G. ERZ.

WINDOW LATCH.

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986,152. Patented Mar. 7, 1911.

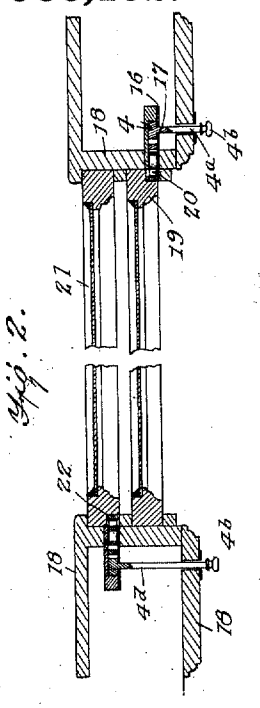

Fig. 2.

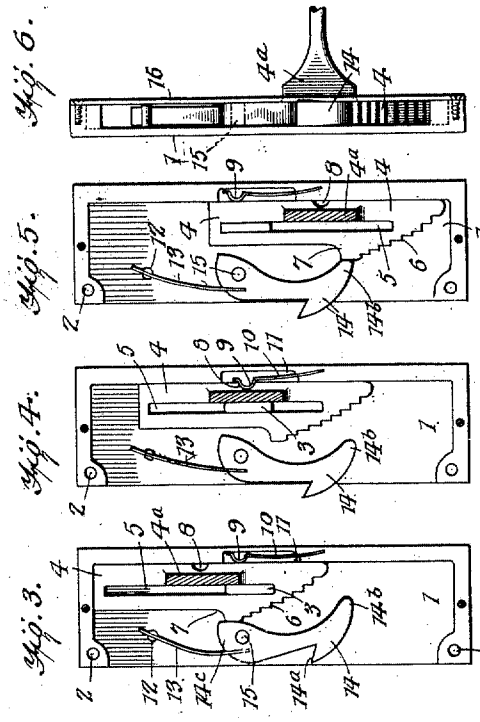

Fig. 6.

Fig. 5.

Fig. 4.

Fig. 3.

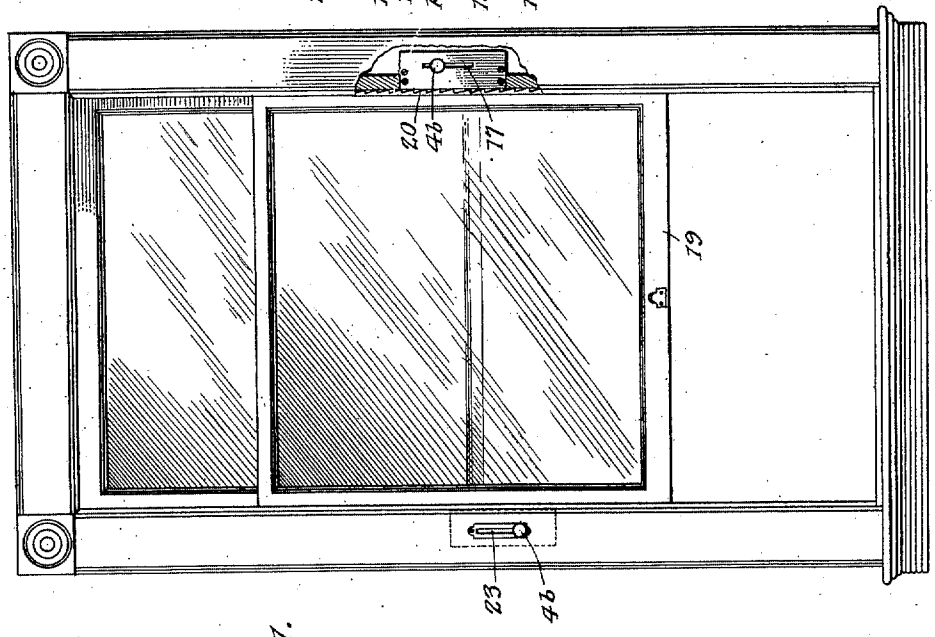

Fig. 1.

WITNESSES:

L. H. Schmidt

L. A. Stanley

INVENTOR

GEORGE ERZ,

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE ERZ, OF LYNDEN, WASHINGTON.

WINDOW-LATCH.

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To all whom it may concern:

Be it known that I, GEORGE ERZ, a citizen of the United States, and a resident of Lynden, in the county of Whatcom and State of Washington, have made certain new and useful Improvements in Window-Latches, of which the following is a specification.

