No. 820,415. PATENTED MAY 15, 1906.

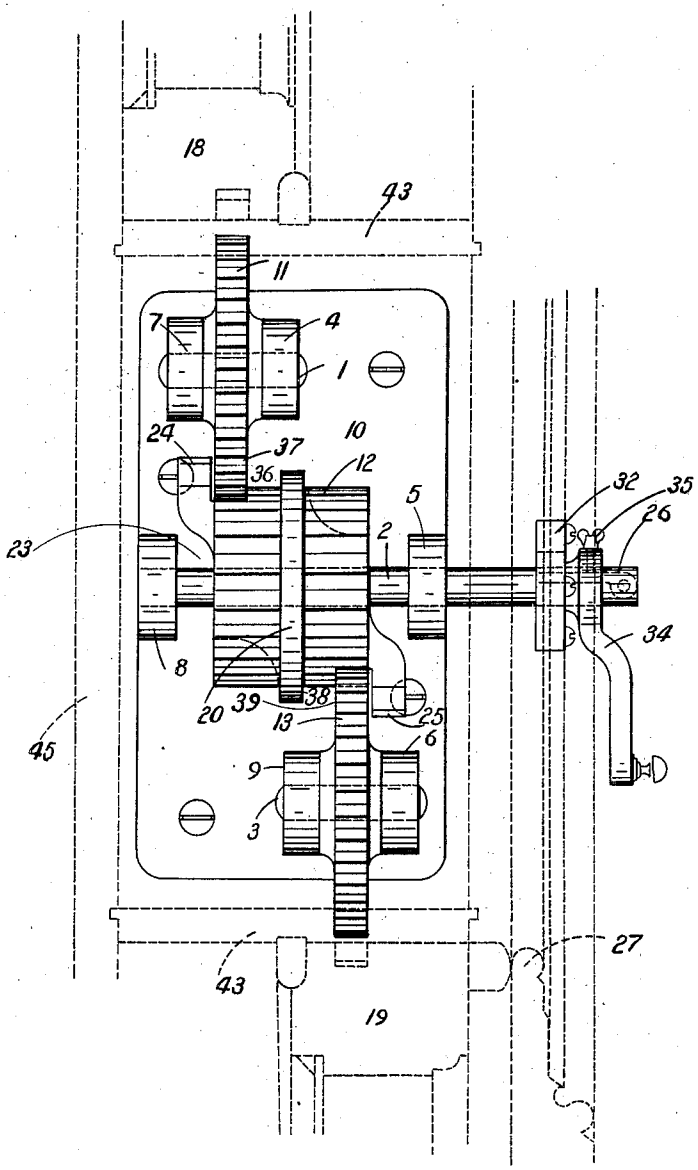
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SASH MOVER AND LOCK.

APPLICATION FILED APR. 4, 1905.

