T. A. O'SHAUGHNESSY.

METHOD AND DEVICE FOR MAKING TRANSPARENT OR TRANSLUCENT MOSAICS.

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1,100,769. Patented June 23, 1914.

Fig. 1

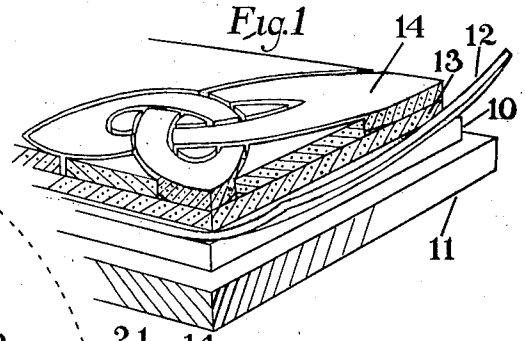


Fig. 2

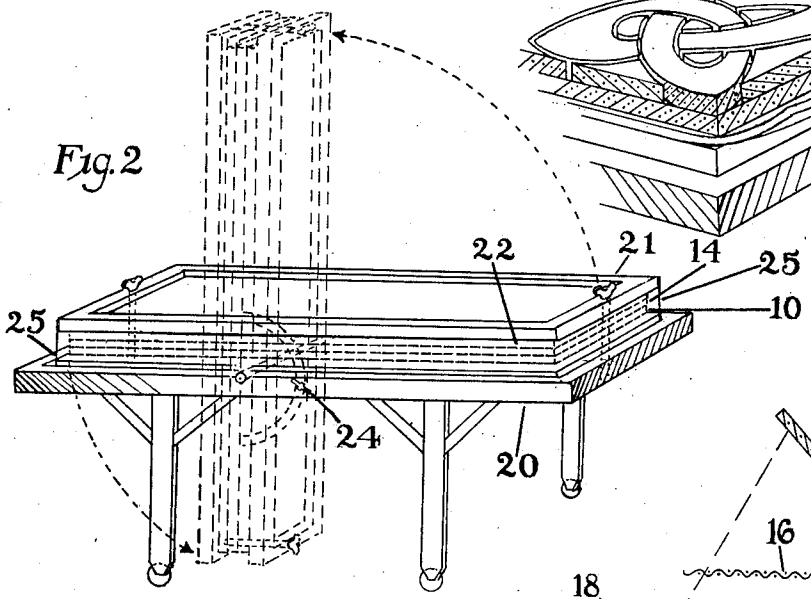


Fig. 3

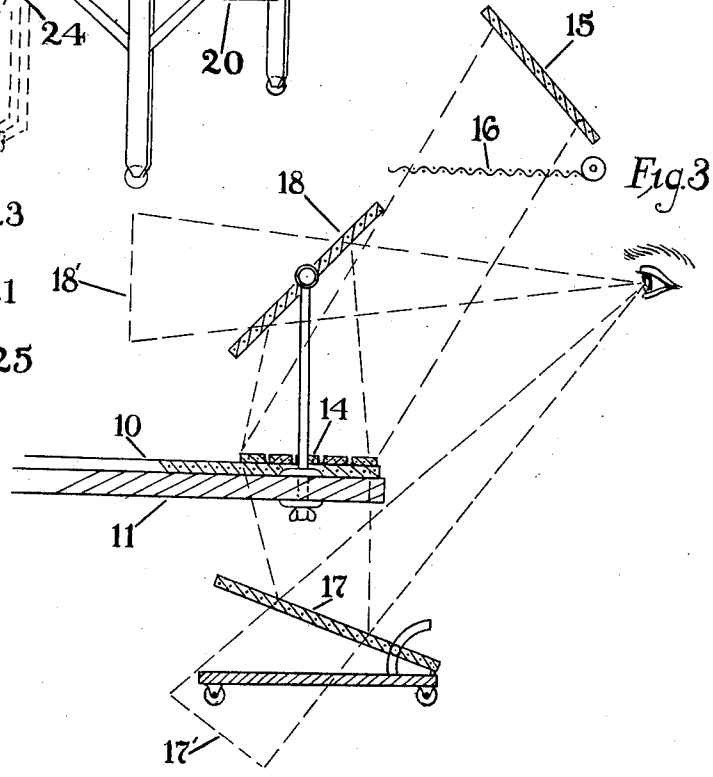
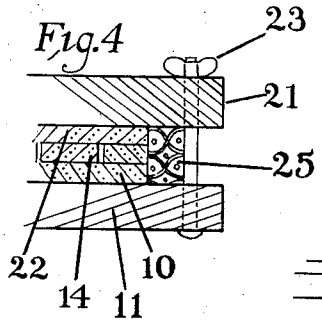


Fig. 4



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METHOD AND DEVICE FOR MAKING TRANSPARENT OR TRANSLUCENT MOSAICS.

