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MAT FOR AUTOMOBILE RUNNING BOARDS AND THE LIKE

Filed Nov. 12, 1931

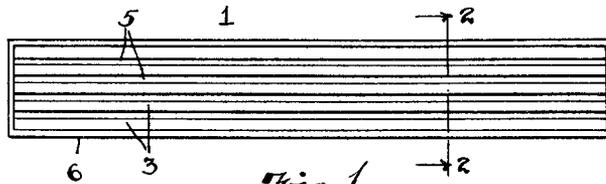


Fig. 1.

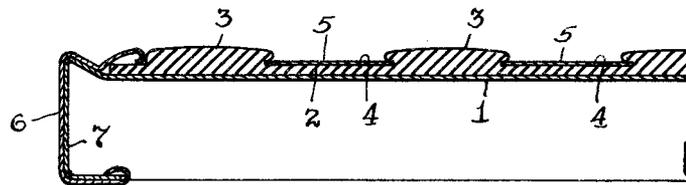


Fig. 2.

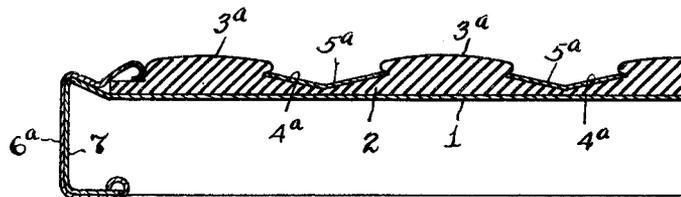


Fig. 3.

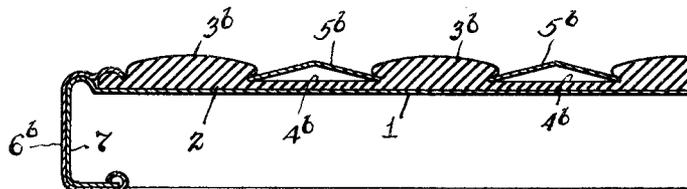


Fig. 4.

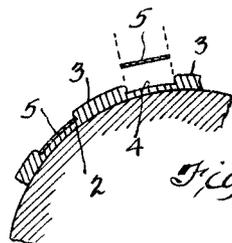


Fig. 6.



Fig. 5.

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UNITED STATES PATENT OFFICE

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MAT FOR AUTOMOBILE RUNNING BOARDS AND THE LIKE

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Aside from all metal running boards, such as have been for some years past utilized on lower priced automobiles, a very extensively employed covering for such running boards has consisted of a sheet of vulcanized rubber provided with a corrugated surface, such sheet of rubber being secured to the running board by means of an interposed layer of cementing material or by vulcanizing the rubber sheet directly to the running board. It has also been usual to secure the edges of the rubber mat to the board by means of a nosing in the form of metal strips bent to overlie such edges. In contradistinction to the foregoing, the present improved construction of mat has as its object to provide a covering for automobile running boards, steps and like tread surfaces which will present alternate ribs of rubber with strips in the depressions therebetween of a material different from that of the mat and preferably of a harder and more rigid nature, such as metal, bakelite or the like. As a result an effect is secured similar to that where ribs of rubber are inset in or vulcanized to a solid metal base plate with the advantage, however, of a much lighter construction as well as one that is much less expensive to manufacture and at the same time superior in wearing and other qualities.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims, the annexed drawing and the following description setting forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—

Fig. 1 is a plan view of a running board provided with my improved mat or covering; Fig. 2 is a broken transverse section of such running board taken on the line 2—2 of Fig. 1 and showing the mat applied thereto; Figs. 3 and 4 are sectional views, similar to Fig. 2, but showing modifications in construction of the mat; Fig. 5 is a sectional view, similar to Fig. 2, but showing a modified con-

struction of the running board involving a corresponding modification of the mat; and Fig. 6 is a sectional view, more or less diagrammatic in character, illustrating one step in the preferred method of making such mat.

The running board 1, as shown in Figs. 2, 3 and 4 of the drawing, consists of a flat metal sheet of the desired dimensions, but may, if desired, be an actual board or composed of any other material suitable for use as a step or tread surface. Also, as shown in Fig. 5, the running board 1 may be corrugated longitudinally.

The mat consists of a sheet 2 of vulcanized rubber, or rubber-like material, molded to present a flat or corrugated surface designed to contact with the board 1, or equivalent support, and having a ribbed upper surface. The cross-sectional conformation of the ribs as well as of the depressions or channels therebetween may vary. Thus, as shown in Fig. 2, the ribs 3 are substantially flat and the bottoms of the channels 4 are likewise flat. In Fig. 3, on the other hand, the ribs 3a are of slightly convex form and the channels 4a are of angular concave form. In Fig. 4, ribs 3b of still greater convexity are illustrated, while the channels 4b are flat as in Fig. 2.

