

J. LAMB.
LEAD FOR GLAZED WINDOWS.

No. 563,189.

Patented June 30, 1896.

Fig. 1.

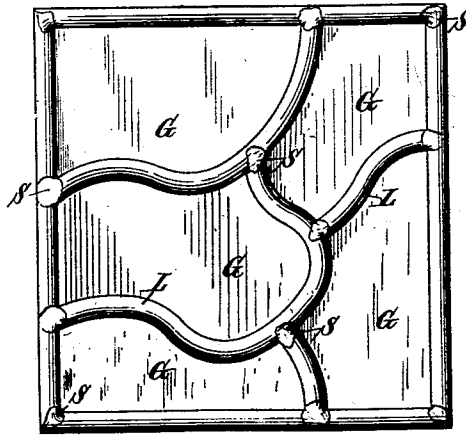


Fig. 2.

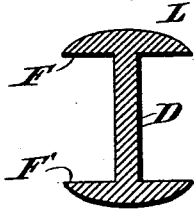


Fig. 3.

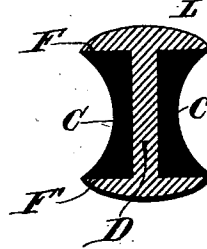


Fig. 4.

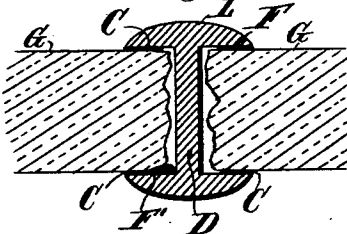
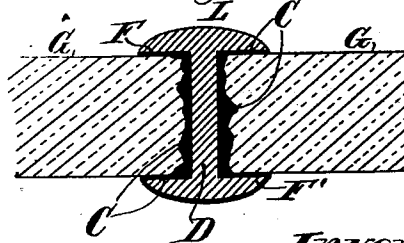


Fig. 5.



Witnesses.

William R. Baird
Herrman Meyer

Inventor:

Joseph Lamb
By Burger Baird
His Attorneys

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Fig. 6.

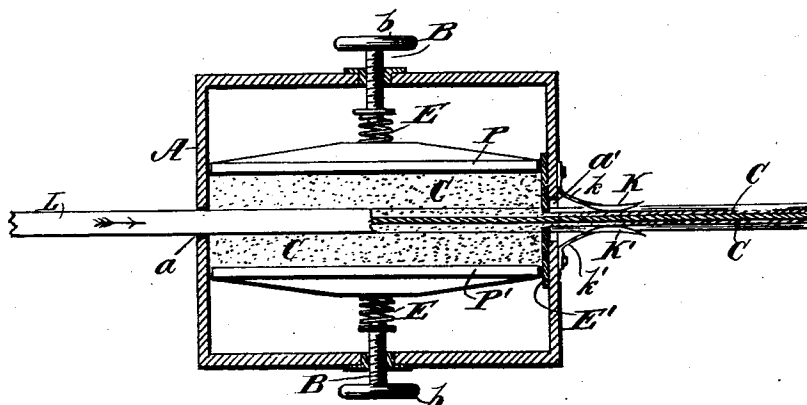


Fig. 7.

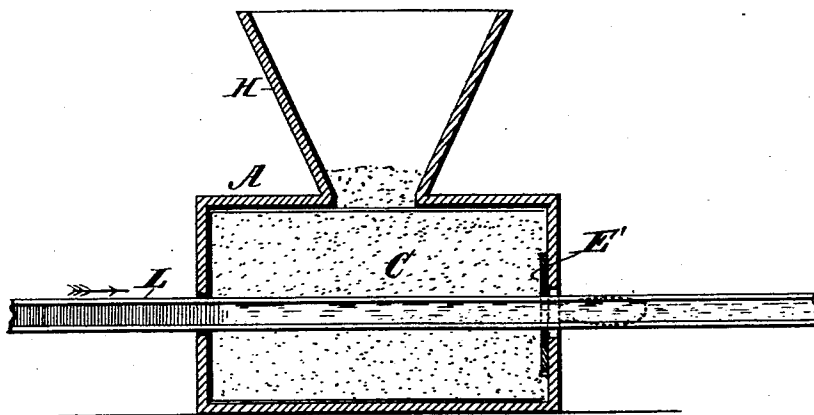
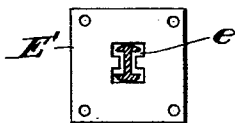


Fig. 8.