My invention relates to devices for retaining window sashes in predetermined positions, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a device of a comparatively simple nature for positively locking either the upper or the lower sash in any position in which it may be put.

A further object of my invention is to provide a latch which when shifted will permit the raising of either sash and will not permit a downward movement, so that the sash may be raised into one position and immediately raised to another without resetting the latch.

A further object of my invention is to provide a latch capable of carrying out the first mentioned objects, which may be shifted to a third position, so as to permit the sash to have free movement up or down.

A further object of my invention is to provide a sash latch, which will work with windows which have shrunk or with window sashes which are loose in their frames equally as well as with sashes that fit perfectly.

Other objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings forming part of this specification in which similar reference characters indicate like parts in the several views and in which—

Figure 1 is a front view of a window equipped with my invention, part of the view being broken away to show the details, Fig. 2 is a horizontal section through portions of the upper and lower sash and through their respective frames and latches, Fig. 3 is a view showing the working parts of the latch in position for the free up and down working of the sash, Fig. 4 is a similar view showing the position of the sliding plate and the latch member when the latter is in position to permit the upward movement of the window, but to oppose the downward movement, Fig. 5 is a similar view showing the sliding plate and latch member in position for positively locking the window, and Fig. 6 is an end view of the latch.

Referring now particularly to Fig. 3, I have shown therein what constitutes the principal part of my invention. The latch consists of a main casing 1 provided with screw holes 2 for securing it in position in the window frame. The casing 1 is provided with a lug 3, which serves as a guide lug for a slotted plate 4. The latter has a longitudinal slot 5 arranged to receive the lug 3. One end of the plate is stepped, as shown at 6, and is also provided with a lug 7 adjacent the stepped portion. On the side of the plate 4 opposite the lug 7 is a recess 8, which is arranged to receive the curved portion 9 of a leaf spring 10, which is normally held by means of the plate 4 in a recess 11 in the plate. The plate 4 has a laterally extending portion 4^a, which terminates in a handle 4^b.

Secured to the interior of the casing is a slotted pin 12, which holds a spring 13 attached to a dog 14, which is pivotally mounted on a pin 15 secured to the casing. The dog is provided with a shoulder 14^a on one side and an extension 14^b at one end. The upper part of the dog is provided with an extension 14^c.

The latch thus described may be provided with a covering plate 16, such as that shown in Fig. 6. This plate has a slot 17 through which the extension 4^a projects, as seen in Fig. 2.

The latch is designed to be located in the window frame 18, as shown in Fig. 2. In this figure it will be seen that the lower window sash 19 is provided along one corner with a series of teeth 20 (see Fig. 1). These teeth are in line with the dog 14 and are arranged to engage the latter, as will be explained hereinafter. The upper sash 21 is provided with a similar set of teeth 22. The latch member for the upper sash is precisely similar to that already described for the lower sash, but the extension 4^d is long enough to extend through the frame 18. It is provided with a handle 4^b similar to that on the opposite side of the window.

On the outside of the window frame 18 on either side of the window, I place escutcheons 23, such as that shown at the left-hand

side of Fig. 1, through which the respective extensions 4^a and 4^b project, the handle 4^b being secured in position after the escutcheon is put on.

From the foregoing description of the various parts of the device the operation thereof may be readily understood.

Consider the action of the latch in the position shown in Fig. 3. In this position, the handle 4^b has been pushed to its upper limit or until the plate 4 strikes against the upper end of the casing 1. In this position the lug 7 will engage the extension 14^c of the dog 14 and will force the shoulder 14^a within the casing 1, *i. e.*, where it will not be in engagement with the teeth 20. The window sash will, therefore, slide up and down freely. In other words, the latch will be thrown into its inoperative position. Now if the handle 4^b is moved so as to bring the plate 4 into the position shown in Fig. 4, then the rounded portion 9 of the spring 10 will enter the recess 8 so as to hold the plate 4 in a position free from the dog 14. The latter, under the influence of the spring 13, will, therefore, project outwardly beyond the casing into engagement with the teeth 20. It will be seen that the window may be raised, the teeth 20 riding over the end of the dog, but the window will be retained in any position to which it has been raised.

