No. 685,520. Patented Oct. 29, 1901.

D. N. MELVIN.

MANUFACTURE OF LINOLEUM FLOOR CLOTH.

(Application filed Aug. 3, 1901.)

(No Model.)

Fig. 1.

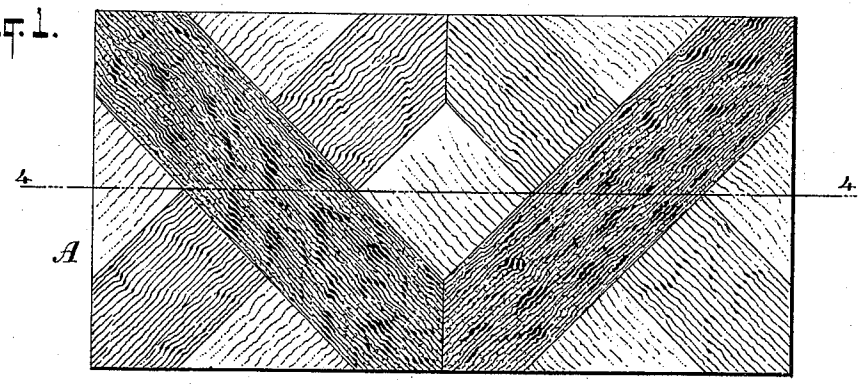


Fig. 2.

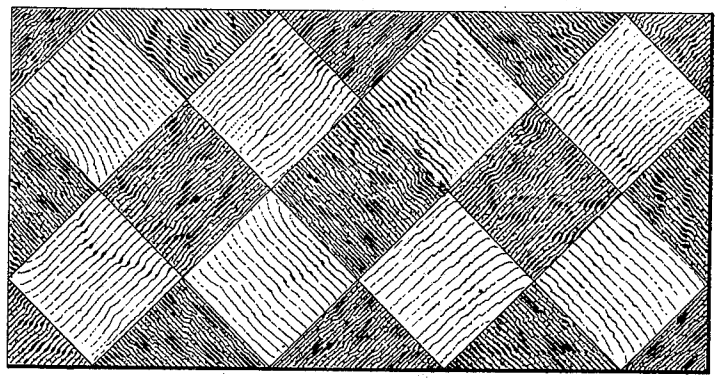


Fig. 3.

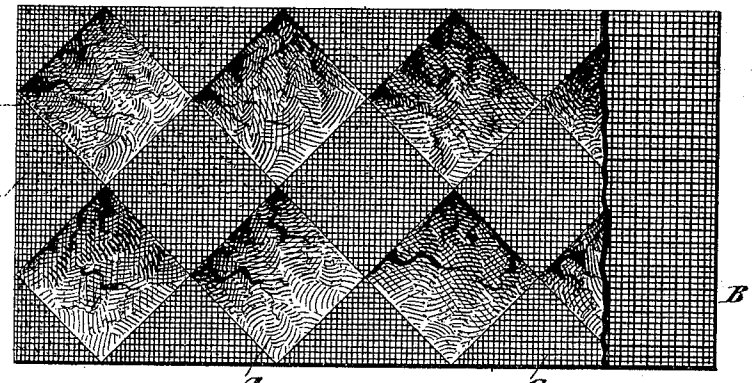
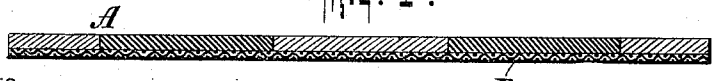


Fig. 4.



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UNITED STATES PATENT OFFICE.

DAVID NEILSON MELVIN, OF LINOLEUMVILLE, NEW YORK.

MANUFACTURE OF LINOLEUM FLOOR-CLOTH.

SPECIFICATION forming part of Letters Patent No. 685,520, dated October 29, 1901.

Application filed August 3, 1901. Serial No. 70,743. (No model.)

To all whom it may concern:

Be it known that I, DAVID NEILSON MELVIN, a subject of the King of Great Britain, and a resident of Linoleumville, in the county of Richmond and State of New York, have invented certain new and useful Improvements in the Manufacture of Linoleum Floor-Cloth, of which the following is a specification.

The invention relates to improvements in the manufacture of linoleum floor-cloth, and pertains more especially to improvements in the manufacture of the character of inlaid linoleum floor-cloth made the subject of Letters Patent No. 412,279, granted to me on October 8, 1889, in accordance with which patent blocks or tesseræ cut from sheets of different colors are arranged and secured upon a fabric or foundation to produce mosaic patterns.

