

C. M. FOWLER.

SASH FASTENER.

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916,137.

Patented Mar. 23, 1909.

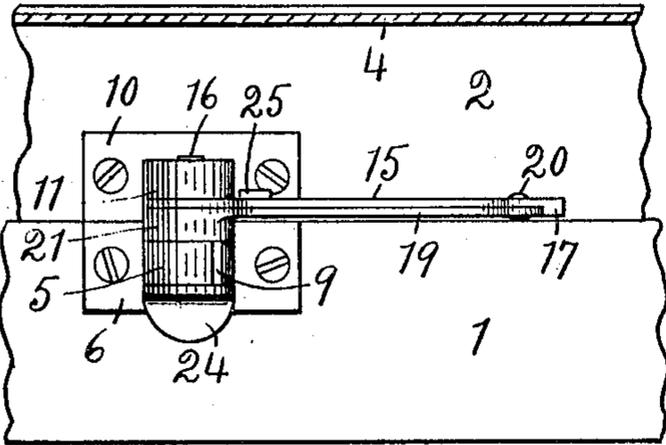


FIG. 1.

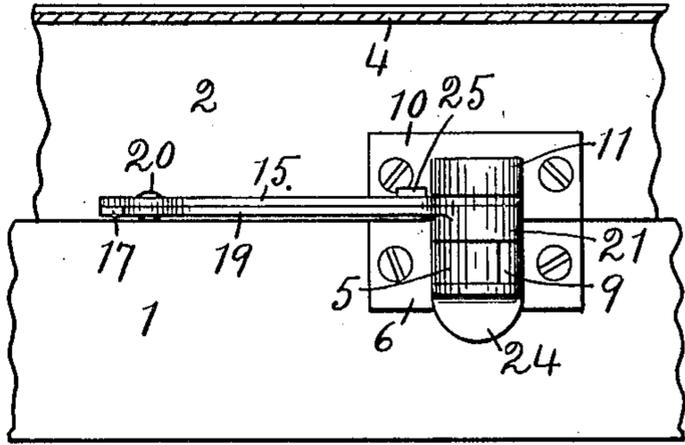


FIG. 2.

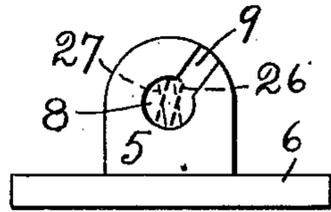
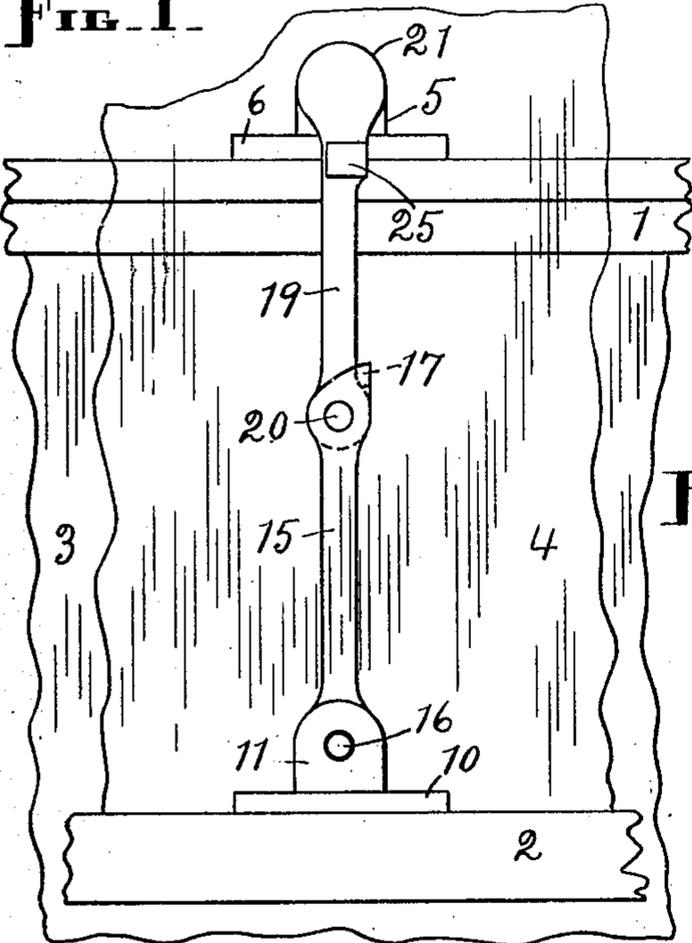


FIG. 5.

FIG. 3.

