

No. 639,956.

Patented Dec. 26, 1899.

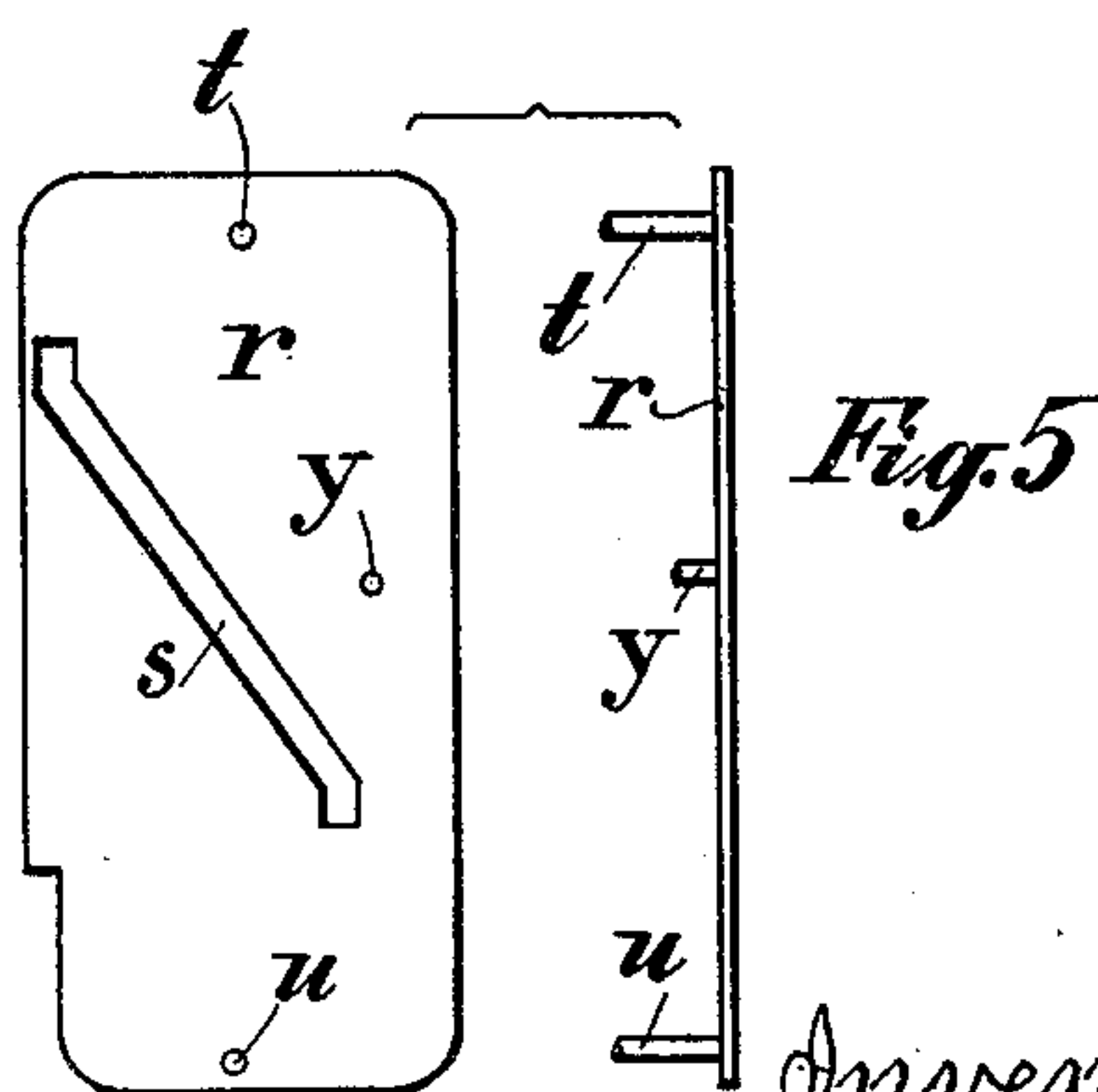
