

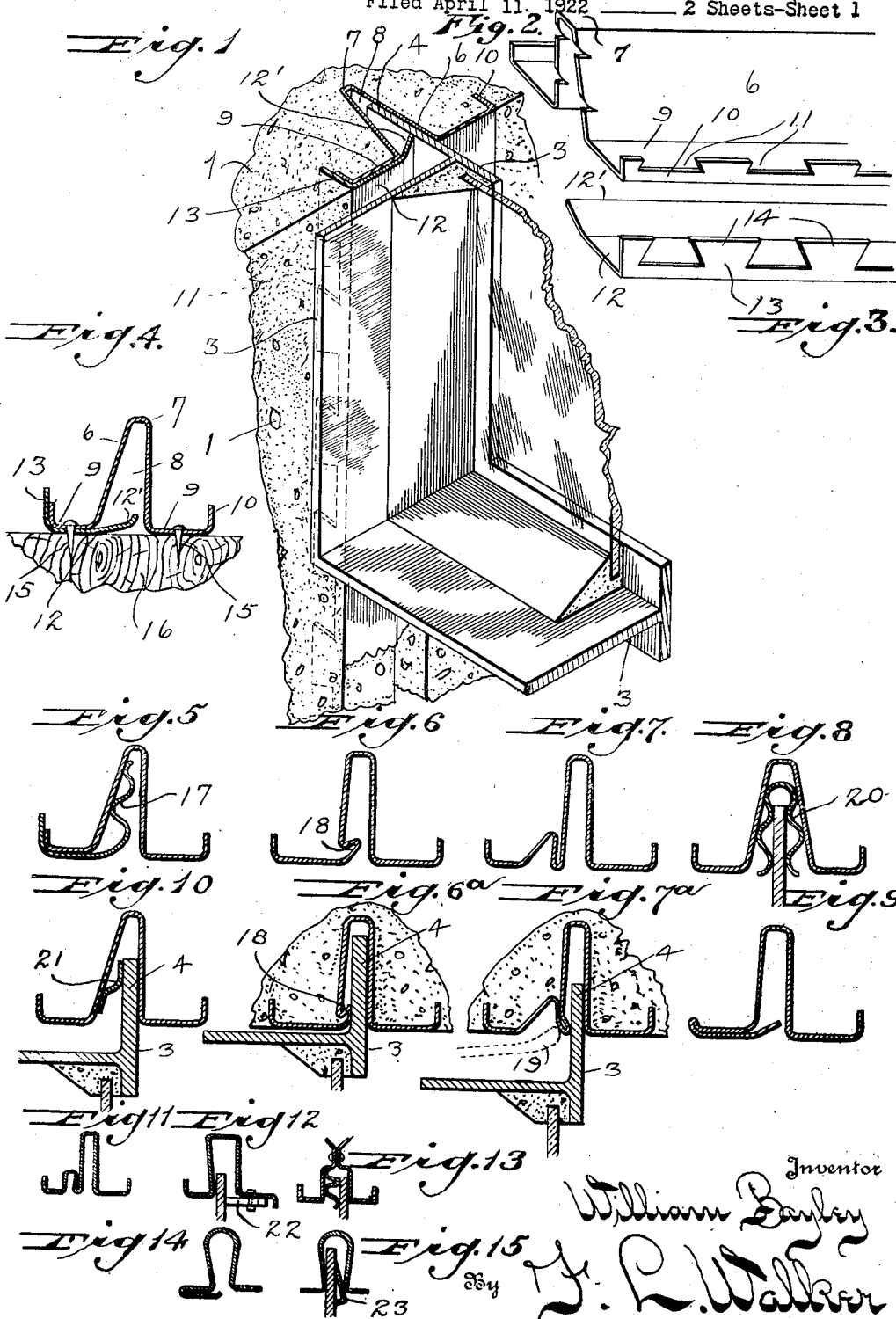
Feb. 28, 1928.

