(No Model.)

W. LIVINGSTONE.

FASTENER FOR THE MEETING RAILS OF SASHES.

No. 408,493. Patented Aug. 6, 1889.

Fig. 12.

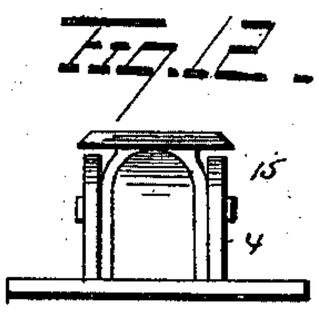

Fig. 5.

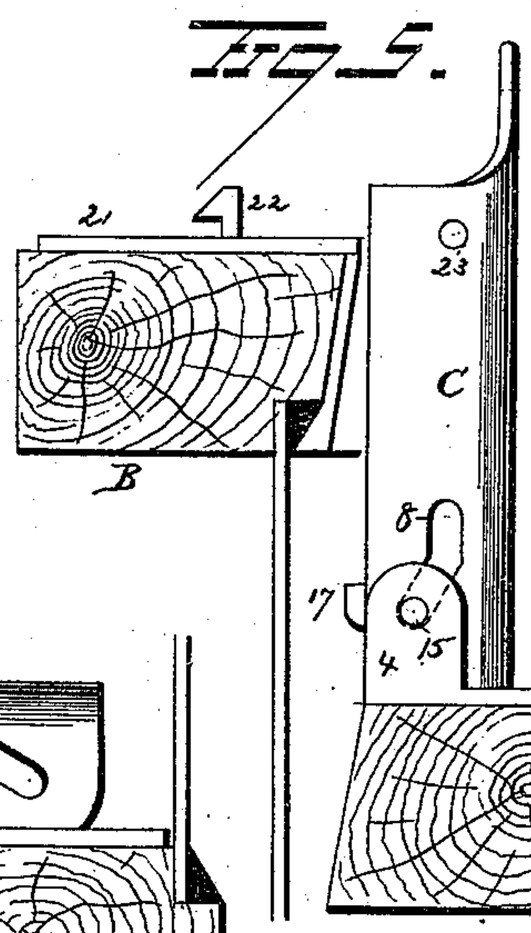

Fig. 1.

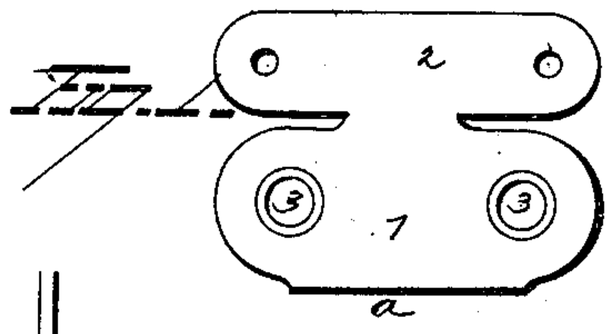

Fig. 8.

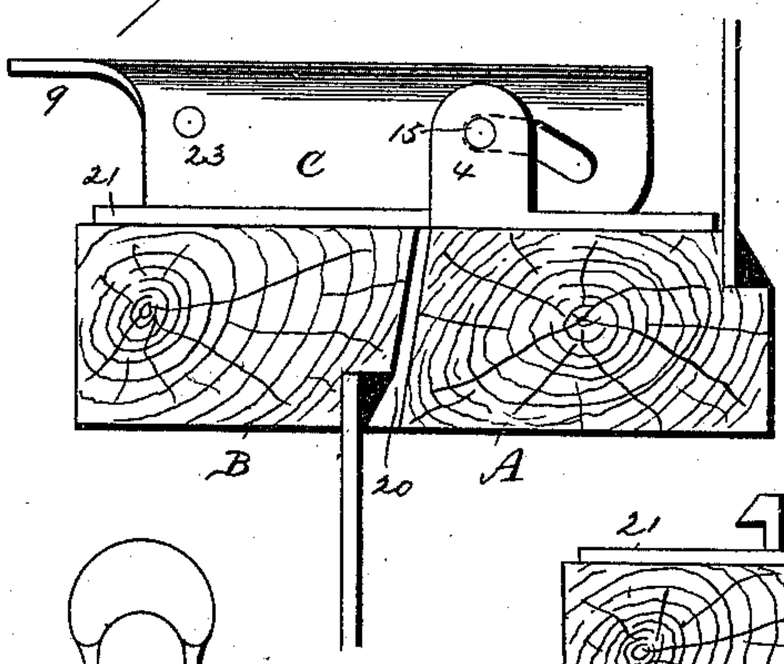

Fig. 11.

