(No Model.)

R. W. ELTZNER.

MANUFACTURING MOSAIC PLATES.

No. 266,025. Patented Oct. 17, 1882.

Fig. 2.

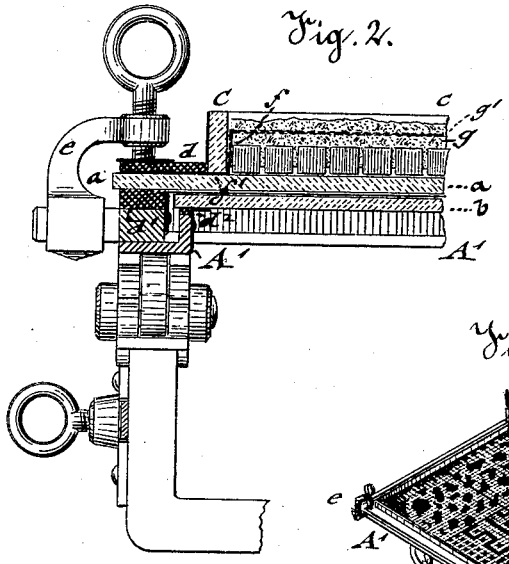


Fig. 3.

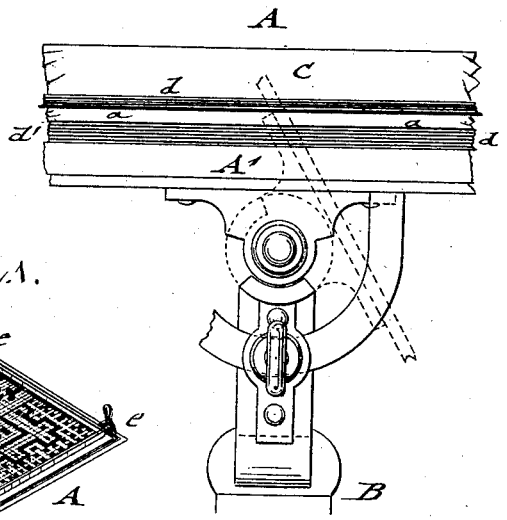


Fig. 1.

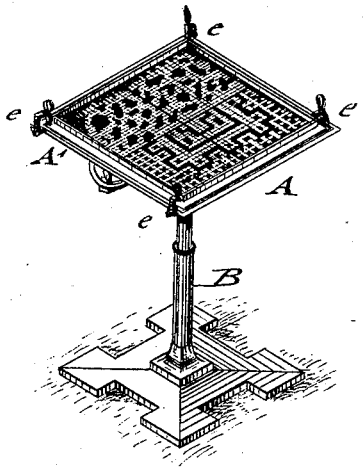
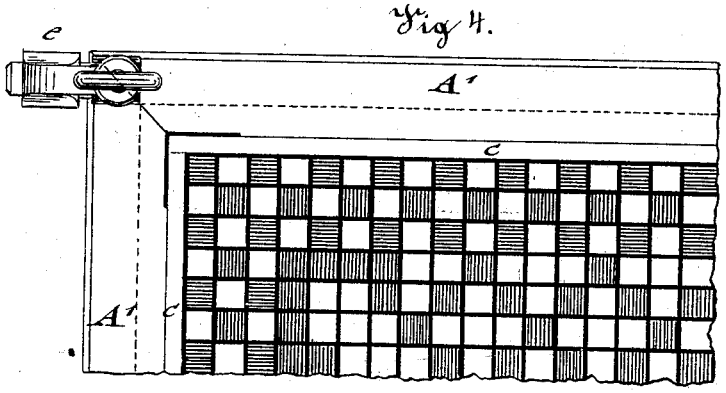


Fig 4.



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MANUFACTURING MOSAIC PLATES.

SPECIFICATION forming part of Letters Patent No. 266,025, dated October 17, 1882.

Application filed December 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WILH. ELTZNER, of the city, county, and State of New York, have invented certain new and useful Improvements in Manufacturing Mosaic Plates, of which the following is a specification.