The object of the present invention is preferably to produce inlaid linoleum floor-cloth comprising a canvas or other foundation and superposed blocks, pieces, or tesseræ of linoleum composition which shall imitate in a more perfect degree than has heretofore been possible wood, marble, onyx, and the like, the floor-cloth made according to my invention representing parquet and marble flooring and the like, the tesseræ distinctly delineating the graining or layers of the wood and the veining, layers, or lines of the marble and onyx.

In accordance with the process of manufacture described in the aforesaid Letters Patent No. 412,279 sheets of linoleum composition variously colored were rolled, and from these differently-colored sheets the blocks or tesseræ were cut and then arranged in appropriate order upon the canvas back or foundation, to which they were secured by heat and pressure, each block or piece representing substantially one uniform color devoid of graining or veining, the linoleum sheets having each been of substantially one uniform color throughout.

In accordance with my present invention I impart to the linoleum sheets the graining or veining I desire represented in the floor-cloth and cut the tesseræ from these sheets and apply them to the canvas or other backing by heat and pressure in the usual or any suitable manner.

In accordance with my invention I produce a new article of manufacture—to wit, inlaid linoleum floor-cloth possessing in its patterns the elongated graining, layers, or veining of wood, marble, onyx, and the like—and this new article of manufacture is produced by a novel process, my invention therefore including both the process of manufacture and the product of such process.

In the accompanying drawings I illustrate somewhat diagrammatically, but as accurately as can be done by the pen, several specimens of inlaid linoleum floor-cloth produced in accordance with and embodying my invention.

Figure 1 is a plan view of a piece of inlaid linoleum floor-cloth representing one pattern in imitation of pieces of inlaid wood; Fig. 2, a like view of a piece of inlaid linoleum floor-cloth representing another pattern in imitation of pieces of inlaid wood; Fig. 3, a like view, partly broken away to disclose the foundation fabric, of a piece of inlaid linoleum floor-cloth made in imitation of marble; and Fig. 4, a longitudinal section on the dotted line 4 4 of Fig. 1.

In the drawings, A designates the pieces, blocks, or tesseræ of linoleum composition, and B the burlap, canvas, or foundation upon which the tesseræ are secured by heat and pressure in accordance with known methods, the lower surface of the tesseræ adhering to the foundation and the adjoining edges of the tesseræ coalescing to produce a homogeneous fabric or floor-covering.

In carrying out my invention I first prepare the composition for the production of the sheets from which the pieces, blocks, or tesseræ are to be cut, and in this preliminary stage of the process it is necessary first to determine the proper colors which are to be contained in the different pieces, blocks, or tesseræ intended to compose the finished pattern, it being necessary that said pieces, blocks, or tesseræ should differ in their general color, so as to be distinguishable from one another and present contrasting effects in the floor-covering in accordance with the taste of the manufacturer and the particular

nature of the product desired. Having determined upon the colors desired for the pieces, blocks, or tesseræ, the sheets are prepared from linoleum composition possessing said colors, and this composition is formed by mixing together two or more separate quantities of granulated linoleum composition, each quantity or batch possessing an independent color and the granulated matter being thoroughly mixed, so that there may be a substantially even distribution of one color with the other color. The granulated composition thus prepared by mixing is of usual character, and several processes are well known, both for the production of the granulated linoleum and for the mixing of the same, the mixing consisting simply in intermingling granulated composition of one color with granulated composition of a different or contrasting color. The granulated composition having been thus prepared in two or more colors is submitted to rollers by which the composition is rolled into sheets, the sheets when formed being primarily somewhat thicker than the sheets required for the finished linoleum product and being interspersed with the different colors which were present in the granulated composition. The sheets of linoleum composition thus formed are then rerolled one or more times, so as to reduce their thickness to the proper extent and to accomplish the further important object of elongating the variously-colored portions of the sheet presented by the granules or pieces of the composition, so that such portions may be extended to form the graining or veining of the wood, marble, onyx, or the like to be imitated, the rerolling of the sheet as primarily formed being done as often as necessary for the production of the particular extent of elongation of the granules or color-sections desired in accordance with the particular variety of wood or stone it is desired to represent. The sheet of linoleum composition having thus been formed and rolled down to the proper extent for use on the canvas or other foundation and in accordance with the length of the veins or graining desired is ready to be reduced into the blocks, pieces, or tesseræ for application to the canvas or other foundation, and this reduction will be performed in the customary way or in any suitable manner, the sheets then not being materially different (with the exception of the coloring) from the sheets referred to in the aforesaid Letters Patent No. 412,279 and their application to the canvas or foundation being performed in the manner disclosed in the said patent or in any other suitable way. It will be necessary, of course, in the production of patterns for the canvas or other foundation that the pieces, blocks, or tesseræ shall possess contrasting colors, and for this reason the rolled sheets for a pattern will differ from one another, all of the sheets being formed of granulated linoleum of mixed colors, but each sheet differing in its colors from the composition of the other sheets, this being the case where, for instance, in the imitation of parquetry, such as represented in Figs. 1 and 2, all of the pieces, blocks, or tesseræ possess the elongated graining or veining in imitation of wood. When, however, a marble pattern is to be produced, the pieces, blocks, or tesseræ cut from the granulated sheet possessing the veining or graining will be utilized in conjunction with plain uniformly-colored pieces, blocks, or tesseræ, such as those designated by the letter C in Fig. 3, cut from plain sheets of linoleum composition of the character described in the aforesaid Letters Patent No. 412,279, it being desirable in the formation of patterns such as disclosed in Fig. 3 to employ the plain or unicolored pieces C alternately with the pieces A possessing the graining or veining.