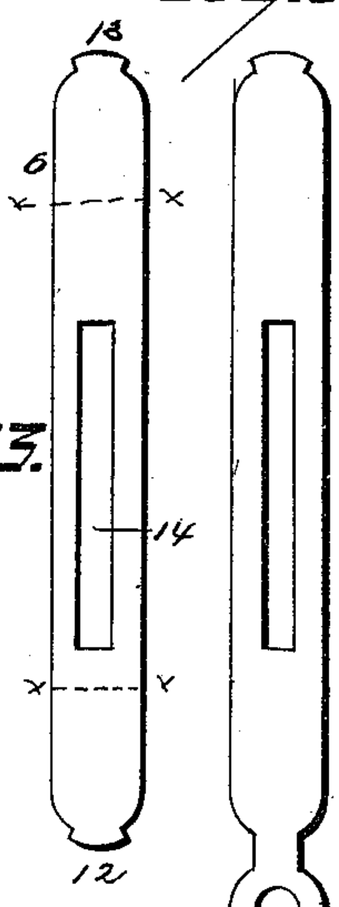

Fig. 3.

Fig. 7.

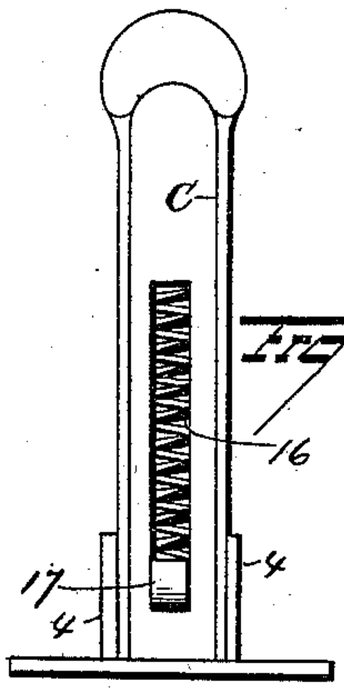

Fig. 6.

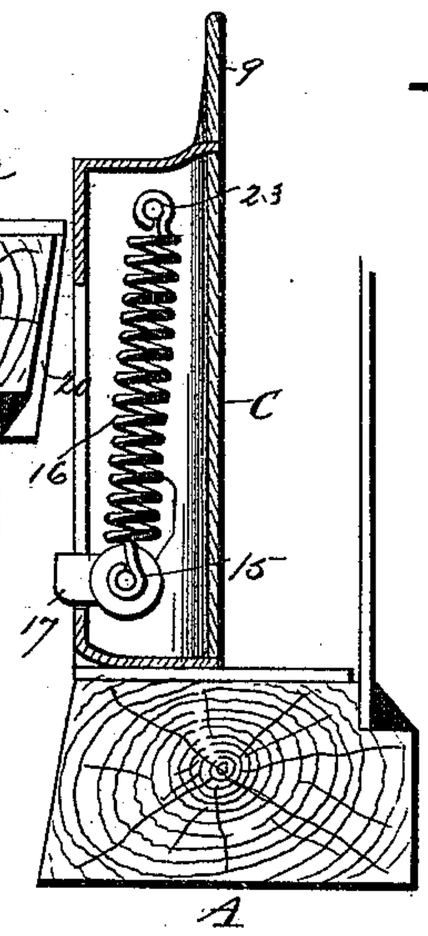

Fig. 4.

Fig. 9.

Fig. 2.

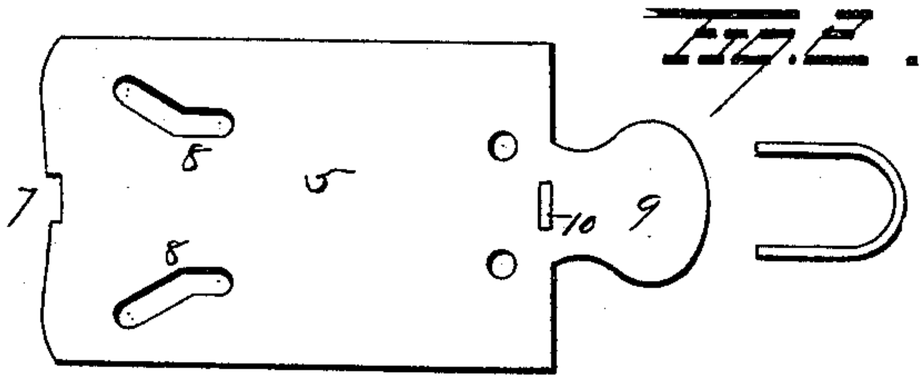

Fig. 10.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM LIVINGSTONE, OF JERSEY CITY, NEW JERSEY.

