PATENTED JULY 12, 1904.

764955

J. E. McGINNESS.

VERTICALLY PIVOTED WINDOW.

APPLICATION FILED APR. 6, 1904.

3 SHEETS—SHEET 1.

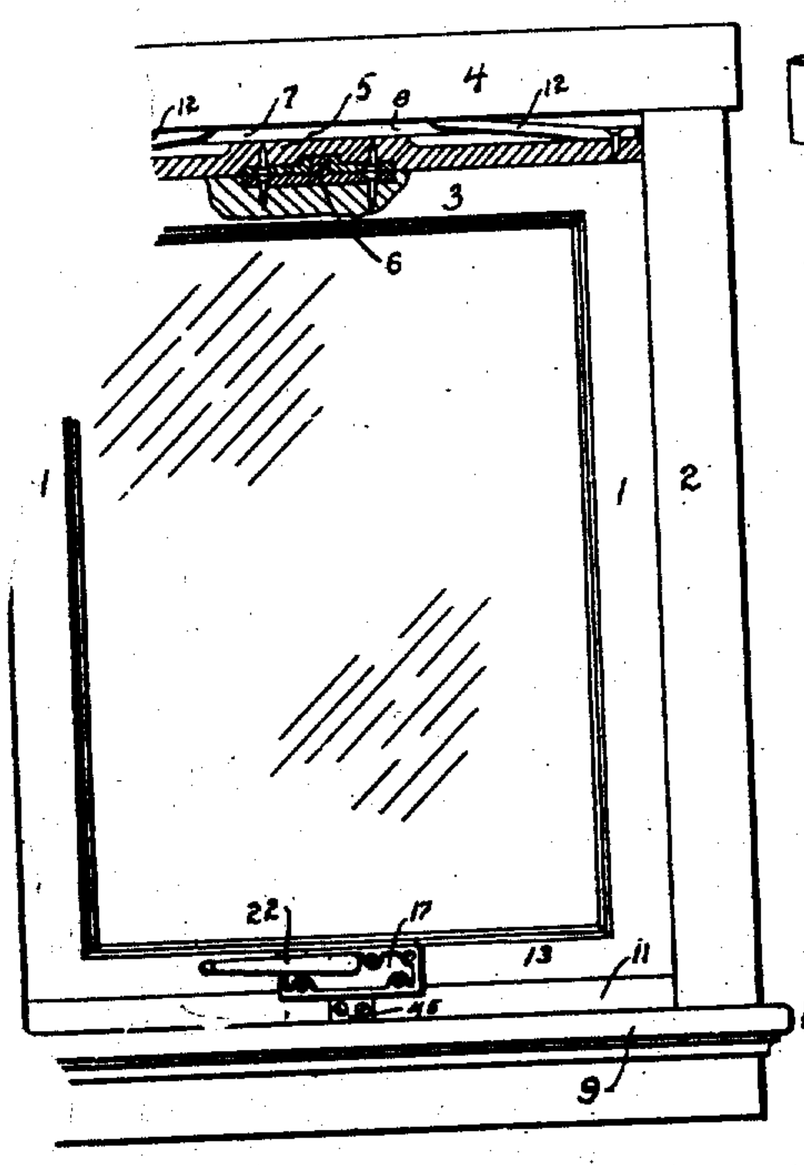

Fig. 1.

