(No Model.)

3 Sheets—Sheet 1.

E. BECK.

MEANS FOR HANGING AND GUIDING SASHES.

No. 605,069. Patented June 7, 1898.

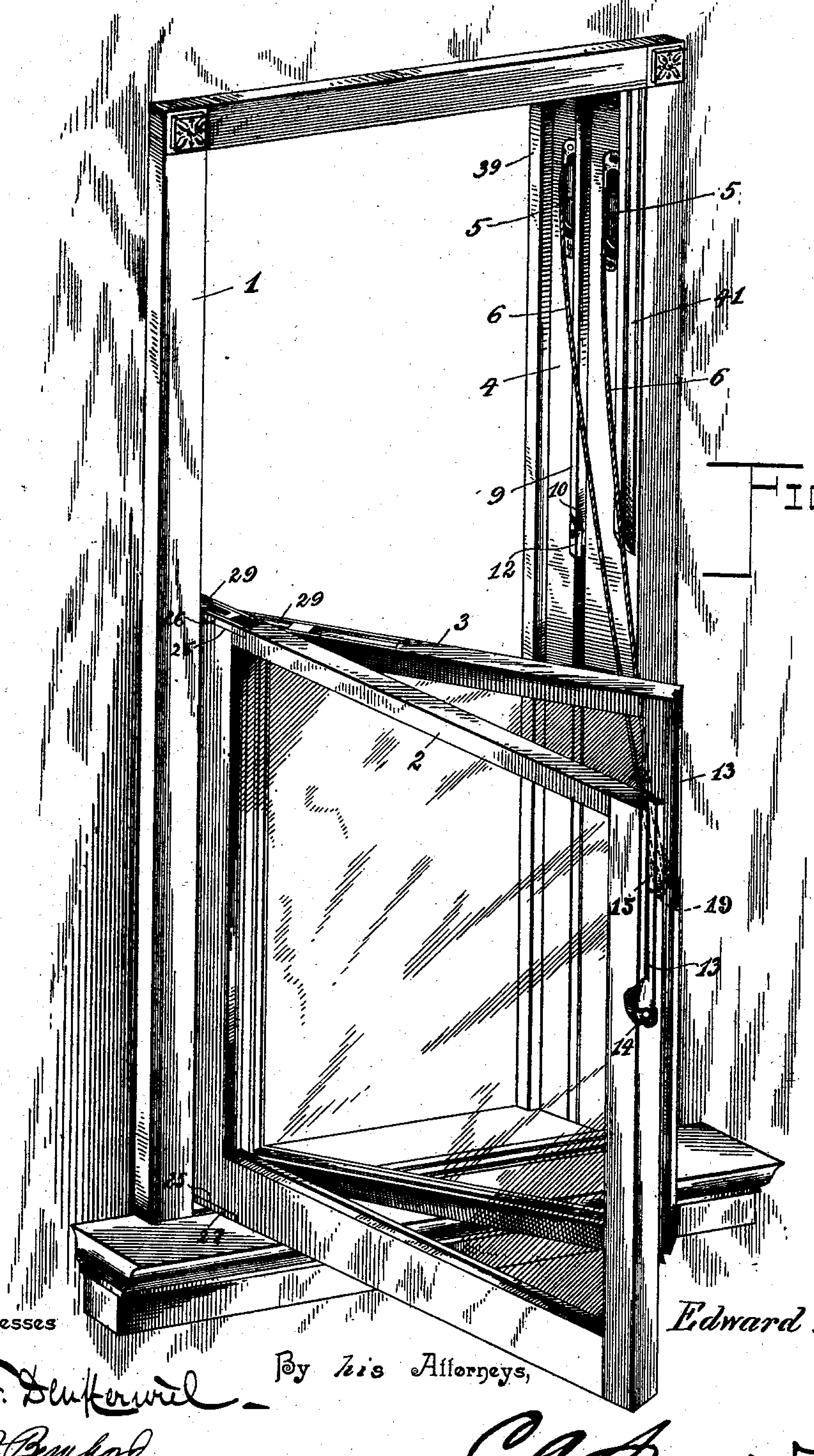

FIG. 1.

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By his Attorneys,
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Inventor
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

3 Sheets—Sheet 2.

E. BECK.

MEANS FOR HANGING AND GUIDING SASHES.

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FIG. 2.

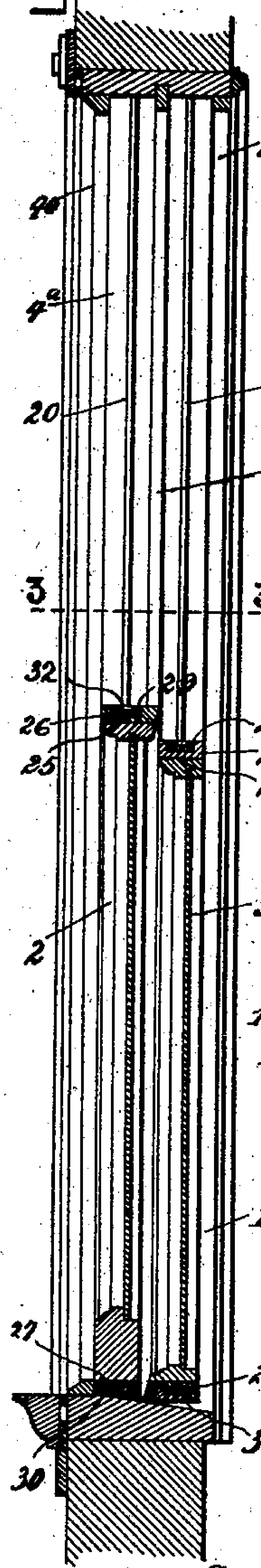


FIG. 4.

