

(No Model.)

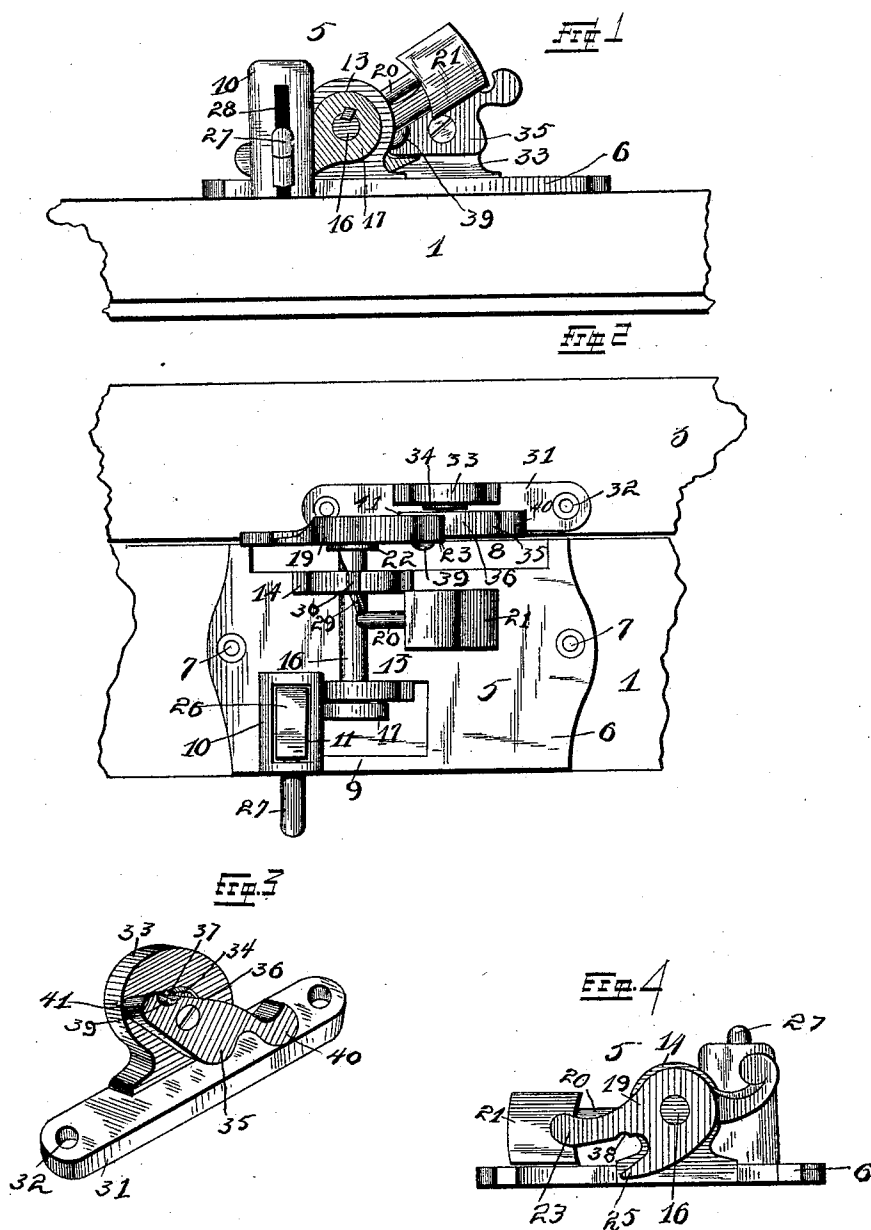
3 Sheets—Sheet 1.

C. NEUMANN.

FASTENER FOR THE MEETING RAILS OF SASHES.

No. 495,905.

Patented Apr. 18, 1893.



Witnesses
Alfred A. Eickes
Herbert S. Robinson

Inventor
Christ Neumann,
By his Attorneys
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(No Model.)