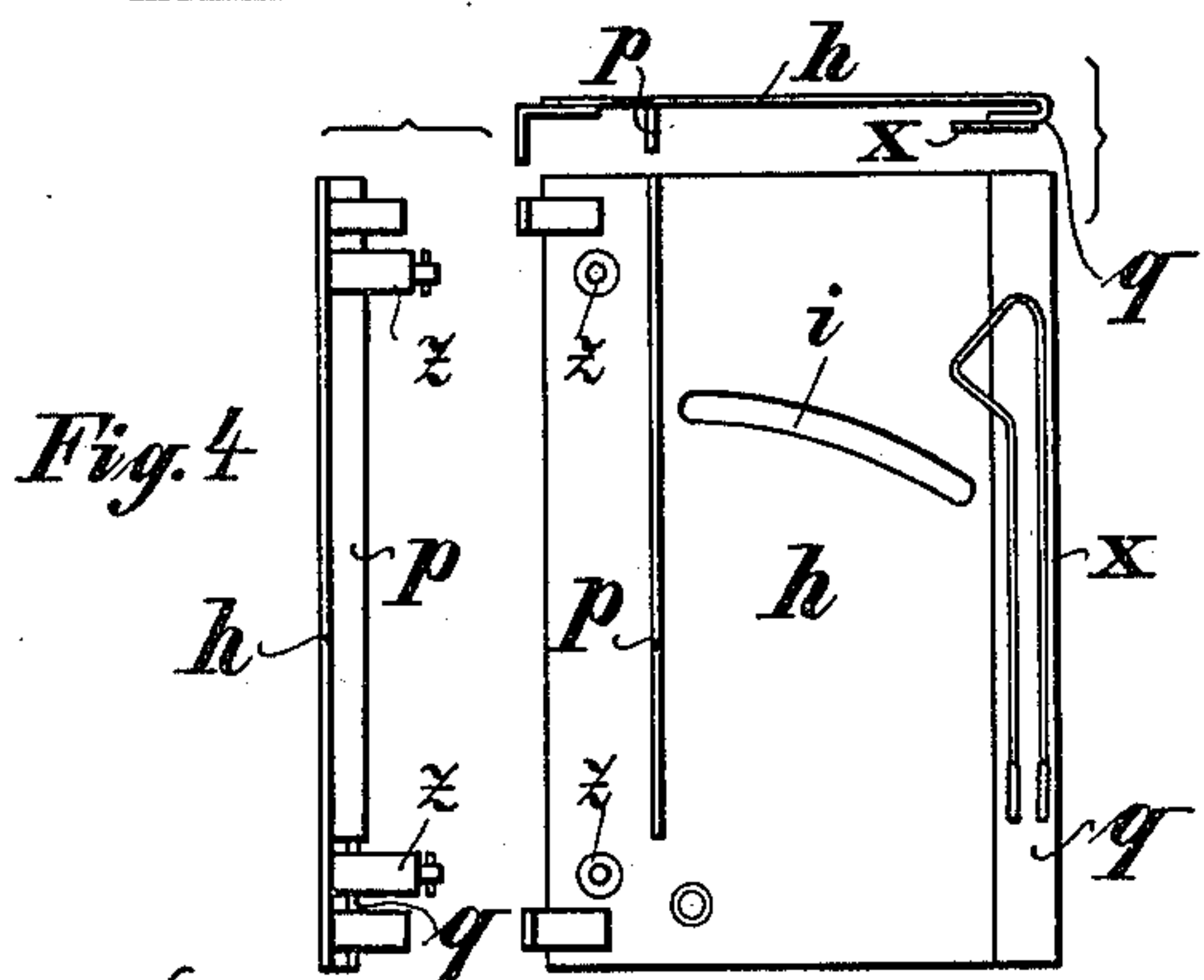
