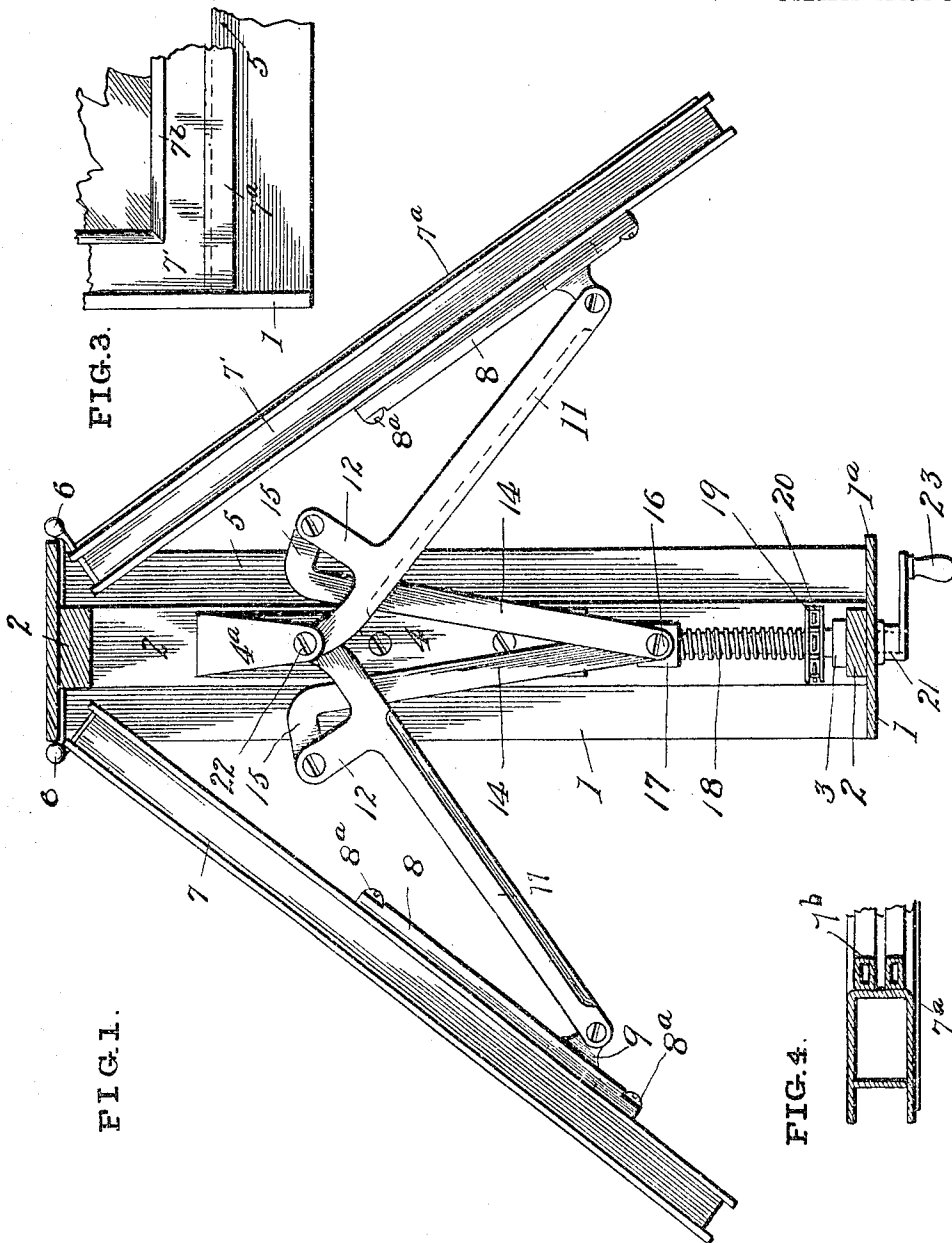


926,094.



