Dec. 23, 1947. R. V. GARNER 2,432,987

COVERING FOR FLOORS

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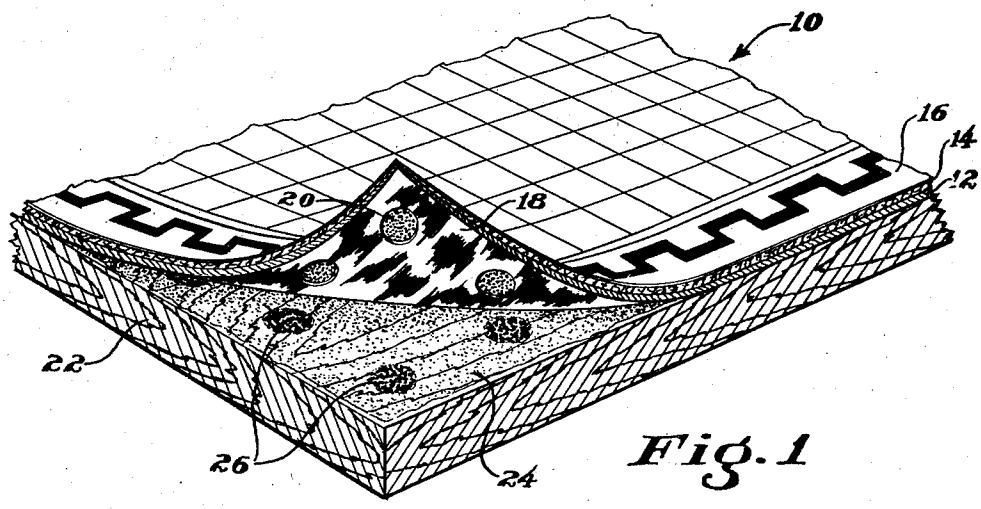


Fig. 1



Fig. 2

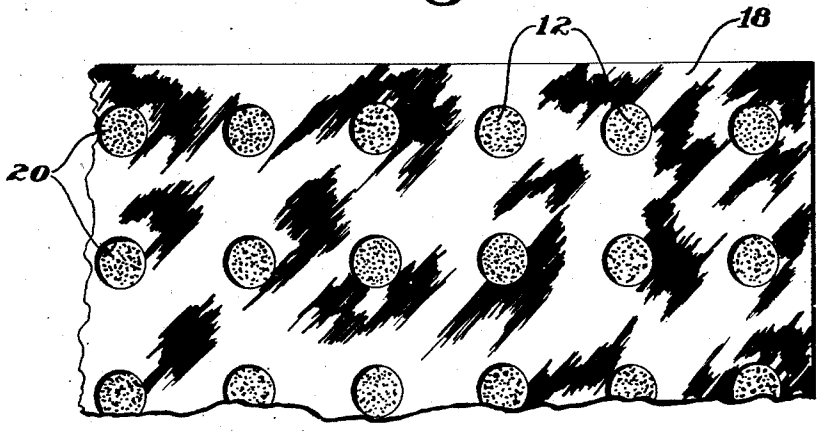


Fig. 3

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COVERING FOR FLOORS

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1

This invention concerns floor and wall covering material of the hard-surfaced flexible type, and particularly means and methods of making the same readily removable from cemented attachment to a sub-surface. The type of covering material principally concerned is that which has a felt base saturated with asphalt or other suitable bituminous or like filling material having an ornamental wearing surface of paint, ornamented paper, linoleum or the like, applied to one surface of the base.

To wear satisfactorily, covering of the flexible type should be firmly anchored to the sub-surface since looseness is likely to result in scuffing up, bulging and cracking of the covering. This is accomplished by attaching the covering to the base with a layer of cement, such as linoleum paste, which functions not only as a bonding medium but also to smooth over and fill irregularities in the sub-surface. The practice of cementing down the covering, while in most cases a practical necessity for proper wear, has caused much difficulty in removal of worn coverings for replacement. The problem has been particularly extreme in the case of the felt base type of coverings since the cement bond of such a base to a sub-surface is normally stronger than the comparatively weak tear resistance of such covering material.

To alleviate this difficulty, it has been proposed heretofore to cover the back surface of the base with a layer of a substance which, because of comparatively weak adherence to the cement or to the base or because of low structural strength making it easily partible or shatterable, would substantially reduce the resistance to removal of the cemented down covering. But these proposals have all involved the difficulty that, in proportion as the resistance to removal was thereby reduced, the covering was likely to work loose under wear with ensuing difficulties of bulging, cracking, tearing, etc.

