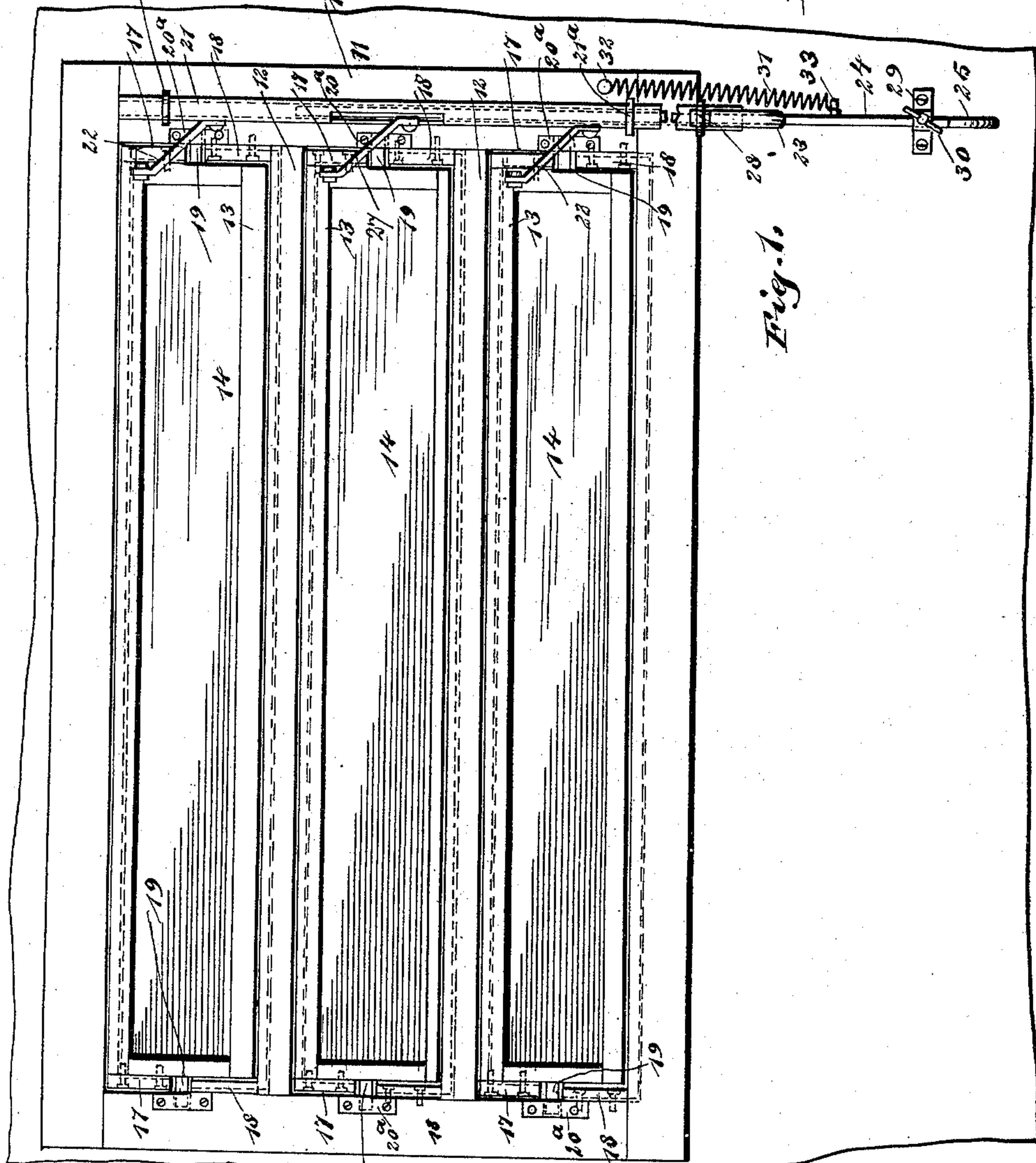
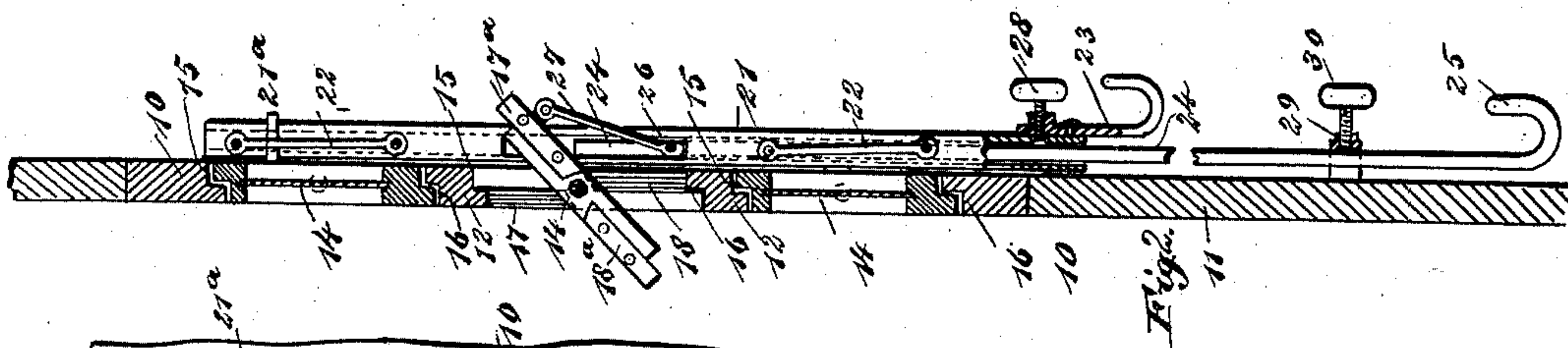


(No Model.)

