Oct. 28, 1930. J. W. AMES 1,779,414

FLOOR MAT

Filed Feb. 25, 1928

Fig. 1.

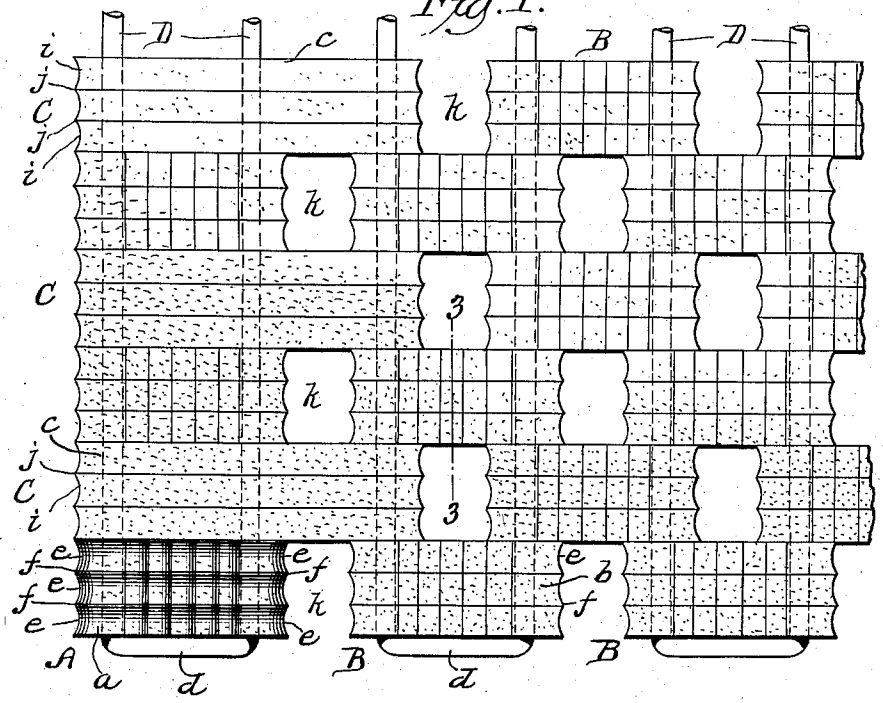


Fig. 2.

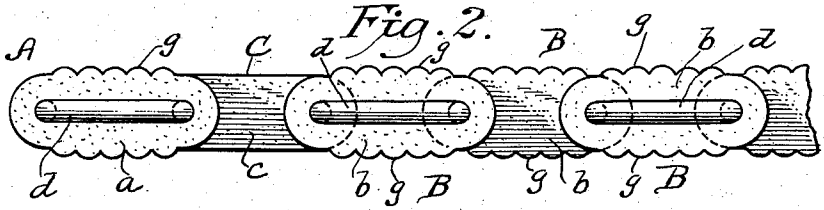


Fig. 3.

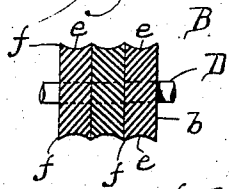


Fig. 4.

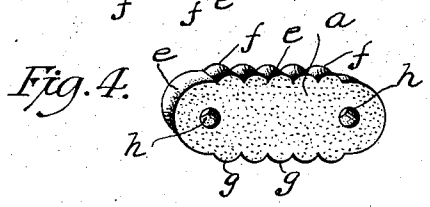


Fig. 5.

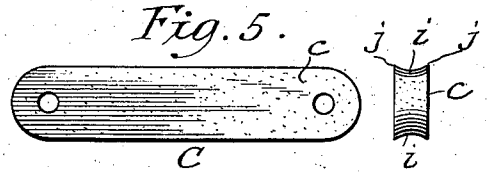
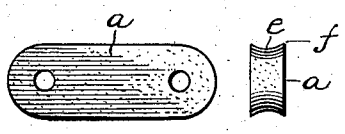


Fig. 6.



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UNITED STATES PATENT OFFICE

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FLOOR MAT

Application filed February 25, 1928. Serial No. 256,901.