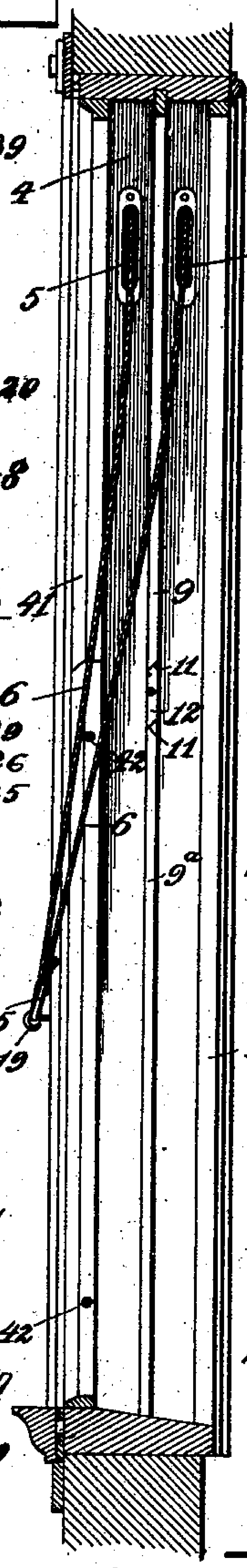


FIG. 5.

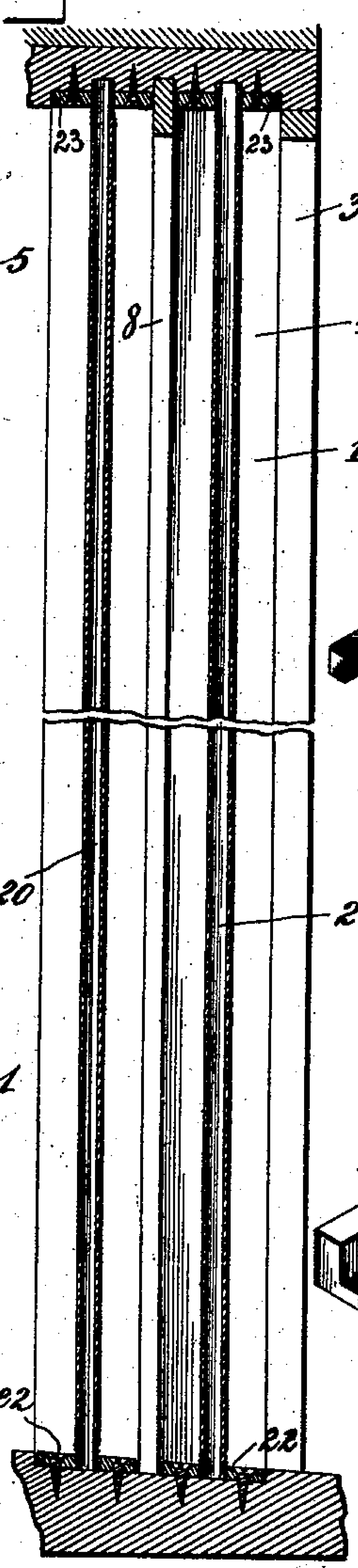


FIG. 7.