WITNESSES:

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D. L. Smith

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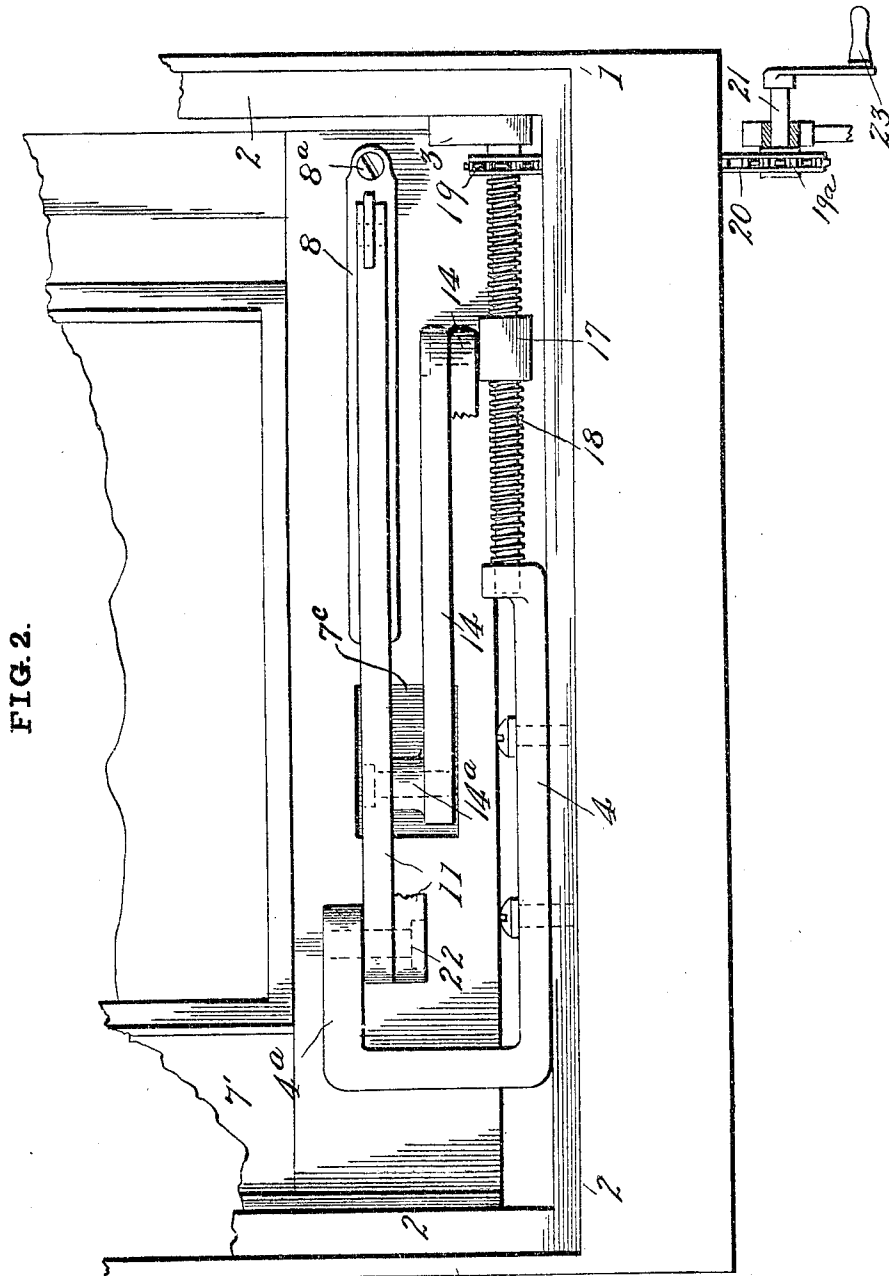


FIG. 2.

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UNITED STATES PATENT OFFICE.

RICHARD B. BROWNE, OF MASPETH, NEW YORK.

SASH-OPERATING MECHANISM.

No. 926,094.

Specification of Letters Patent.

Patented June 29, 1909.

Application filed May 29, 1905. Serial No. 262,955.

To all whom it may concern:

Be it known that I, RICHARD B. BROWNE, a citizen of the United States, and a resident of Maspeth, State of New York, have invented certain new and useful Improvements in Sash-Operating Mechanism, of which the following is a specification.

My invention relates to window sashes, and more particularly to double sashes carrying two panes of glass separated from each other and confining between them a body of air which acts as an efficient insulator of heat, and prevents the rapid radiation of heat which occurs through a single glass in cold weather.

