Jan. 30, 1940. C. D. LOWRY 2,188,412

SASH AND STORE FRONT CONSTRUCTION

Filed Sept. 29, 1938 3 Sheets-Sheet 1

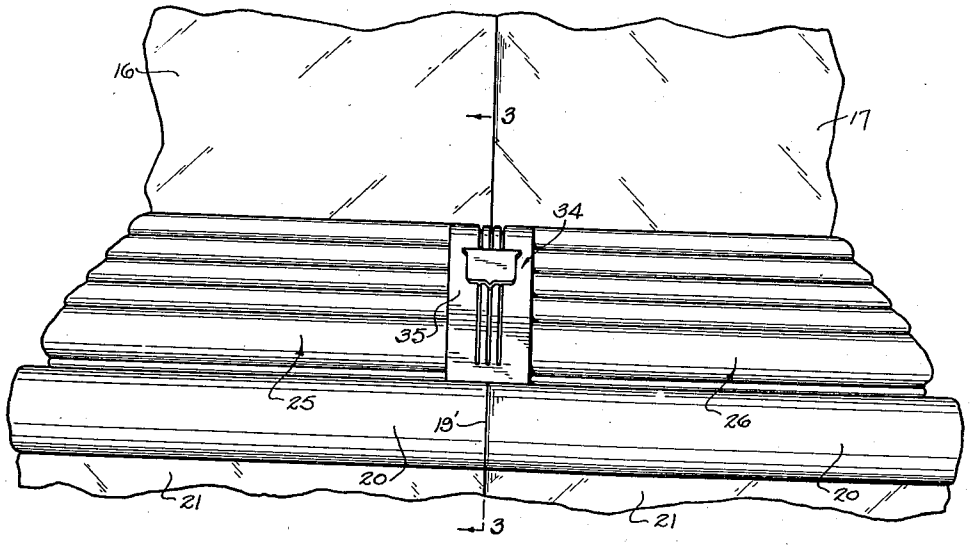


Fig. 1.

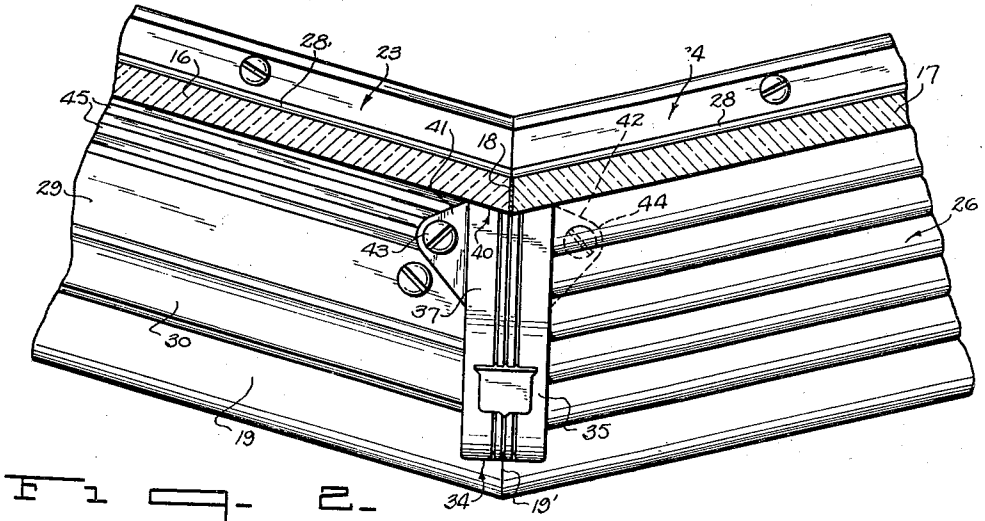


Fig. 2.