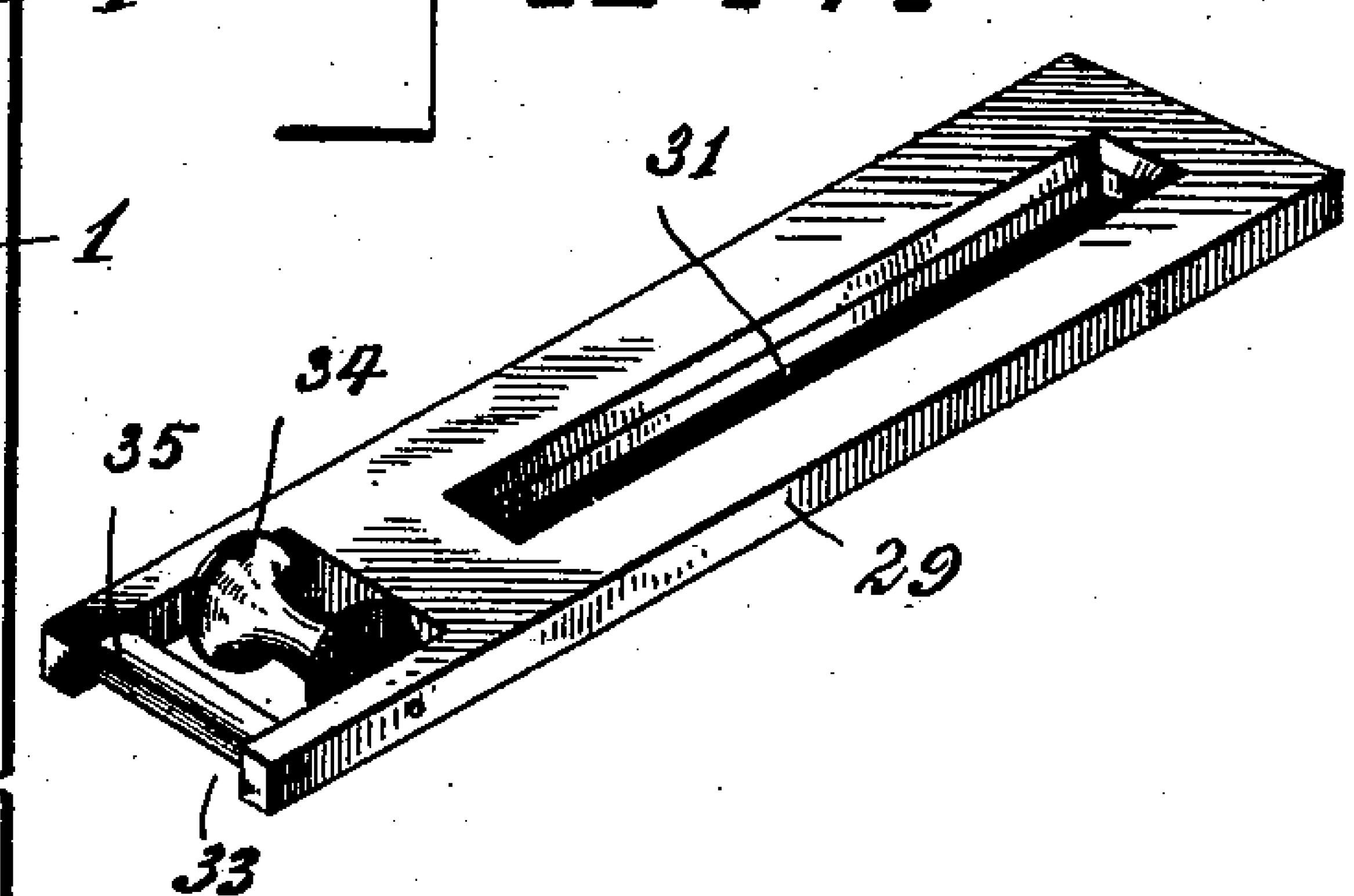


FIG. 6.