1,660,408

W. BAYLEY

WINDOW SASH MOUNTING

Filed April 11, 1922 _____ 2 Sheets-Sheet 1



Feb. 28, 1928.

1,660,408

W. BAYLEY

WINDOW SASH MOUNTING

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2 Sheets-Sheet 2

Fig. 21

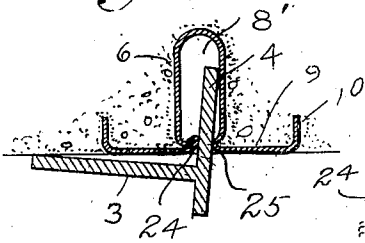


Fig. 16

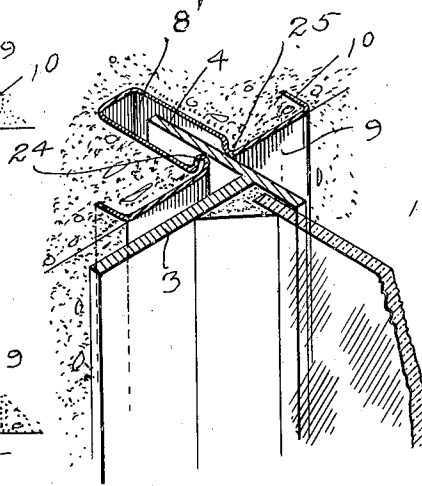


Fig. 19.

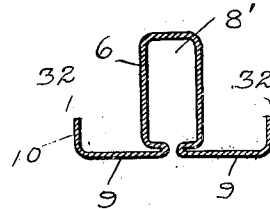


Fig. 20.

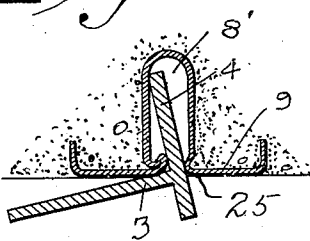


Fig. 17

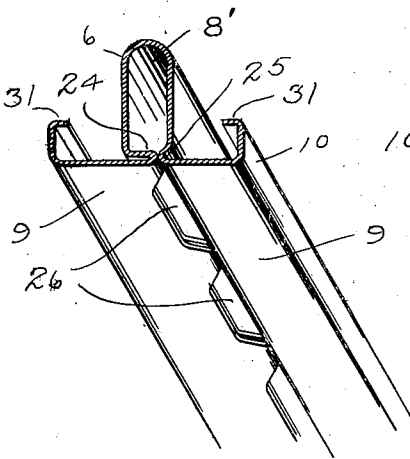


Fig. 18

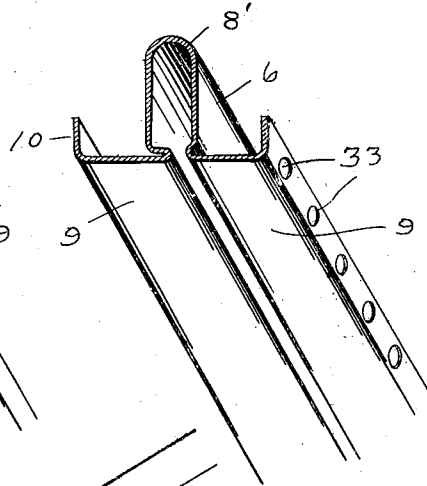
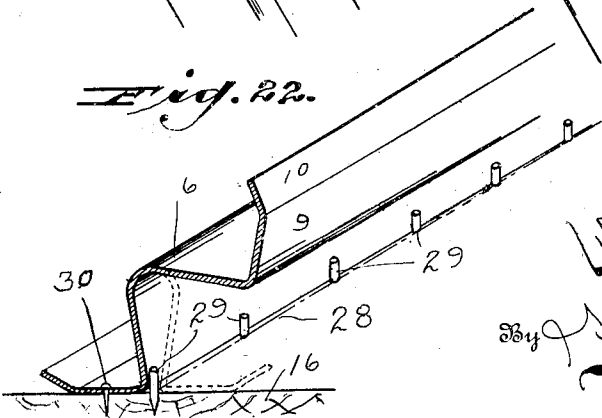


Fig. 22.