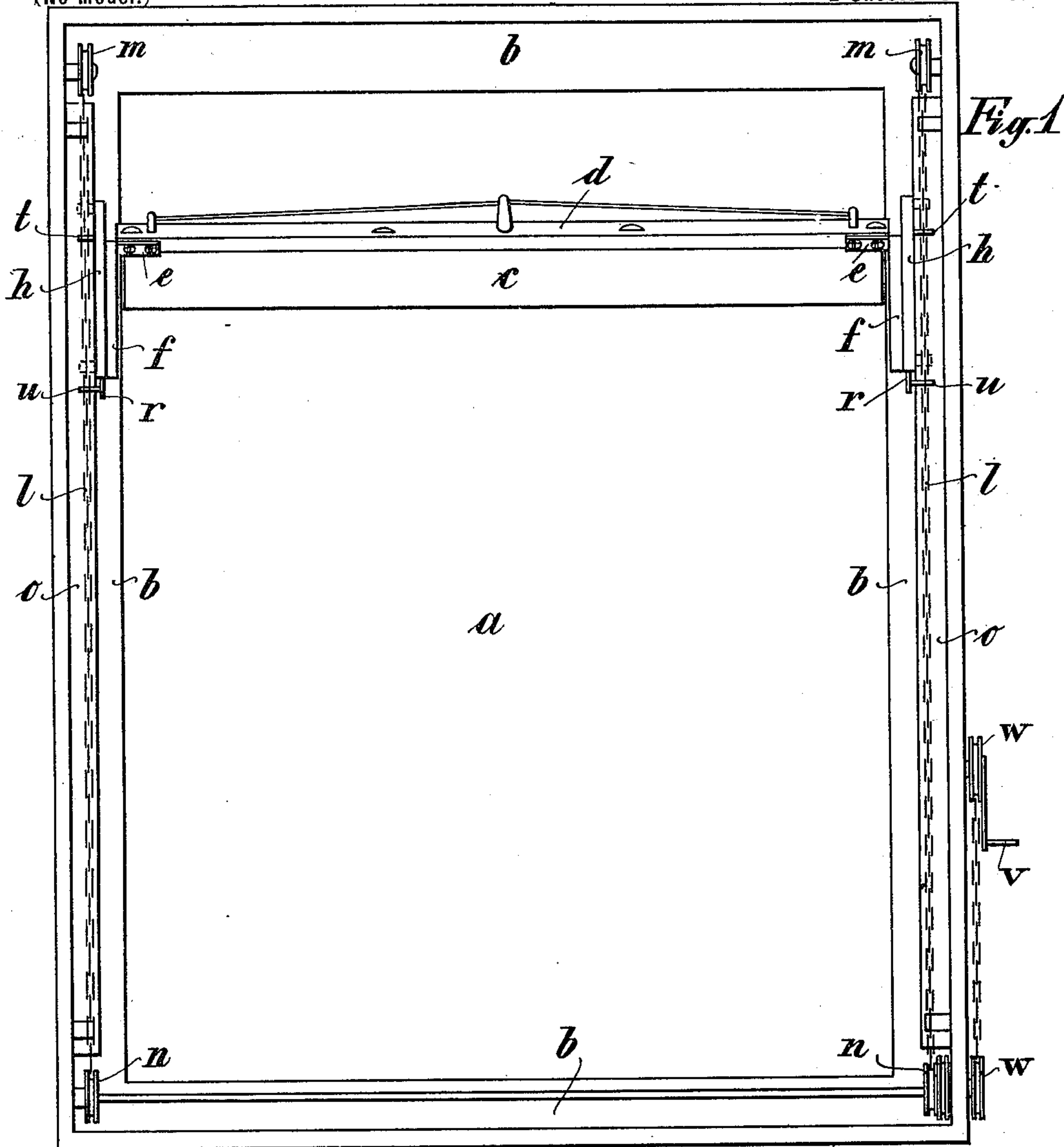
C. WERNICKE.

APPARATUS FOR CLEANING GLASS PANES.

