(No Model.) 2 Sheets—Sheet 1.

R. H. WHITE.

WINDOW.

No. 480,682. Patented Aug. 9, 1892.

Fig 2

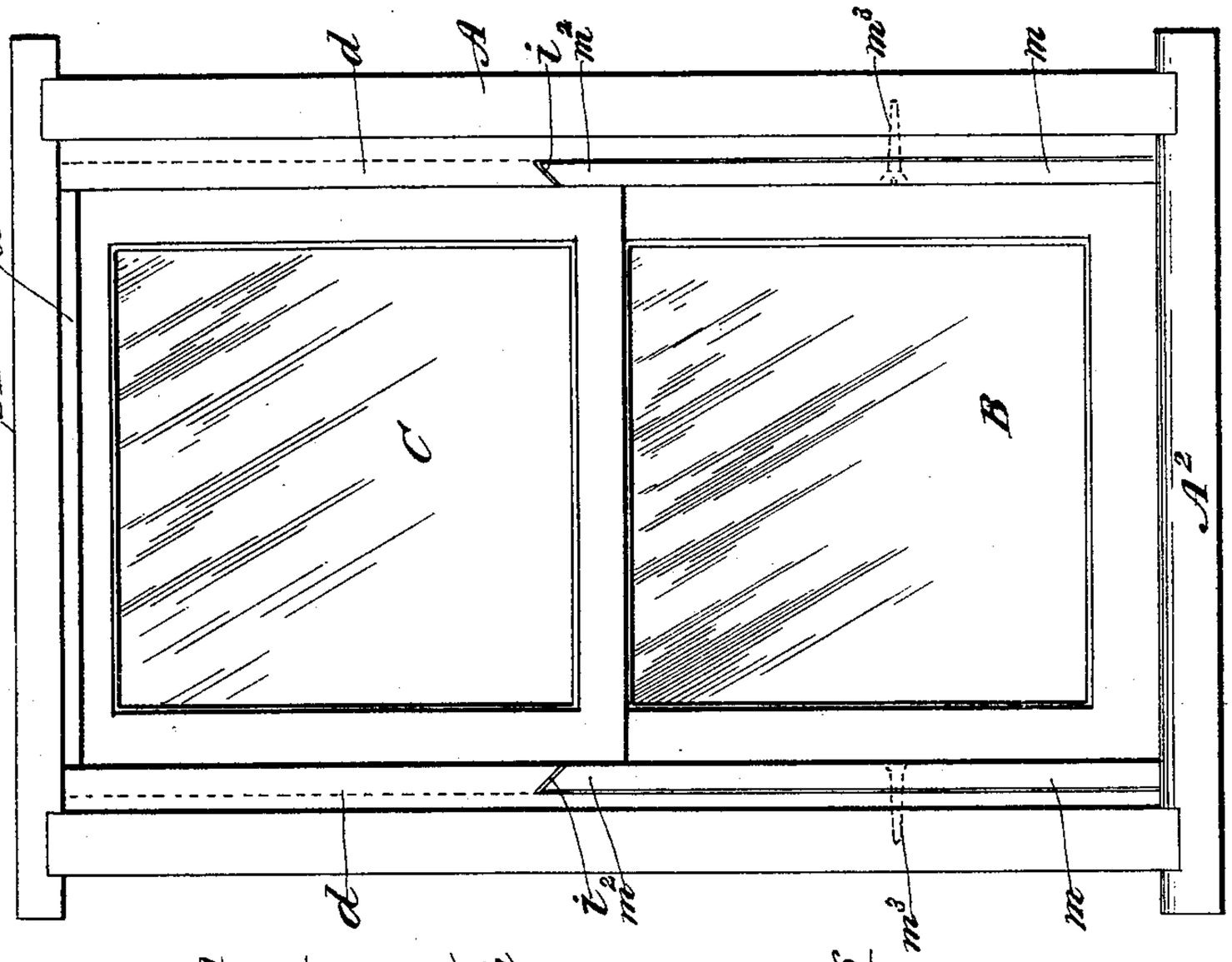
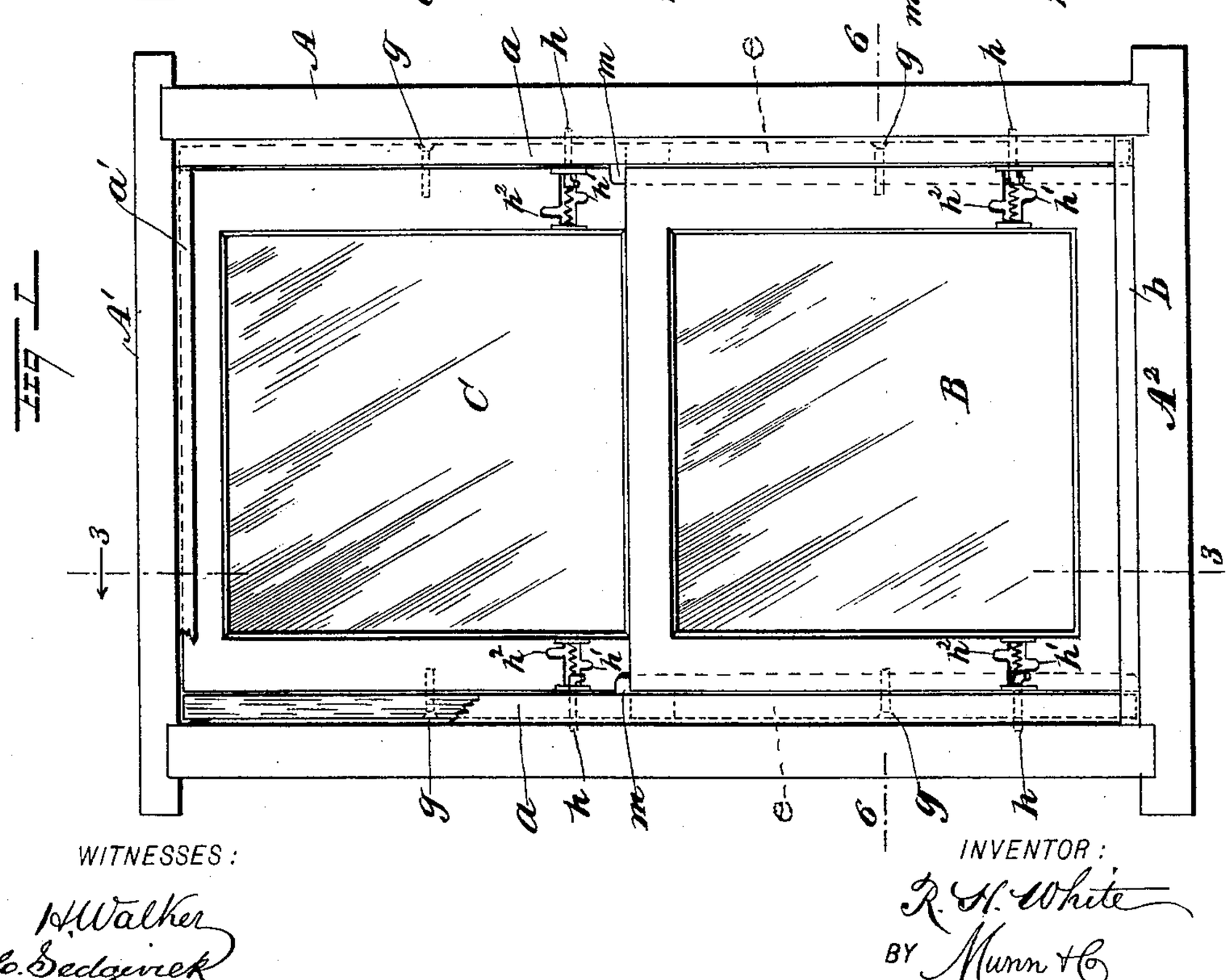