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UNITED STATES PATENT OFFICE.

WILLIAM BAYLEY, OF SPRINGFIELD, OHIO.

WINDOW-SASH MOUNTING.

Application filed April 11, 1922. Serial No. 551,719.

My invention relates to window sashes and more particularly to a mounting and method of installation for metallic window sashes such as are commonly employed in factory and warehouse constructions.

It is the usual practice in installing window sashes of the metallic type, to leave in the margins of the window openings or spaces, enlarged recesses, which after the sash has been properly positioned by means of wedges and space blocks, is filled with concrete, thereby directly embedding the margins of the sash. Such construction is not only expensive, but it necessitates the introduction of a craft other than that directly interested in the installation of the windows.

The present invention contemplates embedding in the margins of the window opening or space a channelled window frame formed from sheet metal, having therein a medial upstanding plait, opening into the window space to receive the marginal flange of the metallic window sash which is projected into the plait or channel of such frame member, and held by a flexible tongue or closure strip or contracted mouth which readily accommodates itself to inequalities of the sash flange and variations of its position of adjustment within the open plait or channel.

The object of the invention is to simplify the structure as well as the means and mode of operation of metallic sash mountings, whereby they will not only be cheapened in construction, but will be more efficient in use, durable, enabling the window sash to be easily and quickly installed, and unlikely to get out of repair.

A further object of the invention is to provide an improved form of window molding adapted to receive the margin of the sash to variable depth to afford a wide range of compensating adjustment, and to be directly embedded in the building structure at the time of its erection.

A further object of the invention is to provide an improved means for securing the window sash in position and closing the receiving recess, to prevent the entrance of air and moisture.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the

mode of operation, or their equivalents as hereinafter described and set forth in the claims.

The window sash mounting and mode of installation forming the subject matter hereof is capable of embodiment in a great number of modifications, varying in details of construction, outline or contour, but all embodying the same essential elements, and novel features.

In the accompanying drawings, Fig. 1 is a detail sectional perspective view of a portion of a window structure, illustrating the preferred form of mounting, and mode of installation of the metallic sash. Fig. 2 is a detail perspective view of the window frame molding. Fig. 3 is a detail perspective view of the closure tongue or filler strip, before being embedded in the concrete or other building structure. Fig. 4 is a detail end view of the window frame molding and closure tongue or filler strip, showing these parts mounted in the usual form or mold, preparatory to pouring concrete or other plastic material thereabout. Figs. 5 to 15 illustrate numerous modifications and variations of the window frame molding and closure means therefor. Fig. 5 illustrates a corrugated closure strip or tongue of resilient character. Fig. 6 discloses a channel shaped frame molding having an intumed plait or fold, projecting within the channel and deformed by the insertion of the sash flange as shown in Fig. 6^a. Fig. 6^a is a view similar to Fig. 6 showing the sash in place. Fig. 7 is an end view of the frame molding showing a contiguous plait or fold, forming one edge of the flange receiving channel. Fig. 7^a shows this fold or plait swedged or bent inwardly against the inserted sash flange. Fig. 8 discloses a modification, wherein a corrugated filler strip is bent upon itself and straddles the inserted sash flange. Fig. 9 is an end view of a frame molding similar to that shown in the principal figure or the preferred form, except the closure tongue or filler strip is formed integral with the molding. Fig. 10 illustrates a modification wherein the closure tongue or filler strip is carried by the inserted sash flange and bears against the inner wall of the channel. This construction is a reversal of that shown in the principal views, Figs. 1, 2 and 3. Fig. 11 discloses a modification quite similar to that shown in Figs. 7 and 7^a. Fig. 12 is an end view of a further modification

of the window frame molding, wherein the closure tongue or filler strip is slidably adjustable and abuts upon the sash flange.

