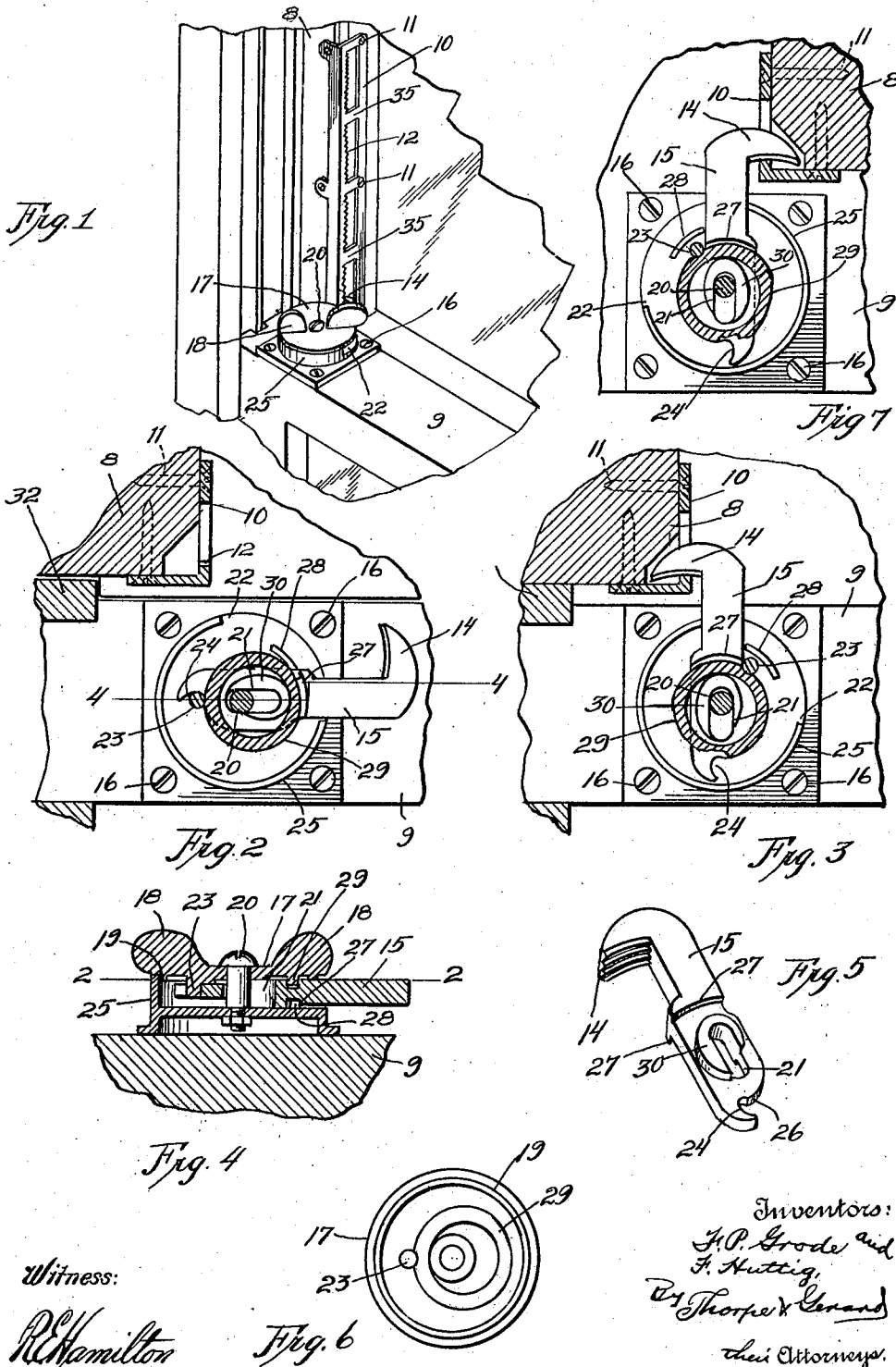


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VENTILATING SASH LOCK.
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1,395,708.