Fig 1



WITNESSES:

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C. Sedgwick

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R. H. White

BY Munn & Co

ATTORNEYS

(No Model.) 2 Sheets—Sheet 2.

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Fig 3

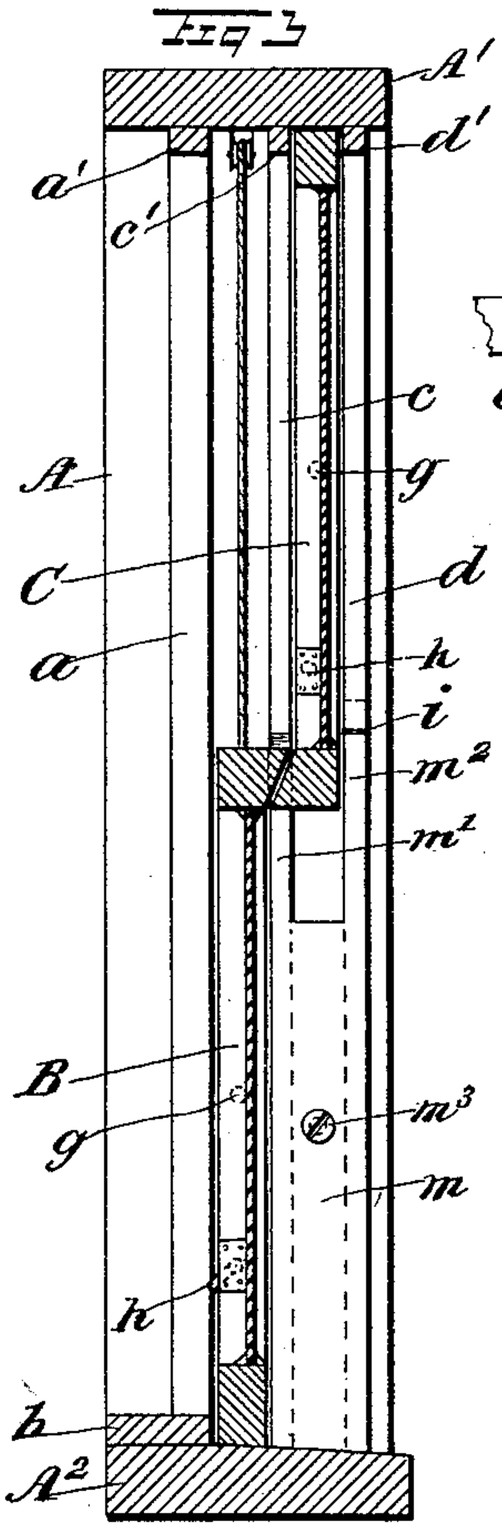


Fig 4

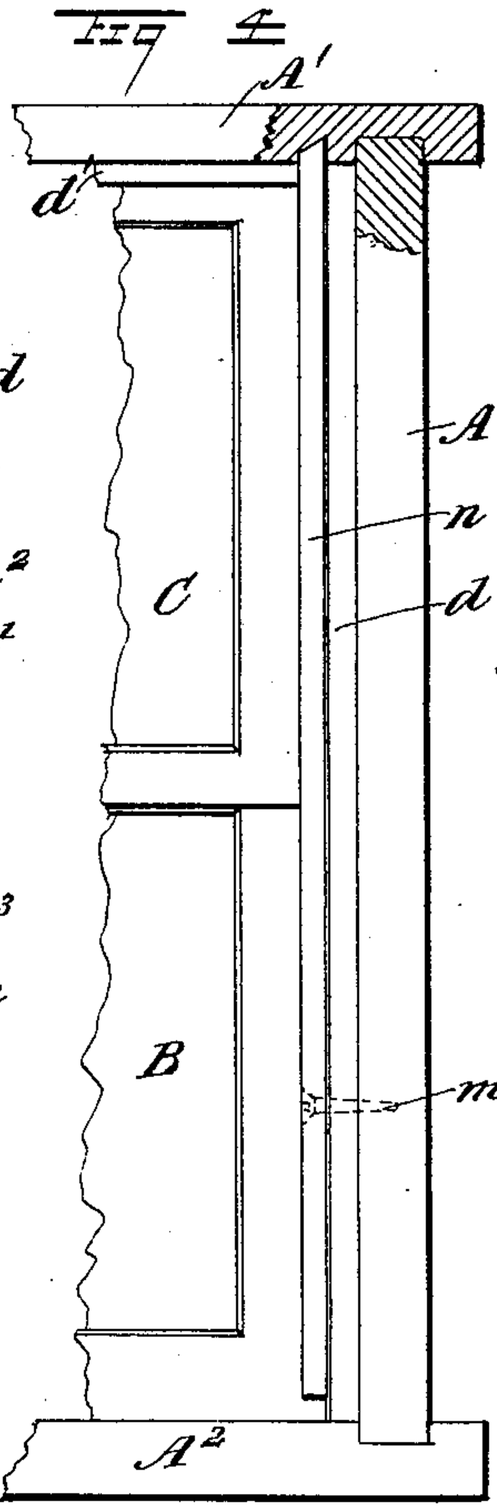


Fig 5

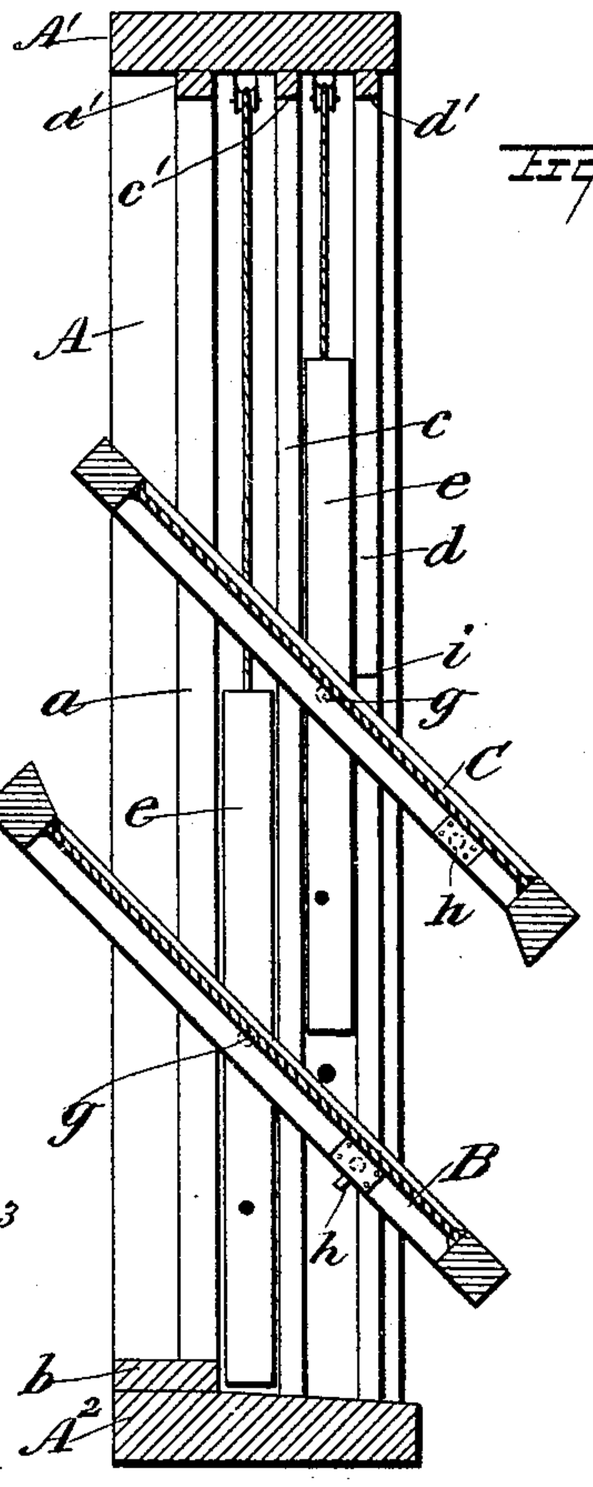


Fig 6

Fig 7

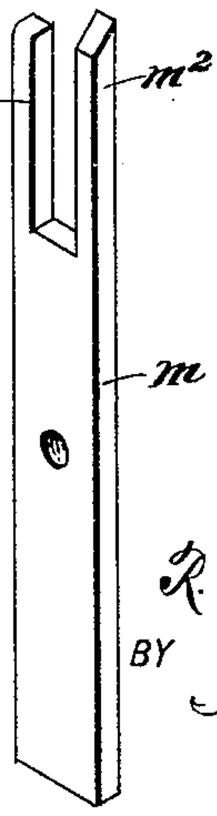
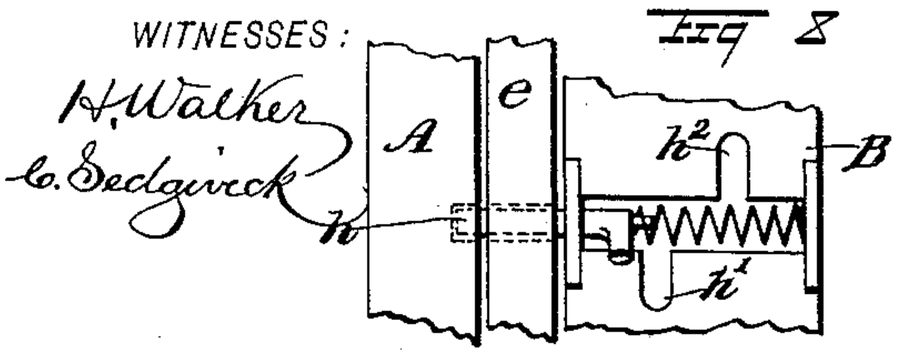


Fig 8



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UNITED STATES PATENT OFFICE.

ROBERT H. WHITE, OF MADISON, INDIANA.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 480,682, dated August 9, 1892.

Application filed December 29, 1891. Serial No. 416,432. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. WHITE, of Madison, in the county of Jefferson and State of Indiana, have invented a new and useful Improvement in Windows, of which the following is a full, clear, and exact description.