H. A. BRENNAN.
TRANSOM LIFTER.

No. 474,720.

Patented May 10, 1892.



WITNESSES:

J. McArdle
C. Sedgwick

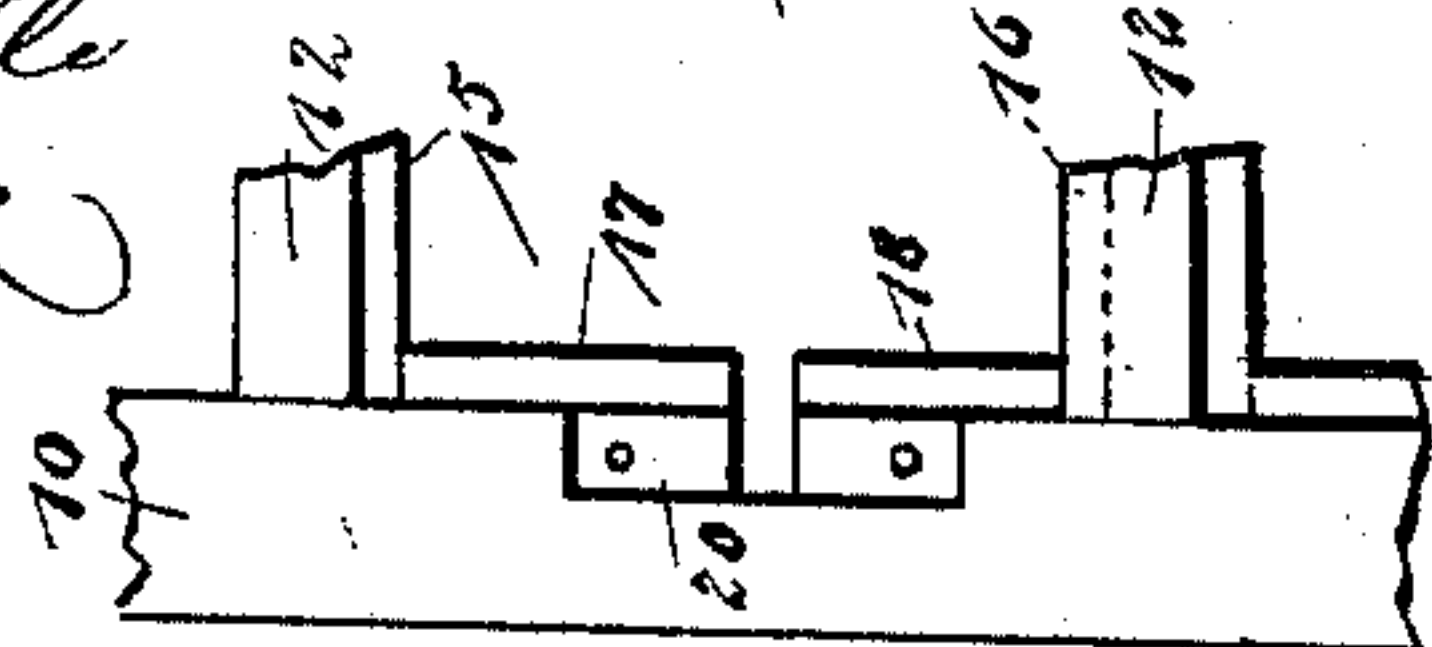


Fig. 3.

INVENTOR

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY A. BRENNAN, OF JERSEY CITY, NEW JERSEY.

TRANSOM-LIFTER.

SPECIFICATION forming part of Letters Patent No. 474,720, dated May 10, 1892.

Application filed March 3, 1892. Serial No. 423,608. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. BRENNAN, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Window-Worker, of which the following is a full, clear, and exact description.

My invention relates to improvements in window-workers, and especially to that variety of apparatus which is adapted to be used in connection with tilting windows, transoms, and the like; and the object of my invention is to produce a cheap and simple form of worker which may be connected with a series of windows arranged one above another and which may be made to operate one, several, or all of the windows, as desired; and a further object of the invention is to construct and arrange the apparatus so that it may be conveniently worked from the inside, but will hold the windows in such a way that they cannot be opened from the outside.

To this end my invention consists in a window-worker, the construction of which will be hereinafter described and claimed.

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

Figure 1 is a broken front elevation of the apparatus as applied to three tilting windows arranged one above another. Fig. 2 is a vertical cross-section through the windows, and Fig. 3 is a broken detail view of one end of the window-frame.

