O. A. ESSIG.

AUTOMATIC SASH LOCK FOR FIREPROOF WINDOWS.

APPLICATION FILED MAR. 17, 1908.

920,444.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

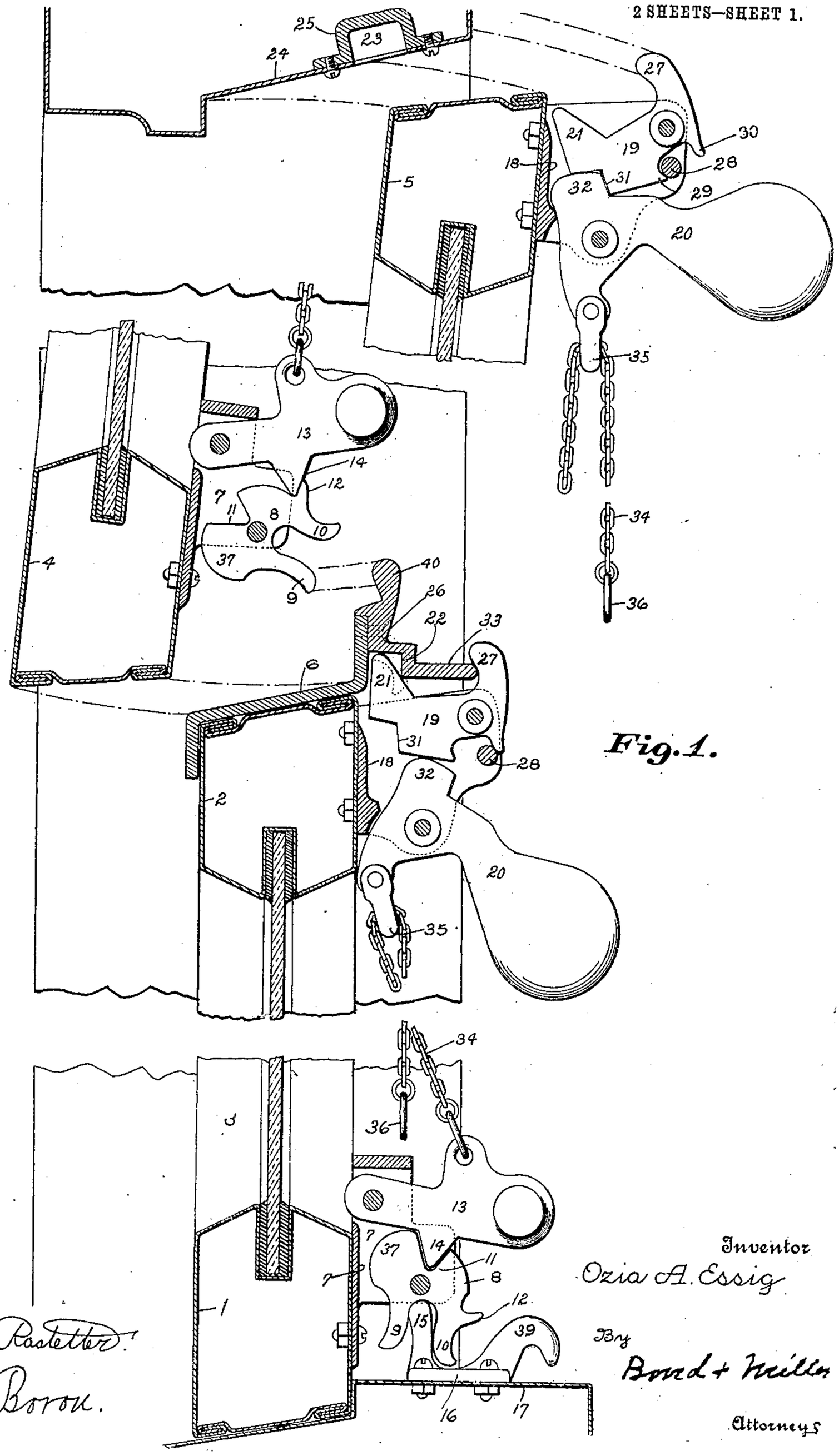

Fig. 1.