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Witness:

R. Hamilton

Fig. 6

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UNITED STATES PATENT OFFICE.

FRANK P. GRODE AND FRED HUTTIG, OF KANSAS CITY, MISSOURI.

VENTILATING-SASH LOCK.

1,395,708.

Specification of Letters Patent.

Patented Nov. 1, 1921.

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To all whom it may concern:

Be it known that we, FRANK P. GRODE and FRED HUTTIG, citizens of the United States, and residents of Kansas City, in the county of Jackson and State of Missouri, have invented a certain new and useful Improvement in Ventilating-Sash Locks, of which the following is a complete specification.

The present invention relates to locking devices for windows, and aims to provide an improved sash lock construction whereby the sash members of a window may be conveniently and securely locked together in either closed position or in variously different open positions for allowing the desired amount of air circulation to pass the partly open sash members and at the same time prevent them from being opened to any further extent.

Accordingly we have devised a sash lock structure which comprises a latch engaging strip for attachment to one of the sash members, and a movable latch bar designed to be carried by the other sash member and having conveniently operated means for moving this latch bar either into or out of position for engagement with the strip, and also for effecting a final retracting movement of the latch bar for drawing the same into clamping engagement with the strip.

In its preferred form, the improved device comprises a housing structure for mounting the latch bar upon the lower sash member, this housing structure being provided with a rotary cap member having a suitable pin or lug for engagement with the latch bar and moving the latter into or out of latch strip engaging position, and also with cam means for effecting the desired reciprocatory movement of the latch bar whereby it is caused to either engage or disengage the latch engaging strip.

It is further sought to devise a locking structure of the character described in which the latch bar is so designed as to permit interchangeable or reversible mounting thereof within the housing structure, whereby the device is adapted for mounting either as a left hand or a right hand window locking device, in addition to which the operating means for swinging the latch bar either into or out of latch strip engaging position and for reciprocating the same is effective for

such operation in either of the positions of the latch bar.

With the foregoing general objects in view, the invention will now be described by reference to the accompanying drawing illustrating one form of construction which we have devised for embodying the proposed improvements, after which the novel features therein will be particularly set forth and claimed.

In the drawing:

Figure 1 is a fragmentary perspective view, illustrating portions of the upper and lower sash members of a window, having associated therewith a sash lock structure constructed in accordance with the present invention;

Figs. 2 and 3 are horizontal detail sections, taken on a larger scale, and illustrating the latch bar element of the device moved out of latch strip engaging position in Fig. 2, and into strip engaging position in Fig. 3, said views representing sections taken on the line 2-2 of Fig. 4;

Fig. 4 is a detail section taken on the line 4-4 of Fig. 2;

Fig. 5 is a perspective view showing the latch bar;

Fig. 6 is an inverted plan view of the rotary cap member of the housing structure; and

Fig. 7 is a detail sectional view similar to that shown in Fig. 3, but illustrating the latch bar in inverted position for adapting the same for operation as a latching device by engagement with a latching strip at the opposite side of the window casing.

Referring now to the said drawing in detail, this illustrates the improved device in connection with the upper and lower sashes 8 and 9, respectively, of a window, the upper sash member 8 having attached thereto a latch engaging strip 10 adapted to be secured by means of screws or the like 11 to one of the sides of the sash 8, Figs. 1 to 3 of the drawing illustrating the strip 10 as applied to the sash 8 at the left of the window, while Fig. 7 shows said strip as reversed and secured in a similar manner to said sash at the right of the window. The latch engaging strip 10 is of a skeleton form for providing a serrated edge 12 adapted for engagement by the similarly serrated tooth 14 formed upon the end of a latch bar

15 which is movably mounted within a housing structure 25 adapted to be secured by means of screws 16 or the like to the upper edge of the other sash member 9, as illustrated in Fig. 1.