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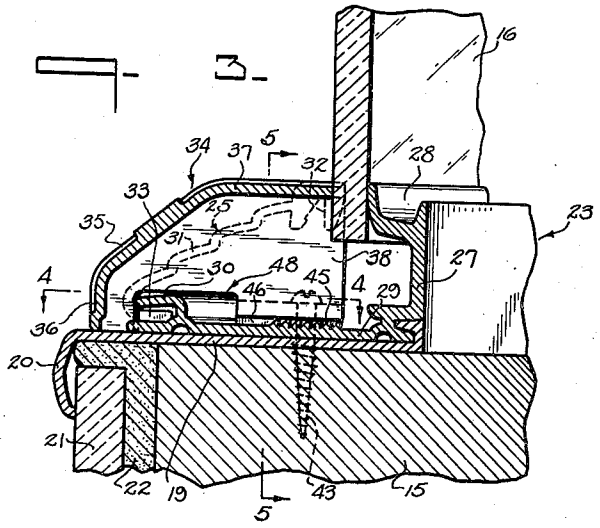
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SASH AND STORE FRONT CONSTRUCTION

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Fig. 3.



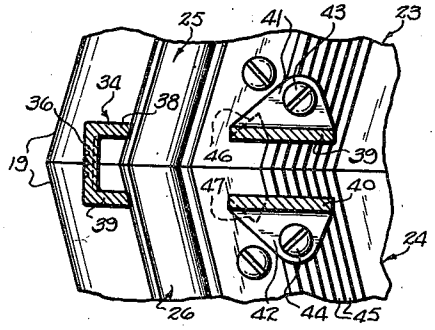


Fig. 4.

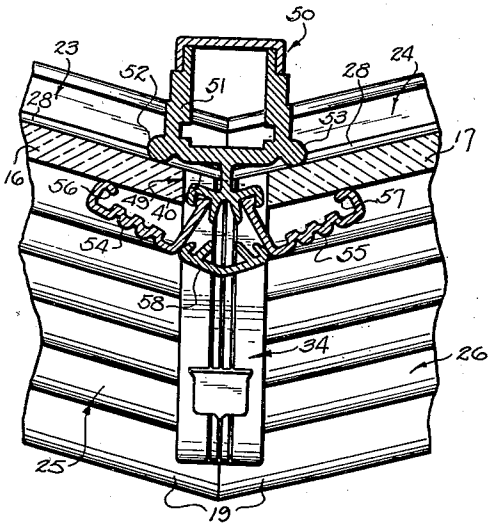


Fig. 6.

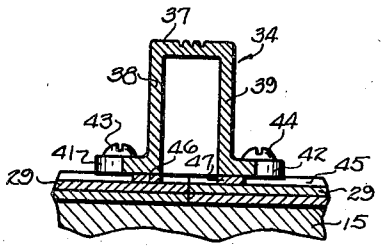


Fig. 5.

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SASH AND STORE FRONT CONSTRUCTION

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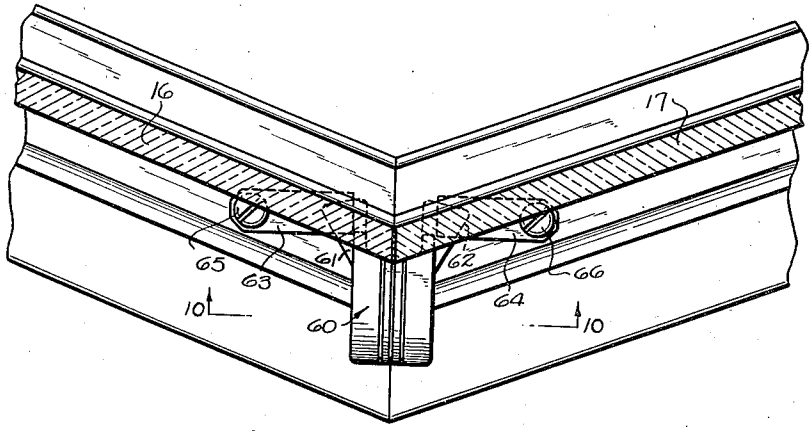


FIG. 9.

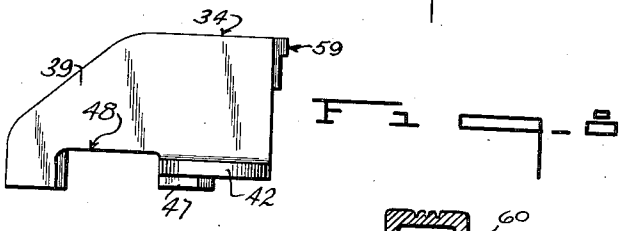


FIG. 8.

