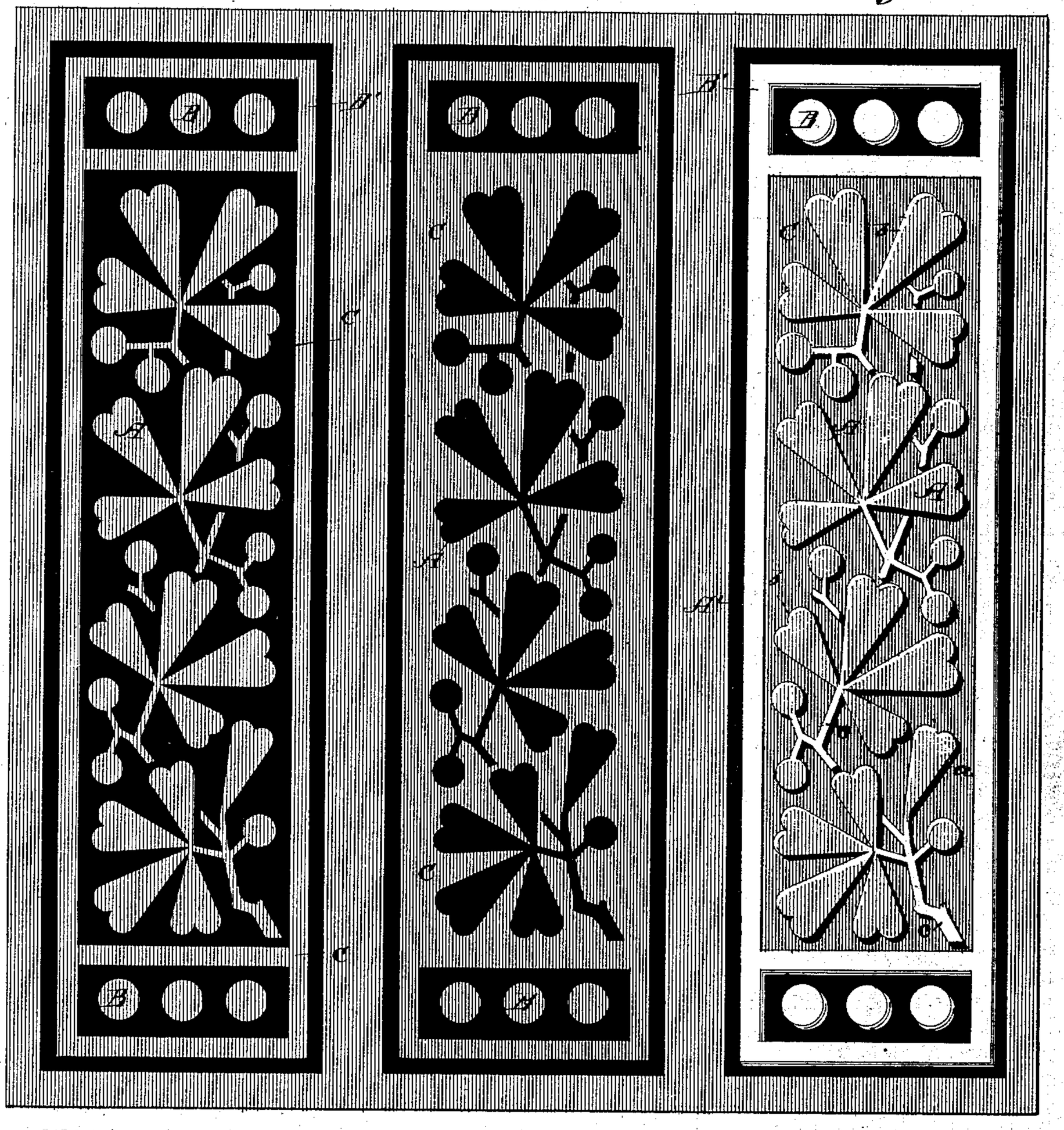
(Model.)

E. L. BROWN.

ART OF ORNAMENTING GLASS.

No. 315,472. Patented Apr. 14, 1885.

Fig. 1. Fig. 2. Fig. 3.



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EDWIN LEE BROWN, OF CHICAGO, ILLINOIS.

ART OF ORNAMENTING GLASS.

SPECIFICATION forming part of Letters Patent No. 315,472, dated April 14, 1885.

Application filed October 20, 1884. (Model.)

To all whom it may concern:

Be it known that I, EDWIN LEE BROWN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Art of Ornamenting Glass, of which the following is a description, reference being had to the accompanying drawings, in which—

Figure 1 shows a "positive" treatment of an ornamental design, the figures being formed upon the face of the glass. Fig. 2 shows a "negative" effect by abrading the groundwork upon the back of the glass and leaving the face in its normal condition. Fig. 3 shows in the main figure a positive treatment upon the face and a negative treatment upon the back, while the dots at the ends and the inner border surrounding the same are positive upon both sides.

