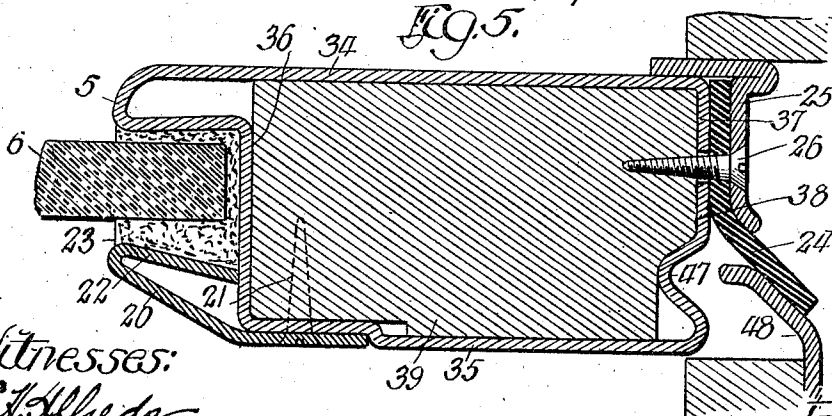
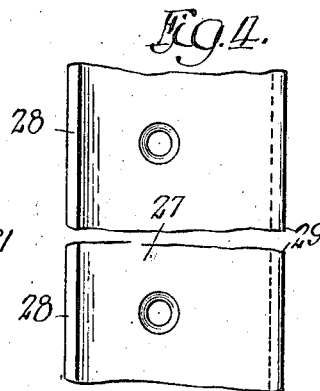
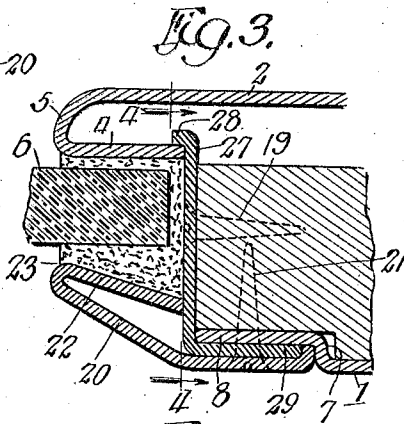
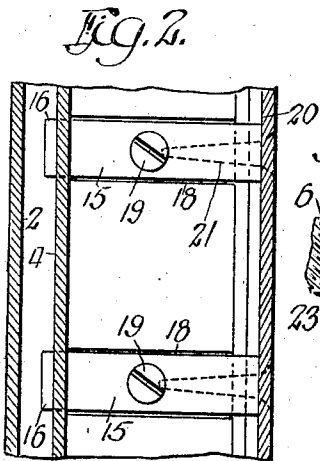
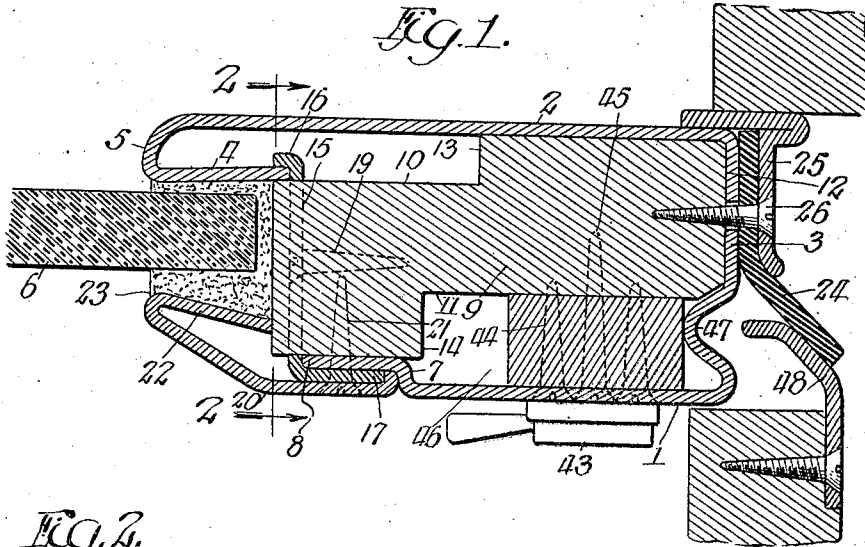


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METALLIC SASH.
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1,092,931.