The housing structure 15 is provided with a rotary cap member 17 formed with suitable thumb-engaging lugs 18 and also with an annular bead 19 on its under face for engagement within the upper edge or margin of said housing structure 25. The cap member 17 is secured to the base of the housing structure 25 by means of a bolt or screw 20 or the like, which permits rotary movement of the cap member 17 about the axis of said bolt 20. Intermediate its ends the latch bar 15 is formed with a slot opening 21 for accommodating the middle portion of the bolt 20, thereby affording a swinging motion of the latch bar about the axis of the bolt or screw 20 as well as permitting a limited longitudinal reciprocating movement of said latch bar for a purpose hereinafter explained. One side of the housing structure 25 is cut away to provide an opening 22 of substantially a quadrant in extent, for accommodating the swinging movements of the latch bar 15 into and out of latch strip engaging position, as clearly illustrated in Figs. 2 and 3. These swinging movements of the latch bar 15 are effected by means of a pin or lug 23 projecting downwardly from the interior or bottom face of the cap member 17 and adapted to engage said bar 15 at different points at opposite sides of the center or pivot bolt 20. The inner end of the latch bar 15 is provided with a notch or recess 24 with which the pin or lug 23 is adapted to engage after passing with a slight degree of friction over the curved edge portion 26 formed upon the latch bar 15 adjacent to the recess 24. The purpose of this construction is to cause the pin or lug 23 to remain seated within the recess 24 during the rotation of the cap member 17 for moving the latch bar 15 into latch strip engaging position, whereupon the pin or lug 23 is released from the recess 24 during the further rotation of the cap member 17 for actuating the cam means which reciprocates the latch bar, as will now be described.

The neck portion of the latch bar 15 which is accommodated within the passage or opening 22 is formed on the opposite sides thereof with curved shoulders 27, either of which shoulders 27 is adapted for sliding engagement with a rib 28 which is similarly curved about the screw 20 at the center, this curved rib 28 being formed upon the interior upper face of the bottom portion of the housing structure 25. The latch bar 15 is adapted to be interchanged or reversibly mounted within the housing structure 25 and upon the bolt or screw 20, with either of its curved shoulders 27 in engagement with the rib 28,

the said shoulders 27 riding in engagement with the outer side of said rib 28. The rib 28 stops short of either end of the opening or passage 22, so that a clearance space is left at each end of the rib 28 equal to the width of the neck portion of the bar 15 but slightly less than the width of the widened portion of the bar whereon are formed the shoulders 27. This rib 28 is also slightly nearer to the center of the housing structure, and the offset formed by the widening of the latch bar at the shoulders 27 is on the same side which carries the tooth 14, from which it will be seen that as the latch bar swings into latch strip engaging position with one of its shoulders 27 riding over the rib 28, this will bring the offset portion of the latch bar inside the housing structure, so that only the narrower neck portion of the bar 15 will be accommodated between the end of the rib 28 and the corresponding end of the passage 22, with nothing to prevent longitudinal reciprocation of the bar 15. For effecting this reciprocation, and consequent latching engagement between the tooth 14 and the serrated edge 12 of the strip 10, we provide cam means consisting of an interior curved rib 29 formed on the inner or lower face of the cap member 17 and adapted to embrace either of a pair of curved bosses 30 formed upon opposite sides of the intermediate portion of the latch bar 15 and around the margin of its slot 21. The construction is such that the cam rib 29 is adapted to actuate the latch bar 15 in either of its reverse positions and thereby to reciprocate the said latch bar whether used either as a left hand or a right hand latching device.

The operation of the described arrangement and construction will be easily understood from the foregoing, but may be briefly summarized as follows: With the latch engaging strip 10 applied to the upper sash 8, secured to the left edge of said sash 8 as shown in Fig. 1, and the remaining parts to the top of the lower sash 9, and with the latch bar 15 swung into open position as shown in Fig. 2, cap member 17 is turned in a direction to move the bar 15 into position for engaging its tooth 14 with the serrated edge 12. During the initial portion of this movement, the pin or lug 23 is seated within the notch or recess 24 and in frictional engagement with this portion of the latch bar 15; as soon, however, as the tooth 14 of the latch bar is brought opposite to the edge 12, and the further swinging movement of the bar 15 is stopped by its engagement with said strip 10, pin 23 is snapped out of engagement with the recess 24, allowing an idle movement of this pin 23 during the operation of the cam means which takes place by engagement of the rib 29 with the curved boss 30 on the intermediate por-