FASTENER FOR THE MEETING-RAILS OF SASHES.

SPECIFICATION forming part of Letters Patent No. 408,493, dated August 6, 1889.

Application filed June 4, 1889. Serial No. 313,055. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LIVINGSTONE, a citizen of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Sash-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.

My invention relates to an improvement in sash-fasteners.

Heretofore sash-fasteners have been constructed to be operated by hand to lock the sash after it has been lowered. In other words, with fasteners as previously constructed it has required one operation to lower the sash and another to lock it.

It is the object of my present invention to provide a sash-fastener by means of which the sash will be locked automatically when it is lowered.

A further object is to produce an automatically-operating sash-fastener which cannot be "picked" or unlocked from outside the window.

A further object is to so construct a sash-fastener and apply it to the window that the sashes shall be securely locked and at the same time maintained tightly together, and thus prevent rattling.

A further object is to produce a sash-fastener from sheet metal, thus producing a fastener which shall be simple and cheap in its production, easy to manufacture, and effective in operation.

With these objects in view my invention consists in making a sash-fastener comprising a box to be pivoted to one sash and a plate secured to the other sash to engage said box, whereby the lowering of one sash or the raising of the other will cause their automatic locking.

The invention further consists in producing a sash-fastener stamped or otherwise produced from sheet metal, and comprising a box pivoted on one sash and a plate secured to the other sash to engage the box and cause the automatic locking of the sashes when one sash is lowered or the other raised; and the invention further consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the blank forming the part which supports the pivoted box. Figs. 2 and 3 are the blanks of which the box is composed. Fig. 4 is a detached view of the toe and blank from which it is made. Fig. 5 is a side elevation showing the parts in unlocked position. Fig. 6 is a sectional view of the same. Fig. 7 is a face view of the pivoted box. Fig. 8 is a side view of the device in locked position. Fig. 9 is a sectional view of the same. Fig. 10 is a view of the blank from which the plate is made. Fig. 11 is a view of a modification of part of the box. Fig. 12 is an end view of the pivoted box.

The window frame and sash may be of any preferred form of construction, as my improved fastener is applicable to any window where the sashes are adapted to reciprocate; hence only a portion of the sashes will be shown and described.

A represents the lower connecting-bar of the upper sash, and B the upper connecting-bar of the lower sash.

Mounted upon the top face of the lower connecting-piece A of the upper sash is a pivoted box C, constructed, preferably, of sheet metal (stamped or otherwise produced) and bent into form, as follows: A blank *a*, Fig. 1, is stamped from sheet metal or otherwise produced, having parts 1 and 2, the part 1 being provided with perforations 3 for the accommodation of fastening devices, by means of which plate *a* may be secured to the connecting-piece A of the upper sash, the portion 2 being parallel with the inner edge of said connecting-piece. The ends of the part 2 are bent upwardly at right angles to the plate or blank and made to produce ears 4 4, between which the box C, above alluded to, is pivoted, as explained farther on.

Box C is made up of two sheet-metal blanks 5 6. The blank 5 is of rectangular form and provided at its bottom with a notch 7, and at points near the bottom and at opposite sides of a line drawn through the center of the blank with elongated slots 8 8, these slots being preferably made to produce obtuse an-

gles, as shown in Fig. 2; or they may be made straight throughout their length. Blank 5 is now bent to form a box open at top and bottom and one edge. A curved extension 9 is made to project from the top of blank 5 to produce a thumb-piece by which the box may be operated, and at or near the base of this thumb-piece a perforation 10 is made, for a purpose presently explained. The blank 6, provided at its ends with projections 12 13 and an elongated slot 14, is bent on the lines *x x* and secured to the part 5 and adapted to close the top, bottom, and one edge of the box C, the projection 12 fitting into the notch 7 and the projection 13 being inserted in the perforation 10. A pin 15, passing through the ears 4 and elongated slots 8, pivotally connect the box C between said ears. A spring 16, inserted in box C, is connected at one end to pin 15 and at the other end to a pin 23, near the top of the box, so that the box C will be maintained in a normal inward position and made to lie closely upon the top of the connecting-bars A B of the sashes. A toe 17 is pivotally mounted on the pin 15 and adapted to project through the slot 14 of the box, the lower extremity of said slot being above the pivotal support of the toe 17, so that said toe will abut against the lower edge of the slot and thus be limited in its downward movement. The toe 17 is preferably cut and stamped from sheet metal or otherwise produced, as shown in Fig. 4, having arms 18, provided with perforations 19. When the toe is placed in position, the pin 15 passes through these perforations 19 and the arms 18 are wholly within the box, the toe proper alone projecting through the slot 14.

