

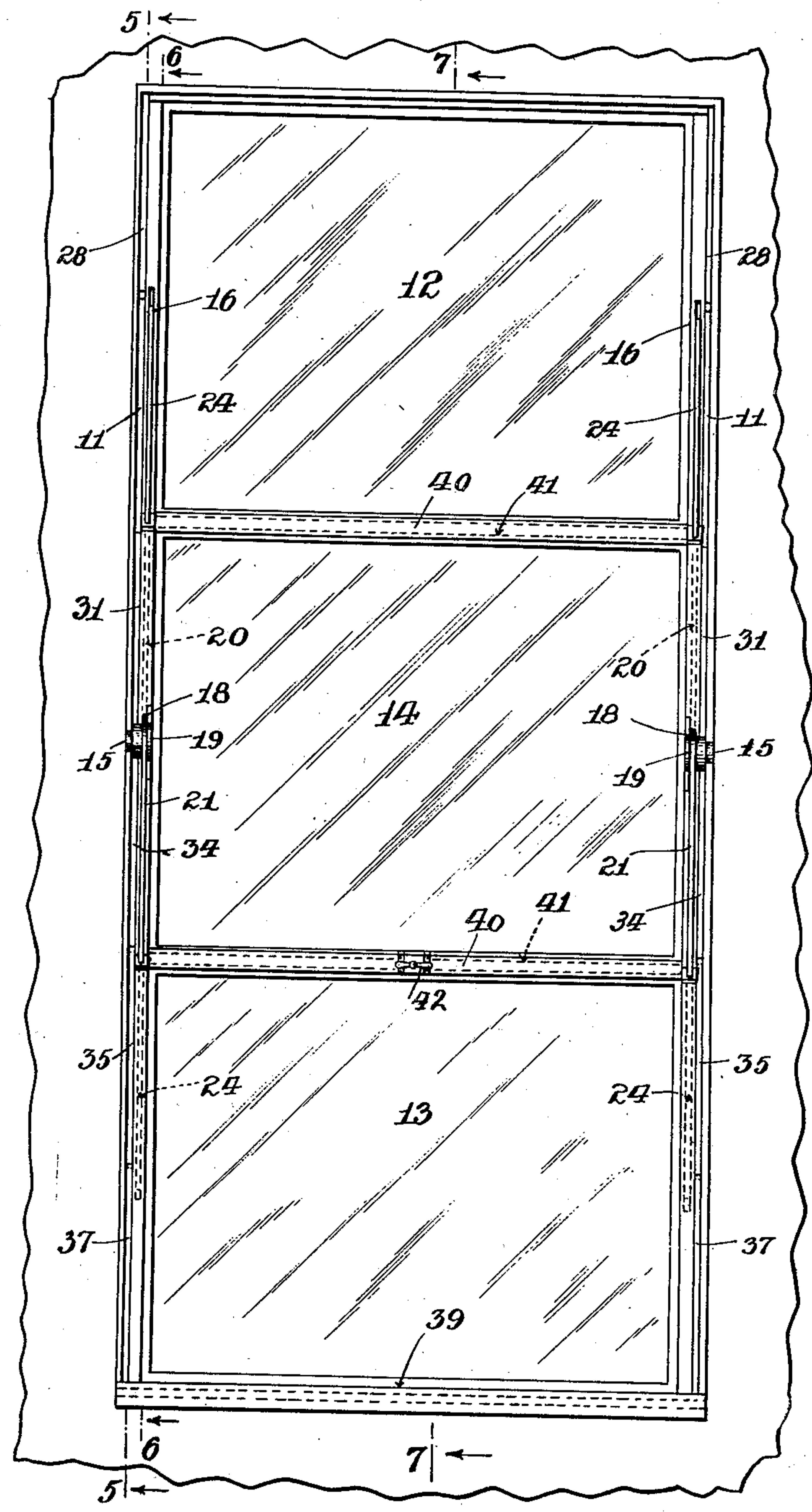
910,857.

