March 15, 1927. H. C. MILLS 1,621,332

SASH FRAME

Filed June 15, 1926

Fig. 1.

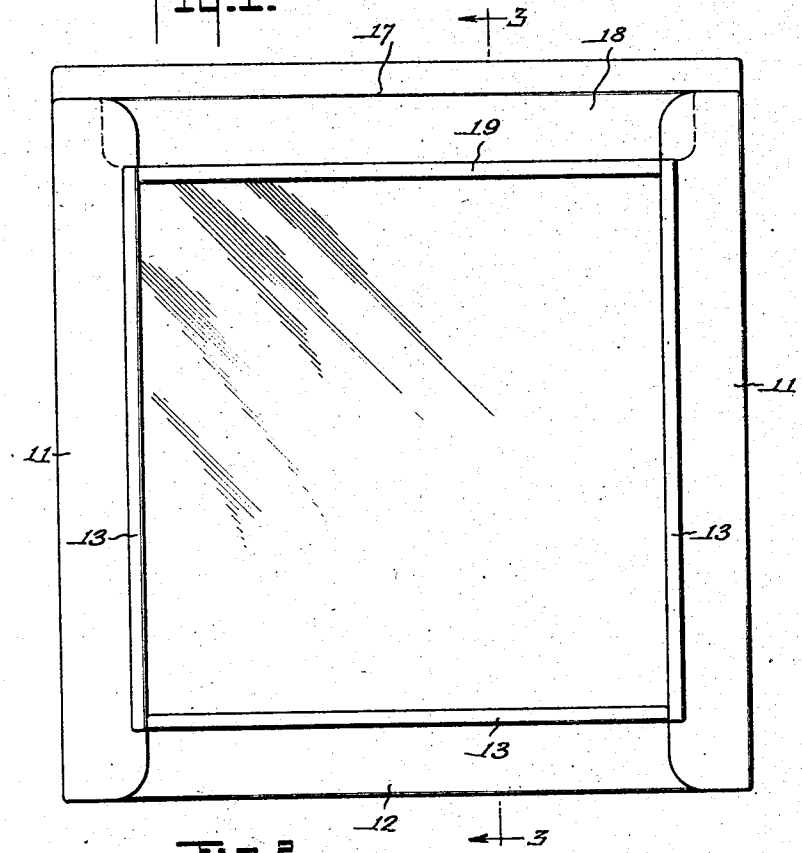


Fig. 3.

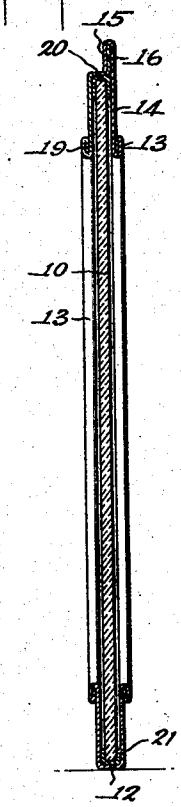


Fig. 2.

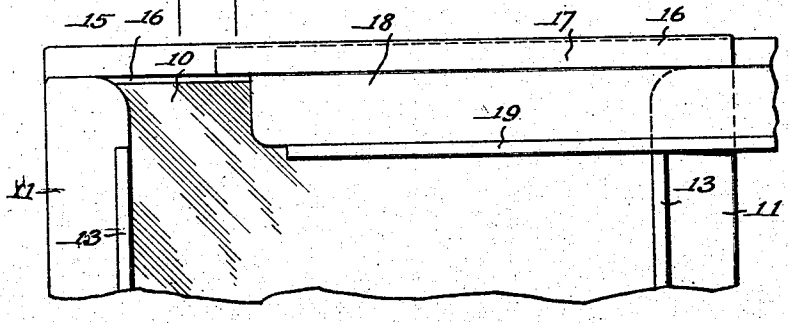


Fig. 4.

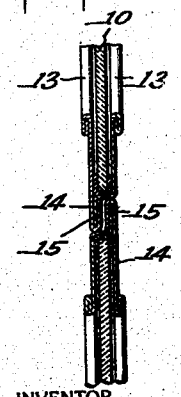
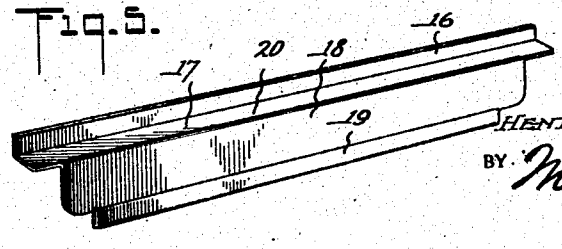


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY C. MILLS, OF CLEVELAND, OHIO.

SASH FRAME.

Application filed June 15, 1926. Serial No. 116,176.

The present invention is concerned with the provision of a metal sash frame adapted to be utilized for removably supporting either a pane of glass, or a framed window screen.

An object of the invention is to provide a frame which may be conveniently bent from metal stock, and in which a sheet of glass may be rapidly inserted.

A further object is to provide a frame which will securely lock the glass in position, a frame which will occupy a relatively small amount of space and storage, and a frame for supporting in vertical juxtaposition a similar frame when the two frames are laterally sustained by parting strips and molding strips.

Further objects of the invention are to provide a frame of this character which will be of simple, practical construction, rugged and durable in use, and well suited to the requirements of economical manufacture.

With the above noted and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter set forth and pointed out in the claims. The invention may be more fully understood from the following description in connection with the accompanying drawings, wherein—

Fig. 1 is a view in front elevation of a sash frame embodying the present invention.

