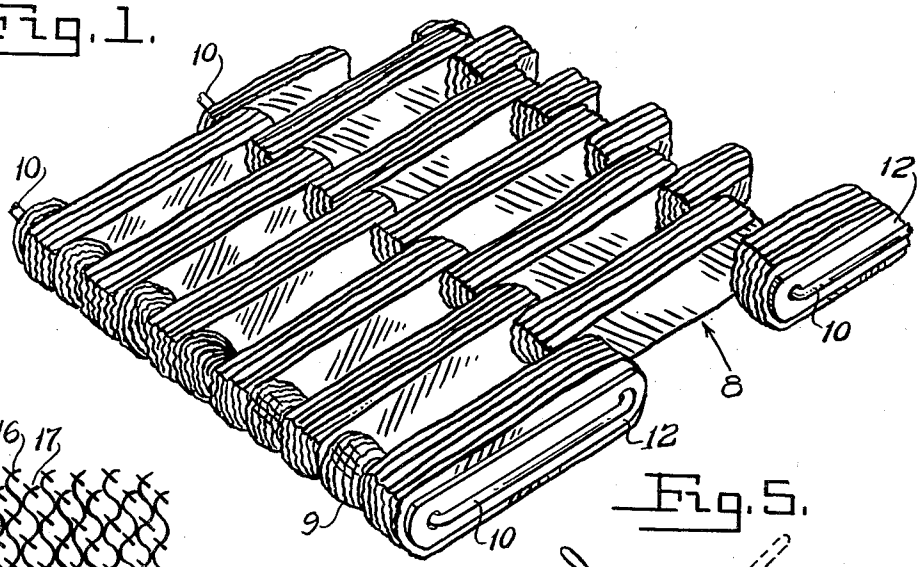
Jan. 24, 1939. E. F. McCLUNG ET AL 2,144,683

MAT

Filed Sept. 17, 1937 2 Sheets-Sheet 1

Fig. 1.



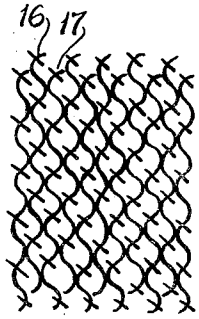


Fig. 7.

Fig. 2.

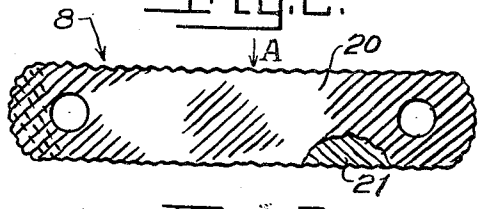


Fig. 3.

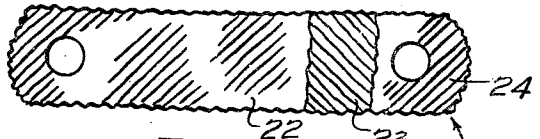


Fig. 4.

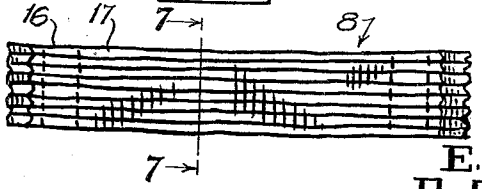
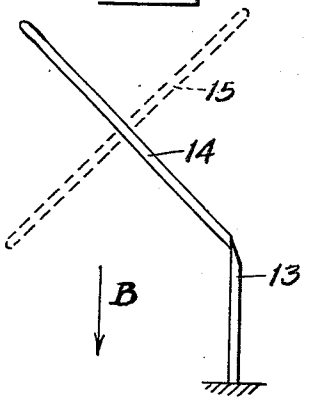


Fig. 5.



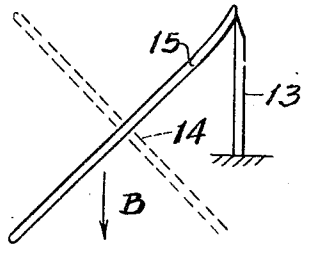


Fig. 6.

E. F. McClung INVENTORS.
P. S. Schildknecht
BY Carlos G. Stratton
ATTORNEY.

Jan. 24, 1939. E. F. McCLUNG ET AL 2,144,683

MAT

Filed Sept. 17, 1937 2 Sheets-Sheet 2

Fig. 9.

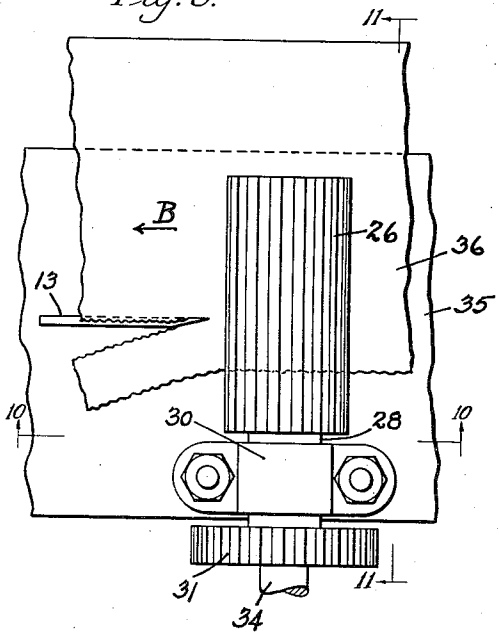


Fig. 8.