Witnesses.

William R. Baird
Herman Meyer

Inventor.

Joseph Lamb
By Burger & Baird
His Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH LAMB, OF NEW YORK, N. Y.

LEAD FOR GLAZED WINDOWS.

SPECIFICATION forming part of Letters Patent No. 563,189, dated June 30, 1896.

Application filed February 29, 1896. Serial No. 581,232. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LAMB, a citizen of the United States, residing at New York, in the State of New York, have invented a new and useful Improvement in Leads for Glazed Windows, of which the following is a specification.

My invention relates to the manufacture of the leads used in making glazed windows; and its novelty consists in the means employed to prepare the same, whereby the windows are strengthened and made weatherproof.

Heretofore, glazed windows have frequently been open to the objection that they were not water-tight, either before or after they were placed in position, and this quality has not infrequently resulted in great damage to the building and its contents, which they inclosed and were supposed to protect.

The object of my invention is to overcome this disadvantage and make a water-tight window. At the same time in so doing I obtain other important advantages, which I will specifically relate hereinafter.

In describing my invention it is important to consider the present state of the art, which has become known to me through practical observation extending over a period of many years, supplemented by the careful study and examination of the literature relating thereto.

Heretofore in the manufacture of lead-glazed windows it has become customary to first assemble the pieces of glass to be used in the window upon a flat table, upon which is spread the pattern to be followed. Each piece of glass is then inserted into a piece of a lead string, or fillet, which consists of a central vertical core and two horizontal flanges forming an I in section. The pieces of glass being thus laid in juxtaposition, the ends of the leads are soldered where they join. The leaded glass is then laid upon a solid table and the workman applies the cement thereto in a semifluid condition by means of short-handled scrubbing-brushes, smearing and brushing the entire surface of the window in an endeavor to force the semifluid mass beneath the lead edges which adjoin the glass and to get it into the space between the glass and the inner surface of the flanges and the core. By carefully and patiently working, the whole window is thus gone over until the cement

has been forced as far as possible into the crevices. The window is then dirty and has to be cleaned. This is done by means of dry sawdust, which adheres to the cement found remaining upon the surface of the glass and which can be brushed away. By this means a sufficient amount of cement is supposed to have filled the narrow edges of the lead fillets, but the workman can never be sure that the space between the glass and the fillet is filled, or that it has been put where most needed, namely, between the inner edge of the glass and the core of the fillet. If this space is not filled, the glass can move more or less laterally, and there is great liability of leakage in stress of weather. Two other disadvantages spring from this method. About one-half of the cement used is thrown away with the sawdust, and as it has to be used in a semifluid condition it takes a long time for the cement to set or season before the glass can be handled and placed in the sash-frame.

Such being the state of the art, I have invented a means of preparing the leads whereby most of the disadvantages mentioned may be overcome. This consists, in brief, in placing between the flanges of the lead fillet and above its core a filling of cement, thus making the fillets ready for use with the cement in its proper position and providing the glazier, who assembles the separate pieces of which the window is to be composed, with a fillet which contains the cement in its proper quantity and position in reference to the work which is to be done and which fillet he cuts, binds, places in position, and solders precisely as the former unfilled fillets were used. The labor of the cementer is thus dispensed with, the cement formerly wasted is saved, the glazed window is stiffer and stronger, the cement is absolutely sure to be where needed between the edge of the glass and the core of the fillet, and the finished window is made waterproof and can be handled and shipped at once, because little, if any, time is required to harden or season it.

In the drawings, Figure 1 is a top plan view of a pane of leaded glass. Fig. 2 is an enlarged central vertical section of the ordinary lead fillet. Fig. 3 is a central vertical section of the same provided with a filling of cement. Fig. 4 is a vertical section of a fillet between

two sheets of glass cemented in the ordinary manner. Fig. 5 is a vertical section of a fillet between the same sheets of glass cemented by my improved method. Fig. 6 is a horizontal section and partial plan view of the apparatus I employ for filling the leads with cement, and Fig. 7 is a central vertical section of the same. Fig. 8 is an enlarged detail of the cement die-plate.

