UNITED STATES PATENT OFFICE.

JACOB KINSEL, OF PHILADELPHIA, PENNSYLVANIA.

ICE-CREEPER.

No. 917,877. Specification of Letters Patent. Patented April 13, 1909.

Application filed June 12, 1908. Serial No. 438,161.

To all whom it may concern:

Be it known that I, JACOB KINSEL, citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ice-Creepers, of which the following is a specification.

The object of the present invention is the provision of an improved ice creeper which is designed to be applied to the heel of a shoe or article of foot wear and which embodies a novel construction whereby it can be easily and quickly moved either into an operative or an inoperative position.

The invention further contemplates an ice creeper which is simple and durable in its construction and can be readily applied to the heel by an ordinary shoe maker.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view showing the bottom of a heel having the ice creeper applied thereto. Fig. 2 is a longitudinal sectional view showing the teeth as moved into an operative position. Fig. 3 is a similar view on an enlarged scale showing the teeth as moved into an inoperative position. Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

For the purpose of illustration the invention is shown as applied to the heel of a shoe 1 which may be of any approved construction. A casing is embedded in the forward portion of the heel and journaled within this casing so as to revolve about a horizontal axis is a cylinder 2. Projecting from the periphery of this cylinder are the teeth 3 which by revolving the cylinder may be turned into an operative position so as to project below the heel or into an inoperative position so as to project forwardly under the instep of the shoe. In the present instance these teeth 3 are detachably applied to the cylinder and are provided with shanks which are threaded within sockets therein. Such a construction has the advantage of enabling the teeth to be made of a hard metal while the cylinder itself may be formed of a softer metal such as brass.

Specifically describing the casing it will be observed that the same comprises a block 4 which is interposed between side plates 5 which are of a substantially rectangular shape, the lower edges of the plates being flush with the bottom of the heel and the forward edges flush with the front of the heel when the casing is in position. The block 4 is recessed to receive the cylinder 2 and fits accurately around the top and rear of the same so as to prevent dirt or foreign matter from accumulating within the interior of the casing and interfering with the action of the cylinder. As shown on the drawing the ends of the cylinder are provided with pivot studs 2^a which are journaled within corresponding openings in the side plates 5, the side plates being applied to the block after the cylinder has been placed in position within the recess therein. The lower and forward corner of the casing is open for approximately one-fourth of the circumference of the cylinder and this opening provides a clearance space for the teeth 3 to admit of the same being moved either into an inoperative or an operative position.

For the purpose of locking the cylinder against movement a spring catch 6 is utilized, the said spring catch being pivotally mounted within a recess formed in one side of the cylinder and the swinging end of the catch being normally caused to project outwardly beyond the cylinder by means of a coil spring 7. When the cylinder has been revolved to turn the teeth 3 downwardly into an operative position so that they project below the bottom of the heel the spring catch is forced outwardly by the spring and engages the upper end of the opening in the casing to prevent any backward movement of the cylinder, forward movement of the cylinder being prevented by the teeth which engage the opposite end of the opening. Attention may here be directed to the fact that the swinging end of the catch is formed with a lip 8 which engages the interior of the casing to limit the outward movement of the catch and prevent the same from being swung forwardly an excessive amount and entirely out of engagement with the shoulder at the upper end of the opening in the casing. When the cylinder has been revolved to move the teeth upwardly under the instep of the shoe the

A. E. LINDAU.

BAR FOR REINFORCING CONCRETE.

APPLICATION FILED APR. 11, 1908.

917,878. Patented Apr. 13, 1909.

Fig. 1.

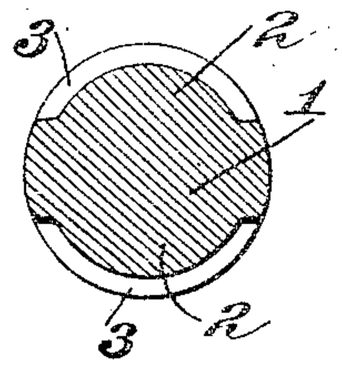


Fig. 2.

