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H. S. KELLANDER ET AL

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HOLLOW FRAME BAR FOR DOORS, WINDOWS, AND THE LIKE

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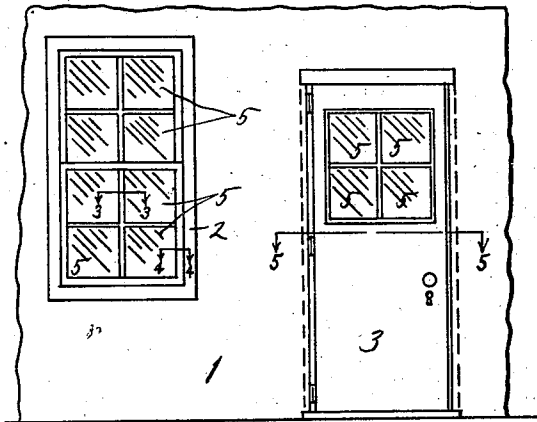


FIG. 1.

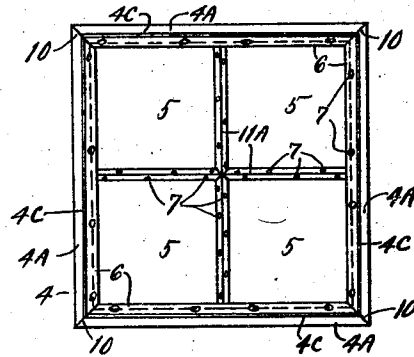
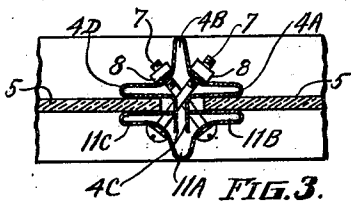
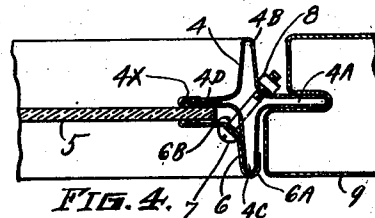
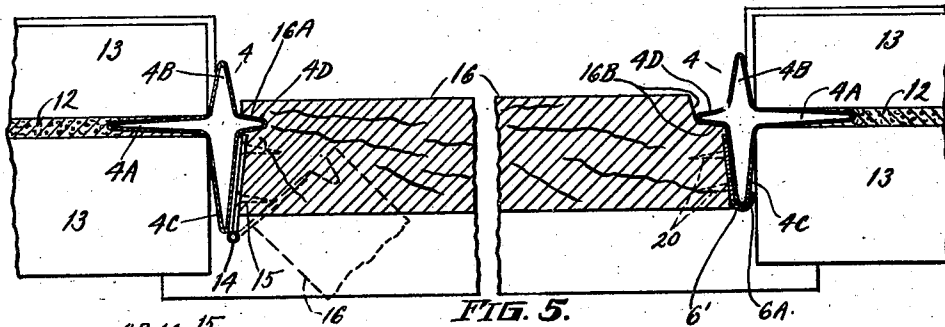
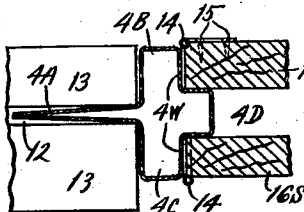
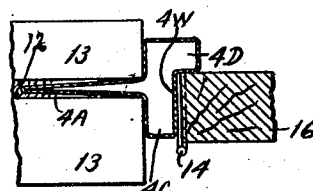


FIG. 2.



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HOLLOW FRAME BAR FOR DOORS, WINDOWS, AND THE LIKE.

Application filed April 14, 1926. Serial No. 101,965.

Our invention relates to a new construction for wall opening frames and sash including door and window frames and certain strips for detachably securing window panes. The object of the invention is to provide a simple and efficient frame construction entirely of comparatively light sheet metal and involving elongated hollow strips to serve as door frames, window sash and window pane parting strips according to the size of strips, as shown in the accompanying drawing, in which—

Fig. 1 is a face view of a portion of a wall with a door and window embodying our improved construction.

Fig. 2 is an elevation of a window of our improved type.

Fig. 3 is an enlarged detail sectional view as on line 3—3 in Fig. 1 showing one form of our device as a parting strip for window panes.

Fig. 4 is an enlarged sectional view about as on line 4—4 in Fig. 1.

Fig. 5 is an enlarged cross section of a door and adjacent parts about as on line 5—5 in Fig. 1.

Figs. 6 and 7 are modifications of our device in cross section as used for a door frame.

Referring to the drawing by reference numerals 1 designates a wall having a window 2 and a door 3.

