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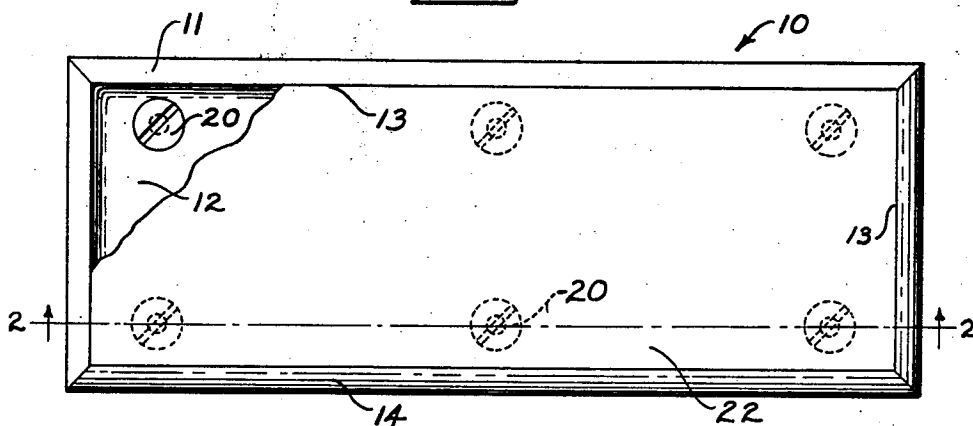
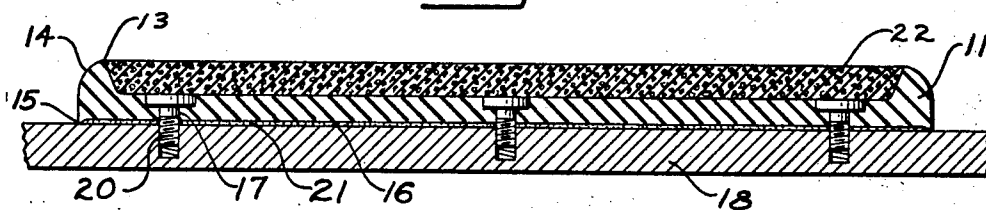
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2,373,698

NON-SPARKING DECK TREAD

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175-264

Fig. 1Fig. 2

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NONSPARKING DECK TREAD

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2 Claims. (Cl. 175-264)

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amended April 30, 1928; 370 O. G. 757)

This invention relates to treads and floor coverings, particularly to such material when used in locations such as powder magazines and fuel oil handling rooms of ships, for which there has been great difficulty in finding suitable deck treads.

One object of this invention is to provide non-slip safety treads. This is attained by the use of a latex cement covering, the surface of which has a high coefficient of friction both wet and dry.

Another object is to provide treads that will be non-sparking when struck by metal. This is accomplished by avoiding the use of a hard abrasive surface which may tear off tiny particles of a metallic object striking it with sufficient force to heat them to incandescence.

A further object is to provide treads which are non-sparking, due to presence of static electricity. This is accomplished by use of a non-metallic aggregate in the latex cement covering, and providing electrical conductive connectors to the metallic structure of the ship, so that static electrical charges will be dissipated.

Another object is to provide treads which will be easily installed and readily replaceable when worn. This object has been obtained by placing the above mentioned latex cement covering within a tray of hard rubber which can be secured to the deck by screws. Latex cement can be much more readily bonded to the hard rubber tray than directly to the metal deck, and the whole tread can be more readily removed when necessary.

Still another object is to provide a tread of suitable durability in service. This is accomplished by the use of the above-mentioned tray, as its edges protect the latex cement at the point of greatest wear without causing appreciable sacrifice of the desirable qualities of the latex cement.

A still further object is to provide an oil-resistant safety tread, which can be attained by using as filler for the hard rubber tray a putty of synthetic rubber such as neoprene or similar material containing an aggregate to increase its slip-proofness.

A final object is to provide a tread in the use of which is minimized the effect of underneath corrosion due to seepage of water under the tread. This object is effective by placing between the hard rubber tray and the metal decks a cement filler, by cupping the lower surface of the tray to cause its edges to bear more tightly against the deck, by the use of a large number

of screws placed along the edges of the tray, and by the use of a hard rubber stock having sufficient flexibility to allow the edges of the tray to be molded by the pressure of the screws to conform closely to the shape of the deck.