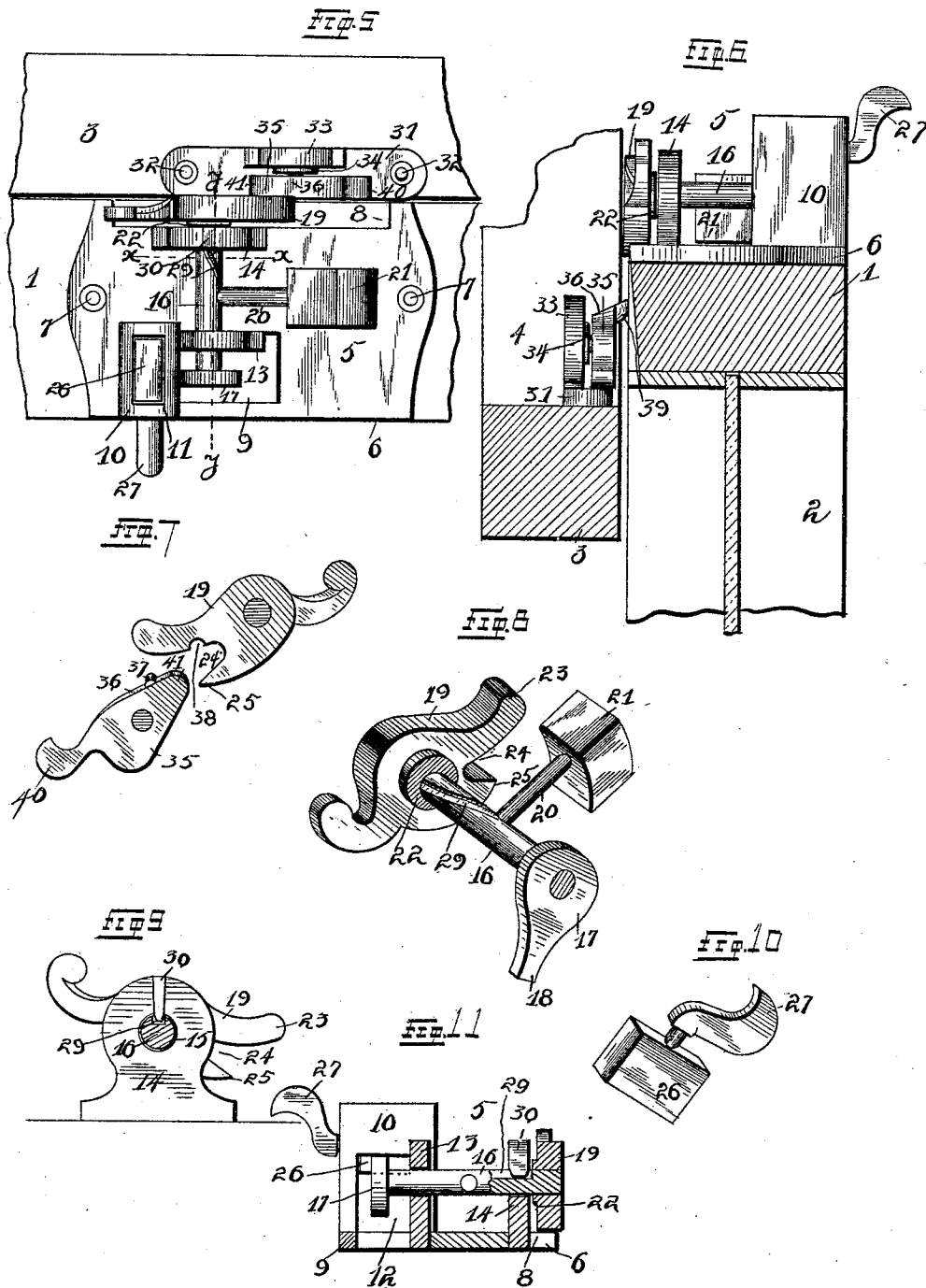
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Fig 12

