J. HERRMANN.

WINDOW FRAME.

APPLICATION FILED JULY 22, 1909.

950,850.

Patented Mar. 1, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

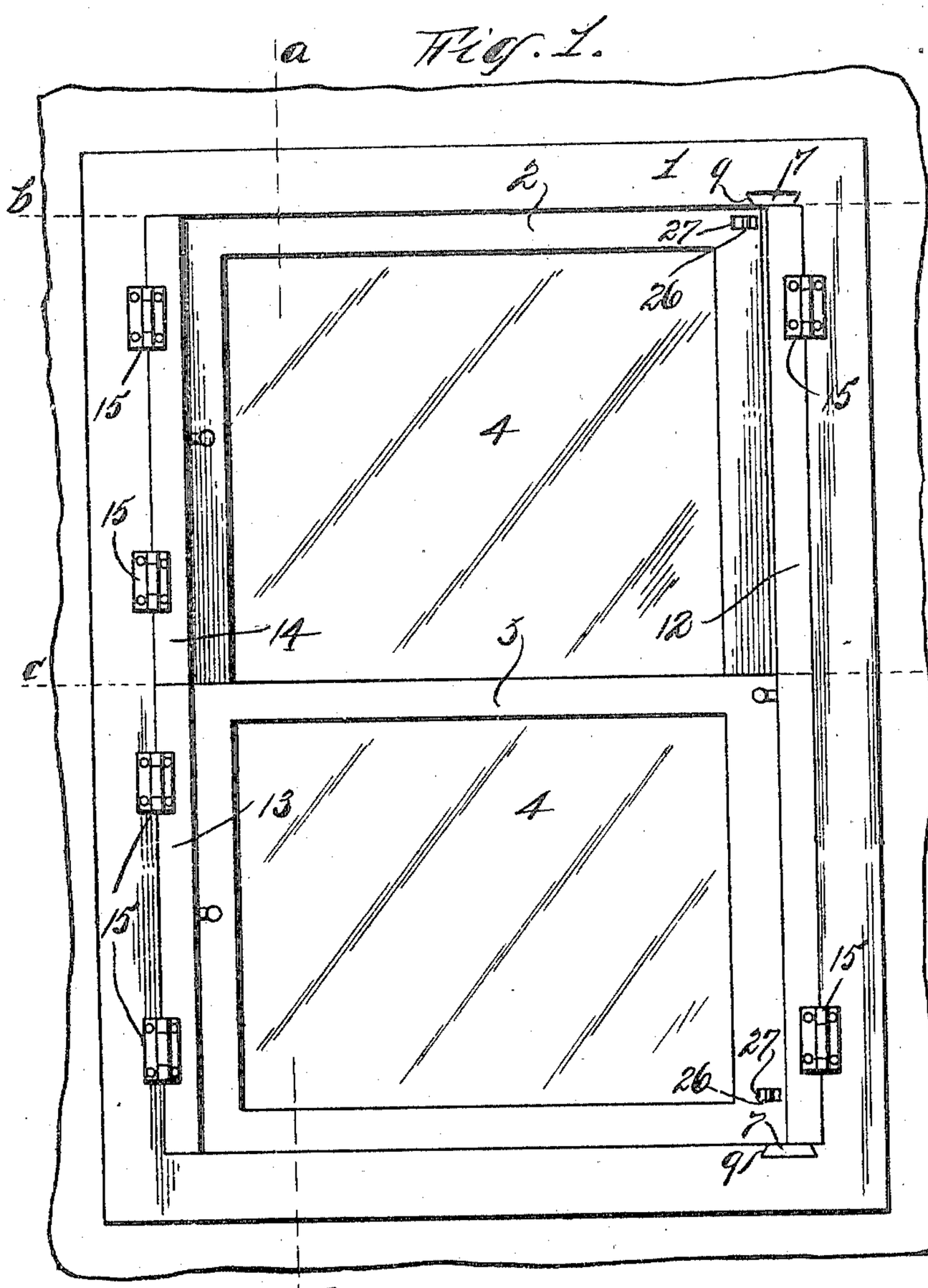

Fig. 2.

