May 15, 1934.

R. T. AXE

1,959,148

WINDOW SASH CONSTRUCTION

Filed April 10, 1931

Fig. 1.

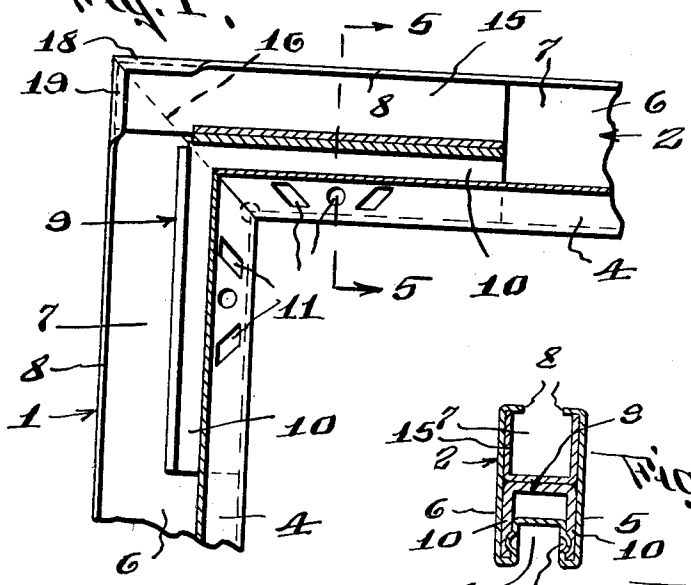


Fig. 3.

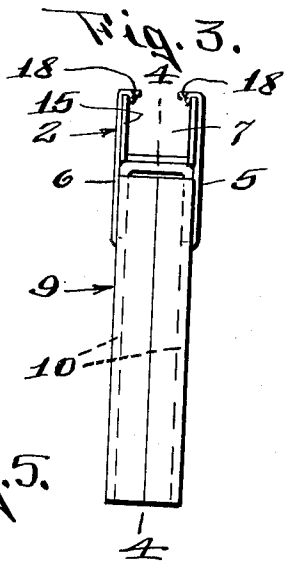


Fig. 5.

Fig. 4.

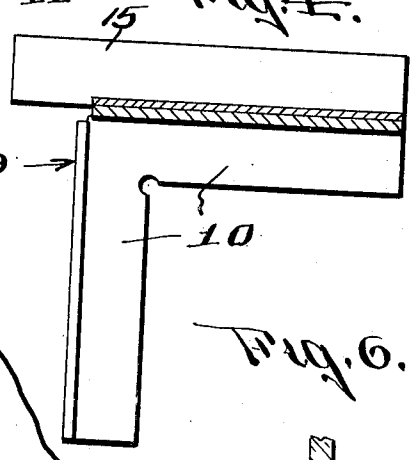


Fig. 6.

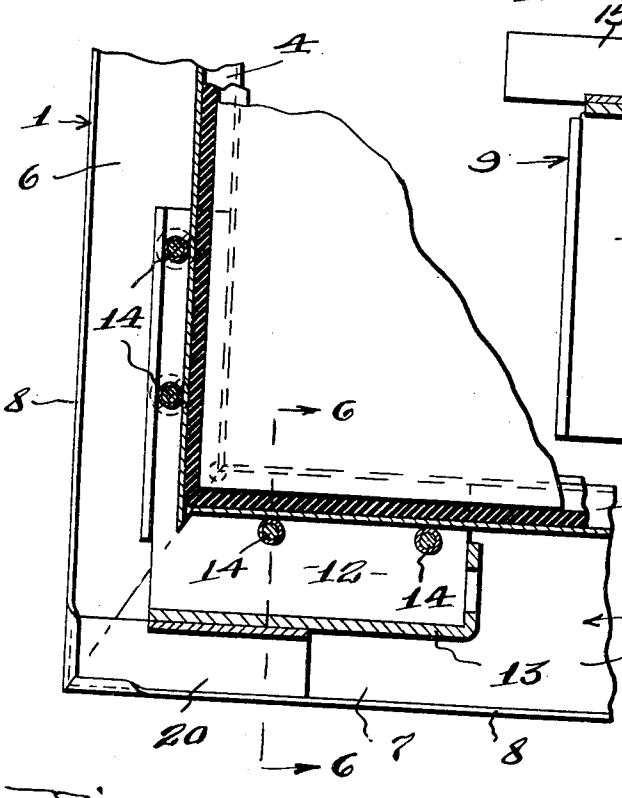
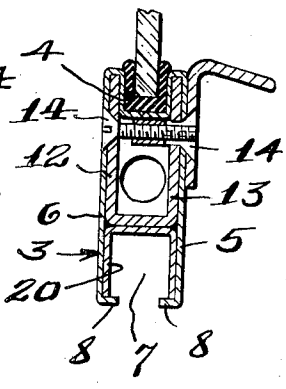


Fig. 2.



