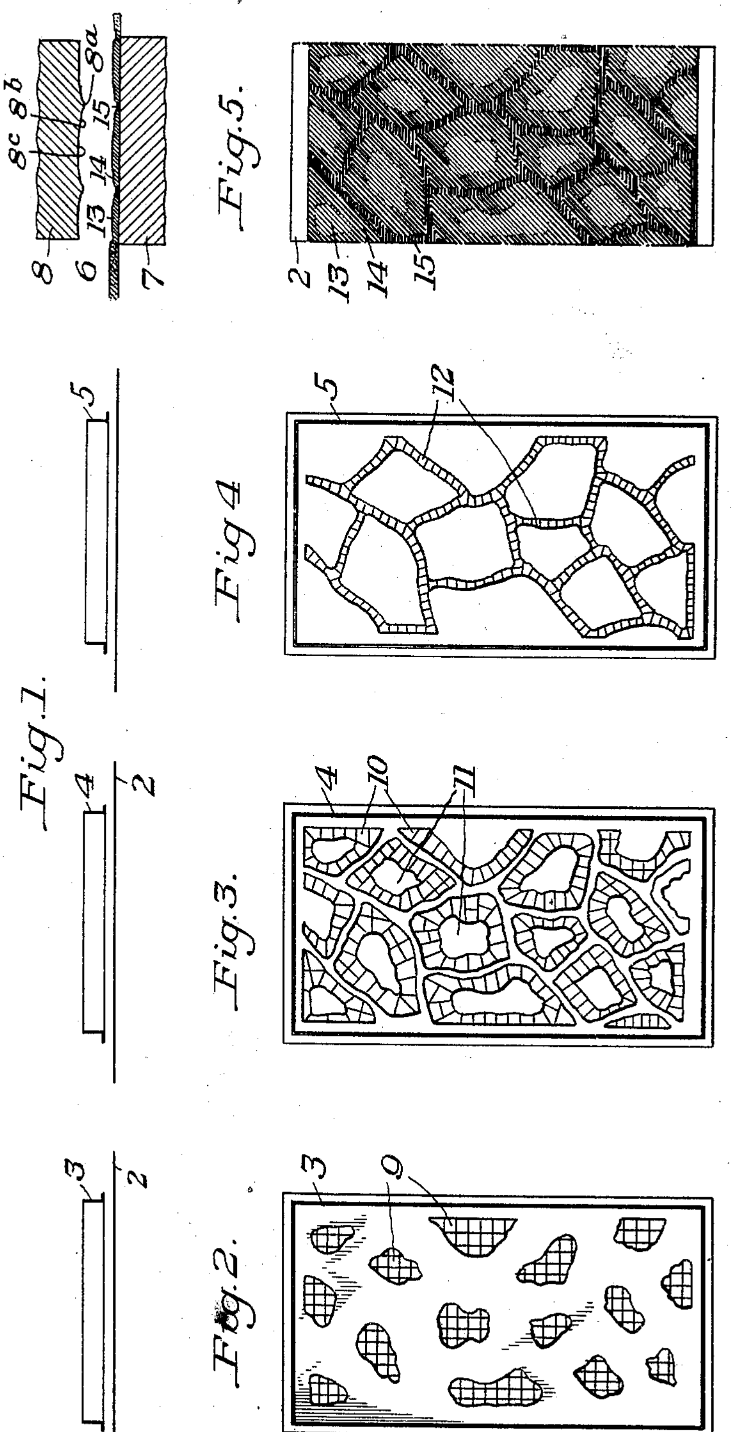
April 19, 1932. S. H. HARTMAN ET AL 1,854,933