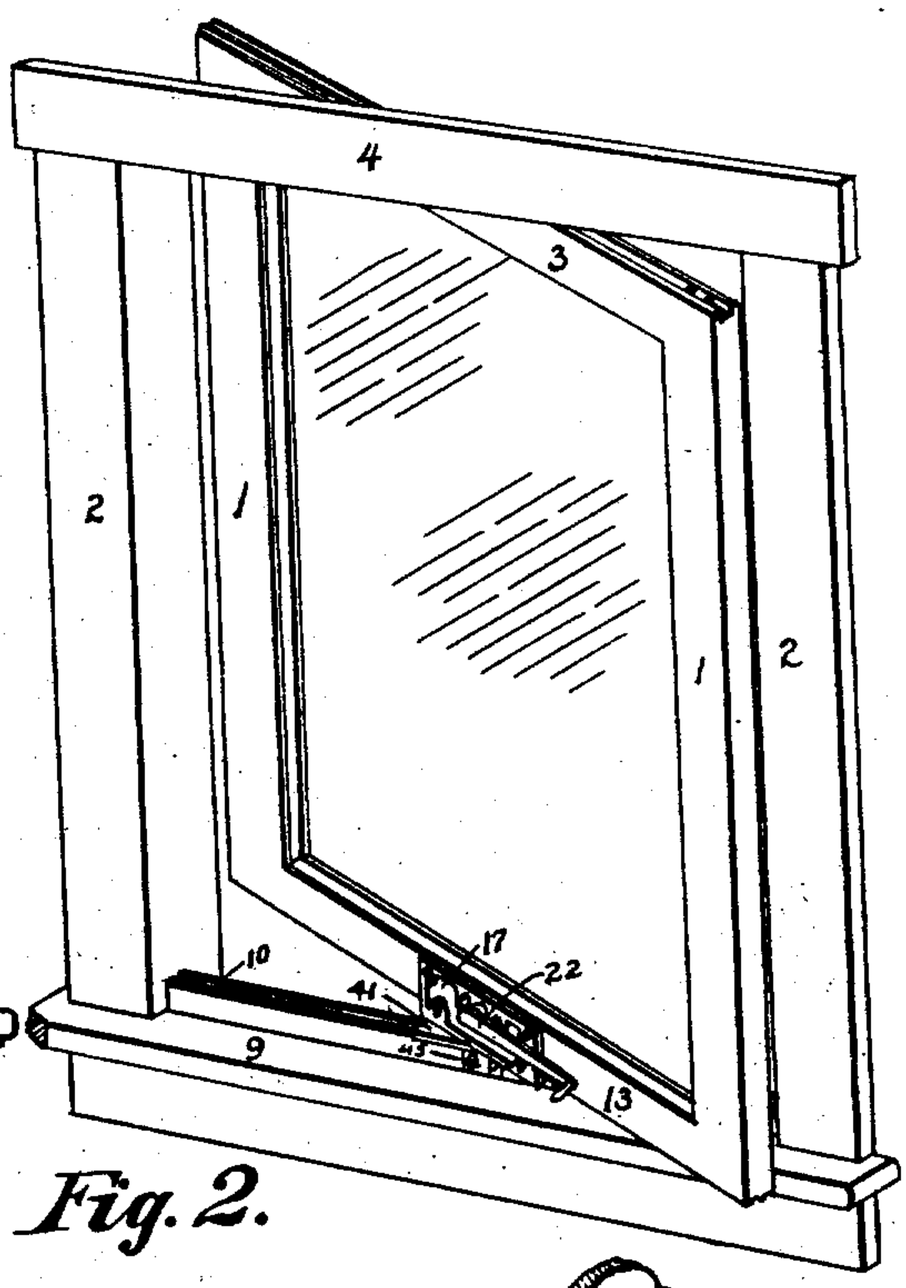

Fig. 2.

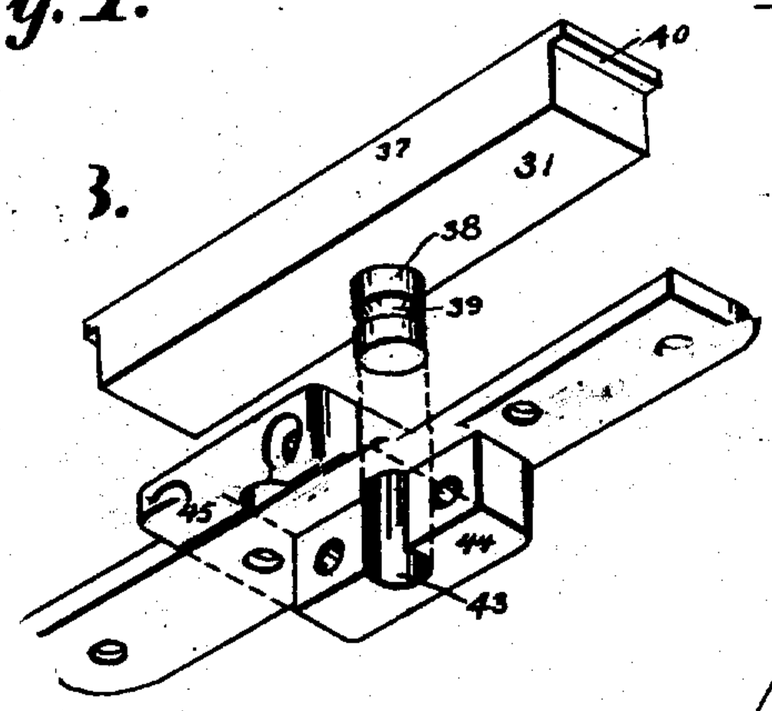

Fig. 3.

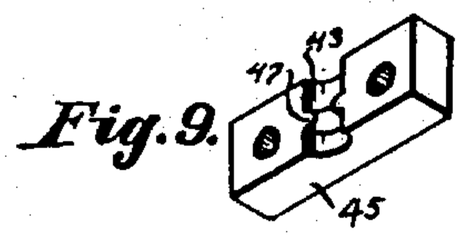

Fig. 9.

