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C. E. RAHR ET AL

WATERPROOF PRODUCT AND PROCESS OF MAKING SAME

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Fig. 1.

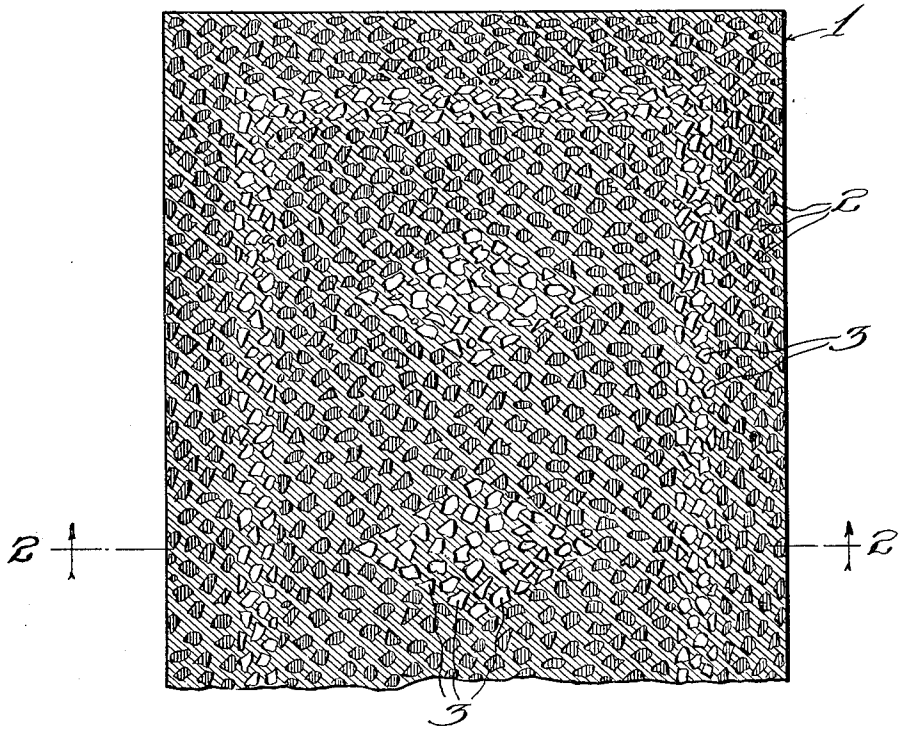
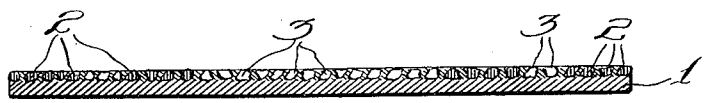


Fig. 2.



Witness:

Inventor
Lester Kirschbraun.
Chester E. Rahr.
by Frank L. Belknap. Atty.

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UNITED STATES PATENT OFFICE.

CHESTER E. RAHR, OF BOSTON, MASSACHUSETTS, AND LESTER KIRSCHBRAUN, OF CHICAGO, ILLINOIS.

WATERPROOF PRODUCT AND PROCESS OF MAKING SAME.

Application filed November 19, 1919. Serial No. 339,210.

To all whom it may concern:

Be it known that we, CHESTER E. RAHR and LESTER KIRSCHBRAUN, both citizens of the United States, residing, respectively, in the city of Boston, county of Suffolk, and State of Massachusetts, and the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Waterproof Products and Processes of Making Same, of which the following is a specification.

This invention relates to improvements in waterproof products and process of making same and is directed more particularly to ornamental flood coverings, ornamental wall boards or the like.

Among the objects of the invention are to produce a product which may be made from ordinary mineral surface so-called ready-made roofing of commerce, the exposed face of which forms a smooth surface having the same appearance as an inlaid mosaic floor; to produce a product of the character referred to in which the interstices of the particles of the mineral surfacing are filled with waterproof adhesive binder and in which the upper edges of the mineral surfacing are smooth and also exposed so as to reproduce the natural color of this mineral surfacing; to produce a product which can be made from ordinary mineral surface ready-made roofing and in which if desired the mineral surfacing may be applied in predetermined designs or configurations or in other words separated areas of different color; to produce a product which can be made by a simple attachment to the ordinary roofing machinery now in use in which after the mineral surfacing is applied, a liquid emulsion of pre-determined color is spread over the mineral surfacing, dried over hot rolls and the entire surface then ground down to the desired smoothness.

Fig. 1 is a face view showing the design produced by grinding the surface of the sheet.

Fig. 2 is a view taken along the line 2—2 in Fig. 1.

Referring to the drawings, the sheet 1 is coated and surfaced with a granular surfacing shown at 2. Upon this granular surfacing is imposed a colored emulsion such as that hereinafter explained, which colors the surfacing and fills the interstices between the fragmentary material. To produce the design effect, the granular surface is abraded or ground as shown at 3 to reveal the color of the surfacing material, that is the colored emulsion is removed and the surface of the granular material partially removed to show the mineral coloring of the broken fragments.

The design shown in Fig. 1 has a banded effect near the margin and diamond shaped figures arranged at predetermined positions in the central part of the sheet.