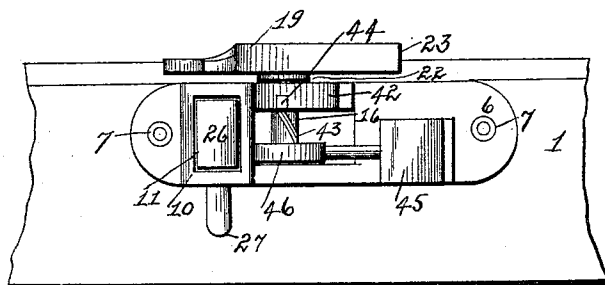


Fig 13

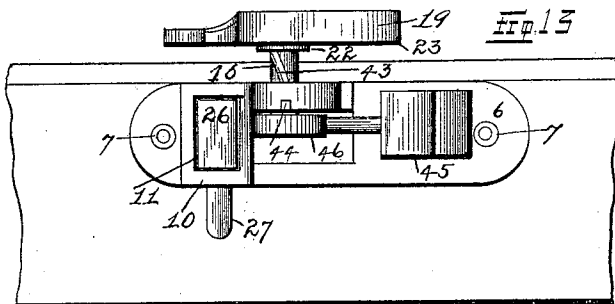


Fig 14

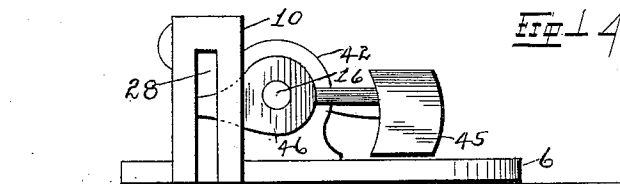
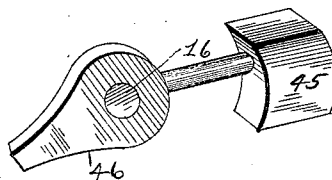


Fig 15



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UNITED STATES PATENT OFFICE.

CHRIST NEUMANN, OF ST. LOUIS, MISSOURI.

FASTENER FOR THE MEETING-RAILS OF SASHES.

SPECIFICATION forming part of Letters Patent No. 495,905, dated April 18, 1893.

Application filed September 5, 1892. Serial No. 445,114. (No model.)

To all whom it may concern:

Be it known that I, CHRIST NEUMANN, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Automatic Sash-Fasteners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in "sash-fasteners," and consists in the novel arrangement and combination of parts as will be more fully hereinafter described and designated in the claims.

The class of fasteners hereinafter described are especially designed for attachment to the meeting rails of the sashes, which are of the usual construction and design and the fasteners may be applied thereto without in any way disfiguring or cutting the wood.

The object of my invention is to provide an improved lock which will fasten automatically when the lower sash is pulled down or closed and which is adapted to be unlocked by hand in the usual manner.

From the descriptions it will be seen that the objections heretofore made to sash-fasteners are overcome, and the necessity of locking the sashes by hand, is dispensed with as my device is entirely automatic in its operation.

In the drawings: Figure 1 is a side view of my complete invention applied to the meeting rails of ordinary sashes and shows the same in a position when locked. Fig. 2 is a top plan view of the two members of my device, applied as above stated, and showing them interlocked. Fig. 3 is a perspective view of the member which is secured to the upper sash. Fig. 4 is a side elevation of the member which is secured to the lower sash and showing the side adjacent the upper member. Fig. 5 is a top plan view of the two members when unlocked. Fig. 6 is an end vertical sectional view, showing the member upon the lower sash in readiness to engage the member upon the upper sash, and showing the rails in section. Fig. 7 shows detail views of the locking lever ready for engagement, and with the other parts of the two members removed. Fig. 8 is a perspective view of the weighted arm, rocking shaft, interlocking lever and locking arm, said parts comprising

portions of the member secured to the lower sash. Fig. 9 is a sectional view taken on a line *xx* in Fig. 5. Fig. 10 is a perspective view of the locking block made use of in carrying out my invention. Fig. 11 is a sectional view on a line *yy* in Fig. 5. Fig. 12 is a top plan view of a modification carried out in the construction of the member applied to the lower sash and showing the same in a position when unlocked. Fig. 13 is a view similar to Fig. 12 except in that it shows the construction when locked. Fig. 14 is a side elevation of this construction with the locking block removed. Fig. 15 is a view in perspective of the locking arm and showing the weighted lever attached thereto.