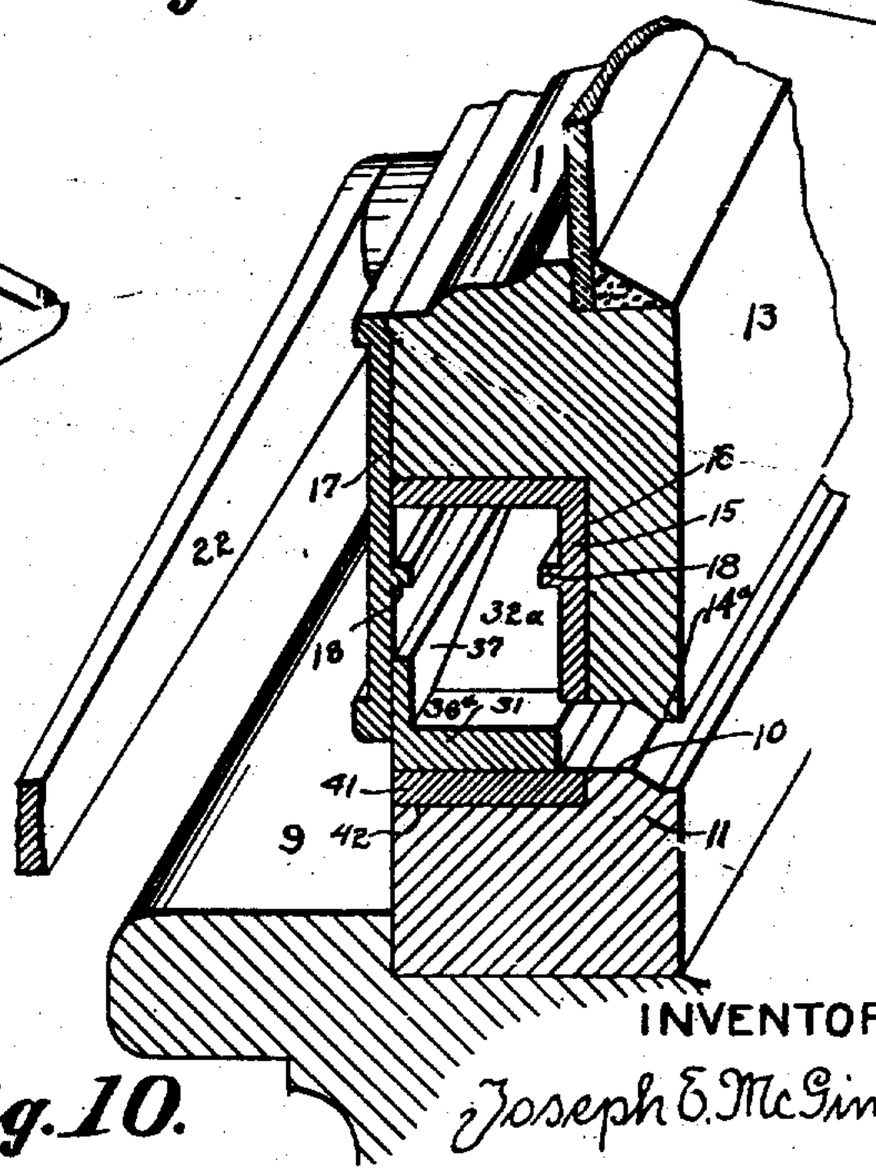

Fig. 10.

WITNESSES

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NO MODEL.