A slot or recess 20 is preferably made in the upper connecting-bar of the lower sash for the accommodation of the toe 17, thus enabling the lower sash to pass the toe. Secured to the top of the connecting-piece B is a plate 21, one edge of which is adapted to align with the edge of the connecting-bar B and close the top of the slot or recess 20, so that when the upper sash is lowered the plate 21 will engage the toe 17 and tilt the box C from a vertical to a horizontal position and thus lock the sash.

The plate 21 is stamped from sheet metal or otherwise produced, having two hook-shaped projections 22 bent upwardly therefrom. These projections 22 are preferably pressed together to produce a single hook, or may be left separated, as desired, and are adapted to enter the elongated slot 14 in the box, as presently explained.

I have described the thumb-piece by which the box C may be operated as projecting from the part 5; but it is evident that the thumb-piece may be made integral with the part 6, as shown in Fig. 12, if desired.

The fastener is operated as follows: Assuming the parts to be in locked position, the thumb-piece of the box C is grasped and first pulled out and then the box is made to assume a vertical position out of line with the lower sash, thus permitting the lower sash to be raised or the upper sash lowered. When the box is first moved, the pin 15 passes through the horizontal portion of the slot 8, so that the box C can be moved out of engagement with the hook 22. During the balance of the movement of the box the pin 15 passes through the inclined portion of slots 8 and the box is thereby raised. The box is then made to assume the vertical position. When the lower sash is lowered, the edge of the plate 21 will engage the toe 17 and tilt the box and cause it to assume a horizontal position. As soon as the box is thus turned, the spring 16 forces it toward the upper sash, and by means of the slots 8 and pin 15 it is slightly lowered until the hook 22 has entered the slot 14 and engaged the box. The sashes will then be securely locked.

It will be seen that when the box C is in a horizontal position and the sashes locked the fulcrum of the box is very close to the edge of the connecting-bar of the sash, thus making it practically impossible to turn said box on its pivot until after it is first pulled out; but independent of this the sash is maintained in a locked position by the engagement of the hook 22 with the box.

Many slight changes might be made in the constructive details of my invention without departing from the spirit thereof; hence I do not wish to limit myself to the precise details of construction herein described; but,

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

1. The combination, with window-sashes, of a box pivoted to one of said sashes and having a longitudinal movement, and a pivoted toe located within said box and adapted to be engaged by the other sash, substantially as set forth.

2. The combination, with window-sashes, of a box having slots pivoted to one of said sashes, the pivot-pin passing through said slots, and a toe projecting from said box to be engaged by the other sash to tilt the box and lock the sashes, substantially as set forth.

3. The combination, with window-sashes, of a box having inclined slots pivoted on one of said sashes, the pivot-pin passing through said inclined slots, and a toe projecting from said box to be engaged by the other sash, substantially as set forth.

4. The combination, with window-sashes, of a box having inclined slots pivoted on one of said sashes, the pivot-pin passing through said inclined slots, a spring connected to the box at one end and to said pivot-pin at the other end, and a toe projecting from the box to be engaged by the other sash, substantially as set forth.

5. The combination, with window-sashes, of a plate having ears secured to one of said sashes, a box pivoted between said ears and provided with slots in three of its faces, a toe

projecting through one of said slots, and a plate on the other sash to engage said toe, substantially as set forth.

6. The combination, with window-sashes, of a plate having ears secured to one of said sashes, a box pivoted between said ears and provided with slots on three of its faces, a toe projecting through one of said slots, a plate on the other sash to engage said toe, and a hook projecting from said plate to enter a slot in the box and engage one wall of said slot, substantially as set forth.

7. In a sash-fastener, the combination, with the sashes, of a pivoted box made of sheet-metal blanks and provided with slots, the pivot-pin passing through said slots, a toe projecting from said box, a sheet-metal plate on the other sash to be engaged by said toe, and a hook-shaped projection extending upwardly from said plate to engage the box, substantially as set forth.

8. The combination, with window-sashes, of a hook secured to one sash, a longitudinally-movable box pivoted to the other sash and provided with a slot to receive said hook, a pivoted toe located within the box, and a spring for moving the box longitudinally.

9. The combination, with window-sashes, of a hook secured to one sash, a box having slotted sides and adapted to engage the hook, a toe pivoted in bearings outside of the box, and a spring for moving the box longitudinally, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM LIVINGSTONE.

Witnesses:
R. S. FERGUSON,
C. S. DRURY.