

(No Model.)

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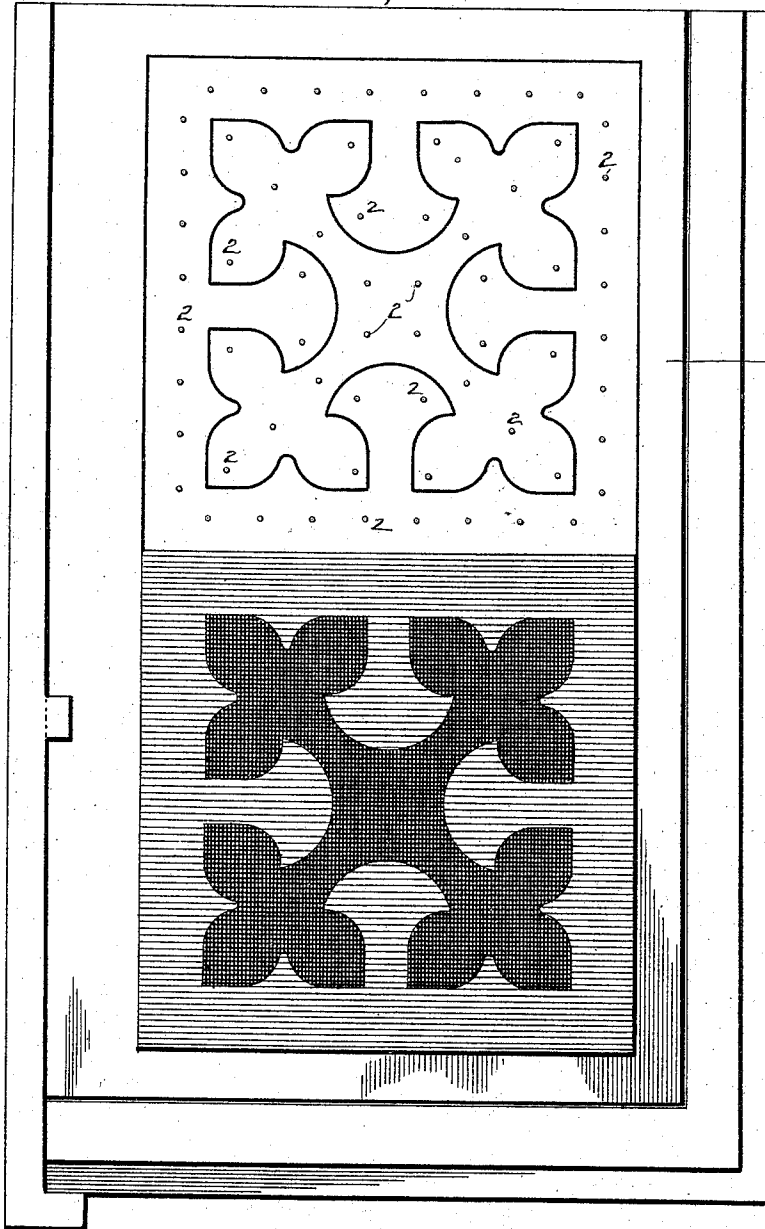
D. N. MELVIN.

APPARATUS FOR AND METHOD OF MANUFACTURING LINOLEUM.

No. 535,217.

Patented Mar. 5, 1895.

Fig. 1.



Witnesses
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(No Model.)