Attempts heretofore to use mineral surface ready roofing as floor coverings have not been entirely successful, partly for the reason that the interstices between the mineral particles accumulate detritus or foreign matter and is not readily cleaned partly because it does not give a smooth surface to walk on and partly because you cannot obtain an attractive ornamental effect.

The process of our invention may be carried out as follows: We first make an emulsion of a pitchy binder, water and an emulsifying agent; for example, the residue of wax tailings produced from the distillation of petroleum wax tailings with superheated steam. (Animal or vegetable pitches that are colorable may be used or resins tempered with drying oils as linseed oil, may be used.) We then make a paste or solution of water and clay of colloidal character and to this is gradually added the pitchy binder in a heated liquid condition with thorough agitation of the mix. This forms an emulsion which can be thinned with water and in which the binder is in the internal phase and the water in the external phase. To this emulsion is added a pigment or soluble dye of a pre-determined color and in quantities sufficient to thoroughly color the pitch.

This emulsion is then applied to the mineral surface of so-called mineral surface ready-made roofing so as to completely fill the superficial intersticies or voids in the mineral surfacing. The ready-made roofing or floor covering, after this emulsion has been applied as above stated, is passed between suitable drying rolls to remove or evaporate the water content of the emulsion thus causing the particles of the pitchy binder to effectively coalesce and form a continuous matrix around the particles of mineral surfacing. This waterproof product then passes between abrading rolls in which the uppermost portions of the grit or

mineral particles are abraded away to flat surfaces which are exposed to view. In other words, a smooth surface is formed in which certain of the grit or mineral particles have flat upper surfaces at the same elevation as that of the colorable binder. This produces a mosiac effect. For example, if the mineral surface was composed of crushed white stone, the background or matrix might be for example red. On the other hand, the grit particles might be formed of green slate and the matrix brown. Any desired arrangement of colors may be used. Also the mineral surfacing may be so applied to the felt base as to form alternating areas of different colors as green and red arranged in symmetrical designs, in which case the background or matrix should be of a different color than either.

The matrix above referred to can be applied to the mineral surfacing of ordinary roll roofing which has previously been made or can be applied as part of a continuous operation with the formation of the mineral surface roofing or flooring itself. In the latter case, the roofing will be relatively hot at the time the mineral surfacing is applied and emulsion can then be applied to a hot surface which may be hot enough inself to evaporate the water and permit the colored binder to coalesce.

We have heretofore stated that this product may be used as a flooring in which case it produces a much more durable and wear resisting covering because of the strength and wear resistance of the mineral particles; that is, in the case of printed floor coverings having a felt base that are now in use. It also permits of much more variation in appearance and thus allows of a more attractive product than in the case of the product last referred to; as for example, the mosaic effect referred to.

The product may be also useful as wall boards for interior use or for use as asphalt shingles or in place of the exterior stucco finish.

We claim as our invention:

1. A waterproof covering consisting of a fabric base, an adhesive coating, a mineral surfacing applied thereto in designs of different colors, a waterproof matrix of a different color than that of the mineral surfacing, filling the interstices between the mineral surfacing, the upper surface of the covering being ground down so as to expose the color of the mineral surfacing.

2. A waterproof covering consisting of a fabric base, an adhesive coating, a mineral surfacing applied thereto, a waterproof matrix of a different color than that of the mineral surfacing, filling the interstices between the mineral surfacing, the upper surface of the covering being ground down so as to expose the color of the mineral surfacing.

3. A waterproof covering consisting of a foundation, a granular surfacing adhesively applied thereto, a waterproof matrix of different color than the granular surfacing, filling the interstices between the granular particles, and the exposed surfacing of the covering ground down or abraded down to expose the color of the granular particles and forming a continuous smooth surface.

4. A waterproof covering consisting of a foundation, a granular surfacing adhesively applied thereto, a waterproof matrix of different color than the granular surfacing, said matrix containing an adhesive waterproof binder and colloidal clay, filling the interstices between the granular particles and the exposed surfacing of the covering.

5. A new product consisting of a foundation, a granular surfacing applied thereto so as to remain in relatively fixed position and a matrix of predetermined color filling the interstices between the granular particles and containing a waterproof adhesive and colloidal clay.

6. A new product consisting of a foundation, a granular surfacing applied thereto so as to remain in relatively fixed position and a fusible material of pre-determined color filling the interstices or voids between the granular particles and the whole ground down to form a uniformly smooth surface in which the color of the granular particles is exposed.

7. A process of making a waterproof covering consisting in applying a waterproof matrix of pre-determined color in the voids of the granular surfacing of prepared roofing and then smoothing down the matrix and abrading the upper edges of the granular surfacing to form a uniformly smooth sheet in which the color of the granular surfacing is exposed.

8. A process of making a waterproof product consisting in applying a granular facing to a foundation sheet so that the granular facing is in relatively fixed position relative thereto and then filling the superficial interstices of the facing with a waterproof matrix of different color than the facing, said matrix being applied in the form of an emulsion containing an emulsifying agent and a waterproof binder.

9. A new product consisting of a foundation, a granular surfacing applied thereto so as to remain in a relatively fixed position, and a matrix of predetermined color filling the interstices between the granular particles and containing a waterproof binder and an emulsifying agent.

CHESTER E. RAHR.
LESTER KIRSCHBRAUN.