

No. 684,448.

Patented Oct. 15, 1901.

F. G. MOORE.

GLASS MOSAIC AND METHOD OF PRODUCING SAME.

(Application filed June 18, 1900.)

(No Model.)

Fig. 1

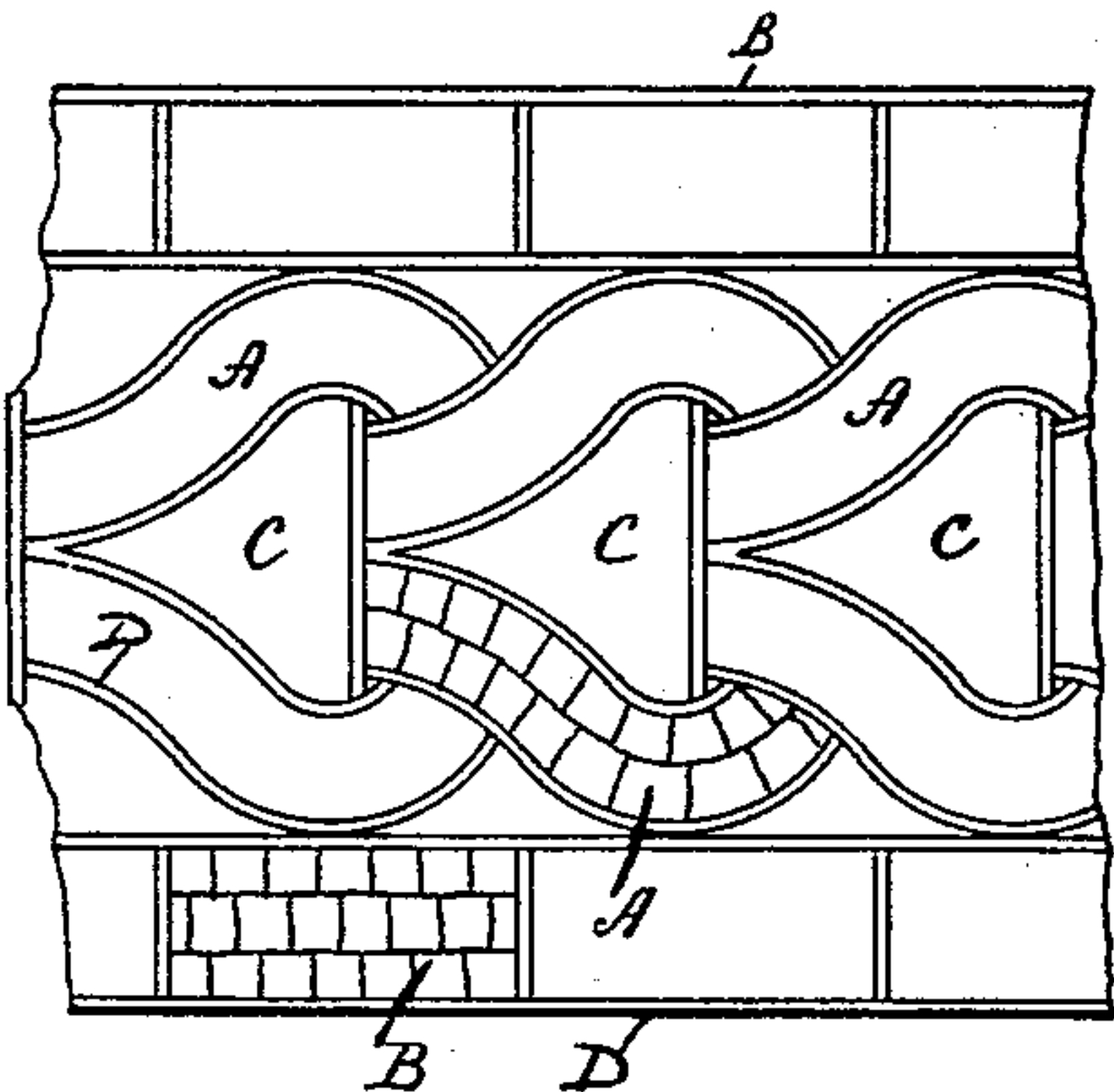


Fig. 2

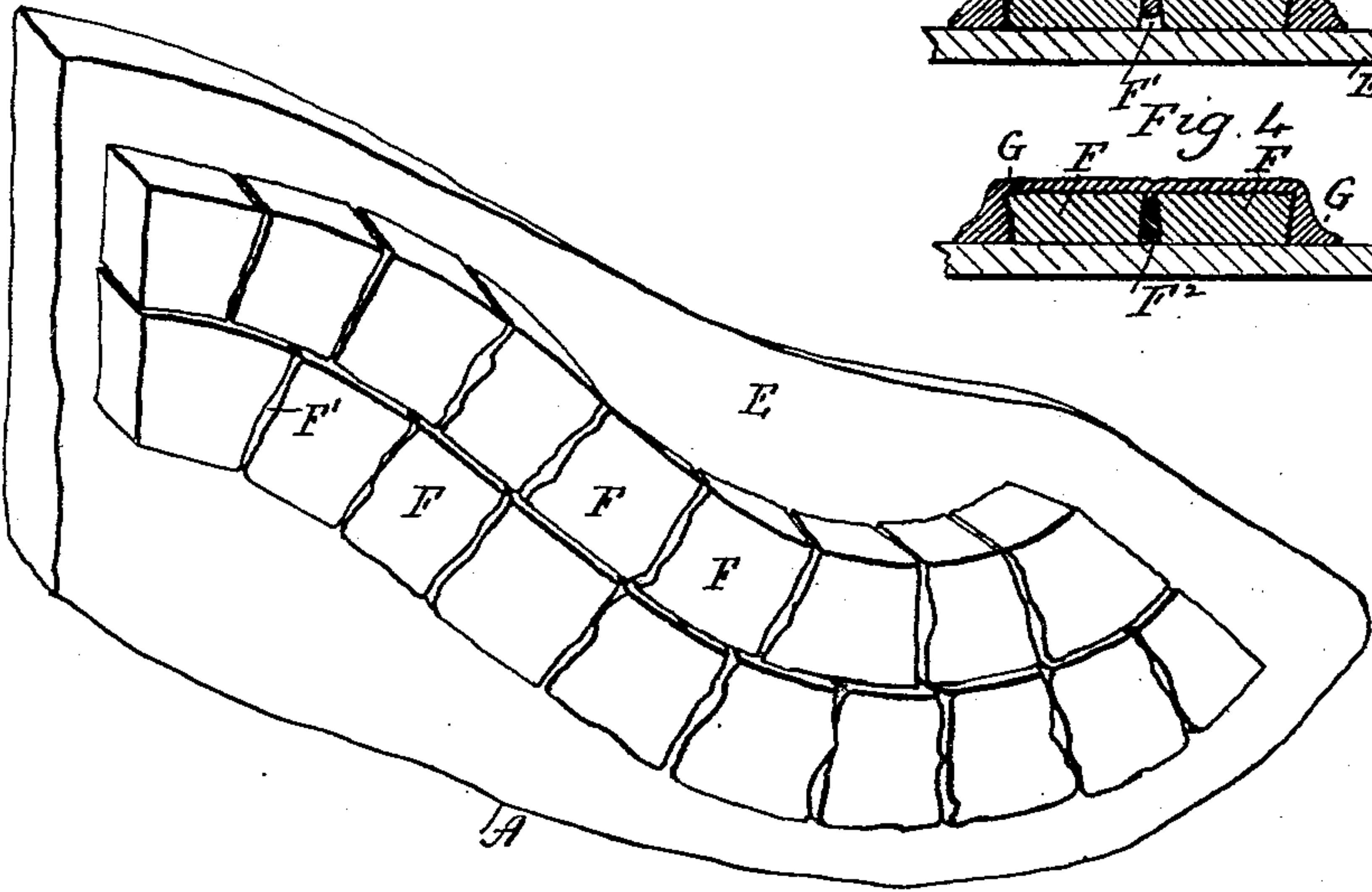


Fig. 3

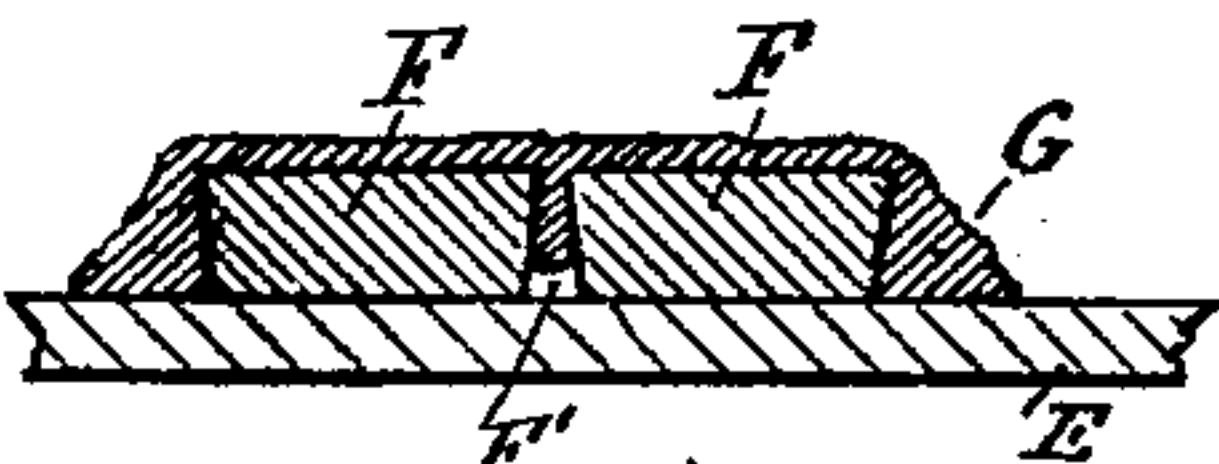
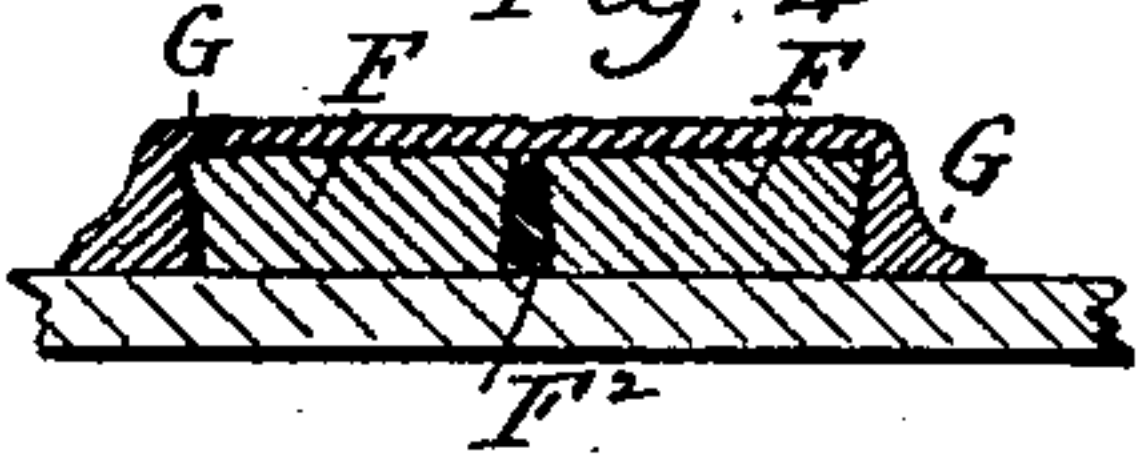


Fig. 4



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GLASS MOSAIC AND METHOD OF PRODUCING SAME.

SPECIFICATION forming part of Letters Patent No. 684,448, dated October 15, 1901.

