(No Model.)

# A. FRIEDRICK.

## PROCESS OF BUILDING LEAD SASH FOR GLAZING PURPOSES.

No. 271,697. Patented Feb. 6, 1883.

*Fig. 1.*

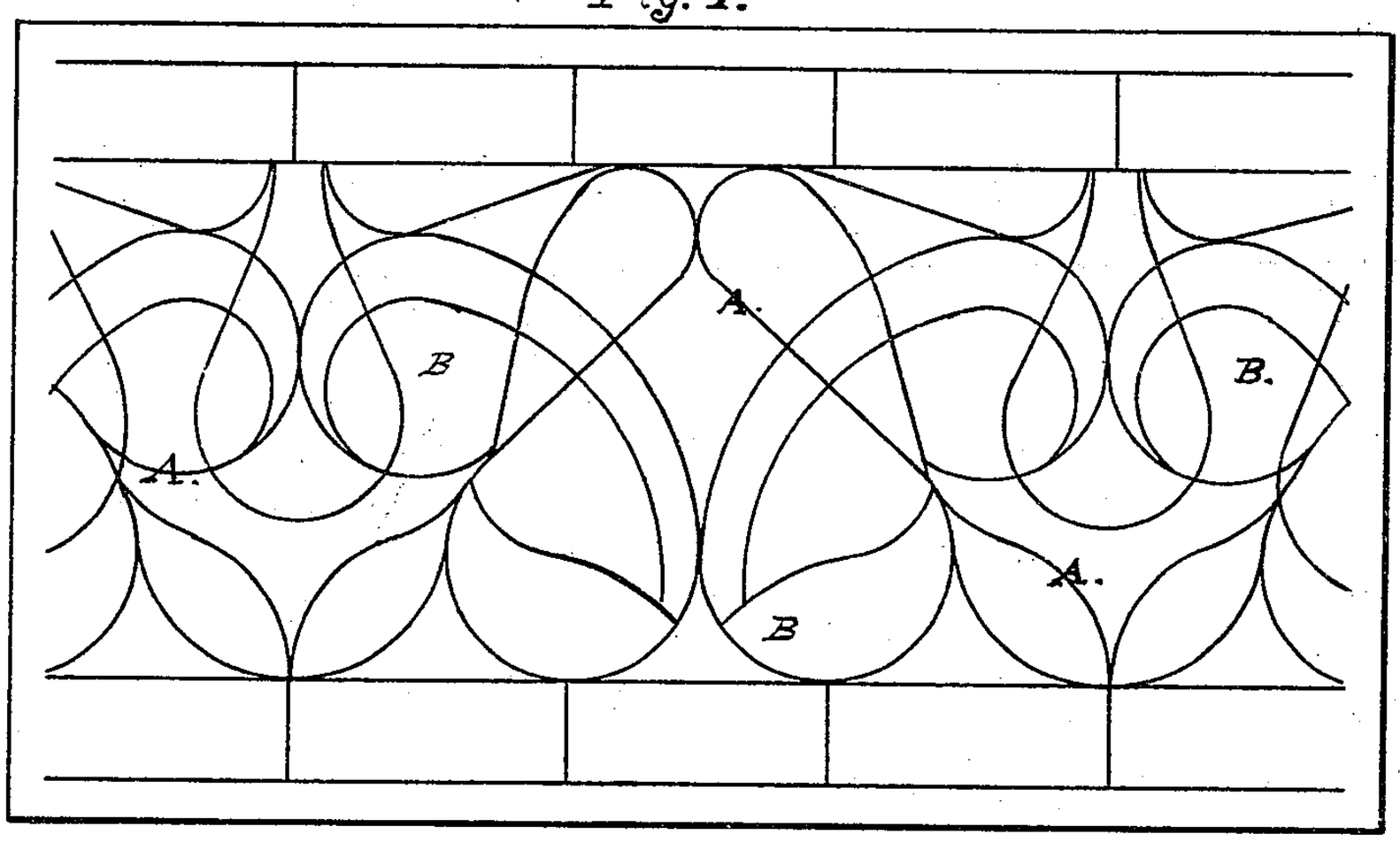



*Fig. 2.*

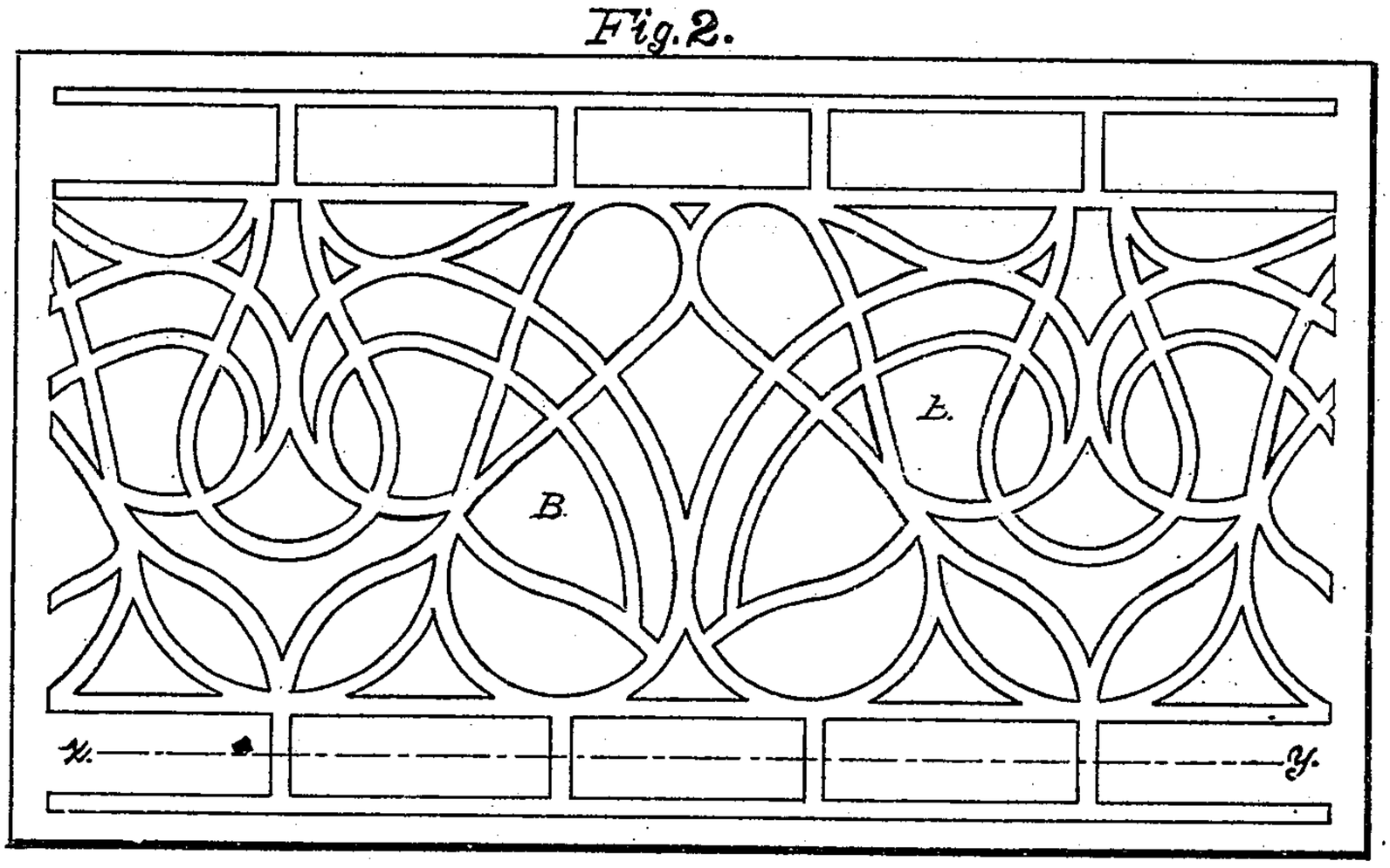