Patented Apr. 14, 1914.



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METALLIC SASH.

1,092,931.

Specification of Letters Patent.

Patented Apr. 14, 1914.

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To all whom it may concern:

Be it known that I, BENJAMIN S. MCCLELLAN, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metallic Sash; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in metallic sash, and more particularly to that class of metallic sash commonly employed for car windows, and comprising a formed or bent sheet metal shell and a filling of wood or other material of like character inclosed in said shell.

It is the object of my invention to provide an improved construction in sash of that kind consisting of sheet metal and wood or the like, and which is designed to provide a fire-proof construction, due to the covering of the combustible filling with a metallic exterior shell, as well as the strength and lightness in the sash due to the use of a filling of wood or similar material to stiffen and strengthen the sheet metal shell and to form an inner body into which fastening screws may be inserted for uniting the several parts constituting the sash into a rigid and unitary structure.

A further object of the invention is to provide means whereby the glass may be readily secured in the sash and held therein by yielding pressure, in order to allow for any irregularities either in the glass or in the parts engaging or in contact with the same, so as to avoid liability of breakage of the glass either in inserting the same or thereafter when the window is in use.

My invention consists in the matters herein set forth and more particularly pointed out in the appended claims.

In the drawings—Figure 1 is a cross-sectional view of the sash showing a portion of the glass and of the adjacent window-frame; Fig. 2 is a cross-section taken on line 2—2 of Fig. 1; Fig. 3 is a cross-sectional view of the sash, showing in detail a modified form of the sash. Fig. 4 is a longitudinal section taken on line 4—4 of Fig. 3; Fig. 5 is a cross-sectional view showing a modified construction in the sash.

Referring now to Figs. 1 and 2, in which one of the sash rails or stiles is shown, the sheet metal shell is constructed of a strip of sheet metal, which is bent or folded longitudinally to form the integrally connected inner and outer side walls, and the outer edge wall, which are indicated respectively by 1, 2 and 3. The side walls 1 and 2 are approximately parallel with each other and are spaced a sufficient distance apart to give the desired thickness to the sash. The inner edge 4 of the outer wall 2 is bent inwardly toward the wall 1 and then rearwardly toward the wall 3 to provide the outer bead 5, which forms one side of the groove or channel for the glass 6. The inner side wall 1 is provided with an inwardly bent or transverse part 7, so that the inner marginal part 8 of said wall 1 is offset inwardly from the plane of the main portion of said wall 1, thereby forming a longitudinally extending recess or rabbet in the outer side of said wall, intermediate the offset portion 7 and the inner edge of the said side wall. Said side wall 1 is of less width than the wall 2 and it terminates approximately in transverse alinement with the inturned edge 4 of the wall 2. Within the recess or chamber formed by the walls 1, 2 and 3 is the filling 9 of wood, fiber, or other suitable material. The filling, as shown in Figs. 1, 3 and 5, is of a width to extend from near the edge of the glass 6 to the wall 3, and is provided in its outer and inner faces with longitudinally extending rabbets or recesses 10 and 11, the former of which is situated at the edge of the insulator adjacent to the glass and the latter of which is situated at the edge of the filling adjacent to the wall 3. This construction permits the filling to be inserted into the sheet metal shell, or removed therefrom, through the opening between its marginal parts 4 and 8 since its thickness at either edge is no greater than the width of said opening. When inserting the filling into the shell, its outer edge 12 first enters the opening at the inner edge of the shell, and when the side 13 of the recess 10 has passed the marginal part 4 of the outer wall 2, the filling is moved laterally to permit the side 14 of the recess 11 to pass the marginal part 8 of the wall 1. The recesses 10 and 11 also provide dead air spaces between the sides of the filling and the walls 1 and 2. The marginal parts 4 and 8 of the side walls