My invention relates to improvements in windows of a type in which the sashes are made to swing on pintles, and has for its objects to provide a window with novel, simple, and inexpensive appliances, which will allow the upper and lower sash to be separately or together rocked and caused to assume any desired angle of inclination from a vertical plane, and, furthermore, which will permit the sashes to be slid in their guides while inclined or when given a vertical position, and also furnish means to lock both sashes in closed adjustment.

With these objects in view my invention consists in the construction of parts and their combination, as is hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a rear elevation showing the inner side of a window having the improvements. Fig. 2 is a front elevation of a window provided with the improvements. Fig. 3 is a vertical section taken on the line 3 3 in Fig. 1. Fig. 4 is a broken partly-sectional front elevation of a window, showing a slight change of construction in a feature of the invention. Fig. 5 is a vertical section of a window having the invention embodied, showing the sashes inclined. Fig. 6 is a sectional plan view taken on the line 6 6 in Fig. 1. Fig. 7 is a perspective view of a detachable joint-closing strip, which in duplicate forms a part of the improvement; and Fig. 8 is a broken rear view, enlarged, of a sash-holding device that is a feature of the invention.

A represents a window-casement of usual form, which, if preferred, may be boxed on the sides to receive sash-weights, if the sashes are to be balanced.

The side pieces of the window-casement A are furnished with two opposite vertical bead-strips *a*, that are secured a proper distance from the inner edges of the same and parallel thereto on the inner surface. The bead-strips *a* are joined at their upper ends by a transverse bead-strip *a'*, which is affixed upon the cap-piece A' of the casement, and upon the sub-sill A^2 a joint-closing strip *b* is secured, which has its ends in contact with the casement sides and bead-strips *a*. Preferably the closing-strip *b* is given a sufficient width to form a facing for the sub-sill A^2. Similar parting-strips *c* are provided, which are secured to the casement sides parallel to and at a proper distance from the bead-strips *a*. Two guide-strips *d* are attached to the inner surfaces of the casement sides parallel with the parting-strips *c*, the preferred form of which guide-strips (shown in Fig. 2) will be further described.