However, in each of the several forms thus illustrated, it will be noted that the edges of the ribs adjacent the channels are slightly undercut to receive the edges of metal strips 5, 5a and 5b, respectively. These strips are preferably made of thin gauge stainless steel or of nickel or chromium plated steel and, like the ribs, may be of different cross-sectional forms. Thus, the strips 5 in Fig. 2 are flat so as to lie in direct contact with the bottoms of the corresponding channels 4. Similarly, the strips 5a in Figs. 3 and 5 are of angular conformation so as to lie in close fitting contact with the bottoms of the channels 4a; on the other hand, in Fig. 4, the strips, while of angular conformation, are disposed to present their convex faces upwardly and engage with the rubber layer constituting the mat proper only along their edges which fit into the undercut edges of the ribs 3b.

The strips may also be made of a non-metallic material, such as bakelite, for example, and may be painted, lacquered or otherwise colored to correspond or contrast with the color of the body of the automobile. Since the upper surface of the strips is in each case below the upper surface of the ribs of the mat, the strips are not trod upon and are subjected to very little wear.

The outer edge of the mat is in each case secured to the running board 1 by means of a metal strip 6, 6a and 6b, of channel formation, the lower portion of such channel strip engaging with a depending flange 7 on the running board, while the upper portion overlies and, if desired, has interlocking engagement with the corresponding edge of the mat.

In the manufacture of my improved construction of mat, the rubber layer 2 with its series of ribs and channels will be molded and vulcanized in the usual way and the metal strips then subsequently inserted in such channels. This operation may be conveniently performed in the manner illustrated in Fig. 6, namely, by supporting the mat on a cylindrical surface with the ribs extending longitudinally of the axis of such surface, which latter is of the proper curvature to open up the channels so that the strips may be readily inserted between the undercut edges of the ribs. When the rubber sheet is thereupon restored to its normal flat condition, the strips will be securely interlocked between the ribs, as will be readily understood. On the other hand, where the mat is vulcanized directly to the running board, the strips may be slid endwise into the channels and will be held in place by the nosing at the ends of the running board.

A mat constructed in the manner disclosed provides for a maximum amount of wear with a minimum amount of rubber in that the thickness of the layer in the bottoms of the channels may be greatly reduced and the ribs, if desired, be made of greater thickness than that of the corrugations in an all rubber mat. The corrugations in the running board shown in Fig. 5 not only strengthen the board longitudinally but permit the use of a mat containing less rubber than the mats shown in the other modified forms of the invention. The strips impart a desired element of rigidity to the mat so as to cause it to lie flat on the running board and retain its shape even where no cementing material is used to secure the mat to the running board. In other words, the use of an interposed layer of cement with my present improved mat is optional. In addition, such strips, particularly where made of polished stainless steel or plated steel, or when painted or otherwise colored to correspond or contrast with the color of the body of the automobile, provide a very effective embellish-

ment to the mat as a whole which is an object greatly to be desired in the case of automobile running boards which as at present constructed detract rather than add to the appearance of an automobile.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a covering for automobile running boards and like tread surfaces, the combination of a thin flexible molded rubber mat adapted to be applied to such surface, said mat having a ribbed wearing face, and strips of a material different from that of the mat secured in the channels between the ribs on such face solely by said ribs.

2. In a covering for automobile running boards and like tread surfaces, the combination of a thin flexible molded rubber mat adapted to be applied to such surface, said mat having its wearing face formed with laterally undercut ribs, and strips of a material different from that of the mat fitted in the channels between such undercut ribs.

3. In a covering for automobile running boards and like tread surfaces, the combination of a thin flexible molded rubber mat adapted to be applied to such surface, said mat having a ribbed wearing face, and strips of angular cross-section and of a material different from that of the mat secured in the channels between the ribs on such face.

4. In a covering for automobile running boards and like tread surfaces, the combination of a thin flexible molded rubber mat adapted to be applied to such surface, said mat having its wearing face formed with laterally undercut ribs, and strips of angular cross-section and of a material different from that of the mat fitted in the channels between such undercut ribs.

5. In a covering for automobile running boards and like tread surfaces, the combination of a thin mat of flexible material adapted to be applied to such surfaces, said mat having a ribbed wearing face and strips of a material different from that of the mat secured in the channels between the ribs on such face solely by said ribs.

6. In a method of making a covering of the character described, the steps which consist in molding a thin flexible rubber mat with ribs on its wearing face, flexing such mat transversely of such ribs, inserting strips of a material different from that of the mat in the channels between such ribs, and thereupon flattening out such mat whereby said strips are secured in place.

7. In a method of making a covering of

the character described, the steps which consist in molding a thin flexible rubber mat with laterally undercut ribs on its wearing face, flexing such mat transversely of such ribs, inserting strips of a material different from that of the mat in the channels between such ribs, and thereupon flattening out such mat whereby said strips are secured in place.

10 Signed by me, this 10th day of November, 1931.

WILLIAM S. VROOMAN.

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