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To all whom it may concern:

Be it known that I, THOMAS A. O'SHAUGHNESSY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented an Improved Method and Device for Making Transparent or Translucent Mosaics.

This invention relates to a method of making transparent and translucent mosaics, and to a device for carrying out the method.

In the manufacture of transparent and translucent mosaics, like windows, composed of a plurality of glass pieces, stained in different colors, the main object was up to the present time to present an artistic effect only to that spectator who sees the window, or mosaic from a side opposite to that side on which the source of light is located. In other words, during day time a stained window presented an artistic effect to the observer in the building of which the window forms a part. At night however, when the interior of the building is illuminated the artistic effect is only visible from the outside of the building. The general coloring scheme used for these windows, or similar transparent mosaics only was intended to convey this artistic effect to one side of the window or mosaics. The other side of the window ordinarily offered an unsightly appearance. The coloring did not only not contribute to enhance the artistic effect of the other interior decoration of the building, but it even disturbed the same as a window of this kind seen from the inside of an illuminated building merely presents a plurality of dark mosaic elements, which deprived of their surface color, were not adapted to bring out any or all of the values of the design.

An object of the present invention is to provide a method wherein during the making of the window due care is taken that both sides of the window present an artistic appearance, no matter on which side the source of light is located.

Another object of the invention is to provide a method for facilitating the composition of the large number of transparent or translucent elements which must be assembled to produce the desired effect.

Another object of the invention is to provide a method which facilitates the comparison of the color values of certain of these transparent or translucent elements with other transparent or translucent elements with which they are supposed to harmonize or to form contrasts, and which also facilitates the comparison of the color value of any of the mosaic elements with the color value of the respective part of the pattern or design.

Another object of the invention is to provide a device which is well adapted for carrying out the method mentioned above and which renders it possible for the artist composing the mosaics to recognize simultaneously the value of a certain mosaic element as a transparent or translucent element and as an element for an opaque wall decoration.

Another object of the invention is to provide a device wherein the comparison of the different color values of the mosaic elements may be made by a single observation and by means of two mirrors, one of which reflects the light after its passage through the mosaic element, while the other mirror at the same time reflects the light reflected by the mosaics.

Another object of the invention is to provide a device which renders it possible to assemble a large plurality of mosaic elements in horizontal position and in such manner that any of these elements may readily be exchanged for other elements which according to the artist's opinion, are more adapted to bring out the artistic effect than the elements primarily used.

Other objects of the invention will be more fully understood by reference to the following specification and to the claims appended thereto and by reference to the accompanying drawing.

In the drawing, Figure 1 is a perspective view of a combination of various elements in a position in which the composition of the mosaic elements in accordance with an artistic pattern, or design and the subsequent removal of said pattern or design is facilitated. Fig. 2 is a perspective view of a table which is particularly adapted for carrying out the method, Fig. 3 is a diagrammatic view of the optical system utilized for carrying out the method, and Fig. 4 is a detail, in sectional view, showing means for securing the mosaic elements temporarily.

In the manufacture of glass mosaics for windows, or the like it has been the practice to place a pattern or design, drawn on opaque paper or cloth on a flat table. The glass pieces cut to reproduce this design,

being shaped from the colored glass by the use of a diamond or other suitable cutting means were placed on the pattern, each covering that portion of the design which had been reproduced in the glass.

In order to test the transparent effect of the entire composition it was necessary obviously to remove the opaque pattern from underneath the assembled elements. This removal could only be effected with great difficulties as the large and small mosaic elements were likely to be scattered and deranged by the withdrawal of said support. The test of the transparent or translucent effect of the assembled mosaic elements could only be carried through if these elements were supported on a transparent plate or the like.

In order to avoid the danger of scattering and deranging the assembled mosaic elements in the handling of same or by the withdrawal of the opaque pattern or design, according to the present invention a film of transparent material like celluloid or glass is placed on top of the pattern, and the proper outline of the various elments of the pattern being visible through that transparent film, facilitates the assembling of the glass pieces which compose mosaic designs.

Fig. 1 indicates the method used for preventing the derangement of the mosaic elements. A transparent plate 10 is supported on a frame 11 made of wood, metal, or the like. The opaque pattern drawn on a sheet of paper or cloth as indicated at 12 is covered by a transparent film or plate 13 and the various mosaic elements are cut to the proper size in accordance with the pattern visible through the film or plate 13, as indicated at 14. It is obvious then that the paper or cloth 12 may be withdrawn and that by this withdrawal the proper location of the various elements 14 is not disturbed, these elements being supported on the transparent film or plate 13.

