

(No Model.)

J. E. FLANAGAN.  
METAL SASH BAR.

No. 567,970.

Patented Sept. 22, 1896.

Fig. 1.

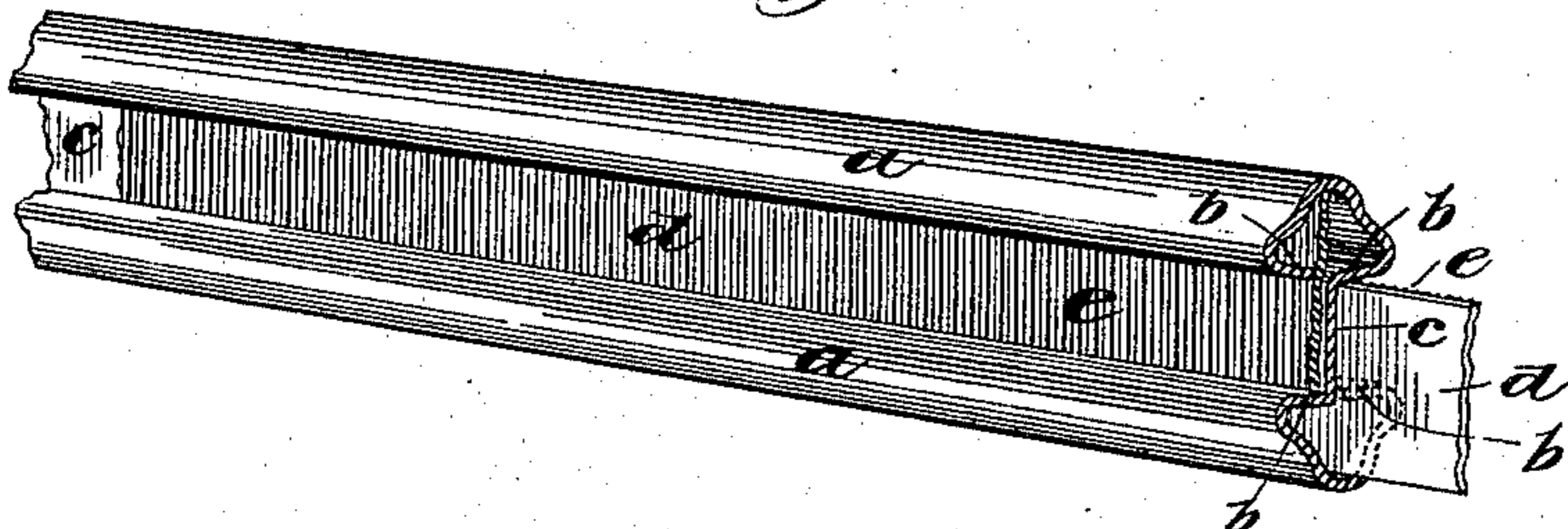


Fig. 2.

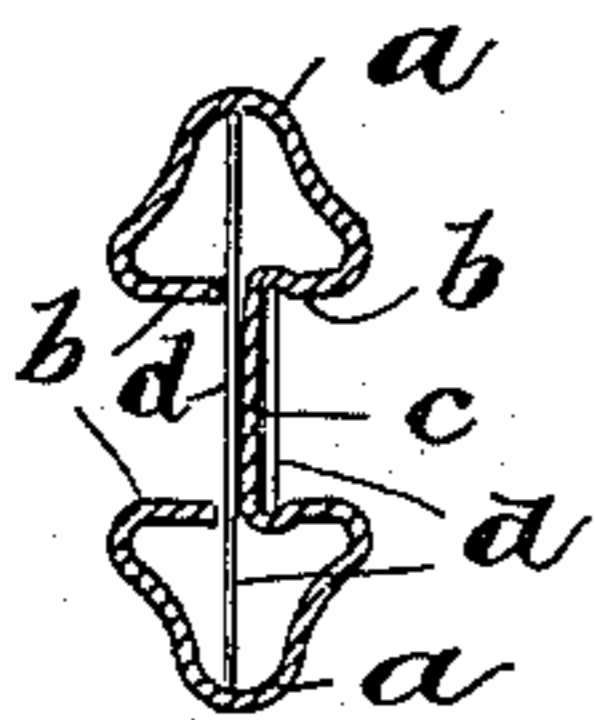


Fig. 3.