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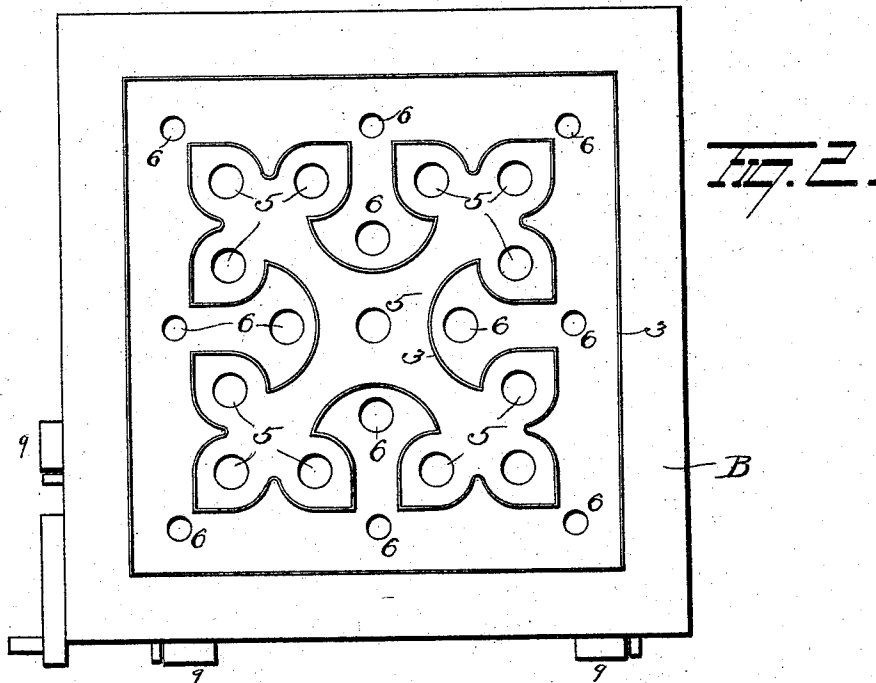
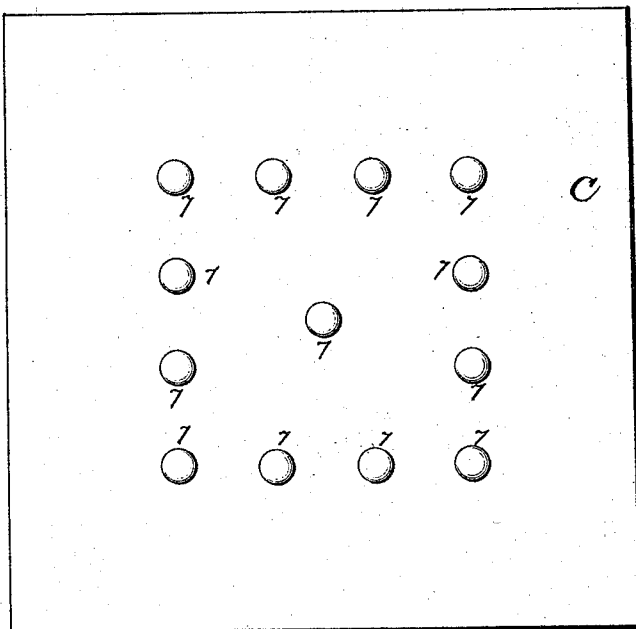


FIG. 3.



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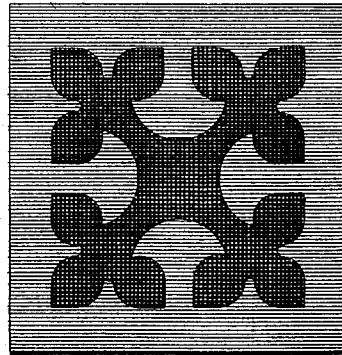
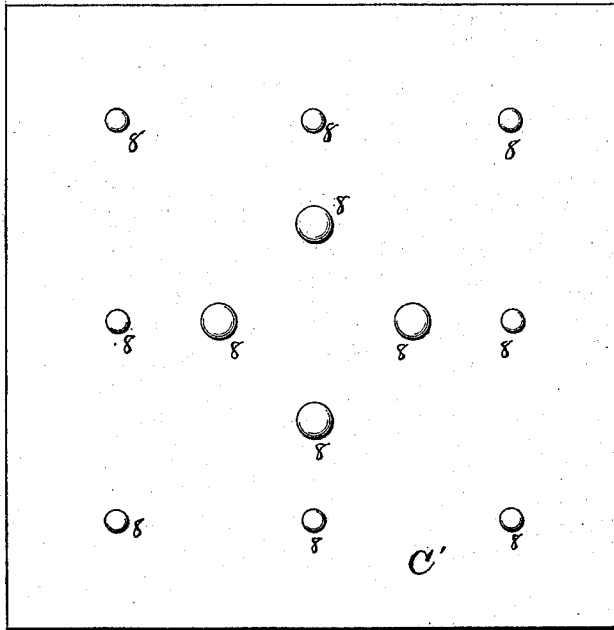


Fig. 6.