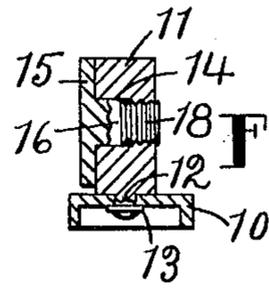


FIG. 6.

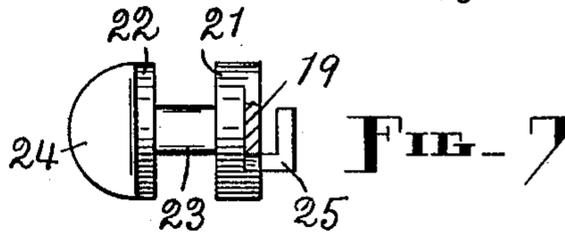


FIG. 7.

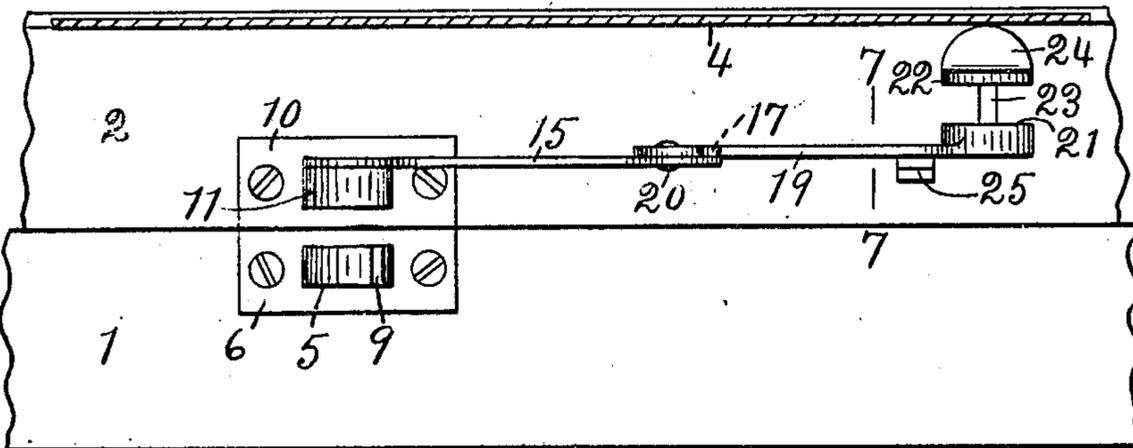


FIG. 4.

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UNITED STATES PATENT OFFICE.

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SASH-FASTENER.

No. 916,137.

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To all whom it may concern:

Be it known that I, CHARLES M. FOWLER, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Sash-Fastener, of which the following is a specification.

My invention relates to improvements in devices for fastening the meeting-rails of window sashes, in which I employ certain peculiar meeting-rail lugs and connecting members therefor, as hereinafter set forth in detail.

The object of my invention is to provide an inexpensive, simple, strong and durable sash fastener, with which two windows slidingly mounted in a frame in the usual manner can be locked together at their meeting-rails, in such a manner as to prevent rattling as well as to prevent opening, or can be fastened while open to a certain extent, or can be unlocked and unfastened entirely so as to enable both of such windows to be raised and lowered freely and at will. I attain this object by the means illustrated in the accompanying drawings, in which—

Figure 1 is a top, plan view of my fastener mounted on portions of two meeting-rails and showing said fastener in its locked position; Fig. 2, a similar view showing the fastener in its unlocked position; Fig. 3, an elevation from the outside of said meeting-rails and said device, the latter being extended and engaging and connecting said rails in such a way that neither can be moved either up or down without the other; Fig. 4, a view similar to the first two, excepting that in this figure the device is represented as having its joined members disconnected from the fixed lug on the top or meeting-rail of the lower sash and turned around and over to get the head of the device out of the way of said lower sash rail; Fig. 5, an enlarged, front elevation of the aforesaid lug on the lower sash meeting-rail; Fig. 6, an enlarged, central, transverse, vertical section through the swivel lug on the bottom or meeting-rail of the upper sash, and, Fig. 7, an enlarged section on lines 7—7, Fig. 4, looking toward the right.

Similar figures refer to similar parts throughout the several views.

In the first four views the middle portions of the meeting-rails of two window sashes are represented at 1 and 2. 1 is the top rail

of the lower sash, and 2 is the bottom rail of the upper sash. The glass in the lower sash is represented at 3, Fig. 3, and that in the upper sash at 4.

A fixed lug 5 has its base 6 securely fastened to the top of the meeting-rail 1. Piercing the lug 5 from front to back is a horizontal opening 8, and a narrow slot 9 radial to the center of said opening extends from the latter to the right and upward, at an angle of about 45°, through the right-hand edge of said lug.