The process hereinbefore described is particularly applicable to the production of wood imitations, such as indicated in Figs. 1 and 2, in which the veining or graining runs substantially in line with the length of the sheets and of the pieces, blocks, or tesseræ cut therefrom, this longitudinal elongation of the different granular portions of the composition being effected by rolling the composition or the sheets formed therefrom always in one direction, whereby the said colored portions or granules of the composition are pulled lengthwise of the sheet and elongated to the extent desired in accordance with the particular variety of wood effect to be produced.

The invention is also admirably adapted to the production of marble effects, and in carrying out the process for producing representations of marble, onyx, and the like I prepare the linoleum sheets in the manner above described, but roll the sheets in both a longitudinal direction to elongate the colored granules and form the veins and also in a transverse direction, so as to disturb the elongated graining or layers to some extent and spread the same laterally, whereby the graining or veining is given an irregular effect in imitation of marble, onyx, and the like instead of the longitudinal-grained effect of wood. In producing the sheets in imitation of marble, onyx, and the like the preferred method of rolling is to pass the sheets several times between the rollers and alternately rolling the sheets in the two directions, longitudinal and transverse, this preventing the obtaining of the wood-graining effect and securing a product in close imitation of marble, onyx, and the like. After the sheets have been rolled to produce imitations of marble, onyx, and the like they will be cut into pieces, blocks, or tesseræ and applied to the canvas or other foundation in the manner described in the aforesaid Letters Patent No. 412,279 and as indicated in Fig. 3 or in any other suitable manner. The rollers between which the granulated composition is passed for the production of the sheets from

which the pieces, blocks, or tessaræ are cut are simply plain rollers of the character customarily employed in this art for rolling linoleum composition into sheets, and they require no special description herein. It may be said, however, that the effect produced by rolling the mixed differently-colored granules may be modified in accordance with the taste and skill of the manufacturer and the special imitation desired by passing the composition or the sheets produced therefrom between rollers running at different surface speeds, whereby, for instance, the character of the graining or veining will be modified in accordance with the nature of the rollers and the speed at which they are run; but I prefer in the practical manufacture of the goods to follow the process which involves the passing of the composition between the usual rollers running at the same rate of speed, since very beautiful effects may be produced thereby and the natural appearance of wood, marble, onyx, and the like imitated to a high degree of perfection. The rolling of the sheets results in the differently-colored granules or portions of the composition being stretched or pulled lengthwise of the sheet when the sheets are rolled in one direction only and both lengthwise and crosswise of the sheet when the sheets are rolled in both directions, longitudinal and transverse, and not in the flattening merely of the granules or colored sections, and the rolling and stretching or elongation of the granules or colored sections or portions of the sheet create a desirable and highly-attractive intermingling of said colored portions and result in the production of a thoroughly homogeneous sheet.