Referring to the drawings: 1 indicates the meeting rail of the lower sash 2 made use of in window construction, and which is of the usual design.

3 indicates the meeting-rail of an ordinary upper sash 4. As is well known, the lower sash 2 is adapted to slide upwardly in a plane adjacent the upper sash 4 and when the lower sash 2 is down or closed, the upper surfaces of both the meeting-rails 1 and 3 are in horizontal alignment.

I will first proceed to describe the construction of the member 5 which is the one secured to the meeting-rail 1 of the lower sash 2. It consists of a base-plate 6 substantially rectangular in form, and having suitable perforations 7 through which screws are placed to secure it to the meeting-rail 1. The edge of the plate 6 adjacent to the meeting-rail 3 has a portion 8 cut away in order to allow the operation of certain parts hereinafter named.

For the sake of conciseness, I will refer to the side of the construction adjacent the meeting-rail 3 as the inner side and the other side from which the parts are operated by hand, as the outside. Near the outer side of the plate 6 is a rectangular shaped opening 9 which is provided for the operation of parts therein. At one end of this opening 9, and near the left-hand end of the plate 6 is an upright rectangular shaped construction 10 which has a vertical longitudinal opening 11 in the same, said opening being oblong in form and designed for the operation of parts therein. Said casing 10 extends upwardly at right angles with the base plate 6 and in one

side, the same being the side toward the opening 9, has a rectangular shaped opening 12 for purposes hereinafter set forth. Mounted in the inner side of said opening 9 and projecting upwardly from the inner edge thereof, is a bearing-block 13 one end of which adjoins the casing 10.

Immediately adjacent the inner edge of the cut-out portion 8 and extending upwardly therein at right angles with the plate 6, is a bearing block 14 similar in construction to the block 13, in that they are both provided with circular apertures 15 in which the rocking shaft 16 is mounted and has its bearing. Upon the outer end of said rocking shaft 16 is keyed an eccentrically mounted locking arm 17 the extending end 18 of which projects inwardly through the opening 12 in the casing 10 and is adapted for operation as hereinafter described. Upon the inner end of said shaft 16 is keyed a locking lever 19 and intermediate of said lever 19 and the arm 17 and secured to the shaft 16 is a small shaft 20 extending at right angles therefrom and having its free end 21 weighted to facilitate certain operations. A collar 22 preferably a part of the lever 19 projects from the inner face of said lever 19 toward the shaft 20 and serves as a gage for a horizontal movement which the shaft 16 and parts connected therewith assume in operation. The lever 19 is provided with an extending arm 23 in the same plane as its surface, and having a curvilinear slot or opening 24 immediately below and separating it from a tooth shaped projection 25, the operation of which will be hereinafter described. The locking block 26 operative in the vertical opening 11 in the casing 10 consists of a rectangular shaped block adapted to fit snugly in said opening 11 and having a handle 27 for hand operation in an elongated slot 28 in the outer wall of the casing 10. The shaft 16 is provided with a spiral groove 29 which starts at the shaft 20 and ranges up onto the top of the shaft and stops at the collar 22. The bearing block 14 is provided with a feather 30 which extends downwardly into said slot 29 thus causing the sides of said slot 29 to act as a cam in the operation of the lever 19.

Having described the parts of one member I will now set forth the construction of the member which is secured to the upper sash. It has a base plate 31 having apertures 32 through which screws are placed to secure the same to the meeting-rail 3. Upon its outer side and extending upwardly at right angles from the base plate 31 is a lug 33 which approximately occupies about half the width of the plate 31 and has upon its inner side a projection 34 which serves as a collar to prevent the rubbing against its inner surface of a locking-dog 35 which is pivotally mounted to the side thereof. The locking-dog 35 is eccentrically mounted and has its upper face 36 canted toward the lug 33 and provided with a transverse projection 37 which is of

the shape of an inverted U in cross-section and which in operation is adapted to engage in a similar shaped transverse opening 38 in the under side of the projecting arm 23 upon the lever 19. Adjacent its upper edge and upon the side of the dog 35 which is next to the lever 19 when the device is locked is a projecting lug 39 which is adapted to be engaged by the lever 19 in its descent to effect the interlocking of said lever and the dog 35. The normal position of the dog 35 is with its elongated end 40 resting on the base-plate 31 and its opposite end 41 above the plane of its mounting and said end 41 is the same form in outline as the slot 24 in the lever 19 and when the two members are locked together these two parts are interlocked.