In the drawings, G G, &c., are pieces of glass between which are placed fillets L of lead soldered at the joints with solder S in the usual manner, and which may be made up into a pane, as shown in Fig. 1. In Fig. 2 is shown the fillet L as ordinarily made and used, and having the core D and flanges F and F', and in Fig. 3 the same fillet filled with cement by my improved process. In Fig. 4 is illustrated the fillet between two pieces of glass after an attempt has been made to force the cement between the flanges F and F' and the glass G, as above described, and showing little or no cement between the core D and glass G; and in Fig. 5 is illustrated the manner in which the space between the glass G and the core D of the fillet L is filled with the cement when my improved fillet is employed.

In Figs. 6 and 7 I illustrate the apparatus which I have invented to fill the lead fillets with cement. In these figures A is a box or other suitable receptacle having an entrance-aperture *a* for the introduction of the lead fillet and an exit-aperture *a'*, through which it passes after treatment. It is also provided with an aperture connected with a source of supply of the cement, for instance, a hopper H. Within the box are two vertical partitions P and P', laterally movable and between which is placed the mass of cement through which the fillet moves, and each of which is provided on its exterior surface with a tension device, such as a set-screw B, having a head *b* and terminating in a coiled spring E, whereby a constant inward pressure is exerted against the partitions P and P', and through them upon the mass of cement. The screw B is passed through a threaded aperture in the side of the box or is otherwise secured in place. At the forward end of the box the exit-aperture *a'* is provided with a die E', having an aperture *e*, through which the fillet L must pass, and which is adapted to restrict the amount of cement which will pass out with and adhere to the fillet. On each side of the aperture *a'* are suitably secured two forming-pieces K and K', which terminate at their inner extremities *k* and *k'* in a piece of elastic metal, whereby they tend to approach each other. These are rounded at their inner surfaces and press against the body of cement in the fillet L as it leaves the die, forcing it toward the core at the center

of the fillet and along the inner edges of the flanges.

The operation of the apparatus is as follows: An ordinary fillet is passed through the apertures *a* and *a'*, projecting slightly beyond the latter. The space between the partitions is then filled with cement, and the partitions P and P' put under a suitable inward pressure. The fillet is then pulled forward by hand or by any suitable means through the die E'. The pressure exerted through the partitions on the mass of cement C causes it to crowd along the core D and between the flanges F and F' of the fillet L, completely filling this space. As the filled lead passes out through the aperture in the die-plate E' a portion of the cement is removed. The forming-pieces K and K' then come into play, gently squeezing the yielding cement and pushing it away from the center and toward the flanges of the fillet, and the fillet is then completed. After completion, if not intended for immediate use, it may be laid in water and so kept soft and in condition.

In the above description I have called the flexible fillets "leads," because they are commonly made of that metal and so designated, but it is obvious that my invention is equally applicable to fillets made of any flexible metal, or combination of metals.

Having described my invention, what I claim as new is—

1. In an apparatus for filling flexible metal fillets with cement, the combination with a receptacle adapted to hold the cement and provided with ingress and egress apertures for the fillet, and having sides provided with means adapted to bring them toward each other whereby a pressure is exerted against the mass of cement surrounding the fillet, of a die-plate adapted to restrict the amount of cement attached to the fillet and forming-pieces attached on each side of said die-plate whereby the cement attached to the fillet is pressed and smoothed, substantially as described.

2. As an article of manufacture a flexible metal fillet provided with a layer of cement between the flanges and alongside of the core.

3. The process of manufacturing glazed windows which consists, first, in placing a layer of cement between the flanges and alongside of the core of a flexible metal fillet, second, in placing the fillet so filled alongside of the edges of the pieces of glass of which the window is to be made, and third, in soldering the joints between the fillets so placed.

In testimony whereof I have hereunto set my hand the 26th day of February, 1896.

JOSEPH LAMB.

In presence of—

WILLIAM R. BAIRD,
JENNIE G. BAIRD.