N. POULSON.
WINDOW CONSTRUCTION.
APPLICATION FILED JAN. 31, 1906.

Patented Jan. 26, 1909.

4 SHEETS—SHEET 1.

Fig. 1.



Attest:
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4 SHEETS—SHEET 2.

Fig. 3.

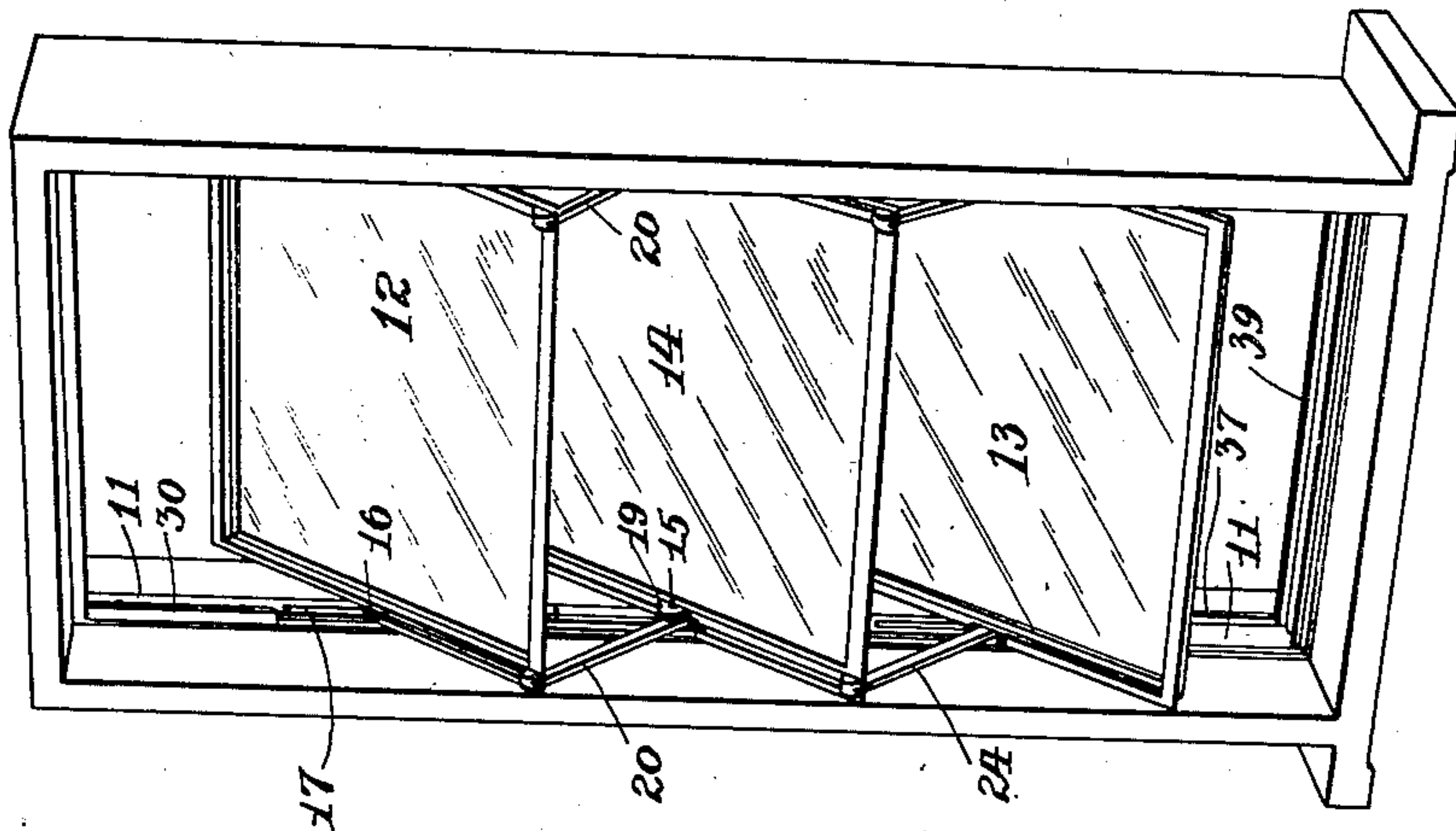
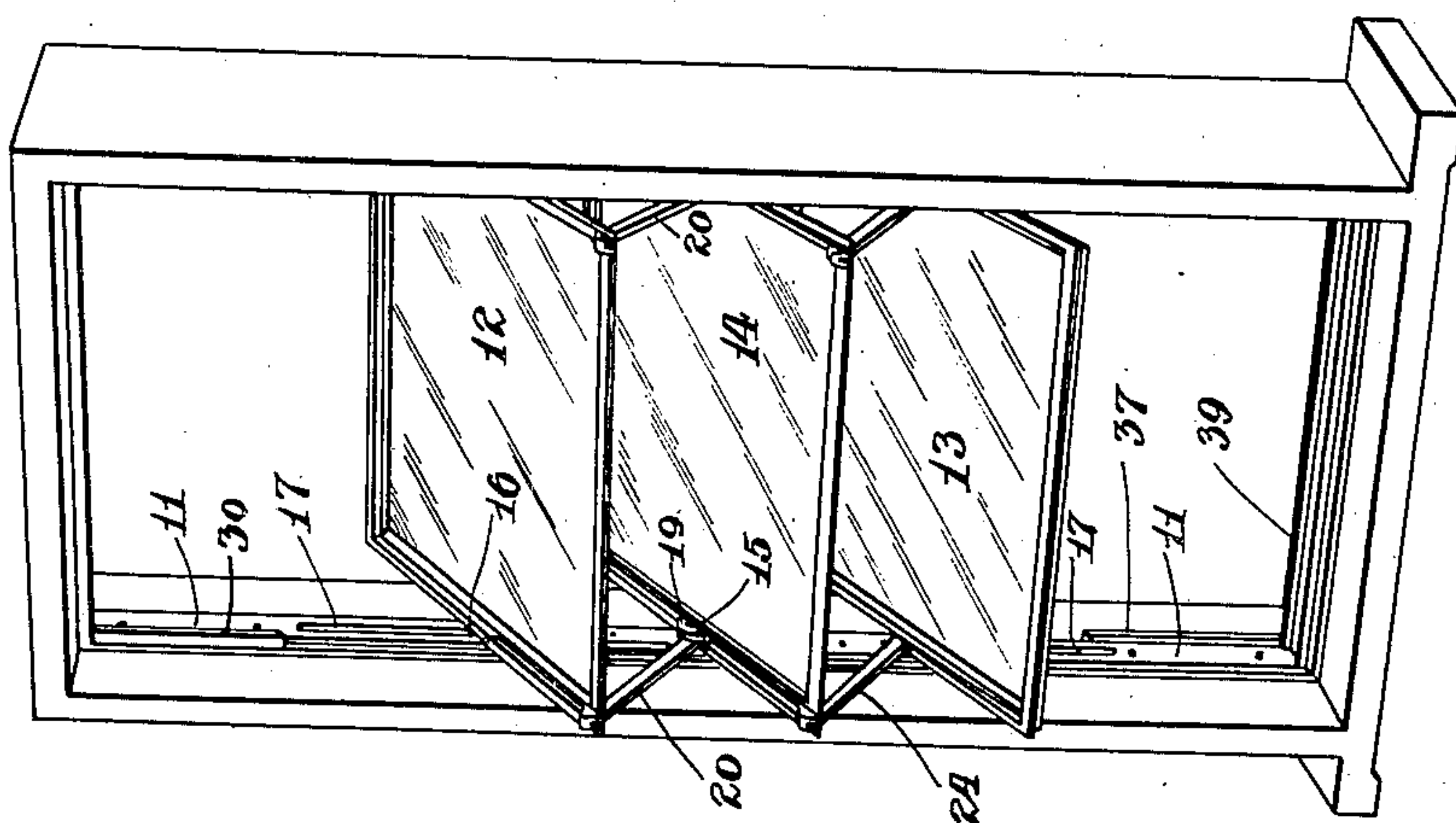


Fig. 2.



