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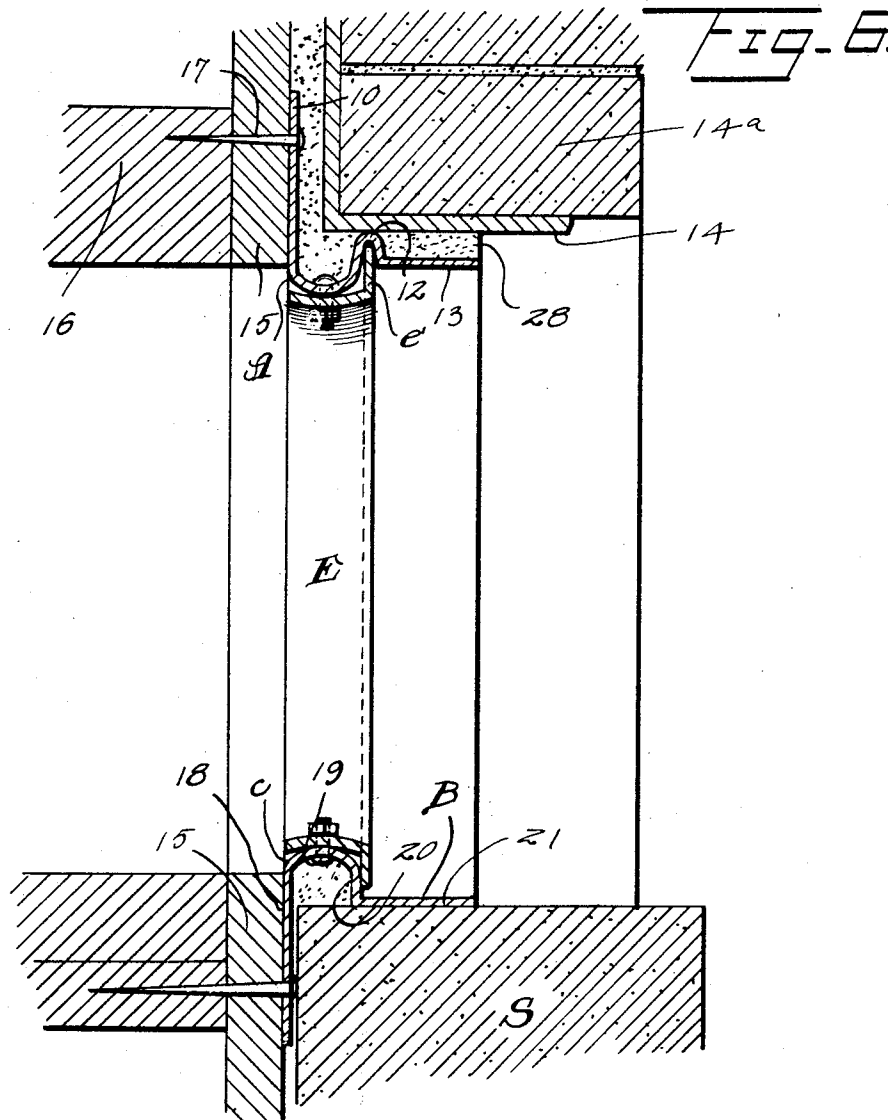
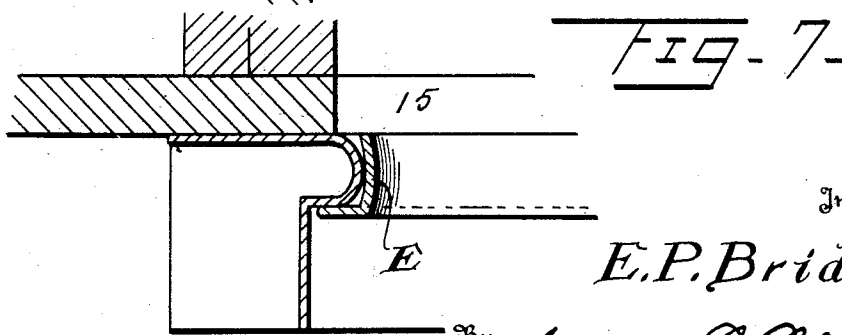
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FIN OR CASING ELEMENT FOR METALLIC WINDOW FRAMES

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FIN OR CASING ELEMENT FOR METALLIC WINDOW FRAMES

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This invention relates to building construction and particularly to "fins" designed to be used in installing the frames of metallic casement windows in brick or stucco constructions. Such casement windows consist of a sash frame proper and an outer metallic frame, within which the sash frame proper is mounted for swinging movement. Where it is not intended that the sash frame shall swing outward or inward, the outer metallic frame is omitted. It is customary to attach the outer metallic frame of the window unit to what is known in the trade as a fin which is used at the head and jams and which is embedded in mortar or cement. This fin is usually right angular in cross section to provide a portion extending into the mortar or concrete of the structure and to provide a flange extending toward the front of the window which abuts against the channel or angle iron frame of the casement window unit.