Having fully described the construction of the parts of my invention, I will now proceed with its operation. To facilitate a clearer and better understanding of the descriptions, reference should be had to the illustration wherein Fig. 1 shows the two members locked together, Fig. 6 shows them in the act of being locked, and Fig. 5 shows the position of the parts as shown in Fig. 6 when looking down upon them from above. Mention has heretofore been made of the peculiar horizontal movement attained by the rocking-shaft 16 and its parts connected therewith, by the use of the feather 30 engaging the slot 29 and which causes the shaft 16 to have this peculiar side motion when the shaft is turned. The normal position of the weighted end 21 of the shaft 20 is with said weight 21 upon the base plate 6 and therefore the under side of the arm 23 is in a horizontal plane, and in readiness for the engagement of the end 41 of the dog 35 when the lower sash 2 is brought lower down. When this engagement of the dog 35 in the slot commences, the lever is tilted up and consequently the shaft 16 is turned, the weight 21 lifted, and the end 18 of the arm 17 lowered and the farther down the sash is pulled, the more movement is implied to each of the above named parts, and by reason of the feather 30 operating in the spiral groove 29, the shaft 16 and its parts move outwardly toward the other member. As the end 18 of the arm 17 goes down, the locking block 26 follows its movement until said arm 17 has assumed a position wherein the end is far enough from the outer wall of the casing 10 to allow the block 26 to fit in between said end and the wall of the casing, thus permanently locking all of the parts, with the end 41 of the dog 35 fitting into the curvilinear opening 24 in the lever 19. When completely locked the parts have assumed a position as shown in Fig. 1 with the weight 21 elevated from off the base-plate 6 and the locking block 26 wedged between the end 18 of the arm 17 and the opposite inner wall of the casing 10. Therefore, in order to release the engagement of the parts and to unlock the members in order that the lower sash can be raised, it is necessary to lift the block 26

by pulling up on the handle 27. When the lower sash is pushed up the parts still retain their position as when locked until the dog 35 is entirely free from its engagement in the slot 24, when said weight 21 gravitates toward the plate 6 and all of the parts are ready for a repetition of the operation.

It is impossible for the parts to become unlocked when locked, except by the hand operation just described and no amount of tampering can cause the parts to disengage as the downward movement of the locking block 26 is stopped by the upper surface of the meeting-rail 1 and can only be lifted in the above described manner. Therefore, it is proper that I term my improved sash-fastener burglar-proof, as in manufacture it is intended that it be constructed of some malleable metal which will preclude any danger of cracking or breaking by the jarring or forcing of the windows.

To bring about the horizontal as well as rocking movement of the shaft 16 and its parts, I could construct the shaft with a spiral feather upon its periphery to operate in a slot in the bearing block 14 in place of the construction which I have shown.

It will be noticed that the construction of the lever 19 and the dog 35 is such that they are made substantially self-balancing in order to facilitate the ready and quick operation of the parts.

In Figs. 12, 13, 14, and 15 I have shown a modification by means of which I arrive at the same results with a simplified construction and which practically includes the same parts.

To replace the bearing blocks 13 and 14 I make use of a bearing-block 42 which is wide enough to provide a balancing bearing for the shaft mounted therein which has a groove 43 running spirally in the surface of its periphery and which is engaged by a feather 44 which projects from the block 42 into said slot 43.