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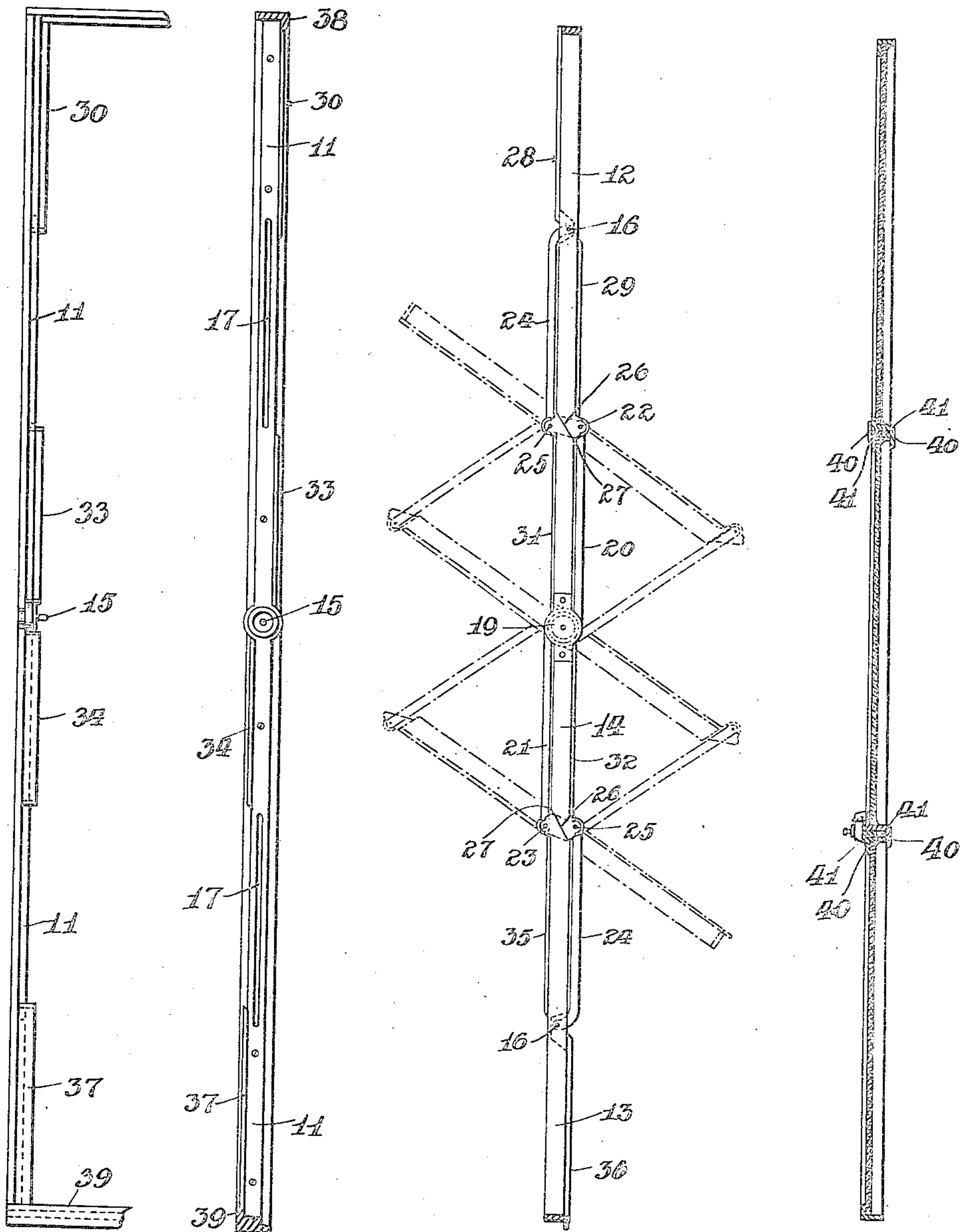
Patented Jan. 26, 1909.