This invention is an improvement in floor mats, and it pertains, more particularly, to mats wherein units of elastic or compressible material are united into rows by metallic rods, and whereof the elements are so related that the resulting structure is foldable into a compact bundle and when spread out for service is of a flexible character whereby it conforms or adapts itself to inequalities in the floor surface.

My invention is characterized by a mat the tread surface of which is roughened to the end that adherent foreign substances on the shoes of persons walking on the mat are readily scraped off and removed, and such roughened surface imparts the further desirable quality of minimizing the tendency of the shoes to slip and slide over the mat, both of the two specified requirements being of pronounced utility in damp or wet weather.

The invention is embodied in units composed of relatively soft material, such as rubber, in contradistinction to material of a rigid character afforded by metal, said rubber units being characterized by the presence of grooves or channels in the edges of the rubber material, and said grooves producing ridges at the respective sides of the units. The units are usually of laminated formation due to an assemblage of layers in register one with the other, so that the ridges will present roughened surfaces of a pronounced character. In a preferred form the laminæ of certain units are provided with scolloped edges, and such scolloped-edged laminæ are grooved transversely, so that with the assemblage of the laminæ into register the unit presents a tread surface of decided roughness, whereby the tendency to slip is overcome to a large extent and shoes can be scraped easily for removing adherent foreign substances.

Other functions and advantages of the invention will appear from the following description taken in connection with the accompanying drawings, wherein—

Figure 1 is a plan view of a part of a rubber mat embodying my invention.

Figure 2 is an elevation looking at one side edge of the mat.

Figure 3 is a cross section on the line 3—3 of Figure 1.

Figure 4 is a perspective view of a scolloped and grooved member or unit of the mat.

Figure 5 shows views in side and edge elevation of a member to form one of the links between adjacent rows of units.

Figure 6 illustrates views in side and edge elevation of another form of member adapted as a substitute for the scolloped-edge member of Figure 4.

In the drawings, A designates the units of a row at one end edge of the mat, B are units of other rows in succeeding order, C are links connecting the units of end row A with the units B of an adjacent row, and D are metal rods by which the units of any one row are retained in operative relation one to the other, said metal rods being associated with the units of adjacent rows so that the mat as a whole may conform to the surface of the floor and to the end that the mat may be rolled or folded into a compact bundle for storage and transportation.

Each unit A or B, and each link C, is of laminated formation, in order that the unit or link may possess the required area and to economize in the quantity of rubber necessary for the production of the mat.

In contradistinction to the usual method of molding rubber to the required form and dimensions, the rubber in my invention is blanked out by appropriate mechanical appliances which cut or stamp the parts or members from strips, pieces or lengths of cured rubber, the latter being obtained from discarded rubber tires of automobiles, trucks, etc. Such strips or pieces to a determined thickness and width are excised by a stationary knife from a rotative mass of cured rubber embodied in a truck tire, or tires of automobiles, or other vehicles, and the cut to length of the strip is then cut by an appropriate mechanism to produce rubber blanks of the required sizes and shapes appropriate for use in mats embodying my invention.

Taking up in detail the unit A, the drawings show it is of laminated formation, com-

prising a number of pieces, *a*, usually three in number, of corresponding shape and dimensions, and assembled into contacting relation to produce a unit of the desired dimensions, i. e., width, length and thickness. The parts or members, *a*, composing the unit are blanked or stamped, and in this operation the edge of each part or member is provided with a groove or channel *e*, the same extending lengthwise and being concave in a direction transversely of the part or member. The groove or channel *e* in the edge of each part or member, *a*, produces at the respective sides of said part or member the ridges, *f*, which extend the full length of the part or member, and on both edges thereof, as well as at the ends, as shown. The parts or members, *a*, composing each unit, A, are assembled into contact sidewise with each other, and as the result of the grooves, *e*, the parts or members, *a*, of the unit present a series of ridges, *f*, which constitute well defined protuberances, whereby a roughened tread surface is obtained on the mat.

In a preferred form, each part or member *a*, of the laminated unit A is provided with scollops or serrations, *g*, shown more clearly in Figures 2 and 4, said scollops producing a series of convex teeth alternating with indentations. According to my invention, the teeth are provided in their convex surfaces with the channels or grooves *e*, the latter being concave transversely of the part or member *a*, and forming the ridges *f* at the respective sides of said member. The serrations provide a certain amount of roughness in the surfaces of the mat, and the extent of such roughness is augmented by the presence of the concave grooves in the convex faces of the serrations, producing the ridges at the sides of the parts or members, the total effect being to extend or spread the roughened surfaces over the entire area of the mat, whereby the desirable non-slipping and scraping functions are attained by an economical construction of the units.