The general object of the present invention is to provide an outer casing or "fin" adapted to be applied to the studding or framing of a window opening, which outer casing or "fin" is particularly adapted for use with fenestra or International metal casement sash, or the frames thereof, which will permit the ready installation of the casement window unit and which will lap over the joint between the metal frame of the window and the edge of the brick or stucco or the wooden element defining the window opening.

A further object is to close the joint between the metal frame of the window unit and the brick or wood frame without leaving any gap or crack to be later filled with putty or like material.

Another object is to provide a construction of this character which will provide means for shedding water at the top and bottom of the window and which is so constructed that it will prevent water entering between the window unit and the brick or stucco casing all around the window.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a vertical sectional view through

a portion of a window casing or unit of the window frame construction and my improved "fin" or casing element in accordance with my invention;

Figure 2 is a horizontal sectional view through my improved casing or fin, looking downward on to the lower element thereof;

Figure 3 is a fragmentary perspective view of the upper element of the said casing or fin;

Figure 4 is a fragmentary perspective view of one of the side elements constituting my window casing;

Figure 5 is a fragmentary perspective view of the lower element of the structure;

Figure 6 is a vertical sectional view through a brick building having window sashes of the character stated and showing my metallic casing applied thereto;

Figure 7 is a fragmentary horizontal section on the line 7—7 of Figure 6.

It will be seen that my outer casing or fin structure consists of four elements A, B, C, and D. The elements C and D are the side elements of the casing and are alike but reversed with relation to each other. The element A forms the top of the casing and the element B the bottom of the casing. The metallic window frame is designated E. The fin element A is formed of sheet metal to provide an attaching portion 10 which in position will be disposed in a vertical plane at the top of the window. The sheet metal is bent at the lower end of the portion 10 outward for a certain distance and this outwardly bent portion 11 is slightly curved downward to fit the groove *e* in the metal frame E.

Beyond the portion 11, the metal is extended upward and then downward as at 12 and then extended directly outward as at 13 to lie against the under face of the angle iron 14, which supports the brick 14a or against the under edge of the frame where stucco construction is used as in Figure 1.

The element 10 it will be seen is disposed against and is nailed to the sheathing 15 by nails 17 and the sheathing is supported by the headers 16. The rebent fold 12 receives the upper flange *e'* of the sash E. The bottom member or element is also formed of sheet metal and bent to form a portion 18

which bears against the sheathing 15. The metal is bent outward approximately at right angles but slightly rounded as at 19 and then downward as at 20 and then straight outward as at 21 to lie against the stone window sill S. It will be seen that the portions 19 and 20 corresponding to the portion 11 have the same width as the portion 11 for the top element. There is no rebent portion 12, however as in the top element, but the flange e' of the casement sash simply bears against the front side of the portion 20.

The side elements have substantially the same shape as the element B, each side element having a portion 22 disposed in a vertical plane and against the sheathing 15, a portion 23 which extends outward approximately at right angles to the portion 22 and then extends laterally parallel to the portion 22 and then an outwardly extending flange 24 corresponding to the portions 13 and 21 of the elements A and B. The portions 11, 19 and 23 of the top, bottom and side elements respectively engage in the groove e of the window frame E. The top and bottom elements A and B are four inches longer than the width of the sash E and the side elements are disposed inward of the ends of the top and bottom elements A and B.

It will be seen from Figure 4, that the portion 22 is slightly less in length than the portion 24 of the side elements and that the bend 23 at its upper and lower ends is concavely cut away as at 25 and that the outer wall of the portion 23 is rounded as at 26 at both upper and lower ends. This permits the side members at their ends to fit over and conform to the portions 11 and 19 of the upper and lower members or elements.

All of the elements are formed with apertures whereby they may be attached to the sheathing or studding or other structural elements forming the building. It will be seen that there is a flange projecting outward from the edge of the metal frame of $1\frac{1}{4}$ inches with laps over the joint between the metal frame of the window sash and the edge of the brick or the edge of the wooden frame or stile in a stucco construction.

