Feb. 28, 1933. D. FINLEY 1,899,385

COVERING STRUCTURE

Filed Feb. 2, 1931

Fig. 1

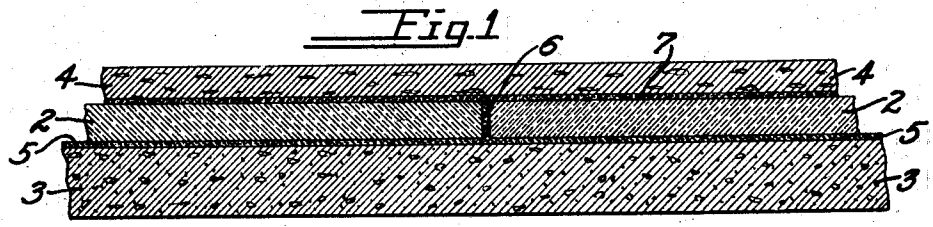
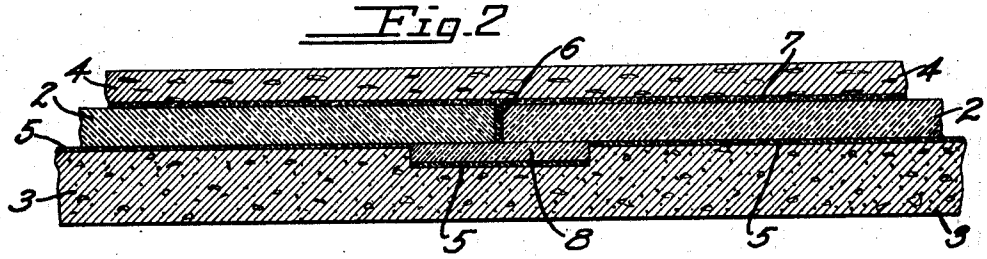


Fig. 2



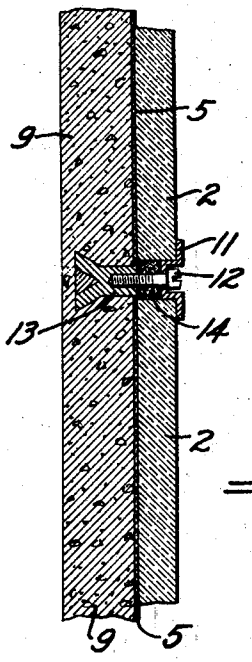


Fig. 3

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UNITED STATES PATENT OFFICE

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COVERING STRUCTURE

Application filed February 2, 1931. Serial No. 512,852.

My invention relates to a covering structure, and particularly to such a structure for covering surfaces exposed to moisture, such as concrete floors.

It is among the objects of my invention to provide a covering structure which will prevent moisture that percolates through a pervious base from wetting and subsequently rotting the top covering material.

Another object of my invention is to provide a covering structure which will permit a top covering to be permanently secured over a moisture pervious base.

Further objects of my invention include the provision, in a covering structure of the character described, of an insulating layer which is impervious to moisture; which will not become corroded by the agencies of electrolytic decomposition; and which is not effected by chemicals present on the surface of a moisture pervious base.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is a fragmentary vertical sectional view showing the covering structure embodying my invention as applied to a floor; and

Figure 2 is a similar view showing a floor structure embodying a variant form of my invention.

Figure 3 is a fragmentary vertical sectional view showing the insulating layer secured to a wall.

Broadly stated, the covering structure embodying my invention comprises an insulating layer of material interposed between a top covering and a moisture pervious base; linoleum and concrete being examples of such coverings and bases. The insulating layer is a dielectric material, impervious to moisture, and not effected by chemicals present in the base. Glass possesses these properties, and is preferably used. The insulating layer is preferably bedded on the base, and the top covering is preferably adhesively secured to the insulating layer by a bituminous cement.

In greater detail, Figure 1 shows a section through the covering structure embodying my invention, in which suitable moisture impervious, dielectric, and chemically inert sheets 2 are laid on the moisture pervious base 3 to form an insulating layer between the base and a top covering 4. If the base 3 is of concrete, the sheets 2 may be cemented to the base by bedding them on the wet concrete as soon as it is poured, in which case the sheets should be vibrated or moved to "puddle" a thin layer 5 of concrete of fine texture at the surface to form a continuous support for the insulating layer. The vertical joints at the seams where the sheets abut are preferably sealed by a highly waterproof cement 6.

A vitreous material such as glass possesses the properties desired in the sheets 2, and is preferably used. I have found that sheets of 16 ounce glass about 14 inches by 20 inches in size are substantially the most economical material to purchase and install. The top covering 4 may be any suitable material and is preferably secured to the insulating layer or sheets 2 by a suitable adhesive 7, such as a bituminous cement. A firm bond will be obtained between the adhesive 7 and the glass sheets 2, and, since the glass protects this adhesive against the distinctive agencies operating from below, a permanent bond will be secured.