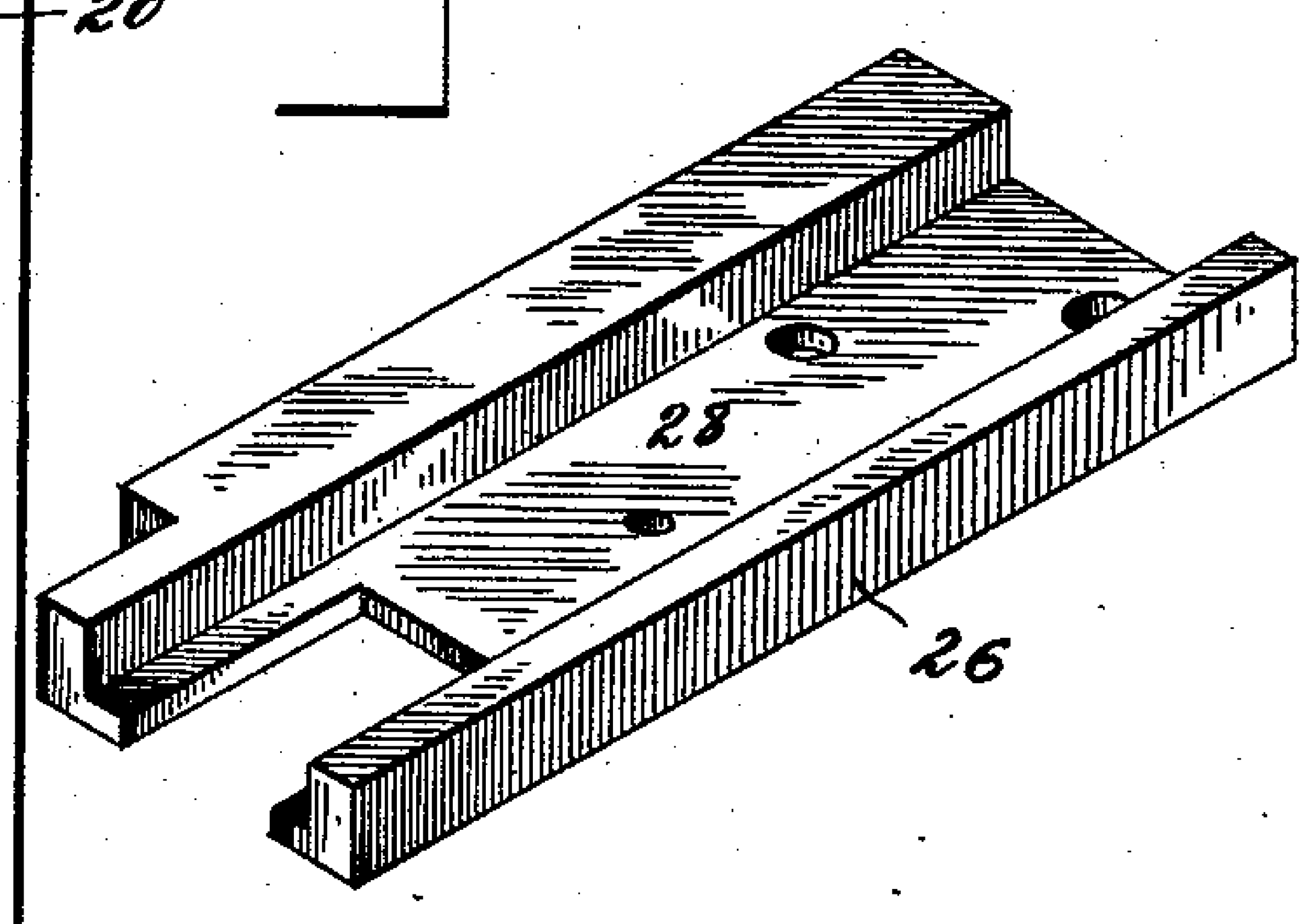
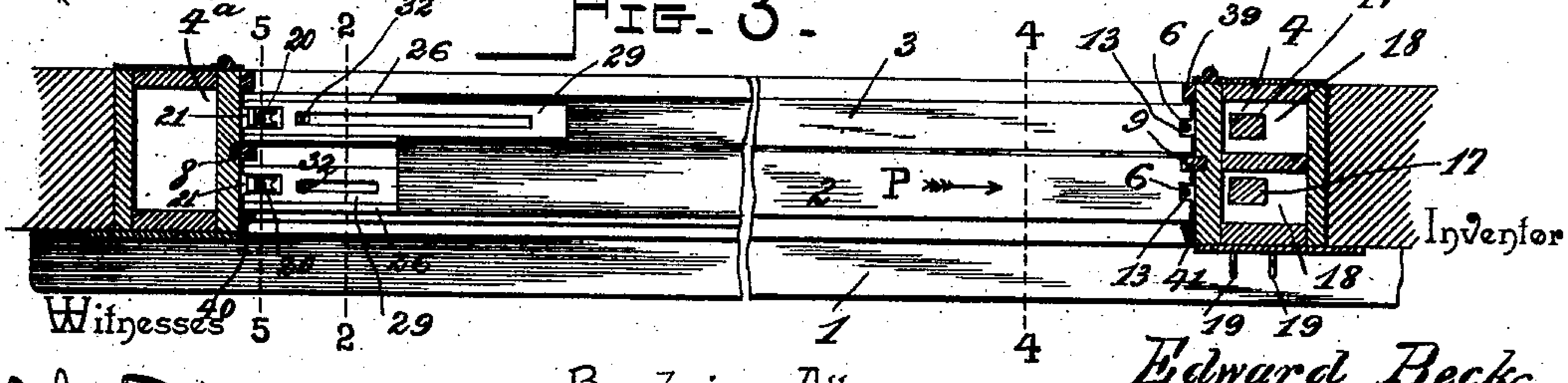


FIG. 3.



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(No Model.) 3 Sheets—Sheet 3.

E. BECK.

MEANS FOR HANGING AND GUIDING SASHES.

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FIG. 8.