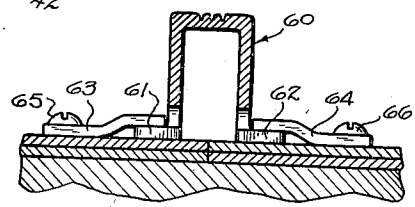


FIG. 10.

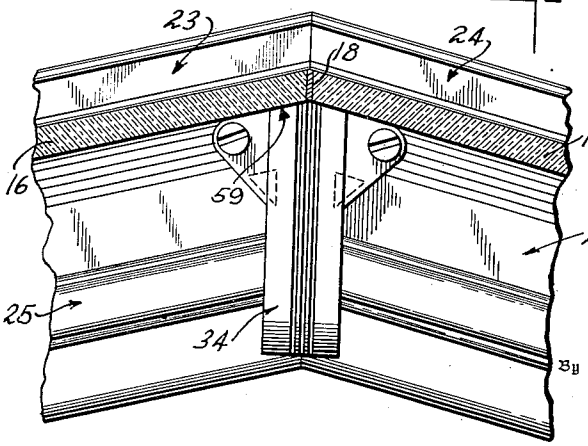


FIG. 7.

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UNITED STATES PATENT OFFICE

2,188,412

SASH AND STORE FRONT CONSTRUCTION

Clyde D. Lowry, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Application September 29, 1938, Serial No. 232,383

6 Claims. (Cl. 189—78)

The present invention relates to sash and store front constructions and more particularly to an improved cap construction for connecting the adjacent ends of metal sash sections.

In the installation of store and window fronts, it is quite common to mount two sheets of glass at an angle to one another to form a corner. A pair of metal sash sections is arranged inwardly of the glass sheets and engage the rear surfaces thereof while a second pair of metal sash sections is arranged outwardly of the glass sheets and engage the front surfaces thereof. A suitable means is provided for connecting the inner and outer sash sections together to firmly clamp the glass sheets in position therebetween. In such installations, it has been customary to make use of a so-called cap construction adapted to overlie and connect the adjacent ends of the outer sash sections at the corner to give a neater and more finished appearance.

An important object of this invention is the provision of a novel cap construction embodying a one-piece metal cap member adapted to be received between the adjacent ends of the outer sash sections in abutting relation thereto.

Another object of the invention is the provision of a cap member of the above character adapted to be supported upon and secured to the inner sash sections, the securing means for said cap member being effectually concealed by the outer sash sections so as to prevent accidental displacement or unauthorized removal thereof.

Another object of the invention is the provision of a cap member of the above character which is adaptable for use with glass sheets disposed at various angles relative to one another to form either a salient corner or a reverse corner, whereby the cap member can be used in a relatively large number of different type installations.

A further object of the invention is the provision of a cap member of the above character which may be easily and conveniently installed, which is of maximum simplicity and efficiency; and which permits accurate and ready mounting and positioning thereof with respect to the adjacent ends of the sash sections.

Other objects and advantages of the invention will become more apparent during the course of the following description when taken in connection with the accompanying drawings.

In the drawings wherein like numerals are employed to designate like parts throughout the same:

Fig. 1 is a front view of a sash or store front construction having associated therewith a cap member provided by the invention;

Fig. 2 is a plan view, with one of the outer sash sections removed;

Fig. 3 is a vertical section taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a horizontal section through the cap member taken substantially on line 4—4 of Fig. 3;

Fig. 5 is a vertical section through the cap member taken substantially on line 5—5 of Fig. 3;

Fig. 6 is a plan view of the sash construction and cap member but showing the two sheets of glass spaced from one another and connected together by a vertical corner bar;

Fig. 7 is a plan view similar to Fig. 2 but showing the cap member associated with two sheets of glass arranged to form a reverse corner;

Fig. 8 is a side view of the cap member of Fig. 7;

Fig. 9 is a plan view showing a different type of fastening means for the cap member; and

Fig. 10 is a section taken substantially on line 10—10 of Fig. 9.

