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K. E. ETCHER

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SHOE MAT

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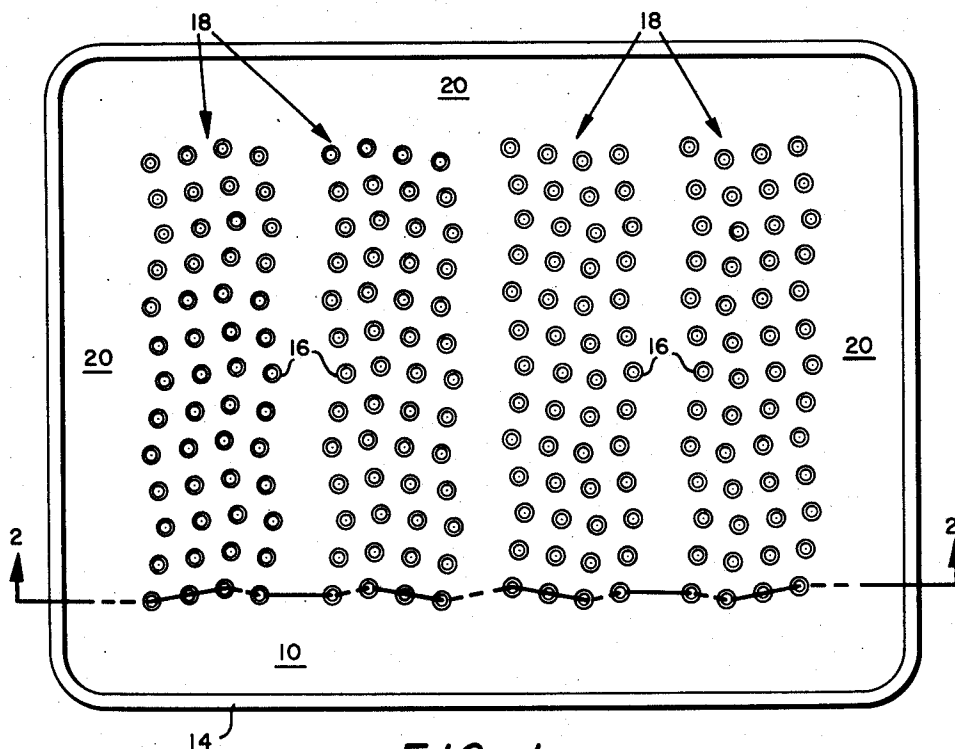


FIG- 1

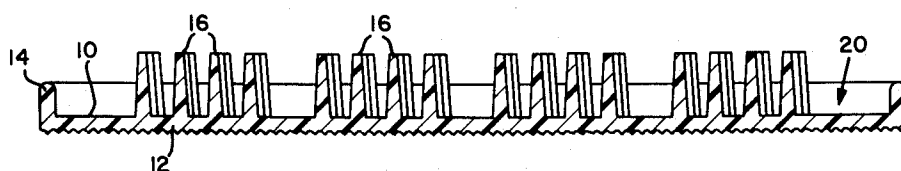


FIG- 2

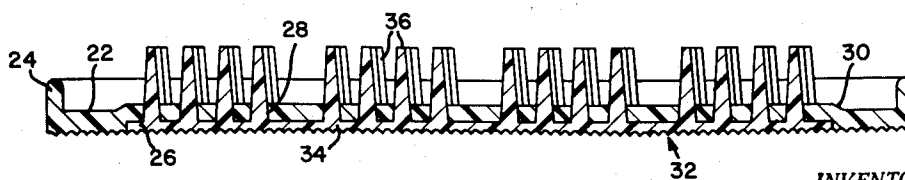


FIG- 3

INVENTOR.
KENNETH E. ETCHER

BY *Allen M. Kraus*

ATTORNEY

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SHOE MAT

Kenneth E. Etcher, 5111 W. Doherty Drive, Rte. 2,
Orchard Lake, Mich.

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2 Claims. (Cl. 15—216)

This invention relates to a bristled mat which is particularly adapted to remove dirt from shoe soles of the type incorporating a plurality of ridges which extend transversely to the axis of the shoe.

Such soles, which are marketed in the United States under the trademark "Ripple Sole," tend to accumulate dirt, stones and other foreign matter in the narrow spaces at the top of the ridges. Normal shoe mats are ineffective in removing this accumulation upon the wearer rubbing the sole transversely or longitudinally with respect to the mat as the lower ends of the ridges contact the surface of the mat and prevent it from contacting the accumulation in the top of the ridges.

To meet the need for a mat which is effective in removing the accumulation from the shoe of the ridge type, I have invented a mat which differs from those previously known in providing a plurality of large resilient bristles disposed about the surface of a mat in such a pattern as to allow the wearer of a ridged-type sole to clean the soles by moving his foot transversely along the mat. The particular spacing, arrangement and configuration of the bristles allows them to penetrate to the root of the ridges to remove the foreign accumulation contained there. The nature of the bristles additionally allows this accumulation to set on the mat in such a manner as to eliminate interference with the combing action of the bristles in their later use. The mat is also easy to clean and store.