A base plate 10 is fastened to the top of the meeting-rail 2 and a swivel lug 11 is mounted on said plate, there being a pin 12 which is fixed to the bottom of said lug and extends downward from the center thereof into a vertical opening in the plate. The pin 12 is headed over at its lower end and a washer 13 is interposed between the upset part of said pin and the underside of the plate 10 to hold the lug 11 in place and allow it to be rotated. A horizontal opening 14, screw-threaded at one end, is made in the lug 11, and like the opening 8 its opening 14 extends through this lug from one face to the other.

The construction, arrangement, and location of the lugs 5 and 11 are such that, when the windows are closed and the meeting-rails 1 and 2 are adjacent to each other with their upper surfaces on the same level, and when the lug 11 stands in parallel relation to the lug 5, the axes of the openings 8 and 14 are in line or coincide with each other.

A link or arm 15 is pivotally connected at one end to the lug 11 by means of a stud 16, and said arm is provided with an ear 17 at the other end, said stud and ear being on opposite sides of the arm and standing at right-angles thereto. The free terminal of the stud 16 is screw-threaded, as shown at 18, in Fig. 6, to engage the screw-threaded part of the walls of the opening 14 in the lug 11 into which opening said stud enters from the end opposite such threaded part. It will now be seen that any rotary movement on the part of the stud 16 must impart motion to the lug 11 longitudinally of the axis of the opening 14, assuming that the arm 15 be prevented from moving along the axial line, owing to the screw-threaded connection just described, the direction of such motion depending upon the direction of rotation of said stud. This is the means whereby the meeting-rails are

drawn together when locked to prevent them from rattling, as will be made to appear more clearly in the course of this description. A second link or arm 19 has one end pivoted at 20 to the free terminal of the arm 15 inside of the ear 17, and is equipped at the opposite end with a link-head which consists of a boss 21 on the arm itself, a disk 22, and a thin connecting bar 23 between said boss and said disk. The bar 23 is at right-angles to the arm 19 and extends in the opposite direction to the stud 16. Said bar is thin enough to enter the slot 9 in the lug 5, and just deep enough to fit the opening 8 in said lug and rotate therein. There may be a thumb-piece 24 on the outer face of the disk 22 to assist in operating the fastener. On the opposite side of the arm 19 from the link-head and therefore on the same side with the arm 15, is an angular lip 25 adapted to engage said arm 15. The lip 25 is adjacent to the edge of the arm 19 which is the one that the ear 17 is adapted to engage. It is now apparent that when the arms 15 and 19 are folded and lie side by side the lip 25 will engage one edge of the arm 15 and prevent said arms from being unfolded or straightened except in one direction, and that when such arms are straightened the ear 17 will engage one edge of the arm 19 and prevent the arms from being folded except in one direction.

When the parts are assembled and positioned as shown in Fig. 1, with the arms 15 and 19 folded and turned over to the right onto the meeting-rails 2, the meeting-rails 1 and 2 are securely locked so that the rail 1 cannot be moved up or the rail 2 moved down, because of the engagement of the lip 25 with said arm 15 which engagement prevents the main axial members from separating on the vertical plane which cuts the main or principal axis of the device between the contiguous portions of the left-hand terminals of said arms. In other words, with the pivot 20 as a fulcrum and acting through the bar 23, which now occupies the position in the opening 8 indicated by the dotted lines 26, in Fig. 5, and through the stud 16, force exerted either up or down is met by the lip 25, since said lip and the arm 19 are held down by the arm 15 when the force is upward on the top rail 1, and said arm 15 is held up by said lip when the force is downward on the bottom rail 2. Furthermore, the meeting-rails are held tight together at this time, owing to the fact that the arms are closely confined by their pivot 20 at one end and by the lip 25 near the other end, and because the engaging screw-threads in the lug 11 are so cut that when said arms were turned into their present position said lug was drawn hard against that portion of the arm 15 which surrounds said stud. This drawing forward of the lug 11 must carry the

rail 2 against the rail 1, if the base 6 and the plate 10 be properly mounted on the rails 1 and 2, inasmuch as the members in front of the lug 11 are supported by and from the lug 5 on said rail 1 and are prevented from moving back and forth by the boss 21 and the disk 22, which embrace said lug 5 between them, and by the stiff connections between the arms already mentioned.