With reference first to Figs. 1 to 5 of the drawings, the numeral 15 designates the horizontal wooden sill of the usual framing in which are mounted two sheets of glass 16 and 17, said sheets being arranged at an angle to one another to form a corner as best shown in Fig. 2. The glass sheets extend outwardly and rearwardly toward the back of the window or store front to form what is usually termed a salient corner. The adjacent vertical edges of the two sheets of glass are spaced slightly from one another and disposed therebetween is a strip of cushioning material 18 or a suitable cement.

Mounted upon the wooden sill 15 are the metal sill plates 19, the forward ends 20 of which are turned downwardly and overlap the marginal portions of tiles 21 of vitrolite or other structural glass or the like which may be used to face the building, said tiles being secured in place by a suitable cement or mastic 22. The inner adjacent ends of the sill plates 19 are mitered at the corner of the window as indicated at 19'.

The metal sash construction for carrying the glass sheets is mounted upon the sill plates 19 and comprises the inner stationary sections 23 and 24 lying to the rear of the glass sheets 16 and 17 respectively and the outer movable sections 25 and 26 disposed in front of the glass sheets. The inner sash sections 23 and 24 each comprises a vertical back wall 27 provided at its upper end with a glass engaging portion 28. Formed integral with the back wall 27 at its lower end is a

forwardly directed horizontal bottom wall 29 extending in a plane perpendicular to the plane of the glass sheets, said bottom wall being formed at its outer end with a raised flange 30.

Each of the front sash sections 25 and 26 comprises a face piece 31 provided at its upper end with a glass engaging portion 32 and at its lower end with an inturned flange 33 fitting beneath the flange 30 of the respective rear sash section. The means for connecting the inner and outer sash sections together to clamp the glass sheets in place between the glass engaging portions 28 and 32, as well as the setting blocks for sustaining the weight of the glass, have been omitted from the drawings for the sake of clearness, but for a detailed disclosure of such means attention is called to applicant's Patent No. 2,103,732, issued December 28, 1937. It will of course be understood, however, that this invention is in no way limited to use with any particular type of sash construction.

The present invention comprehends a novel cap construction 34 which is adapted to be positioned between and to abut the adjacent ends of the outer sash sections 25 and 26 to join the said sections together at the corner of the window. To this end, the said outer sash sections are cut relatively shorter than the rear sash sections to permit the installation of the cap therebetween. The cap construction 34 is in the form of a hollow one-piece cap or filler member provided with an inclined front wall or face portion 35 terminating at its lower end in a substantially vertical portion 36, which rests upon the sill plates 19, and at its upper end in a rearwardly extending, substantially horizontal top wall 37. Formed integral with the front and top walls 35 and 37 are the substantially parallel side walls 38 and 39. The cap member is therefore of substantially inverted U-shape in cross section, as shown in Fig. 5, having its front end and top closed and its rear end and bottom open. The top wall 37 of the cap member is notched at its inner end as at 40 to fit snugly against the front faces of the glass sheets 16 and 17. The side walls 38 and 39 of the cap member are provided at their lower ends, and adjacent the rear thereof, with the outwardly projecting horizontal attaching ears 41 and 42 respectively, said ears being adapted to rest upon the bottom walls 29 of the rear sash sections 23 and 24 and to be secured thereto by screws or the like 43 and 44. The front and top walls of the cap member may have formed upon the outer surfaces thereof any suitable design to improve the ornamental appearance thereof as well as to identify the manufacturer of the metal sash construction.

With the type of sash construction disclosed in the drawings, the bottom walls 29 of the rear sections 23 and 24 are provided with a series of longitudinally extending rack teeth 45 which form a portion of the means for connecting the front and rear sash sections together as will be apparent upon reference to the above-mentioned patent. The cap member 34, when in proper position, rests at its rear end upon these teeth and in order to compensate for the said teeth and to steady and insure the proper positioning of the cap member, suitable shims 46 and 47 can be inserted beneath the attaching ears 41 and 42 forwardly of the rack teeth 45. As the rear sash sections 23 and 24 abut one another at their inner adjacent ends, the side walls 38 and 39 of the cap member are cut out or notched as at 48 to fit over the raised flanges 30. This notching or cutting out of the side walls of the cap member is best shown in Fig. 8.

