Aug. 17, 1943. H. C. WHEELER 2,327,232

LATCH FOR AWNINGS

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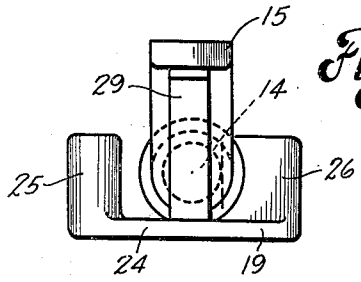


Fig.-5

Fig.-1

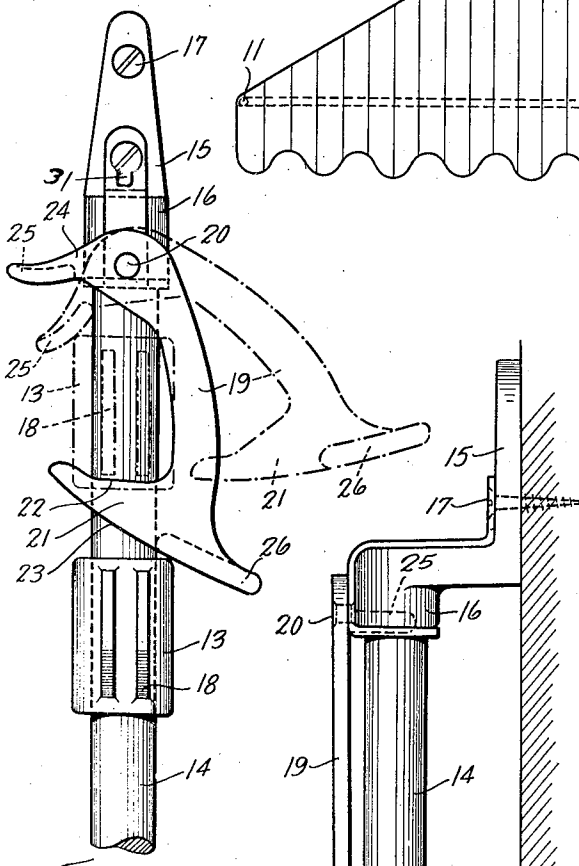


Fig.-2

Fig.-6

Fig.-3

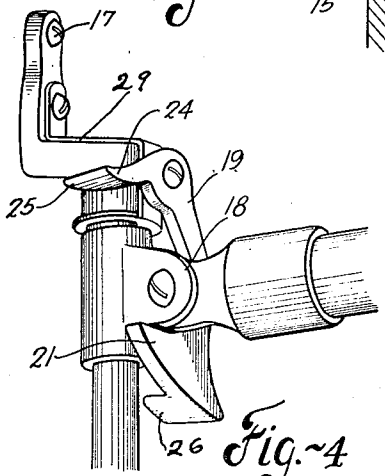


Fig.-4

INVENTOR.
Harry C. Wheeler
BY
Reed.
ATTORNEY.

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LATCH FOR AWNINGS

Harry C. Wheeler, Middletown, Ohio

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12 Claims. (Cl. 160—82)

This invention relates to a latch for an awning. In a very common type of awning the awning cover is supported in its extended position by a U-shaped frame the side arms of which are pivotally connected with members slidably mounted on upright guides secured to the building. In the usual construction these slidable members and the connected ends of the frame arms are in their lowermost positions when the awning is raised and when the awning is lowered the arms are moved to their horizontal positions and the slidable members secured in their elevated positions, this being usually accomplished by inserting pins through openings in the guides. The insertion of such a pin requires the use of both hands, one to support the side arm of the frame and the other to insert the pin, and this is often very inconvenient, particularly when access to the guides is more or less difficult, as for example, when the guides are arranged at the sides of a window and the slidable member must be reached from the inside of the building. If the pin is not properly inserted the vibration of the frame by the wind is apt to displace the same and release the side arm. Further, the pins, which are not in use when the awning is raised, are attached to the building by cords which frequently break, resulting in the loss of the pin, particularly when the cords have deteriorated by exposure to the weather.

One object of the invention is to provide a latch which will automatically move to arm supporting position when the slidable member has been moved to the upper end of the guide, and may be easily actuated to release the arm.

A further object of the invention is to provide such a latch which will be retracted by the upward movement of the arm and will then move to arm supporting position, and which is provided with means for properly positioning the latch for retraction by the upward movement of the slidable member.

A further object of the invention is to provide such a latch having means operable by one hand of the operator to retract the same and release the arm.

A further object of the invention is to provide such a latch having means for positively moving the same to arm supporting position when the slidable member is moved to the upper end of the guide.

A further object of the invention is to provide a rigid one piece pivoted latch having means for positively limiting its pivotal movement in both directions and for manually movng the same to arm releasing position.

A further object of the invention is to provide means for mounting the latch on the supporting bracket of a previously installed guide with little or no modification of the guide or bracket.

Other objects of the invention may appear as the device is described in detail.