Fig. 13 illustrates a different type of channel molding having anchorage flanges at its inner edge, and employing a loose corrugated filler strip, somewhat similar to the structure in Fig. 5. Fig. 14 shows an end view of a window frame molding, similar in general design to that in Fig. 9, except that the mouth of the channel is contracted, affording an inwardly expanding plait, which affords anchorage in the building structure. Fig. 15 illustrates a molding of similar outline, but employing a filler strip having a laterally flanged edge which operates as a wedge when driven into the mouth of the channel, beside the inserted flange. Fig. 16 is a detail perspective view and Figs. 17, 18 and 19 are end views of modifications of the construction heretofore shown, wherein the channel has a contracted mouth, one side of which forms a fulcrum for lateral tilting adjustment. Figs. 20 and 21 show the range of lateral tilting movement. Fig. 22 illustrates the mode of securing the channels within the concrete form.

Like parts are indicated by similar characters of reference throughout the several views.

The present practice in installing or setting metallic sashes is illustrated in Fig. 4 wherein 1 is the wall of the structure, having in the edge of the window space a recess indicated by the dotted lines 2. The sash 3 is mounted in the opening with the marginal flange 4 projecting within the enlarged recess 2, and this recess is afterward filled with concrete or cement as at 5. It is rather a difficult operation to fill these recesses with fluid or plastic cement particularly those of the window head, as well as the sides. Moreover, under the present rule of the building trades, this work must be done by a concrete worker thus necessitating the employment of workmen of different craft, for inserting windows by this method.

To overcome these disadvantages, there is provided in the present construction as shown in Fig. 1, a window frame molding 6, comprising a strip of sheet metal, having therein a medial upstanding plait or fold 7, forming a flange receiving channel 8, from the mouth of which extends laterally and outwardly wings or flanges 9. The margins of these lateral wings or flanges 9 are bent at right angles at 10 and preferably notched as at 11, to afford suitable anchorage in the structure wall 1. The particular shape of the fold or plait 7 may be varied at will. In the principal figure, this plait has been shown with one straight side and one inclined or diagonal side. It may however, be rectangular in form as shown in the Figures 6, 7, 9 and 11, or it may be oval as in

Figs. 14 and 15, or provided with converging walls as in Fig. 8 or divergent walls as in Fig. 12. This molding 6 is embedded about the window opening and at the same time there is embedded in the wall structure a closure tongue or filler strip 12, having an upturned flanged edge 13, provided with anchorage notches forming tongues 14. This closure tongue or filler strip 12 extends exteriorly of one of the laterally disposed wings or flanges 9 of the window frame molding and overhangs the grooved recess 8. The overhanging portion 12' of this closure tongue or filler strip 12 is flexible and preferably resilient or springy in character, although the latter characteristic is not essential. In order to embed the molding and closure strip in the wall structure, these members are provided with registered holes at spaced intervals, through which are inserted nails 15 to secure the window frame molding and closure strip in proper position within the form or mold 16, as shown in Fig. 3, preparatory to pouring the concrete thereabout. In installing the window sash as shown in Fig. 1, the marginal flange 4 of the sash 3 is thrust within the recess or channel 8 of the window frame molding, thereby flexing the overhanging portion of the closure tongue or filler strip 12, placing it under tension which causes it to conform closely to the inserted flange 4, of the sash. This tongue or closure strip 12' is sufficiently flexible and yielding to automatically conform to the flange 4 of the sash 3. While a degree of elasticity or springiness in this closure strip is desirable, the mere resistance to bending or flexing movement will be sufficient to conform the strip to the inserted flange and thereby close the mouth of the channel 8, and hold the flange 4 of the sash in contact with the opposite wall of the channel. To facilitate this bearing and insure a close contact between the closure tongue and the flange, the end of the closure tongue or filler strip 12' is preferably though not necessarily slightly rounded or flexed inwardly as shown in Fig. 3.