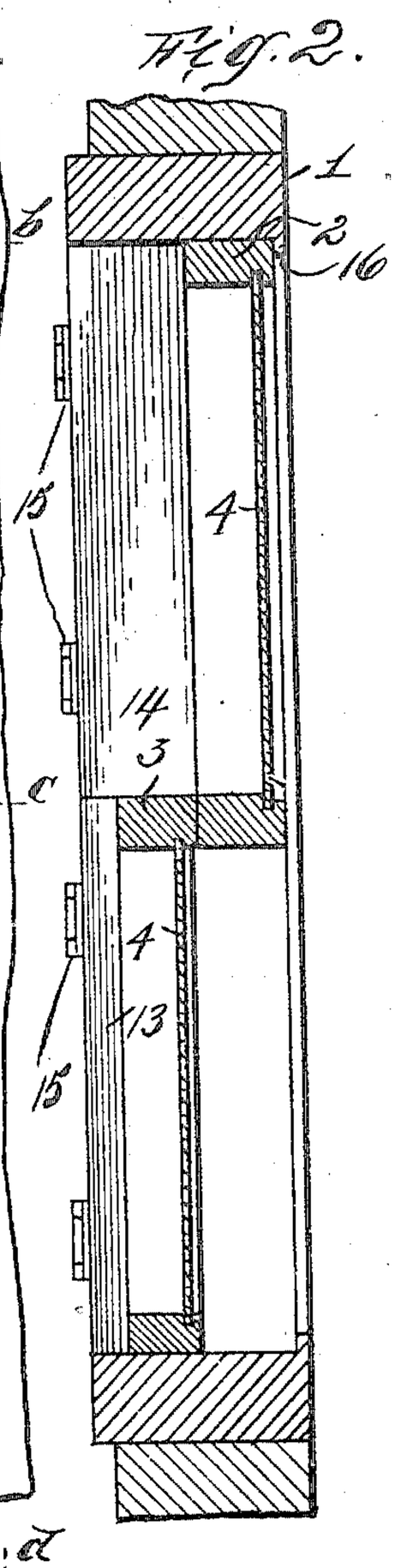

Fig. 3.

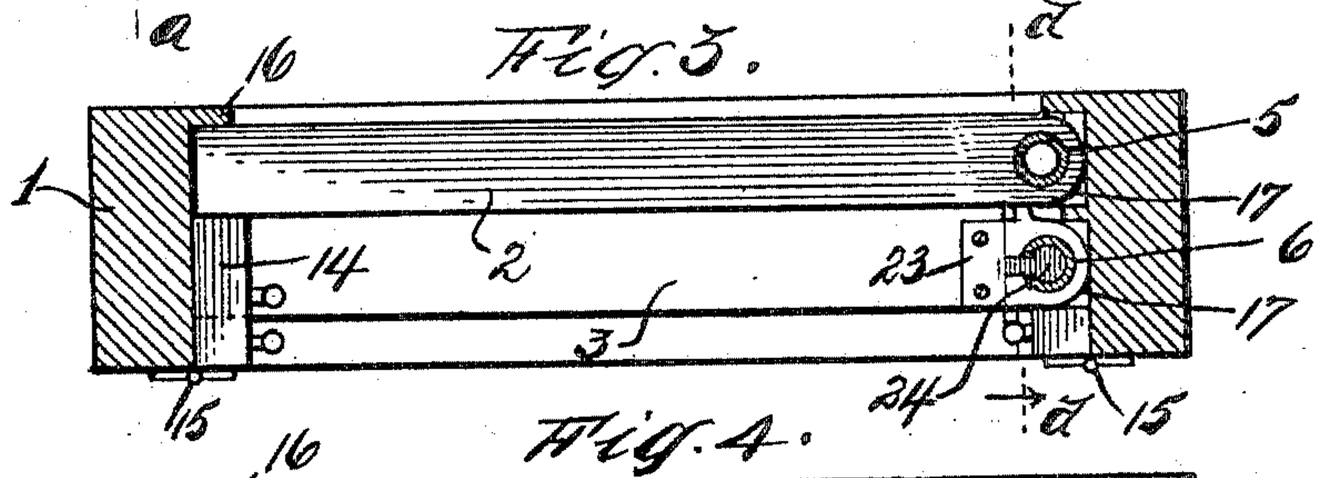

Fig. 4.