Most of the mosaics of transparent or translucent glass are used as windows and it is therefore, necessary for the artist to test the effect of the entire composition of elements when the same are in that position which they will occupy in the building. Windows normally are supported in vertical position and the effect of these windows during the making of the same could only be properly tested by placing the various mosaic elements on a vertical transparent support and by holding them thereon by means of a suitable adhesive. If the artist was of the opinion that the selected color of one of the elements or of several of these elements did not produce the desired effect, he was compelled to unloosen the adhesive, to remove the element and to substitute therefor another one.

As stated above, the mosaics were only tested on their artistic effect as far as the transparency or translucency was concerned. The prior method in making these mosaics was therefore, approximately the following: A pane of transparent glass was placed in vertical position and a source of light was disposed behind said pane; the artist standing in front of the pane composed the mosaics by selecting the elements of suitable outline and color and sticking the same by means of an adhesive to the pane. If he believed that any of these selected elements would not bring the desired effect satisfactorily he had to remove the element and to stick another one in the place of same. No attention was paid in this method to the effect or to the appearance which the assembled mosaics would offer from that side on which the source of light was located. The artist intending to test the effect of the light reflected from the mosaic had to step behind the vertical transparent support whenever a new element has been, by means of the adhesive, secured to the pane.

In the present invention the necessity of using an adhesive for holding the mosaic elements in place on the provisional support is avoided by placing said support in horizontal, or approximately horizontal position. The exchange of one mosaic element for another can readily be effected in much shorter time than in the manner which has been used heretofore.

The optical equipment necessary for carrying out the method is illustrated in Fig. 3. The mosaics 14 are successively assembled on top of a plate of transparent glass 10 which is supported on a frame 11, similar to the arrangement described with reference to Fig. 1. At a suitable height above this supporting plate 10 a skylight 15 is located so that the sunlight passing through the pane of the skylight illuminates the assembled mosaics, bringing out the natural colors of the same. It is obvious however, that in place of this natural light a source of artificial light may be used. If the light passing through this window 15 should be too strong or too concentrated some means for diffusing the light may be interposed between the top of the table 11, and the skylight. In the present instance a removable curtain or shade 16 is indicated adjacent the skylight for diffusing the light passing therethrough.

The effect of the light after its passage through the mosaic elements (and called hereafter the "transparent effect") may be tested by means of a reflecting element disposed on that side of the assembled mosaics which is opposite to the side on which the source of light is located. In the embodiment of the device diagrammatically shown in Fig. 3, a mirror 17 is held underneath the table

11 on which the mosaic is assembled. This mirror, of course, may be adjusted to different angular positions with respect to the table and it may also be adjusted so as to reflect different parts of the assembled elements. The image visible in said mirror at 17′ will then be exact reproduction of the assembled mosaics, as the same will appear when viewed from a side opposite to that on which the source of light is located.

The window may be tested as to transparent effect, reflecting light from mirror 17, so as to cause light to come through window from beneath and to cause transparent effect of window to be reflected from mirror 18 and appear as if at 18′.

The effect of the mosaic element as it appears on the side on which the source of light is located, (and hereafter called for the sake of shortness "opaque effect" of the mosaics), preferably is tested by some reflecting means disposed on the same side on which the source of light is disposed. According to Fig. 3 a mirror 18 is adjustably held in angular position above the horizontal support 10 and the image 18′ visible to the artist during the assembly of the elements is an exact reproduction of the appearance which the finished mosaics will present from the inside of a building during night time. It is obvious that this mirror also may be adjusted angularly with respect to the horizontal support and may be shifted above the same so as to reflect different portions of all of the elements. Obviously the mirrors may also be adjusted to show the window in any position, vertical, horizontal, or at any angle to the vertical or horizontal plane. It is also obvious that the transparent effect, as well as the opaque effect of the mosaic elements, or of the assembled mosaics, as produced by a source of light of different color may be tested by arranging underneath the skylight 15 a screen of the respective color, or by utilizing glass of a certain color as skylight, or finally by staining the reflecting means in different colors. It is also obvious that one or the other of the reflecting means may entirely be omitted wherever it is not desired to test both of the effects during the assembling of the elements.