The construction in Fig. 5 is quite similar except that the insertion of the sash flange tends to flatten or distort the corrugated insert or closure strip 17.

In Fig. 6, the closure member is formed integral with the window frame molding by the formation of an intumed plait 18, which overhangs the mouth of the channel 8, in somewhat the same manner as the closure tongue 12'. The insertion of the sash flange will distort this plait as is shown in Fig. 6a. The distorted plait, however, will conform to the sash flange and effect an air and moisture tight joint. At the same time the flange is held in close contact or abutment upon the opposite face of the channel 8. In Figs. 7 and 11 the closure flange or filler strip is

likewise formed by an integral plait, which, however, in these instances is coincident with the one side of the flange receiving channel 8. This closure tongue is adapted to be swedged or flexed into close bearing upon the inserted flange by means of a tool as shown at 19 in Fig. 7^a. As before mentioned the structure shown in Fig. 9 is quite similar to that shown in Figs. 1, 2 and 3, except that the closure member is integral with the window frame molding. The operation and result are as before described. In Fig. 8 the closure of the window frame channel is effected by means of a corrugated channel 20, which straddles the edge of the sash flange 4, and upon the flange being forced within the converging walls of the channel 8, this closure strip is deformed, but its corrugations effect close contact with the walls of the window frame channel and with the opposite faces of the sash flange 4. Fig. 10 is merely a reversal of the structure shown in Figs. 1, 2 and 3, by attaching the closure tongue or filler strip 21 to the inserted sash flange 4, whereby it is flexed or placed under tension as the flange is forced within the channel 8, causing its free edge to bear outwardly upon and conform to the inner face of the channel wall. In Fig. 12, the closure strip 22 rests against one of the face flanges of the window frame molding, adjacent to but overhanging the channel. In this case, however, instead of being flexed inwardly as in the principal construction, the closure strip is preferably slotted as shown by dotted lines and is adjusted straight inwardly with its edge abutting upon the inserted sash flange 4. Fig. 13 discloses a channel molding made up of separate members, connected together by riveting, welding or otherwise with their inner margins out-turned to form anchorage flanges. This particular form of molding has been shown in conjunction with an insert or filler strip similar to that shown in Fig. 5. It is to be understood, however, that any of the other types of closure tongue or filler strip may be employed. Fig. 15 shows as a further modification, the use of a wedge strip 23 in this instance comprising a strip of sheet metal having one edge flanged laterally, the flanged strip being driven edgewise within the mouth of the channel or groove in the window frame molding. Thus exerting lateral pressure upon the inserted sash flange 4. Thus in each instance the invention involves a window frame molding permanently embedded in the structure and having a grooved recess communicating with the window space to receive the marginal flange of the sash, the grooved recess being closed and the sash held in adjusted position by a deformable or yielding closure strip carried by one of the members and bearing upon the other, to support the sash and close the mouth of the recess against the passage

of air and moisture. The construction enables metallic sashes to be set much more rapidly and with less expense than by the methods heretofore employed.

In Figs. 16 to 18 inclusive there is shown a construction wherein the channel 8' is provided with a contracted mouth, one lip 24 of which is flexible or yielding, while the opposite lip 25 is rigid and is somewhat in the form of an inwardly projecting bead, which forms a fulcrum for the sash, upon which the sash is capable of a limited laterally tilting movement, by which it may be accommodated to various irregularities and afford a considerable range of adjustment. This lateral tilting adjustment is clearly illustrated in Figs. 20 and 21. While the sash may be rocked to and fro upon the inwardly projecting rigid flange or lip 25, the flexible lip 24 will in all positions engage the sash to seal the mouth of the channel. The flexible or yielding lip 24 may extend entirely across the mouth of the channel to close proximity to the fulcrum lip or bead 25, as in Fig. 17, or it may be somewhat shorter and terminate in spaced relation with the fulcrum bead or lip 25 as shown in Fig. 18. Further to accommodate the structure to various conditions of use, any of the forms shown may be modified by notching or cutting away spaced portions of the flexible closure strip, or lip as shown at 26 in Fig. 17. The construction shown in Fig. 19, shows both lips of the contracted orifice of the channel as flexible or yielding. This construction will readily accommodate itself to inequalities in the edge of the sash, without subjecting the sash to lateral strain or any tendency to spring the sash out of its normal plane.