ORNAMENTATION OF SURFACE COVERINGS

Filed Aug. 7, 1928 3 Sheets-Sheet 1



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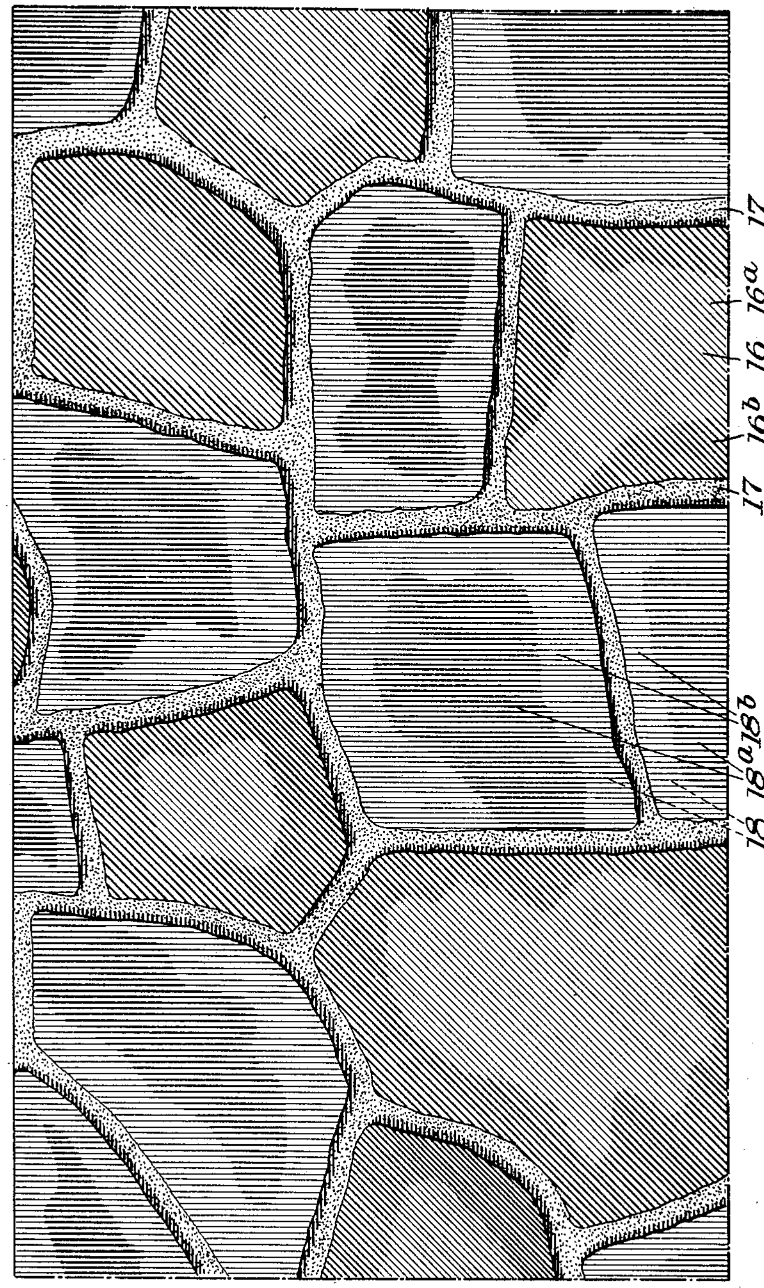

Fig. 6.

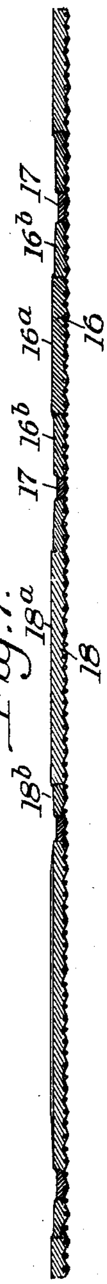

Fig. 7.

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Filed Aug. 7, 1928 3 Sheets-Sheet 3