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WINDOW SASH CONSTRUCTION

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Application April 10, 1931, Serial No. 529,080

7 Claims. (Cl. 189—76)

This invention relates to sheet metal sashes such as are used in railway cars, motor vehicles, busses etc. and has for its object a reinforcing means for stiffening light sheet metal sashes, particularly at the corners. It also has for its object a particularly simple and compact construction of a casing provided for the sash holders, usually employed to hold the sash open at different elevations, and in some instances to lock it closed.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a fragmentary sectional view of portions of two sash members which meet and form a corner, as the upper portion of one of the stiles and the top rail of a sash.

Figure 2 is a similar view of the sash members which meet, as the stile and bottom rail where provision is made for a sash holder.

Figure 3 is an edge view of the reinforcing insert shown in Figure 1, the top rail being also shown.

Figure 4 is a sectional view on line 4—4, Figure 3, the top rail being omitted.

Figures 5 and 6 are sectional views on line 5—5, Figure 1 and 6—6, Figure 2 respectively.

Sheet metal sashes, such as are used in motor busses must be light and rigid and are made up of thin sheet metal for the sake of lightness and are stiffened by corner re-inforcements. The sashes are provided with lengthwise channels opening through their edges for receiving sash guides in the form of ribs on the window frame extending into the channels. The subject matter of this invention is means for reinforcing the thin sheet metal sashes at the corners and particularly at the extreme outer angles of the corner adjacent the window frame.

The sash comprises generally a reinforcing insert extending lengthwise of one of the hollow sheet metal sash members as the rail or stile, the insert extending beyond or lapping the joint formed by the two members which meet to join a corner. The projecting end of the insert extends to the extreme outer corner of the sash and is there secured to both members, that is, if the insert extends lengthwise of the rail it extends beyond the end of the rail into the stile and is secured at its outer end to the extreme end of both the stile and the rail. More specifically, the insert is carried by one of the arms of a corner iron.

1 designates one of the stiles, 2 the top rail and 3 the bottom rail of a sash. Each of these is formed up of sheet metal to have a re-entrant glass receiving groove 4 along its inner edge, front and rear walls 5, 6 which confine a channel 7 opening through the edge of the sash. The bottom of the re-entrant groove 4 forms the bottom of the channel. The outer margins of the front and rear walls 5, 6 are formed with inwardly projecting flanges 8.

9 designates one form of corner iron employed at corners where there are no sash holders or locks, this being U shaped in general form in cross section with the arms or flanges 10 of the U formation fitting into the spaces between the side walls of the re-entrant groove 4 and the opposing portion of the front and rear walls 5, 6. The corner irons may be secured in position by compressing the side walls of the groove 4 and the opposing portions of the front and rear walls 5, 6 on the interposed flanges 10 and by indenting as at 11, one of these walls into the other. Usually the side walls of the glass receiving groove 4 are indented into the flanges 10 of the corner insert. This manner of securing the corner iron in position forms no part of this invention but forms the subject matter of the application of Charles L. Shaffer, Ser. No. 501,902 filed December 12, 1930.

12 designates a corner iron used at corners where there is a sash holder or lock. This is mounted in a manner similar to the corner insert 9 but one portion 13 thereof is in the form of a housing for a sash lock mechanism, not shown. The corner iron 12, because of the sash lock mechanism, is held in position in any suitable manner as by fastening members 14 extending transversely through the arms of the corner insert 12 outside of the glass receiving groove 4, and through the front and rear walls of the sash members.

15 designates an insert extending lengthwise of one of the two sash members, which meet and form a corner, it being shown as extending lengthwise of the top rail 2 in Figure 1 and having its end portion projecting beyond the line of the joint between the top rail 2 and the stile 1. The joint here shown is a miter joint indicated by the line 16. This insert 15 extends lengthwise of one of the arms of the corner insert 9 and the projecting portion thereof is secured to both the top rail 2 and stile 1 at the outer corner angle of the sash. As here illustrated, the insert is U shaped in general form, the U formation overlying and being welded to the bottom of the U formation of one of the arms of the corner iron. The outer edges of the side walls of the U formation underlie the flanges 8. The projecting portion of the insert 15 is secured adjacent its outer end to the side walls 5, 6 and as here shown, the end portions of the flanges 8 are folded inwardly onto the projecting end portion of the insert 15, as at 18 and 19, the portions 18 overlying the end edge margins of the side flanges of the insert 15 and the

portions 19 coact with the side margins of the projecting end portion of the insert 15.