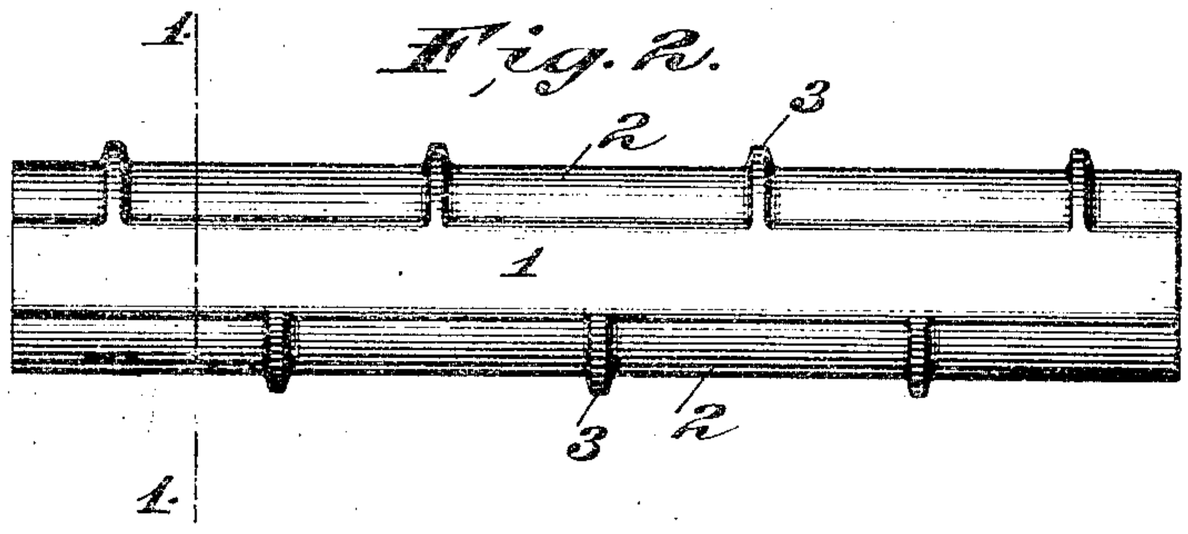


Fig. 3.

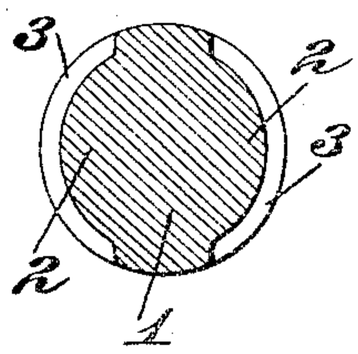


Fig. 4.

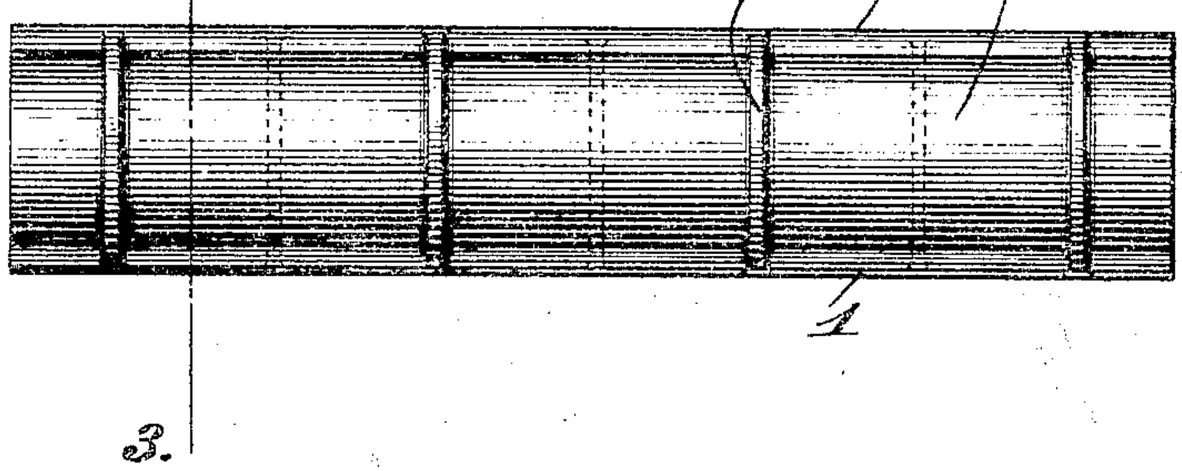


Fig. 5.