The effect of the completed mosaics in vertical position can readily be tested without running the danger of disturbing the location of the assembled elements by the device illustrated in Figs. 2 and 4. In this device a wooden or metal frame 11 is pivotally mounted on a table 20 and a similar frame 21 holding a glass plate 22 is placed over the assembled mosaics and connected with the lower frame by means of bolts 23 or similar clamping devices. The elements of the mosaics are retained on all sides by strips 25 of compressible material which are held in place by pressure of the two plane surfaces which inclose the mosaic elements. The entire structure comprising the two frames 11 and 21, the glass plates 10 and 22, and the assembled mosaic elements 14 with the strip 25 may then be swung from horizontal position into the vertical position, as indicated in dotted lines in Fig. 2. The structure comprising the two frames may then be secured in vertical position by a thumb screw 24 or the like.

The method as described above enables the artist to compare each mosaic element with the remaining elements not only as to the transparent effect but also as to the opaque effect. A window made in this manner will resemble a panel decoration when viewed from the inside of the building in nighttime, the colors of the various elements being selected with due regard to the double purpose or the double effects which are to be attained. The manufacture will not only result in a more artistic product, as far as the transparent and opaque effect is concerned, which latter effect heretofore had been entirely left out of consideration, but the horizontal support of the elements during the assembling of the same, the avoidance of the adhesive, and the facility with which the completed mosaics can be tested, will reduce the cost as well as the time for making these mosaics.

After the mosaic elements have been tested as to their transparent and opaque effects, they are shifted from the transparent support to a support which has very slight conductivity of heat and which at the same time is not damaged by excessive heat. The assembled elements are then glazed on this support, or are united in some other suitable manner. The permanent union of the several elements may be attained in some suitable way which is well known to the art.

I claim:

1. In a method of making transparent or translucent mosaics, the steps of assembling mosaic elements in substantially horizontal position and of projecting light through said mosaics and observing the effect of said light and of observing at the same time the effect of the light reflected from the mosaics.

2. In a method of making transparent or translucent mosaics, the steps of assembling mosaic elements on a transparent support and testing during the assembling operation simultaneously the effects of light passing through said elements and reflected therefrom.

3. In a method of making transparent or translucent mosaics, the steps of loosely placing mosaic elements on a transparent support, of reflecting light passing through said mosaics and support, and of reflecting at the same time light reflected by said mosaics substantially as described.

4. In a method of making transparent or translucent mosaics, the steps of placing an opaque design or pattern on a transparent support covering the design or pattern with a transparent member assembling mosaic elements on said member, withdrawing said opaque design or pattern and testing the opaque and transparent effect of the mosaics.

5. In a method of making transparent or translucent mosaics, the steps of assembling mosaic elements over a design or pattern on opaque material, withdrawing the opaque pattern or design from underneath the assembled elements and testing simultaneously the transparent and opaque effect of the assembled elements.

6. In a method of making transparent or translucent mosaics the steps of assembling mosaic elements on a horizontal transparent support, passing light through said elements while they are being assembled, reflecting the light after its passage therethrough and testing the light reflected from said mosaic elements.

7. In a method of making transparent or translucent mosaics, the steps of assembling mosaic elements in accordance with a predetermined pattern on a transparent support, and reflecting the light passing through said elements and the light reflected from said elements to a common point.

8. In a method of making transparent or translucent mosaics, the steps of assembling mosaic elements on a transparent support, placing a source of light on one side of said assembled elements and testing the effect of the light on both sides of said assembled elements.

9. In a device for making transparent or translucent mosaics, the combination of a tiltable horizontal and transparent support for the mosaic elements, reflecting means on opposite sides of said mosaic elements and a source of light.

10. In a device for making transparent or translucent mosaics, the combination of a transparent support for the mosaic elements and adjustable reflecting means on either side of said elements.

11. In a device for making transparent and translucent mosaics, the combination of a tiltable transparent support for the mosaic elements, adjustable mirrors on both sides of said support, and a source of light on one side of said elements.

12. In a device for making transparent or translucent mosaics, the combination of a transparent support for the mosaic elements, a frame for said support, means for tilting said frame and support and for locking the same in a predetermined angular position.

13. In a device for making transparent and translucent mosaics, the combination of a transparent support for the mosaic elements, means for tilting said support, and means free of adhesive for holding said assembled elements in their assembled position while support is being tilted.

14. In a device for making transparent and translucent mosaics the combination of a transparent support for the mosaic elements, a transparent cover for the same, means for clamping said cover and support together, a frame for said cover and support, and means for adjusting the angle of said cover and support with respect to a horizontal plane.

15. In a device for making transparent and translucent mosaics, the combination of a transparent support for the mosaic elements, a transparent cover for the same, a frame for said cover and support, means for securing said cover and support and the mosaic elements against displacement in the frame, and means for adjusting the frame in an angular position.

In testimony whereof I affix my signature in the presence of two witnesses.

THOMAS A. O'SHAUGHNESSY.

Witnesses:

JOHN F. ROSE,

JOHN P. O'SHAUGHNESSY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."