To unlock the device and partially unfasten the meeting-rails 1 and 2, throw the folded arms 15 and 19 over to the left into the position shown in Fig. 2, the dotted lines 27, in Fig. 5, indicating the position which the bar 23 will now occupy in the opening 8. This action operates to thrust the lug 11 and with it the meeting-rail 2 backward, through the medium of the screw-threads 18, and leaves the two rails free to pass each other, but they can separate only as far as the arms 15 and 19 will permit, or for a distance equal to the combined length of the unfolded arms. When the arms 15 and 19 are unfolded and straightened out and the meeting-rails 1 and 2 separated, as shown in Fig. 3, said arms and their connections secure said rails so that further separation is impossible, and they cannot be released from their present condition relative to each other without moving said arms at their junction point so as to carry the ear 17 away from the adjacent edge of the arm 15, provided such ear be in contact with such edge. To make clear how the arms are locked when unfolded and in their substantially vertical position, attention is called to the fact that the ear 17 engages the arm 15 immediately after the pivot 20 arrives at or possibly passes the center when said arms are straightened, and this engagement retains the arms in their straightened condition or position until they are moved to carry said ear back to the other side of the center. The center just referred to is represented by an imaginary line connecting the now separated axes of the stud 16 and bar 23. Since all parts of the fastener are inside of the window glass, the fastener cannot be tampered with from the outside, but upon reaching over behind the meeting-rail 1 from behind and disengaging the arms from their central locked condition they can be folded as before and will be so folded and the meeting-rails again brought into contiguity accordingly as the top window is raised or the bottom window lowered or both. This feature of my invention provides for opening the windows sufficiently to ventilate the room without opening them wide enough to admit the body of a person, and as already intimated the fastener cannot be reached from the outside.

To completely unfasten the meeting-rails and leave them entirely free from my device, it is necessary to detach the link-head from the lug 8, and then to turn the arms so as to

get said head out of the way of the rail 1. This is done in the following manner: First, swing the folded arms upward from either side until the angle of the bar 23 is the same as that of the slot 9 and then remove said bar through said slot from the lug 8, the arm 19 swinging upward on the pivot 20 and the arm 15 swinging upward on the stud 16 a little to enable the disengagement to be made; next, with the link-head free from the lug 8, turn the lug 11 on its pivot pin 12 half around, which action brings said link-head on what is now the back side of the arm 19, and, finally, stretch the arms out on the rail 2 on one side or the other of the lug 11 (see Fig. 4), or arrange them in any other desired position so long as no part or connection of the same is in the way of the rail 1. When the bar 23 is in the slot 9 or in line therewith, the arms are directed upward to the left.

From the foregoing the manner of reëngaging the link-head with the lug 5 will be readily understood, so also will such other and minor details of operation as may have escaped particular notice herein.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a sash fastener, with a fixed lug adapted to be mounted on a meeting-rail, of a second lug having a screw-threaded opening therein and adapted to be mounted on a second meeting-rail, and pivotally-connected arms one of which is provided with a screw-threaded stud to fit said screw-threaded opening in said second lug for the purpose of imparting movement to the second lug longitudinally of its axis when the stud-provided arm is turned, and the other of which arms is pivotally connected with said first-mentioned lug.

2. The combination, in a sash fastener, with a fixed lug adapted to be mounted on a meeting-rail, of a second lug having a screw-threaded opening therein and adapted to be mounted on a second meeting-rail and pivotally-connected arms, one of such arms being provided with a screw-threaded stud to fit

said screw-threaded opening in said second lug for the purpose of imparting movement to the second lug longitudinally of its axis when the stud-provided arm is turned, and being further provided with an ear arranged to engage one edge or the other of such arms, and this other arm being pivotally connected with said first-mentioned lug.

3. The combination, in a sash fastener, with a fixed lug adapted to be mounted on a meeting-rail, of a second lug having a screw-threaded opening therein and adapted to be mounted on a second meeting-rail, and pivotally-connected arms one of such arms being provided with a screw-threaded stud to fit said screw-threaded opening in said second lug for the purpose of imparting movement to the second lug longitudinally of its axis when the stud-provided arm is turned, and the other of such arms being pivotally connected with said first-mentioned lug and provided with a lip arranged to engage one edge and side of said stud-provided arm.

4. The combination, in a sash fastener, with a fixed lug having an opening there-through and a slot therein extending from such opening to the outside of said lug, the latter being adapted to be attached to a meeting-rail, of a swivel lug having a screw-threaded opening therein, such swivel lug being adapted to be mounted on a second meeting-rail, and pivotally connected arms one of which is provided with a screw-threaded stud to fit said screw-threaded opening in said swivel lug for the purpose of imparting movement to the swivel lug longitudinally of its axis when the stud-provided arm is turned, and the other of which arms is provided with a head consisting in part of a bar that is capable of entering said opening by way of said slot in said first-mentioned lug and of being rotated in said last-mentioned opening.

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Witnesses:

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JOSEPH FLYNN.