By my present invention, the covering is rendered easily removable when worn out but yet so firmly bonded to the sub-surface by the cement as to avoid any danger of premature loosening under conditions of wear. This is accomplished by providing a composite back or under surface for the covering material which has alternate sets of areas which are of different composition and characteristics, one set of these areas being formed of a composition of a character such as to have a high resistance to removal of the overlying covering portions from cement-bonded relation to a sub-surface and the other alternate or intervening set of areas being formed of a different composition having a character such as to have little or no resistance to such removal of the overlying covering portions. The areas of high resistance may be the felt or other base itself

2

of the covering, or they may be of a composition applied over the base which has a high degree of adhesion to the cement and to the base and which is not easily partible or shatterable. The areas of low resistance to removal are preferably formed of a composition, such as certain wax preparations hereinafter described, which have either a low or non-adhesive character to floor covering cements or which are readily shatterable to release the covering therefrom. These latter areas may, however, be composed of substances which, although adherent to the covering cement, are easily partible or weakly adherent to the base of the covering.

The preferred method of treating the covering to provide my novel backing is to apply to the back surface of the base of the covering a discontinuous coating of the composition, such as a wax composition, which is weakly or substantially non-resistant to removal of the covering from cemented down position, leaving predetermined spaced uncoated areas of the base which are the areas highly resistant to such removal. The latter areas are distributed over the entire area of the covering and along or closely adjacent to the edges, preferably according to a regular pattern and in predetermined, regular dimensions.

In the accompanying drawing, which illustrates a preferred embodiment and practice of the invention—

Fig. 1 is a perspective view of a segment of floor and of my novel covering, with a corner of the covering curled up to illustrate removability;

Fig. 2 is a vertical section view of a segment of the covering on an exaggerated scale; and

Fig. 3 is a plan view of the back of a corner segment of the covering.

Referring to the drawing, as more particularly shown in Fig. 2 the covering illustrated, designated generally 10, is of the hard-surfaced, decorated, felt base type, having the usual asphalt-impregnated felt base 12 having adhered to its upper surface a hard, wearing layer 14 of linoleum plastic or the like, which has a painted ornamental design 16 on its outer surface. The design 16, although shown as painted on, may, of course, be inlaid in the layer 14 and the paint layer 16 dispensed with, or the layer 14 can be omitted with the paint layer 16 alone supplying the hard, wearing surface of the base.

In accordance with the invention, the under surface of base 12 is provided with a discontinuous coating 18 of a substance or composition of a character such as to provide a weak bond, or none at all, between the base and a layer of linoleum paste or other flooring cement intervening between the under side of the covering and the sub-surface to which the covering is applied. This coating is so applied as to leave uncoated areas, which appear as openings 20 in

the coating, distributed over the entire area of the back of the covering and adjacent its edges, these openings being preferably, as shown, of uniform, regular dimensions and uniformly closely spaced apart. The openings **20** leave the under surface of the base **12** exposed within their confines.

In applying the covering to a sub-surface such as the wooden floor **22** of Fig. 1, the sub-surface is first coated with a tacky layer of linoleum paste or like cement **24** and the covering is then laid on this layer with its under surface in contact therewith and pressed down so that the cement flows up into the openings **20** in the coating **18** and contacts the portions of the under surface of the base exposed by said openings. The impregnated felt base has by nature a strong adherence to such cements so that when the cement **24** sets, a strong covering-to-floor bond is formed in the uncoated areas **20**. On the other hand, the material of the coating **18** is of such a nature as to form, with the cement **24**, a negligible, if any, covering-to-floor bond in the areas between the openings **20**.

The areas **20** of firm bond are so proportioned and distributed as to effectively anchor the covering against accidental loosening during wear. They are, however, insufficient in extent to prevent stripping or peeling the covering as a unit from the sub-surface when it is desired to remove it. Resistance to such removal in the areas **18** is either absent or negligible. In the immediate areas **20** it is substantial but yet insufficient to cause breakage of the covering or an excessively strong pull to produce separation, the resistance in these areas at most causing tufts of the impregnated felt base therein to pull out, as indicated at **26** in Fig. 1, due to greater strength of the base-to-sub-surface bond in these areas than the cohesive strength of the impregnated felt. A corner of the covering may be loosened and raised, as indicated in Fig. 1, by inserting a knife blade between the edge areas **20** and exerting leverage, after which, by pulling upwards the loosened corner back over the still adhered covering, the latter may be stripped bodily from the floor.