This invention relates to an improved method of manufacturing mosaic plates for pavements, wall ornamentation, furniture, and other decorative purposes from natural and artificial materials—such as marble, slate, porcelain, majolica, glass, jet, wood, and the like—so that any desired design can be produced without the employment of specially-skilled hands, and thus very ornamental articles be furnished at reasonable price for application in the arts.

The invention consists of a mosaic tablet or plate the individual blocks of which are arranged face downward, according to a pattern or design on transparent paper that has been placed between two glass plates, so that light can fall through from below. The blocks of mosaic which form the plate are finally backed by means of a cement with open joints, and stiffened with an exterior strip or band, as will appear more fully hereinafter.

The invention consists, further, in certain improvements in the art of making mosaic tablets, as hereinafter described.

The invention consists, further, in certain improvements in the apparatus used in the manufacture of mosaic tablets, as hereinafter described.

In the accompanying drawings, Figure 1 represents a perspective view of the table on which my mosaic plate is formed. Fig. 2 is a detail vertical transverse section of the same. Fig. 3 is a detail side view of a portion of the table, both figures being drawn on an enlarged scale, and Fig. 4 is a plan view of a mosaic plate formed on the table.

Similar letters of reference indicate corresponding parts.

In carrying out my invention, a table, A, of the size of the mosaic plate to be formed, is supported on a suitable stand, B. The table A is made of an exterior iron frame, A′, and of two glass plates, *a* and *b*, between which is placed the drawing of the design which is to be produced in mosaic. The design is made on transparent or translucent tracing-paper, which is placed with the right side downward, and secured by gum to the lower glass plate, *b*. The thickness of the covering glass plate *a* increases with the size, weight, and thickness of the mosaic tablet to be produced. Upon the top glass plate, *a*, a rectangular frame of upright glass strips, *c*, is placed, the corners of which are held together by stout paper strips pasted thereto. Below the glass strips *c* is placed a layer of paper, which covers the glass plate *a* outside of the glass strips *c*, so as to protect the surface of the former. Outside of the vertical glass strips *c* are arranged flat rubber strips *d*, also intermediate rubber strips, *d*′, *d*² between the glass plates *a b* and frame A′; the rubber strips *d*′ *d*² and the clamps *e*, which are applied near the corners of the frame A′, holding the glass plates firmly in position upon the iron frame of the table. The vertical glass strips *c* vary in height according to the thickness of the mosaic plates to be formed, and serve as the exterior walls for the cement backing which is given to the mosaic plate. A strip or band, *f*, of galvanized wire-gauze is placed in position along the inner surface of the glass strips, as shown in dotted lines in Fig. 2. The band *f* should not extend lower down than the depth of the joint between the blocks of the plates, for which purpose, so as to obtain the correct position of the band *f*, a flanged zinc strip, *f*′, is placed upon the glass plate *a*, below the rubber strips *d*, the zinc strips extending below the glass strips *c c* to the inside, its flange projecting upward along their inner surface for supporting the band *f*, as shown in Fig. 2. The individual blocks of mosaic, whatever be the material employed, are now placed in position upon the covering glass plate *a*, according to the design represented on the tracing-paper between the plates *b a*. As the light passes through the glass plates from below it renders the configuration and colors of the design clearly visible, so that the exact position and color of the blocks required are clearly recognized. One row after the other, from the left to the right, is successively placed in position, the faces of the blocks being gummed, so that they adhere to the glass plate. If it be desired to bring out some portions of the design in relief, the remaining

portions have to be covered with square glass plates of the size of the block, so that the blocks placed thereon are set somewhat below the blocks without glass plates. When all the blocks are placed in position according to the design the covering-plate *a*, with the blocks remaining thereon face downward, is removed from the frame for being backed and finished, while the table itself is ready for forming the next mosaic plate. For finishing the mosaic plate the open joints between the blocks are now partly filled up with a layer of fine sand to the depth of the joints. As soon as this is done a backing, *g*, of a suitable cement, plaster-of-paris, or other suitable material, is spread into the joints and over the back of the blocks until they are covered to the thickness of one-eighth to one-quarter of an inch. A layer, *g'*, of wire-gauze is placed upon the cement and embedded therein, after which it is covered with a thick layer of cement, plaster-of-paris, or other material, to which, according to the thickness of the plate, sand or small lumps of stone are added. As soon as the cement backing has sufficiently set the clamping-screws are unscrewed, the paper strips at the corners of the glass strips *c* cut through, and the latter removed. The mosaic plate is then lifted off from the glass plate *a* and placed face upward on a suitable setting-plate for final drying. The joints are then cleared of the adhering sand by means of a brush, and the mosaic plate is finished.