In Figure 2, 20 designates the insert corresponding to the insert 15, it being secured to the bottom of the U shaped part of the corner iron, which forms a housing for sash lock mechanism. Owing to the projecting end portion of the inserts 15, 20 and the securement thereof to the front and rear walls of the sheet metal sash members adjacent the outer corner angle of the sash, the sash is not only stiffened at the corner but also at the extreme outer corner of the sash without the use of screws or comparatively heavy blocks or inserts.

The bottoms of the channel formation of the projecting end portions of the inserts 15 and 20 are preferably removed providing a passage in line with the channel 7 of the stile 1 in order that the channel in the stile may open into the channels of the top and bottom rails providing a continuous run way from the top to the bottom of the sash for the guide ribs on the window frame.

What I claim is:

1. A window sash having hollow sheet metal sash members which meet to form a corner, said members defining a channel opening through the outer edge of the sash member, a reinforcing insert extending lengthwise of the channel of one member and projecting beyond the corner and into the abutting end of the other member, the outer margin of the walls of the channel of the abutting members being folded over onto the projecting portion of the insert at the outer corner angle of the sash.

2. A window sash having hollow sheet metal sash members which meet and form a corner, said members having front and rear walls defining a channel opening through the outer edge of each sash member, the outer margins of the walls of the channel extending inwardly toward each other at the entrance of the channel and said members being bevelled at their abutting ends forming a miter joint, a reinforcing insert having opposing walls contiguous to the inner faces of the side walls of the channel and extending beyond the line of the miter joint into the other member, and the portions of the marginal flanges of the abutting members adjacent the outer corner of the sash being folded onto the contiguous portions of the insert.

3. A window sash having hollow sheet metal sash members which meet and form a corner, said members being formed with front and rear walls, a re-entrant glass receiving groove along their inner edges the front and rear walls defining a channel opening through the outer edge of each sash member, the bottom of the re-entrant groove forming the bottom of the channel, a reinforcing insert U-shaped in general form having its bottom opposed to the bottom of the groove, and the side flanges of the U-formation extending toward the outer edge of the sash, the insert extending lengthwise of the channel of one member and projecting beyond the joint at the corner of the members, and into the abutting end of the other member, the outer margin of the walls of the channel of the abutting members being folded over onto the projecting portion of the insert at the outer corner angle of the sash.

4. A window sash having hollow sheet metal sash members which meet and form a corner, said members being formed with front and rear walls, a re-entrant glass receiving groove along their inner edges, the front and rear walls defining a channel opening through the outer edge of each sash member, the bottom of the re-entrant groove forming the bottom of the channel, a reinforcing insert U-shaped in general form having its bottom opposed to the bottom of the groove, and the side flanges of the U-formation extending toward the outer edge of the sash, the insert extending lengthwise of the channel of one member and projecting beyond the joint at the corner of the members and into the abutting end of the other member, the bottom of the U-formation of the projecting portion being removed forming a passage in line with the channel of the sash member into which the end of the insert projects, and the outer margins of the walls of the channel of the abutting members being folded over onto the projecting portion of the insert at the outer corner angle of the sash.

5. A window sash having hollow sheet metal sash members which meet and form a corner, said members being formed with front and rear walls and re-entrant glass receiving grooves along their inner edges, the front and rear walls defining a channel opening through the outer edges of the sash, the bottom of the re-entrant groove forming the bottom of the channel, a reinforcing insert U-shaped in general form having its bottom opposed to the bottom of the groove, and the side flanges of the U-formation extending toward the outer edge of the sash, the insert extending lengthwise of the channel of one member and projecting beyond the joint at the corner of the members and into the abutting end of the other member, the front and rear walls of the channel which opens through the edge of the sash members having inwardly extending marginal flanges and the end portions of said flanges at the outer corner angle being folded onto the projecting end portion of the insert.

6. A window sash having hollow sheet metal sash members defining channels opening through the outer edges of the sash members, a reinforcing angular corner insert located in the channels at the corner of the meeting sash members and a second reinforcing insert extending lengthwise of one of the sash members along one arm of the corner insert and having portions extending beyond the abutting ends of the sash member at the corner and secured to the other sash member.

7. A window sash having hollow sheet metal sash members which meet and form a corner, said members being formed with front and rear walls and re-entrant glass receiving grooves along their inner edges, with their side walls spaced apart from the front and rear walls, the front and rear walls defining channels opening through the outer edges of the sash members, the sash members meeting at the corner with a miter joint, a reinforcing angular corner insert U-shaped in general form in cross section having the walls of the U-formation fitting into the spaces between the side walls of the groove and the front and rear walls of the sash, a second reinforcing insert, extending lengthwise of one of the sash members, U-shaped in general form in cross section with the bottom of the U-formation opposed to the bottom of the groove, the end portions of the second insert extending beyond the miter joint into the other sash member and the portions of the margins of the front and rear walls of the sash members at the outer corner angle of the sash being folded inwardly onto the end portions of the second insert.

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