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2 SHEETS—SHEET 2.

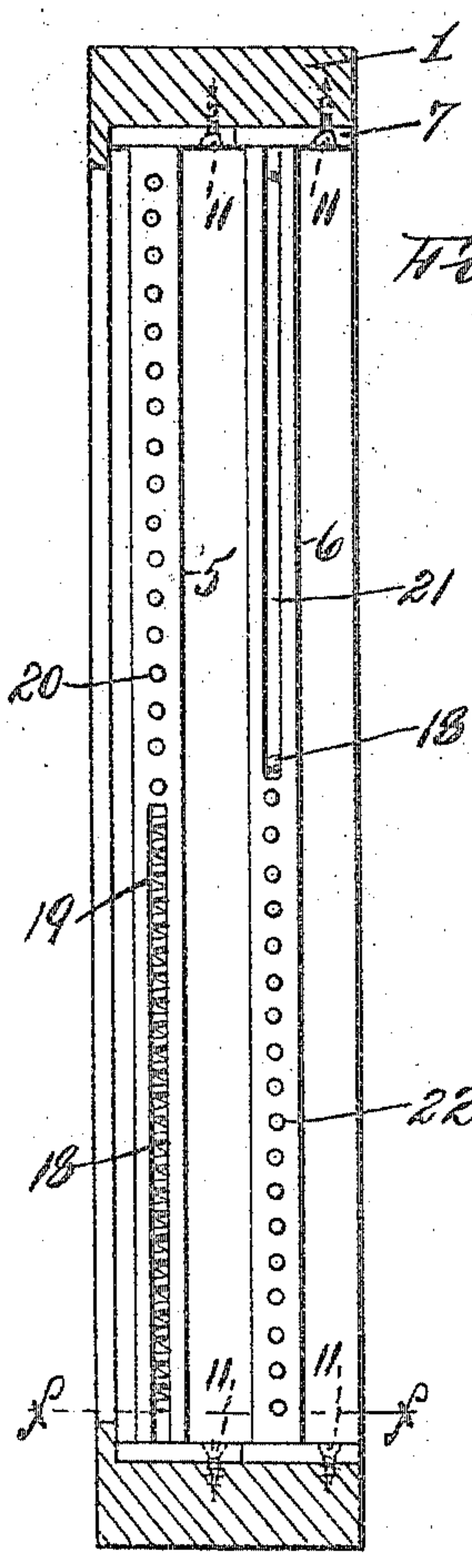

Fig. 5.

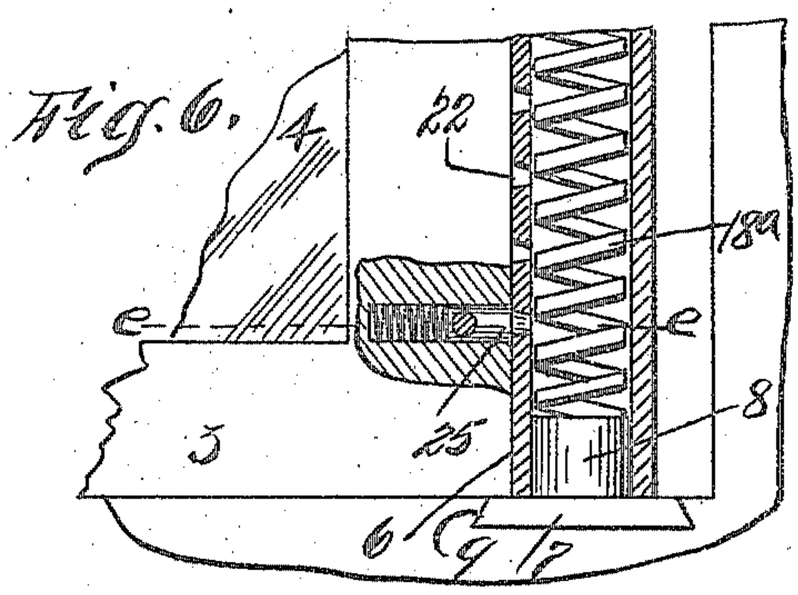

Fig. 6.