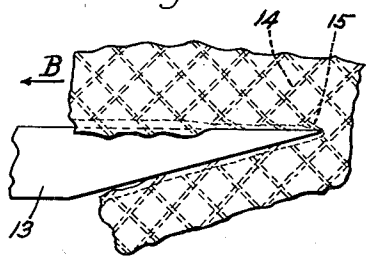


Fig. 10.

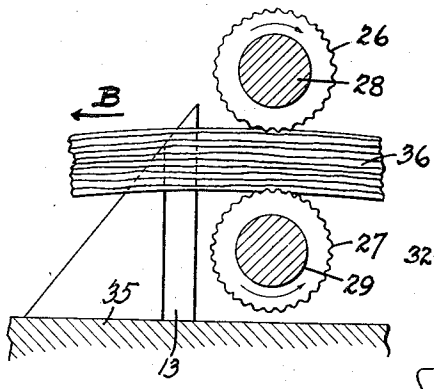
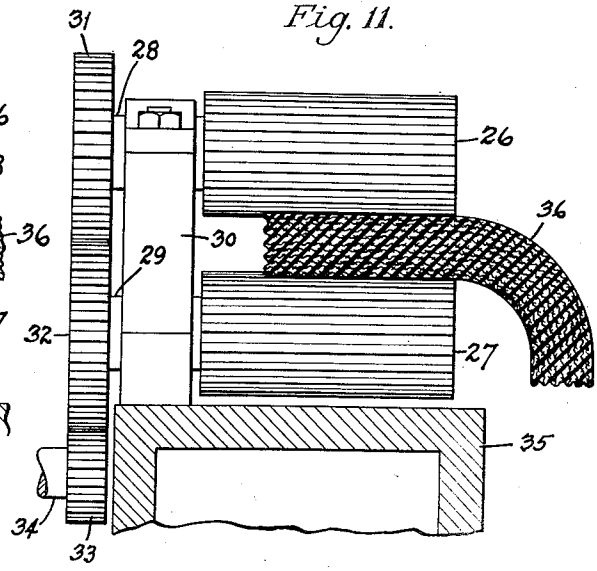


Fig. 11.



INVENTORS.
E. F. McClung
P. S. Schildknecht

BY Carlos G. Stratton
ATTORNEY.

Patented Jan. 24, 1939 2,144,683

UNITED STATES PATENT OFFICE

2,144,683

MAT

Eugene F. McClung, Huntington Park, and Paul S. Schildknecht, Los Angeles, Calif.; said Schildknecht assignor to said McClung

Application September 17, 1937, Serial No. 164,326

6 Claims. (Cl. 15—239)

Our invention relates to door mats and more particularly to door mats made from layers of fabric held together by a binder, e. g., a resilient binder such as rubber.

An object of the invention is to provide an articulate mat of segments made up in the manner mentioned, the segments being provided with alternate ridges and longitudinal depressions on its shoe engaging surface or surfaces. Such a construction not only facilitates cleaning of shoes, rubbers, and the like, but also hastens the drying thereof after it becomes wet.

Another object is to provide simple and practical method and means to make same.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description.

In the drawings, like reference characters designate similar parts in the several views.

Figure 1 is a perspective view of a mat embodying features of our invention.

Figures 2 and 3 are views at opposite sides of a segment comprised in the mat.

Figure 4 is a plan view, looking in the direction of the arrow A of Figure 2.

Figures 5 and 6 are diagrammatic views of the method and means of cutting material on the bias in the production of the present segments.

Figure 7 is an enlarged cross section, taken on the line 7—7 of Figure 4.

Figure 8 is a more detailed plan view of the cutting action diagrammatically shown in Figures 5 and 6.

Figure 9 is a plan view suggesting feeding means from our co-pending application, as more fully identified hereinafter.

Figures 10 and 11 are sectional views taken on the lines 10—10 and 11—11 respectively of Figure 9.

Referring more in detail to the drawings, the reference numeral 8 designates generally segments that make up the present mat. Filler members for finishing the mats at ends are indicated at 9. Wires 10 are passed through eyes in metal plates 12 at the sides of the mat. The wires 10 not only bind the segments together but also provide hinge pins for rolling up the mat.

To produce the segments, old, used motor vehicle tires are employed. The process is substantially as follows:

The remaining rubber on the tread and on the side walls of the tires is stripped off. The tires are then cut in two on their bisecting, vertical planes, considering the position of the tires as on the wheels of a motor vehicle. In other words, two annular halves are thus produced from each tire, the cut being made around the circumference of the tread of the tire.