It also relates to certain improved means for operating such double sashes, the advantages thereof being fully pointed out hereinafter in connection with a detailed description of a structure exemplifying one form of my invention, having reference to the accompanying drawings, in which—

Figure 1 is a sectional plan view of a preferred form thereof Fig. 2, a side elevation of the same with one of the sashes and a portion of the operating mechanism removed, Fig. 3, a detail view of a portion of the frame and sashes, and Fig. 4, a cross sectional view through a member of one of the sashes, showing its general construction.

Fig. 1 represents a plan view of a window casing which I prefer to construct of metal, with the top plate removed so as to show the operating mechanism. Referring to this figure, 1 is a metallic window casing. 2 is an inwardly-projecting portion of the casing, formed with a flat inward face paralleling the sides of the casing, and may be integral therewith or attached thereto in any suitable manner. 5 is a raised portion of the casing projecting across its lower outer edge, and rising above the raised portion 2. 6 6 are hinges secured to one side of the casing, preferably two or more on either side of the raised portion 2, supporting the swinging sashes 7 7', of which 7 is the inner and 7' the outer sash. These sashes may be constructed of sheet metal of various cross sections, but in the preferred construction have a general rectangular section with side pieces projecting outward beyond the body of the sashes, as shown in Fig. 4, which may be machined to form a close fit with the casing. Other material and other forms of construction

may, however, be used for either the sashes 55 or the casing, or both.

It will be observed that the outer sash is constructed to swing outward and the inner sash to swing inward.

Secured to the inner lower portion of each sash is a guide piece 8, which may be of a tubular shape slotted on one side and secured to the sash by screws 8^a. Within these guide pieces are loosely placed slides 9, each having a flat projecting portion extending through said slots, and an enlarged portion within the tubular ways 8.

The slotted end of a lever 11 embraces the projecting portion of each of said slides 9, and is pivotally pinned thereto. These levers 11 converge toward the center of the casing where they are pivotally connected together and to a fixed point by means of a bracket 4, having a hook shaped member 4^a through which the pivot pin 22, securing said levers 11, passes. Each of the levers 11 is provided with an outwardly extending short arm 12, to the end of which is pivoted one end of a link 14. There is one of these links 14 for each lever.

Each link has a long straight portion and a short portion 15 disposed at right angles thereto, at the end of which short portion connection with the corresponding lever 11 is made. The other end of each of these links 14 is pivotally connected at the point 16 to the nut 17. The end of the bracket 4 farthest from the hinges 6 is turned upward and forms a support or journal for one end of a screw 18, which passes through the nut 17, and is supported at the other end in a plate 3, secured to the casing. A sprocket 19 is mounted on the screw, and over it runs a chain 20, which passes through slots in the casing to a second sprocket 19^a, which may be mounted in the casing or at any desired place distant therefrom.

As best seen in Fig. 3, a downwardly extending flange 7^a is secured to the outside lower edge of the outer sash, and the inner edge of the lower portion of the outer sash is so designed as in closing to pass above the raised portion 5 of the casing, while the flange referred to fits snugly against it on the outside, serving to exclude air and moisture.

In Fig. 1 the sashes are shown about half open. If it is desired to close them a crank 23, (which may be fixed to or removable

from the shaft of the sprocket 19^a) is turned in a right-hand direction, thereby, through the screw 18, drawing the nut 17 toward the crank, through the link 14, pulling the outer ends of levers 11 toward the crank, and through the slides 9 moving in the guides 8, pulling the sashes together and into the casing. When the sashes are fully closed the levers 11 and links 14 are folded closely together in the small space between the sashes. In order that this may be accomplished without interference, as best seen in Fig. 2, the lever 11 for the outer sash is pivoted to the bracket 4 above the lever for the inner sash.

The link 14 corresponding to the outer sash is provided at the end of its short arm with an upwardly-extending shoulder 14^a through which connection is made with the corresponding lever. This affords a space equal to the thickness of one of the operating members between the lever and the link referred to. In Fig. 2 the link and lever belonging to the inner sash are shown broken away to afford a clearer view of the mechanism, but when the sashes are fully closed it will be apparent that the lever 11 of the inner sash will lie between the lever 11 and the link 14 of the outer sash, and that the link of the inner sash will lie beneath the link 14 of the outer sash.

