Oct. 9, 1923. 1,470,382

E. G. LANCE

WINDOW FASTENER

Filed July 23, 1921

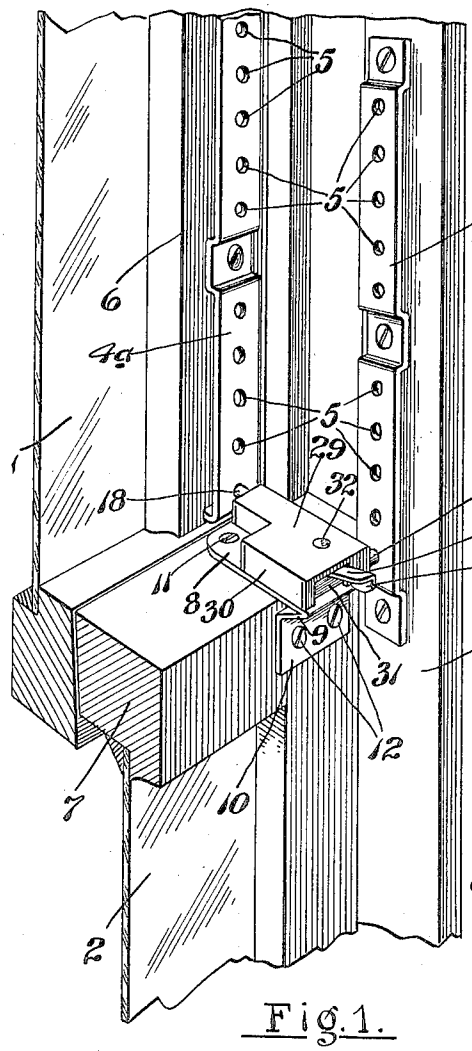


Fig. 1.

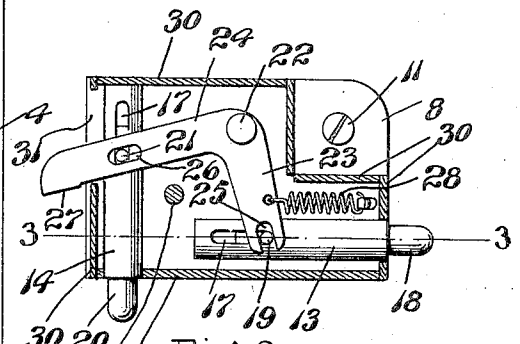


Fig. 2.

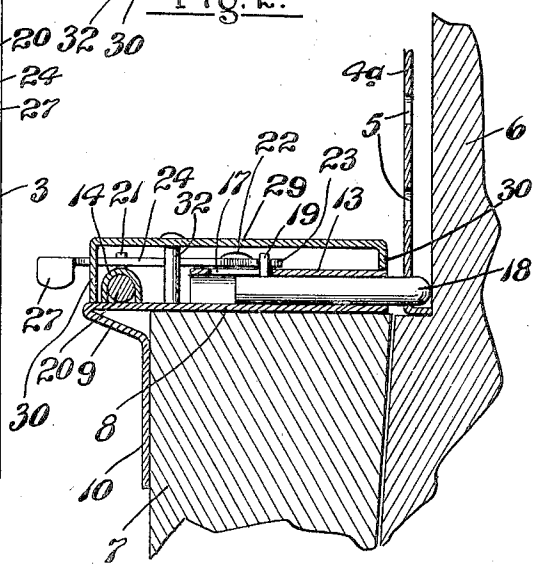


Fig. 3.

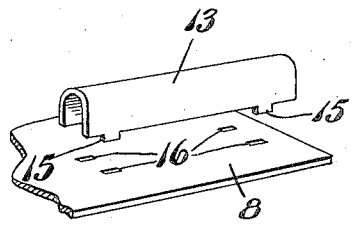


Fig. 4.

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UNITED STATES PATENT OFFICE.

ERNST G. LANCE, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO OTTO C. RUSS, OF LAKE ODESSA, MICHIGAN.

WINDOW FASTENER.

Application filed July 23, 1921. Serial No. 486,986.

To all whom it may concern:

Be it known that I, ERNST G. LANCE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Window Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a window fastener, and is particularly concerned with improvements in structure shown in my prior application for patent relating to the same matter. In the present invention, the construction has been greatly simplified thereby reducing the cost of manufacture, and the action is more positive, both window sashes being positively held against movement in either direction when once fastened in position. It is an object and purpose of the present invention to construct the lock in the simplest manner possible consistent with the effective attainment of the ends above outlined, and so design the fastener that tools and dies needed will be reduced to a minimum, many parts being duplicated in the assembly, whereby a very economical construction is produced yet one which is particularly practical, durable and efficient for the locking of windows either in closed or partly open positions.

For an understanding of the invention and the constructions used in embodying the same, reference may be had to the following description, taken in connection with the accompanying drawing, in which,

Fig. 1 is a perspective view, showing my window fastener applied to a window.

Fig. 2 is a horizontal section through the same.

Fig. 3 is a vertical section through the fastener and adjacent portions of the window sashes with which it is associated, the section through the fastener being on the plane of line 3—3, of Fig. 2, and

Fig. 4 is a fragmentary perspective view, showing the manner of attaching the pin guides to the base plate in the fastener.

Like reference characters refer to like parts in the different figures of the drawing.