4 SHEETS—SHEET 3.

Fig. 4. Fig. 5.

Fig. 6.

Fig. 7.



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4 SHEETS—SHEET 4.

Fig. 8.

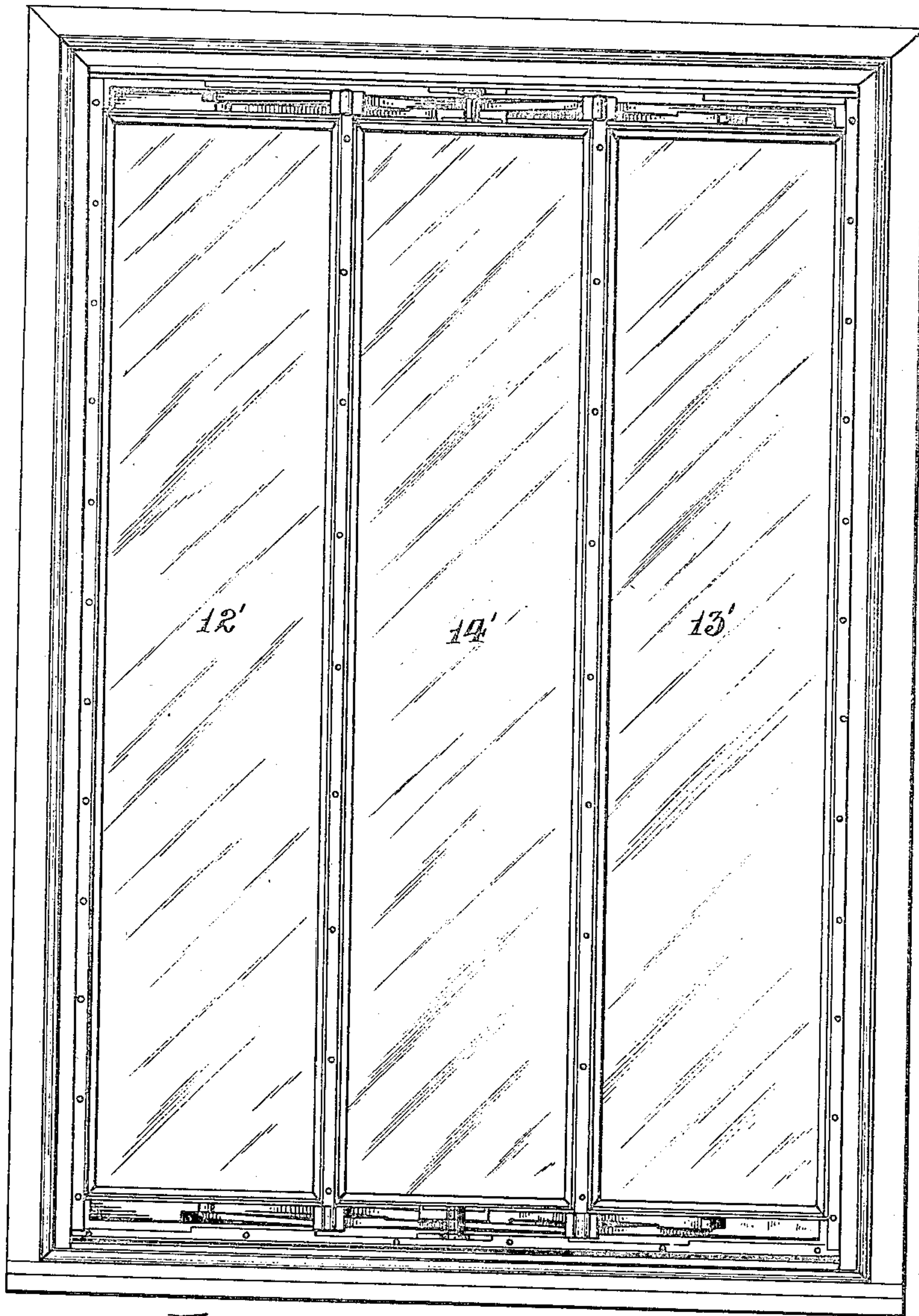
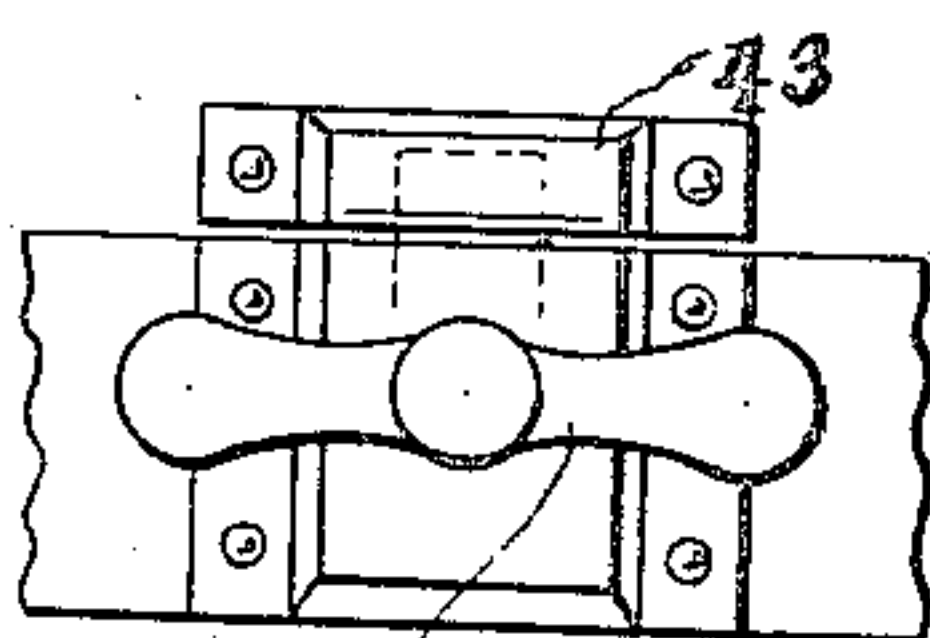
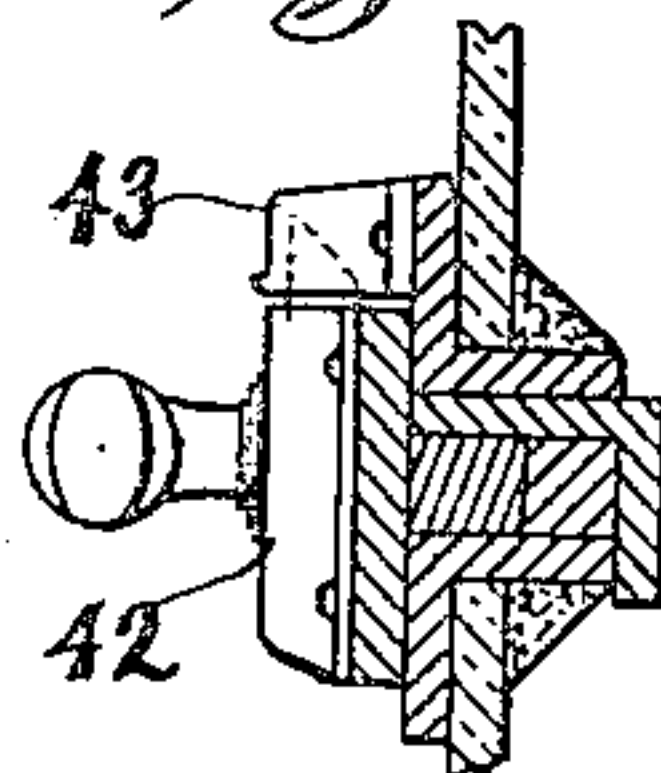


Fig. 9.



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Fig. 10.



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UNITED STATES PATENT OFFICE.

NIELS POULSON, OF BROOKLYN, NEW YORK.

WINDOW CONSTRUCTION.

