May 27, 1947. G. TRAUTVETTER ET AL 2,421,171

ANTISLIP SURFACE

Filed Oct. 30, 1944 2 Sheets-Sheet 1

Fig. 1.

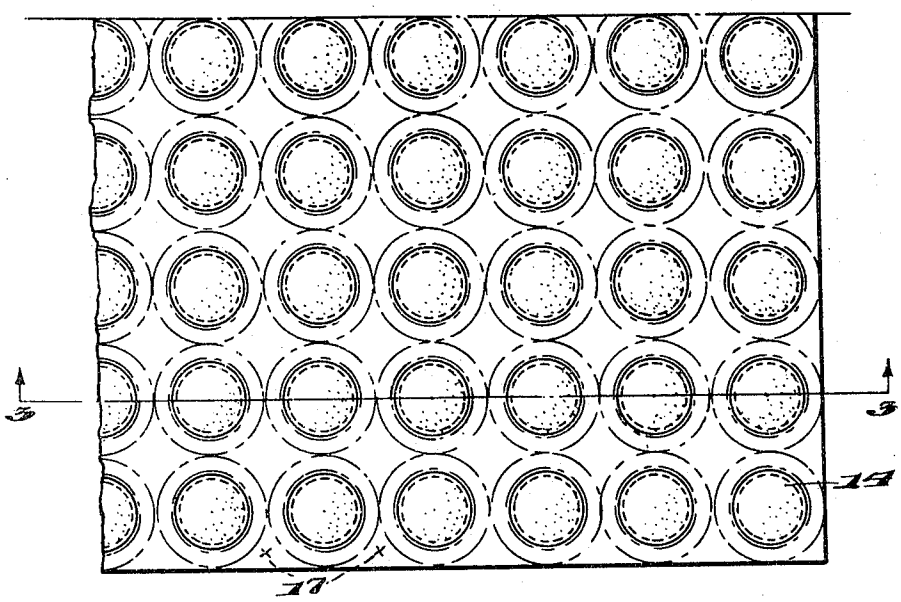
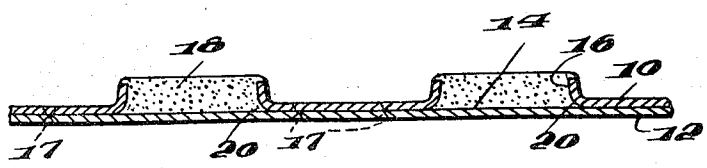


Fig. 2



Fig. 3.



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Fig. 4.

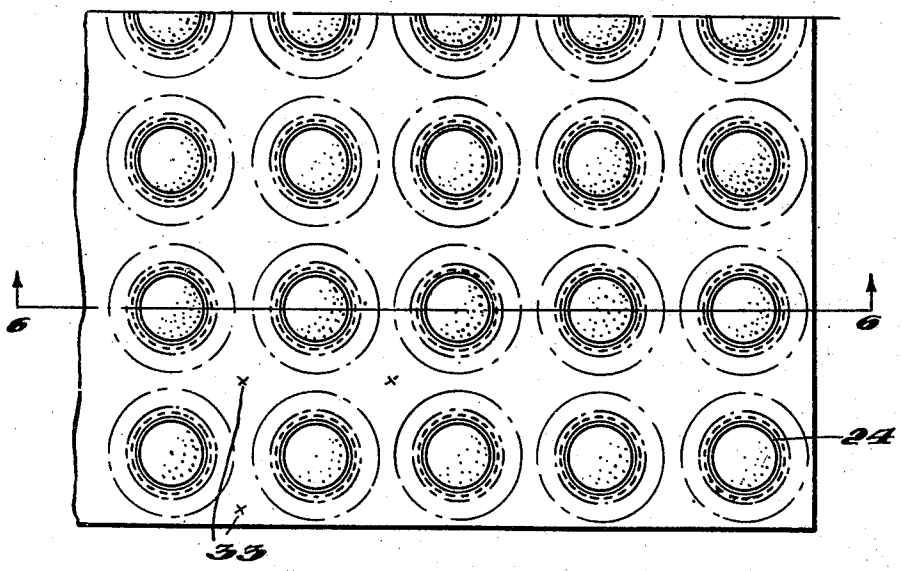


Fig. 5.

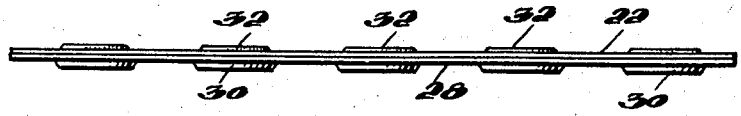
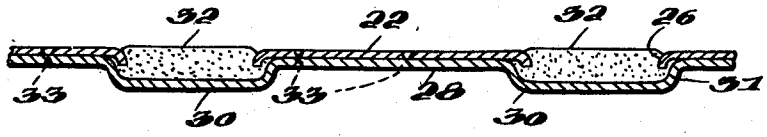


Fig. 6.



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UNITED STATES PATENT OFFICE

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ANTISLIP SURFACE

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Application October 30, 1944, Serial No. 561,112

4 Claims. (Cl. 94—5)

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This invention relates to anti-slip surfaces. While adapted for a great variety of applications the invention will be found to be particularly suitable for floorings and steps in railroad cars, ships, streetcars, buses and the like, to provide a sure footing for passengers.

The principal object of the invention resides in the provision of a sturdy, light weight, anti-slip surface which may be manufactured economically and sold at a reasonable cost.