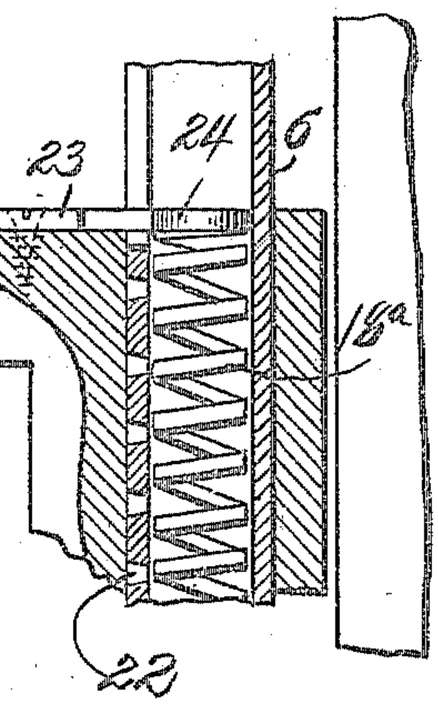

Fig. 7.

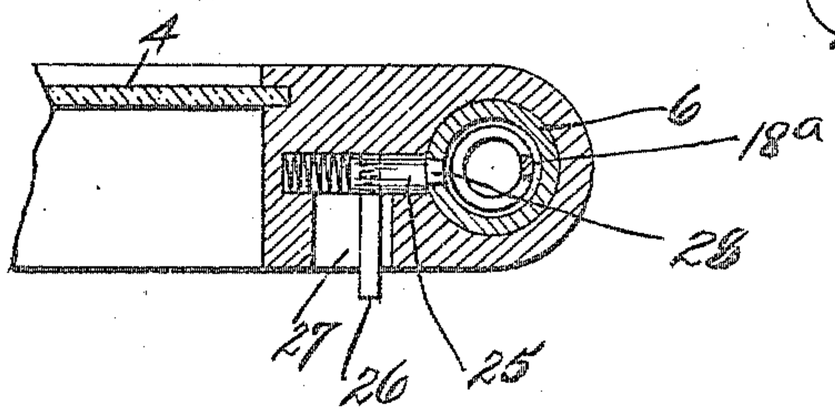

Fig. 8.

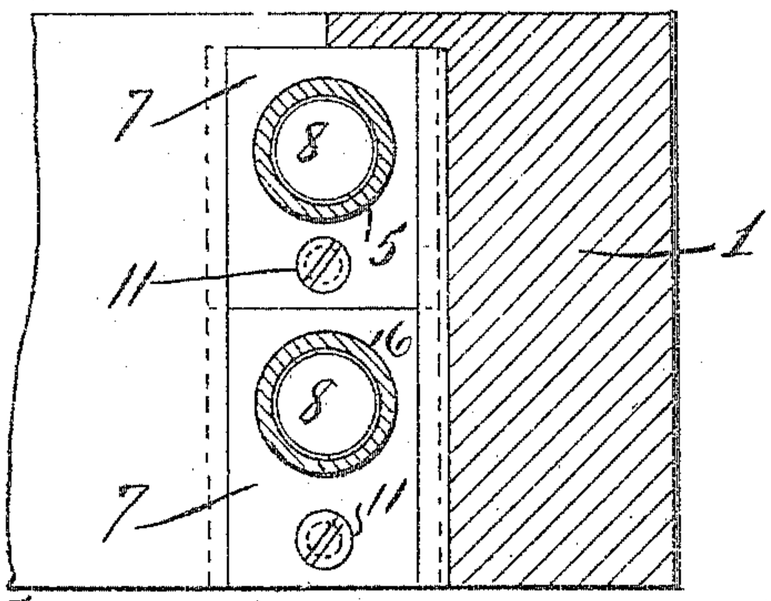

Fig. 9.

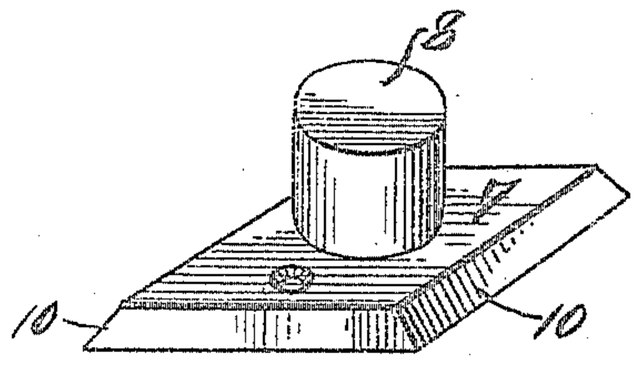

Fig. 10.