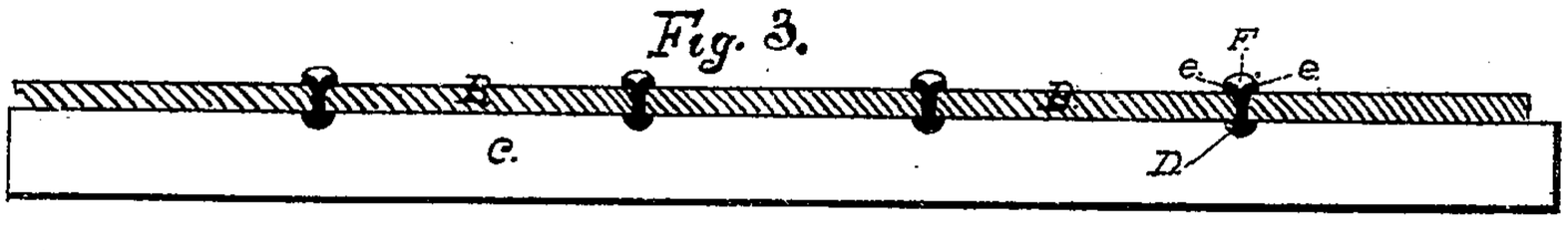



*Fig. 3.*




Witnesses.
Fred. E. Lockwood.
Sidney Gibbs

Inventor.
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# UNITED STATES PATENT OFFICE.