The molding 6 of sheet metal may be partially opened or distended to enable a number of strips of molding to be nested or introduced one within the other, for storage and shipment. A convenient method of locating the molding within the concrete form is shown in Fig. 22. This consists in drawing a chalk line 28 longitudinally upon the form and locating therein in spaced relation a number of nails 29. One side of the channel 8 of the molding is abutted against such nails, and the flange 9 of the molding is secured by driving nails 30 therethrough, directly into the form board. After thus securing one of the lateral wings 9 of the molding, the opposite wing is flexed downward until the mouth or lip of the channel also contacts the abutment nails 29, when its lateral wing may also be secured to the form board.

The various forms of construction heretofore referred to and as shown in the drawings, afford a wide range of compensating adjustment, by providing for clamping the margin of the sash at whatever depth it may

be necessary, to insert it within the channel. For instance, Fig. 6^a shows a sash margin inserted to its full depth within the channel, while Fig. 7^a discloses it as only partially entered. Yet in both instances it is fully supported and sealed. Figs. 20 and 21 show a wide range of lateral tilting movement while still maintaining the supported and sealed relation of the sash. Thus the different forms of construction afford a wide range of compensating variation, or relative positions of the sash within the channel, while maintaining the maximum efficiency of the device.

While dove tail notches and tongues 11 and 13 have been shown in Fig. 2 to afford anchorage for the strip, it will be obvious that other forms of anchorage may be employed as for instance, the lateral flanging of the edges of the strip as shown at 31 in Fig. 17, or 32 in Fig. 19, or these anchorage flanges may be perforated as at 33 in Fig. 18. Any suitable formation which will secure the molding strip firmly embedded in the concrete material will fully serve for the anchorage purposes.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific details shown, but that the means and construction herein shown comprises the preferred form of several modes of putting the invention into effect and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. In a mounting for metallic sash and the like, a window frame molding comprising a strip of sheet metal having therein an upstanding open plait and laterally disposed flanges extending in opposite directions from the mouth of the channel, said molding being embedded in the margins of a window opening in a concrete or like structure with said plait opening into the window space, a sash, a marginal flange upon the sash projecting within the open plait, and a flexible tongue carried by said molding overhanging the open mouth of the plait and bearing upon the inserted sash flange.

2. In a mounting for metallic window sash and the like, a window frame molding comprising a channelled frame bar embedded in the margins of a window opening in a concrete or like structure, with said channel opening into the window space, a sash, a marginal flange upon the sash projecting within the channel of said frame bar, and a closure strip for said channel engaging the sash flange to hold the same in adjusted position and seal the channel.

3. As an article of manufacture, a channel shaped frame bar to be embedded in the margins of a window or like opening to receive marginal sash portion, and a yielding tongue to engage the inserted sash portion and form a closure for said channel.

4. In a mounting for metallic sash and the like, a channel shaped frame portion, a marginal portion upon the sash adapted to be projected within the channel, and a flexible closure strip overhanging the mouth of the channel and operatively engaging the inserted sash portion when the latter is inserted within the channel.

5. In a mounting for metallic sash and the like, a channel shaped frame portion, a marginal portion upon the sash adapted to be projected within the channel and adjustable means for holding the sash portion in adjusted relation within the channel and closing the channel against the passage of air or moisture about the sash.

In testimony whereof, I have hereunto set my hand this 15th day of March, 1922.

WILLIAM BAYLEY.