United States Patent

Woolley

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[54] **DOOR MAT**

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[52] **U.S. Cl.** **15/217**, 15/187

[51] **Int. Cl.** **A47i 23/26**

[58] **Field of Search** ..... 15/215, 216, 217, 238, 187, 15/188; 273/198, 176 E, 176 F; 161/62, 63, 150; 27/29, 30; 94/5, 7, 3; 52/177

[56] **References Cited**

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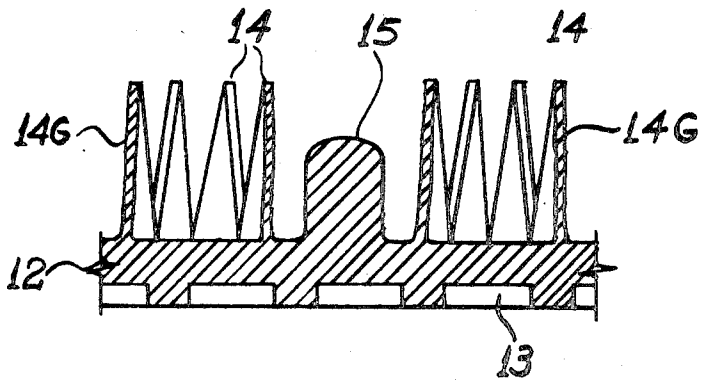
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[57] **ABSTRACT**

A mat base is molded from thermoplastic material integrally with upwardly projecting flexible bristles and with rigid nubs at spaced points between the bristles. The bristles are higher than the nubs to effect cleaning of shoes, but the nubs sustain the weight of the user and support the shoes at an elevation above the mat base to protect the bristles from breaking and to avoid contact of shoes with dirt accumulated on the base.

