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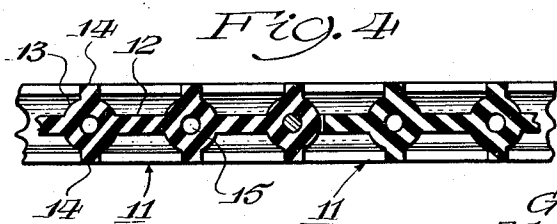
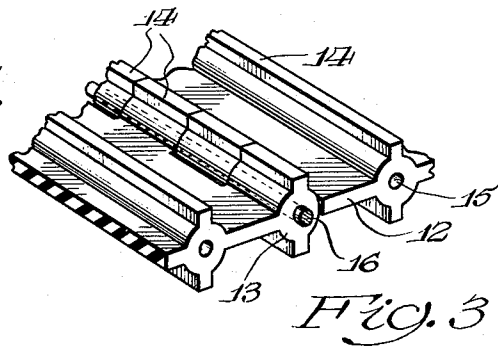
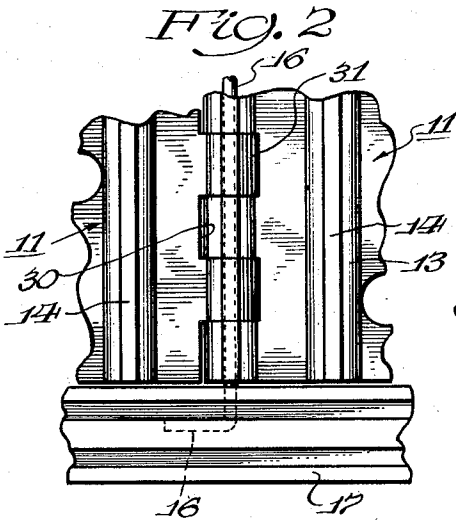
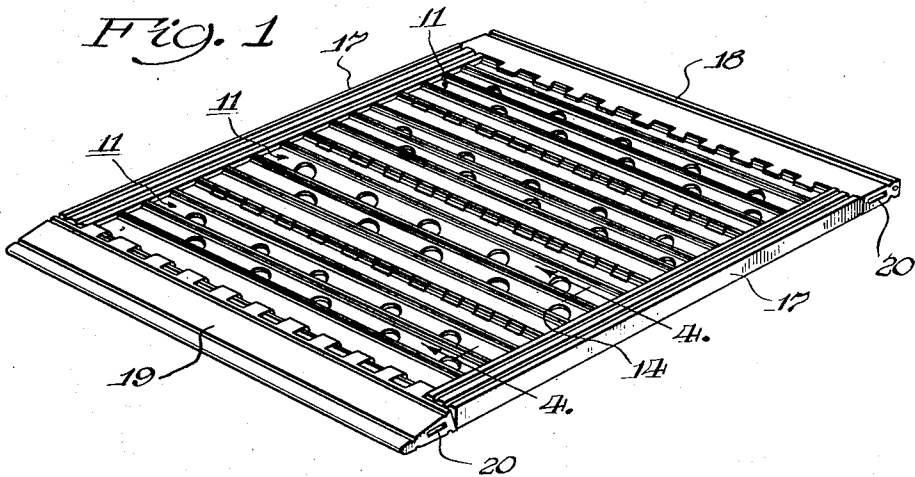
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2,934,778

FLOOR MAT

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5

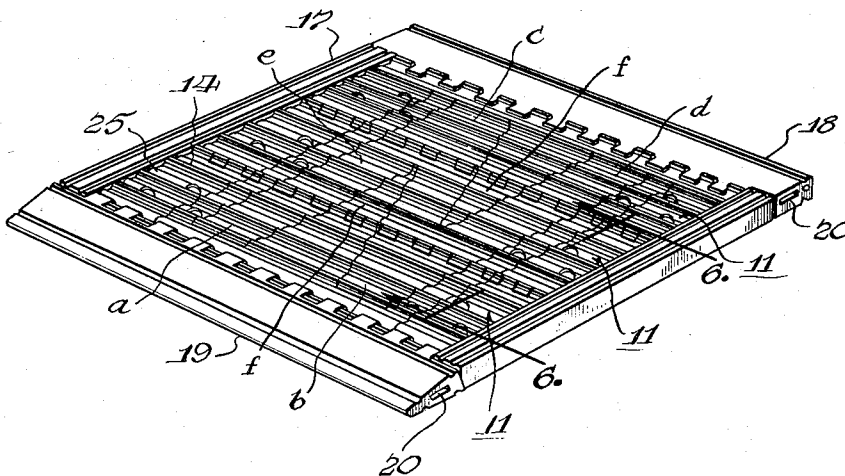
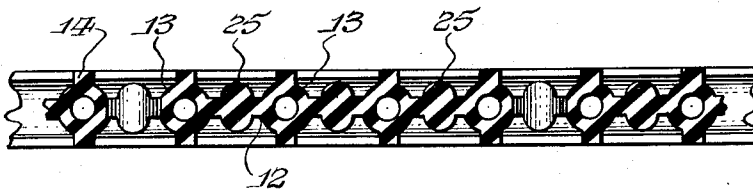


Fig. 6



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1

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FLOOR MAT

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5 Claims. (Cl. 15—239)

This invention relates to a floor mat. It has to do more particularly with mats which are especially suitable for use as door mats.