In my invention, which will be subsequently described in detail, I provide a mat base formed of a sheet of rubber or similar synthetic material and having an upturned lip running about its perimeter to retain the dirt removed from shoes. A regular pattern of vertical bristles extends upwardly from this base. These bristles, which collectively will be referred to as a comb, are preferably formed of nylon or other plastic having a lesser degree of flexibility than natural rubber. These bristles are preferably circular in configuration and are tapered, having their greatest diameter at the base of the mat so as to enhance their flexibility. The pattern in which they are arranged provides a continuous variation along rows and columns so as to allow a ridged sole to be moved transversely across the mat in any position and still have the bristles fall into the troughs of the ridges.

It is therefore seen to be a primary object of this invention to provide a shoe mat particularly adapted for removing dirt from transversely ridged soles.

Other objects, advantages and applications of the present invention will be made apparent by the following detailed description of the invention. The description makes reference to the accompanying drawings in which:

FIGURE 1 represents a plan view of unclaimed matter; FIGURE 2 represents a sectional elevation view taken along line 2—2 of FIGURE 1; and

FIGURE 3 represents a sectional view of the invention taken along the line substantially similar to line 2—2 of FIGURE 1 on a plan view which is not illustrated.

FIGURES 1 and 2 illustrate unclaimed matter in which the mat is formed by a molding process from a natural or a synthetic rubber or a plastic having similar properties wherein the mat is cast as a whole.

The base of the mat 10 is a thick rectangular sheet formed with serrations 12 on its lower edge to increase the friction between the mat and a support surface. The

edges of the mat 10 are upturned to form a lip 14 which surrounds the entire perimeter of the base. This lip acts as a barrier to retain an accumulation of dirt removed from soles within the confines of the mat. The bristles 16 are arranged in four sections, each generally indicated at 18, which extend largely across the width of the mat. Each edge of the section adjacent to the lip 14 terminates at a relatively wide distance from that lip in order to form a plain boundary section 20 which is free of bristles.

This boundary section 20 insures that dirt removed by the bristles 16 fall well within the confines of the mat. Similarly, the intermediate vacant sections between the bristle sections 18 allows for easy cleaning of the mat by providing a relatively short path from each bristle to a plain section which may be easily brushed clean.

Within the sections 18 themselves, the bristles 16 are arranged in a pattern which undulates across both the length and the width. That is, each section 18 is formed of a group of bristles four wide and thirteen deep. However, adjacent bristles are displaced with respect to one another from the normal so that the bristles will form any rank or file and may be connected with an imaginary line of a wave-like form. This undulation assures that a rippled sole which is disposed randomly on the mat may be moved transversely with respect to its axis and some of the bristles which it contacts are certain to penetrate to the roots of the ridges in the sole.

The bristles are circular in form and are thicker at the root section, adjacent to the base 10, than at their uppermost extremities, tapering in the intermediate length. This provides the bristles with a measure of rigidity yet allows their ends to flex so as to accommodate to the contours of a sole.

Within a section, the bristles are separated from one another by a distance which is approximately equal to or slightly in excess of their root diameter. This allows them to accommodate to the ridge spacings in many common shoe soles and provides an adequate space for the foreign matter to fall without interfering with subsequent bristle usage.

FIGURE 3 illustrates the invention. In the embodiment of the invention a base 22, having a lip 24 surrounding its perimeter, does not have the bristles formed integrally; rather on its lower serrated edge it has a rectangular depression 26 with a number of tapered openings 28 which communicate with its upper surface. The area above the rectangular depression 26 is raised as at 30 so as to maintain uniform base thickness.

The base 22 is formed of rubber and the bristles are molded in a unitary section, generally indicated at 32, out of a stiffer composition rubber or a stiffer plastic such as nylon. The bristle section 32 is formed of a sheet-like base portion 34 and a comb section 36 incorporating bristles of approximately the same dimensions as the bristles 16 of FIGURE 1.

The bristles 36 pass through the holes 28 in the base of the mat and extend above it to the same height as the bristles shown in FIGURE 2. In both cases the bristles extend substantially above the level of the lip 24 so as to avoid interference with the movement of the sole of the user from the lip.

The creation of the bristles in a separate mold from the base section provides two advantages: (1) the bristles may be formed of a stiffer substance than the base without sacrificing the necessary flexibility of the mat, and (2) the base section 22 embraces the root of the bristle and thereby adds to its stiffness without sacrificing the flexibility of the upper end section.

Having thus described my invention, I claim:

1. A shoe mat comprising a flat base having an upturned lip extending around its perimeter, a planar cavity in the lower surface of said base, a plurality of holes

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through said base above said cavity, and an insert for said cavity comprising a sheet having a plurality of tapered bristles extending from its upper surface, said sheet being of a thickness equal to the depth of said cavity and said bristles being arranged in the same pattern as said holes whereby said insert may be disposed within said cavity with the bristles extending upwardly through the holes.

2. A shoe mat comprising a flat base, a planar cavity in the lower surface of said base, a plurality of holes through said base above said cavity, and an insert for said cavity comprising a sheet having a plurality of tapered bristles extending from its upper surface, said sheet being of a thickness equal to the depth of said cavity and said bristles being arranged in the same pattern as said

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holes whereby said insert may be disposed within said cavity with the bristles extending upwardly through the holes.

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