No 800,895. PATENTED OCT. 3, 1905.

T. BEEVERS.

TREAD FOR STAIRCASES, &c.

APPLICATION FILED OCT. 14, 1903.

FIG. 2.

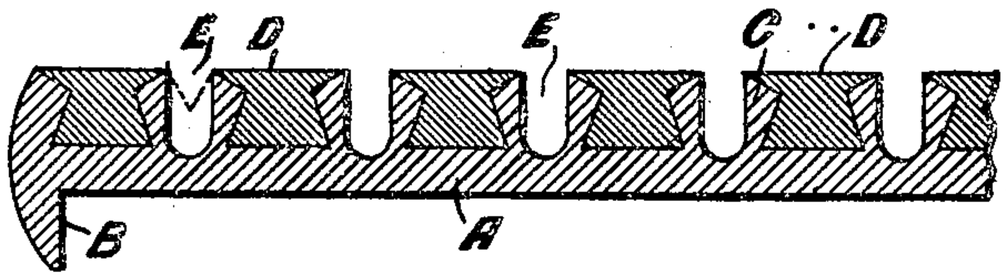
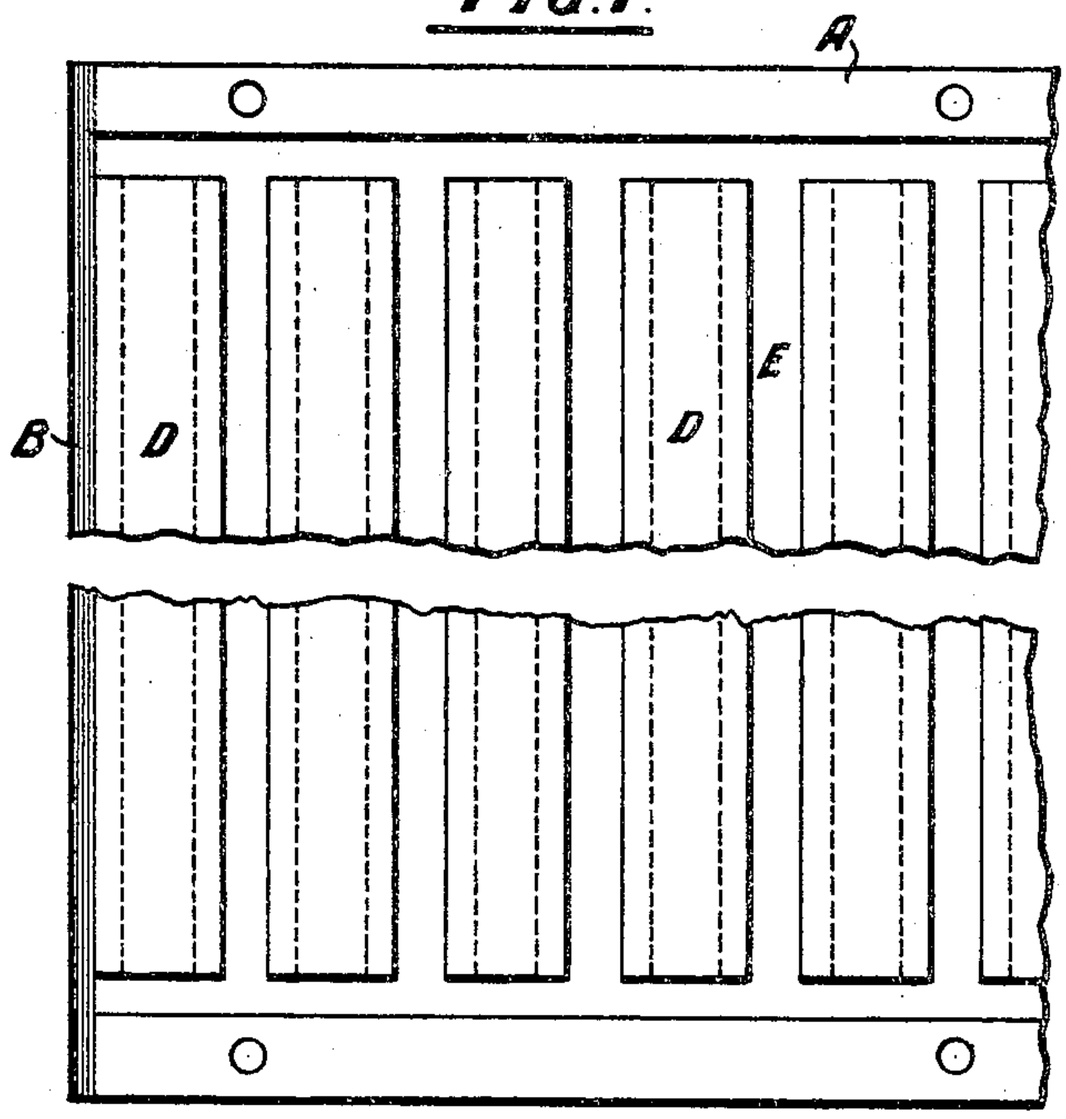


FIG. 1.