B C indicate, respectively, the lower and upper window-sashes, which are of any preferred style of construction and are proportioned to suit the dimensions of the casement A. The sash-frames are of such a reduced width as will prevent them from engaging the vertical strips *a c*, and to adapt them for such an engagement a pair of similar slide-blocks *e* is furnished for each sash. The blocks *e* are equal in length to the height of the sash they are connected to and loosely fill the vertical channels between the strips *a c d*. Each pair of slide-blocks for a sash is pivoted thereto near their centers of length and the centers of height of the sashes by pintle-bolts *g*. (See Figs. 1 and 6.) The combined width of the slide-blocks *e* and sashes they are attached to should be slightly less than the width between the inner faces of the casement side pieces, so that the sashes and blocks when in place will be permitted to move freely in a vertical plane, and as the sashes are adapted to clear the guide-strips and parting-strips it will be evident that they may also be rocked upon their pintle-bolts *g*.

It is essential that provision be made to lock the sashes B C to the slide-blocks *e* when the sashes are to be slid vertically to open and close the window, and also to adjustably fasten the sashes in a closed position. To these ends the locking-bolts *h* are provided. (See Figs. 1 and 8.) The locking-bolts are used in pairs for each sash, and are preferably located thereon near the lower edges upon the side rails of the sash-frames. The bolts *h* are of

like construction, and, as indicated in the drawings, each consists of a cylindrical body with a lateral limb on the inner end.

There are opposite recesses formed in the inner faces of the side rails of the sash-frames B C, preferably near their lower ends, which recesses are of sufficient depth and length to allow a part of the bolts *h* to lie in them and be longitudinally moved.

At points which align with the recesses mentioned perforations are formed in the slide-blocks *e*, and similar perforations are produced in the side pieces of the casement A, that register with the holes in the slide-blocks when the window-sashes are completely closed, which provision will allow the bolts *h* to enter the casement and secure the sashes in a closed condition. Preferably the locking-bolts *h* are furnished with springs that normally project them toward the casement. Two notches h' h^2 are formed in each bolt-recess at right angles to it, which notches will receive the limbs of the bolts *h* and hold the latter retracted, the first notch h' being adapted to retain the bolt-body withdrawn from the casement and the other notch h^2 holds the bolt retracted from the slide-block also, the latter adjustment allowing the sashes to rock on their pintle-bolts.

The guide-strips *d*, that are located on the casement side pieces so as to loosely engage the exterior surface of the upper sash C, are of sufficient width to cover the joints between the slide-blocks *e* and the sash C nearly the entire length of the latter when it is closed completely, as shown in Fig. 2. From the point *i* on each guide-strip *d* these strips are reduced in width, there being a downwardly and inwardly sloping shoulder produced at said points, and below them the inner edges of the guide-strips are made to align with the corresponding edges of the bead-strips *a* and parting-strips *c*, the shoulders *i* being preferably located near the lower rail of the top sash when the latter is in a closed condition.

As the described construction of the guide-strips *d* and the parting-strips *c* will expose the joints between the slide-blocks *e* and sashes they are pivoted upon below the sloping shoulders *i* of the guide-strips, provision is made to stop these crevices, the preferred means consisting of the joint-closing strips *m*. (Shown detached in Fig. 7.) The pieces *m* are represented in position on the window-casement in Figs. 1, 2, 3, and 6, and consist of duplicate elongated rectangular pieces having a width equal to the joint thickness of the lower sash B and strips *a c*, so that the closing-strips will align their edges with the outer edges of the strips *a c* when imposed thereon, as shown in Fig. 6. A longitudinal slot is cut in each closing-strip *m* from the upper end, which slots extend an equal distance and are formed centrally of the width, so as to produce two parallel limbs m' m^2. The upper ends of the limbs m^2 are sloped to fit the diagonal shoulders *i* on the guide-strips *d*, and the length of the strips *m* is proportioned to the distance from said shoulders to the sub-sill A^2, so that the closing-strips *m* when inserted, as represented in Figs. 2 and 3, will fit tightly, a single screw m^3 in each strip serving to retain them clamped upon the parting-strips *c* and bead-strips *d* when said screws are inserted in the sides of the casement.

