G. A. DONATH.

ICE CREEPER.

APPLICATION FILED FEB. 21, 1916.

1,205,337. Patented Nov. 21, 1916.

Fig. 1.

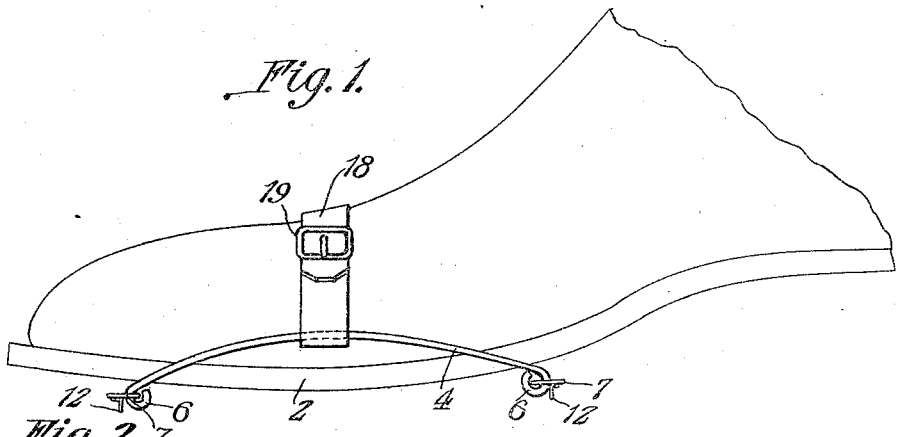


Fig. 2.

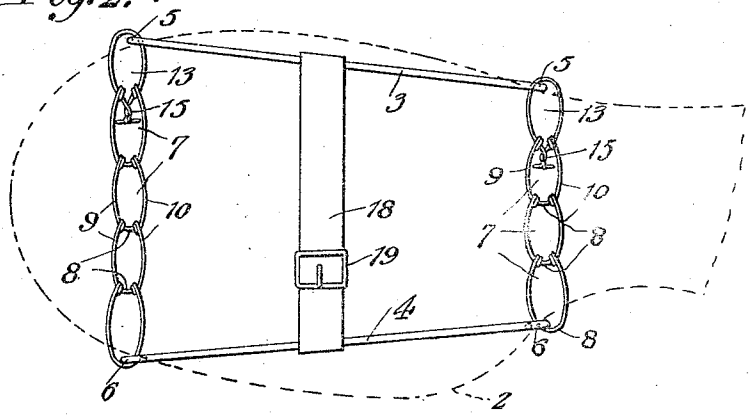


Fig. 3.

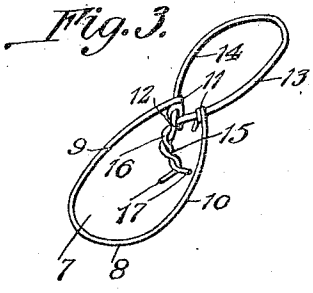
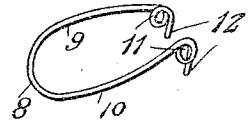


Fig. 4.



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ICE-CREEPER.

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To all whom it may concern:

Be it known that I, GUSTAV ADOLPH DONATH, a citizen of the United States, residing at Waverly, in the county of Bremer and State of Iowa, have invented certain new and useful Improvements in Ice-Creepers, of which the following is a specification.

The present invention relates to anti-slipping devices and more particularly to ice creepers for use on shoes.

An object of my invention is to provide a device of the character above mentioned which is simple in construction, strong and durable, cheap to manufacture, and easily and quickly applied in operative position on a shoe.

Another object of my invention is to provide an anti-slipping device of the character described formed preferably of wire strands bent into novel shape to form ground or ice engaging elements for preventing slipping.

Other objects and advantages to be derived from the use of my invention will appear from the following detail description taken in connection with the accompanying drawing in which,

Figure 1 is a side elevation of a shoe showing my improved creeper applied thereto, Fig. 2 is a top plan view of my improved creeper or anti-slipping device, Fig. 3 is an enlarged perspective view of one of the anti-slipping devices, and Fig. 4 is a similar view of another form of anti-slipping device.

Referring more particularly to the drawing, wherein smiliar characters of reference designate like and corresponding parts throughout the various views 1 designates the upper of a shoe and 2 the sole.