No. 910,857.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed January 31, 1906. Serial No. 298,843.

To all whom it may concern:

Be it known that I, NIELS POULSON, of Brooklyn, in the county of Kings, and in the State of New York, have invented a certain new and useful Improvement in Window Constructions, and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is an inside elevation of a window embodying my invention; Figs. 2 and 3, are perspective views of Fig. 1, showing the sash in different positions; Fig. 4 is a broken side elevation of the frame shown in Fig. 1; Figs. 5, 6 and 7 are sectional views taken on the lines 5—5, 6—6 and 7—7 of Fig. 1; Fig. 8 is a front perspective view of a window with the sash mounted to turn on vertical axes; and Figs. 9 and 10 are detail views of a latch which may be employed.

The object of my invention has been to provide a window construction in which a maximum amount of air and light can be admitted, which shall be capable of operation with great ease, and without counterweights and which shall be simple in construction and of low cost, and to such ends my invention consists in the window construction hereinafter specified.

In carrying my invention into practice, I preferably secure upon the jambs of the window-frame, beads 11, and I mount three sashes, an upper sash 12, lower sash 13 and middle sash 14, upon the said beads, the middle sash being pivoted in the middle of its stiles upon pivot pins 15 secured in the said beads and strips. The upper and lower sash are each provided with a pivot pin 16 at the middle of each of their stiles, and such pins are mounted in slots 17 formed in the beads 11, above and below the middle. The three sashes are so connected together that when any one of them turns on its pivots, the other two sashes are also turned on their pivots, and the upper and lower sash are drawn toward the middle sash, which position is illustrated in Figs. 2 and 3 in which position they may be made to afford comparatively little obstruction to the window opening,—much less obstruction than would be possible with two sliding sashes.

The arrangement by which the three sashes are caused to have the motions before described, is as follows:—Each of the stiles of the middle sash is provided with a slot 18 in

which is mounted a lever 19, the said levers being pivoted upon the pins 15. The lever 19 is bent so that its arms 20 and 21 may lie against the outer and inner faces of the sash. The arm 20 is pivoted by a pin 22 between ears formed on the lower end of the upper sash. The arm 21 is pivoted by a pin 23 between ears formed on the inside of the lower sash. Each pivot pin 16 of the upper and lower sash is connected by a link 24 with a pivot pin 25 mounted in ears on the middle sash, the link for the upper sash being on the inside of the window and the link for the lower sash being on the outside.

In order to make the window wind and rain proof the following provisions are made:—The meeting rails are each provided with beveled surfaces 26, and with inner and outer surfaces 27, that are perpendicular to the plane of the sash, whereby an irregular joint is formed through which it is difficult for the wind to pass. The stiles of the upper sash are provided with inner flanges 28, that are adapted to fit against the inner edge of the beads 11 above the pivot 16 and with outer flanges 29, that are adapted to fit against the outer edge of the beads 11 below the pivot 16. The beads 11 are provided with flanges 30 along the portion of the beads adjacent to the upper sash not covered on the outside by the flanges 29. The middle sash is provided with flanges 31 on the inside of its stiles above the pivot 15, and flanges 32 on the outside of its stiles below the pivot, which are adapted to bear against the beads 11. The beads 11 are provided with flanges 33 above the pivots 15, and the flanges 34 below such pivots, against which flanges the middle sash is adapted to bear. The stiles of the lower sash are provided with inner flanges 35 above the pivots 16 and outer flanges 36 below the said pivots to close the joints with beads 11, and the said beads are provided with flanges 37 on the inside to contact with the lower portions of the stiles of the said sash. The various flanges meet each other with a beveled joint, and they cover almost the entire length of the beads 11, both on the inside and the outside, so that a very tight construction is provided. At the top of the window-frame a strip 38 forms a shoulder against which the upper sash turns, and, on the sill of said frame, a strip 39 forms a similar shoulder for the bottom sash. The meeting rails of the various sashes are each

provided with flanges 40, each flange being preferably provided with a strengthening strip 41 in the angle. The passage-way between the meeting rails is thus made so irregular that the force of the wind is practically destroyed, and little or no air passes through the joint.