For the purpose of attaching the metal window frame unit to the casing formed of the members A, B, C and D, each of the elements A, B, C and D are apertured for the passage of a bolt into the corresponding portion of the window frame unit. Thus in the element A, the portion 11 is apertured at its middle, in the element B, the portion 19 is so apertured and in the elements C and D, the portion 23 is so apertured. The bolts 27 pass through corresponding apertures in the frame e of the sash E. It will be seen that the top member has the outwardly projecting flange 13 which extends outward parallel to the lower face of the brick 14a and the space between this flange 13 and the angle

iron support for the brick 14 is filled with mortar 28 which thus closes the space between the sash and the angle iron support, preventing rain, wind or snow from blowing through and at the same time making a substantial showing.

Furthermore this flange forms an effective drip cap over the top of the sash. The flange 21 projects outward from the window over the stone window sill, at the bottom of the window, preventing water from entering at this point. The provision of the rebent portion 12 in the upper element A is a very necessary provision at the top of the window but could not be used at the bottom section, neither is it used at the side sections, as if this fold 12 were used on the side sections, it would prevent brick from making close contact with fin at outer edge.

In Figure 1, I show my outer casing as applied to stucco construction. The casing structure is the same as the frame used for brick or stone work, the wooden frame for the window opening being designated F. The stucco G, of course, is disposed between this wooden frame and the attaching flanges of the top, side and bottom elements. This construction is extensively used on outside walls that are stuccoed and paneled with wooden strips. It will be seen that in the stucco construction, the flange 21 projects outward from the window over the wood casing at the bottom of the window, preventing water from entering joint between stucco and wood. This is a vital and essential feature of my invention and not used in connection with any other casement framing that I know of. It is to be understood that these elements A, B, C and D are not attached to each other or bolted together at the corners, but only to the sides and top and bottom of the casement sash itself.

It is to be understood that the element E shown in Figures 1 and 6 is the outer frame of a metallic window structure, that in certain of these window structures, there is a sash frame pivotally mounted within the outer frame and in certain other structures of this character there is no pivoted sash but the sash is attached directly to the part E. In all of these metallic window units known to me and on the market, the structural element that forms the frame E is formed with an outwardly extending flange e and in all of these structures the window opening is so framed as to provide an outwardly extending bead which is embraced by the portions 11, 19 and 23 of the several elements of my casing. This bead may be of wood, stucco, cement or tile. The ordinary "fin" is angular in cross section, as previously stated, to provide a portion which rests against the elements 16 in Figure 1 and then extends directly outward but this fin does not provide a portion which at the head of the window fits

around the inwardly extending flange *e* nor is this fin provided with a portion which extends outward as at 13 to the exterior of the window. Water, therefore, is very liable to be driven in between the metallic frame of the window sash and this wooden or concrete rib. This is particularly true at the top of the window and along the jambs. My improved casing element or "fin", therefore, not only acts as a fin proper providing metallic member to which the window frame unit may be attached, but it prevents the entrance of water at the joint between the metallic window frame structure and the wooden, mortar, or concrete bead or adjacent parts. My construction further provides for a wide marginal flange designated respectively 13, 24 and 21 in Figures 3, 4 and 5 and this flange provides a wider space for brick, stucco or wood or other element making contact with the outer steel frame. This wide flange constitutes a brick mold or mortar joint support for joining stool to the outer frame and eliminates the need of a wooden strip of molding which is exposed to the weather and to rot and decay where screws are used to attach this steel frame of the window unit to the building. In my construction, these screws which are very commonly used for the purpose are replaced by flat head stove bolts 27 and the fin is securely nailed or attached to the building. While in most structures where the metal fenestra window units are inserted, a wooden bead is provided projecting inward into the window opening and immediately opposed to the window unit frame E and to which the frame element of the casement proper is attached by screws, with my fin this wooden strip may be entirely discarded, the fin being attached directly to the building. Such a wooden strip or bead may, however, be used with my casing element and in this case, the basal flange 10 in Figure 3, 22 in Figure 4 and 18 in Figure 5 is attached on the outer side of this wooden strip or bead.

It will be seen that the construction which I have described is a very simple one and can be cheaply made and readily installed. Preferably, though not necessarily, these elements will be formed of sheet metal having the thickness of one-eighth inch. They may be readily formed to suit all widths and heights of window opening and window sash.