6 Claims, 4 Drawing Figures



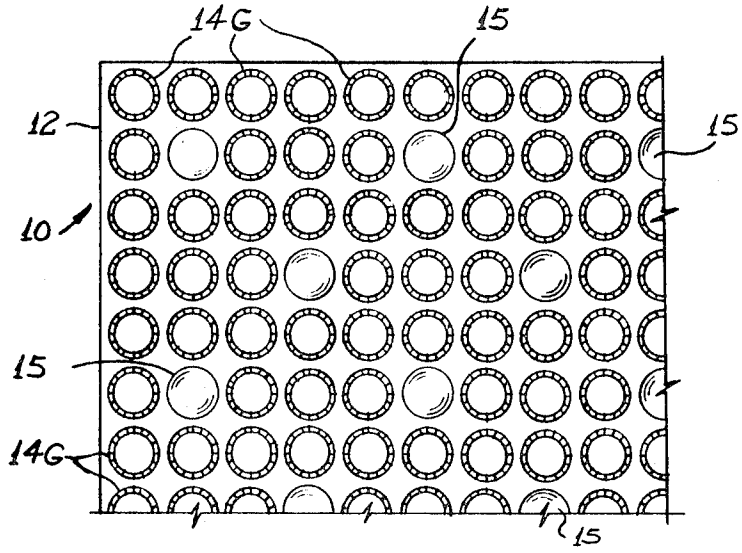


FIG. 1

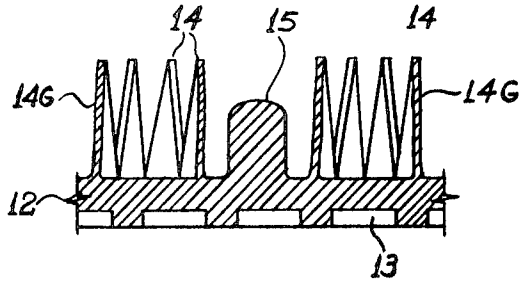


FIG. 2

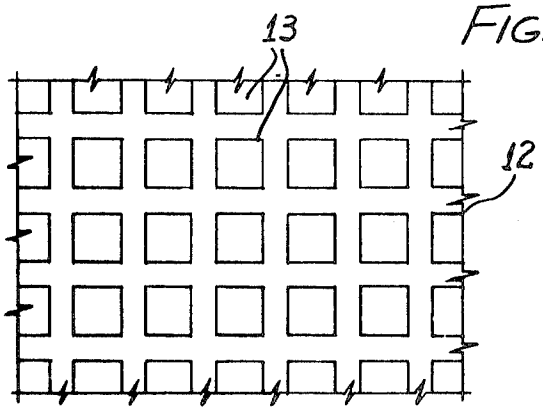


FIG. 4

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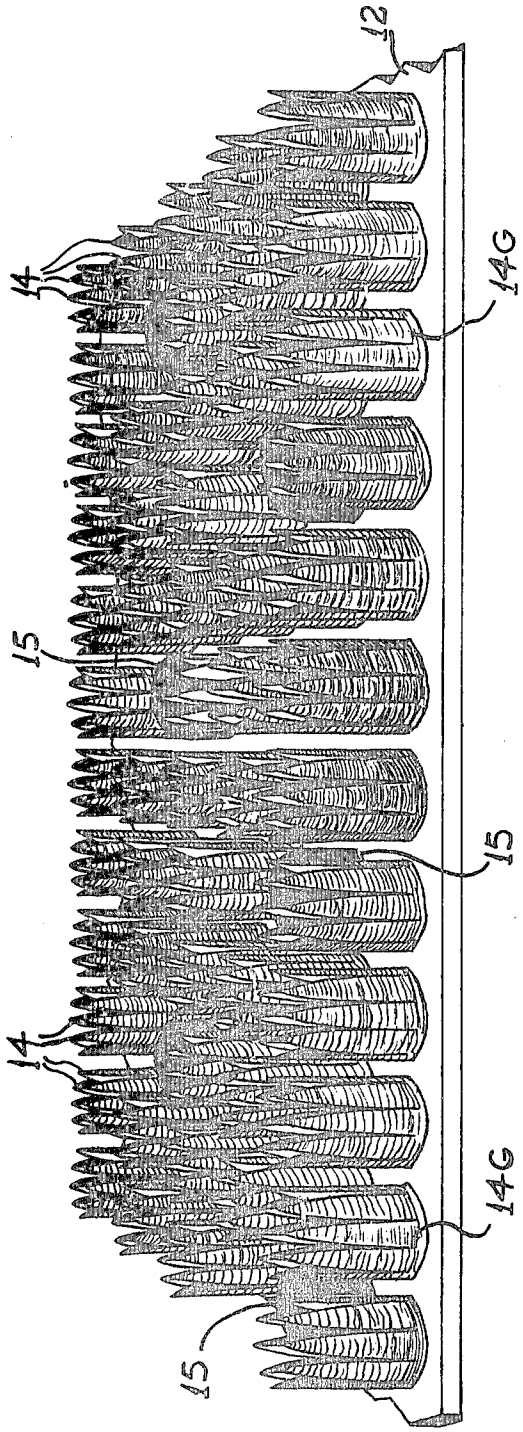


FIG. 3

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DOOR MAT

This invention relates to new and useful improvements in door mats which are used for wiping or cleaning shoes, and the principal object of the invention is to provide an improved mat having bristles which are protected against breakage or other damage under the weight of the user of the mat.

This object is attained by providing the base of the mat, in addition to the bristles, with upwardly projecting, rigid nubs disposed at spaced points between the bristles, the bristles being higher than and projecting above the nubs to effect the shoe cleaning action while the weight of the user is sustained by the nubs which support the shoes at an elevation above the base of the mat. In this manner the bristles do not become broken off or otherwise damaged as they are in conventional mats where the full weight of the user is applied to the bristles, and thus the mat of the invention has a considerably longer life in addition to affording a more effective shoe cleaning action. Also, since the nubs support the shoes at an elevation above the base of the mat, the shoes are safe-guarded against being soiled again by contact with dirt accumulated on the mat base.

The mat of the invention is particularly well suited to be molded from thermoplastic material, with the bristles and the nubs being formed integrally on the mat base. As such, the mat is very economical to manufacture, either in a determinate size or in running length, and presents a pleasing appearance.

With the foregoing more important object and features in view and such other objects and features which may become apparent as this specification proceeds, the invention will be understood from the following description taken in conjunction with the accompanying drawings, in which like characters of reference designate like parts and in which:

FIG. 1 is a fragmentary plan view of the mat of the invention;

FIG. 2 is an enlarged fragmentary vertical sectional view showing the groups of bristles and one of the nubs on the mat base;

FIG. 3 is a fragmentary perspective view of a group of bristles and a nub on the mat base; and

FIG. 4 is a fragmentary underside plan view of the mat base.

Referring now to the accompanying drawings in detail, the door mat of the invention is designated generally by the reference numeral 10. The same is especially well suited to be integrally moulded from suitable thermoplastic material such as, for example, vinyl chloride, ethylene vinyl acetate, or the like, of any desired color.