In accordance with the preferred embodiment of the invention the main body of the mat comprises a plurality of strips, of any desired length, formed of any suitable material such as rubber or soft plastic. The strips are of such form and width that they may readily be formed by extrusion and their edges are cut away to form projections which mesh with projections of an adjacent strip. The meshing projections have a bore extending therethrough whereby the adjacent strips may be hingedly connected together by a rod extending therethrough.

A mat constructed in this manner is inexpensive to manufacture since the strips may be extruded and, at the same time, a mat of large size is readily assembled from a relatively small number of component parts. The individual strips as extruded may be of any desired cross-sectional configuration without the necessity of cutting material away to form the desired cross-sectional configuration. The strips may thus be provided with large, widely spaced lugs for effective foot-wiping and with other special cross-sectional configurations described below. The basic construction also lends itself to the incorporation of decorative patterns therein. Furthermore, it lends itself to either an open or porous form, or to substantially tight form of mat.

It is an object of the invention to provide an improved floor mat which is readily fabricated from a relatively small number of component strips, each of said parts being of such width that it is readily produced by extrusion.

It is another object of the invention to provide an improved floor mat which is economical to manufacture and which has widely spaced upstanding lugs which facilitate the wiping of heavy mud from shoes and boots thus rendering the mat especially suitable as a door mat.

It is another object of the invention to provide an improved floor mat construction which lends itself readily to the incorporation therein of decorative inserts.

It is another object of the invention to provide an improved floor mat construction which lends itself readily to either an open or porous form, or to a substantially tight form.

In the drawings, in which like parts are designated by like reference numerals:

Figure 1 is a perspective view of a floor mat illustrating one embodiment of the invention;

Fig. 2 is an enlarged fragmentary plan view of a portion of the floor mat of Fig. 1;

Fig. 3 is an enlarged fragmentary perspective view of a portion of the same floor mat with one edge member removed;

Fig. 4 is an enlarged cross-sectional view taken along the line 4—4 of Fig. 1;

Fig. 5 is a perspective view of a floor mat illustrating another embodiment of the invention; and

Fig. 6 is a cross-sectional view taken along the line 6—6 of Fig. 5.

2

The floor mat of Fig. 1 consists primarily of a plurality of strips 11 which are preferably of rubber or soft plastic and which are of such form and width that they may readily be extruded. One suggested cross-sectional configuration of the strips 11 may be seen best in Figs. 3 and 4. It will there be seen that each strip 11 consists of web portions 12 and longitudinally extending enlarged portions 13 having ribs or lugs 14 protruding from the top and bottom thereof. The strips 11 are symmetrical about their central planes such that the top and bottom are reversible, and, as will subsequently be seen, the remaining portions of the complete floor mat are also reversible. Accordingly, in the event that the lugs 14, or the corners thereof, become worn on one side, the mat may be reversed, to the effect that the mat has twice the useful life that it otherwise would have.

Each strip 11 is cut away, i.e., recessed along both of its edges, in a manner shown best in Fig. 2, to provide alternate recesses or grooves 30 and complementally shaped projections or tongues 31. The longitudinal dimension of the recesses preferably is the same as that of the resulting tongues or projections whereby the projections on each side of each strip may mesh snugly with the projections of an adjacent strip.

It will be seen in the drawings that the edges of each strip 11 constitute two enlarged portions 13. At least those two enlarged portions 13 which extend along the edges of each strip define a bore 15 for receiving a rod 16, as best illustrated in Fig. 3. The recesses 30 along the edges of the strips 11 are of such depth that the resulting projections of adjacent strips may extend therein to a sufficient extent that the bores 15 therethrough may be brought into alignment. When a rod 16 is then inserted in the resulting bore 15, the two adjacent strips 11 are hingedly connected together. As best seen in Fig. 3, the interrupted lugs 14 extending along the edges of each strip 11 cooperate with the interrupted lugs of the next adjacent strip to form one continuous lug.

The ends of the rods 16 are preferably bent through an angle of 90° at the ends thereof and beyond the ends of the strips 11, and are preferably engaged in suitable openings in side rails 17. Such side rails 17 are desirable as they protect the ends of the strips 11, anchor the ends of the rods 16, and give the mat a finished appearance. The two ends of the floor mat are preferably finished with end strips 18 and 19. Each of these end strips is cut away along one edge thereof to form projections similar to those on the strips 11, whereby they may mesh with the corresponding end strips and be hingedly connected thereto by additional rods 16.

