R. G. CHASE.

METAL TREAD.

APPLICATION FILED DEC. 29, 1910.

Patented Oct. 21, 1913.

1,076,017.

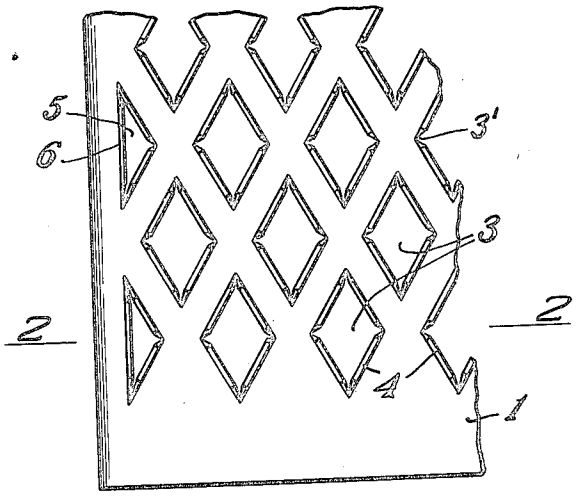


FIG. 1

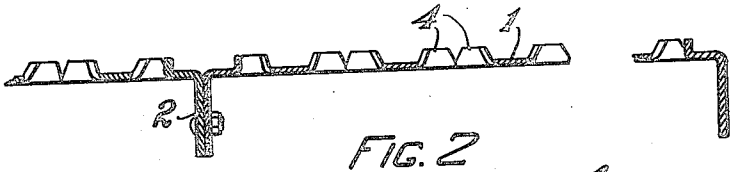


FIG. 2

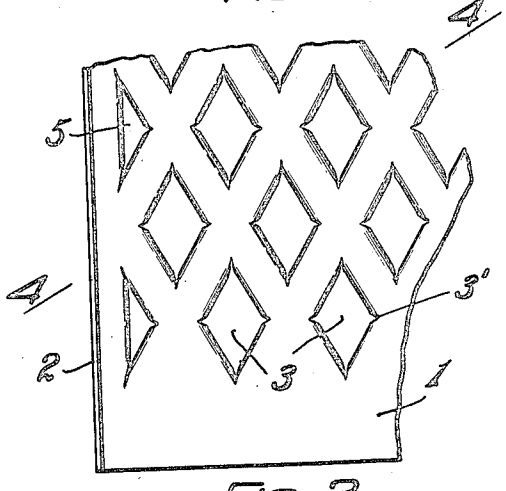


FIG. 3

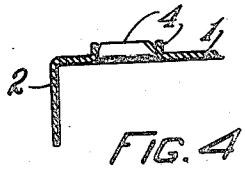


FIG. 4

WITNESSES

R. B. Ellms.

L. D. Goodwin

INVENTOR

RODNEY G. CHASE

BY Ellis Spear Jr.

ATTY.

UNITED STATES PATENT OFFICE.

RODNEY G. CHASE, OF WEST MEDFORD, MASSACHUSETTS.

METAL TREAD.

1,076,017. Specification of Letters Patent. Patented Oct. 21, 1913.

Application filed December 29, 1910. Serial No. 599,799.

To all whom it may concern:

Be it known that I, RODNEY G. CHASE, a citizen of the United States, residing at West Medford, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Metal Treads, of which the following is a specification.

This invention relates to metal treads and particularly to an integral sheet metal tread.

The provision of tread surfaces has come to be more and more of a necessity in areas over which the public must pass in any numbers and especially in connection with the passage-ways or steps associated with the problem of transportation. In metropolitan districts the areas thus requiring protective treatment have increased so largely that the problem of cost is a very essential factor. In the handling of the great crowds in a metropolitan district the footing afforded in places where a slip or a fall would involve serious liability has become of great importance and the provision of a cheap but efficient tread surface has been strenuously sought. In most of the tread surfaces now available, the structure has been such that, if efficient, the same was not durable, and if durability was sought it was only attainable at an excessive or even a prohibitive expense.