Fig. 4

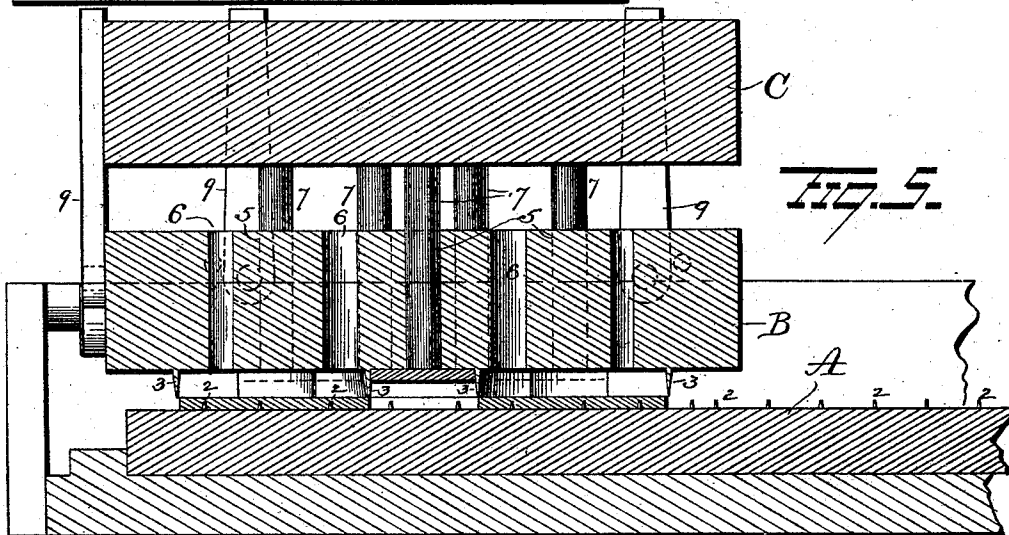
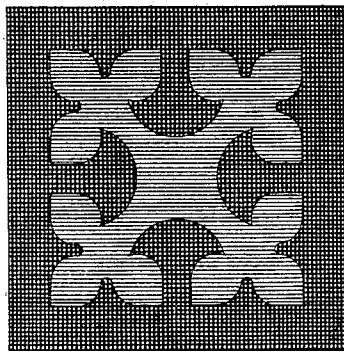


Fig. 5.

Fig. 7

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UNITED STATES PATENT OFFICE.

DAVID N. MELVIN, OF LINOLEUMVILLE, NEW YORK.

APPARATUS FOR AND METHOD OF MANUFACTURING LINOLEUM.

SPECIFICATION forming part of Letters Patent No. 535,217, dated March 5, 1895.

Application filed December 20, 1894. Serial No. 532,473. (No model.)

To all whom it may concern:

Be it known that I, DAVID N. MELVIN, of Linoleumville, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Apparatus for and Methods of Manufacturing Linoleum; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in apparatus for and methods of manufacturing linoleum and more particularly it relates to an improvement in the apparatus disclosed in Letters-Patent No. 511,785, granted to me January 2, 1894, and the method disclosed in Letters-Patent No. 412,279, granted to me October 8, 1889. In one of the patents referred to a cutting block is described by means of which shapes or tesserae of linoleum are cut from the unoxidized sheet of material in greater or less numbers, and then transferred from the cutting block into a receptacle from which the shapes are selected as they are required to make up a pattern. In the other patent referred to a method is disclosed for forming the sheets, cutting them into shapes, arranging the shapes on a flexible back-ground and pressing them into the back-ground, and in addition the step of arranging the shapes on a block or form was disclosed. In that patent two forms of blocks were shown and described, one in which pins were arranged to serve as guides to indicate the position for the shapes as well as to penetrate the shapes to temporarily hold them upon the block where they are placed by hand until the shapes are pressed and made to adhere to the canvas or foundation. In the other form of block metal edgings very similar in appearance to the cutting knives of Patent No. 511,785 were employed, between which the shapes were inserted by hand and held until pressed upon the canvas backing or foundation with sufficient pressure to make them adhere thereto. My present invention is a departure from these former inventions and consists in a printing block having pins thereon arranged to enter the shapes or tesserae which are impaled thereon, at or near the center of each shape, in connection with

means for applying the shapes or tesserae from the cutting block directly to the printing block, and it consists in the improved method of cutting the shapes or tesserae from a sheet of unoxidized material, and transferring it from the cutting block directly to the printing block preparatory to its being pressed upon the canvas or flexible foundation.

In the accompanying drawings Figure 1 is a plan view showing the printing block inverted in a frame, a portion being covered with shapes or tesserae, the remaining portion showing the pins ready to receive tesserae thereon. Fig. 2 is a bottom plan view of the cutting block. Figs. 3 and 4 are views of two forms of plungers. Fig. 5 is a view in longitudinal section showing the several parts assembled and in position to perform their respective functions and Figs. 6 and 7 are views of two different patterns of completed linoleum.

A, represents what I term the printing block for the reason that it is constructed to receive the shapes or tesserae thereon directly from the cutting block, preparatory to their transfer to the canvas or flexible foundation. This printing block preferably has the pattern marked thereon as indicated in Fig. 1 to the shape of which the tesserae conform. This pattern might be varied in design as desired and one pattern or tesserae is adapted to constitute a complement of the other in the completed block or when more than two different colors of tesserae are used they are all complements of one another. Pins, 2, 2, protrude from the surface of the printing block sufficiently far to enter the shapes or tesserae when placed thereon and hold them thereon temporarily or until the printing block has been inverted and pressed upon the canvas with enough pressure to make the shapes or tesserae adhere with sufficient pertinency to prevent the removal with the printing block when the latter is lifted from the canvas. In other words the pins are only intended to hold the shapes or tesserae temporarily until the adhesion upon the canvas is greater than the engagement of the pins with the material. These pins instead of being arranged around the outline of the shapes or tesserae as heretofore, are preferably located at or near the

center or center line of each figure, they not serving in any way as a guide for placing the shapes in position.

Of course the different shapes could be impaled on the pins by hand as heretofore, but I prefer to do it by mechanism which will now be described.

B, is the cutting block. This block has cutting knives 3, 3, on its lower face, conforming in outline to the shape of the pattern and the tesserae to be cut from the sheet of unoxidized material. In the pattern shown one set of tesserae is entirely surrounded by the other set or in other words one set forms the center for the other set. It is obvious that other forms of tesserae might be cut in the same manner.

Holes 5, 5, and 6, 6, are formed in the printing block inside and outside of the inner knife 3, in sufficient numbers and suitable distribution so that the devices inserted through them will discharge or force the tesserae therefrom. As a convenient means for accomplishing this discharge of the tesserae different plungers are employed, one for each different color of tesserae required to complete a block, as for instance two in the present instance.