3 SHEETS—SHEET 1.

FIG. 1



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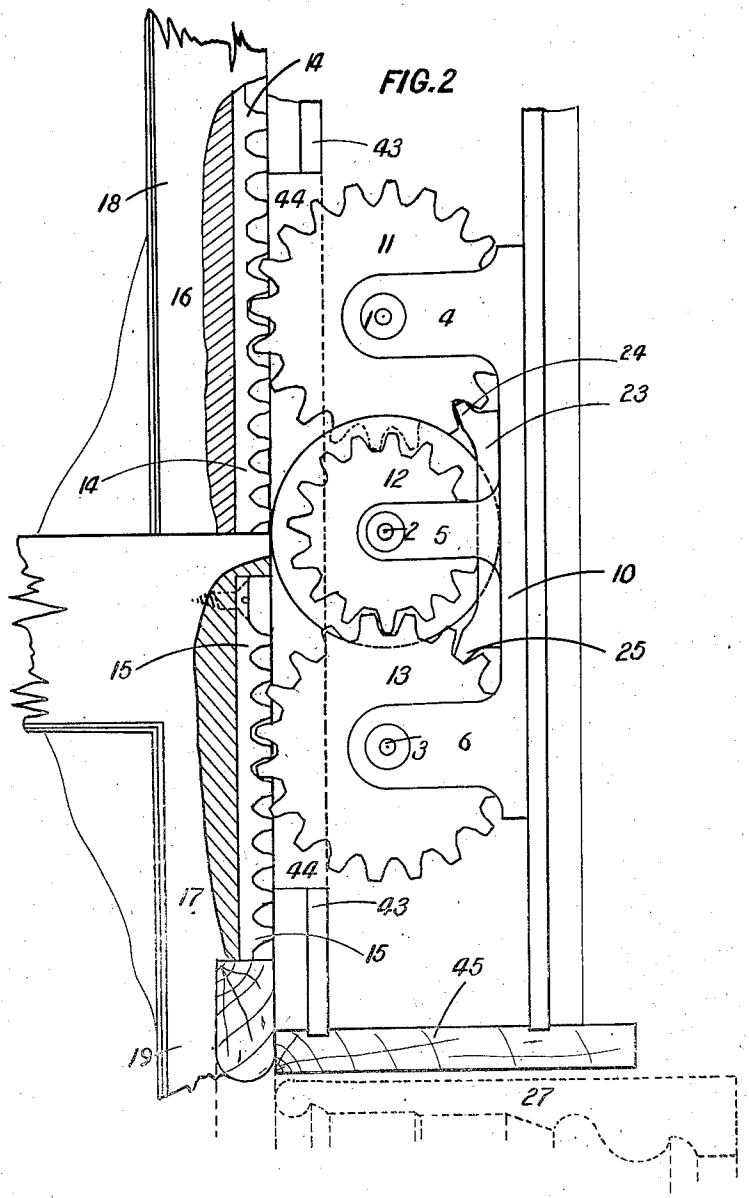
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3 SHEETS—SHEET 2.

FIG. 2



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3 SHEETS—SHEET 3.

FIG. 3

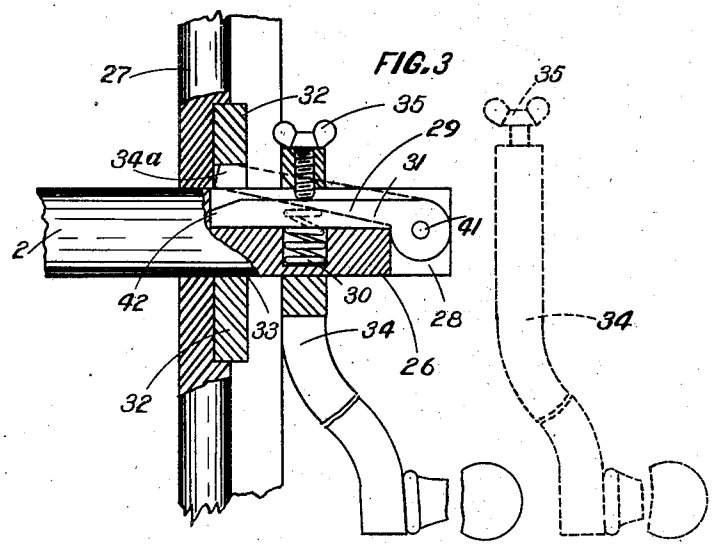
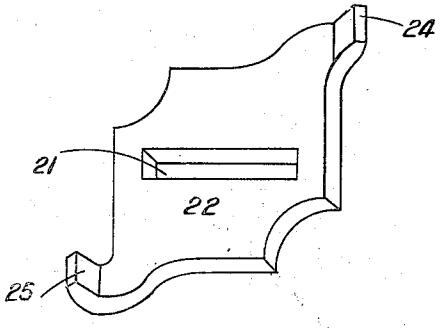


FIG. 4



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UNITED STATES PATENT OFFICE.

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SASH MOVER AND LOCK.