As will be understood from the above, the cap member 34 is arranged between the inner adjacent ends of the outer sash sections 23 and 24 at the juncture of the two sheets of glass 16 and 17, with the rear end of said cap member being notched as at 40 to conform to the angle at which the glass sheets are disposed. The horizontal top wall 37 of the cap member is preferably substantially flush with the upper ends of the outer sash sections 25 and 26, while the cap member projects forwardly beyond said sash members, as clearly indicated in Fig. 3. The inner adjacent ends of said outer sash sections are of course properly mitered to snugly abut the opposite side walls of the cap member.

The cap member is supported at its inner end upon the bottom walls 29 of the rear sash sections and at its outer end upon the sill plates 19, said cap member being secured to the rear sash sections by the screws 43 and 44 which pass through the attaching ears 41 and 42. The use of the shims 46 and 47 may not always be necessary and likewise the extent to which the side walls of the cap members are notched or cut away as at 48 is dependent upon the shape of the outer ends of the bottom walls of the rear sash sections. For instance, if the raised flanges 30 were eliminated or these flanges were cut away where the cap member comes, the cut outs 48 would not be necessary.

In the installation of the cap member 34, the rear sash sections 23 and 24 are first properly located and secured in place. The glass sheets 16 and 17 are then properly associated therewith, after which the cap member is properly positioned at the juncture of the two sheets of glass and secured in place as explained above. The outer sash sections 25 and 26 are then associated with the rear sash sections and the two connected together to firmly clamp the glass sheets therebetween. The outer sash sections serve to completely conceal the securing means for the cap member to not only give a neater and more attractive appearance, but also to prevent the unauthorized removal of the cap member. Thus, the cap member cannot be removed without first removing the outer sash sections and if the securing means for the sash sections are arranged inwardly of the glass sheets, it will be impossible for the cap member to be removed from the outside by any unauthorized person.

From the above, it will be readily seen that the cap member 34 is of relatively simple, inexpensive construction, yet efficient and effective for the use for which it is intended and that it may be readily and conveniently installed. Also, that it contains no parts which can become loose or out of adjustment. By simply making the notch 40 of the desired shape and size, the cap member can be used with glass sheets arranged at various angles relative to one another. As the notch 40 can be formed on the job, the same type cap member can be used in various installations.

In Fig. 6, the cap member 34 is used in connection with a slightly different type of installation. In this case, the glass sheets 16 and 17 do not come together at their inner adjacent edges as in Fig. 2, but are spaced from one another to provide a gap 49 therebetween. With this arrangement, the cap member 34 extends rearwardly between the vertical edges of the glass sheets and the inner notched end 40 thereof corresponds to and engages the vertical flanges or

glass engaging portions 28 of the rear sash sections 23 and 24. The adjacent inner ends of the outer sash sections 25 and 26 abut the side walls of the cap member as explained above.

When the glass sheets are arranged in this manner, it is desirable to make use of a vertical corner bar, designated in its entirety by the numeral 50, for joining the adjacent edges of the glass sheets. The corner bar 50 may be of any desired construction and is supported at its lower end upon the top wall of the cap member and also upon the upper ends of the outer sash sections. The corner bar, herein disclosed by way of illustration, consists briefly of a rear stationary member 51 having the glass engaging beads 52 and 53 which bear against the inner surfaces of the glass sheets. Pivotally carried by the rear stationary member 51 and arranged forwardly of the glass sheets are the wing members 54 and 55 having at their outer ends the glass engaging beads 56 and 57 which bear against the front faces of the glass sheets. Arranged between the wing members 54 and 55 is the wedge plate 58 which is suitably secured to the rear member 51 in a manner to force the wing members outwardly and inwardly to hold the outer ends thereof in firm clamping engagement with the glass sheets.

In Figs. 7 and 8 is disclosed a cap member 34 for a reverse corner; that is to say, where the glass sheets 16 and 17 extend outwardly and forwardly from the corner instead of rearwardly. The cap member here used is of the same construction and arrangement as described above with the exception that the rear end thereof is cut as at 59 to form a double bevel or reverse angle to that disclosed in Fig. 2, so as to fit between and snugly engage the front faces of the glass sheets.

