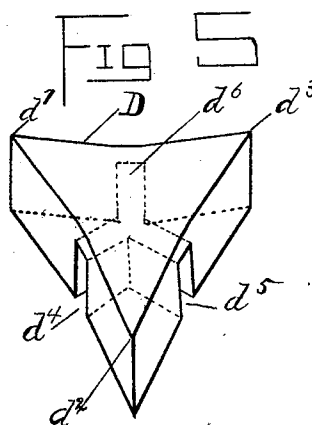
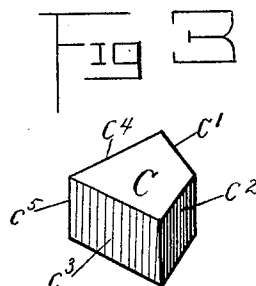
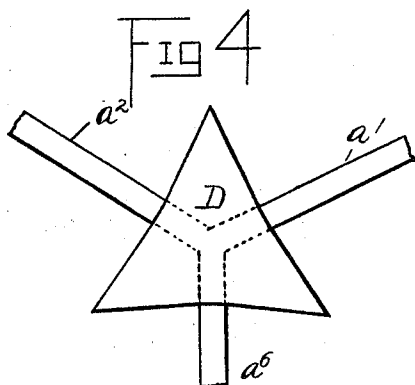
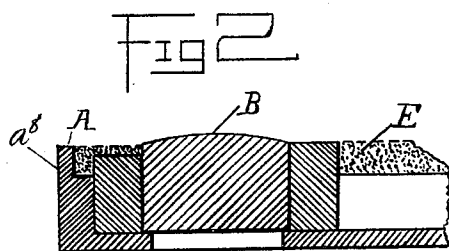
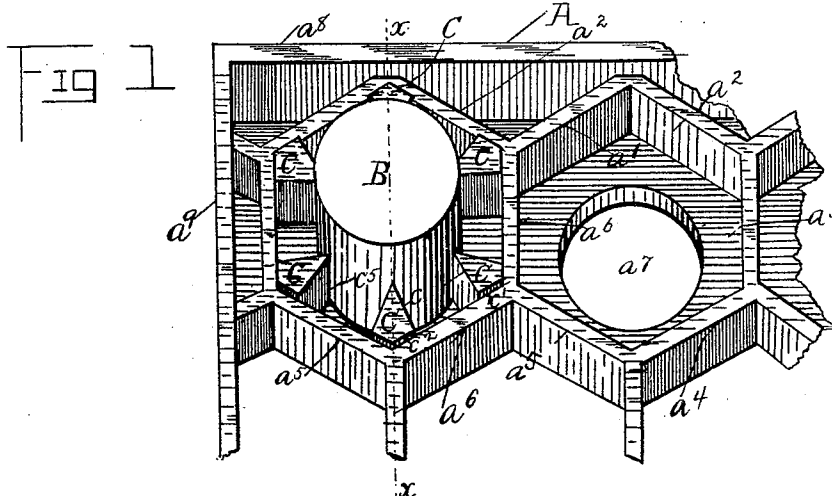


(No Model.)

D. G. BEECHING.
TRANSLUCENT TILE.

No. 582,893.

Patented May 18, 1897.



WITNESS:

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UNITED STATES PATENT OFFICE.

DAVID G. BEECHING, OF LEONIA, NEW JERSEY.

TRANSLUCENT TILE.

SPECIFICATION forming part of Letters Patent No. 582,893, dated May 18, 1897.

Application filed August 14, 1896. Serial No. 602,739. (No model.)

To all whom it may concern:

Be it known that I, DAVID G. BEECHING, a citizen of the United States, and a resident of Leonia, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Translucent Tiles, of which the following is a specification.

My invention relates to a new article of manufacture which is an improvement in translucent tiles to be used in skylights, pavements, or otherwise.

I have illustrated my invention in the accompanying drawings, in which I have designated the parts by letters, referring to like parts by like letters.

Figure 1 is a perspective view of the grating employed by me, showing a glass or lens in one light-hole and the other hole without the glass also showing my improved lead portion as introduced without the cement. Fig. 2 is a vertical section taken on the line $x x$, showing the grating, the glass lens, the lead portion, and the cement. Fig. 3 is a perspective of one of the lead pieces shown in Fig. 1. Figs. 4 and 5 show another construction of the lead part which I may employ.

The several parts referred to in the drawings may be described as follows:

A may be said to represent the grating generally, which is usually made in the form of a box with four or more sides, two of which are shown and indicated as a^3 and a^9 . These are of preferably an elevation nearly in the plane of the top of the lens. This base is provided with light-holes, as a^7 , &c., of a size to receive the glass lights or lenses of any desired form and of a height when seated in the light-hole a^7 to be in the same plane as the top of the rim a^3 a^9 , &c., and I prefer to dispose these light-holes a^7 , &c., in what may be termed a "triangular" arrangement, such as that shown in the drawings, as I find this the most economical disposition to make of such holes—that is to say, I am able by this arrangement to get a larger area within a given space. In order to give rigidity and strength to the base A, I provide the base with braces a^1 , a^2 , a^3 , a^4 , a^5 , and a^6 at right angles thereto, and I interpose these braces between the light-holes. I prefer to make them not so high as the rim a^3 and a^9 .