In the accompanying drawing Fig. 1 is a side elevation, partly broken away, of an awning equipped with my invention; Fig. 2 is a front elevation of the latch showing the same in the path of the slidable member; Fig. 3 is a side elevation of the structure shown in Fig. 2; Fig. 4 is a perspective view showing the slidable member in its fully elevated position; Fig. 5 is a top plan view of the structure shown in Fig. 2; and Fig. 6 is a detail view of the device for attaching the latch to the bracket which supports the guide.

In the drawing I have illustrated one embodiment of the invention and have shown the same in connection with a slidable member and guide of types which are in common use but it will be understood that the latch may take various forms and may be used in connection with guides and slidable members of various kinds.

As shown in Fig. 1 the cover 10 of the awning is supported by the usual U-shaped frame which comprises the longitudinal bar 11, which has supporting connection with the lower portion of the cover, and side arms, one of which is shown at 12, and each of which is pivotally connected at its inner end with a slidable member 13 which is mounted on an upright guide 14 supported by the building to which the awning is attached. In the present instance the guide 14 is in the form of a rod and is supported at its upper and lower ends by brackets 15 which are provided with socket members 16 to receive the respective ends of the guide rod. The brackets are secured to the building in any suitable manner, as by screws 17. The slidable member 13 is here shown in the form of a sleeve slidably mounted on the guide rod and having inwardly projecting pivot lugs 18 to which the end of the adjacent side arm 12 is pivotally connected.

The latch may be formed of one or more pieces but is preferably rigid throughout and is here shown as cast in a single piece. It comprises an elongate body portion 19 having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of the guide 14. Preferably it is mounted on the upper bracket and the pivot pin, shown at 20, may be mounted in the socket member 16 of the upper

bracket or it may be mounted in an attaching device, as here shown, and which will be hereinafter described. Adjacent its lower end the body is provided with a transverse finger 21 which is movable, by the swinging of the body, into and out of the path of the slidable member 13—18 and constitutes a retaining member the upper edge of which extends beneath and has supporting engagement with the lugs 18 of the slidable member when the latter is in its proper elevated position. This upper edge is preferably curved substantially about the axis of the body, as shown at 22, to permit the same to be easily retracted while the weight of the slidable member and arm rests thereon. When the slidable member is in its lower position the retaining member 21 extends into the path of the slidable member above the same and the lower edge of the retaining member is inclined, and preferably slightly curved, as shown at 23, so that the engagement of the slidable member therewith, as the slidable member moves upwardly, will retract the retaining member, that is, cam the same out of the path of the slidable member, as shown in dotted lines in Fig. 2. The free end of the retaining member or finger 21 remains in contact with the adjacent lug 18 until the slidable member has moved past the retaining member and the latter is then released for movement to retaining position beneath the slidable member. Manually operated means are provided for retracting the retaining member and releasing the slidable member for downward movement and in the present instance this means comprises a short arm 24 rigid with and forming an extension of the body 19 and extending beyond the pivotal axis of the body 19. Preferably this arm 24 is provided with a laterally extending lug 25 which constitutes a finger piece whereby the latch as a whole may be swung about its pivotal axis to withdraw the retaining member from beneath the slidable member. This lug 25 is so arranged with relation to the axis of the latch that when the retaining device has been fully retracted, as shown in Fig. 2, the lug 25 will engage the guide 14 and prevent further pivotal movement of the latch, thus avoiding the possibility of the latch being swung entirely across its pivotal axis due to a violent impact of the slidable member with the retaining member.

The latch is preferably mounted for free pivotal movement about its axis so that when unrestrained it will move by gravity to a position in which the retaining member is in the path of the slidable member, as shown in Fig. 2. The weight of the lower portion of the latch is such that this gravitational movement will be effected quickly and to prevent the retaining member from swinging beyond its proper position with relation to the slidable member it is provided with a lateral lug 26 arranged to engage the guide 14. However, even when the latch has free pivotal movement when installed the pivotal connection will sometimes be caused to bind, due to corrosion or rough usage, in such a manner as to retard or prevent the gravitational movement of the latch to retaining position. Therefore, I have further so arranged the lug 25 that when the retaining member is in its retracted position this lug will lie in the path of the slidable member near the upper limit of the movement of the latter and the impact of the slidable member with the lug will positively move the latch to retaining position. In the arrangement shown in Fig. 2 the slidable member will move a slight distance beyond its normal position and, after the retaining member has moved beneath the same, it will drop back onto the retaining surface.

As above stated, the latch can be pivotally mounted directly on the guide supporting bracket but this involves some modification of the bracket, at least to the extent of drilling and tapping a hole to receive the pivot screw. Therefore in order to facilitate the mounting of the latch on existing installations I have provided an attaching device on which the latch is pivotally mounted and which can be attached to the supporting bracket without modification of the latter. As here shown this attaching device comprises a U-shaped member of sheet metal the lower arm 27 of which is provided with an opening 28 to receive and embrace the guide 14 adjacent to the bracket 15. The upper arm 29 of the U-shaped member rests upon the upper portion of the socket member of the bracket and has its rear end upturned, as shown at 30, and provided with a slot 31 which, when the device is in position on any standard bracket, will register with the lower screw hole in the upper portion of the bracket. The latch is pivotally mounted on the vertical portion 32 of the U-shaped member, the pivot member being shown in the form of a rivet which permanently connects the two parts for free pivotal movement. Thus in order to mount the latch on a previously installed awning structure it is only necessary to remove the top bracket 15, slip the U-shaped attaching device over the socket member of that bracket and then insert the upper end of the guide through the opening in the member 27 of the attaching device and into the socket. The bracket is then again attached to the building by screws 17, the lowermost of these screws being inserted through the upper slotted part of the attaching device so as to rigidly connect the latter with the bracket.