On bringing the handle 4^b to its lower position, as shown on the left-hand side of Fig. 1, the plate 4 will be brought into the position shown in Fig. 5. In this position the extension 14^b of the dog is engaged by the lug 7 on the plate 4, thus holding the dog in a positive locking position. In this position the window can be neither raised or lowered, but is positively locked in any position in which it may happen to be. It may be that the dog 14 cannot be thrown out as far as indicated in the figure before it will strike the teeth. In this case the serrated or stepped edge 6 will engage the projection 14^b to positively hold the dog in position. I step this edge purposely, so as not to provide a cam surface, which will force the plate upwardly, and thereby permit the unlocking of the window. The angular shoulders, however, will not permit the camming action, but will positively hold the latch member or dog 14 in locking position. I consider this an important feature of my invention, since it provides means for positively locking a window having a sash which is either working very loosely in the frame, due to shrinkage, or which is swelled so as to come near the dog. It will be apparent also that the plate 4 will automatically adjust itself to sashes of different width.

My device is especially applicable for use on railroad trains, for the window can be raised slightly and positively locked, as explained, thus permitting a good ventilation of the car. Furthermore, after the handle is set in the desired position one may use both hands in raising the window, whereas, in most of the devices in use one has to manipulate the latch with one hand and raise the window with the other. It should be observed that the weight of the window does not come upon the spring 13, which merely regulates the position of the dog, but comes upon the pin 15, which, of course, can be made large enough to meet the requirements. There is no danger of the window dropping, through failure of the latch to work. The normal position of the sliding plate 4 is its lowest position, so that if there is any dropping of the parts the plate will tend to positively actuate the dog so as to lock the window. It will also be observed that there is nothing to oppose the easy lifting of the plate so that the window can be instantly lowered by raising the handle to its highest position. Since very little strain comes on the springs, and since there are only two movable parts, the apparatus is exceedingly durable, and not liable to get out of order. Moreover the simplicity of the parts renders the device cheap to manufacture.

I am aware that other forms of the device based upon the same principle might be made, but I consider as my own all such modifications as fairly fall within the spirit and scope of the invention.

I claim:

1. The combination with a slotted window casing and a window sash provided with teeth, of a latch, said latch comprising a casing provided with a guide lug, a sliding plate having a slot arranged to receive said guide lug, said plate having a series of stepped cam members at one end and being provided with a recess, a spring carried by said casing and having a curved portion adapted to enter the recess in said sliding plate to frictionally hold the latter, a dog pivotally mounted within said casing, said dog having an upper extension arranged to be engaged by one of the cam members on said sliding plate and having a lower inwardly curved extension arranged to be engaged by the stepped cam members of the plate when in its shifted position and a shoulder on the side of the dog opposite the lower curved extension adapted to engage the teeth on the sash, a spring secured to said casing and to said dog for normally holding the shoulder in engagement with said teeth, and an integral extension of said slidable plate arranged to extend through the slot in said window casing for shifting the plate.

2. The combination with a slotted window casing and a window sash provided with teeth, of a latch, said latch comprising a casing, a plate slidably disposed in said cas-

ing and provided with stepped cam members, means for guiding said plate, a pivoted dog having extensions arranged to be engaged by certain of said cam members, said dog also having a shoulder, a spring secured to said dog for normally holding the shoulder in engagement with the teeth, the stepped cam members being arranged to engage one of said extensions for holding the shoulder of the dog in locked relation with the teeth, said shoulder being retracted by the engagement of one of said cam members with another extension of said dog, and a spring for holding said slidable plate out of engagement with said dog.

3. The combination with a slotted window casing and a window sash provided with teeth, of a latch, said latch comprising a casing, a plate slidably disposed in said casing and provided with cam members, a pivoted dog having a shoulder and a pair of extensions, a spring for normally holding the shoulder of said dog in an outer position in engagement with the teeth on said sash, said slidable plate being adapted to engage one of the extensions of said dog to force the shoulder out of engagement with said teeth and when in its shifted position to engage another extension to positively hold said shoulder in engagement with said teeth, and when in a third position to be out of engagement with said dog.

4. The combination with a slotted window casing and a window sash provided with teeth of a latch, said latch comprising a casing, a slidable plate disposed within said casing, a spring actuated pivoted dog within said casing having a shoulder normally in engagement with the teeth on said sash, said plate being arranged to engage said dog in one position to retract said shoulder from said teeth in another position to positively hold said shoulder in engagement with said teeth, and in a third position to release said dog to the action of the spring, and means for shifting said slidable plate.

GEORGE ERZ.

Witnesses:
J. D. YOAKLEY,
L. A. STANLEY.