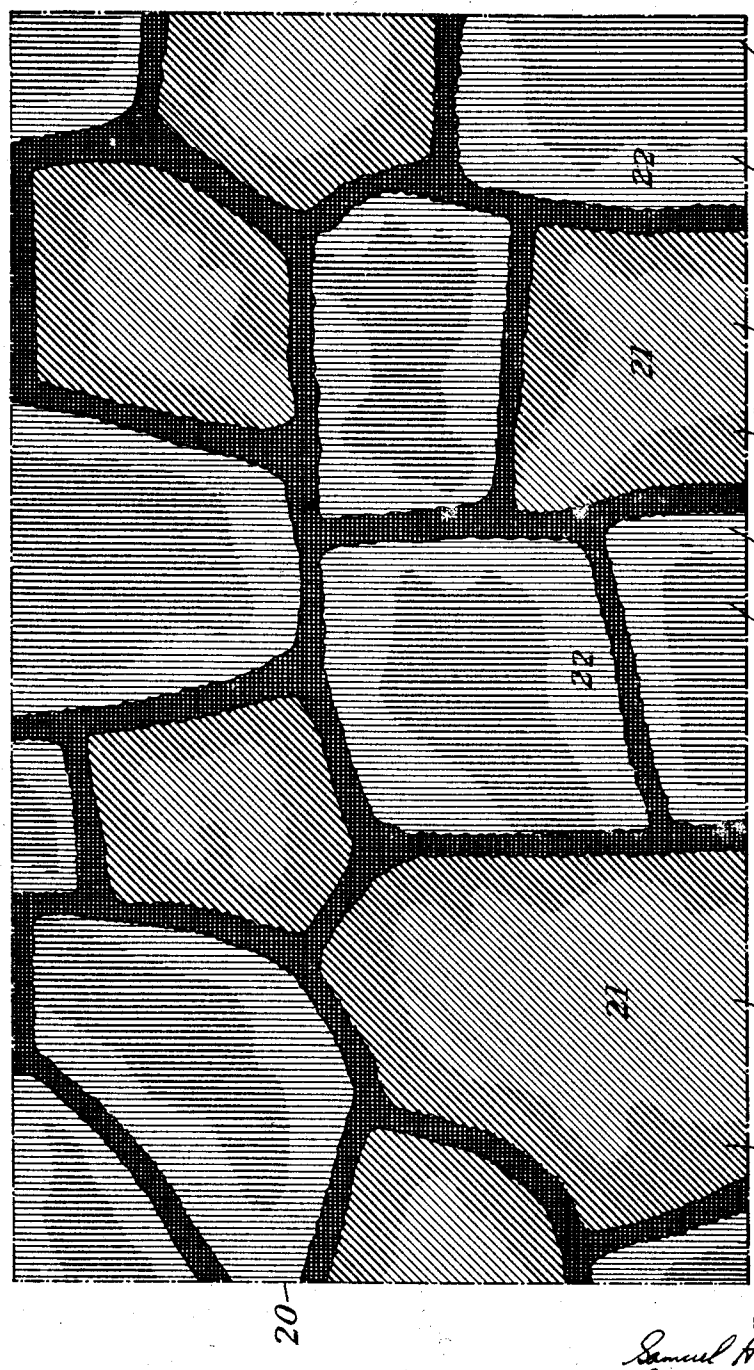

Fig. 8.

Fig. 9.

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UNITED STATES PATENT OFFICE

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ORNAMENTATION OF SURFACE COVERINGS

Application filed August 7, 1928. Serial No. 297,931.

This invention relates to hard surface coverings, and more particularly to the securing of new ornamental effects in coverings of this nature.

Molded inlaid linoleum, for instance, is commonly made with pattern units which are most commonly of symmetrical shape and are always of one color. These units, each usually represent square or oblong tile, are spaced apart, and between adjacent units there is frequently an inlaid pattern of a different color which is depressed below the level of the pattern units themselves to produce an embossed effect. This is shown, for instance, in patent to Humphreys and McCarthy, No. 1,630,085, dated May 24th, 1927.

According to one form of the present invention, molded inlaid linoleum is formed wherein the pattern units are comprised of two or more colors, or two or more shades of the same color. Preferably the different shades are non-symmetrically arranged with respect to the contour of the pattern so as to avoid any appearance of mechanical symmetry. The different pattern units are connected by an intervening joint which contrasts with the colors employed in the pattern units.

In order to enhance the appearance of the floor covering, different areas are pressed or embossed to different planes, the line of embossing conforming generally to the contour of the pattern units and to the contour of the patches of contrasting color in the same unit, whereby the units themselves stand out in relief while the line of juncture between the different colors in the same pattern unit is rendered less conspicuous.

Likewise, in a printed linoleum or felt base surface covering some of the pattern or tile units may have different areas printed in different shades of the same color and the patches or areas of different color may then be embossed to different planes coinciding with the contour lines of the various printed areas.