B is a lens of any desired form. I have in-

dicated the same as round and of an elevation equal with that of the outside rim a^3 and a^9 when the same is seated in the light-hole a^7 and of a form to be seated in the light-hole a^7 .

C represents a triangular piece of lead or equivalent substance. (Shown in detail in Fig. 3.) I introduce pieces of this general form between the braces and the lens, as indicated in Fig. 1, so that the sides thereof c^1 and c^2 fit into the triangular portions of the braces and the sharp edge c^5 makes contact with the lens B. It will be understood that this is the form suitable to be used with a tile of the form indicated in the drawings. Should the tile, however, be round or any other form, that end of the piece C bearing on the rim of the brace should conform thereto. The edge c^5 , however, is always intended to bear on the lens. In Fig. 2 I have shown a section taken on the lines $x x$, and I have indicated the concrete or cement as having been introduced into the vacant spaces around the lens and smoothed off to a level with the rim of the base A and on a level with the edge of the lens.

In Figs. 4 and 5 I have indicated a second form of construction which I may employ under certain conditions. The object of this form of construction is to provide a convenient means of applying the lead piece and consists simply of three of the portions C put together, with a space to permit the lead to fit over that portion of the brace where the three braces meet. I have indicated this in the top view of Fig. 4 as D and in a perspective view in Fig. 5, where d^1 , d^2 , and d^3 indicate the edges of the lead portion and d^4 , d^5 , and d^6 indicate the portions which are removed from this triangular lead piece to permit the braces a^1 , a^2 , and a^6 to be introduced.

The object of my invention is to provide an element in the combination of parts which go to make up a translucent tile of this general character which will by its peculiar character compensate for the uneven expansion and contraction of the elements that go to make up the tile when completed. These elements consist, first, of the iron grating A, with its accompanying walls a^3 a^9 , &c., and braces a^1 to a^6 , &c.; second, of the glass lens B; third, of the lead or equivalent parts C, and, fourth,

of the concrete shown in Fig. 2 and indicated as E.

I am aware that heretofore efforts have been made by those who have been working in this art to overcome the difficulties which are found to arise from the uneven expansion and contraction of the elements which go to make up the tile as at present constructed, resulting oftentimes in the cracking of the glass or the breaking of other portions of the tile. The object of my present invention is to interpose between these elements in such relation as may accomplish the best results a soft or elastic substance, such as lead, in such form and in such relation to the parts as to permit an expansion and contraction which under normal conditions exist, and yet to provide a compensation for such expansion and contraction that will overcome the difficulties heretofore encountered—that is to say, the cracking of glass or the disturbance of the normally rigid relation of the parts. To this end I have constructed the triangular piece of metal C, which is intended to fit between the braces, say at a^6 and a^4 , with its sharp edge a^5 bearing against the glass. The advantages of this arrangement are, first, that these blocks C form a bearing and support for the lens B when the concrete or cement is being introduced; second, that when the concrete is introduced and expansion or contraction occurs of any or all of the parts or elements of the combination making or forming the complete tile the soft-metal wedge C will yield to such pressure in a manner to relieve the strain and permit the tile to remain an integral whole, and I present to the glass the edge c^5 with the idea that it is the most delicate portion, and consequently any pressure upon it will be more readily relieved by the yielding of the soft edge c^5 .

In order that the utility of my invention may be fully understood, it must be remembered that illuminating-tiles such as that which I have described are made with the use of gratings having four or more walls, which are usually two or three feet one way and five or six feet the other. Of course they may be made of any size or form; but in all cases

they are made with inclosing walls, such as a^8 and a^9 . When the cement is introduced, therefore, it becomes a solid mass between the walls of the grating surrounding the lenses and having its bearing and hole on the braces, as a^7 to a^6 , &c. The object that I have in view is to interpose at preferably the intervals indicated as above a substance, such as lead, throughout the entire mass of concrete or cement, in order that said substance may act as a yielding element throughout the entire mass. It will be understood, therefore, that the concrete lying between the walls, as c^3 c^4 , &c., in its expansion will find a yielding body to such expansion, and in like manner when the lens expands it will find in the lead a yielding edge, and so the whole union of the parts of the tile will be dependent one upon the other, and the uneven expansion will be compensated for by the elasticity and softness of the lead or equivalent material interposed as part hereof. I prefer to make the lead piece C of an elevation somewhat less than that of the rim of the grating, such as a^8 , so that when the plastic cement is introduced it will cover the lead; but I do not intend that it shall cover it to any material depth, and I may bring the lead to the surface—that is to say, in a plane with the top of the rim a^8 and the lens B, as shown in Fig. 2.

What I claim is—

As a new article of manufacture a translucent tile formed of a grating with walls, braces and light-holes, and glass lenses set into said light-holes, and triangular pieces, of lead or equivalent elastic material interposed between the braces and the glass with the sharp edge of the piece bearing on the glass, and the space within the walls of the grating filled in with cement, substantially as described.

Signed at New York, in the county of New York and State of New York, this 11th day of August, A. D. 1896.

DAVID G. BEECHING.

Witnesses:

WILLIAM W. SEUFERT,
THOMAS P. DALTON.