Application filed June 18, 1900. Serial No. 20,672. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK GARDNER MOORE, of Hanover, in the county of Grafton and State of New Hampshire, have invented a new Improvement in Glass Mosaics and Methods of Producing the Same; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken fragment of glass mosaic produced in accordance with my invention; Fig. 2, an enlarged detached view of one of the "mosaic elements" entering into the mosaic shown in the preceding figure; Fig. 3, a sectional view showing two tesserae secured to a glass body-plate, having a palpable space or cavity between them and imprisoned by a film of transparent or semi-transparent flux or glazing or equivalent material; Fig. 4, a corresponding view showing the use of decorative material in the space between the tesserae.

My invention relates to the use of true mosaic in glass, whether tessellated or otherwise, in the manufacture of mosaic-glass, stained or clear, for windows, screens, transparencies, lamp-shades, gas or electric fixtures, and other decorative structures or articles to which the improvement may be applicable, the object being to produce glass mosaic of superior beauty and durability adapted to a wide range of decorative work. My invention, however, does not aim to dispense with the traditional leaden frames or cams now employed in decorative glass work, except in the case of very small openings. It does, however, provide for the designer a way of escape from the trammels of leading, where leading interferes with the free execution of a design. Dispensing with leads is, however, an incidental advantage quite apart from my main purpose, which may be said to be to enable a mode of decoration long applied in opaque materials to floor and wall surfaces to be employed in the production of windows and other transparent and translucent objects.

With these ends in view my invention consists in certain details of construction and

methods of procedure, as will be hereinafter described, and pointed out in the claims.

Before proceeding to a description of my invention I should state that I shall employ the word "mosaic" in a sense approximating at least to its ancient sense of describing the assemblage of small regularly-cut pieces or substantially regular fragments of choice material in the production of floor and wall surfaces rather than in the sense in which it is now employed by workers in glass to describe mosaic effects produced without the employment of true mosaic construction, but aiming at the semblance of it. I shall also use the words "mosaic element" to describe the assemblage of small pieces of glass initially assembled on a one-piece glass body as an independent organization and then introduced into a design containing various elements, mosaic and otherwise, leaded together in the usual manner.

For the illustration of my invention I have chosen to represent a small section of a border of true mosaic-glass, this border being composed of mosaic elements leaded together, but it will be of course understood that the forms which mosaic structures produced in accordance with my invention may assume are infinite and that the form shown is merely illustrative.

As shown in the drawings, the border consists of a conventionalized chain of links, composed of mosaic elements A, located between parallel mosaic-strips B and separated from each other by spacing elements C, the said elements and strips being organized together by means of leads D, used in the traditional manner. The elements A and B are what I have already described as "mosaic elements." The element A comprises an irregular body E, of clear or stained glass, upon the inner surface of which are imposed two waved or scroll-shaped bands of clear or stained glass tesserae F. These are comparatively uniform in size and shape; but that is not essential. The said bands are not placed in direct contact with each other nor are the tesserae of the same band in direct contact with other tesserae of the same band. On the contrary, the tesserae are shaped and arranged so as to secure between them palpable spaces or cavities F', which are indeed open joints or

joints so emphasized as to be plainly visible as lines of demarcation between the tesserae. The tesserae F, having been laid in the required arrangement upon the glass body E, are welded thereto by exposing the same to heat or adhered in some other suitable manner. Finally an envelop, binder, or film G, of transparent or translucent flux or glazing, is applied over the exposed surface of the tesserae, which it incloses and imprisons, entering more or less into the spaces or cavities between them. Prior to the application of the envelop G of flux or glazing the spaces or cavities F' between the tesserae being in general of a sufficient size for the purpose may be filled in whole or in part with such enriching material F², as bits of metal and metal-foil, the latter having great value in lighting up or illuminating the fabric or special portions thereof. This flux or glazing may be chosen to perform merely the mechanical function of imprisoning and sealing the tesserae and binding them to the body and to each other, or, in addition to its imprisoning and binding function it may have a supplemental decorative function in softening or otherwise modifying the effect of the design. By coloring it it may have the effect of a retouching-varnish, while by dexterously applying it it may produce effects of veining, mottling, clouding, &c. This film, whether a vitreous flux or a glazing of some sort, may be applied to the mosaic elements prior to their assemblance in the mosaic structure or afterward, as most convenient and most effective in carrying out the conception of the artist.