The material which I prefer to use for the coating **18** is a wax or wax base composition which, by reason of substantial non-adhesion to the cement or ready shatterability, or both, forms with the cement little or no covering-to-floor bond. Among suitable waxes of this character may be mentioned beeswax, carnauba, candelilla, Montan and high melting point (140° F. or higher) paraffin. Waxes, other than paraffin, may be plasticized with paraffin. The wax may, if desired, be pigmented which, in the embodiment of the drawing, will produce an attractive mottled appearance for the back of the covering due to the presence of the uncoated areas **20**. A preferred composition for this coating is:

	Per cent
Montan wax	77
Paraffin	8.5
Red oxide	14.5

The coating **18** may, however, be of a composition such as disclosed in Bradley U. S. Patent No. 2,341,078, dated February 8, 1944, which has a weak, readily ruptured adhesion to the base of the covering, or a composition, such, for example, as described in Pennell U. S. Patent No. 2,274,848, of March 3, 1942, which is easily broken or partible in a plane parallel to the surface of the coating. If compositions of either of these types are used, some or all of the coating **18** will, on removal of the covering, remain adhered to the cement instead of peeling off with the covering, as illustrated in Fig. 1, in which the coating **18** is indicated as of the type substantially non-adherent to the cement.

As illustrated, the coating **18** is applied directly to the base material itself of the covering so that the said material forms the firmly cementable areas of the covering by leaving openings **20** in the coating **18**. It will be understood, however, that similar results can be obtained by first completely coating the undersurface of the base material with a substance such as paint, which, like asphalt-impregnated felt, forms with the cement a strong covering-to-floor bond, and then applying the discontinuous coating **18** over that. Or, the areas **20**, instead of being left as openings in the coating **18**, may be filled with such a substance.

The relative extent of the areas **18** and **20** is a variable within considerable lengths. Generally, however, the areas **20** should not constitute less than 4% of the total area of the covering to obtain adequate anchoring of the covering to the sub-surface, nor more than 30%, and preferably not more than 10% of the total area to provide proper ease of removability. Employing a material for the coating **18** which is substantially non-resistant to removal, such as the wax composition previously mentioned, and applying the coating **18** directly to the back of an asphalt-impregnated felt base of a covering which forms the uncoated areas **20**, I make the uncoated areas from 6 to 10% of the area of the covering.

For most effective use of the principle of the invention, the firm bond forming areas such as **20** should be of small size, uniformly distributed over the under surface of the covering. I prefer to make these equivalent in size to a ¼" to 1" diameter circle, ⅛" being about the minimum and 1½" about the maximum.

Having illustrated and described preferred embodiments and practice of the invention, what I desire to claim and secure by Letters Patent is:

1. A hard surfaced flexible covering for floors, walls and the like including an asphalt-impregnated felt base adapted to be removably cemented to an underlying supporting surface with a bond strong enough for normal use and to be subsequently removed therefrom without being destroyed by tearing, the said base having a continuous lower face coated with a discontinuous layer of a wax-including material presenting open spaces through which areas of said lower face are exposed, the said exposed areas extending generally parallel with the lower surface of the wax-including layer and at a depth uniformly approximating the thickness of said layer, such that the floor covering is more firmly attachable by adhesive contacting the said exposed areas of the said lower face than the adhesive contacting the exposed surface of the wax-including layer.

2. A hard surface flexible covering for floors, walls and the like including an asphalt-impregnated felt base adapted to be removably cemented to an underlying supporting surface with a bond strong enough for normal use and to be subsequently removed therefrom without being destroyed by tearing, the under surface of the covering comprising a set of spaced exposed areas and a set of intervening areas permanently coated with a wax-including material having a poor bond with floor covering cement, the set of in-

tervening areas being formed of a discontinuous coating of the material composing said areas on a continuous layer of the substance composing said spaced areas, leaving said layer exposed in said areas, said exposed portions of said layer extending generally parallel with the under surface of the coating at a depth uniformly approximating the thickness of said coating, the covering being more firmly attachable to a supporting surface by cement in said spaced areas than in said intervening areas.

3. The covering as claimed in claim 2 wherein said spaced areas constitute from 4% to 30% of the entire under surface of the covering and are distributed substantially uniformly thereover.

4. A covering as claimed in claim 2 wherein substantially all said spaced areas are of a size within a range of that of circles having diam-

eters of from ⅛ inch to 1½ inches and said spaced areas constitute not more than 10% of the entire under surface of the covering.

ROBERT V. GARNER.

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Disclaimer

2,432,987.—*Robert V. Garner*, Westwood, Mass. COVERING FOR FLOORS. Patent dated Dec. 23, 1947. Disclaimer filed Nov. 10, 1948, by the assignee, *Bird & Son, Inc.*

Hereby enters this disclaimer to claims 1 and 2 of said patent.

[*Official Gazette December 14, 1948.*]