The object of my present invention is to provide a tread capable of production at a low initial cost and yet of strength, durability and efficiency, and of such a nature as to justify such a complete equipment as to protect the public at every possible point of danger. This result I have secured by the production from sheet metal of unitary intersticed plates in which upturned friction edges at the interstice margins form the tread needed to prevent slipping.

My invention will be more fully described in the specification which follows and in the drawings which form a part thereof I have shown as an illustrative embodiment a form of my device which I find well adapted to the ends sought.

Throughout specification and drawings like reference numerals are employed to indicate corresponding parts and in the drawings: Figure 1 is a plan view of the upper side of a portion of a unit member formed in accordance with my invention. Fig. 2 is a sectional view of the line 2—2 Fig. 1. Fig. 3 is a view of the lower side of a fragment of such a member and, Fig. 4 is a section on the line 4—4 of Fig. 3.

1 is a plate of sheet metal of suitable thickness and strength having down-turned lateral flanges 2 affording longitudinal strength or stiffening for the plate. 3 are interstices punched from the plate with angular corner slits 3^1. 4 are marginal flanges up-turned along the edges of the remaining material of the plate 1 between the slits 3^1.

In the form shown the interstices 3 are diamond or lozenge shaped. The slits 3^1 being in the corners of the line of the theoretical diagonals of the interstices. This gives to the up-turned friction edge 4 the form of a truncated, flat sided pyramid which affords a most satisfactory foot contacting surface. The position of the interstices so as to have their acute angles enter the transverse rows next on each side affords a continuity of friction surface in each direction with a maximum efficiency in the line of the least exposed surface. That is to say, in the figures shown, any slipping tendency across the tread (from right to left of the figures) presents a maximum amount of flanged surface due to the entry of the acute angles of the interstices between the next adjoining rows. On the other hand, any diagonal motion along the lines of the reticulated metal plate is met by the flanges 4 at right angles and hence in the position calculated to give the greatest amount of slipping resistance. At the margins of the plate the interstices 5 are of half the size to fill the surface of the structure. At the margin of the member the up-turned flange 6 comes on the side which corresponds to the major axis of the main interstices. The flange 6 is therefore of greater length than any of the flanges 4 and offers a greater amount of friction surface along the line where the greatest amount is needed.

When used as a narrow tread the plate 1 with its down-turned lateral flanges 2 will constitute the entire tread or a plurality of these units may be assembled as indicated in Fig. 2. In this case the down-turned lateral flanges 2 are set adjacent and may be bolted or riveted together to unite the entire structure.

Various modifications in the form and structure of my device may therefore be

made without departing from the spirit of my invention if within the limits of the appended claims.

What I therefore claim and desire to secure by Letters Patent is:—

1. A metal tread comprising a plate formed with a plurality of interstices upturned marginally to provide friction surfaces, each interstice along the margin of said plate shaped so as to position one of its upturned marginal surfaces parallel to and adjacent the edge of said plate.

2. A metal tread comprising a plate formed with a plurality of interstices upturned marginally to provide friction surfaces, each interstice along the margin of said plate being of triangular shape so as to position the upturned surface formed along the margin of its hypotenuse parallel to and adjacent the edge of said plate.

3. A metal tread comprising a plate having interstices slit substantially radially from the center thereof, and formed with marginal flanges upturned along each edge of the material between said slits.

4. A metal tread comprising a plate having interstices therein, said interstices having angular notches struck from their corners and a marginal flange upturned along each edge of the material between said notches forming upturned flat sided pyramidal flanges.

5. A metal tread comprising a plate having interstices formed therein bounded by upturned marginal flanges of truncated flat pyramidal shape, the inclined marginal flanges of the pyramid side being determined by the radials of the openings.

6. A metal tread comprising a plate having interstices, said interstices having marginal flanges upturned along the edge of the material, said flanges being of less area than the area of said interstices.

7. A metal tread comprising a plate having straight sided interstices, said interstices having marginal flanges upturned along each edge of the material, said flanges being of less area than the area of said interstices.

In testimony whereof, I affix my signature in presence of two witnesses.

RODNEY G. CHASE.

Witnesses:

L. D. GOODWIN,

R. B. ELLMS.