1 and 2 may be connected in any preferred manner, but, as shown in Figs. 1 and 2, they are joined as shown and described in my application for Letters Patent Serial No. 561,954, filed May 18th, 1910, that is to say, by means of locking strips or plates 15 extending transversely of the inner edge of the filling and each having flanges 16 and 17 which hook over the marginal parts 4 and 8, respectively, and serve to prevent the side walls from spreading apart. Said strips, as shown, are countersunk in recesses 18 in the edge of the filling and are secured thereto by wood screws 19, which extend through the strip and into the edge of the filling. A removable sheet metal strip 20, forming a bead, is secured to the inner face of the sash and extends inwardly therefrom, with its inner edge flush with the edge of the bead 5, to provide the inner wall of the channel or recess for the glass. Said strip 20, as shown in Figs. 1 and 2, has its outer marginal part seated in the recess or rabbet formed by the offset marginal portion 8 of the wall 1, and bears against the flanges 17 of the locking plate 15. Wood screws 21 extend through said strip 20 and through the flanges 17 and marginal part 8 of the wall 1, and into the filling 9; said screws serving to rigidly join said parts. The strip 20, in its part which projects inwardly beyond the body of the sash, and which forms the inner bead, is bent or inclined inward toward the outer bead 5, and its marginal part 22 is bent or extended rearwardly toward the filling 9 and forms the inner side wall of the groove or channel for the glass. The marginal parts 4 and 22 of the wall 2, and strip 20 are inclined or arranged at an angle to each other, so that the channel for the glass is somewhat wider at its inner than at its outer part, in order to prevent the putty 23 from working out of the channel. When the bead, formed by the strip 20, is brought up to place by the screws 21, its marginal part 22 compresses the putty firmly against the glass but with an even pressure throughout the length of the bead. By reason of the construction described in the sheet metal parts constituting the inner and outer beads, the marginal parts 4 and 22 of said beads are made elastic or yielding, so that the glass is held by a yielding pressure, and liability of breakage of the same is obviated. Flexible weather strips 24 for the sash are shown as secured to the outer marginal face or edge of the sash, in the usual manner, by means of an angle bar 25 and screws 26, which pass through one flange of the bar, the strip and the wall 3 and into the filling 9.

The filling in the structure described not only prevents the passage of heat and cold through the sash rails and stiles, but it also provides a firm anchorage for the attaching

screws for the beads and weather strips, without necessitating the placing of the screws at predetermined points, as is required where machine screws are employed with abutments to receive the screws.

If preferred, one continuous locking plate 27 may be employed, as shown in Figs. 3 and 4, which plate extends the full length of the rail or stile, in contact with the inner edge of the filling 9, and has oppositely directed flanges 28 and 29 thereon, which engage the marginal parts 4 and 8 of the walls 1 and 2, as described, with reference to the plate 15. Said continuous plate 27 is shown as attached to the filling by wood screws 19, as are the separate locking plates 15, shown in Figs. 1 and 2.

In Fig. 5 I have shown another form of construction embodying the same general features hereinbefore set forth. In this instance, the metal shells of the sash rails and stiles have their outer walls 34, inner walls 35, inner edge wall 36 and outer edge wall 37 formed from a single piece of sheet metal bent into tubular form, as shown in said Fig. 5. In this case the lateral edges of the metal strip or sheet are preferably arranged to meet in the outer edge wall 37 of the shell and are welded together, or otherwise joined at 38. Before said edges of the sheet are turned in and joined, however, the filling 39 is inserted from the outer edge of the sash and then the edges of the metal are folded in and secured together, thus inclosing the filling within the sheet metal shell.

As shown in Fig. 1 of the drawings, I have provided a sash lock 43 which is placed directly against the inner side wall 1 of the shell and is secured in place by means of screws 44 and 45, which extend through the said side wall 1 and through a wooden abutment block 46 into the filling 9. Said abutment block is seated in the recess or rabbet 11 of the filling, and fills the space between the inner face of the filling and the said inner wall 1 of the shell. When a filling of rectangular form is employed, as shown in Fig. 5, the abutment block 46 is omitted.

The outer edge walls 3 of the shell, in the construction shown both in Fig. 1 and Fig. 5, have a longitudinal groove 47 therein to prevent the sash contacting with the inclined bearing plate 48 for the weather strip 24.