This invention is particularly adapted for use with vertically sliding windows. In Fig. 1 the upper sash 1 and lower sash 2 are shown mounted for vertical sliding movements in a window frame or casing 3. On the inner side of the casing a bar of flat metal 4 is permanently secured, the same being formed with a plurality of openings 5 therein located vertically one over the other in spaced apart relation. Likewise, a similar bar 4^a having like openings 5 therein is permanently attached to the side 6 of the upper sash.

On the upper side 7 of the lower sash 2 of the window, a fastener for use in conjunction with the two bars 4 and 4^a is secured. In construction, the same includes a base plate 8, which extends beyond the edge of the sash member 7, is then turned downwardly and back toward the sash member, as indicated at 9, and thence bent downwardly to form a section 10 which lies against the inner side of the sash member 7. The base is secured in fixed relation to the lower sash by means of screws 11 and 12 passing through the base 8 and the section 10 thereof into the member 7, as fully shown in Fig. 1.

Two inverted U-shaped guides 13 and 14 are located above the base 8 and are secured thereto by means of tangs 15 on the sides of said guides passing through openings 16 in the base and headed over on the under side of the base. These guides are located at right angles to each other, one adjacent one side edge of the base and the other adjacent the inner end thereof. Each guide, in its upper side is formed with a slot 17. The guides are duplicates and can be made with the same die.

Locking pins 18 and 20 are slidably mounted in the guides 13 and 14, and are provided with small pins 19 and 21, respectively, which extend upwardly through the slots 17 in the guides. The pin 18 is adapted to enter the openings 5 in the bar 4^a on the upper sash, while pin 20 is adapted to enter the similar openings 5 in the bar 4 on the casing 3 when the pins are extended beyond the base.

On a pivot stud 22 fixed to and extending upwardly from the base 8, a bell-crank lever is pivotally mounted having two arms 23 and 24, in the free end of the former of which a slot 25 is cut for the reception of the pin 19. The other arm 24 has a closed slot 26 through which the pin 21 passes, the arm extending beyond the pin and over the edge

of the base and being formed at its end with a down-turned lip 27. A coiled tension spring 28 is attached at one end to arm 23 and at its other end to the base 8, the normal effect of which is to turn the bell-crank lever and operate both locking pins 18 and 20 to outer position, shown in Fig. 2. By pressing against the lip 27, the lever may be moved against the force exerted by the spring, and both locking pins simultaneously retracted.

The bell-crank lever, locking pins and guides therefor are covered by a housing having an upper top 29 and depending sides 30 in the one of which arm 24 passes through a portion is cut away to leave an opening 31, permitting the movement of the arm as needed for the operation of the bell-crank lever. The housing is secured to the base by a rivet 32 passing through the base and top of the housing as shown. I prefer to make the housing so that it does not cover the entire base, thereby leaving an exposed portion through which the screw 11 may be passed.

With this construction of fastener, the locking pins are normally projected to seat in openings 5 in the bars 4 and 4^a, thereby locking the lower sash to the casing and the upper sash to the lower sash, the pins being simultaneously withdrawn whenever the position of the sashes with respect to each is to be changed or the sashes are to be changed with respect to the casing. This operation is very readily accomplished by merely pressing on the end of the arm 24 of the bell-crank lever. The upper sash is firmly held against movement with respect to the lower sash in both directions when the pin 18 is seated in an opening 5 in the bar 4^a and cannot be moved either up or down. Similarly, the lower sash cannot be moved up or down when the pin 20 is seated in an opening 5 in bar 4. The window may be secured either in closed position, or either sash may be opened partly with the other closed, or both may be partly opened, being securely locked in any of the positions to which moved. And at the same time it is impossible to reach the lock to operate it to unlock the windows from the outside.

The construction is economical to manufacture as all of the parts are simple sheet metal forms, very readily cut and formed at one operation except, possibly, the base, and this requires but little additional forming after blanking is done. The bars 4 and 4^a are substantial duplicates, and the locking pin guides 13 and 14 are duplicates, requiring but one die for the production of both. The lock is very durable, as well as efficient, and performs the functions for which designed perfectly.

I claim:

1. A latch for windows, comprising a base plate, two U-shaped guides having slotted upper sides secured to the upper side of the base and positioned at right angles to each other, locking pins slidably mounted under said guides, each having an operating pin attached thereto and extending upwardly through the slots in the guides, a bell crank lever pivotally mounted on the base having two arms, one being slotted at its free end for the reception of one of said operating pins, and the other having a slot between its ends in which the other operating pin extends, said last mentioned arm being extended beyond the base and formed with a down-turned lip at one edge, substantially as described.

2. A construction containing the elements in combination defined in claim 1, combined with a housing attached to the base and covering the guides, locking pins and lever, said housing at one side having an opening through which the second mentioned arm of the lever extends, and having other openings in other sides for the locking pins, substantially as described.

3. A latch for windows comprising a base plate adapted to be positioned horizontally and formed at one end with a reversely turned and downwardly and inwardly extending portion terminating in a downwardly extending vertical portion through which securing means are adapted to pass to secure the plate to a window sash, two locking pins slidably mounted at right angles to each other on the base, the outer ends of the pins being adapted to project beyond the edges of the base, and an operating member pivotally mounted on the base and having operative connection with both pins for simultaneously operating the same inward or outward, substantially as described.

4. A latch for windows, comprising a base plate, two U-shaped guides secured in inverted position on the upper side of the base plate at right angles to each other, locking pins slidably mounted under the guides, a bell crank lever pivotally mounted on the base having arms, one for each pin operatively connected therewith to simultaneously slide the pins on pivotal movement of the lever, and means for manually turning the lever about its pivot, substantially as described.

In testimony whereof I affix my signature.

ERNST G. LANCE.