The invention may be readily understood by reference to the accompanying drawings, wherein

Figure 1 is a diagrammatic view showing the arrangement of the stencils and the embossing die in an apparatus for making molded inlaid linoleum according to the present invention;

Figure 2 is a plan view of one stencil used in a process according to my invention;

Figure 3 is a similar view of another stencil;

Figure 4 is a similar view of another stencil;

Figure 5 is a plan view of a single section of linoleum formed with the stencil arrangement shown in Figures 1 to 4 inclusive;

Figure 6 is a plan view on a larger scale of a portion of linoleum embodying the present invention;

Figure 7 is a longitudinal section through a piece of goods shown in Figure 6.

Figure 8 is a view similar to Figure 6 of a printed surface covering; and

Figure 9 is a section similar to Figure 7 representing a section through the printed material.

It will be understood that the drawings are merely illustrative of the invention, and the invention is not confined to the particular apparatus or design shown.

In the practice of making molded inlaid linoleum, a series of stencils are positioned at regular intervals along an endless conveyor. This conveyor supports a web of backing material such as burlap and serves to intermittently advance the burlap under the successive stencils. Each stencil is provided with openings in the bottom through which the granular mix can sift onto the burlap. The outline of the openings corresponds to the colored areas to be applied at each stencil. Overlapping of the stencils in the usual process is avoided. After the material has emerged from under the last stencil of the series, the burlap is covered with small piles of loose granular mix. The burlap is then moved under a press where the mix is compacted, the granular material being formed into a single sheet having a pattern thereon. According to the practice disclosed in said Patent No. 1,630,085 these portions of the pattern simulating mortar joints are

depressed below the general plane of the level of the goods.

In the present invention the individual pattern elements, instead of being of a single color, are comprised of two or more shades of the same color or two or more colors whereby a novel effect can be secured. This effect is particularly desired where it is desirable to produce a pattern generally similar to a floor formed of odd shaped stones to produce an appearance of irregularity in the surface of the stones and to produce an appearance of stones which have become worn with long use.

In Figure 1, 2 designates a strip of burlap or other fabric commonly used as a backing for linoleum. At 3, 4 and 5 are designated stencils through which the granular material is sifted on to the backing to produce the desired design. At the right hand end of Figure 1 is indicated a press 6 for embossing the material after it has previously been compacted in a press, not shown. The press 6 has a bed portion 7 and a die portion 8.

The stencil 3 is shown in Figure 2 and is provided with a plurality of irregularly shaped openings 9.

In Figure 3 is shown a plan view of the stencil 4. This stencil has a plurality of openings 10 with a solid central portion 11. Each of the openings 10 has the contour of the pattern element which it is desired to produce. The solid inner portion 11 conforms to the shape of the openings 9 in the stencil 3 shown in Figure 2.

In Figure 4 there is shown a plan view of the stencil 5. This stencil has narrow openings or slots 12 therein corresponding to the outline of the mortared joints between the units of the complete design.

In the operation of molding linoleum, one shade of granular mix is sifted through the openings 9 on to the burlap backing 2. The burlap backing 2 is moved intermittently, and is advanced so that each section will be brought into register with each stencil. After a section has received granular material from the stencil 3, it eventually comes under the stencil 4 where a granular mix of a different characteristic, preferably a different shade of the same color, is sifted through the stencil 4. The material sifted through the stencil 4 falls around the material previously applied through the openings 9 in the stencil 3. Under the stencil 5, material of still another characteristic is sifted on to the burlap, this material contrasting in color to the material applied at any preceding station. After passing under the last stencil 5 the goods are first compacted in a press, not shown to compact the granular material on to the burlap and form a continuous sheet.

The sheet thus produced has a pattern with the individual pattern units having an irregular portion 13 of one shade and another portion 14 of another shade with a joint 15 connecting the various units. The portions 13 do not conform to the contour of the units.

The upper die 8 for embossing the material has an uneven surface for embossing or depressing certain parts of the material. The die is so arranged that the material outlining the joints between units is depressed to the greatest extent. The portions 14 are pressed lower than the portions 13. By thus depressing different portions of the material to different levels, a novel appearance is secured. The boundary lines of the different levels of embossing conform substantially to the outlines of the various components of the pattern. By reason of the fact that the portions 13 stand out in relief the line of color juncture between the portion 13 and the portion 14 is rendered less conspicuous and the desired shaded effect is secured. This effect cannot be secured to advantage by embossing alone, nor can it be secured to good advantage by merely using different shades of mix.