Witnesses

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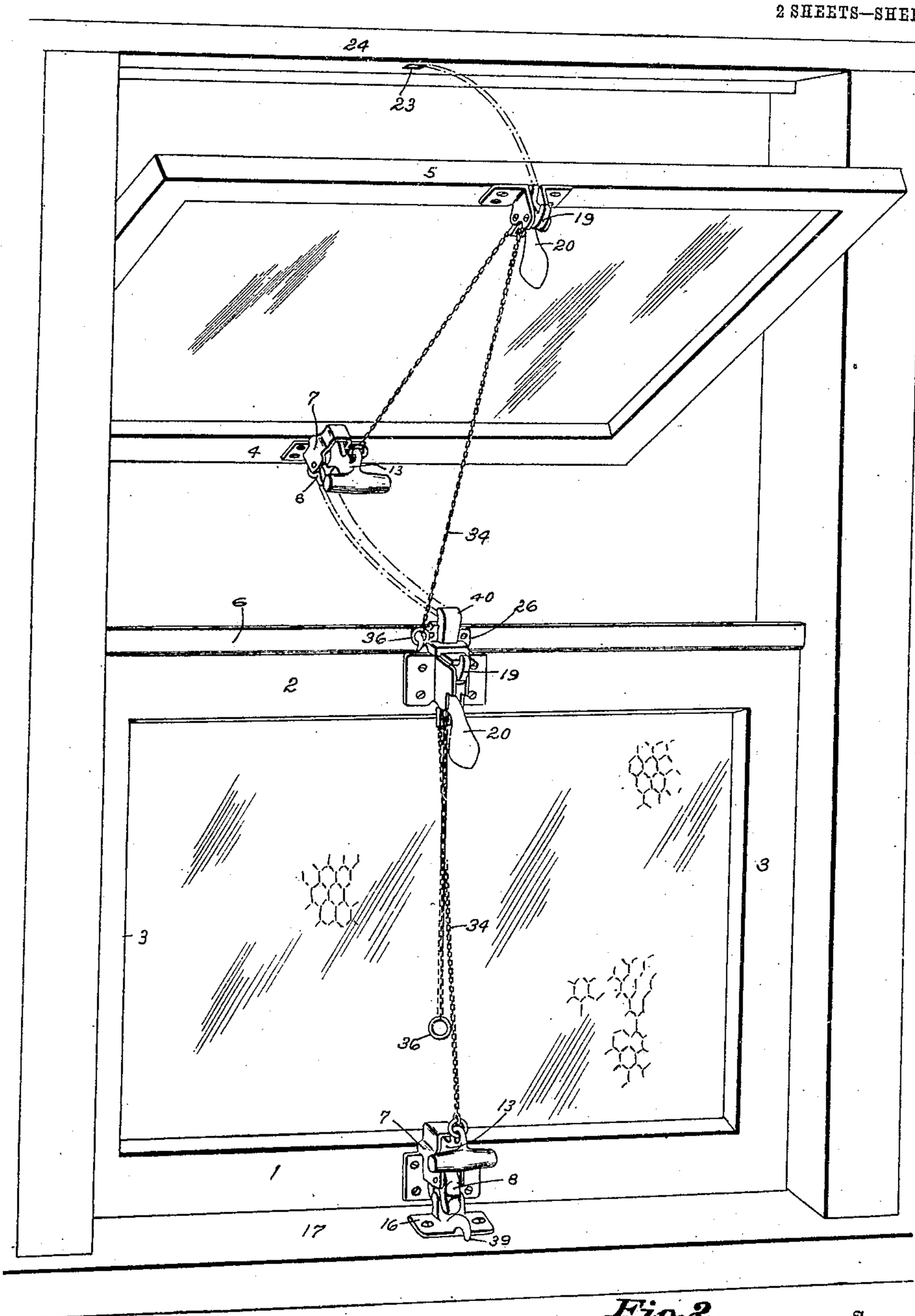

Fig. 2.

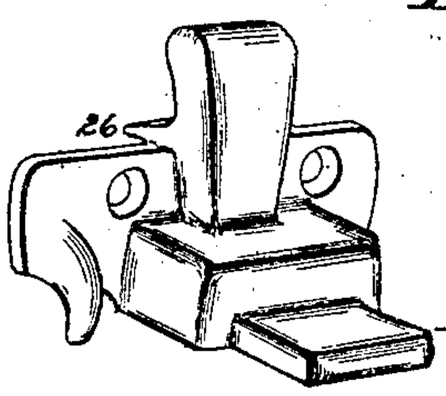

Fig. 3.

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UNITED STATES PATENT OFFICE.

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AUTOMATIC SASH-LOCK FOR FIREPROOF WINDOWS.

No. 920,444. Specification of Letters Patent. Patented May 4, 1909.

Application filed March 17, 1908. Serial No. 421,679.