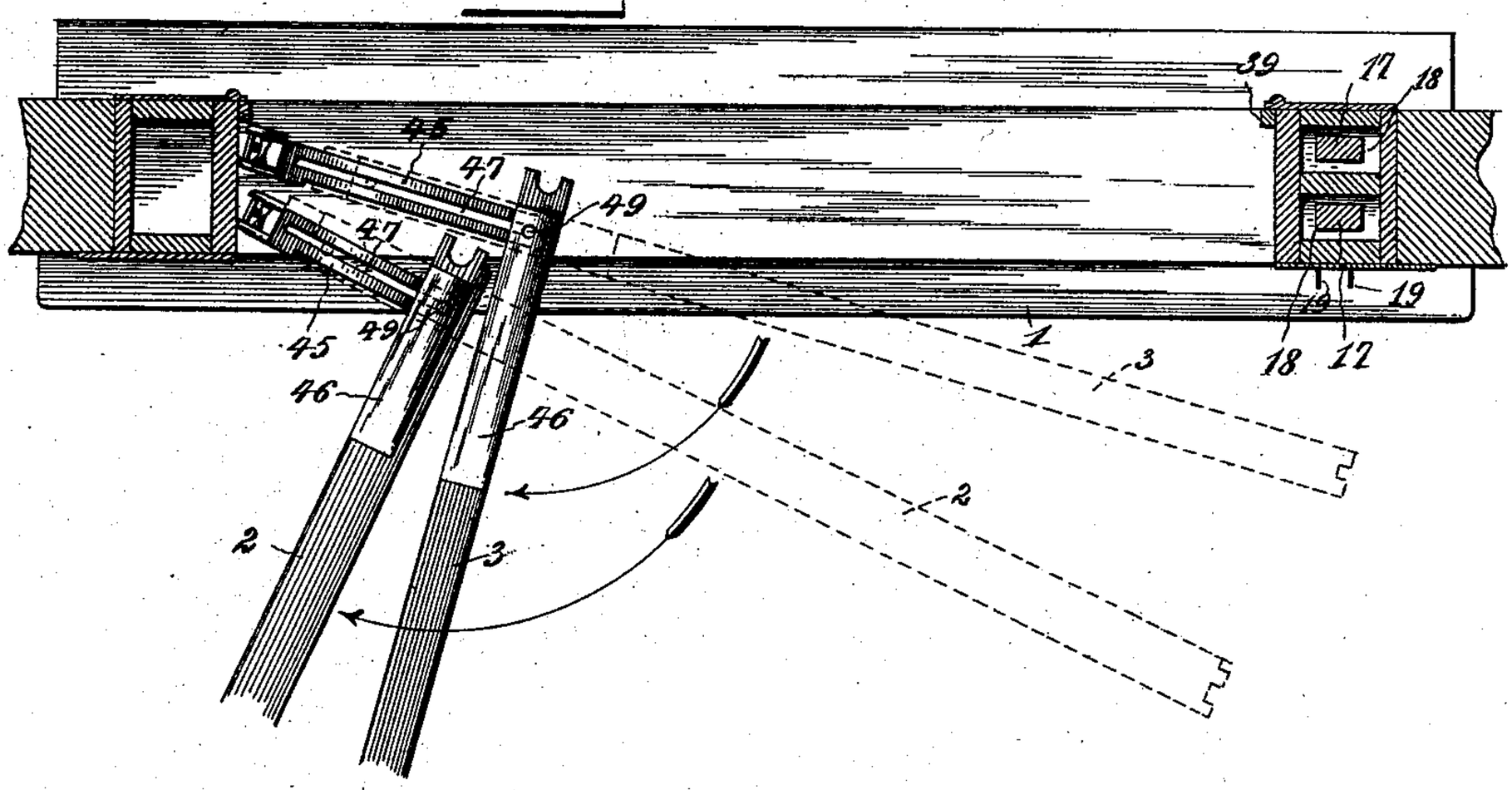


FIG. 9.

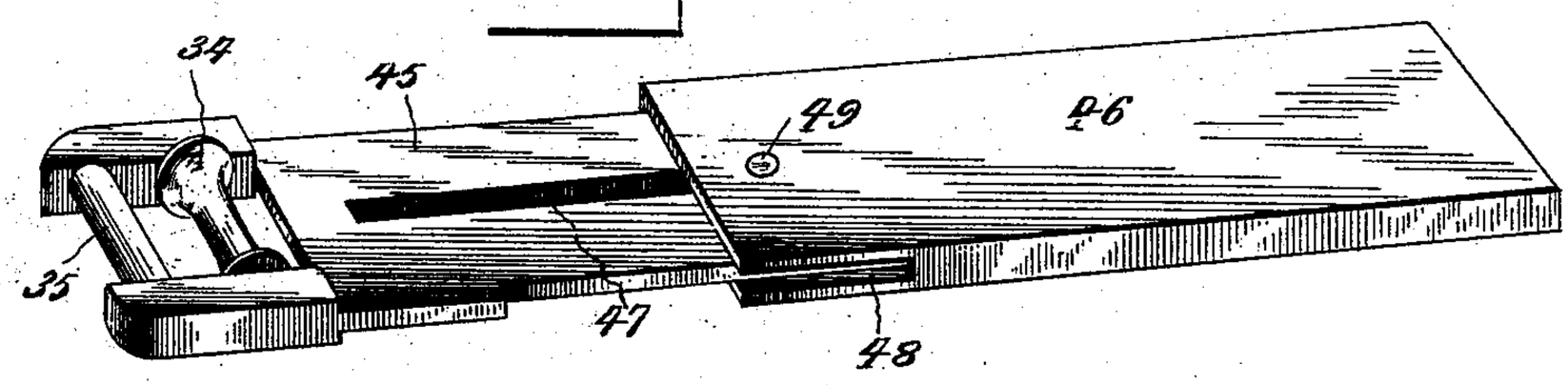
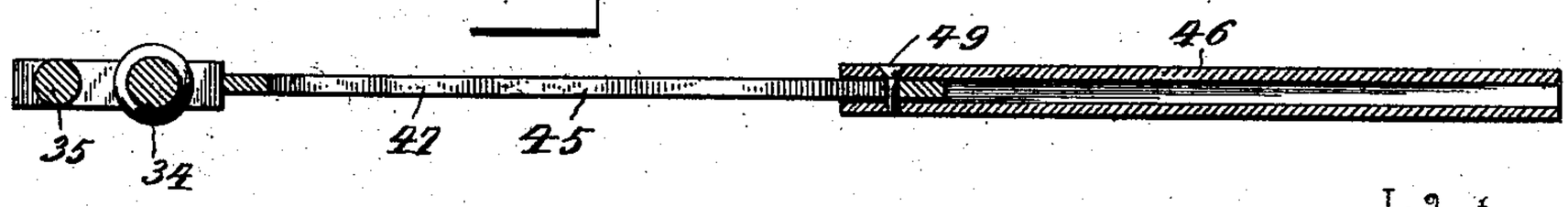


FIG. 10.



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UNITED STATES PATENT OFFICE.

EDWARD BECK, OF CHICAGO, ILLINOIS.

MEANS FOR HANGING AND GUIDING SASHES.

SPECIFICATION forming part of Letters Patent No. 605,069, dated June 7, 1898.