It will be seen from an inspection of the drawings that, strictly speaking, the tesserae F, on account of their comparatively regular shape and size, produce what is technically known as "Roman mosaic," the art of which consisted in binding small regularly cut or broken fragments of opaque material together; but my invention also contemplates the use of pieces of glass of less regular shape and size and cut with reference to the lines of the design so as to form what is technically known in the art as "Florentine mosaic" or "opus sectile." For the sake of brevity I use the word "tesserae" as including not only the components of a Roman mosaic, but also the irregular pieces composing a Florentine mosaic. In either case I do not aim to weld the tesserae directly to each other to secure their cohesion, for as it is my purpose to retain wherever practicable the ancient method of leading, so, also, it is my aim to leave the joints of the mosaic distinctly marked, as in the ancient or medieval mosaics. It is desired only to weld the tesserae to a large or small piece of stained or clear glass constituting the body of the mosaic element. This body may be a sheet of glass, or it may be a lamp-shade or some other object in glass. Of course if the tesserae, whether regular or irregular in form, do adhere to-

gether at points of closest contact no harm may be done, but, as aforesaid, that is a possible incident and not an aim of my invention, which comprehends as one of its essential parts the possibility of inserting enriching material, such as bits of metal or metal-foil, into the palpable spaces or cavities between the tesserae. As the mosaic in its first form comes from the furnace perhaps marred by slight distortion, my method secures to the artist the freedom to correct any faults by the insertion of substances suited to the special purpose by removing defective tesserae and replacing them and to modify the effect by chipping the edges of the tesserae to produce facets and the like.

In the manufacture of windows or other structures, whether of clear or stained glass and with or without the use of enriching material in the cavities or spaces, I contemplate not only the production of entire windows, but also the combination of my improved construction with traditional practice. In either case the window or other structure will consist of mosaic elements combined as a rule by leading in the ordinary manner. In the second case certain elements of the design will be chosen for treatment according to my improved method, while the remaining portions will be treated in any of the prevailing modes. Thus, for example, in a window containing figures the figures may be produced in the usual way, while the background and other accessories of the window may be formed of tessellated mosaic elements which may or may not contain in the spaces or cavities between the tesserae-enriching material, such as bits of metal or metal-foil, at the discretion of the artist.

In view of the modifications suggested and of others which may obviously be made I would have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes as fairly fall within the spirit and scope of my invention.

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

1. As a new article of manufacture, glass mosaic or mosaic elements consisting of a glass body, glass tesserae firmly adhered by welding or otherwise to the said glass body upon which they are arranged with palpable spaces or cavities between them, and an envelop consisting of a continuous or unbroken film or sheet of transparent or translucent flux or glaze applied over the exposed surfaces of the tesserae, which are thus imprisoned and bound to the glass body and to each other.

2. As a new article of manufacture, glass mosaic or mosaic elements, consisting of a glass body, glass tesserae firmly adhered by welding or otherwise to the said glass body upon which they are arranged with palpable spaces or cavities between them, enriching material located in the said palpable spaces or cavities

between the tesserae, the effect of which they modify, and an envelop consisting of a transparent or translucent flux or glaze applied over the exposed surfaces of the tesserae which
5 are thus imprisoned and bound to the glass body and to each other.

3. A process of producing glass mosaic consisting in arranging glass tesserae upon a glass body with palpable spaces or cavities between
10 the individual tesserae, and exposing the body and tesserae to heat for welding the tesserae not to each other but directly to the glass body, in introducing enriching material into

the said spaces or cavities or some of them, and in imprisoning the tesserae by applying 15 over them a transparent or translucent flux or glazing which envelops them and enters more or less into the said spaces or cavities between them.

In testimony whereof I have signed this 20 specification in the presence of two subscribing witnesses.

FRANK GARDNER MOORE.

Witnesses:

GEO. D. LORD,
GAYLORD S. WHITE.