When glass is installed on an old floor such as tile, wood, or concrete, it is preferable to provide a smooth foundation on which to bed the glass to secure it and prevent its being broken by traffic. Such a bedding may be formed by applying a suitable cementing compound, such as a water wetted mixture of two parts sand, one part Portland cement and one-tenth part hydrated lime, to the floor, as at 5 in the figures, into which the glass is pressed down as it is laid.

The construction shown in Figure 1 is sufficient for ordinary conditions, but when the water is forced up into the base 3 under higher pressures, an alternative construction giving a somewhat tighter seal may be em-

ployed. As illustrated in Figure 2, a relatively narrow strip 8 also preferably of glass is imbedded in the base 3 or in the leveling layer 5, beneath the seam sealed by the cement 6. The sheets 2 in contact with the strip 8 form a high friction path through which it is difficult for moisture to seep. If desired, this joint between the sheets 2 and the strip 8 may be made more impervious to moisture by cementing it with a suitable highly waterproof cement.

For light traffic conditions the covering 4 may be a linoleum, but for very heavy traffic conditions a pavement comprising a bituminous treated fibrous sheet, such as that described in United States Patent No. 1,610,019, is preferably employed. The glass is found to preserve the bond of this type of pavement on a moisture pervious base under conditions when it would otherwise be impaired by the action of chemicals present on the surface of the base; and the plastic pavement absorbs and distributes the shock of heavy traffic over the surface of the glass so that it is not fractured.

When it is desired to waterproof walls, a fastening device is preferably employed to aid in holding the sheets 2 of the insulating layer in place. As shown in Figure 3, the sheets 2 are bedded on a fine textured layer of cement 5, and are additionally held to the wall or base 9 by means of a yoke strip 11 engaging the edges of the sheets. This strip is pulled down into the joint by the screws 12 threaded into the bars 13 imbedded in the wall.

Before installing the strip 11 the joint between the sheets 2 is preferably filled with a waterproofing material 14 to insure tightness. Any suitable covering material may be applied over the insulating layer.

In some cases it may be desirable to use the glass sheets 2 without the top covering, and some very beautiful effects may be obtained either on walls or floors by using colored glass in the various panels set off by the strips, or by using coloring matter in the leveling layer 5 and using a mottled or smoky glass in the panels. By this method underground, or other rooms exposed to moisture, that are expensive to maintain in a sightly condition by methods used in the past, may be rendered permanently beautiful.

The maintenance of floors and runways is quite an item of expense in the various industries, and plastic pavements in general, and the type described in the patent above referred to in particular, have demonstrated a marked superiority and economy over wood, concrete, and other similar traffic surfaces commonly used. It has been found difficult, however, to maintain the bond between the plastic covering and its base, and particularly when moisture is forced into the base under considerable pressure. It is believed that the bond is destroyed by chemical agents such as alkali reacting with the bonding material to loosen the covering, or by dissolved salts carried through the base and deposited under the covering to raise the covering and break the bond, or both.

An interposed insulating layer of glass will prevent such an occurrence, because it is practically completely impervious to moisture. The trials conducted so far would indicate that this theory is correct since the bond between a plastic top covering and glass sheets laid as described herein gives promise of lasting indefinitely even though the moisture is under considerable pressure beneath the base. Furthermore, the insulating layer of glass is chemically inert and dielectric, and itself will not deteriorate.

In conclusion it is pointed out that the covering structure embodying my invention may be adapted to suit a wide variety of conditions, and that it may be used to render rooms, that would otherwise be damp and unhealthy, dry and tenable. It is also pointed out that the structure is of particular value when used to preserve the bond of a plastic bituminous pavement or of a bituminous cementing layer on a moisture pervious base.

I claim:

1. A covering structure for floors, pavements, and the like comprising a base, a plurality of glass sheets interfitted to cover said base, and a plastic covering bonded to said sheets.

2. A covering structure for floors, pavements and the like comprising a base, a plurality of abutting insulating sheets covering said base, a waterproof cement between the abutting portions of said sheets, and a plastic resilient covering bonded to said sheets.

3. A covering structure for floors, pavements and the like comprising a base, a leveling layer of cement on said base, an insulating layer of interfitted glass sheets bedded on said leveling layer, and a plastic fibrous covering bonded to the insulating layer, said insulating layer preserving the bond to permanently secure the covering over the base.

4. A covering structure for floors, pavements and the like comprising a concrete base, a plurality of abutting glass sheets bedded on said base, glass seam strips embedded in said base to underlie the abutting portions of said sheets, and a plastic covering bonded to said sheets.

5. A covering structure for floors, pavements and the like comprising a base, a glass sheet secured to said base, and a bituminous treated fibrous sheet adhesively secured to said glass sheet.

6. A covering structure for floors, pavements and the like comprising a base, a plurality of abutting glass sheets bedded on said

base and presenting a smooth surface, waterproof cement between the abutting portions of said sheets, and a linoleum covering adhesively secured to the surface of said glass sheets.

7. A covering for floors, pavements and the like comprising a base, a plurality of abutting glass sheets bedded on said base and presenting a smooth surface, waterproof cement between the abutting portions of said sheets, and a bituminous treated fibrous sheet adhesively secured to the surface of said glass sheets.

In testimony whereof, I have hereunto set my hand.

DOZIER FINLEY.