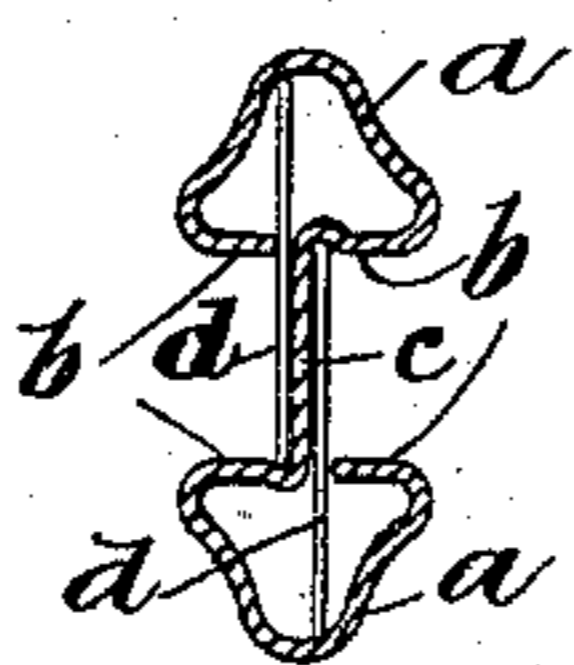


Fig. 4.

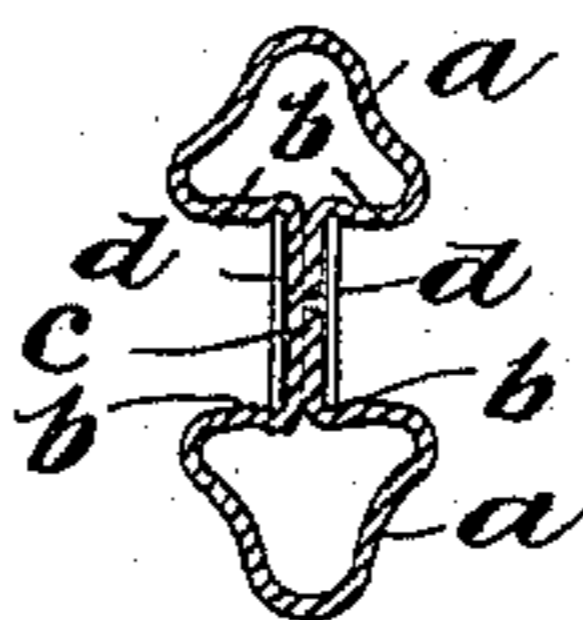


Fig. 5.

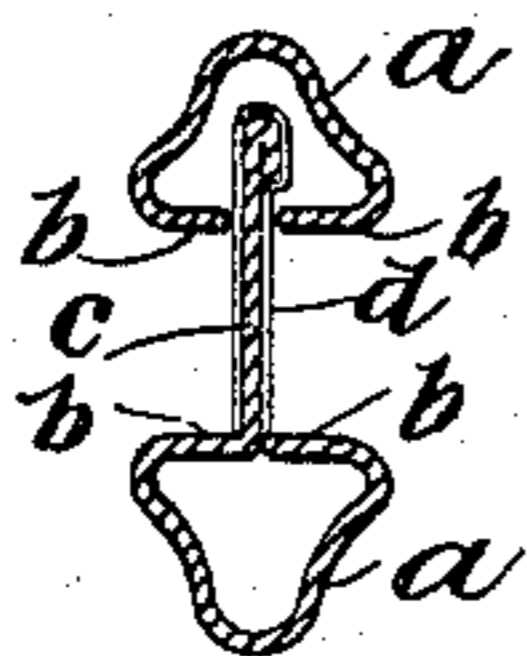


Fig. 6.