I claim:—

1. An outer casing and fin structure for use with metallic window frames comprising a top, a bottom and two side elements, each formed to provide a substantially flat base portion constituting a fin and designed to lie against the sheathing of the building all of said base portions being disposed in the same plane, a portion extending outward and then parallel to the base portion to form a centrally projecting rib adapted to engage within

the window sash frame and a flange extending outward at right angles to the base portion and from said rib, each base portion being formed with apertures for the passage of attaching means and each rib with an aperture for the passage of a bolt holding the window sash frame in place, the upper and lower elements being of such length as to extend to the outer edges of the base portions of the side elements.

2. An outer casing and fin structure for use with metallic window sashes comprising a top, a bottom and two side elements, each formed of sheet metal and each formed to provide a substantially flat and wide base portion constituting a fin and designed to lie against the sheathing of the building, all of said base portions being disposed in the same plane, a portion extending outward and then parallel to the base portion to form a centrally projecting rib adapted to engage within the edge face of a window frame unit and a wide and substantially flat flange extending outward at right angles to the base portion and from said rib, each base portion being formed with apertures for the passage of attaching means and each rib with an aperture for the passage of a bolt holding the window frame unit in place, the upper and lower elements being of such length as to extend to the outer edges of the base portions of the side elements, the upper and lower edges of the side elements being cut away to receive the ribs of the top and bottom portions and to fit against the outwardly extending flange of the top and bottom portions.

3. A casing and fin structure for metallic window frames, comprising a top, a bottom and two side elements, each formed of sheet metal, the top element being formed to provide a substantially flat and wide base portion constituting a fin and designed to lie against the sheathing of the building, a portion extending outward at right angles to the base and then upward parallel to the base portion, then downward to form a sash-frame-flange receiving bead and then outward to form a flange extending at right angles to the base portion, each side element and the bottom element being formed to provide a substantially flat base portion to lie against the sheathing of the building, a portion extending outward and then parallel to the base portion to form a rib adapted to engage within the window frame, and a flange extending at right angles to the base portion, and the rib on the several elements being apertured for the passage of bolts holding the window frame in place.

4. A casing and fin structure for metallic window frames comprising a top, a bottom and two side elements, each formed of sheet metal, the top element being formed to provide a substantially flat base portion to lie against the sheathing of the building and constituting a fin, a portion extending out-

ward and then upward parallel to the base portion and constituting a rib, then downward and then outward to form a flange extending at right angles to the base portion, each side element and the bottom element being formed to provide a substantially flat base portion to lie against the sheathing of the building and constituting a fin, a portion extending outward and then parallel to the base portion to form a rib adapted to engage within the window frame, and a flange extending at right angles to the base portion, all of said base portions on the top, side and bottom elements being disposed in the same plane, the upper and lower elements being of such length as to extend to the outer edges of the base portions of the side elements and the upper and lower ends of the side elements being cut away to receive the ribs of the upper and lower elements and fit against the upwardly extending flanges thereof.

5. In a building having a window opening, a rectangular window frame disposed in the window opening and having an outer marginal flange extending parallel to the face of the window opening, and casing elements disposed on the four sides of said sash, the uppermost casing element being formed with a base flange whereby it may be attached to the sheathing of the building, the element extending outward from the base flange and lying against the body of the casement window frame, then being formed to provide an upwardly extending fold, to receive the upper flange on the window frame, then extending straight outward, the lower element of the casing being formed to provide a base portion adapted to fit against the sheathing of the building and extending outward and against the under face of the window frame and then downward against the inner face of the flange of the window frame and then straight outward, each of said side elements being formed with a base portion to lie flat against the sheathing, then extend outward against the window frame, then inward against the inner face flange of the window frame and then outward, all of said elements being apertured, and fastening devices extending through the body of the window frame and through said apertures.

6. An outer casing structure for metallic window frames, the structure comprising a top, a bottom and two side elements, each element being formed to provide a substantially flat and wide vertically disposed base portion to lie against the sheathing of the window and constituting a fin, the said portions all being disposed in the same plane, a portion extending directly outward and then parallel to the base portion to form a centrally projecting rib, the inner wall of which is adapted to engage within a metallic window frame, and a flange extending outward and at right

angles to the base portion and from said rib.

7. An outer casing structure for metallic window frames comprising a top and bottom and two side elements each formed to provide a substantially flat and wide base portion to lie against the sheathing of the window and constituting a fin, all of said base portions being disposed in the same plane, a portion extending directly outward and then parallel to the base portion to form a centrally projecting rib, the inner wall of which is adapted to engage within the window frame, and a flange extending outward at right angles to the base portions and from said rib, each of the base portions being formed with apertures for the passage of attaching means and each rib with apertures for the passage of bolts for bolting a window frame in place.

In testimony whereof I hereunto affix my signature.

ERNEST P. BRIDGES.