I am aware that heretofore granulated linoleum composition of different colors has been mixed and applied to a canvas back by pressure; but in this practice as heretofore carried on the composition in granular form has been pressed by plungers through dies or forms directly upon the canvas, the dies or forms defining the patterns to be produced. This practice has, however, resulted merely in producing limited effects and is incapable of being utilized in the production of the floor-covering embracing my invention, which comprises the rolling of the granulated composition into sheets of the proper texture and the formation of the veining or graining by means of the rollers, after which the pieces, blocks, or tesseræ are cut from these sheets and applied by heat and pressure to the burlap, canvas, or other foundation, so that the lower surfaces of the pieces, blocks, or tesseræ shall adhere to the foundation and the adjoining edges of the tesseræ coalesce. In accordance with my invention I therefore produce rolled sheets possessing the graining or veining of proper texture, character, and condition for application to the foundation and from these sheets cut the pieces, blocks, or tesseræ which are to form the pattern and be secured to the foundation by means of heat and pressure.

I have described above the best method known to me for the production of the floor-covering embodying my invention; but I do not limit my invention in every respect to the exact method described hereinbefore, since doubtless said method may be modified, varied, or extended in accordance with the will and facilities of the manufacturer and the particular effects to be produced.

By the term "granulated linoleum composition" as employed herein I mean linoleum composition reduced to or in small pieces— such, for instance, as may be produced by what is known in this art as a "scratcher."

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The process of manufacturing inlaid linoleum floor-cloth, consisting in mixing together granulated linoleum compositions of two or more colors, rolling the composition thus formed into sheets and elongating, in the direction of the rolling, the colored granules or portions, cutting from the sheets thus formed the pieces, blocks or tesseræ, arranging the same on a back or foundation, and securing them to such foundation.

2. The process described for making inlaid linoleum floor-cloth, which consists in mixing together granulated linoleum composition of two or more colors, forming this mixed composition into a sheet of greater thickness than that required for the finished product, rolling this sheet to a reduced thickness and to extend the colored granules or portions of the composition in the direction of the rolling, and finally cutting the tesseræ from the sheet thus prepared and applying them in the form of a pattern upon the foundation and there securing them.

3. The process described for making inlaid linoleum floor-cloth, which consists in mixing together granulated linoleum composition of two or more colors, rolling this composition into a sheet of the required thickness, the rolling being done both longitudinally and transversely of the sheet to extend the colors of the composition both longitudinally and transversely, and finally cutting the tesseræ from the sheet thus prepared and applying them in the form of a pattern to the foundation and there securing them.

4. The process described for making inlaid linoleum floor-cloth, which consists in mixing together granulated linoleum composition of two or more colors, rolling this composition into a sheet of the required thickness, the rolling being done lengthwise and crosswise of the sheet alternately to extend the colors of the composition both longitudinally and transversely, and finally cutting the tesseræ from the sheet thus prepared and applying them in the form of a pattern to the foundation and there securing them.

5. The process described for making inlaid

linoleum floor-cloth, which consists in mixing together granulated linoleum composition of two or more colors, rolling this composition into a sheet of the required thickness, the rolling being done lengthwise and crosswise of the sheet and the repeated rollings being always in the same direction as the preceding rollings, and finally cutting the tesseræ from the sheet thus prepared and applying them in the form of a pattern to the foundation and there securing them.

6. The process described for making inlaid linoleum floor-cloth in imitation of wood or parquet work, which consists in preparing granulated linoleum compositions in the colors required, mixing together two or more of these colored compositions, rolling this mixed composition into a sheet of the required thickness and at the same time elongating the colors of the composition to indicate wood, and finally cutting the tesseræ from the sheet thus prepared and applying them in the form of a pattern to the foundation and there securing them.

7. The process described for making linoleum floor-cloth, which consists in preparing granulated linoleum compositions in the colors required, mixing together these colored compositions, rolling this mixed composition into a sheet of the required thickness and at the same time elongating the colors of the composition, and affixing this rolled sheet to the foundation fabric; substantially as and for the purposes set forth.

8. As a new article of manufacture, linoleum floor-cloth consisting of the foundation fabric and the rolled pieces, blocks or tesseræ thereon arranged to form a pattern and consisting throughout of intermingled differently-colored small portions or granules of linoleum composition rolled together and irregularly elongated, substantially as described.

9. As a new article of manufacture, linoleum floor-cloth consisting of the foundation fabric and the rolled pieces, blocks or tesseræ thereon arranged to form a pattern and some of which are plain throughout while others consist throughout of intermingled differently-colored small portions or granules of linoleum composition rolled together and irregularly elongated, substantially as described.

Signed at New York, in the county of New York and State of New York, this 2d day of August, A. D. 1901.

DAVID NEILSON MELVIN.

Witnesses:

CHAS. C. GILL,

GUNDER GUNDERSON.