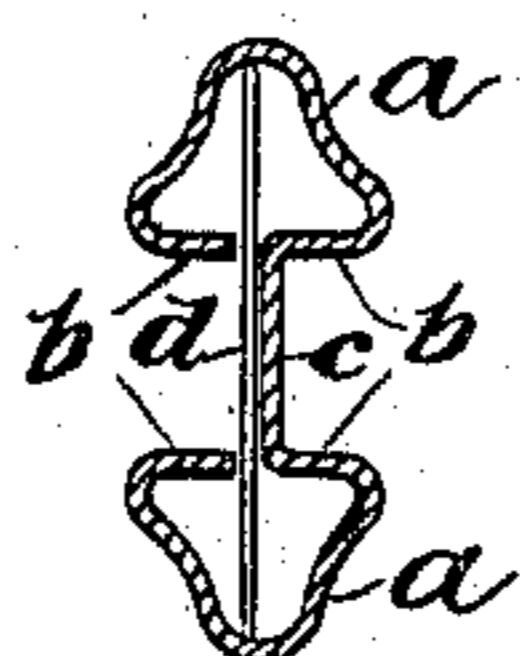
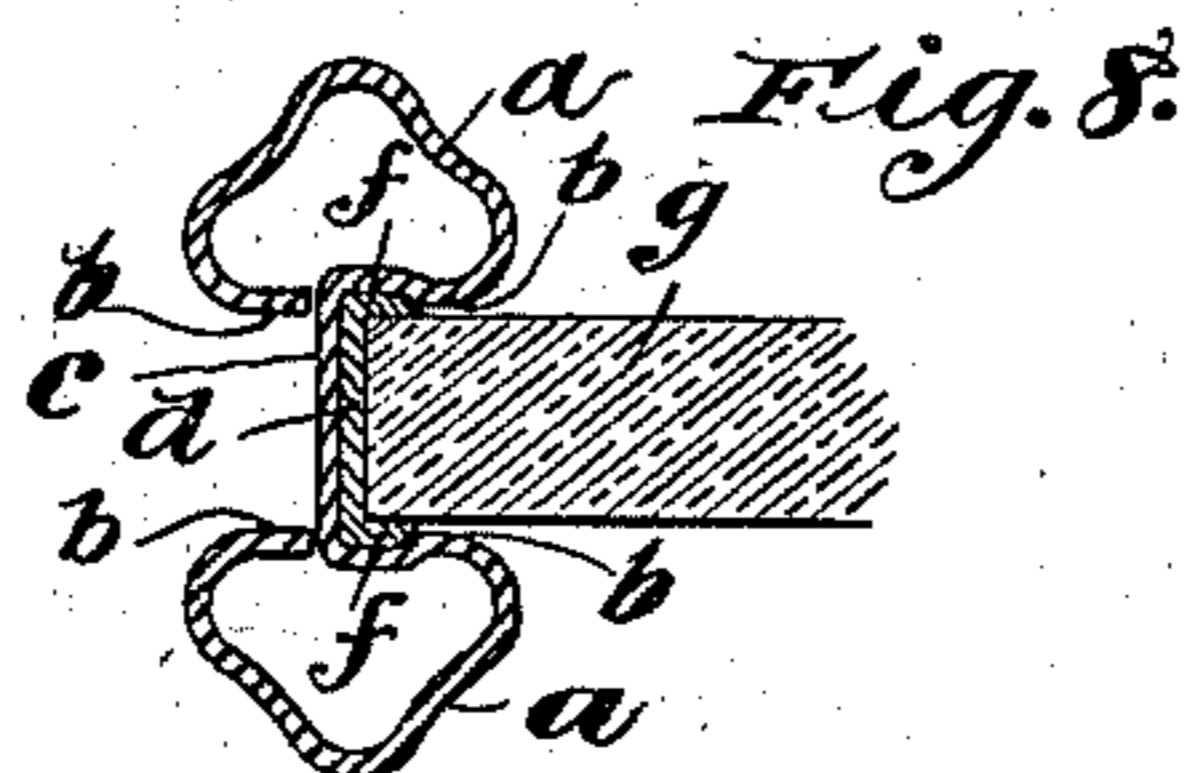
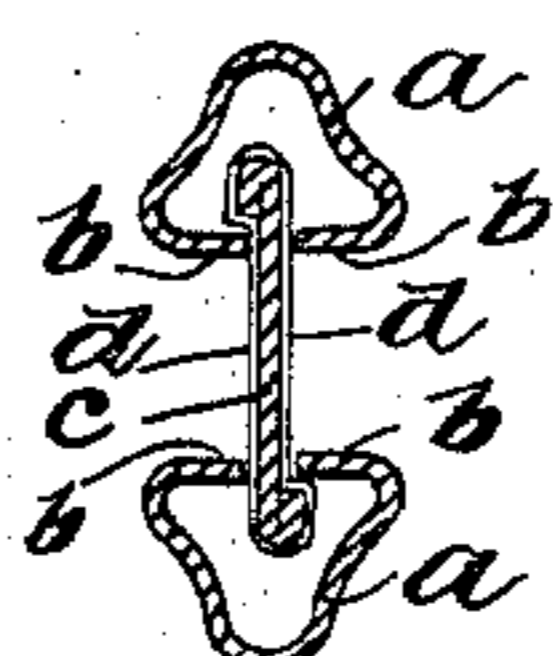