Application filed October 15, 1897. Serial No. 655,286. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BECK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Means for Hanging and Guiding Sashes, of which the following is a specification.

My invention relates to improvements in means for hanging and guiding sashes; and the object that I have in view is to provide an improved construction by which the sash may be readily adjusted out of position and moved inwardly for the purpose of having ready access to the outside of the sash to clean the panes, for repairing the parts, and for painting the sash.

A further object of the invention is to provide novel means for guiding the sash in its vertical movements within the window-casing and for permitting the horizontally-swinging movement without disconnecting the sash.

A further object of the invention is to improve the structure in various ways with a view to simplifying its construction, enabling the parts to be easily and quickly applied, and to insure free movement or play of the sash.

With these ends in view my invention consists in the novel combination of elements and in the construction and arrangement of parts which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a window in which is embodied my improved means for hanging and guiding sashes, one of the sashes being adjusted out of position in the casing and thrown around so as to project into the room or apartment. Fig. 2 is a vertical sectional elevation on the plane indicated by the dotted line 2 2 of Fig. 3. Fig. 3 is a horizontal section on the plane indicated by the dotted line 3 3 of Fig. 2. Fig. 4 is a vertical transverse sectional view through the window on the dotted line 4 4 of Fig. 3, looking in the direction indicated by the arrow. Fig. 5 is a detail sectional elevation through one of the guide rods or tubes and one of the stiles of a sash, the plane of the section being on the line 5 5 of Fig. 3. Figs. 6 and 7 are detail perspective views of the face-plate and the roller-carrying plate detached from the sash. Fig. 8 is a sectional plan view showing the sashes extended beyond the window-casing and thrown around out of position after having been projected into the room. Figs. 9 and 10 are detail views in perspective and section, respectively, of the extensible and angularly-adjustable sash-support shown for the sash adjusted in Fig. 8.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

1 designates a window casing or frame which in its general construction is similar to the casings or frames commonly employed in windows, with the exception that only one of the jambs instead of both jambs, as in ordinary frames, is equipped with rope-pulleys for the sash-weight cords to balance the sash.

According to my invention I employ sashes 2 3, which are suspended or balanced at one side only, while the opposite side of each sash is arranged to be guided on fixed rods or tubes in a manner to have free sliding movement thereon in a vertical direction when opening or closing the sash. To this end I provide one jamb, 4, of the sash with the ordinary pulleys 5, over which run the usual sash-cords 6, one sash-cord only being provided for each sash and said sash-cord being arranged at one side only of the window frame or casing. The other jamb, 4^a, of the frame or casing 1 is solid or imperforate throughout its length. The adjacent sashes 2 3 are separated one from the other by parting-beads 8 9, and the bead 8, which is attached to the solid jamb 4^a, is a solid continuous strip suitably secured in place. The other parting-bead, 9, is made in lengths or sections 9^a, and the upper length is secured rigidly to the jamb 4, while the lower length of said divided parting-bead is removably secured in place to enable it to be taken out when it is desired to swing the upper sash inwardly to have ready access thereto. The adjacent ends of the lengths of said divided bead 9 are mortised or cut away, as at 10, in a manner to provide oppositely-inclined shoulders 11 on the adjacent ends of said lengths 9^a, and in the mortise is arranged a pivoted

button 12, the ends of which are beveled to correspond to the inclinations of the shoulders 11. This button 12 is arranged to fill the mortise in the divided bead when the window is to be used, and said button when in normal position lies flush with the edges and outer exposed face of the bead 9, thus disposing the button in a manner to avoid interfering with the movement of the sashes. The button thus serves to assist in holding the removable length of the parting-bead in position, and it presents with the bead a continuous edge to each sash for the proper guidance thereof in the window frame or casing.

The edge of each sash adjacent to the jamb 4 is provided for a part of its length with a vertical groove 13 to accommodate a part of the sash-cord 6, and near the lower terminal of this groove is provided a hook 14, which is attached to the edge of the sash to be housed within the groove 13 thereof. The end of the sash-cord 6 is provided with an eye or loop 15, designed to engage removably with the hook 14 to operatively and detachably connect the sash-cord to the sash, and to the other end of each sash-cord is attached a drop-weight 17. The drop-weights 17 for the two sash-cords 6 of the sashes 2 3 are contained within suitable weight boxes or casings 18, made as a part of the jamb 4 of the window-casing. On the inner side or face of the window-casing, adjacent to the jamb 4 thereof, are attached the hooks 19 or other suitable catches, with which may be engaged the eyes or loops 15 of the sash-cords, when the latter are detached from the sashes, to permit said sashes to be swung inwardly into the room or apartment of a building.

20 20 are the vertical guide rods or tubes, which are fastened in the casing or frame 1, adjacent to the imperforate jamb 4^a thereof. The edge of each sash adjacent to the jamb 4^a is provided with a vertical channel or groove 21, which extends continuously from the bottom to the top edge of said sash, and this sash is adjusted in the frame or casing, so as to receive within its groove or channel 21 the vertical guide rod or tube 20.