3 SHEETS—SHEET 2.

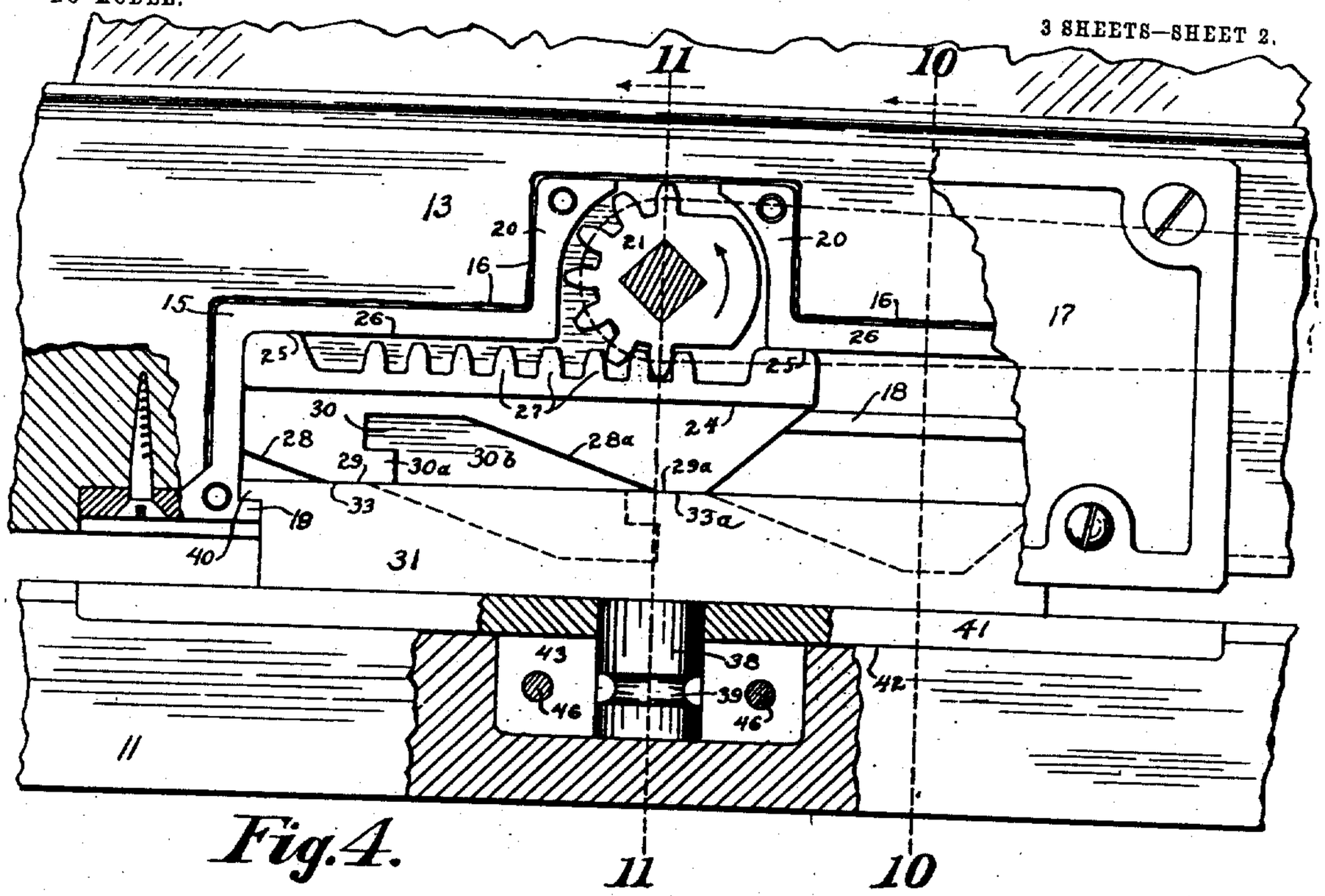

Fig. 4.

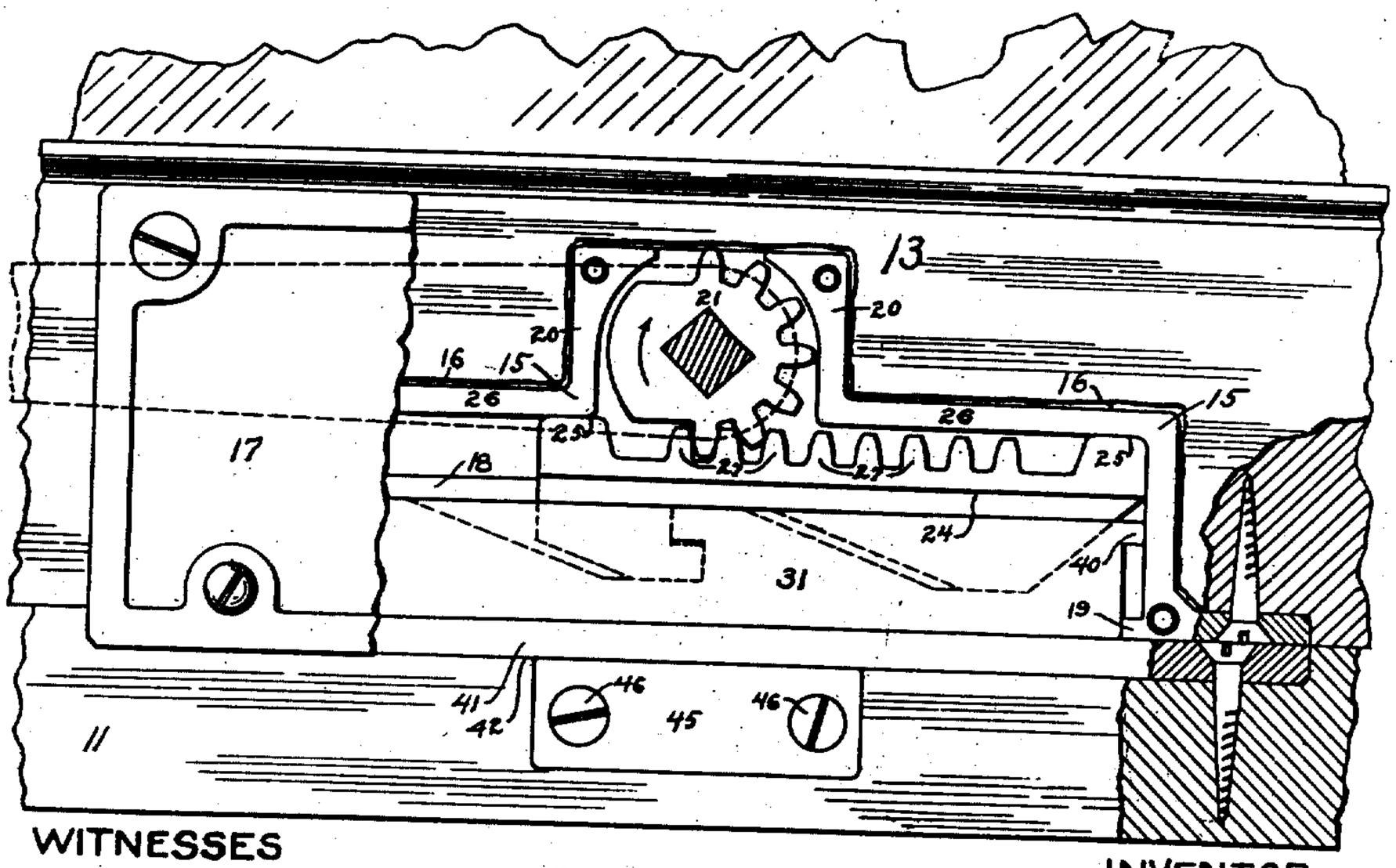

Fig. 3.