Fig. 7.



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# UNITED STATES PATENT OFFICE.

JOSEPH E. FLANAGAN, OF CHICAGO, ILLINOIS.

## METAL SASH-BAR.

SPECIFICATION forming part of Letters Patent No. 567,970, dated September 22, 1896.

Application filed May 31, 1895. Serial No. 551,265. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH E. FLANAGAN, of Chicago, Illinois, have invented certain new and useful Improvements in Metal Sash-Bars, of which the following is a specification.

This invention relates to metallic sash-bars, such as are employed in setting ornamental and art glass. Heretofore ornamental and art glass have been most commonly set by the lead process, in which the joints are formed by hand manipulation, and the panel or sheet is braced or strengthened by rigid metal tie-bars. This lead process is largely passing into disuse on account of certain inherent defects, the chief of which is its weakness and insubstantial character. The later means employed consists in the use of metal bars composed of a plurality of parts formed by dies and having rests or seats for the edges of the sheets of glass, the parts being adapted to be separated to enable the glass to be placed in position, after which they are secured together, and the glass thereby locked between the shoulders, heads, or abutments formed on the parts. This later type of said bar is usually made from a comparatively stiff or hard metal, so that the use of separate tie bars or braces is dispensed with, the sash-bars themselves being sufficiently rigid to give the desired strength. Obviously, however, this hard metal cannot be made to conform to the edges of a sheet of glass as accurately as soft metal, and the hard-metal sash-bar has certain attending disadvantages as to rigidity of joints which makes them unsuitable for use with very light or fragile pieces of glass, because by reason of their rigidity or unyielding character such light or fragile glass is likely to be shattered or broken under shock, jar, or pressure.

My invention has for its object to produce a sash-bar which shall combine the advantages of the older methods and avoid their defects.

To this end my invention consists in a sash-bar of hard metal having a web and heads, in combination with a lining, cushion, or packing to receive the edge of the glass formed of some material soft enough to readily conform to the contour of the edges of the glass. I preferably embody my invention in a sash-bar composed of a hard-metal strip having a

lining-piece of lead secured upon the web between the shoulders or heads of the metal sash and adapted to engage or, if desired, to embrace the edges of the pieces of glass.

My invention further consists in certain details of construction hereinafter described, and particularly pointed out in the claims.