ALPHONSE FRIEDRICK, OF BROOKLYN, NEW YORK.

## PROCESS OF BUILDING LEAD SASH FOR GLAZING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 271,697, dated February 6, 1883.

Application filed June 29, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ALPHONSE FRIEDRICK, a citizen of the United States, residing at Nos. 16 and 18 Hoyt street, Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in the Process of Building Lead Sash for Glazing Purposes as used in making illuminated windows, screens, and panels in which various kinds of glass are used; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Heretofore in making illuminated windows, screens, or panels, as used in churches or domestic work, where the various kinds of glass have been joined with lead sash-bars, the process has been as follows: First, a design is made from which glass-cutting and lead-glazing patterns are made; second, the glass, of required color and thickness, is cut to conform to the shapes indicated on the cutting-pattern, after which they are assembled in their proper places on the glazing-pattern, being held in place by nails until joined piece to piece, following the lines indicated on the said glazing-pattern, by means of lead sash-bars, which are also soldered, piece to piece, at intersections, said bars being formed with a groove in two of their sides to receive the glass; finally, cement is rubbed into the interstices between the glass and lead with the aid of a brush in order to render the sash air and water tight.

In the above-described method of building lead sash I propose, by my invention, to obviate the following difficulties: first, glazing each piece of glass separately, and at the same time fitting each piece of lead sash-bar separately to the glass; second, the necessary requirement of much time and the services of artistic and skilled workmen of long experience, in order to preserve the continuous and correct outline of the design formed by the sash-bar connections between the glass; and, third, the difficulty of rubbing the cement in the interstices between the lead and glass with the aid of a brush.

The object of my invention is to obviate the difficulties above described, which object I attain by means of a grooved (lead sash design) matrix-surface, which is produced by first transferring the lines indicated on the cutting-pattern (which lines form the lead sash-bar divisions between the several pieces of glass) to a level surface of wood or other suitable material, after which the said lines are cut out to a depth and width sufficient to receive the required sizes of lead sash-bar, thus forming a grooved pattern, (from which I produce as many duplicate molds as may be required for glazing many sections of the same pattern,) which will serve to build and hold the lead sash-bars in place, said sash-bars being formed with a flat or half-round bar, with two flanges projecting from its center, forming a rabbet each side of said flanges to receive the glass, as described in my application for Letters Patent No. 43,503, for improvement in lead sash-bars, filed October 10, 1881.

After the sash-bars have been fitted in the grooves of the pattern or matrix-board above described, being held in place by nails, if necessary, the pieces of glass of required color and thickness, previously cut by aid of the cutting-pattern, are assembled in their respective places in the sash thus formed, and locked in said sash in the following manner: by first soldering all intersections and connections of sash-bars together; second, by cementing all interstices between the glass and lead; third, by turning down the flanges of sash-bars to the right and left closely to the glass and floating over with solder all seams between flanges to add additional strength to the bars and to keep the flanges in place, as above described; finally, the sash containing the glass is lifted from the pattern, turned over, laid in a horizontal position, and all intersections and connections of sash-bars are soldered, as above described, thus completing the window, screen, or panel.

In the accompanying drawings, Figure 1 represents a glass-cutting and lead-glazing pattern, in which A represents the lead sash-bar divisions between the several pieces of glass B, and so arranged as to form the outline of a design. Fig. 2 represents a grooved matrix-surface, formed by transferring the lead sash-bar outlines from Fig. 1 to a surface of wood or other suitable material, afterward to be cut out in depth and width sufficient to receive the sash-bars and hold the same in place until the

sash thus formed is glazed, soldered, and cemented, as before described. Fig. 3 represents a section through X Y, Fig. 2, in which C is the grooved matrix-surface; D, the half-round of lead sash-bar, resting in the grooves of said matrix-surface; *e*, the flanges of sash-bar, locking the glass B in the rabbets of said bars, and having the seams F between the flanges floated with solder.

Having fully described my invention, its object, and manner of using the same, what I desire to claim and secure by Letters Patent is—

The process of building lead sash for glazing purposes, (as used in the art of making illuminated windows, screens, and panels,) which consists in forming a grooved matrix-surface, (in which the grooves conform to the lines forming the lead sash-bar divisions of the glass in the design,) securing the sections of sash-bar in said grooves, arranging the glasses therein, securing them upon the exposed side, removing the sash from the matrix, and securing the sash-bar upon the opposite side, as set forth.

ALPHONSE FRIEDRICK.

Witnesses:
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