In Figs. 9 and 10 is illustrated a different type of fastening means which may be used for securing the cap member in place. The cap member is here designated in its entirety by the numeral 60 and is of substantially the same construction as cap member 34 disclosed above; being provided with the laterally and outwardly projecting attaching ears 61 and 62. However, with this cap construction, the attaching ears are not provided with openings for the reception of the fastening screws but instead separate fastening clips 63 and 64 are employed. These clips may be in the form of relatively short pieces of metal and are secured at their outer ends to the bottom walls of the rear sash sections by screws or the like 65 and 66 respectively, while the inner ends thereof overlap the attaching ears 61 and 62 and bear downwardly thereon to secure the cap member firmly in place upon tightening of the said screws.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. In combination in a sash or store front construction having a pair of glass sheets disposed at an angle to one another to form a corner, a pair of metal sash sections disposed inwardly of the glass sheets and engaging the rear surfaces thereof, a pair of metal sash sections lying outwardly of the glass sheets and engaging the front surfaces thereof, said outer sash sections having their adjacent ends spaced from one another at the corner, a metal cap member disposed between the spaced ends of said outer sash sections comprising a front wall, a substantially horizontal top wall and parallel side walls abutting the adjacent ends of the said outer sash sections, and means for securing said cap member to said inner sash sections.

2. In combination in a sash or store front construction having a pair of glass sheets disposed at an angle to one another to form a corner, a pair of metal sash sections disposed inwardly of the glass sheets and engaging the rear surfaces thereof, a pair of metal sash sections lying outwardly of the glass sheets and engaging the front surfaces thereof, said outer sash sections having their adjacent ends spaced from one another at the corner, a metal cap member disposed between the spaced ends of said outer sash sections comprising a front wall, a substantially horizontal top wall and parallel side walls abutting the adjacent ends of the said outer sash sections, said cap member being supported at its rear end upon said inner sash sections, and means for securing the said cap member adjacent its rear end to the said inner sash sections.

3. In combination in a sash or store front construction having a pair of glass sheets disposed at an angle to one another to form a corner, a pair of metal sash sections disposed inwardly of the glass sheets and engaging the rear surfaces thereof, said sash sections having bottom walls extending in a plane perpendicular to the plane of the glass sheets, a pair of metal sash sections lying outwardly of the glass sheets and engaging the front surfaces thereof, said outer sash sections having their adjacent ends spaced from one another at the corner, a metal cap member disposed between the spaced ends of said outer sash sections comprising a front wall, a substantially horizontal top wall and parallel side walls abutting the adjacent ends of the said outer sash sections, said cap member being supported at its rear end upon the bottom walls of said inner sash sections, and fastening means for securing the said cap member to the bottom walls of the inner sash sections.

4. In combination in a sash or store front construction having a pair of glass sheets disposed at an angle to one another to form a corner, a pair of metal sash sections disposed inwardly of the glass sheets and engaging the rear surfaces thereof, said sash sections having bottom walls extending in a plane perpendicular to the plane of the glass sheets and terminating at their outer ends in raised portions, a pair of metal sash sections lying outwardly of the glass sheets and having portions engaging the front surfaces thereof and other portions associated with the raised portions of the bottom walls of said inner sash section, said outer sash sections having their adjacent ends spaced from one another at the corner, a metal cap member disposed between the spaced ends of said outer sash sections comprising a front wall, a substantially horizontal top wall and parallel side walls abutting the adjacent ends of the said outer sash sections, said cap member being supported at its rear end upon the bottom walls of said inner sash sections while the outer end thereof projects forwardly beyond said outer sash sections, the side walls of said cap member being provided with laterally projecting attaching ears and being also cut out to fit over the raised portions of the bottom walls of said inner sash sec-

tions, and means engaging said attaching ears for securing the said cap member to the bottom walls of the said inner sash sections.

5. A cap construction for connecting the spaced ends of adjacent sash sections, comprising a one-piece metal cap member having a front wall, a substantially horizontal top wall and parallel side walls, said side walls being provided with laterally and outwardly projecting attaching ears.

6. A cap construction for connecting the spaced ends of adjacent sash sections, comprising a one-piece metal cap member substantially U-shaped in cross section having a top wall and substantially parallel side walls provided at their lower ends with laterally and outwardly projecting attaching ears, the forward end of said cap member being closed by a front wall while the rear end and bottom thereof are open.

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