This and other objects of the invention will become more apparent from the following description and claims when read in conjunction with the accompanying drawings in which,

Figure 1 is a plain view of one form of the invention;

Figure 2 is a side elevation;

Figure 3 is an enlarged section taken on the line 3—3 of Figure 1;

Figure 4 is a plain view of a modified form of the invention;

Figure 5 is a side elevation of the same, and

Figure 6 is an enlarged section taken on the line 6—6 of Figure 4.

With reference now to the form of the invention shown in Figures 1, 2 and 3, it will be noted that the arrangement is comprised of an upper tread plate 10, and a lower reinforced plate 12. These plates are preferably of stainless sheet steel or the like, and are comparatively thin.

The tread plate 10 is provided with a plurality of apertures or holes 14 provided with upstanding edge portions 16. The holes are shown in the drawings as circular, but obviously may be of other shapes.

The tread plate 10 is disposed above the reinforced plate 12 and the two plates are secured together by spot welding or the like, such as at 17 for example. Other known means may be employed to secure the plates firmly together.

It will be appreciated that this arrangement provides a number of pockets for the reception and retention of anti-slip material 18. It will be seen from Figure 3 that the base of each upstanding edge portion 16 is curved so that each pocket is provided with an annular recess 20 of greater diameter than that of the pocket proper.

The anti-slip material 18 is firmly pressed into each pocket. This material or compound may be of any suitable type of which many are known. Usually it is comprised of a plastic base in which is dispersed powder or granular anti-slip material, such as carborundum or the like. Any type of material may be used which can be made to fill completely each pocket, including its annular recess 20, and which material will or can then be hardened so as to become locked in the pocket.

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It will be noted that the anti-slip material 18 in each pocket extends upwardly a slight distance above the plane of the upper edges of the upstanding edge portions 16.

In the modified form of the invention illustrated in Figures 4, 5 and 6, the arrangement is also comprised of two plates. In this instance a tread plate 22 is provided with a plurality of circular openings 24, the edge portions 26 of which are bent downwardly for a short distance. The reinforcing plate 28 is provided with a plurality of circular depressions 30, the side walls 31 of which diverge upwardly. The upper diameter of each depression 30 is slightly greater than the outer diameter of the edges of the openings 24.

The tread plate 22 is disposed on the reinforcing plate 28, with the openings 24 in register with the depressions 30, in the manner clearly indicated in Figure 3, and the two plates are secured together by spot welding or by any other suitable method. The welding spots may, for example, be at the crosses 33.

Anti-slip material 32 is then pressed in each depression 30 and when hard becomes locked therein by means of the overhanging edge portions 26 of the holes in the tread plate 22. It will be noted that here again the arrangement provides a plurality of pockets for the anti-slip material.

Figures 5 and 6, it will be noted, show the finished upper surface of the anti-slip material 32 as extending slightly above the plane of the upper surface of the tread plate 22.

The tread and reinforcing plates in both modifications may, as indicated, be of stainless sheet steel of comparatively thin dimensions. As an example, the tread plates may be of a thickness of only .030, while the reinforcing plates may be .025 in thickness, although other thicknesses may be used.

Materials other than stainless sheet steel may be employed, but stainless steel is believed to be preferable and has proved eminently satisfactory for the purposes of this invention.

It will be appreciated that two forms of this invention are capable of economical manufacture by relatively simple stamping and welding operations. The anti-slip surfaces formed are very well suited for use in railroad cars, ships, streetcars, buses and the like, at such locations as

would necessitate providing secure footing for passengers.

To those skilled in the art it will now be apparent that changes in shape and arrangement of its composite parts may be made within the purview of the inventive concept. Consequently, the invention is to be limited only as indicated in the following claims.

We claim:

1. An article of manufacture comprising, a tread plate of sheet metal having a plurality of openings, and a reinforcing plate of sheet metal having a plurality of depressions of substantially the same configuration as said openings but slightly larger than said openings, said reinforcing plate being disposed beneath said tread plate with the openings in said tread plate in register with said depressions, said tread plate and said reinforcing plate being secured together in face to face contact to form a laminated structure, and anti-slip material disposed in the pockets formed by said openings and depressions.

2. An article of manufacture comprising, a tread plate of sheet metal having a plurality of openings, and a reinforcing plate of sheet metal having a plurality of depressions of substantially the same configuration as said openings but slightly larger than said openings, said reinforcing plate being disposed beneath said tread plate with the openings in said tread plate in register with said depressions, said tread plate and said reinforcing plate being secured together in face to face contact to form a laminated structure, and anti-slip material disposed in the pockets formed by said openings and depressions, said anti-slip material extending upwardly slightly above the plane of the upper surface of said tread plate.

3. An article of manufacture comprising, a tread plate of sheet metal having a plurality of circular openings provided with down-turned edges, a reinforcing plate of sheet metal having a plurality of circular depressions of slightly larger diameter than said openings, said reinforcing plate being disposed beneath said tread plate with the openings in said tread plate in register with said depressions and said down turned edges extending into said depressions, said tread plate and said reinforcing plate being secured together in face to face contact to form a laminated structure, an anti-slip material disposed in the pockets formed by said openings and depressions and locked in said pockets by means of ledges formed by said down turned edges.

4. An article of manufacture comprising, a tread plate of sheet stainless steel having a plurality of circular openings provided with down turned edges, a reinforcing plate of sheet stainless steel having a plurality of circular depressions of slightly larger diameter than said circular openings, said reinforcing plate being disposed beneath said tread plate with the openings in said tread plate in register with said depressions and said down turned edges extending into said depressions, said tread plate and said reinforcing plate being spot welded together in face to face contact to form a laminated structure, and anti-slip material disposed in the pockets formed by said openings and depressions and locked in said pockets by said down turned edges, said anti-slip material extending upwardly above the plane of the upper surface of said tread plate.

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