While I have shown and described one embodiment of my invention I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of said guide, a retaining member carried by the lower portion of said body and supported thereby normally in the path of said slidable member, said retaining member having an inclined lower surface to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, and manually actuated means carried by said body to move said retaining member from retaining position and release said slidable member for downward movement.

2. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of said guide, a retaining member

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carried by the lower portion of said body and supported thereby normally in the path of said slidable member, said retaining member having an inclined lower surface to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, said retaining member having its upper surface curved substantially about the pivotal axis of said body, and a manually operated part rigid with the upper portion of said body to move said retaining member from its retaining position.

3. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of said guide, a retaining member carried by the lower portion of said body and supported thereby normally in the path of said slidable member, said retaining member having an inclined lower surface to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, and a part carried by said body to limit the pivotal movement of said retaining member by the impact of said slidable member.

4. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of said guide, a retaining member carried by the lower portion of said body and supported thereby normally in the path of said slidable member, said retaining member having an inclined lower surface to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, and means actuated by said slidable member to positively move said retaining member to retaining position.

5. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of said guide, a retaining member carried by the lower portion of said body and supported thereby normally in the path of said slidable member, said retaining member having an inclined lower surface to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, and a part rigid with the upper portion of said body and movable upon the retraction of said retaining member into a position to be engaged and actuated by said slidable member to move said retaining member to retaining position.

6. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of said guide, a retaining member carried by the lower portion of said body and supported thereby normally in the path of said slidable member, said retaining member having an inclined lower surface to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, and means carried by said body to limit the pivotal movement of the latter, to positively move said retaining member to retaining position and to move said retaining member from retaining position.

7. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent the upper end of said guide, a retaining member carried by the lower portion of said body and supported thereby normally in the path of said slidable member, said retaining member having an inclined lower surface to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, and a part rigid with the upper portion of said body to engage said guide near the upper limit of movement of said slidable member to limit the pivotal movement of said body by the impact of said slidable member with said retaining member and to be engaged by said slidable member to positively move said retaining member to retaining position.

8. A latch for an awning of the type including a frame having an arm pivotally connected with a member slidably mounted on an upright guide, said latch comprising an elongate body having near its upper end means whereby it may be pivotally mounted on a fixed support adjacent to the upper end of said guide and having near its lower end a retaining member biased to a position in the path of said slidable member, said retaining member having an inclined lower surface portion to be engaged by said slidable member upon the upward movement of the latter to retract said retaining member and then release the same for movement to retaining position beneath said slidable member when the latter has moved past the same, and a part carried by said body to engage said guide and position said inclined surface portion in the path of said slidable member.

9. A latch structure for an awning of the type including an upright guide, supporting brackets for the upper and lower ends of said guide, means for securing said brackets to a building, a member slidably mounted on said guide and a frame having an arm pivotally connected with said slidable member, said latch structure including an attaching device supported by said upper bracket and having means whereby it may be secured to said bracket by the same means which secures said bracket to said building, and a latch member pivotally mounted on said attaching device

and having a part movable into and out of the path of said slidable member.

10. A latch structure for an awning of the type including an upright guide, supporting brackets having socket members to receive the upper and lower ends of said guide, means for securing said brackets to a building, a member slidably mounted on said guide and a frame having an arm pivotally connected with said slidable member, said latch structure including a substantially U-shaped attaching device having a vertical part and upper and lower arms adapted to embrace the socket member of the upper bracket, the lower arm of said device having an opening to receive said guide and the upper arm thereof having a part to be engaged by the means for securing said bracket to the building, and a latch member pivotally mounted on the vertical part of said U-shaped device and having a part movable into and out of the path of said slidable member.

11. A latch of the character described comprising an elongate body having near one end thereof means whereby it may be pivotally mounted on a fixed support and having near the other end thereof a transverse retaining member having that edge thereof adjacent the pivotal axis of said body curved substantially about said axis and having its other edge inclined, said body also having near the first mentioned end thereof a transverse part rigid therewith to limit the pivotal movement of said body in one direction and operable to move said retaining member into and out of retaining position.

12. In a latch for a device of the type including a guide and a member slidable on said guide, an elongate body having near one end thereof means whereby it may be pivotally mounted on a fixed support adjacent said guide, having near the other end thereof a transverse retaining member for retaining said slidable member and provided with an inclined surface, and having near the first mentioned end thereof a part operable by said slidable member to move said retaining member into retaining position and manually operable to move said retaining member out of retaining position.

HARRY C. WHEELER.