tion of the bar 15, thereby retracting said bar and bringing its tooth 24 into clamping engagement with the edge 12 of the strip 10. This reciprocation of the bar 15 is permitted since the offset portion thereof at the shoulder 27 has passed within the housing structure at the same time that the shoulder 27 has passed out of engagement with the curved rib 28 so that only the narrower neck portion of the bar 15 is left between the end of the rib 28 and the corresponding end of the passage 22. At the end of the retracting movement of the latch bar the pin or lug 23 comes to rest against the edge of said bar at the opposite side of the pivot screw or bolt 20, the parts being left in this position during the locked relation of the sash members. In the unlocking operation, the cap member 17 is rotated in the opposite direction, first effecting operation of the cam means for reciprocating the latch bar 15 in the opposite direction and releasing its tooth 14 from engagement with the edge 12, and at the same time bringing the shoulder 17 in position for again engaging with the exterior edge of the rib 28, after which the pin or lug 23 engages with the inner end portion of the latch bar adjacent the notch or recess 24 and thereby begins to swing the latch bar 15 back into initial position, pin 23 finally snapping back into said recess 24, as shown in Fig. 2. In this open position of the device as shown in Fig. 2, the offset portion of the bar 15 at the shoulder 27 extends in overlapping relation to the rib 28, and obviously prevents any retraction of the latch bar 15 while occupying this position. The double arrangement of the shoulders 27, as well as of the curved bosses 30, in conjunction with the symmetrical form of the cam rib 29, provides a construction permitting of the ready reversal of the latch bar for operation either as a left hand or a right hand latch, the operation of which in either position is merely the reverse of its operation in the other position, as will be readily understood. It is furthermore apparent that the latching operation can be carried out at any point along the edge 12 of the strip 10, the action of the retracting of the bar 15 with its tooth 14 in engagement with the edge 12 serving to effect a binding engagement of the upper and lower sash members against the parting bead 32 (see Fig. 2) and thus securely and reliably holding the sash members together in this binding engagement at any desired point. For changing the improved device from one side of the window to the other, it is necessary only to reverse the latch engaging strip 10 end for end for adapting it to be secured in the relation shown in Fig. 7, and also reversing the mounting of the latch bar 15 within the housing structure 25, which is done by sim-

ply unbolting or unscrewing the parts, turning the bar 15 over and then securing them together with the bar 15 in its new position.

It will thus be seen that we have devised an extremely neat and compact construction for carrying out the desired objects of the invention. The improved arrangement and construction are not only simple and inexpensive but economical to manufacture, and afford a secure and reliable means for holding the sash members 8 and 9 in either partially open position or in entirely closed position, as may desired.

While we have illustrated and described what we now regard as the preferred form of construction, we desire to reserve the right to make such changes as may fairly fall within the scope of these appended claims.

It may be further pointed out that even though the rotary member 17 should not be completely turned to fully retract the latch bar 15 for bringing its tooth 14 into engagement with the serrated edge 12, there is nevertheless only a limited movement permitted either of the sash members 8 and 9, because of the skeleton form of the strip 10 which leaves the series of spaced cross bars 35 at intervals, so that the maximum movement allowed either of the sashes under these conditions would be merely the distance between any two adjoining bars 35. Again, under the same conditions no instrument could be inserted from the outside of the window by an intruder for the purpose of laterally swinging the latch bar 15 about the axis of the bolt 20, because of the fact that the edge of the bar is in engagement with one end of the curved rib 28, which effectually prevents such backward swinging movement of the bar away from the strip 10. As a further advantage, it is to be noted that the application of the improved device involves no cutting away or mortising of the window parts, such as is commonly necessitated by most well known forms of sash lock devices.