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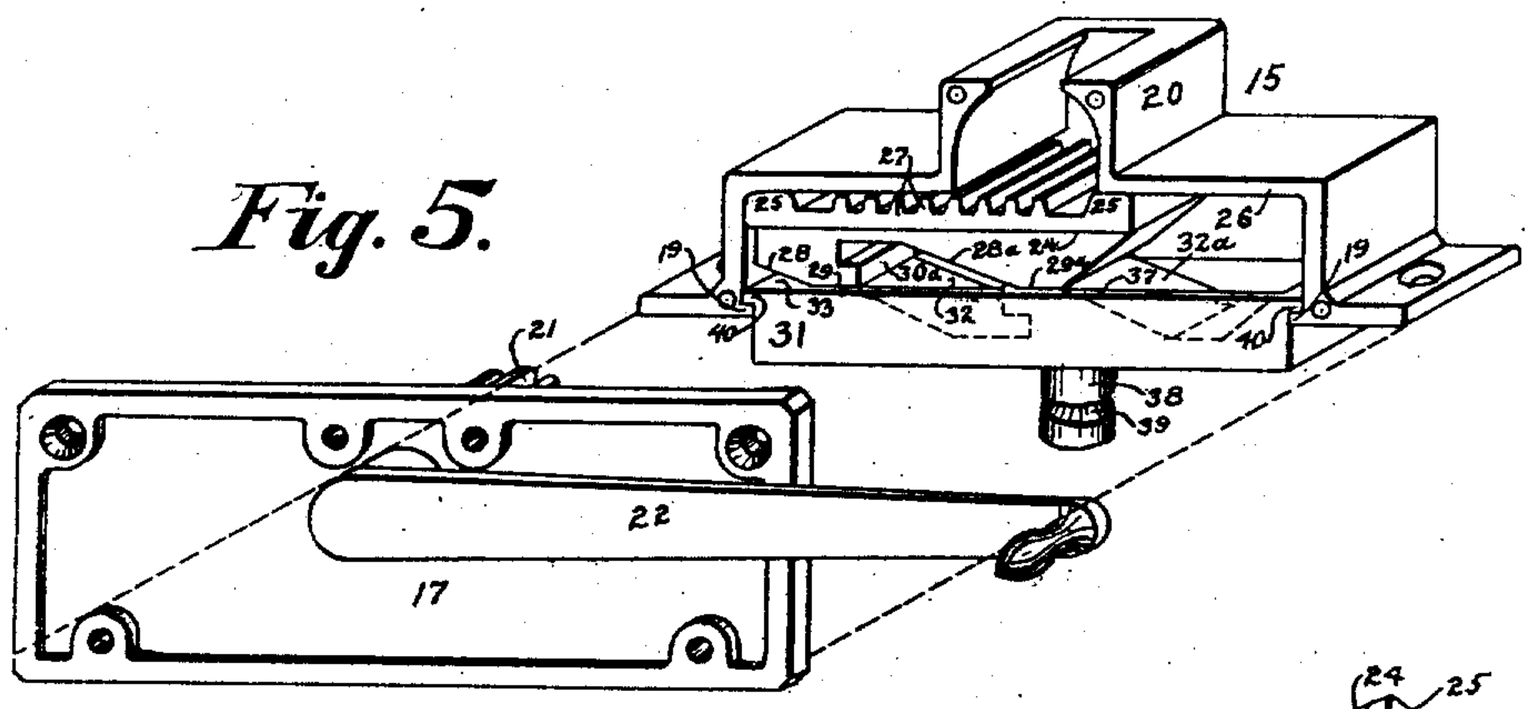
NO MODEL. 3 SHEETS—SHEET 3.

Fig. 5.



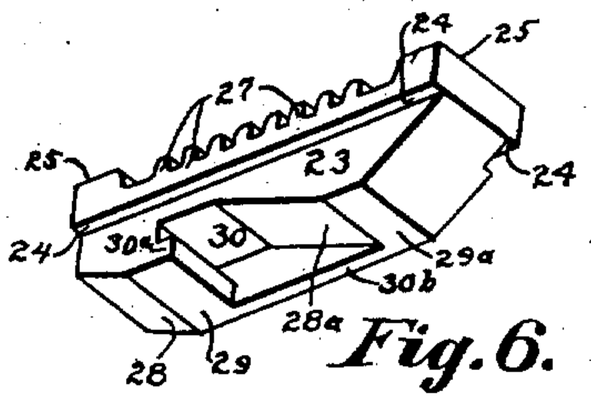


Fig. 6.

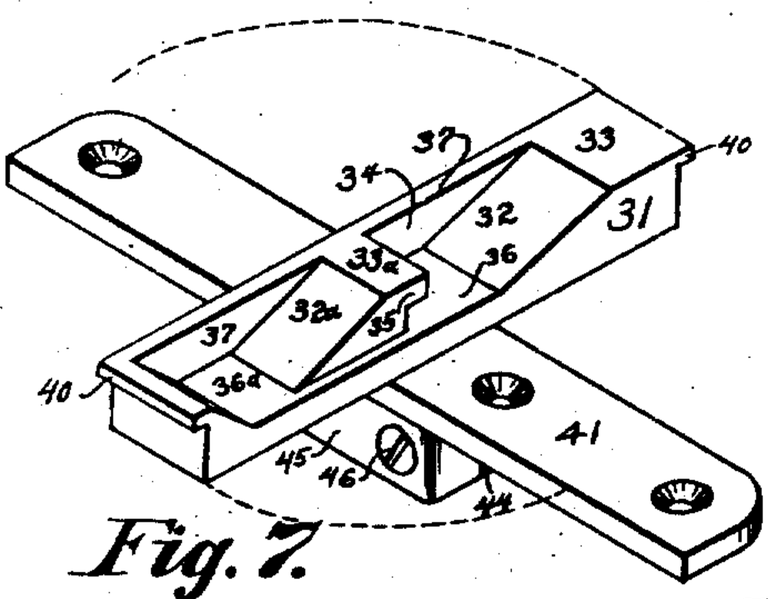


Fig. 7.