When the sashes are fully closed the arms 12 of the levers 11 project outward somewhat beyond the line of the sashes. To accommodate these projections holes 7^c are cut in the sashes of sufficient width to allow these members to clear the sashes in opening the same.

To open the sashes the crank 23 is turned in the left hand direction.

The interior edges of the sashes are provided with cleats 7^b for securing the glasses. In each sash a double row of cleats is provided along the inner edge, affording a space between them into which the glass fits. For convenience the outer cleat of each sash is permanently fixed thereto and the inner cleats may be screwed on so that they may be readily removed for placing the glass from the inside, and readily secured in place.

The advantages of this construction are many. The operating mechanism comprises an automatic lock, so that when the sashes are left in any position, they can not be moved therefrom by manipulation of any portion of the mechanism except the screw 18. With the sashes fully closed this affords a most efficient protection against the opening of the sashes from without. It also prevents the sashes from being affected by the wind, and this without necessitating any attention to latching or securing the same in position, which is taken care of automatically by the screw operating mechanism described. A further advantage is that these sashes may be placed in ordinarily inacces-

sible positions, such for example, as in walls at great elevation above floors in public buildings. When so placed the lower sprocket 19^a may be brought down to any convenient position within easy reach.

While I show my invention as applied to a double sash, it will be obvious that by omitting one sash and the lever 11 and link 14 corresponding thereto, the other sash may be operated and the advantages above described obtained with the remaining portion of the mechanism. It should be understood that I do not limit myself to the exemplifying construction shown and described, nor to details of form, material, fastenings or connections, but that I claim all variations thereof not departing from the spirit of my invention.

I claim:

1. The combination of a casing, a pair of sashes hinged thereto at the same edge thereof, a screw, a nut thereon, a lever for each sash having a slidable, pivotal connection therewith, a fixed pivotal connection for said levers at the same point in the casing, two links, one pivoted to each of said levers, and each pivoted to said nut, and means for rotating said screw.

2. The combination of a casing, two sashes hinged therein at the same side, two levers pivoted at a fixed point in the casing and one connected to each sash by means of a slider, links pivoted to the levers and a reciprocating member pivoted to both links by means of which the sashes are operated.

3. The combination of a casing, two sashes hinged therein at the same side and sash operating mechanism between the sashes including two levers pivoted together at a fixed point in the casing and at their other ends slidably pivoted to the sashes, the lever being provided with outwardly projecting offset portions, links connected to the offset portions of the levers, a nut to which the other ends of the links are connected and a screw mounted in fixed bearings in the casing and engaging the nut.

4. The combination of a casing, two sashes hinged therein at the same side and sash operating mechanism between the sashes including two levers pivoted together at a fixed point in the casing and at their other ends slidably pivoted to the sashes, the levers being provided with outwardly projecting offset portions, the sashes being provided with recesses to accommodate the offset portions when closed, links connected to the offset portions of the levers, a nut to which the other ends of the links are connected and a screw mounted in fixed bearings in the casing and engaging the nut.

5. The combination of a casing, two sashes hinged in the same side thereof and operating mechanism between the sashes including two levers pivoted at a fixed point in the

casing, each lever being provided near its fixed pivot with an outwardly extending arm, a guide-way on each sash, a slider in each guide-way to which one of the levers is pivoted, two links having right-angle end portions connected to the arms of the levers, a nut to which the other ends of the links are pivoted and a screw mounted in fixed bearings and engaging the nut.

6. The combination of a casing, two sashes hinged in the same side thereof and operating mechanism between the sashes including two levers pivoted at a fixed point in the casing, each lever being provided near its fixed pivot with an outwardly extending arm, a guide-way on each sash, a slider in each

guide-way to which one of the levers is pivoted, two links having right-angle end portions connected to the arms of the levers, a nut to which the other ends of the links are pivoted and a screw mounted in fixed bearings and engaging the nut, the sashes being provided with recesses to accommodate the arms of the levers and the angular ends of the links when the sashes are closed.

In testimony whereof I have affixed my signature in the presence of two witnesses.

RICHARD B. BROWNE.

Witnesses:

FRANK ARUNDEL,
J. W. TESKE.