The guide rods or tubes are arranged in compact relation to the jamb 4^a and the sashes, and said rods are fastened at their ends to the top and bottom of the casing or frame 1. I prefer to attach the ends of the rod to the frame by means of the plates 22 23 and to provide these plates with threaded openings or sockets in which are screwed threaded ends of the rods or tubes, although other means may be resorted to for attaching the rods or tubes to the window-frame. The plates 22 23 are preferably countersunk in the top and bottom of the casing, and they are attached by means of screws which pass through suitable apertures provided in the plates.

Each sash is slidably connected to one of the guide rods or tubes by means which permit the sash, when disconnected from its weight-cord, to swing or turn in a horizontal plane on the rod or tube. The top and bottom rails of each sash adjacent to the guide rod or tube are mortised, as at 25, to receive the face-plates 26 27, and these face-plates are thus set in the top and bottom rails to be flush with the edges and faces of the rails of said sash. I prefer to make the upper plate 26 on the sash somewhat longer than the lower plate 27; but this is not material. Said face-plates 26 27 of the sash are provided with longitudinal slots or guideways 28 to receive the adjustable plates 29 30. These plates 29 30 are fitted to the face-plates to lie flush therewith and to be capable of a limited sliding adjustment in the slots or guideways of said face-plates, and each plate 29 and 30 is provided with a longitudinal slot 31, through which passes a screw 32, that serves to fasten the said carrying-plate 29 or 30 in position on the sash.

The carrying-plates 29 30 for each sash are provided with openings or open-ended slots 33, and said carrying-plates are attached to the sash to project across the vertical continuous groove 21 in the edge thereof adjacent to the jamb 4^a. Each carrying-plate 29 or 30 is equipped with a pair of rollers 34 35, which are spaced apart a sufficient distance to accommodate between them the guide rod or tube, and said rollers 34 35 are suitably journaled in the opening or open slot 33 of said plate—as, for instance, by providing suitable pins or journals to enable the rollers to turn freely within the carrying-plate. The inner roller 34 of each pair is a grooved roller, while the other outer roller is a cylindrical roller, and while I prefer to employ this construction and arrangement of rollers it is not strictly necessary that I should use one cylindrical and one grooved roller, because I may use a pair of grooved rollers or a pair of smooth rollers.

From the foregoing description, taken in connection with drawings, it will be seen that I have provided each sash with means for balancing and for guiding the same, the balancing device being connected operatively with one side of the sash, while the guiding device is arranged in operative relation to the other side of the sash. This guiding device is arranged to hold the sash at its top and bottom edges to insure the sash sliding in a perpendicular direction, and it also forms a means whereby the sash may be turned in a horizontal plane, the rod or tube serving as a trunnion or pivot for the sash in its horizontal swinging movement or adjustment.

The upper sash 3 is held in position between the parting-beads 8 9 and the outer stop-beads 39. The inner sash is arranged to ride against the inner stop-beads 40 41, and the bead 41 on the side of the frame adjacent to the jamb 4 is made in sections or lengths, the lower one of which is secured detachably in place by screws 42 or other suitable fasteners.

When it is desired to clean the sashes, the lower length of the bead 41 is removed, the

sash 2 is swung outward after the cord 6 has been detached therefrom and its hooks or eye attached to one of the fixed hooks 19, the lower length 9ª of the parting-bead 9 is removed, the sash 3 is lowered and swung outward alongside of the lower sash, and the cord 6 of the sash 3 is attached to the other hook 19. The sashes are thus arranged to permit access to be had to the outside of the panes in said sashes or to the frames thereof for the purpose of cleaning the panes or for painting the sash or for performing other work thereon without detaching the sash bodily from the window, and in this adjustment of the sashes the drop-weights attached to the cords 6 are held from falling to the bottom of the weight-box by the loops or eyes of said cords engaging with the hooks 19. By having the slidable roller-carrying plates of the upper sash of greater length than the corresponding plates of the lower sash the upper sash may be projected into the room or apartment to occupy the same position as the lower sash, whereby work may be performed equally as well on the upper sash as on the lower sash. To replace the sashes, the eye of one cord is attached to the sash 3, and the latter is swung back into position within the window-casing, after which the length 9ª of the parting-bead 9 is replaced. The other sash-cord may now be connected to the sash 2, the latter swung back into position within the window-frame, and the lower length of the bead 41 is replaced.