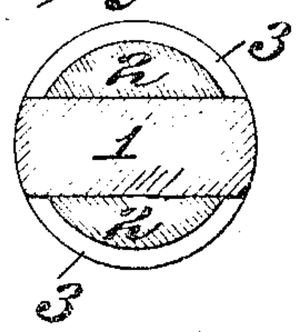
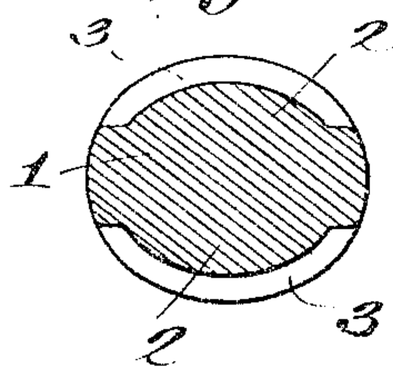


Fig. 6.



Witnesses:
G. A. Pennington
J. B. Megown

Inventor:
Alfred E. Lindau,
By Cameron & Cameron,
Attys.

UNITED STATES PATENT OFFICE.

ALFRED E. LINDAU, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CORRUGATED BAR COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

BAR FOR REINFORCING CONCRETE.

No. 917,878. Specification of Letters Patent. Patented April 13, 1909.

Application filed April 11, 1908. Serial No. 426,470.

To all whom it may concern:

Be it known that I, ALFRED E. LINDAU, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Bars for Reinforcing Concrete, of which the following is a specification.

My invention relates to bars for reinforcing concrete, and has for its principal objects to so distribute the metal of the core that its whole tensile or bending strength will be fully developed throughout the entire cross section of the core, to maintain the cross section of the bar of uniform shape and size throughout the length of the bar; to provide the core with a mechanical bond without affecting the tensile or bending strength of the core and without materially increasing the weight of the bar; to provide for the mechanical bonding of the bar with the concrete without danger of forming air or water pockets in the concrete; to devise a contour that is well adapted for manufacture in a rolling mill; to so arrange the bonding members that the process of manufacturing the bar will not materially affect the homogeneity of the metal; and to secure other advantages hereinafter more fully appearing.

My invention consists principally in a bar whose cross section comprises an oblong middle portion and convex side portions, the convex portions terminating short of the ends of the middle portion.

It also consists in the construction and arrangements of parts hereinafter described and claimed.

In the accompanying drawing which forms part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a cross section of a bar embodying my invention on the line 1—1 of Fig. 2; Fig. 2 is a side view of such bar; Fig. 3 is a cross section of said bar turned ninety degrees from its position in Fig. 1; Fig. 4 is a view at right angles to that of Fig. 2; Fig. 5 is a diagrammatic view illustrating the different areas into which the cross section of the bar is divisible. Fig. 6 is a cross section of a bar of elliptical form.

In smooth or plain bars, the metal throughout the cross section continues the full length of the bar in unbroken parallel lines, and consequently such plain bars can develop the full tensile strength of their entire cross sectional areas. As such bars have no thin projecting portions that are liable to buckle, such plain bars develop the full cross bending capacity of their section. On account of the metal of a flat bar being close to its neutral axis, such flat bars are particularly adapted for bending. The disadvantage of plain bars is that they have no mechanical bond with the concrete but depend entirely upon skin friction.

The purpose of the present invention is to secure the advantages of plain bars for a bar having a mechanical bond, and particularly to secure a bar which will bend easily and will develop its full tensile and bending strength.

As illustrated in Fig. 5, the core of my bar comprises a middle portion 1 of generally oblong shape and two side portions 2 of segmental shape, the side portions terminating short of the ends of the middle portion. This oblong or middle portion preferably comprises nearly one half of the entire area of the cross section and by reason of its position relative to the neutral axis tends to increase the facility with which the bar may be bent. Preferably, the ends of the oblong portion are circular arcs concentric with, but of greater radius than, the arcs of the segmental portions. In such case, the core of the body may be considered as of round or circular section with wide enlargements on diametrically opposite sides thereof. Obviously, however, the several arcs need not be circular. In fact, the segments may be formed with elliptical arcs or circular arcs of large radius, whenever it is desirable to secure a greater concentration of the metal adjacent to the neutral axis. In either case, the area and shape of the cross section of the core are uniform throughout the length of the bar, although, as hereinafter stated, mechanical bonding members are formed on the surface of the segmental portions. By this arrangement, the longitudinal elements of the surface of the core are parallel with