If desired, the blocks may be connected in a still more reliable manner by means of short metallic strips, which are cast in by the cement between the blocks, or by other means, as desired. In this connection it may be mentioned that the proper size of the working-table to be used is preferably equal to four square feet, so that four mosaic plates each one square foot in size may be made at the same time, the separation of the plates being readily obtained by means of a dividing-cross of glass strips. If larger mosaic plates are desired, larger working-tables may be used. The frame of the table is preferably connected to the supporting-stand by means of a hinged joint and semi-circular guide-rails, so as to be set into inclined position, by which the passage of the light through the design is facilitated. If extra large and heavy mosaic plates *h* are to be made, the lower glass plate, *b*, is made of several pieces, between which iron stiffening-rails are interposed.

The advantages of my improved method of manufacturing mosaic plates are that any desired design may be quickly produced without the employment of skilled hands, and that a number of hands can be employed at the same time to produce different plates. The plates can be made by daylight or artificial light, provided the colors on the design can be properly distinguished. As the joints between the blocks are open, a secure foothold is furnished when used for pavements. The plates do not require to be made of any great thickness, as the inclosing band and interposed layer of wire-gauze in the backing imparts to them considerable strength and thickness.

I am aware that a series of tiles secured to a cement backing is not new, broadly.

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

1. As an article of manufacture, a mosaic tablet composed of a series of blocks or tiles and a cement backing which unites the tiles and partially fills the interstices between them, said interstices being open for a certain depth below the face of the tablet, substantially as described.

2. As an article of manufacture, a mosaic tablet consisting of a series of blocks or tiles and a backing which unites the tiles and partially fills the interstices between them, composed of cement and metallic gauze or binding-strips, the joints between the tiles being open for a certain depth below the surface of the tablet, substantially as described.

3. The art of making mosaic tablets, consisting in placing individual blocks in position, according to the design, face downward, then filling the interstices between the blocks for a certain depth with loose sand, then filling the remainder of said interstices with cement, then forming a backing of cement over said blocks and allowing the same to harden, and finally removing the loose sand from the interstices, substantially as described.

4. The art of making mosaic tablets, which consists in placing a translucent sheet containing the design between glass plates, then placing colored blocks or tiles upon the face of the upper glass plate to accord with the design as seen through said plate, then forming a backing of cement over and between the tiles, substantially as described.

5. The combination, in an apparatus for use in the manufacture of mosaic tablets, of a translucent or transparent lower plate, a transparent upper plate, means for supporting the plates which permit the passage of light through them, and means for holding the plates together when the translucent sheet containing the design is placed between them, substantially as described.

6. An apparatus for use in the manufacture of mosaic tablets, consisting of a transparent or translucent lower plate, a transparent upper plate, means for holding the plates together when the translucent sheet containing the design is placed between, and strips for surrounding the blocks and holding the cement, substantially as described.

7. The combination, in an apparatus for use in the manufacture of mosaic tablets, of a lower translucent or transparent plate, an upper transparent plate, a supporting skeleton frame for said plates which admits the passage of light through them, and an elastic packing interposed between the frame and plates, substantially as described.

8. The combination, in an apparatus for use in the manufacture of mosaic tablets, of a lower translucent or transparent plate, an upper transparent plate, a supporting-frame for said plates which admits light therethrough, an elastic packing interposed between the frame and plates, retaining-strips upon the transparent plate for surrounding the blocks and holding the cement, and flanged metallic strips between the retaining-strips and plate, the flanges of which project upward and serve to support gauze bands, substantially as described.

9. A table for use in the manufacture of mosaic tablets, consisting of a skeleton frame, A′, glass plates *a b*, upright glass strips *c c*, and clamping devices *d e*, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ROBERT WILH. ELTZNER.

Witnesses:

PAUL GOEPEL,

CARL KARP.