminating undue strain upon the parts of the shoe and the fatigue experienced by persons having to stand for a considerable length of time on ladder rungs.

Another object of the invention is to provide a rigid foot support for engaging a rung of a ladder, which can be readily and easily secured to or detached from the foot or shoe, said support also having means thereon for preventing the slipping of the foot on the rungs of a ladder.

A still further object of the invention is to provide an improved shoe support for facilitating the climbing of or standing on ladders, of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, in which,

Figure 1 is a perspective view of the improved shoe attachment or foot support.

Figure 2 is a side elevation of one of the supports showing the same in use.

Figure 3 is a transverse sectional view through one of the foot supports or shoe attachments taken on the line 3—3 of Figure 1.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates the improved shoe attachment or foot support, which includes a flat plate 5, preferably formed of a single piece of sheet metal. This plate 5 is shaped so as to conform to the sole and heel of a shoe and may be of any desired length. The plate 5 includes the sole portion 6, the heel portion 7, and the connecting shank portion 8, which may be formed slightly narrower in width than the sole and heel portions 6 and 7 if so desired. It is essential however, that the shank portion 8 be provided with depending portions 9, which add strength and rigidity to the plate 5. However, these flanges 9 also constitute attaching members as will become hereinafter more fully apparent.

The plate 5 is adapted to be secured to the sole of a shoe in any preferred manner. By way of example, the heel portion 7 of the plate 5 has been shown provided with a counter or heel guard plate 10, which carries a strap 11 and a buckle 12. This strap 11 is adapted to extend around the ankle of the wearer. It is of course apparent that other methods may be used in lieu of the strap 11 and the buckle 12 for connecting the heel portion of the device on the shoe. By way of example, the sole portion 6 of the plate 5 is also shown with an attaching strap 13 and a co-acting buckle 14, but it is apparent that a sole clamp can be effectively used. The buckle 14 and the strap 13 are secured to the upstanding lips or lugs 15 formed on the side edges of the sole portion 6 of the plate 5. These lugs 15 perform a triple function; first, to prevent lateral shifting of the sole of the shoe on the plate; second, to stiffen the plate; and third, to form the carrying means for strap 13 and the buckle 14. In order to facilitate the clambing of ladders and to prevent slipping of the plate 5 upon a ladder rung, a resilient rubber pad 20 is provided. This pad 20 is to be disposed at the shank portion 8 of the plate 5, as it has been found that this is the most convenient point at which the foot should engage the ladder rung. This resilient rubber block 20 can be formed of any desired thickness and if so desired, the lower surface thereof may be corrugated as at 21, in order to more readily engage the rung of the ladder and prevent slipping of the plate 5 thereon. As shown, these serrations or grooves extend transversely across the plate.

The reinforcing flanges 9 are inclined inwardly and downwardly toward each other

so as to firmly grip the longitudinal side edges of the rubber block 20, and these flanges form means for firmly securing the block in position. It is apparent from the formation of these flanges 9 that the block can be slipped outwardly from underneath the plate, by pushing the same longitudinally of the plate. If found desirable suitable fastening elements such as bolts or staples with ends threaded for nuts, may also be used for holding the block 20 in position.

The rigid plate 5 permits the strain of standing upon a rung to be equally distributed to the foot, thereby permitting all parts of the foot to assume its correct load.

From the foregoing description, it can be seen that an exceptionally simple and durable device has been provided, which will effectively facilitate the work of painters and others, who have to stand a considerable length of time upon ladders, and which will entirely eliminate the fatigue experienced from said practice.

Changes in details may be made without departing from the spirit or scope of this invention; but,

I claim:

1. A ladder climbing and standing attachment for shoes comprising a flat rigid metallic plate, means carried by the rear end of the plate for engaging the foot of the user, means carried by the forward end of the plate for engaging the foot of the user, the plate being shaped to conform to the sole and heel of the shoe, depending reinforcing and attaching flanges carried by the plate intermediate the sole and heel, and a gripping block engaging the lower surface of the plate and carried by said flanges.

2. A ladder climbing and standing attachment for shoes comprising a flat metallic plate including a sole portion, a heel portion, and a connecting shank portion, an upstanding rigid counter portion formed on the rear end of the heel portion, a fastening strap carried by the counter portion, depending attaching and reinforcing flanges formed on the shank portion, a rubber block carried by the attaching and reinforcing flanges, the lower surface of the block being corrugated, upstanding lugs formed on the edges of the plate at the sole portion, and an attaching strap carried by said lug.

3. As a new article of manufacture, a ladder climbing and standing attachment for shoes comprising a rigid plate including a sole portion, a heel portion, and a connecting shank portion, a friction pad for engaging the lower surface of the shank portion, and depending attaching and reinforcing flanges formed on the shank portion and extending inwardly into intimate engagement with the side faces of the friction pad.

LEONARD I. YOUNG.