Like letters of reference indicate like parts in the different figures.

My invention has reference to the art of ornamenting glass by etching or grinding the surface thereof in any well-known manner, whereby said surface is abraded or rendered semi-opaque; but is especially applicable in the use of the sand-blast process, by which the more delicate and perfect effects are obtained. In this line of glass ornamentation results have heretofore been accomplished by either a positive or negative treatment of the design upon one side of the glass. This not only produces a less artistic effect, but leaves a portion of the glass transparent, which is often objectionable in case the same is intended to be used as a screen. On the other hand, the design may be positive and the entire opposite surface of the glass may be ground; but while this may serve as a perfect screen, it is limited in its artistic effects, being devoid of the marked contrasts produced by deep shadows.

The object of my invention is primarily to produce an ornamental glass, which, while it may serve as a perfect screen, may at the same time present a series of lights and shades of variable forms, proportions, and intensity, according to the position of the observer. A secondary object is to secure the appearance of depth in the design, which may or may not be accompanied with the more intense shade-lines, according as said design is produced upon the respective sides of the glass. I accomplish said object preferably by first forming said design positively upon the face of the glass, and then submitting the back of said glass to a negative treatment, the lines of the figures upon the front preferably coinciding with those upon the back, or the effect may be varied with pleasing results by treating said glass positively upon both sides, the outlines of the figures being made to coincide or to vary from such coincidence in different proportions, according to the effect which is desired to be produced, all of which will be hereinafter more fully described, and definitely pointed out in the claims.

In the drawings, A represents the main design, while B B′ is a modification thereof. Fig. 1 shows said design, A B B′, treated positively upon the face of the glass.

Fig. 2 indicates the parts A and B′ as negatively formed by submitting the groundwork C upon the back of the glass to the sand-blast process, while B in the same figure is formed by a positive treatment of said design upon the back of the glass, both of said results being produced in the usual well-known manner. A′, Figs. 1 and 3, shows a border in which the glass is left in its normal condition.

Fig. 3 illustrates a design as completed by my improved process of ornamentation.

I first submit the parts A, B, and B′ upon the face of the glass, as shown in Fig. 1, to the sand-blast, the part C being protected by a coating of wax, paraffine, or other suitable material. The parts C, B, and B′ are then submitted to a like treatment upon the back of the glass, it being important, in order to produce the more marked and pleasing effects, that the lines of one should coincide with those of the other—that is to say, the positive design A should be placed directly over that of the negative upon the opposite side, while B B′ should fit or fall directly over the corresponding figures which are positively formed upon the other side. The result is that the parts B B′ are much whiter than the ground C, and have the appearance of extending through the glass, while, owing to the thickness of said glass, the angle of incidence from which the figure A is viewed enables the observer to see a portion of the glass in its nor-

mal condition, said portion varying in extent and configuration according to the position of the eye of the observer, thus forming what appear to be dark shade-lines or shadows *a*, while at the same time the line of vision, which strikes upon the outline of the ground portion C of the back, includes or passes through a portion of the opposite side of the figure A, leaving the impression of a series of white lights or tints, *b*, in direct contrast to the lines or shadows *a*. When the figure is small or narrow, as in the stem of a flower, vine, or other similar design, it may, owing to the angle of incidence from which it is viewed, be thrown entirely upon or over the background C, thus causing all that portion of the figure to appear white, as shown at *c*, Fig. 3, with the dark shadows *a* contrasted therewith; hence not only constantly-varying effects may be produced in the way of lights and shades, according to the position of the observer, but the appearance of depth may be given to a portion of the design, while other parts may appear as being raised and others sunken.

The design shown is one of the simplest forms; but I am enabled by modifying the combinations there indicated to obtain all the varied and beautiful effects of diaper, basket, lace, or frost work, according to the skill of the designer.

While I prefer in most cases that the outlines of the design upon the respective sides of the glass may coincide with each other, yet I do not confine myself to this arrangement, as I am enabled by varying therefrom to produce the appearance of rounded, hollow, or irregular surfaces.

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

1. The art of ornamenting glass consisting of, first, forming by sand-blast or analogous process the positive design upon the face, and, secondly, the negative design upon the back, substantially as and for the purposes specified.

2. The art of ornamenting glass by sand-blast or analogous process consisting of forming the design both upon the front and back of the glass, the outlines of the two coinciding with each other, substantially in the manner and for the purposes set forth.

3. The art of ornamenting glass by sand-blast or analogous process by producing the positive design upon the front and the negative upon the back, whereby the outlines of the two may coincide when viewed directly from the front, substantially as described.

4. As a new article of manufacture, an ornamental glass the design upon which is formed upon one side of the glass by sand-blast or equivalent process, and its counterpart or negative upon the opposite side, substantially as described.

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