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R. T. AXE

WINDOW SASH AND LOCK CONSTRUCTION

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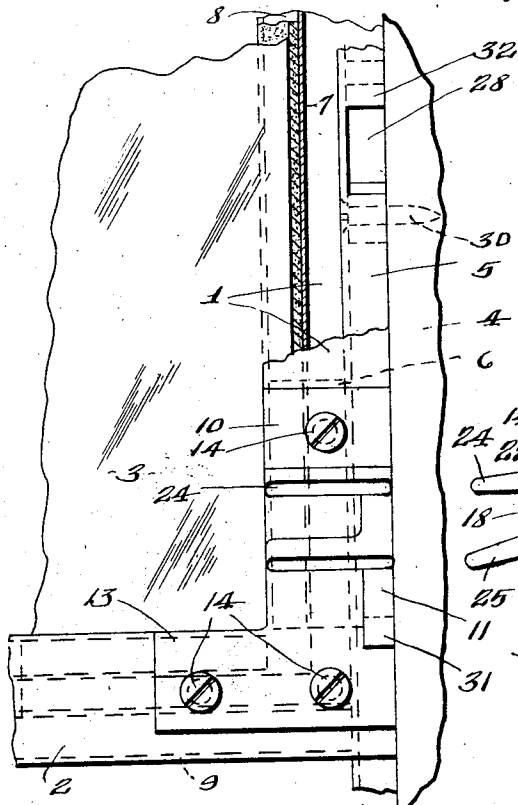



Fig-1-

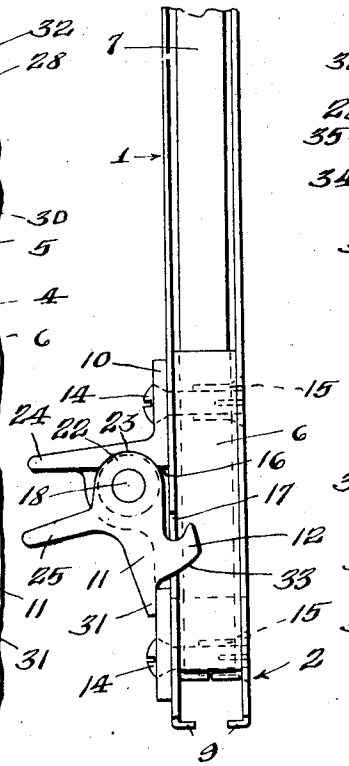



Fig-2-

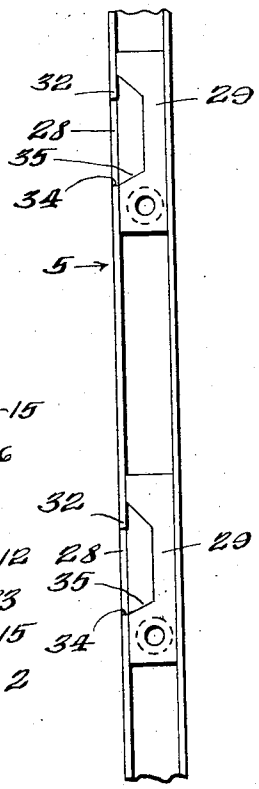



Fig-3-

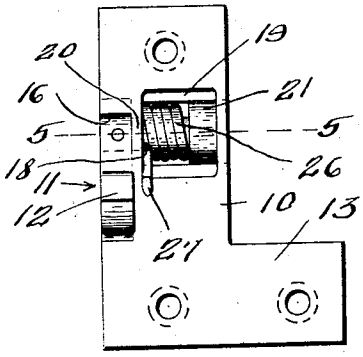



Fig-4-

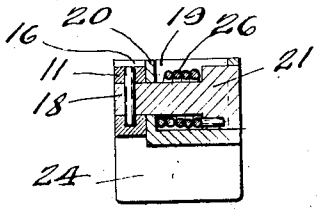



Fig-5-

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Patented Aug. 23, 1927. 1,640,173

# UNITED STATES PATENT OFFICE.

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## WINDOW SASH AND LOCK CONSTRUCTION.

Application filed July 14, 1925. Serial No. 43,588.

This invention relates to sheet metal window sashes such as are used in motor vehicles, particularly motor busses, railway cars etc., where the sash members as the stiles and rails are very narrow and has for its object a particularly light, rigid construction and arrangement of the sash and sash holder and guide.