The units B of the second row, and of succeeding row or rows, are identical in construction to the units A of the end row, i. e., each unit B is of laminated formation comprising blanked or stamped parts *b* provided with scolloped marginal edges *g*, and with transversely curved grooves or channels *e* producing the ridges *f*, said units *b* of each unit being assembled in sidewise contacting relation.

The units A, B, are pierced with apertures *h* into which are inserted the metal rods D, whereby the units are threaded or strung along the rods.

The links C are positioned in alternate order to the units A, B, of the end row and to the units of the second row adjacent said end row. Each link is of laminated formation, comprising parts or members *c* blanked or struck from rubber material and provided in the edge thereof with a channel or groove *i* curved transversely and producing the side ridges *j*. The parts or members *c* of links C are assembled into sidewise contact as shown in Figure 1, and the liuks are threaded or strung on the rods D. The links C and the units A, B, are in abutting contact with each other, but it is to be observed that the links C are appreciably longer than the units A or B of the first row and the second row, as shown clearly in Figure 1, whereby the ends of the units A, B, in the rows lengthwise of the mat are separated for appreciable distances so as to provide openings or spaces, indicated at *k*, there being a substantial distance between the end of unit A and the end of unit B adjacent to unit A, thus leaving ample clearance between the units for the folding of the mat and providing spaces at the ends and throughout the area of the mat through which dirt and foreign substances scraped from the shoes can fall to the floor.

It is not essential that the parts *a*, *b*, of the laminated units be provided with the serrated edges *g*, for the reason that each part *a* or *b* may be blanked or cut in the form shown in Figure 6 wherein the top and bottom edges of the member are straight and parallel, although said edges are provided with the grooves or channels *e* curved transversely and forming the ridges *f*.

The drawings show the rod D as provided with cross members *d* operating to couple the adjacent rods in pairs. While this form of rods may be desirable as tending to facilitate the assemblage of the parts or members comprising the units and the links, still the kind of the rods is optional because individual or separate rods may be used.

The units and links are bound by the rods into a unitary structure which lays flat on the floor or conforms to the floor surface, but the rods provide a pivotal connection between the rows of units and links whereby the mat as a whole may be rolled or folded into a compact structure for convenient transportation or storage. When in service, the rubber material of the mat affords a yielding cushion for persons to walk upon, as distinguished from the hard tread afforded by metal mats, and the roughened nature of the wear surface afforded by the grooved and ridged units plus the scolloped or serrated edges of the numerous units imparts the desirable qualities of precluding slipping and of scraping the adhesions from the shoes. The use of cured rubber salvaged from discarded tires tends to attain economy, and by stamping or blanking the units from such salvaged rubber and by assembling the laminæ of the units, lends to further economy in the production of the mats.

Having thus fully described the invention,

what I claim as new and desire to secure by Letters Patent is:

1. As an article of manufacture, a floor mat link having a tread face provided with a groove extending longitudinally thereof, the groove being of substantially the same width as the tread face whereby a ridge is formed along each longitudinal edge of the tread face.

2. An element in a flexible floor mat comprising an apertured element having a tread face provided on its edge with a longitudinally extending concave groove whereby, said groove being of substantially the same width as the tread face, a ridge is provided at each edge portion of the element and said element having a plurality of serrations extending transversely of said element from one edge to the other.

3. As an article of manufacture, a flexible floor mat link comprising an elongated relatively thin body having rounded ends and having a tread face, the tread face being provided with a rounded groove extending for substantially the full thickness thereof whereby a ridge is provided at each edge of the groove.

4. As an article of manufacture, a flexible floor mat link having a tread face provided with a concave groove extending longitudinally thereof, the groove being of substantially the same width as the tread face whereby a ridge is formed along each longitudinal edge of the tread face, said link having a plurality of serrations extending transversely of said link.

In testimony whereof I have hereto signed my name this 21st day of February, 1928.

JAMES W. AMES.