What we claim is:

1. A sash lock comprising a vertical latch engaging strip adapted to be secured to one of the sash members, a movable latch bar adapted to be mounted on the other sash member, and provided with a toothed end portion, said latch strip being formed with serrations pointing in a direction away from the plane separating said sash members, and means for swinging said latch bar into and out of position for hooking the toothed end portion of said bar around said latch engaging strip and for longitudinally reciprocating said bar when in strip engaging position.

2. A sash lock comprising a vertical latch engaging strip adapted to be secured to one of the sash members, a movable latch bar

adapted to be mounted on the other sash member, and provided with a toothed end portion, said latch strip being formed with serrations pointing in a direction away from the plane separating said sash members, and means for swinging said latch bar into and out of position for engagement with said engaging strip and for longitudinally reciprocating said bar when in strip engaging position to bring the toothed portion of the bar into or out of clamping engagement with the serrations of said strip.

3. A sash lock comprising a vertical latch engaging strip adapted to be secured to one of the sash members, a movable latch bar adapted to be mounted on the other sash member, and provided with a toothed end portion, and a rotating member provided with means for engaging and moving said latch bar into latch strip engaging position and with cam means for retracting said bar to bring the toothed portion thereof into clamping engagement with the serrations of said strip.

4. A sash lock comprising a vertical latch engaging strip adapted to be secured to one of the sash members, a movable latch bar adapted to be mounted on the other sash member, and provided with a toothed end portion, said latch strip being formed with serrations pointing in a direction away from the plane separating said sash members, and a rotating member provided with means operating initially to move said latch bar into latch strip engaging position and with cam means operating thereafter to retract said bar to bring the toothed portion thereof into engagement with the serrations of said strip, the reverse rotation of said member effecting operation of said cam means to disengage said bar from said strip and cause said first means to move said bar into initial position.

5. A sash lock comprising a vertical latch engaging strip adapted to be secured to one of the sash member, a housing structure adapted to be mounted on the other sash member, and a latch bar movably mounted within said housing structure and formed with a toothed end portion, said latch strip being formed with serrations pointing in a direction away from the plane separating said sash members, said housing structure having a rotary cap member provided with means for engaging and moving said latch bar into latch strip engaging position and with cam means for retracting said bar to bring the toothed end portion thereof into clamping engagement with said strip.

6. A sash lock comprising a vertical latch engaging strip adapted to be secured to one

of the sash members, a housing structure adapted to be mounted on the other sash member, and a latch bar movably mounted within said housing structure and formed with a toothed end portion, said latch strip being formed with serrations pointing in a direction away from the plane separating said sash members, said housing structure having a rotary cap member provided with a lug adapted for intermittent frictional engagement with the latch bar and also provided with cam means for longitudinally reciprocating said bar, the initial rotary movement of said cap member causing said lug to swing said bar into position for engaging its tooth portion with the serrations of said strip, the further movement of said cap member effecting disengagement of said lug from the bar and actuating said cam means to reciprocate the bar into clamping engagement with said strip.

7. A sash lock comprising a vertical latch engaging strip adapted to be secured to one of the sash members, a housing structure adapted to be mounted on the other sash member, and a latch bar movably mounted within said housing structure and formed with a toothed end portion, said latch strip being formed with serrations pointing in a direction away from the plane separating said sash members, said housing structure having a rotary cap member provided with cam means for longitudinally reciprocating said bar when in strip engaging position for engaging and disengaging its toothed portion from the serrations of said strip, and a lug carried by said cap member and operative to alternately engage said bar at opposite sides of the center of said cap member for swinging said bar into and out of strip engaging position.

8. A sash lock comprising a latch engaging strip adapted to be secured to one of the sash members, a housing structure adapted to be mounted on the other sash member, and a latch bar provided with a toothed end portion and adapted to be interchangeably mounted within said housing structure for swinging movement with the toothed portion of the bar presented in either of two opposite directions, said housing structure having a rotary cap member provided with means for engaging and swinging said bar in either of its directions for moving it into strip engaging position, and also with cam means for reciprocating said bar when in strip engaging position for bringing its toothed portion into clamping engagement with said strip.

In witness whereof we hereto affix our signatures.

FRANK P. GRODE.
FRED HUTTIG.