In a sash made as described, the sheet metal parts, bent into U-form to constitute the holding beads for the sash, are elastic or yielding in character, and act to hold the glass in place with a yielding pressure, so as to avoid liability of breakage of the glass. Moreover, the construction described, in the inner wall of the shell, by which the same is inwardly offset to form a rabbet to receive the marginal part of the strip which forms the bead, giving a smooth finish on the face

of the sash, while the overlapping of the bead forms a strip and the inner wall of the shell enable both of these parts to be secured together and to the filling by a single series of screws. The filling of wood or the like enables ordinary wood screws to be used for attaching the removable sheet metal beads and the side weather strips to the sash, and obviates the necessity for using abutment blocks having screw-threaded apertures, such as are necessary when machine screws are employed to join the parts. Moreover, when the glass has been placed in the sash with its edges embedded in putty, the removable bead, by reason of its elastic or yielding character, due to its flexible inner flange 22, may be drawn up to place without causing undue stress on the glass.

The present application is a division of my hereinbefore mentioned application, Serial No. 561,954, filed May 18, 1910.

Many of the details of the construction shown may be varied or omitted without departing from the spirit of the invention, and I do not desire to be limited to such details, except as pointed out in the appended claims.

I claim as my invention:

1. A window sash, comprising a sheet metal shell having the margin of one wall thereof bent to provide a rearwardly extending flange forming with said wall a fixed bead at the inner margin of the sash, means extending directly between and permanently connecting said flange with the wall of said shell at the opposite side of the sash, a sheet metal strip having one margin overlapping the wall of the shell with which said flange is connected, and its other margin bent inwardly and rearwardly to form a resilient bead the inner wall of which is free to yield laterally throughout and form with said flange the side walls of the channel provided between said beads, and fastening members inserted through the overlapping parts of the shell and strip.

2. A window sash, comprising a sheet metal shell having the margin of one wall thereof bent to provide a rearwardly extending flange forming with said wall a fixed bead at the inner margin of the sash, means extending directly between and permanently connecting the inner edge of said flange with the wall of said shell at the opposite side of the sash; the wall of said shell with which said flange is connected being inwardly offset at its part adjacent to the inner margin of the sash, and a sheet metal strip having one edge seated in the rabbet formed by said offset part and its other edge bent to provide a yielding bead, the inner wall of which extends rearwardly and is

free to yield laterally and forming with said flange the side walls of the channel provided between said beads.

3. A window sash, comprising a sheet metal shell having the margin of one wall thereof bent to provide a rearwardly extending flange forming with said wall a fixed bead at the inner margin of the sash, means extending directly between and connecting said flange with the wall of said shell at the opposite side of the sash, and a sheet metal strip applied to the wall of said shell with which said flange is connected and having a part thereof free to yield laterally throughout and forming with said flange the side walls of the channel provided between said beads, one of said beads being arranged at an angle to the other and forming a channel therebetween the inner end of which is wider than its outer end.

4. A window sash, comprising a sheet metal shell, a wood filler or the like located in said shell, said shell being provided with a bead at one side of the sash, and having an inwardly offset portion forming a rabbet at the opposite side of the sash, means extending directly between and permanently connecting said bead with the wall of said shell at the opposite side of the sash, a sheet metal strip having one margin seated in said rabbet, and its other margin bent to form a second bead provided with a rearwardly directed flange free to yield laterally throughout all portions thereof and forming with said first mentioned bead the side walls of the channel provided between said beads, and fastening members extending through the overlapped parts of said strip and into the said filling.

5. A window sash, comprising a sheet metal shell having a fixed bead at the inner edge of the sash and at one side of the same, means extending directly between and permanently connecting said fixed bead with the wall of said shell at the opposite side of the sash, and a sheet metal strip applied to the wall of said shell with which said fixed bead is connected and forming a second bead opposite to said fixed bead, said strip having a part free to yield laterally throughout all portions thereof and forming with the fixed bead the side walls of the channel provided between said beads.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 5th day of June A. D. 1912.

BENJAMIN S. McCLELLAN.

Witnesses:

WM. H. DISTIN, Jr.,
CHARLES H. POOLE.