The different shades of color in the several tessera when compressed are united along an irregular line of junction characteristic of molded inlaid linoleums. As shown in the drawings, this line, besides being irregular or palsied in character, is made wavy, that is to say, is directed in an irregular manner, which fact, coupled with the irregular or wavy character of the line, is of great value in securing the effects which we desire to obtain. The embossing of the tessera themselves is along such irregular line, the result being that a highly desirable shaded effect is obtained, it being that of stones of irregular non-planar surface.

In Figure 1 the portions 8^a of the die are for pressing the surfaces 15, the portions 8^b press the surfaces 14 and the portions 8^c press the portions 13.

In Figure 6 the floor covering made in accordance with our invention is illustrated to better advantage. In this figure we have shown how different pattern units may be of different colors. Cross-hatching in the same direction indicates the same color while difference in the intensity of the cross-hatching indicates variations in the shade of the color.

In this figure there are pattern units 16 having a portion 16^a corresponding to the portion 13 of Figure 5. The portion 16^b corresponds to the part 14 of Figure 5. The joint between tiles is designated 17. It will be noted that in the units 16 the high central portion is of the lighter shade while the surrounding lower portion is of a darker shade. Other units 18 have high portions 18^a with surrounding lower portions 18^b. In these blocks the higher portions 18^a are of darker shade and the portions 18^b of lighter shade. The blocks 16 and 18 are of contrasting color.

The ornamental effect which is produced

simulates a flooring made of slates and stones wherein the irregularities are represented by the different shading and by the difference in height of the various components of the pattern. This effect is increased by reason of the fact that the central or high portions 16^a and 18^a are non-symmetrical with respect to the blocks in which they are located and do not conform to the contour of the blocks.

In Figure 7 the elevation of the different parts of the pattern can be readily seen.

The appearance of the hard surface covering can be further modified by using mixes of different grain sizes or grain characteristics in the different zones. For instance, in Figure 5 the zones 13 may be formed of coarser grained material than the material of the zones 14.

In Figures 7 and 8 there is shown the same idea of ornamentation as applied to a printed hard surface covering.

In these figures the sheet 20 of felt base or other material has a printed pattern thereon a pattern wherein 21 and 22 are units of different colors separated by a background simulating a joint structure which is in marked contrast to the colors of a units proper. Each of the units has patches or areas 21^a and 22^a, respectively, and other areas 21^b and 22^b which for the most part surround the first mentioned areas, respectively. Areas 21^a and 21^b are of the same color but of different shades. This is true, also, of the areas 22^a and 22^b. The areas 21^a and 22^a are of irregular shape and are not symmetrical with the contour of the units. By reason of this the worn effect of tiles or stones is simulated.

In order to further secure this effect, and remove any flat, spotted appearance, the different areas are embossed to different planes, the lines of elevational contour corresponding to the outlines of the different pattern elements. The background simulating the interliner is preferably depressed to the greatest extent, with the areas 21^a and 22^a standing in relief above the portion 21^b and 22^b. This relieves the spotted mechanical appearance of the differently shaded areas and relieves the mechanical sharpness of the printed design.

While we have illustrated one embodiment of our invention it will be understood that the invention is not confined to any particular pattern, or to the production of any particular effect, although it is best adapted to the production of stone floor effects in a molded floor covering.

We claim:

1. As a new article of manufacture, an ornamented hard surface covering material having a pattern comprised of irregular unsymmetrical pattern units, some of which are differently colored from others, said units being connected by an interliner portion simulating a joint and contrasting with the color of the units, said units having different areas in different shades of the same color, the different areas being irregular and unsymmetrical with reference to the contour of the units, said areas being pressed to different levels, the contour lines of elevation conforming substantially to the outline of the differently shaded areas thereby tending to conceal the spot-like appearance of the different areas and produce a shaded effect.