C, C', represent the two plungers shown. The plunger C is furnished with fingers 7, 7, arranged to correspond with and enter the inside holes 5, 5, only and they are adapted to force out the inside tessera. The other plunger C' is provided with fingers 8, 8, arranged and adapted to pass through holes 6, 6, distributed outside of knife 3 to remove the outer tesserae from the cutting block. To guide these plungers the pivoted gages 9, 9, are used. Now it may be that only one shape is to be removed and the other to be discarded. In that event the one shape to be used is discharged upon the printing block and the remaining waste material is discharged into a receptacle or wherever convenient after which it may be worked over again and made up in a new sheet; or if desired, one shape or tessera may be discharged for the center say of one block or square and the remaining tesserae be discharged for the outside color of the next adjacent square. In this way the center of one square and the outside of the next square are of the same color and are both made at a single cutting. The complement cutting is made from another color of material and these two shapes are discharged in the reverse order from the other two. This pattern is indicated in Fig. 7, whereas the other pattern alluded to in which the centers of all the squares are the same, are illustrated in Fig. 6.

Generally speaking I have referred to the manufacture on a very small scale in which the shapes or tesserae of a single square are cut and placed at a time. It is obvious however that any number could be cut and placed at a time with equal facility, on precisely the same principle.

The method pursued in the manufacture of this linoleum is as follows: The cutting block is forced down upon the sheet of unoxidized composition until the knives pass through it, the shapes or tesserae thus formed remaining between the knives. The cutting block with its shapes or tesserae therein, is now placed in position over the printing block and one of the plungers, the one having fingers to correspond with the shape of the tessera to be forced out of the cutting block, is placed over the latter and depressed until the tessera to be discharged has been impaled upon the pins on the printing block. The cutting block and plunger are then removed from the printing block and another cutting block is then placed over the printing block and the complement tessera to complete the square is forced out of the cutting block upon the printing block as before. After the tesserae have all been affixed in proper arrangement upon the printing block with the centers all the same or alternate colors as the case may be, the shapes or tesserae are placed against the canvas back-ground or foundation. Pressure is then applied to cause the shapes or tesserae to adhere to the canvas. The printing block is next removed and sufficient pressure is applied to cause the shapes or tesserae to adhere permanently to the canvas and to one another at their adjacent edges, heat being supplied in the process as occasion requires. This gives uniformity of design and regularity of outline. The process is simple and inexpensive and saves handling the parts as heretofore.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described and the steps followed in the process without departing from the spirit and scope of my invention and hence I do not wish to limit myself to the exact construction and method set forth, but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for the manufacture of linoleum, a printing block having pins protruding therefrom, said pins located at or near the center or center line of the tesserae irrespective of the outline thereof, substantially as set forth.

2. In apparatus for the manufacture of linoleum, a printing block having a pattern outlined thereon and pins protruding from the surface of the block at or near the center or center line of the pattern or patterns, substantially as set forth.

3. In apparatus for the manufacture of linoleum, the combination with a printing block having pins protruding from one face thereof upon which the tesserae are adapted to be impaled, of a cutting block from which the tesserae are transferred directly to the printing block, substantially as set forth.

4. In apparatus for manufacturing linoleum, the combination with a printing block from

one surface of which pins protrude, of a cutting block by which tesserae are cut and from which they are transferred directly to the printing block, and means for discharging the tessera from the cutting block and impaling it upon the pins of the printing block, substantially as set forth.

5. In apparatus for the manufacture of linoleum, the combination with a printing block having pins thereon, of a cutting block having knives thereon and holes between the blades, of one or more plungers provided with fingers adapted to enter and pass through the holes in the cutting block to discharge the tesserae therefrom, substantially as set forth.

6. In apparatus for the manufacture of linoleum, the combination with a printing block having a pattern outlined thereon and pins protruding from the face of the block, of a cutting block having blades thereon and holes

formed therein; and a plunger having fingers adapted to enter and pass through said holes in the cutting block, to insure the impalement of tesserae on the pins, substantially as set forth.

7. The herein described method of manufacturing linoleum, consisting in cutting tesserae from a sheet of unoxidized linoleum composition, and discharging tessera from the cutting block direct upon a printing block preparatory to applying the tesserae from said block to a canvas or flexible back ground, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID N. MELVIN.

Witnesses:

HOWARD MARSHALL,
VERNON E. HODGES.