Instead of having a separate weighted arm such as 21, I have provided a weighted arm 45 which has a connection with a locking arm 46. Upon the opposite end of the shaft 16 is mounted a locking lever similar to the lever 19 and which has the same function in operation. It will be seen that this arrangement of the parts brings about the same results with a much narrower construction of base and a simplified form of construction and the operation of which in locking, is similar to the former construction.

It will be seen from the description of this modified form of construction, that the article can be manufactured at a greatly reduced cost and will present a very neat appearance upon the meeting-rail of the sash.

The member of this fastener which is secured to the meeting-rail of the upper sash is not modified in any way as I believe it to be

as simple and certain in operation as would be possible.

Having fully described my invention, what I claim is—

1. As an improvement in sash fasteners, a locking device consisting of a rocking-shaft having a spiral horizontal movement, a vertical, slotted casing adjacent to said shaft, a lever projecting from the latter and into the casing, and a block corresponding to and working in the casing and adapted to bear upon the end of said lever, said block being provided with a projecting operating knob or handle; substantially as and for the purpose set forth.

2. In a sash fastener, the combination, with a retaining member provided with a dog, of a locking member consisting of a rocking-shaft having a spiral horizontal movement and provided at one end with a lever automatically interlocking with said dog, and with a weighted lever for normally retaining said shaft in locking position, and means for locking said shaft against movement; substantially as and for the purpose set forth.

3. An improved sash-fastener for the meeting-rails of sash, having one member provided with a base-plate 6, a cut-out portion 8 in one side thereof, a rectangular shaped opening 9, a vertical casing 10 having a vertical rectangular shaped opening therein, an elongated slot 28 in one wall thereof, and a rectangular shaped opening 12 in the side of said casing 10 for the operation of parts therein, substantially as set forth.

4. An improved sash-fastener for the meeting-rails of sash, having one member provided with a base-plate 6 bearing blocks 13 and 14 mounted at right angles thereon and therewith, bearings 15 in said block 13 and 14, a shaft 16 mounted therein, a locking-arm 17 keyed upon one end of said shaft 16 and having a free end operative through the opening 12 into the interior of the casing 10, a locking lever 19 keyed upon the opposite end of said shaft 16 and an intermediate weighted arm 20 secured to said shaft 16, substantially as set forth.

5. An improved sash-fastener for the meeting-rails of sash, having a shaft 16 mounted in bearings 15, a locking-arm 17 mounted on one end thereof, a locking-lever 19 mounted upon the opposite end of said shaft 16, said locking lever 19 provided with a projecting arm 23, a curvilinear opening between said arm 23 and a tooth shaped projection 25, and a transverse slot 38 in the under surface of said arm 23, and a retaining device comprising a dog 35 corresponding to and received by said curvilinear opening; substantially as set forth.

6. An improved sash-fastener for the meeting-rails of sash, having a locking arm 17, a casing 10, a locking-block 26 substantially rectangular in form, a handle 27 for said

block 26 said handle projecting through an elongated slot 28 in the wall of said casing 10, and said block 26 adapted to lock said locking arm 17 and parts connected therewith, substantially as set forth.

7. An improved sash-fastener for the meeting-rails of sash, having one member provided with a base-plate 31, perforations 32 therein, by means of which said plate 31 is secured to the meeting-rail 3 of the sash 4, a lug 33 having a projecting collar 34 upon its inner side, mounted at right angles thereon, a locking-dog 35 pivoted to said lug 33 its upper face 36 canted toward said lug 33 and a transverse projection 37 thereon to fit into the transverse slot 38 in the under side of the arm 23 on the lever 19 of the other member, substantially as set forth.

8. An improved sash-fastener consisting of

two members one of which being provided with a locking lever 19 having a curvilinear opening 24, a slotted casing 10, a lever 17 connected with the lever 19, and a locking block 26, the other member being provided with a locking-dog 35, a projection 39 thereon, the end 41 of said dog 35 adapted to fit into the curvilinear opening 24 in the locking lever 19 of the other member and said locking block 26 adapted to lock between the wall of the casing 10 and the end 18 of the lever 17, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHRIST NEUMANN.

Witnesses:

W. C. HOWLAND,
HERBERT S. ROBINSON.