It will be seen that the closing-strips *m* when in position will allow the upper sash C to be lowered within the slots in said strips until the lower rail of the sash impinges on the lower walls of the slots, so that ventilation from above the sash is provided when it is in lowered adjustment, the length of the slots limiting the opening above the upper sash.

In use when it is desired to rock the sashes B C, as indicated in Fig. 5, the closing-strips *m* are removed, which will allow the lower sash to be swung if the locking-bolts *h* are first adjusted to release the connection of said bolts with the slide-blocks *e*. By a similar adjustment of the locking-bolts on the upper sash C it may also be rocked and made to assume any desired degree of inclination after it has been lowered sufficiently to locate its pintle-bolts *g* slightly below the shoulders *i* on the guide-strips *d*.

If it is desired to have the upper sash C held so as to be permitted to rock without lowering it farther than to clear the top bead-strip a', the closing-strips are made, as shown in Fig. 4, at *n*. In this case the strips named are extended the full height of the window-casement within and the slots in the same made to exceed in length that of the upper sash C. Mortises or sockets are formed in the cap-piece A′ to receive the upper ends of the limbs on the closing-strips, which latter are made to engage their top ends with the sockets or mortises when in position.

To introduce the closing-strips *n* within the casement A, the upper sash C is first rocked so that the strips may be slid upon it and their limbs embrace the side rails of the sash. The sash and closing-strips are then jointly vibrated into a vertical position and the upper ends of the strips are forced into the mortises or sockets in the cap-piece A′, the inclined walls of the sockets or mortises engaging the sloped side of the upper ends of the strips and causing a hugging of the upper ends of said limbs against the edges of the bead-strips *d* and parting-strips *c*, whereupon the lower parts of the strips *n* are tightly secured to close the joints by means of the screws m^3.

When the closing-strips *n* are provided, the guide-strips *d* are made of a breadth equal throughout their length to the projection of the parting-strips *c* and bead-strips *a* from the sides of the casement, so that their removal will allow the upper sash to swing on its pivot-supports if the locking-bolts *h* are

withdrawn from the slide-blocks *e* and the sash slid down far enough to release it from contact with the transverse bead-strip *a'*.

It should be explained that preferably there are transverse strips *c'* and *d'* secured on the cap-piece A' to join the upper ends of the strips *c* and *d*, which will close the joint between the cap-piece and upper sash and form a proper finish for the window at this point.

It will be evident that the improvement may be applied to Gothic or other arched-top window-frames and operate efficiently, the slide-blocks in such a form of upper sash being applied only upon the parallel portions of the side edges of the frame.

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

1. In a window, the combination, with a casement, an upper and lower sash, and guiding-strips on the casement, of slide-blocks pivoted on the side edges of the sashes, closing-strips slotted to embrace the upper sash, and means for removably securing the closing-strips against the guiding-strips, substantially as described.

2. In a window, the combination, with a casement, guiding-strips on each side of the inner walls of the casement, and sliding blocks for each side of the casement and lying within the spaces between the guiding-strips and flush with their outer edges, of a spring-pressed locking-bolt on each side rail of the sashes, adapted to lock the sashes to the slide-blocks and the slide-blocks to the casement, closing-strips slotted to embrace the upper sash, and means for securing the closing-strips on the guiding-strips and to the casement, substantially as described.

3. In a window having an upper and a lower sash adapted to slide vertically and rock in the casement by a pivoted engagement with slide-blocks traversing channels between guiding-strips on the sides of the casement, and closing-strips embracing the upper sash and having slotted upper portions and removably secured to the sides of the casement on the guiding-strips, substantially as described.

4. In a window having an upper and lower sash held to slide and adapted to rock on slide-blocks movable between guiding-strips on the casement, and closing-strips secured to the casement imposed on the guiding-strips and slotted to embrace the upper sash and adapted to permit said sash to be lowered to a limited degree, substantially as described.

ROBERT H. WHITE.

Witnesses:
C. A. BOWMAN,
CHARLES BARNHARDT.