No. 820,415 Specification of Letters Patent. Patented May 15, 1906.

Application filed April 4, 1905. Serial No. 253,788.

To all whom it may concern:

Be it known that we, ALFRED REGINALD HARDY, accountant, and ROBERT NOBLE ADAMS, publisher, of Dunedin, New Zealand, have invented certain new and useful Improvements in Sash Movers and Locks, of which the following is a specification.

The object of this invention is provide means whereby the upper and lower sashes of a window may either be moved simultaneously or independently without the use of weights and so that both or either of them may be locked in any position.

The invention consists of the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims with reference to the accompanying drawings, in which the same numerals of reference indicate the same or similar parts, and in which—

Figure 1 is a front elevation of the apparatus, the upper sash 18, lower sash 19, architrave 27, pulley-stile 43, and facing-board 45 being shown in dotted lines in order to more clearly indicate the method of mounting the gearing and the means of operating the gearing to enable the upper and lower sashes to be operated independently or simultaneously. Fig. 2 is a side elevation of the apparatus, the architrave being removed and a part of the upper sash 18 and lower sash 19 being shown in section in order to more clearly show how the gearing of the apparatus engages with the toothed racks 14 and 15, secured to the side rails of said sashes 18 and 19. Fig. 3 is an enlarged view of a portion of Fig. 1 to show the method of actuating and locking the gearing. When the handle 34 is removed, as shown in dotted lines, the key 31 is in the position represented by dotted lines. Fig. 4 is a perspective view of the locking-plate 22.

In the casing of a window-frame I secure a base-plate 10, having three pairs of lugs 4 7, 5 8, and 6 9 thereon, the lugs 5 9 being situated in the middle of the plate, one on each side, while the lugs 4 7 are closer together and occupy the left-hand corner at one end of the plate, and the lugs 6 9 occupy the right hand corner of the other end. The two pairs of end lugs 4 7 and 6 9 carry short spindles 1 and 3, while the middle pair carry the long spindle 2. On said spindles 1, 2, and 3 are mounted the pinions 11, 12, and 13. The upper and lower pinions 11 and 13 are preferably of the same size and engage in racks 14 and 15, respectively attached to the side-rails 16 and 17 of the upper and lower sashes 18 and 19 of the window. To permit the pinions 11 and 13 to engage in the racks 14 and 15, clearance is provided in the pulley-stile 43 at 44. The middle pinion 12 is double the width of the other pinions 11 and 13 and is divided by a central flange 20, of greater diameter than the pinion 12, said flange 20 being for the purpose of engaging in a slot 21, formed in a locking-plate 22, (which locking-plate 22 is more particularly shown in Fig. 4.) Said locking-plate, which is adapted to slide between the lugs 8 and 9 on the face 23 of the base-plate 10, is provided with projecting pieces 24 and 25, which are of a shape suitable to engage in the spaces between the teeth of the pinions 11 and 13, for the purpose of locking either pinion to retain the corresponding sash in a fixed position when it is desired to operate the sashes independently. The spindle 2, to which the pinion 12 is secured, is adapted to slide laterally in the lugs 8 and 5 and has its outer end 26 projecting beyond the architrave 27. A slot 28 and a channel 29 are formed in said outer end 26 of said spindle 2, and said channel 29 is adapted to have a spiral spring 30 inserted therein. A key 31, having one of its ends in the slot 28 and pivoted thereto, is adapted to lie in the channel 29. The spring 30 bears upward against the under face of the key, thus tending to force the key upwardly out of the channel. A locking-washer 32, which has a central hole 33 and a slot 34^a therein, communicating with said hole, is secured to the architrave 27, so that its center is in line with the center of the spindle 2 in order that the end 26 of the spindle 2 may be revolved freely in the hole 33 by means of the handle 34. After the handle 34 is in the position illustrated in Fig. 3 and the thumb-screw 35 is screwed home, securing said handle 34 to the spindle 2, the apparatus is unlocked and in a condition to operate the sashes. Fig. 1 illustrates the apparatus in a position whereby when the spindle 2 is revolved by turning the handle 34 both sashes are operated simultaneously to rise or fall, as desired according to the direction in which the handle 34 is turned.