My invention may be used in connection with many different forms of metallic sash-bar, and is not to be considered as limited to any particular form in its broader or more general scope.

I have shown several embodiments thereof in the accompanying drawings, in which—

Figure 1 is a perspective view showing a broken section of a metal sash-bar having a soft-metal lining applied to the web thereof and showing corrugations in the lining. Figs. 2 to 7, inclusive, are transverse sections showing various forms of metal sash-bars having soft-metal linings applied to the webs thereof, all of the figures except Fig. 6 showing the lining applied to both sides of the web. Fig. 8 is a section showing the lining applied to a sash-bar and embracing the edge of a sheet of glass broken away.

The manner of forming sheet-metal sash-bars is well understood and hence will not be particularly described. In the art the parts of the sash-bar are spoken of as the "head," (shown at *a* in the drawings,) the "shoulder," (marked *b*,) and the "web," (marked *c*.) The web may be single, as shown in all of the figures except Fig. 4, or double, as shown in the latter figure. The web and head may be constructed from a single piece or strip of metal, as shown in Figs. 1 to 4, inclusive, or the web may be formed integrally with one of the heads, as shown in Fig. 5, or separately from the heads, as shown in Fig. 7.

My invention is readily applicable to all of the various structures shown in the drawings and to numerous others; and it consists in a packing, cushion, or lining strip *d*, preferably formed of lead and secured to the sash-bar on one or both sides of the web, as desired and as clearly indicated in the drawings. This lining-strip when made of lead may be corrugated or creased, as shown at *e*, so that when forming it around the edge of the glass the latter may be more easily embedded and will not slip thereon, such cor-

rugations also furnishing a means for a closer connection and firmer holding between the cement and bar introduced to form a more perfectly water-tight joint, and the lining-strip  
 5 may have flanges *f* turned on its edges, as seen in Fig. 8, so that the lining-strip will embrace the edge of the sheet of glass *g*, as seen in the last-named figure. It will thus be seen that the lead or soft metal acts sim-  
 10 ply as a lining for the purposes described, as owing to the weight and bulk of lead or any other soft metal applicable to enforcing my invention it would be impracticable to utilize such softer metal to form or constitute  
 15 any part of the supporting-bar itself. The use of lead for cushioning and lining purposes in the manner heretofore described and by me set forth enables me to work this soft-metal-lined bar into all the various  
 20 shapes, forms, and convolutions desired for producing the most intricate designs and patterns for ornamental or art glasswork.

The hard-metal sash-bars are usually formed by the aid of dies or rollers, and my improved  
 25 sash-bars may be made by passing the cushion-strips through the dies or rollers in conjunction with the strip forming the hard-metal sash-bars. However formed or secured to the sash-bar strip, this lining-strip serves  
 30 as a cushion to the edge of the glass, rendering it much less liable to be broken in case of shock. It also readily conforms to the edge of the sheet of glass and may be made to embrace it by providing it with the flanges,

as described. By reason of the soft character of the lining a much closer, more permanent, and tighter joint can be made than with the ordinary hard-metal sash-bar, and when used in conjunction with the latter any amount of pressure exerted in closely binding  
 40 and uniting the sash-bar strips will not injuriously affect the glass, as the latter will embed itself in the soft lining.

While I have described lead as the best material for the lining, I do not limit my in-  
 45 vention thereto, as other soft, pliable metals or material might be used.

I claim—

1. A metallic sash-bar composed wholly of hard metal and having a web and marginal heads or shoulders to engage and hold  
 50 a sheet of glass and a soft-metal lining applied to the web between the shoulders to serve as a cushion for the edge of glass, substantially as described.

2. A metallic sash-bar composed wholly of hard metal and having a web with marginal heads or shoulders to embrace the edge of a sheet of glass and a soft-metal lining-strip having also marginal heads and applied  
 55 to the web between the shoulders and adapted to embrace the edge of a sheet of glass and to serve as a cushion therefor, substantially as described.

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Witnesses:

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