Our improved frame and strip construction is embodied mainly in a sheet metal tube of approximately a four-point star shape in cross section as the tube 4 in Fig. 4, in which the sheet metal edges are overlapped as at 4^x and suitably welded or otherwise held together. The points of said star shaped tube are preferably tapered outwardly from the center, said points hereinafter being designated as 4^A, 4^B, 4^C and 4^D and at the convergence of said arms the metal is preferably rounded as shown. This construction as described and hereinafter set forth in various modified forms and sizes can be used as a door frame, window frame, window sash and window panel strips.

In Fig. 4 one form of our strips is shown as a window sash or the peripheral frame of a slidable window. In this form the strips are cut as required and mitered to fit together at the corners and be suitably welded or joined as at 10 in Fig. 2. The inwardly directed arms 4^D are a common plane and against which the pane 5 is laid and an auxiliary sheet metal strip 6 of L-shape in cross section is laid against the opposite side of the glass 5, one arm or edge of said auxiliary strip being hooked as 6^A and adapted to engage the outer edge of arm 4^C. This auxiliary strip 6 is secured to the tubular strip 4 by being provided with apertures 6^B through each of which a machine screw 7 is passed through the central part of tube 4 diagonally and provided with a nut 8 at the opposite side. Thus a complete single-pane sash is made and the outward arm 4^A of the vertical tubes are slidable or fixedly retained in a suitable window frame 9, the latter also preferably of hollow sheet metal construction of a type for which we have made separate application for patent.

In the form of our device shown in Fig. 3, used as parting strips for the panes 5 of a window, the arm 4^C is shortened and open and arms 4^A and 4^D are laid against the adjacent panes 5 with arm 4^C laid between the panes and protruding beyond the opposite sides of the latter. These protruding edges of arm 4^C are engaged and covered by another auxiliary hollow strip 11 also made of sheet iron and T-shaped in cross section, the leg of the T designated as 11^A and the arms as 11^B and 11^C, the latter arms adapted to be laid against the glass opposite to member 4 and having a slotted part between the adjacent parts of arms 11^B and 11^C which loosely engage the outer sides of the protruding part of arm 4^C. Then machine screws 7 or the like are passed diagonally through (both ways) the central part of both members 4 and 11 to hold the opposite strips tight against opposite sides of the glass.

The preferred form of our device (star shaped in cross section) is also shown in Fig. 5 in enlarged scale and used as the vertical members of a door frame and the arms in various lengths. Arm 4^A is long and adapted to be imbedded in mortar 12 between bricks 13 of a wall. Arms 4^C are comparatively long and to one of them is suitably fixed the wings of any suitable number of hinges 14 the other wings of which are suitably secured as at 15 to a door 16. The hinge edge of such door 16 may be grooved to fit snugly as at 16^A over arm 4^D and thus attain a weatherproof condition. The free edge of the door may be notched out as at

16^b to bear against arm 4^d of the vertical member 4 and the rest of the door edge engages the inwardly sloping part of arm 4^c. 6' is a modification of the strip 6 but more of a J-shape in cross section and its channel or hook shaped part 6^a adapted to engage the outer edge of arm 4^c to provide further weathertight condition when the door is closed.

10 In the modifications Figs. 6 and 7 we have shown our metal frame in modified forms for double doors or single doors, showing only the hinged edges of the doors. In these forms arm 4^a is the same as previously described and retained in the wall in any suitable manner. In Fig. 6 the arms 4^b, 4^c and 4^d are rectangular as also arms 4^b and 4^c of Fig. 7, providing as in Fig. 6 two aligned walls 4^w on which the hinges of the door 16 and the storm or screened door 16^s is secured.

Our invention has now been fully described. It is obvious that in the preferred form (star shape) weather proof condition is maintained by the adjoining door and slightly yieldable frame bars and when used in window construction no putty is needed

though lead may be used at the edges of arms 4^d and 6 at the surface of the glass.

What we claim is:

A metal frame bar for windows, doors and the like, comprising a sheet metal tubular strip of approximately star shape in cross section and the arms of said star tapered outwardly, said strips adapted to be assembled in fixed parallel relation in pairs or in quadrangular arrangement, and an auxiliary sheet metal strip of L-shape in cross section, one edge of said auxiliary strip hooked to engage the outer edge of one arm of said tubular strip, the other arm of said auxiliary strip normally in spaced parallel relation to an adjacent arm of the tubular strip to retain a pane of glass therebetween and means for pressing said auxiliary arm toward the glass and comprising a number of screws passed diagonally through registering apertures provided in the auxiliary strip and the tubular strip.

In testimony whereof we affix our signatures.

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