Witnesses
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UNITED STATES PATENT OFFICE.

JACOB HERRMANN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO ARTHUR A. CAMERER, OF NEW YORK, N.Y.

WINDOW-FRAME.

950,850. Specification of Letters Patent. Patented Mar. 1, 1910.

Application filed July 22, 1909. Serial No. 508,923.

To all whom it may concern:

Be it known that I, JACOB HERRMANN, a citizen of the United States, residing at the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Window-Frames, of which the following is a clear, full, and exact description.

This invention relates to an improvement in window structures, the object being to provide a window structure that is more easily assembled and disassembled than those commonly used.

To carry out the purpose of this invention, I have provided a window structure, the sashes of which are slidably supported by the window frame and are adapted for removal therefrom, without taking off any of the parts which constitute the said frame.

To adapt the sashes for removal from the frame, or to be swung inwardly, I provide a pivotal connection for the sashes, or rather for each sash, the said pivotal connections being adapted for removal from the frame, hence, when the pivotal connections are removed from the frame, the sashes will also come away from the frame, which will be more fully hereinafter described.

I will now proceed to describe my invention, the novel features of which I will finally claim, reference being had to the accompanying drawings, forming part hereof, wherein:

Figure 1 is a face view of my improved window structure looking from the inside of a room; Fig. 2 is a vertical sectional view thereof, taken on a line *a*—*a* in Fig. 1; Fig. 3 is a cross-sectional plan view taken on a line *b*—*b* in Fig. 1; Fig. 4 is a similar view taken on a line *c*—*c* in Fig. 1; Fig. 5 is a vertical sectional view taken on a line *d*—*d* in Fig. 3, the window sashes being omitted; Fig. 6 is an enlarged fragmentary side elevation, partly in section, of the lower right hand end of the lower window sash, the pivotal support therefor being also indicated; Fig. 7 is a similar view of the upper right hand end of the lower window sash; Fig. 8 is an enlarged sectional plan view taken on a line *e*—*e* in Fig. 6; Fig. 9 is an enlarged sectional plan view taken on a line *f*—*f* in Fig. 5; and Fig. 10 is a perspective view of one of the blocks for the tubes which support one end of the window sashes.

Referring now to the structure herein illustrated, numeral 1 indicates a frame which slidably supports an upper downwardly movable sash 2 and a lower upwardly movable sash 3, the said sashes being provided with a window pane 4. As can be seen in Figs. 3, 4 and 5, I have provided, in this instance, pivotally mounted tubular supports 5 and 6. The support 5 retains the upper sash 2, while the support 6 retains the lower sash 3, as can be seen in Figs. 3 and 4. The supports 5 and 6 pass completely through their respective sashes 2 and 3. To pivotally mount the supports 5 and 6 on the frame 1, I provide blocks 7 which carry studs 8, the said studs being adapted to rotatably support the sash supports 5 and 6.

To removably secure the blocks 7 in the frame 1, I provide the said frame with a dove-tailed groove 9, into which the block 7 is adapted to slide, the blocks 7 being provided with tapered sides 10 adapted to engage the said groove 9. As can be seen in Fig. 1, the top and bottom rails of the frame 1 are each provided with a dove-tailed groove.

To secure the blocks 7 in the groove 9, I provide, in this instance, screws 11. By referring to Figs. 3, 4 and 5 it will be plainly seen that the sashes 2 and 3, which are carried by the supports 5 and 6, may be removed from the frame 1 by removing the screws 11 and then pulling the sashes 2 and 3 and the supports 5 and 6 outwardly. To hold the sashes 2 and 3 in their normal position, that is to say, in a position whereby they may be moved upwardly or downwardly, I pivotally secure to the frame 1 keepers 12, 13 and 14. The pivotal connection, in this instance, comprises hinges 15. In Figs. 1 to 4 inclusive, the keepers are shown in their normal position, or in contact with the sashes, and it is quite apparent that the said sashes can be moved upwardly and downwardly. When the keepers are in the position shown, they form one side of a groove for the sashes; the other side of the said groove comprises a rabbet 16. It will be also seen, by referring to Figs. 1 to 3 inclusive, that the keeper 14 is designed to pass over the top surface of the upper rail of the lower sash 3 and to contact the upper sash 2. While it is essential that the keeper

14 should pass over the lower sash 3 in order to contact the upper sash 2, it also acts to lock the lower sash 3 closed.