To all whom it may concern:

Be it known that I, OZIA A. ESSIG, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Automatic Sash-Locks for Fireproof Windows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, and to the numerals of reference marked thereon, in which—

Figure 1 is a vertical section of the upper and lower window sashes, showing the lower window sash in locked position with reference to the window frame and the upper sash turned upon its pivotal point and in its unlocked position. Fig. 2 is a front elevation of a window frame and the window sashes, showing the window sash open and the lower window sash closed and locked, the position of the sashes being similar to those shown in Fig. 1. Fig. 3 is a detached view of the chambered lock plate and the striking lugs or flanges designed to be attached to the transom bar.

The present invention has relation to automatic sash lock for fire proof windows designed to lock the upper and lower sash rails and where two independent window sashes are employed to lock the upper and lower sash rails of each window sash. This object is brought about by the construction and arrangement of the different parts hereinafter described and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the lower sash rail of the lower window sash and 2 the upper sash rail of the lower window sash, which sash rails are held in proper relative position by the vertical sash rails 3 of the window sash proper. The sash rails 4 and 5 are similar to the sash rails 1 and 2 and constitute the horizontal rails of the upper window sash proper. Between the top sash rail 2 of the lower window sash and the lower sash rail 4 of the upper window sash is located the transom bar 6, which is attached to the window frame at its ends in any convenient and well known manner. To the lower sash rail 1 and to the lower sash rail 4 are securely attached the frames or housings 7, to which frames or housings are pivotally attached the locking dogs 8, which locking dogs are provided with the curved lips or projections 9 and 10, which lips are spaced apart for the purpose hereinafter described. The locking dogs 8 are also provided with the V-shaped notches 11, and the stop flanges or lugs 12. Directly above the locking dogs 8 are the gravity lock levers 13, which are pivoted to the housings 7. The gravity lock levers 13 are provided with the toothed projections 14, which are for the purpose of engaging the V-shaped notches 11, when said locking lever is in the position illustrated in the lower portion of Fig. 1, and when in such position the lower sash rail is locked against movement by reason of the lips 9 and 10 being located upon opposite sides of the lock plate or flange 15, which lock plate or flange is formed integral with the base 16, which base is secured to the window sill 17 in any convenient and well known manner. To the upper sash rails 2 and 5 are secured the housings 18, to which housings are pivotally attached the upper sash rail locking dogs 19 and directly below said locking dogs 19 are located the gravity lock levers 20. The locking dogs 19 are provided with the locking lugs 21, which locking lugs are designed to enter the recesses or chambers 22 and 23. The chamber 23 being formed by cutting an aperture in the sheet metal cap 24 of the window frame proper and covering said aperture by the housing 25. The lower chamber being formed in the combined strike plate and catch plate 26. The locking dogs 19 are each provided with the upward curved striking lugs 27, which striking lugs are for the purpose of actuating the locking dogs 19 as hereinafter described. For the purpose of limiting the rocking movement of the locking dogs 19, the housings are provided with the stop pins 28, which stop pins are located between the shoulders 29 and the flanges 30.

It will be understood that if there was nothing to limit the locking movement of the locking dogs they would swing out of position during the time the window sashes are moved upon their pivotal points, or in other words when the window sashes are brought into a horizontal position or substantially so, the locking dogs 19 would be liable to tilt and assume inoperative positions. The operation of the locking dogs, 19, is as fol-

lows: For the purpose of clearness the action of the upper locking dog 19 will be described. Assuming that the window sash is open and it is desired to close and lock the upper window sash the locking dogs being in the position illustrated in the top of Fig. 1, as the top of the window sash is brought toward and under the cap 24 the striking lug 27 will come into engagement with the front face of the cap 24 and tilt the inner end of said locking dog upward and move the locking lug 21 upward and into the aperture 23 and as the dog 19 is moved upward, the gravity lever 20 will be released and fall into the position illustrated in the middle portion of Fig. 1, thereby locking the dog 19 against downward movement, and of course locking the window sash.

For the purpose of allowing the locking dogs 19 to assume a lowered position or the position illustrated in the upper portion of Fig. 1, said locking dogs are provided with the cut out portions 31, and into which cut out portions the projecting lugs 32 formed upon the lock lever 20 are permitted to enter. In Fig. 1 the locking gravity levers 20, are shown in their upper and lower positions and the locking dogs in their locked and unlocked positions, the lower locking dog 19 being actuated by the strike plate 33 in substantially the same manner that the upper locking dog is actuated by the front face of the cap 24.