Each tire half is then fed into a spiral cutting machine, to cut the halves into spiral strips that are the same width as the depth of the finished segments 8. The cutting is begun at the tread, working around to the bead of the tire.

It is believed that illustration and detailed description of the devices for stripping the rubber from old tires and cutting them in half are unnecessary here, since their details of construction form no part of the present invention.

Conventional means for feeding the tire halves to the cutting knife may be employed. Any suitable feeding means may be employed, such as end portions of the feed rollers 31, 32 in our co-pending application Serial No. 164,327, filed contemporaneously herewith.

Although details of the feeding mechanism per se form no part of the present invention, feeding rollers such as shown at 26 and 27 are suggested. The surfaces of these rollers may be corrugated or otherwise roughened for non-slipping contact with the tire casing section.

Shafts 28 and 29 respectively drive the feed rollers 26, 27. A bearing box 30 journals the two shafts. Meshing pinion gears 31 and 32 on the shafts 28 and 29 respectively drive the feed rollers in opposite directions, as suggested by the arrows on the rollers in Figure 10. A spur gear 33, engaging the pinion gear 32, is in turn driven by a shaft 34. A platform upon which a stationary knife 13 and the bearing box 30 are mounted is shown at 35.

The operation is as follows: Tire casings (a portion of one is suggested at 36) of course are made up of cords or fabric arranged on the bias. Moreover, the layers of cords or fabric are alternately arranged, whereby the main threads or cords of one layer are on the bias in one direction and in the next adjacent layers are on the bias substantially at right angles to the threads or cords of the first-mentioned layer, as shown at 20 to 24 in Figures 2 and 3.

Bias arranged threads or cords are illustrated in Figures 5, 6 and 8. Bias arranged threads or cords that might be termed as being "against" the knife are suggested by the thread or cord 14. Bias arranged threads or cords that might be termed as being "with" the knife are suggested by the thread or cord 15. The direction of movement of the material is denoted by the arrows B.

It will be noted especially in Figures 5 and 6

that the threads or cords 14 are cut shorter by the knife 13 than are the threads or cords 15. The bias threads or cords 15 that are "with" the knife are slightly deflected by the stationary knife, as suggested in Figure 6, thus cutting the layer of threads or cords that is "with" the knife longer than the layer of threads or cords that is "against" the knife.

Bias cut, spiral strips cut from the tire halves are then fed into our punching and stamping machine, which is described and shown in our said co-pending application Serial No. 164,327, filed contemporaneously herewith. The segments shaped and punched as shown in the present drawings are thereby produced. The edges may be scalloped, as suggested at the upper and lower edges of Figures 2 and 3.

In the use of the present mat, the alternate short and long layers provide alternate ridges 16 and grooves or longitudinal depressions 17. The ridges provide better scraping means than if the scraping surface were flat. The depressions or grooves 17 receive dirt and mud scraped from shoes, overshoes, etc., by the ridges 16. Moreover, when wet, the ridges are drained and provide a larger surface, thereby dry more quickly than a flat surface.

While we have illustrated and described what we now regard as the preferred embodiment of our invention, the construction is, of course, subject to modifications without departing from the spirit of our invention. We, therefore, do not wish to restrict ourselves to the particular form of construction illustrated and described, but desire to avail ourselves of all modifications which may fall within the scope of the appended claims.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A mat comprising segments disposed when in normal use with their edges disposed upward, the segments having layers of bias arranged threads or cords held together by a binder, the threads or cords of adjacent layers being disposed in different directions, the layers of threads or cords that extend in one direction at the upper edge of the segment being longer than the layers of threads or cords that extend in another direction at the same edge, whereby to provide alternate ridges and grooves at the upper edges of the segments, and means to bind the segments together.

2. A mat comprising segments having their edges disposed to be wiped by a user's shoe or overshoe, ends of cords or threads being exposed at said edges, certain of said ends projecting from the bodies of the segments farther than other ends, and means to bind the segments together.

3. A mat comprising segments having their edges disposed to be wiped by a user's shoe or overshoe, ends of cords or threads being exposed at said edges, certain of said ends projecting from the bodies of the segments farther than other ends, to provide corrugations running one way on the edges and said edges also having scallops running the other way, and means to bind the segments together.

4. A mat comprising segments provided with laminations of bias fabric arranged in different directions in adjacent laminations, the adjacent laminations extending different distances from the bodies of the segments, to provide corrugations and grooves, and binding material for the fabric layers.

5. A mat comprising segments provided with laminations of fabric, the edges of the laminations extending different distances from the bodies of the segments, to provide an irregular surface on the segments, and binding material for the fabric layers.

6. A mat comprising segments provided with laminations of bias threads or cords, the threads and cords extending in different directions in different layers, the ends of the threads or cords in the different layers extending different distances from the bodies of the segments to provide an irregular surface on the segments, and binding material for the fabric layers.

EUGENE F. McCLUNG.
PAUL S. SCHILDKNECHT.