Fig. 2 is a fragmentary front elevational view of the upper end of the sash showing the removable frame section partially slid to partially open position.

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a vertical sectional detail illustrating the manner in which two of the sash frames are supported one upon the other in superimposed edge to edge relationship.

Fig. 5 is a perspective view of the removable frame section.

The frame is adapted to receive either a sheet of window glass or a properly framed section of wire screen. For purposes of illustration I have elected to show a glass pane 10 in position. The frame is preferably bent from spring metal including channelled side sections 11 and a channelled bottom section 12, the ends of these sections overlapping at the lower corners of the frame and being welded, soldered or otherwise rigidly secured together. The edges of the channelled sections 11 and 12 are folded outwardly upon themselves to define strengthening beads 13 at the inside of the frame, the ends of these beads abutting.

Rigidly connecting the tops of the side channelled members 11 is a stationary section 14 of the upper cross channel piece of the frame. The stationary section is in the nature of a plate folded over at 15 at its upper edge to define a narrow channelled guideway for a flange 16 on the removable section 17.

The removable section of the frame which cooperates with the member 14 to define the upper channel has been illustrated in Fig. 5. It will be noted that this member includes a vertically disposed plate portion 18 beaded at 19 to conform with the beads 13 of the stationary channelled portions. A horizontal flange 20 integral with the upper edge of the plate portion 18 is adapted to engage the upper edge of the glass sheet 10 and the flange 16 rising from the horizontal portion 20 fits within the channel 15 as above described.

It will be seen that when the removable section 17 is detached from the frame, that a sheet of glass may be readily entered into the frame, its edges being received between the channelled side frame members 11 and the channelled bottom frame member 12. When the removable section 17 is attached to the frame, the glass is locked against accidental retraction by the horizontal portion 20 of such removable section, and the removable section 17 cooperates with the cross bar 14 to define an upper channelled portion receiving the upper edge of the glass sheet. Before applying the glass, all of the edges thereof are preferably covered with a felt packing strip 21 to preserve it against direct contact with the metal frame.

The manner of removing and applying the section 17 may be better understood from a consideration of Fig. 2. When this section is in position, the ends of the plate 18 are covered by the upper ends of the channelled members 11, but are spaced a sufficient distance from the intermediate portions of the channelled members to permit sliding of the removable section in either direction. Such sliding movement is normally prevented by the engagement of the bead 19 with the upper ends of the side bead 13.

In order to remove the section 17, a suitable sharp instrument is inserted under one

of the upper corners of one of the side members 11, and this corner sprung outwardly a sufficient distance to permit the end of the bead 19 being entered thereunder. Section 17 is then slid under one channelled member 11 until its end clears the opposite channelled member 11. The end which has been freed is then pried up so that the bead 19 will pass over the bead 13, and the section 17 may be withdrawn as indicated in Fig. 2. A reverse operation takes place when applying the section 17.

It will be noted that when the section 17 is in position, it is securely locked against accidental retractile movement and that a sturdy and substantial frame is provided.

In order that two of the frames may be supported in superimposed edge to edge relationship, it is merely necessary to overlap the flange 15, 14 of one frame and the flange 15, 14 of another frame as shown in Fig. 4, wherein it will be seen that the flange of one frame member rests against the horizontal portion 20 of the removable section of an adjacent frame member, and the frames are self-sustaining against lateral displacement.

While I have referred to the removable section 17 as being at the top of the frame, it will of course be understood that this section might constitute either the top or bottom of the frame, or if the flanges 14, 15 were dispensed with, might constitute one of the side members. It has merely been referred to as the top for convenience of description.

Obviously, various changes and alterations might be made in the general form and arrangement of parts described without departing from the invention. Hence I do not wish to limit myself to the details set forth, but shall consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A rectangular metal frame of the class described including four inwardly facing channelled side members, one of said members including a section removable by a longitudinal sliding movement to permit the insertion or withdrawal of a glass pane or the like.

2. A rectangular metal frame of the class described including four inwardly facing channelled side members, one of said members including a section removable by a longitudinal sliding movement to permit the insertion or withdrawal of a glass pane or the like, said frame members including beaded edges, the stationary heads engag- the head of the removable section to normally hold said section against sliding movement.

3. A rectangular metal frame of the class described including four inwardly facing channelled side members, one of said members including a section removable by a longitudinal sliding movement to permit the insertion or withdrawal of a glass pane or the like, said frame members including beaded edges, the stationary heads engaging the head of the removable section to normally hold said section against sliding movement, the channelled members being of spring metal whereby the corners of certain of said members may be distorted by a suitable tool to provide clearance for the sliding movement of the detachable section and will spring back into place when released.

4. A rectangular metal frame of the class described including four inwardly facing channelled side members, one of said members including a section removable by a longitudinal sliding movement to permit the insertion or withdrawal of a glass pane or the like, said frame members including beaded edges, the stationary heads engaging the head of the removable section to normally hold said section against sliding movement, the ends of said removable section being normally concealed by the ends of adjacent channelled members.

5. A spring metal frame of the class described including a plurality of channelled side members receiving the edges of a pane of glass, a portion of said frame being removable for the purpose described and the edge of the intermediate portion of one side member being extended to form flanges whereby when two frames are superimposed in edge to edge relationship the flanges will overlap to aid in laterally sustaining the frames and to prevent the entrance of foreign matter therebetween.

6. A rectangular metal window frame including three channelled side members rigidly connected together, a stationary section of a fourth side member rigidly connecting the ends of two of the first mentioned channelled side members, a removable section of the fourth side member slidably engageable with the stationary section thereof and cooperating therewith to define a channel at the fourth side of the frame.

HENRY C. MILLS.