It will be understood that when the window sash is locked at its top and bottom it is necessary to release the locking devices connected to the top and bottom rails of the sash frames proper and in order to simultaneously unlock the upper sash rail and the lower sash rail, it is necessary to elevate the gravity locking levers 13 and 20, and in order to provide for simultaneously elevating said locking levers and simultaneously releasing the locking dogs 8 and 19, the actuating chain 34 is provided, which actuating chain is connected to the gravity locking lever 13 at its lower end and thence extended upward and through the loop 35 and thence downward to a point easy of access and provided with the pull ring 36.

It will be understood that by a downward pull upon the ring 36 the levers 20 and 13 will be simultaneously elevated at their outer points and the locking dogs 8 and 19 be released at which time the window sash proper is free to move upon its pivotal point. After the gravity locking lever 13 has been elevated and the tooth 14 detached from the V-shaped notch 11 the locking dog 8 will be rocked upon its pivotal point by reason of the curved lip 10 coming into engagement with the flange 15 and the locking lever 13 held in its elevated position. For the purpose of assisting in bringing the locking dogs 8 in the position illustrated in the upper portion of Fig. 1, said locking dogs are provided with the weighted ends 37, which weighted ends assist in bringing said locking dogs in the position to hold the gravity locking levers 13 in their elevated position.

It will be understood that the locking dogs 8 should be stopped at such a point that they will be rocked by the lips 9 when the window is closed and locked and for the purpose of stopping the locking dogs, at a point where the lips 9 will come in proper engagement with the flanges 15 and 40, the stop flanges 12 are provided, which stop flanges strike the toothed projections 14.

After the top and bottom rails have been unlocked by the pulling of the chain 34, a further pulling of the chain will turn the given window sash upon its pivotal point, and for the purpose of holding the window sashes in an open position, the link 36 at the bottom of the chain is connected to the hook 39, for the lower sash and to a similar hook such as 39 shown in dotted lines Fig. 1 for the upper sash, the hook 39 being formed upon the base 16 connected to the window sill 17 and the hook 40 being formed upon or connected to the transom rail 6. By providing locks for the upper and lower sash rails for the window sash, the window sashes can be securely locked in a closed position and held at their tops and bottoms in secured positions with reference to the window frame proper, thereby providing a window locking device well adapted for fire protection, owing to the fact that at all times the window sash is held in a firm position and the top and bottom rails held in swinging contact with the adjacent parts, to which the tops and bottom of the sash rails are locked or secured.

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

1. In a sash lock of the character described housings secured to the upper and lower horizontal rails of the window sash, gravity lock levers pivotally attached to said housing, locking dogs pivoted to said housings, and said locking dogs adapted to lock the upper and lower sash rails respectively, one of said dogs provided with spaced lips and the other dog provided with a locking extension, a flange adapted to engage the spaced lips of one of the dogs and a chamber adapted to receive the locking extension of the other dog, and means for simultaneously lifting the gravity lock levers, and releasing the dogs, substantially as and for the purpose specified.

2. In a sash lock of the character described, the combination of a pivoted window sash, housings secured to the top and bottom rails of the pivoted window sash, the bottom rail provided with a gravity dog and a gravity lock lever, said gravity dog provided with a recess and the gravity lever provided with a toothed extension adapted to

engage the recess of the dog, a flange held in fixed relation with reference to the gravity dog, said dog provided with spaced lips adapted to actuate the locking dogs when freed, substantially as and for the purpose specified.

3. In a sash lock of the character described, a pivoted window, housings secured to the top and bottom rails of said pivoted window gravity lock levers pivoted to said housings, dogs adapted to lock the bottom and upper sash rails, and gravity lock levers adapted to lock the dogs against movement and means for simultaneously elevating the gravity lock levers and the lock levers provided with means for releasing the dogs, substantially as and for the purpose specified.

4. In a sash lock of the class described, a pivoted window sash, housings secured to the top and bottom sash rails respectively, dogs pivoted to the housings, said dogs provided with locking elements, strike plates adapted to actuate the dogs, and gravity lock levers adapted to lock the dogs in position to lock the top and bottom sash rails, and means for simultaneously actuating the gravity lock levers, substantially as and for the purpose specified.

5. In a sash lock of the character described, a pivoted window sash having secured to the top and bottom rails thereof housings, dogs pivoted to the upper and lower housings respectively, the dog pivoted to the upper housing provided with a strike flange, and a shoulder and flange, a stop pin located between said shoulder and flange, the dog pivoted to the lower housing provided with spaced lips or flanges, and strike plates adapted to actuate the dogs by the swinging movement of the window sash and gravity lock levers provided with means for locking the dogs against pivotal movement and means for actuating the gravity lock levers, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

OZIA A. ESSIG.

Witnesses:
J. A. JEFFERS,
F. W. BOND.