In the construction of the sashes and their supporting means, as hereinbefore described, the adjustment of the sashes is limited to sliding movement on the carrying-plates, which are loosely fitted in the window-frame to slide vertically on the guide-rods therein; but in Figs. 8, 9, and 10 I have illustrated another and the preferred embodiment of the means for carrying the sash, by which the sash may not only be projected beyond the window-frame into the room, but which also permits the sash to be swung around into substantially parallel relation to the wall of the room, thus exposing the outer side of the sash to ready and easy access for the performance of useful work thereon. In this embodiment of the invention I have constructed the slidable roller-plate so that the sash-plate may be turned at an angle to the roller-plate after the sash and the plate or boxing thereon have been extended the full limit of the adjustment permitted by the parts forming the sash carrier or support. In this embodiment of the invention I provide the roller-carrying plate 45 and the sash plate or fixture 46. The sash-plate is in the form of a box-like fixture constructed to set in a recess of the sash and to be fastened therein by screws or other fasteners, and said plates 45 46 are connected together in a manner to permit sliding movement of the sash-plate on the roller-plate and also to permit the sash-plate to turn with the sash at an angle to the roller-carrying plate after the sash and its plate have been extended the full limit of the roller-plate. The roller-plate is provided with a longitudinal slot 47, which is closed at or near the ends of the roller-plate, and this slotted roller-plate is fitted in the box-like sash-plate to enable the latter to slide endwise freely on the roller-plate. One side of the box-like sash-plate 46 is cut away or recessed, as at 48, and the sash-plate carries a guide and stop pin 49, which is fixed to the sash-plate near or at its free end and which is arranged to travel in the slot of the roller-plate, said pin serving to arrest the sliding movement of the sash-plate on the roller-plate. In the practical service of the sash support or carrier shown by Figs. 8, 9, and 10 and consisting of the plates 45 46 the sash may be adjusted to cause its plates 46 to slide on the plates 45 in order to project the sash into the room a suitable distance, and when the sash has been adjusted the full limit of the length of the roller-plates the stop-pins 49 arrest the sliding movement of the sash and its plates and the ends of the roller-plates arrive opposite to the cut-away portions or recesses 48 in the sash-plates, after which the sash and its attached plates 46 may be turned around, with the pins 49 as the pivots, as illustrated by Fig. 8, whereby the sash is capable of a compound adjustment to enable the same to be projected into the room and to be swung around to a position substantially parallel to the line or plane of the window and the wall of the room, so as to expose the outer side or face of the sash to easy access.

I am aware that changes in the form and proportion of parts and in the details of construction may be made without departing from the spirit or sacrificing the advantages of the invention.

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

1. The combination of guide rods or tubes situated at one side of a window-frame, a sash having a grooved stile fitted to said rod or tube, plates attached to said sash and provided with rolls which ride upon the rod or tube and serve to guide the sash in its vertical play and to connect the sash with said rod or tube when the sash is turned horizontally, and a weight-cord connected to the opposite side of the sash, as and for the purposes described.

2. The combination with a window casing or frame, of guide tubes or rods attached within the casing adjacent to one of the jambs thereof, sashes each having one stile thereof grooved to receive one of the rods or tubes, plates attached to the sash and carrying rolls which ride upon said guide rods or tubes, and independent weight-cords connected with the opposite sides of the sashes from the guide tubes or rods, as and for the purposes described.

3. The combination with a guide rod or

tube, a sash, and a weight-cord attached to the opposite side of the sash from the guide rod or tube, of carrying-plates attached to the sash at top and bottom and fitting the rod or tube, and a pair of rollers journaled in each plate and arranged to ride against opposite faces of the rod or tube, as and for the purposes described.

4. The combination with a guide rod or tube, a sash, and a weight-cord attached to one edge or side of the sash, of the adjustable carrying-plates fastened to the top and bottom of the sash and having openings or slots which fit loosely around said rod or tube, and a pair of rollers journaled in each plate and arranged to ride against opposite sides of the rod or tube, one of said rollers being grooved to closely embrace the rod or tube and enable the sash to turn in a horizontal direction thereon, as and for the purposes described.

5. The combination with a window frame or casing, of the sashes each having one stile provided with a continuous channel and its other stile with a groove which extends only part way of the length of the sash, guide-rods fitted in the channeled stiles of the sashes, rollers carried by the sashes to ride against the guide-rods, and weight-cords detachably connected to the grooved edges of the sashes, for the purposes described, substantially as set forth.

6. The combination with a window-frame, and guides therein, of vertically-movable plates fitted to said guides, and a sash fitted to said plates to slide thereon and to turn at an angle to the plates, for the purposes described, substantially as set forth.

7. The combination with a frame, and guides therein, of extensible supports or carriers fitted to the guides to travel vertically thereon and to turn outwardly at an angle to the guides, and a sash carried by one member of the extensible support or carrier and adapted to turn pivotally thereon in a horizontal plane to occupy a position substantially parallel to the plane of the window-frame when projected therefrom into a room, substantially as described, for the purposes set forth.

8. The combination with a frame, guides therein, and plates fitted to said guides to travel vertically and to turn horizontally thereon, of sash-plates fitted to the traveling plates to slide thereon in a horizontal direction and to turn on said traveling plates when the sash-plates have reached the limits of their sliding play, and a sash attached to and carried by the sash-plates, whereby the sash may be projected into a room and thence turned to a position substantially parallel to the plane of the frame, for the purposes described, substantially as set forth.

9. The combination with a frame, and a guide-rod therein, of roller-plates fitted to the guide-rod to travel vertically and to turn horizontally thereon and provided with longitudinal slots, box-like sash-plates fitted to the traveling roller-plates to slide horizontally thereon and constructed with recesses to permit of angular adjustment of the sash-plates on the roller-plates, pins carried by the sash-plates and fitted in the slots of the roller-plates, and a sash carried by the sash-plates, for the purposes described, substantially as set forth.

10. The combination with a frame, and a guide rod or tube therein, of plates fitted to said rod or tube to travel vertically and turn horizontally thereon, and a sash slidably fitted to said plates, whereby the sash may travel with the plates vertically within the frame and be extended therefrom when the plates are turned inwardly on the rod or tube, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EDWARD BECK.

Witnesses:
THOMAS DEMPSTER,
JEANIE J. DEMPSTER.