By referring to Fig. 3 it will be seen that the right hand end, in this instance, of the sashes 2 and 3 are rounded as at 17 for the purpose of allowing the said sashes to be swung inwardly in order that the glass therein may be cleaned or replaced. Should I desire to swing the sashes inwardly, I swing the keepers 12, 13 and 14 away from the sashes as shown by dotted lines in Fig. 4, thereby removing, so to speak, one side of the grooves which slidably retain the sashes. When the keepers are swung inwardly as above stated, the sashes 2 and 3 can be pulled inwardly, thereby rotating their supports 5 and 6, which, as has hereinbefore been explained, are rotatably supported by the blocks 7.

In order to provide a counter-balance for the sashes, I have placed within the supports 5 and 6 springs 18 and 18ª, respectively, the said springs being in the lower half of the said tubular supports. As can be seen in Fig. 5, the support 5, from the lower end to about the center thereof, is provided with a slot 19 and above the slot 19 with perforations 20. The support 6 is provided with a slot 21 in the upper half thereof and with perforations 22 in the other half thereof. The spring 18 tends by its tension to hold the upper sash 2 up, while the spring 18ª tends to force the lower sash upwardly. In other words, the said springs by their tension act to counter-balance the weight of the sashes, in order that the lower sash 3 can be easily pushed upwardly and the upper sash 2 to be pulled downwardly without having to exert any great amount of force.

In order to provide an abutment for the springs to act against, I provide a plate 23, having a rounded end 24, which is adapted to slidably fit the bore of the tubular support 6, which is clearly shown in Figs. 3 and 7.

The above description refers to the lower sash 3, the upper right hand end of which is provided with the said plate 23, having a rounded end 24, and it will be understood that the lower right hand end of the upper sash will be supplied with a similar plate having a rounded end adapted to act as an abutment for the spring 18.

In order that the sashes may be provided with a device which is adapted to hold them in an open position, I provide the said sashes with a movable spring pressed pin 25, (see Fig. 6) which illustrates the lower right hand corner of the sash 3, the upper right hand corner of the upper sash 2 being likewise supplied with a spring-pressed movable pin. By referring to Fig. 8, it will be seen that the pin 25 is provided with an outwardly extending stud 26, which passes through a slot 27, the inner end of the said pin being provided with a reduced portion 28, which is designed to enter the perforations 22 in the support 6, the locking pin in the sash 2 also being provided with a reduced end which is adapted to enter the perforations 20 in the support 5.

Having now described my invention, what I claim and desire to secure by Letters Patent is:—

1. An improved window structure, comprising a frame, a plurality of sashes carried by said frame, tubular supports for said sashes, said supports being substantially equal in length to the combined height of said sashes, a plurality of independent blocks slidably mounted in said frame, adapted to rotatably retain said tubular supports, whereby the sashes carried thereby may be swung outwardly, a spring within said supports, means carried by said sashes adapted to act as an abutment for said springs, said tubular supports being provided with openings, and pins carried by said sashes adapted to engage the openings in said tubular supports.

2. An improved window structure, comprising a frame, a plurality of sashes carried by said frame, tubular supports for said sashes, provided with longitudinal slots, said supports being substantially equal in length to the combined height of said sashes, a plurality of independent blocks slidably mounted in said frame adapted to rotatably retain said tubular supports, whereby the sashes carried thereby may be swung outwardly, a spring within said supports, a plate carried by each of said sashes having a rounded end adapted to slide within said tubular supports, said tubular supports being provided with openings, and pins carried by said sashes adapted to engage the openings in said tubular supports.

Signed at New York city, N. Y., on this 20th day of July, 1909.

JACOB HERRMANN.

Witnesses:

ARTHUR A. CAMERER,

RUDOLPH A. SELGMANN.