The main window-frame 10 is secured in the side of the building 11 or in any desired place, and it is divided by parallel cross-rails 12, so as to form a series of supplemental frames, in which the frames 13 of the windows 14 are pivoted. The rails 12 are rabbeted on the inner and under side, as shown at 15, and on the upper outer side, as shown at 16, and the sides of the upper and lower portions of the frames 13 are correspondingly rabbeted, so that the frames 13 may fit snugly in the main frame and prevent the wind from passing through between the frames. The upper and lower portions of the main frame 10 are correspondingly rabbeted, as shown in Fig. 2, and the inner end portions of the main frame op-

posite each of the windows 14 are provided with beads 17 and 18, which are arranged, respectively, on the upper outer side and lower inner side of the window-apertures, and the windows have corresponding beads 17^a and 18^a, which fit snugly against the beads 17 and 18 when the window is closed. Opposite each window-aperture and in the main frame 10 are recesses 20, which permit the trunnions 19 of the window-frames 14 to be inserted in place, and after the trunnions are placed within the recesses blocks 20^a are secured in the window-recesses to prevent the accidental removal of the trunnions. The trunnions 19 are produced centrally on the window-frames 13 and at the ends in the same way that they are arranged on an ordinary transom, and the window-frames may thus swing vertically on the trunnions.

Secured to the frame 10 at one end of the several windows is a vertical hollow shaft 21, which is held to slide in keepers 21^a, and opposite the upper and lower windows are rods 22, which are pivoted to the hollow shaft 21, and the upper ends of which are also pivoted to the upper portions of the window-frames 13, and it will be seen that by pulling downward on the hollow shaft the windows may be opened and by pushing upward on the same the windows may be closed. At the lower end of the hollow shaft 21 is a hook 23, which serves as a handle. Extending vertically through the hollow shaft is a rod 24, which has a hook 25 at its lower end, which forms a handle, and this shaft extends opposite a slot 26 on the inner side of the hollow shaft 21, and a bent rod 27 extends through this slot, the lower end of the rod being pivoted to the rod 24 and the upper end of the bent rod 27 being pivoted to the middle window-frame 13. It will be seen, then, that by pushing the rod 24 up and down within the hollow shaft the middle window 14 may be closed or opened without moving either the upper or lower windows. A thumb-screw 28 extends through the lower portion of the hollow shaft and impinges upon the rod 24, and by this means the hollow shaft and the rod 24 may be fastened together, so that the two will move in unison and all the windows will be simultaneously operated. The rod 24 is

held to slide in a keeper 29, which is arranged near its lower end, and a thumb-screw 30 extends through the keeper and impinges on the rod, and by means of the thumb-screw the rod may be held in any desired position, thus locking the windows in the position in which they may happen to be. The rod 24 is normally pressed upward by a spiral spring 31, one end of which is secured to a stud 32 on the frame 10 and the lower end of which is secured to a lug 33 on the rod 24. It will be understood that the rod 24 may be of any length, so that it may be used for operating windows which are located high up in the side of the building.

The operation is as follows: If all the windows are to be simultaneously operated, the hollow shaft 21 and the rod 24 are fastened together by the thumb-screw 28, and then by pulling down on the rod 24 the shaft will be also moved and the several windows 14 will be opened. The windows may be opened wide or may be but slightly opened, and the rod may be fastened by the thumb-screw 30, so as to prevent the windows from being operated from the outside of the building. When the windows are to be independently operated, the thumb-screw 28 is loosened. Then, if but one window is to be opened, the rod 24 is pulled down, thus tilting the middle window 14 and leaving the upper and lower windows closed. If two windows are to be opened, the hollow shaft 21 is pulled down by means of the hook 23 and the upper and lower windows will be opened.

I have shown the apparatus as applied to three windows; but it will be understood that it may be applied to a greater number, if desired, and that the rails 12 may be dispensed with and the windows made to fit snugly together.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. The combination, with a plurality of windows arranged one above another, of a vertically-movable hollow shaft connecting with a portion of the windows, said shaft having a slot in one side, a vertically-movable rod held to slide in the hollow shaft, and a rod connection between the vertically-movable rod and a portion of the windows, the connecting-rod being made to extend through the slot in the hollow shaft, substantially as described.

2. The combination, with the several windows arranged one above another, of a vertically-movable shaft arranged adjacent to the windows and connected with a portion of them and a vertically-movable rod slidably secured to the shaft and pivotally connected with the remaining portion of the windows, substantially as described.

3. The combination, with the windows arranged in series, as shown, of a sliding shaft arranged adjacent to the windows and at right angles to the window-pivots, said shaft being pivotally connected with a portion of the windows, a rod slidably secured to the shaft and connected with the remaining portion of the windows, and means for fastening the rod and shaft together, substantially as described.

4. The combination, with the several windows arranged one above another, of a hollow shaft held to slide at one end of the windows and provided with a handle, a rod held to slide in the hollow shaft and connected with the remaining portion of the windows, a fastening device to secure the shaft and rod together, and a fastening device to fix the position of the rod, substantially as described.

HENRY A. BRENNAN.

Witnesses:

JAMES T. REED,

HENRY E. NIED.