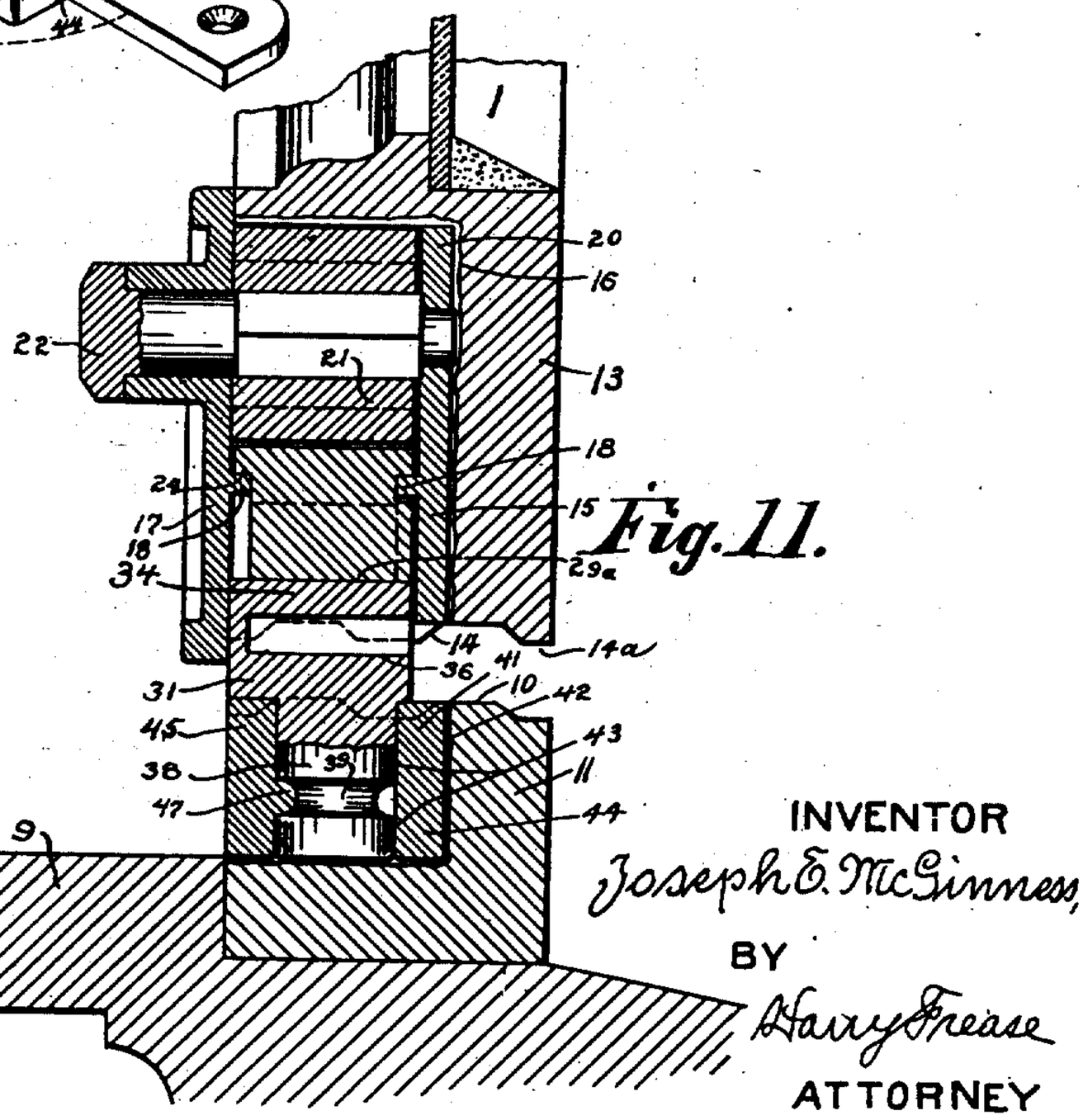


Fig. 11.

WITNESSES

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No. 764,955. Patented July 12, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH E. McGINNESS, OF PITTSBURG, PENNSYLVANIA.

VERTICALLY-PIVOTED WINDOW.

SPECIFICATION forming part of Letters Patent No. 764,955, dated July 12, 1904.

Application filed April 6, 1904. Serial No. 201,855. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. McGINNESS, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Vertically-Pivoted Windows, of which the following is a specification.