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 elevation, partly in section, of a window construction embodying my invention.

Figure 2 is an edge view of the sash shown in Figure 1, the window frame and guide being omitted.

Figure 3 is an edge view looking to the left in Figure 1 of the sash guide.

Figure 4 is an elevation of the sash holder.

Figure 5 is a sectional view on line 5—5, Figure 4.

This window sash construction comprises, generally, a sash in which the sash members particularly the stiles and rails are narrow and formed of sheet metal in the form of a channel at the edge of the sash for receiving a window guide, and a sash holder mounted on the narrow member or stile of the sash entirely within the width of the stile or sash member and having a latch member movable through the front face or wall of the sash member to coact with the guide within the sash member.

1, 2 and 3 designate respectively the stile, rail and glass pane of a sash.

4 designates a portion of the window frame and 5 the guide fixed to the frame and coacting with the sash or the stile 1.

The stile 1 and rail 2 are substantially alike in construction, the stile standing squarely on the end portion of the rail and being united thereto by a corner iron 6 which is secured to the stile and the rail by fastening members to be presently described which also secure the sash holder in poition. The stile is formed up of sheet metal in the form of a channel open at the edge of the sash for receiving the guide 5, the bottom 7 of the channel being formed with a groove 8 for receiving the glass pane 3. The rail 2 is in addition formed with inturned flanges 9 at its lower edge for receiving a weather strip or buffer not shown. The stile 1 is square at its lower end and abuts squarely against the upper edge of the rail 2.

The sash holder comprises a base plate 10 of substantially the same width of the stile 1 from its inner to its outer edge and a sash holder member or latch 11 movably carried by the plate 10 and having a portion as a nose 12 movable through alined openings in the plate 10 and the underlying wall of the stile 1 into the interior of the stile 1 to coact with the front side of the window guide 5. The base plate 10 is also formed with an angular extension 13 overlying the rail 2 and the base plate is held in position by screws 14 which extend through the base plate or the extension and through the corner iron 6, stile or rail 1, 2 and threads into sleeve nuts 15.

As here shown, the alined openings in the base plate 10 and the underlying wall of the stile 1 are in the form of notches 16 and 17 formed respectively in the outer edge of the base plate 10 and the outer edge of the underlying wall of the stile 1.

The latch member 11 is here shown as a rock arm mounted upon a rock shaft 18 journalled in the walls of a recess 19 formed in the plate 10 and opening through the inner face of the plate, the shaft 18 extending through the wall 20 separating the recess from the notch 16. In order to provide ample bearing surface, the shaft is provided with a collar 21 journalled in one wall of the recess and the sash holder 11 is formed with a hub 22 having a bearing at 23 in a projection on the front side of the base plate. This projection is a portion of a stationary handle 24 for coacting with a pinch lever 25 projecting from the sash holder or latch 11, a spring 26 is coiled about the shaft within the recess 19 and is anchored at one end to the collar 21 and at its other end at 27 to the base plate, the spring tending to thrust the shaft in one direction to pull the hub 22 against the wall 20. The other face of the latch 11 is flush

with the edges of the stile and base plate 10.

The window guide 5 is in the form of a channel with the edge of its side flanges against the window frame 4 and with the bottom flange arranged inward toward the inner edge of the stile 1. The side wall of the member 5 which underlies that wall of the stile on which the sash lock is mounted is formed with openings at intervals at 28 for receiving the sash lock 11 and as these openings are located in the side at the free edges of such side, the guide 5 is braced by means of blocks 29 located adjacent said slot, the blocks 29 being arranged between the flanges of the guide 5. The guide 5 is held in position by screws 30 extending through the bottom of the channel of the guide 5 and through the blocks or braces 29.

The latch member 11 is formed with a stop 31 for coacting with the base plate 10 and limiting the inward movement of the sash member and the nose of the sash is in the form of a hook for engaging the wall 32 at one end of each slot 28 and the hook is formed with a ratcheting surface 33 so that when the sash is moved in a retrograde direction, usually down, the sash holder can ratchet owing to the fact that the surface 33 will engage the lower ends of the slots 28 at 34. To facilitate the ratcheting, the blocks 29 are also formed with inclined surfaces 35 for engaging the ratcheting surface 33 of the sash holder.