With the foregoing and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter described and illustrated in the drawing, in which:

Fig. 1 is a top plan view, partly broken away, of the tray of this invention; and

Fig. 2 is a sectional view on line 2-2 of Fig. 1.

There is shown at 10 the improved tread of this invention. This tread 10 includes a tray 11 having an aggregate receiving depression 12 in its upper surface extending to its edges 13. From these top edges 13 the outer side 14 curves smoothly down to an edge 15 forming a slightly cupped lower surface 16 on the bottom of the tray 11, this cup edge 15 extending completely about the lower surface 16 of the tray 11.

A plurality of countersunk screw-receiving apertures 17 extend through tray 11 adjacent the side walls of the depression 12. The tread 10 is secured to a metallic deck 18 by means of the metallic screws 20 extending through the apertures 17. Before the tray 11 is fastened in position on the deck, however, a cement filler 21 is placed between the bottom surface 16 of the tray 11 and the deck within the confines of the edge 15. A preferred composition of the filler 21 is 48½% of rubber latex, 48% hydraulic cement, and the balance of accelerators, anti-oxidants, and other conventional vulcanizing ingredients. The screws 20 are then placed in position and tightened so as to press the edges 15 tightly against the deck, thus preventing any seepage of water therebeneath with consequent corrosion of the deck surface. After the tray is thus firmly secured to the deck in its appropriate position, the depression 12 is filled with a putty 22 of synthetic rubber such as neoprene or similar material containing a carbon-black aggregate and having a high coefficient of friction, both wet and dry. A preferred composition of this putty 22 is 30% rubber latex, 30% hydraulic cement, 25% of an aggregate of 40-60 mesh ground walnut shells, 12½% carbon-black, and the balance of accelerators, anti-oxidants, and other conventional vulcanizing ingredients. This carbon-black aggregate makes the putty 22 an electrical conductor which is grounded by the metal screws 20 to the metal deck 18.

In operation, the treads 10 are thus assembled in appropriate position wherever needed. They

are particularly useful in powder magazines or other locations where it is imperative that all sparking be eliminated. The carbon-black bearing aggregate in the putty 22 prevents accumulation of static electricity by continuously discharging the same, as fast as it may be formed, through the screws 20 to the deck 18. Similarly, the absence of any hard, abrasive surface on the latex body 22 eliminates the possibility of any sparks when struck by any metallic object. When the putty 22 becomes worn away through constant use, it may be easily replaced in the same manner in which it was originally placed in position.

While the tray 11 has been described as being of hard rubber, it will be understood that this term "rubber" includes not only the natural rubbers but also any so-called synthetic rubber or rubber substitutes having the desired physical properties, including well known plastics with bases made of resin, urea formaldehyde, or any other suitable material, and that the term "rubber," as herein used, should be so interpreted. Although specific examples of the compositions of the filler 21 and putty 22 have been disclosed, any other suitable compositions may be used. Some suitable compositions are disclosed in Navy Department Bureau of Ships Specification 52-D-6 (int.).

Other modifications and changes in the number and proportions of the parts may be made by those skilled in the art without departing from the nature of the invention within the scope of what is hereinafter claimed.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A non-sparking deck tread comprising a semi-flexible tray having a filler-receiving depression in its upper surface, said tray being of a non-sparking, non-conducting material, a cupped edge extending about its lower surface, said tray being filled with a non-sparking electrical conducting putty, means mechanically securing said tray to a metal deck, said means electrically connecting the conducting putty to said deck, said means comprising a plurality of screws extending through countersunk apertures through the bottom of the tray depress and into the deck, and a liquid-proof filler between the bottom surface of the tray and the deck, said filler being confined between the tray and the deck by the cupped edge on the bottom of the tray, said cupped edge being pressed against the deck by the tray-securing means.

2. A non-sparking deck tread comprising a tray having a filler-receiving depression in its upper surface, said tray being of a non-sparking, non-conducting material, a cupped edge extending about its lower surface, said tray being filled with a non-sparking putty having electrical conducting properties, means mechanically securing said tray to a metal deck, said means electrically connecting the conducting putty to the deck, and a liquid-proof filler between the bottom surface of the tray and the deck, said filler being confined beneath the tray by the cupped edge thereof, said cupped edge being pressed against the deck by the tray-securing means.

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