In Fig. 1, the end strip 18 is shown formed with a squared outer edge. This form of end strip is desirable for that edge of the floor mat which may butt against a wall or a step. The other end strip 19 has a beveled outer edge, this form of end strip being desirable for the edge of the mat which may lie in the open. In an application wherein the mat is to be laid in a floor recess provided for that purpose, squared end strips 18 should be employed at both ends. Where the mat is to lie in the open, tapered end strips 19 are preferred at both ends. Preferably the end strips are provided with a longitudinal opening therethrough for receiving a reinforcing metal insert 20.

In certain applications, it may be desired that the floor mat be substantially solid or continuous, such that it may hold any dirt or debris that may fall thereon. In such case, each of the strips may be left intact except for the recessing of the edges to form the meshing projections. In such case, also, the recesses are preferably of such dimensions that the meshing projections of the adjacent strip substantially fill the recesses, and a substantially continuous surface is presented.

In other applications it may be desired that dirt or debris which falls on the floor mat be permitted to fall through the mat, or to be swept or washed through. In such case, suitable openings through the web portions 12 may be provided as shown in Fig. 1. Preferably, such openings are not formed in the web portions immediately adjacent the edge lugs of the strips, as such openings would weaken the edges of the strips. However, the recesses intermediate the projections at the edges of the strips may be so dimensioned as to leave substantial openings through which dirt may fall or be washed or swept.

The embodiment of the invention illustrated in Figs. 5 and 6 incorporates substantially the same basic construction as that shown in Figs. 1-4; and, accordingly, like parts are designated by the same reference numerals and the above description of the basic construction is not repeated.

Fig. 6 illustrates one additional feature in the form of additional enlarged portions such as ribs or beads 25 arranged intermediate the enlarged portions 13 described above. The beads 25 are recommended to prevent the catching of the narrow heels of women's shoes between adjacent lugs 14. The beads 25 provide additional support for narrow heels intermediate the lugs 14, and at the same time, the beads 25 are not so high that they interfere with the shoe scraping action provided by the widely spaced lugs 24, further explained below.

The invention as thus far described lends itself to the incorporation of decorative patterns within a floor mat by means of a construction illustrated in Fig. 5. Basically, the floor mat of Fig. 5 incorporates the construction of Figs. 1-4 along with the intermediate beads 25 of Fig. 6, but is distinguished by the incorporation of inserts which provide a decorative pattern. Some of the strips 11 do not extend entirely across the width of the mat, but are instead interrupted, and portions are removed to receive inserts which are preferably of a different color than the strips 11.

In the example of Fig. 5, portions of the strips 11 are removed and inserts are provided in such a pattern that the inserts form the letter N. Specifically, portions of the first and third strips 11 of Fig. 5 are removed to permit the inclusion of inserts *a*, *b*, *c* and *d* which form the top and bottom portions of the letter N. The strip 11 in the center of the mat has portions removed to permit inclusion of a single insert *e* which is of irregular configuration such that it may form the central portion of the letter N. Additional inserts *f* are then required, preferably of the same color as the basic strips 11 to fill in the triangular openings within the insert *e*.

Each of the inserts *a-f* preferably has the same cross-sectional configuration as the basic strips 11 and in particular includes enlarged portions 13, and preferably lugs 14 and beads 25, where the latter are employed in the basic strips 11. Each of the enlarged portions 13 defines a bore for receiving a rod 16, the bores of the inserts being aligned with those of the strips 11. Each of the inserts *a-f* is also of sufficient length that it includes enlarged portions 13 and bores 15 for receiving at least two rods 16. This assures that the inserts will be maintained in the same general plane as the rest of the mat rather than being free to pivot about a single rod 16.

It will readily be seen that a floor mat constructed in accordance with the present invention has several substantial advantages over any mat previously produced. It has the advantage of widely spaced scraping edges whereby heavy mud may be scraped from the shoes of the user. This is in marked contrast to mats of relatively fine pattern which are readily filled with mud when the user attempts to scrape heavy mud from his shoes, and which by virtue of their fine pattern are worn smooth and hence substantially ineffective by relatively light use.

A mat constructed in accordance with the present in-

vention is made up of strips of practicable widths whereby they may readily be formed by extrusion to any desired cross-sectional configuration. This eliminates the necessity of cutting away any substantial portion of the mat components to produce a desired configuration, whereby there is relatively little waste. Furthermore, such a mat is readily assembled since a small number of strips (which may be of any desired length) are required to produce a mat of large size. This is in marked contrast to conventional forms of coarse mats constructed of individual links.