In the operation of the above illustrative embodiment of my construction, if it is desired to open the window from the position illustrated in Fig. 1, it is only necessary to push outward upon the lower portion of any one of the three sashes, when all three sashes will move simultaneously. As the sashes swing on their pivots, they not only turn edgewise, but the lower sash and upper sash are drawn toward the middle sash. The greatest possible opening is thus provided for the passage of light and air. As the area presented to the wind by the portions of my sash above the pivots is always equal to such area below the pivots there is no tendency of the wind to turn the said sash in any position, so that they readily stay without fastening in any desired position.

If desired, a locking device may be employed, and to illustrate the application of a lock, I show on the top rail of the lowest sash an ordinary T-handle spring latch 42, and a hasp or socket 43 on the bottom rail of adjacent sash.

My invention, of course, is not limited in its application to windows in which the sash swing on horizontal axes and to show the same embodied in windows whose sash do not swing on horizontal axes, I illustrate in Fig. 8, a window in which the sashes swing on vertical axes.

It will be observed that my window affords excellent protection against the weather, and when it is wished to open the window, my sashes afford the minimum amount of obstruction to the window. The moving parts of my window construction are always balanced, and no window weights or other similar construction are necessary. Neither is any operating mechanism required. When the sashes of my window are in an intermediate position, both sides of each sash can be reached, for cleaning, from the inside of the room.

It is obvious that various changes can be made in the above illustrated construction, which will be within the scope of my invention. I do not desire to be limited to the use of only three sashes in a given window.

I claim

1. In a window, the combination of a plurality of sashes, supporting pivots for each sash, the adjacent edges of the sashes being free to move toward and from each other, and connections for positively and simultaneously swinging said sashes upon their pivots and moving them toward or from each other and the pivots of an intermedi-

ate sash affording a support for itself and for the remaining sashes.

2. In a window, the combination of a plurality of sashes, supporting pivots for each sash, the adjacent edges of the sashes being free to move toward and from each other, and a lever mechanism for positively and simultaneously swinging said sashes upon their pivots and moving them toward or from each other and the pivots of an intermediate sash affording a support for itself and for the remaining sashes.

3. The combination of a window frame, a sash pivoted near the middle of the jambs of said frame, and upper and lower sashes having pivots that are slidably mounted in said jambs.

4. The combination of a window frame, a sash pivoted to the jambs of said frame near their middle portions, upper and lower sashes having pivots slidably mounted on said jambs, and links connecting said sashes to cause all of them to turn simultaneously.

5. The combination of a window frame, a sash pivoted to the jambs of said frame near their middle portions, an upper and a lower sash having pivots slidably mounted on said jambs, and links connecting said sash to cause all of them to turn simultaneously, and links connecting said slidable pivots with said middle sash to draw said sashes together.

6. The combination of a window frame, a sash pivoted at the middle of its stiles to the middle of the jambs of the frame, upper and lower sashes mounted at the middle of their stiles on pivots that are slidably connected with said jambs and a lever fulcrumed concentric with said first middle sash, and having its arms pivoted to the adjacent ends of said upper and lower sashes.

7. The combination of a window frame, a sash pivoted at the middle of its stiles to the middle of the jambs of the frame, upper and lower sashes pivoted at the middle of their stiles to said jambs, a lever fulcrumed concentric with said middle sash, and having its arms pivoted to the adjacent ends of said upper and lower sashes, and links connecting the pivots of said upper and lower sashes with the adjacent ends of the stiles of the middle sash.

8. The combination of a window frame having beads thereon, of sashes pivoted on said beads, and flanges on said sashes and on said beads, whereby when said sashes are turned in line with said beads, said flanges close the joints between said sashes and said beads.

In testimony that I claim the foregoing I have hereunto set my hand.

NIELS POULSON.

Witnesses:

FREDERICK W. SMITH,
ALBERT E. WERT.