To operate the upper sash 18 independently, (while the lower sash remains in a fixed position,) the spindle 2, with its pinion 12 at-

tached thereto, is pushed inward until the side 36 of the flange 20 touches the face 37 of the pinion 11, the pinion 13 being thus disengaged from the pinion 12, and simultaneously with such disengagement the pinion 13 is engaged and prevented from revolving by the projecting piece 25 on the locking-plate 22, thereby locking the lower sash 19, the said plate 22 having changed its position owing to the flange 20 on the pinion 13 engaging in the slot 21 of the locking-plate 22 and sliding along the face 23 of the base-plate 10 with the pinion 12. The turning of the handle 34 then operates the upper sash in the desired direction. When it is desired to operate the lower sash 19 independently while the upper sash remains in a fixed position, a corresponding process is followed—viz., the spindle 2, with its pinion 12 attached thereto, is withdrawn outward until the face 38 of the flange 20 touches the side 39 of the pinion 13, the pinions 11 and 12 being thus disengaged, while the projecting piece 24 on the locking-plate 22 engages the pinion 11, preventing it revolving and thereby locking the upper sash 18. The turning of the handle then operates the lower sash in the desired direction. When it is desired to prevent the sashes from being opened or closed by hand, the spindle 2 is revolved until the key 31 is in line with the slot 34^a. The handle 34 is then removed, which permits the key 31 under the influence of the spiral spring 30 to engage in the slot 34^a, preventing the rotation of the spindle, and thus retaining the upper and lower sashes in a fixed position.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A sash-fastener consisting of a base-plate having two pinions mounted thereon one at each end thereof, a larger pinion intermediate of the outer two pinions mounted on a sliding spindle and divided into two portions by a central flange each one of said portions being adapted to mesh with a pinion respectively, a slotted locking-plate for said flange provided with projecting pieces adapted to engage said two pinions respectively, and means for rotating and locking said sliding spindle substantially as and for the purposes set forth.

2. A sash-fastener consisting of an upper and lower window-sash having their adjoining side rails each provided with a rack, a pinion meshing with each rack a middle pinion divided into two portions by a central flange mounted on a sliding spindle, said portions being adapted to mesh with said two pinions respectively, a slotted locking-plate for said flange provided with projecting pieces adapted to engage said two pinions respectively, and means for rotating and locking said sliding spindle, substantially as and for the purposes set forth.

3. A sash-fastener consisting of racks secured to the sash, pinions engaging with said racks, a central pinion adapted to engage with the beforementioned pinions to rotate the same, a sliding spindle for said central pinion whereby said pinion may be moved out of engagement with either one of the beforementioned pinions and a locking-plate having a slot therein in which a part of the central pinion engages to move said plate and projecting pieces on said plate adapted to engage with the first-mentioned pinions to lock the same against movement.

4. A sash-fastener consisting of racks secured to the sash, pinions 11 13 engaging with said racks, a central pinion 12 adapted to engage with the pinions 11 13 to rotate the same, a sliding spindle for the pinion 12 whereby said pinion may be moved out of engagement with either one of the pinions 11 13, means for locking the pinions 11 13 against movement and means for preventing movement of the sliding pinion, said means consisting of a key pivoted to the outer end of said spindle, said spindle having a channel in said end in which said key fits, a spring in said channel for forcing the key out of the channel, a washer having a slot therein and secured to the frame, said key engaging in said slot when forced out of the channel and a removable handle having means thereon for keeping the key in its channel, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALFRED REGINALD HARDY.
ROBERT NOBLE ADAMS.

Witnesses:
A. J. PARK,
JOHN RUTHERFORD PARK.