The mat, while it may have widely spaced lugs for effective wiping of shoes, may also employ intermediate ridges such as the beads 25 which help in supporting the narrow heels of women's shoes while being of lesser height than the lugs whereby they do not interfere with the wiping effect of the widely spaced lugs.

The mat also lends itself to construction as a continuous or substantially dirt-proof mat or to a perforate mat which permits dirt and debris to fall through. Still further, the mat lends itself to the desirable characteristic of being reversible whereby its effective life is substantially doubled. Finally, a mat constructed in accordance with the present invention lends itself readily to the inclusion of decorative patterns incorporated therein.

The method of making a floor mat disclosed above, namely the extruding of mat strips having a cross section characterized by enlarged portions supporting upstanding lugs and by bores extending therethrough, the cutting away of portions of the edges to form lateral projections, the meshing of the edge projections of adjacent strips with bores adjacent the edges aligned, and the inserting of rods therethrough, permits the production of a mat having any desired cross section, with relatively few assembly operations and little waste of material. At the same time it permits the inclusion of decorative patterns.

It will be apparent that the invention may be varied in its physical embodiment without departing from the spirit of the invention, and it is desired, therefore, that the invention be limited only by the scope of the appended claims.

The invention having thus been described, what is claimed and desired to be secured by Letters Patent is:

1. A floor mat comprising a plurality of elongated parallel strips of solid, flexible material linked together along their longitudinal edges, each strip being of a length equal to a substantial portion of one full dimension of said mat and having a plurality of parallel longitudinally extending lugs protruding from at least one principal surface thereof, the longitudinal edges of said strips being cut away at spaced intervals to form laterally extending arms for meshing with like arms of adjoining strips, such meshing arms of each two adjacent strips having aligned lugs protruding therefrom and parallel to said first-named lugs, with aligned, widened base portions and aligned bores therein and together forming a continuous lug having a continuous widened base portion and a continuous bore extending along the length of said strips, and a rod extending through said bore whereby said two adjacent strips are hingedly connected together.

2. The invention as set forth in claim 1, wherein said bores in said arms are in alignment with said second-named lugs in a direction perpendicularly with a principal surface of said mat, whereby said second-named lugs limit relative angular folding movement between two adjacent strips.

3. A floor mat comprising a plurality of elongated parallel strips of solid, flexible material linked together along their longitudinal edges, said strips being reversible and interchangeable with each other and being of a length equal to a substantial portion of one full dimension of said mat and each having a plurality of parallel longitudinally extending lugs protruding from the two principal surfaces thereof, said lugs being arranged in

5

oppositely disposed pairs, the longitudinal edges of said strips being cut away at spaced intervals to form laterally extending arms for meshing with like arms of adjoining strips, such meshing arms of each two adjacent strips having aligned pairs of oppositely disposed lugs protruding therefrom in oppositely disposed pairs and parallel to said first-named lugs, with aligned widened base portions and aligned bores therein and together forming a continuous lug having a continuous widened base portion and a continuous bore extending the length of said strips, and a rod extending through said bore whereby said two adjacent strips are hingedly connected together.

4. A floor mat comprising a plurality of elongated parallel strips of solid, flexible material linked together along their longitudinal edges, each strip being of a length equal to a substantial portion of one full dimension of said mat having a plurality of parallel longitudinally extending lugs protruding from at least one principal surface thereof, the longitudinal edges of said strips being cut away at spaced intervals to form laterally extending arms for meshing with like arms of adjoining strips, such meshing arms of each two adjacent strips having aligned lugs protruding therefrom and parallel to said first-named lugs, with aligned bores therein and together forming a continuous lug having a continuous bore extending along the length of said strips, said strips having additional lugs of lesser height than said first-mentioned lugs disposed between adjacent ones of said first-mentioned lugs, and a rod extending through said bore whereby said two adjacent strips are hingedly connected together.

6

5. A floor mat comprising a plurality of elongated parallel strips of solid, flexible material linked together along their longitudinal edges and each extending for a substantial portion of one full dimension of such floor mat, each strip having a plurality of parallel longitudinally extending lugs protruding from at least one principal surface thereof, each lug being formed with a widened base portion, the longitudinal edges of said strips being cut away at spaced intervals to form laterally extending arms for meshing with like arms of adjoining strips, such meshing arms of each two adjacent strips having aligned lugs protruding therefrom and parallel to said first-named lugs, with aligned, widened, base portions and aligned bores therein and together forming a continuous lug having a continuous widened base portion and a continuous bore extending along the length of said strips, and being of a diameter at least substantially equal to the thickness of said strips intermediate said lugs, said strips having additional lugs disposed between adjacent ones of said first-mentioned lugs, and a rod extending through said bore whereby said two adjacent strips are hingedly connected together.

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