The invention relates to a lifting device for a vertically-pivoted window-sash by means of which the sash can be raised a short distance to clear the sill or the usual ridges on the sill-strip; and the object of the improvement is to provide a simple and sensitive lifting mechanism operated by the endwise movement of a wedge-block which will give the sash a flat support when it is raised for rotating and will also rigidly lock the sash against elevation and rotation when it is closed and lowered, together with a friction pivotal connection adapted to be tightened to retard the rotation of the sash. This object is attained by the construction, mechanism, and arrangement illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a window with the sash closed and lowered; Fig. 2, a similar view, with the sash raised and opened, illustrating the use of the lifting device; Fig. 3, a fragmentary elevation, with the sash lowered on the sill-strip, showing the lifting device with part of the face-plate removed; Fig. 4, a similar view showing the sash raised and part of the sill-strip in section; Fig. 5, a detached perspective view of the case with the wedge-block and the wedge-plate in place and the face-plate separated opposite its place; Fig. 6, a detached perspective view of the wedge-block; Fig. 7, a detached perspective view of the sill-plate with the wedge-plate pivoted and rotated thereon; Fig. 8, a detached perspective view of the sill-plate with the wedge-plate and friction-block separated opposite their places; Fig. 9, a detached perspective view of the friction-block; Fig. 10, a perspective section on line 10 10, Fig. 4; and Fig. 11, a section on line 11 11, Fig. 4.

Similar numerals refer to similar parts throughout the drawings.

In this class of windows the sash 1 is usually made shorter than the inside clear height of the opening of the frame 2, and the space between the upper sash-bar 3 and the frame head-piece 4 is partly filled by the follower 5, to which the sash is pivoted, as at 6. The follower extends into the upper frame-groove 7, but with the interval 8 between it and the head-piece, so that the sash can be elevated a short distance to clear the frame-sill 9 or the ridges 10 usually found on the sill-strip 11. Springs, as 12, are usually provided between the follower and the head-piece to press the follower against the upper edge of the sash, and the lower sash-bar 13 is preferably provided with the ridges 14 and 14ª, adapted to enter into the grooves formed by the sill-strip ridges, so that a tight and close joint is made between the sash and the sill-strip when the sash is closed and lowered. The sill-strip is illustrated as being separate from the sill proper and as projecting above it, and this is the preferred form of making the window, especially when an ordinary frame is adapted to receive a vertically-pivoted sash; but a separately-formed and upwardly-projecting strip is not essential to the proper working of the lifting device and pivotal connection.

The lifting mechanism is located in the case 15, formed or attached in the mortise 16 in the lower sash-bar and preferably flush with the inner face of the sash. The general shape of the case is that of an elongated rectangular socket open below, and its inner wall is preferably formed by the separable face-plate 17, which extends a short distance below the edge of the sash. The internal longitudinal ribs 18 are formed on the side walls of the case near the top, and the internal transverse ribs 19 are formed on the end walls at the bottom of the case. The housing 20 is provided on the upper side of the case, in which is transversely pivoted the pinion 21, which pinion is rotated by the lever 22, located, preferably, on the inner side of the sash. The wedge-block 23 is located and adapted to travel endwise in the upper part of the case and is preferably provided with the lateral flanges 24, adapted to rest and slide on the longitudinal ribs of the case. These ribs and flanges are designed to support the block in its place at all times and are not essential to

the proper operation of the mechanism. The transverse flat bearings 25 are provided on the upper sides at the ends of the wedge-block and are adapted to abut and slide against the top or upper wall 26 of the case, and between these bearings is provided the rack 27, the teeth of which are preferably free from any contact with the top of the case, and this rack is adapted to freely mesh with the pinion, by which means the block is operated endwise in the case by the rotation of the lever. The lower side of the block is shaped to form the longitudinally-inclined faces 28 and 28^a and the flat faces 29 and 29^a, adjoining the lower ends thereof, and the intervening cavity 30 is shaped to form the transverse flange 30^a, the lower side of which is an extension of the flat face 29. On one side of the block is preferably provided the web 30^b, which occupies the space below the case-rib on that side and is used to connect and strengthen the depending parts of the block.

The upper side of the wedge-plate 31 is shaped to form the inclined faces 32 and 32^a, on which the inclined faces of the block are adapted to slide, and the flat faces 33 and 33^a, adjoining the upper ends thereof, on which the flat faces of the block are adapted to rest when the block is moved endwise to the left end of the case, as shown in Figs. 4 and 5, and the intervening cavity 34 is shaped to form the transverse flange 35, the upper side of which is in extension of the flat surface 33^a, which flange is adapted to lap over and engage the corresponding flange 30^a of the block when the block is moved endwise to the right of the case, as shown by broken lines in Fig. 3. To permit the direct endwise movement of the block necessary for the block-flange to enter under the plate-flange, the flat faces 29 and 29^a on the bottom of the block are made shorter than the flat faces 36 and 36^a at the bottom of the inclined face of the plate. On the side of the wedge-plate opposite the wedge-block web is preferably provided the web 37, which occupies the space below the case-rib on that side and is used to connect and strengthen the projecting upper parts of the plate. The depending pivot-post 38 is provided on the wedge-plate, preferably midway between its ends, in which post is formed the annular groove 39, and the ribs 40 are provided on the ends of the plate, which ribs are adapted to engage the end ribs of the case, and thereby prevent the plate from dropping out of it.

The sill-plate 41 is formed or attached in the mortise 42 in the sill-strip, and in this plate is provided the vertical pivot-bearing 43. The depending part 44 of this bearing is made with the separable side or block 45, preferably comprising less than half of the bearing, which is adapted to be clamped against the pivot-post by means of the screws 46, and by the friction thus caused the rotation of the pivot in the bearing is retarded to any desired extent by the adjustment of these screws. The annular rib 47 is provided on the friction-block in the bearing, which is adapted to fit in the annular groove of the pivot-post and to hold it in its proper place, as shown in Fig. 11—that is to say, with the wedge-plate resting on the sill-plate.