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UNITED STATES PATENT OFFICE.

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TREAD FOR STAIRCASES, &c.

No. 800,895. Specification of Letters Patent. Patented Oct. 3, 1905.

Application filed October 14, 1903. Serial No. 177,000.

To all whom it may concern:

Be it known that I, THOMAS BEEVERS, a subject of the King of Great Britain, and a resident of Melrose, Springfield road, New Southgate, in the county of Middlesex, England, have invented certain new and useful Improvements in Treads for Staircases, Coal-Plates, Manhole-Covers, and Similar Articles, of which the following is a specification.

In the accompanying drawings, Figure 1 is a plan view of the improved stair-tread, and Fig. 2 is a cross-section.

This invention relates to improvements in the tread described in the specification of patent of the United States of America granted to Messrs. Mason, Mason, and Codner on the 30th of August, 1892, No. 481,702, in which a hard-metal plate with dovetail recesses to be filled with non-slipping material is employed, V-shaped grooves between the walls of the recesses being provided. The most satisfactory mode of producing the hard-metal portion of the treads is, as described in the said specification, by rolling; but the cost of this proceeding is somewhat high, and a demand has arisen for a cheaper article. To this end it has been proposed to make these portions in cast metal, as also described in the said specification; but although this can readily be done it has been found that the wearing qualities of the cast metal do not answer to expectations. The reason of this is believed to be that the thickness of the metal of the raised portions or ribs does not permit of their becoming properly chilled, and consequently the metal is comparatively soft and wears rapidly away with the traffic.

In the production of an efficient tread it was found necessary to leave spaces between the non-slipping materials in order to obtain a good foothold, and hence the employment of the V-grooves above mentioned. The wearing down of the walls of these grooves gradually reduces the width of the grooves and, in effect, produces a wide hard-metal surface between and of greater width than the two non-slipping surfaces, which hard-metal surfaces become more or less slippery, and thus detract from the essential feature of the invention—namely, producing a comparatively wide non-slipping tread-surface held in by a comparatively narrow hard-metal wearing-surface.

Now the object of the present invention is to avoid the inconveniences above enumerated by providing for the proper chilling of the ribs, at the same time retaining the full width of the spaces between the non-slipping material during the whole time of the life of the tread.

Referring then to the drawings, A is a plate. B is the nosing for a stair-tread, and C represents the ribs, and between two alternate ribs is a dovetail recess to be filled with soft non-slipping material D, preferably lead. Between each two ribs forming one side of a dovetail recess is an upright-sided groove E, having a U-shaped bottom, forming a space having a depth slightly greater than that of the recess. The bottom of each groove is slightly inclined, preferably from the center toward the ends, where it meets a transverse groove to carry off any water that falls on the tread, notches or holes being made in the nosing to permit of the water escaping. It will be seen that each rib C is vertical on the outside, but so inclined on the inside, and that at the neck, or it may be called the "base," the width or thickness of the rib is less than at the top, and therefore the rib being comparatively thin in the lower part the chilling is effected with greater facility and efficiency than heretofore.

The old form of V-groove is indicated by dotted lines in the first groove E of Fig. 2, and it will be seen that the thickness of the metal at the neck or base is such as to militate against effective chilling. The upright sides of the groove also insure that the space will always remain at its full width during the life of the tread, and the groove being slightly deeper than the recess the effective foothold is thus secured at all times. The U-groove also lends itself more effectively to carry off water.

It will be obvious that this invention may be applied to the production of coal-plates, manhole-covers, carriage-steps, &c., as described in the specification of patent above referred to, and further description of such applications will therefore be unnecessary, and it will be understood that in the expression "treads" I wish to include all such articles.

What I claim as my invention, and desire to secure by Letters Patent, is—

A tread for staircases comprising a hard-

metal plate having a plurality of parallel raised ribs shaped in cross-section to form alternate series of dovetailed recesses and upright-sided recesses, the said upright-sided recesses being slightly deeper than the dovetailed recesses and a soft non-slipping material located in the dovetailed recesses whereby as the surface of the tread is worn away below a predetermined point, the metal wearing-surface is decreased and the non-slipping surface is increased.

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