Owing to this construction, of the sash lock and of the sash and the arrangement of the window guide, the sash holder can be mounted on a comparatively narrow sash formed of thin sheet metal and no part of the sash lock overlies the glass or extends beyond the outline of the sash at any point so that the sash and its lock can be confined in a comparatively small space. The sash construction forms the subject matter of my pending application 55,765, filed September 11, 1925.

What I claim is:

1. A window sash construction, comprising a frame having a projecting guide, a sash having a hollow member in the form of a channel movable along the guide, the guide projecting into the channel, one wall of the sash member being formed with an opening arranged to expose a side of the guide therethrough, and a sash holder comprising a base mounted on the sash member and located wholly within the width of the sash member, and a movable latch carried by the base plate and having a nose movable through said opening to coact with said side of the guides.

2. A window sash construction, comprising a frame having a projecting guide, a sash having a hollow member in the form of a channel movable along the guide, the guide projecting into the channel, one wall of the sash member being formed with an opening arranged to expose a side of the guide therethrough and a sash holder comprising a base mounted on the sash member and located wholly within the width of the sash member, and a movable latch carried by the base and having a nose movable through said opening into position to coact with said side of the guide, the guide being formed with openings for receiving the latch member.

3. A window sash construction comprising a frame having a projecting guide, a sash having a hollow member in the form of a channel movable along the guide, the guide projecting into the channel, one wall of the sash member being formed with an opening arranged to expose a side face of the guide therethrough and a sash holder comprising a base mounted on the sash member and located wholly within the width of the sash member, and a movable latch carried by the base and having a nose movable through said opening into position to coact with said side of the guide, the guide being in the form of a channel, and the side wall of the guide toward the latch being formed with openings therethrough for receiving the latch and braces in the guide near such opening.

4. A window sash construction comprising a frame having a projecting guide, a sash having a hollow member in the form of a channel movable along the guide, the guide projecting into the channel, one wall of the sash member being formed with an opening arranged to expose a side face of the guide therethrough, and a sash holder comprising a base mounted on the sash member and located wholly within the width of the sash member, and a movable latch carried by the base and having a nose movable through said opening into position to coact with said side of the guide, the guide being in the form of a channel and the side wall of the guide toward the latch member being formed with openings therethrough for receiving the latch member, braces in the guide near such openings and fastening screws extending through the bottom of the channel of the guide through the braces and into the frame.

5. A window sash construction comprising a sheet metal sash member in the form of a channel open at its outer edge, the bottom of the channel being formed with a groove for receiving a glass pane, a sash holder comprising a base plate mounted on one of the walls of the sash member, the wall of the sash member on which the base plate is mounted being formed with a passage therethrough, and the base plate being formed with a passage alined with the former passage, a sash holding member carried by the base plate and having a portion movable through said alined passages

in combination with a guide for the window extending into the sash member, and with which the sash holding member coacts.

6. A sash holding member comprising a base plate formed with a notch in one side edge thereof, and with a recess opening through its inner face at one side of the notch, a shaft arranged in the recess and projecting through the wall separating the recess from the notch into said notch, a sash holding member mounted on the shaft and located in the notch and having its outer face flush with the edge of the base plate and a handle integral with the sash holding member.

7. A sash holding member comprising a base plate formed with a notch in one side edge thereof, and with a recess opening through the inner face at one side of the notch, a shaft arranged in the recess and projecting through the wall separating the recess from the notch into said notch, a sash holding member mounted on the shaft in the notch, and a handle integral with the sash holding member, the shaft having a collar at its inner end journalled in a wall of the recess and a spring coiled about the shaft and anchored at one end thereto and at its other end to the base plate.

8. A window sash construction comprising a sheet metal sash member in the form of a channel open at its outer edge, a sash holder comprising a plate mounted on one of the walls of the sash member and a holder member supported by the plate and mounted to move about an axis parallel to the plane of the sash, the wall of the sash member on which the base plate is mounted being formed with a passage therethrough and the sash holding member having a nose extending through said passage, in combination with a guide for the window extending into the sash member, and closing said passage, the guide having a hole for receiving the nose of the holding member.

In testimony whereof, I have hereunto signed my name, at Syracuse, in the county of Onondaga, and State of New York, this 7th day of July, 1925.

ROY T. AXE.