The parts being assembled and the sash being closed and lowered, as shown in Figs. 1 and 3, to raise the sash the lever is thrown to rotate the pinion, as indicated by the arrow in Fig. 3, which rotation moves the wedge-block from the right to the left end of the case. The first effect of this movement is to carry the transverse flange of the wedge-block out from under the similar flange of the wedge-plate, after which the inclined faces of the block come in contact with the similar faces of the plate, and the further movement of the block forces or wedges the plate down out of the case or, more strictly speaking, as the wedge-plate is resting on the fixed sill-plate and the wedge-block bears against the upper wall of the case the effect of this further movement is to raise the sash away from the sill. The parts of the mechanism are so arranged and proportioned that the final part of the endwise movement of the wedge-block carries the flat faces on its lower side onto and along the corresponding flat faces on the top of the wedge-plate, which provides a flat bearing for the sash after it is raised, as shown in Figs. 3 and 4. In this position the entire weight of the sash is carried by the end bearings of the wedge-block abutting against the upper wall of the case, and there is no strain or pressure whatever on the rack or pinion, and especially there is no pressure acting to reverse the rotation of the pinion to let the sash down, which is necessarily the case when the sash is sustained on an inclined bearing. When the sash is thus elevated to free the ridges of the lower bar from the ridges of the sill-plate, it is free to be rotated on its vertical pivots, as shown in Fig. 2, subject only to the retardation caused by the adjustment of the friction-block of the lower pivot-bearing. In this rotation the wedge-plate rotates with the sash, and the weight thereof is preferably carried by this plate resting and turning on the sill-plate. The sash being raised and rotated to be in line with the sill-strip, as shown in Fig. 4, to lower it the lever is thrown to rotate the pinion, as indicated by the arrow in the same figure, which rotation moves the wedge-block from the left to the right end of the case. The first effect of this movement is to carry the flat faces of the block along and off of the corresponding flat faces of the wedge-plate, after which the inclined faces of the block descend along the similar faces of the plate to the bottom thereof, in which relation the sash is lowered to rest on the sill-strip. The final movement of the block carries its transverse flange under

the similar flange of the plate, which locks the sash against being raised, as by a burglar with a "jimmy," without an endwise movement of the block, and when the sash is lowered on the sill-strip the depending part of face-plate descends and engages along the inner edge of the sill-plate, as shown in Figs. 1 and 3, which engagement locks the sash against rotation without its being raised.

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

1. In a window, a sill, a vertically-movable sash having a socket in its lower bar, a plate in the socket pivoted on the sill and having inclined faces and adjoining flat faces and a transverse flange on its upper side, and an endwise-movable block bearing the upper wall of the socket and having inclined faces and adjoining flat faces on its lower side adapted to slide on the similar plate-faces and a flange adapted to enter under the plate-flange.

2. In a window, a sill, a vertically-movable sash having a socket in its lower bar, a plate in the socket pivoted on the sill and having inclined faces and a transverse flange on its upper side, and an endwise-movable block bearing the upper wall of the socket and having inclined faces on its lower side adapted to slide on the similar plate-faces and a flange adapted to enter under the plate-flange.

3. In a window, a sill, a vertically-movable sash having a socket in its lower bar, a plate in the socket pivoted on the sill and having inclined faces and adjoining flat faces on its upper side, and an endwise-movable block bearing the upper wall of the socket and having inclined faces and adjoining flat faces on its lower side adapted to slide on the similar plate-faces.

4. In a window, a sill, a vertically-movable sash having a socket in its lower bar, a vertically-movable plate in the socket pivoted on the sill and having inclined faces on its upper side, a block bearing the upper wall of the socket and having inclined faces on its lower side adapted to slide on the similar plate-faces, there being a rack on the block, and a transversely-pivoted pinion in the sash adapted to mesh with the rack.

5. In a window, a sill, a plate pivoted on the sill having inclined faces and adjoining flat faces and a transverse flange on its upper side, an endwise-movable block having inclined faces and adjoining flat faces on its lower side adapted to slide on the similar plate-faces and a flange adapted to enter under the plate-flange, and a vertically-movable sash bearing on the block.

6. In a window, a sill, a plate pivoted on the sill having inclined faces and a transverse flange on its upper side, an endwise-movable block having inclined faces on its lower side and adapted to slide on the similar plate-faces, and a flange adapted to enter under the plate-flange, and a vertically-movable sash on the block.

7. In a window, a sill, a plate pivoted on the sill having inclined faces and adjoining flat faces on its upper side, an endwise-movable block having inclined faces and adjoining flat faces on its lower side adapted to slide on the similar plate-faces, and a vertically-movable sash bearing on the block.

8. In a window, a sill-plate having a pivot-bearing therein with a separable block on one side having an annular rib thereon, a sash having a pivot-post adapted to rotate in the bearing there being an annular groove in the post adapted to engage the block-rib, and means for tightening the block against the pivot-post.

9. In a window, a sill-plate, a vertically-movable sash pivoted thereon, and a face-plate on the sash extended below its edge and adapted to engage the edge of the sill-plate when the sash is alined therewith and lowered.

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

JOSEPH E. McGINNESS.

Witnesses:

JAMES M. McKEE,

J. B. LAUBACH.