My invention is adapted to be secured under the shoe sole, means being provided for embracing the shoe and retaining the device in position thereon.

My invention includes side bars 3 and 4 formed of strands of wire having loops 5 and 6, respectively, on their free ends. The anti-slipping devices are formed of strands of wire of a slightly smaller gage than the strands 3 and 4 and are shown to advantage in Figs. 3 and 4. There are two sets of anti-slipping members in my invention both of which coöperate in the preferred form of the device. As best shown in Fig. 2 the anti-slipping devices when assembled form a flexible body, insuring engagement of all of the anti-slipping members simultaneously with the earth.

Referring specifically to the construction of the anti-slipping members I provide links 7 formed of strands of wire looped upon themselves at 8 to form curved arms 9 and 10, the free extremities of said arms being looped as at 11 and bent angularly to form ground or ice engaging elements 12. The looped portions 11 are adapted to be engaged about the adjacent link at the looped portion thereof as best shown in Fig. 2. The end link is engagable with one of the loops 5 or 6 as the case may be. Any number of sets of anti-slipping members may be provided, but I have shown two sets in the drawing arranged at opposite ends of the bars or strands 3 and 4.

In order to conveniently connect the end links of each set to the bar 3 I provide a novel form of connecting means affording anti-slipping members, said connecting means including a link 13 engaged with one of the loops 5 and having the arms 14 thereof twisted together as at 15, downwardly bent as at 16, and outwardly bent to form anti-slipping elements 17. The adjacent link of a set provided with the hereinbefore described loops 11 and anti-slipping elements 12 is engaged with the arms 14 of the link 13 as best shown in Fig. 3. A strap 18 having the usual buckle 19 may be carried by the arms 3 and 4 and adapted to engage over the shoe 1 for retention of the device in position.

It will be seen that in the provision of my improved anti-slipping device the flexible nature of the same insures simultaneous engagement of all the anti-slipping members with the earth or the ice as the case may be, the peculiar connection of the same preventing lateral twisting or distortion of the anti-slipping device when in use. It will also be noted that in the provision of the link 13 and the peculiar fastening means therefor I have obviated the difficulty which might arise in connecting the free link of the plurality of links 7, at the same time providing anti-slipping elements. The device when applied to a shoe sole is arranged with the narrow end thereof toward the heel of the shoe so that the toe of the shoe is provided with the relatively wide ground engaging portion of the device which increases the efficiency of the anti-slipping

member when in use. Of course, it is to be understood that I do not limit myself to the provision of but two sets of links 7 since these links could be multiplied and used not only for shoe anti-slipping devices but might be very readily modified for use in connection with anti-skidding chains for automobiles and the like.

From the above description taken in connection with the accompanying drawing it is thought that a clear and comprehensive understanding of the construction, use, and advantages of my invention may be readily gathered, and while I have shown and described my invention as embodying a specific structure I desire it to be understood that I do not limit myself to this construction or reserve the right to make such changes therein as do not depart from the spirit and scope of the invention as claimed.

What I claim as new and desire to secure by Letters-Patent is:—

1. In a device of the character described, a plurality of links formed of strands of wire bent upon themselves to form arms, said arms being looped about adjacent links at or near the bent portion thereof, the free extremities of said arms being bent outwardly to form anti-slipping elements.

2. In an anti-slipping device, a plurality of interconnected links having arms the free ends of which are looped to form connecting means and anti-slipping elements, and a connecting member comprising a link formed of a strand of wire having arms, said arms being twisted adjacent their free ends and bent laterally to form anti-slipping elements.

3. In an anti-slipping device, a plurality of interconnected links forming anti-slipping members, and a connecting member comprising a link formed of a strand of wire bent intermediate its end to form curved arms, said arms being twisted adjacent their free extremities and laterally and outwardly bent to form anti-slipping elements, the first of said links having connection with the curved arms of the said second link.

4. In an anti-slipping device, a plurality of interconnected links, and a connecting member for the free link of said plurality of links formed of a strand of wire bent upon itself to form curved arms, said arms being engaged by the adjacent link, the free extremities of said arms being twisted and said twisted portion being laterally bent and formed to provide divergent ground engaging elements.

In testimony whereof I affix my signature.

GUSTAV ADOLPH DONATH.

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