The mat 10 comprises a sheetlike base 12 which is substantially rigid yet flexible enough for the mat to lie flat on a surface on which it is placed, and also to enable the mat to be rolled up for purposes of transportation or storage. If desired, the underside of the mat base 12 may be recessed as indicated at 13 to provide a "waffle iron" effect with an action similar to suction cups for resisting slippage of the mat on its supporting surface.

The top surface of the mat base 12 is formed integrally with groups of upwardly projecting flexible bristles 14, each group of bristles, designated as 14G, having a circular formation when viewed in plan, and the several groups of bristles being arranged in rows extending longitudinally, transversely and/or diagonally of the mat base as will be apparent from FIG. 1.

Each of the bristles 14 has an upwardly tapered, elongated triangular configuration, terminating in a point at its upper end, and since the bristles are upwardly tapered, their cross section is progressively reduced in the upward direction and thus the upper end portions of the bristles are more flexible and bendable than the lower portions thereof where the bristles are connected to the mat base.

A plurality of upwardly projecting nubs 15 are also formed integrally on the top surface of the base 12 at spaced points between the groups of bristles 14G. These nubs are preferably cylindrical with a dome-like upper end and their diameter is substantially the same as or slightly smaller than the circle diameter of each bristle group 14G. The nubs 15 are spaced

apart by a distance of approximately 1¼ or 1½ inches, more or less, and conveniently, at a selected point in a row, one of the bristle groups 14G may be omitted and one of the nubs 15 provided in its place.

The bristles 14 are of a greater height than the nubs 15, so that the more flexible upper end portions of the bristles project above the nubs. For example, the bristles may have a height of one-half inch while the nubs are five-sixteenths inches high, so that the bristles project above the nubs by three-sixteenths inches. These dimensions, however, are for illustrative purposes only and are not limiting.

In any event, as distinguished from the flexible bristles 14, the nubs 15 are substantially rigid. Thus, when the mat is in use and the user wipes his shoes thereon, the nubs 15 sustain the user's weight while supporting the shoes at an elevation above the mat base 12. In other words, the bristles 14 will bend under the shoes only until the shoes come to rest on the nubs 15 and such bending will occur mainly in the more flexible upper end portions of the bristles and very little bending, if any, will take place in the lower end portions where the bristles are joined to the base 12. The bristles are thus protected against breakage or other damage which is likely to occur when the full weight of the user is applied to the bristles as in conventional mats, and the mat of the invention will thereby have a much longer effective life.

Moreover, with the user's weight sustained by the nubs 15, the flexible upper end portions of the bristles 14 will perform the shoe cleaning operation with much greater effectiveness than is obtained in conventional mats where the bristles are flattened out under the user's weight and therefore cannot provide a proper brushing action at the bristle ends.

Further still, since the user's shoes are supported by the nubs 15 at an elevation above the mat base 12, they cannot come in contact and be again soiled by dirt which accumulates on the base between the lower end portions of the bristles, thus further enhancing the effectiveness of the shoe cleaning procedure.

The mat may be manufactured in running length at random width, so that it may be cut to a desired size by the user. Alternatively, it may be made in a selected size or sizes, in which event a suitable border (not shown) may be provided at the perimeter of the mat base, if so desired. Manifestly, the mat may have a circular rather than a rectangular shape, with the groups of bristles 14G arranged in circular rows rather than in straight rows, and many other geometric variations are also possible.

Thus, while in the foregoing there has been described and shown the preferred embodiment of the invention, various modifications and equivalents may be resorted to within the spirit and scope of the invention as claimed.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows.

1. A door mat comprising a base, flexible bristles projecting upwardly from said base, said bristles being arranged in groups with each group of bristles having a substantially circular formation, and a plurality of rigid nubs projecting upwardly from the base at spaced points between said groups of bristles, said bristles being of a height greater than said nubs, and the mat being further characterized in that said base is moulded integrally with said bristles and with said nubs from homogeneous, thermoplastic material.

2. The device as defined in claim 1 wherein said bristles have an upwardly tapered elongated triangular configuration.

3. The device as defined in claim 1 wherein said nubs have a substantially cylindrical configuration.

4. The device as defined in claim 1 wherein said nubs have a substantially cylindrical configuration with a dome-like upper end.

5. The device as defined in claim 1 wherein said nubs are substantially cylindrical and of a diameter substantially corresponding to the circle diameter of each group of bristles.

6. The device as defined in claim 5 wherein said groups of bristles are arranged in rows in which at a selected point one of said nubs is provided in place of a group of bristles.