2. As a new article of manufacture, an ornamented hard surface covering material having a pattern comprised of irregular unsymmetrical pattern units, some of which are differently colored from others, said units being connected by an interliner portion simulating a joint and contrasting with the color of the units, said units having different areas in different shades of the same color, the different areas being irregular and unsymmetrical with reference to the contour of the units, said areas being pressed to different levels, the contour lines of elevation conforming substantially to the outline of the differently shaded areas thereby tending to conceal the spot-like appearance of the different areas and produce a shaded effect, the interliner being depressed below the different areas of the units whereby the units as whole stand in relief and the different areas of the units are in relief.

3. As a new article of manufacture, a molded inlaid linoleum having a pattern comprised of individually molded pattern units joined by a molded joint simulating a mortar joint, each unit being divided into at least two areas of irregular outlines and contrasting appearance, one of said areas being depressed below the other, and the joint simulating a mortar joint being depressed below the units.

4. As a new article of manufacture, a molded inlaid linoleum having a pattern comprised of individually molded pattern units joined by a molded joint at least a part of which lies at a level different from the level of the adjacent surfaces and simulating a mortar joint, at least some pattern units being divided into at least two areas of irregular outline and of contrasting appearance, one area being the same color as the other area but of a different shade, and the inlays simulating the mortar joint contrasting with the colors in the units, said portions of the units being pressed to different thicknesses whereby one portion stands in relief above another portion.

5. As a new article of manufacture, a molded inlaid linoleum having a pattern comprised of individually molded pattern units joined by a molded joint simulating a mortar joint, at least some pattern units being divided into at least two areas of irregular outline and of contrasting appearance, one area being the same color as the other area but of

a different shade, and the inlays simulating the mortar joint contrasting with the colors in the units, said portions of the units being pressed to different thicknesses whereby one portion stands in relief above another portion, the inlay simulating the mortar joint, being pressed to a plane below the plane of either portion of the units.

6. In the manufacture of molded inlaid linoleum the steps of separately molding pattern elements which have two portions of contrasting color and then pressing the molded product and depressing one portion of the pattern element to a plane below the other and depressing a portion between separate pattern elements below either portion of the pattern elements.

7. As a new article of manufacture, a molded inlaid linoleum having individual pattern elements, each comprised of irregular patches of mix of contrasting appearance and one of which is pressed to a plane below the other, said individual pattern elements being separated by a portion of small area pressed below the plane of either portion of the pattern elements.

8. In the manufacture of molded inlaid linoleum the steps consisting in laying color on a backing to form pattern elements with joining areas therebetween, at least some pattern elements being formed by laying different shades of the same color, there being the irregular line of juncture between such shades characteristic of inlaid linoleum, such lines of juncture also being directed in an irregular manner, and depressing one of the shades of such color below the other color in the same pattern element, such depression extending along said line of junction.

9. As a new article of manufacture, molded inlaid linoleum having individual pattern elements with joining areas therebetween, at least some pattern elements being comprised of irregular patterns of different shades of the same color, there being the irregular line of junction between such shades characteristic of inlaid linoleum, and the lines of junction being directed in an irregular manner, a patch of one shade being depressed along such irregular line of juncture below the adjacent shade of the same color in the same pattern element.

10. As a new article of manufacture, linoleum comprising pattern units having portions of different appearance from the marginal portions upstanding from such marginal portions, the joints between pattern units being depressed below said marginal portions.

11. As a new article of manufacture, a flexible hard surfaced covering material comprising pattern units of different color and having portions of different appearance from the marginal portions upstanding from such marginal portions, the joints between pattern units being depressed below said marginal portions.

12. As a new article of manufacture, a flexible hard surfaced covering comprising pattern units of different color and having portions of different appearance from the marginal portions upstanding from such marginal portions, and joint portions between the pattern units, said joint portions lying at least in part at a level different from the level of said marginal portions.

13. As a new article of manufacture, linoleum comprising pattern units having marginal portions and joints therebetween, the joints being depressed below the marginal portions, at least some of the pattern units having central portions of irregular contour and different appearance upstanding from the marginal portions.

14. As a new article of manufacture, linoleum comprising pattern units having marginal portions and joints therebetween, the joints being depressed below the marginal portions, at least some of the pattern units having central portions of irregular contour upstanding from the marginal portions and of a different shade or color than the marginal portions.

In testimony whereof we have hereunto set our hands.

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