(Application filed May 9, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.  
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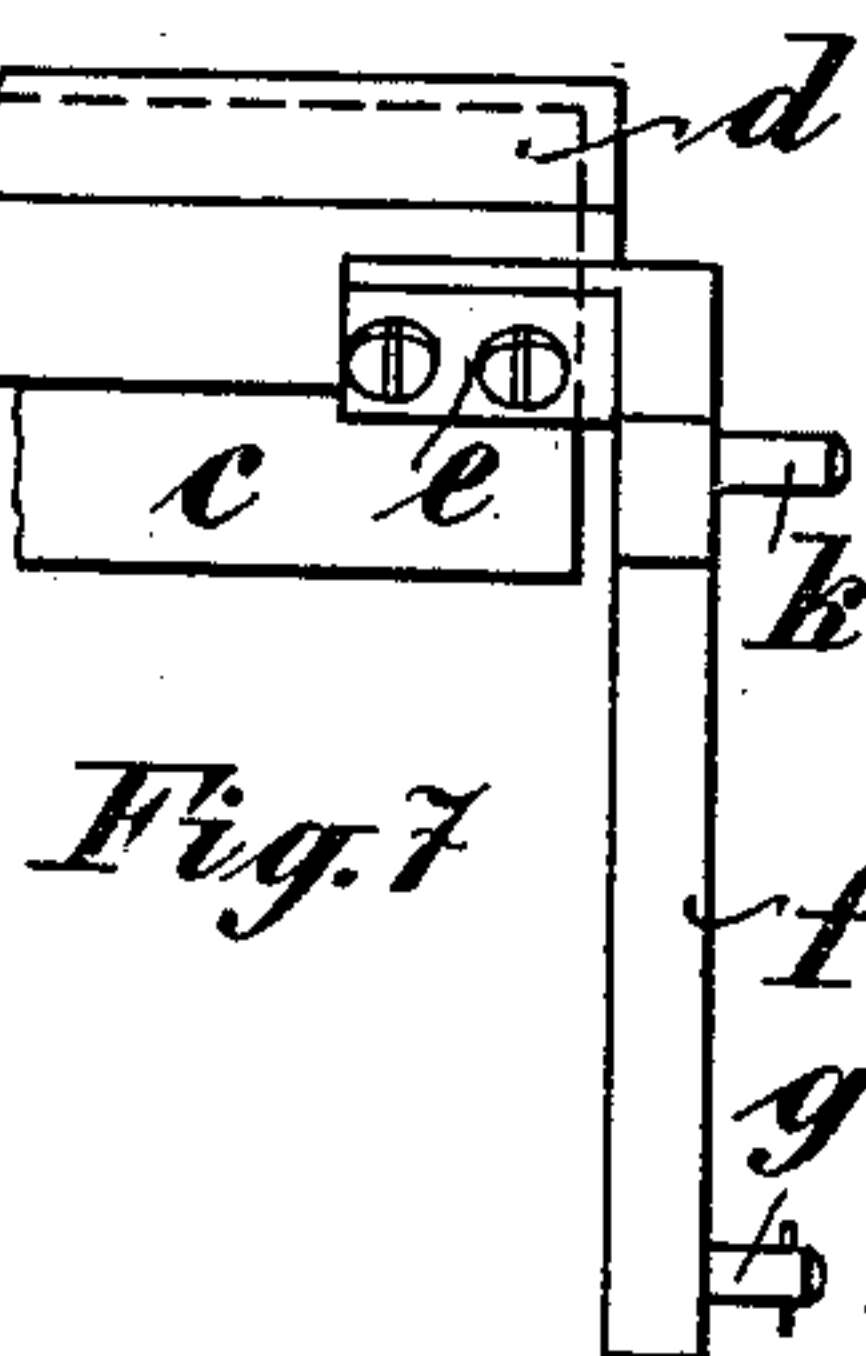
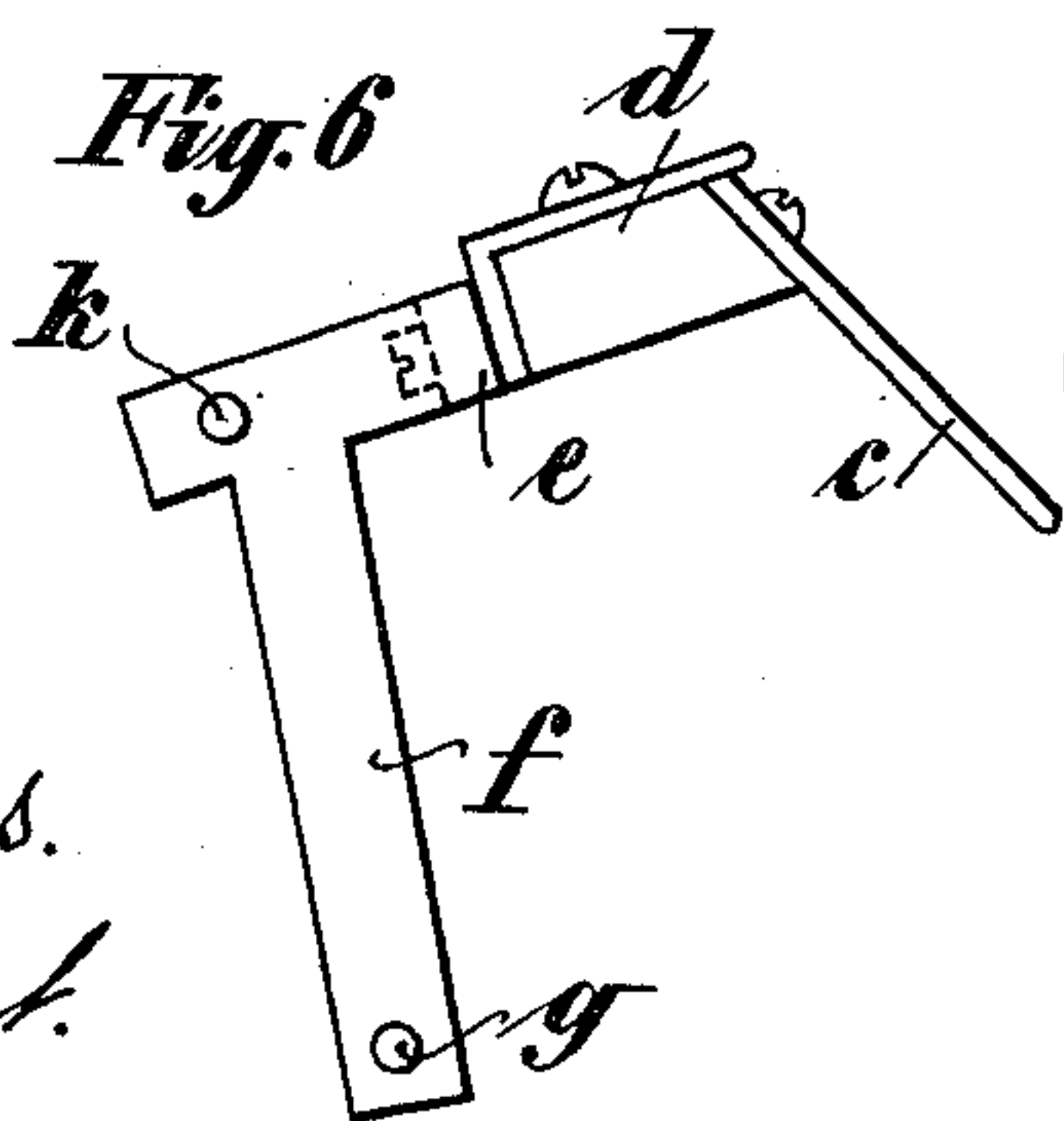
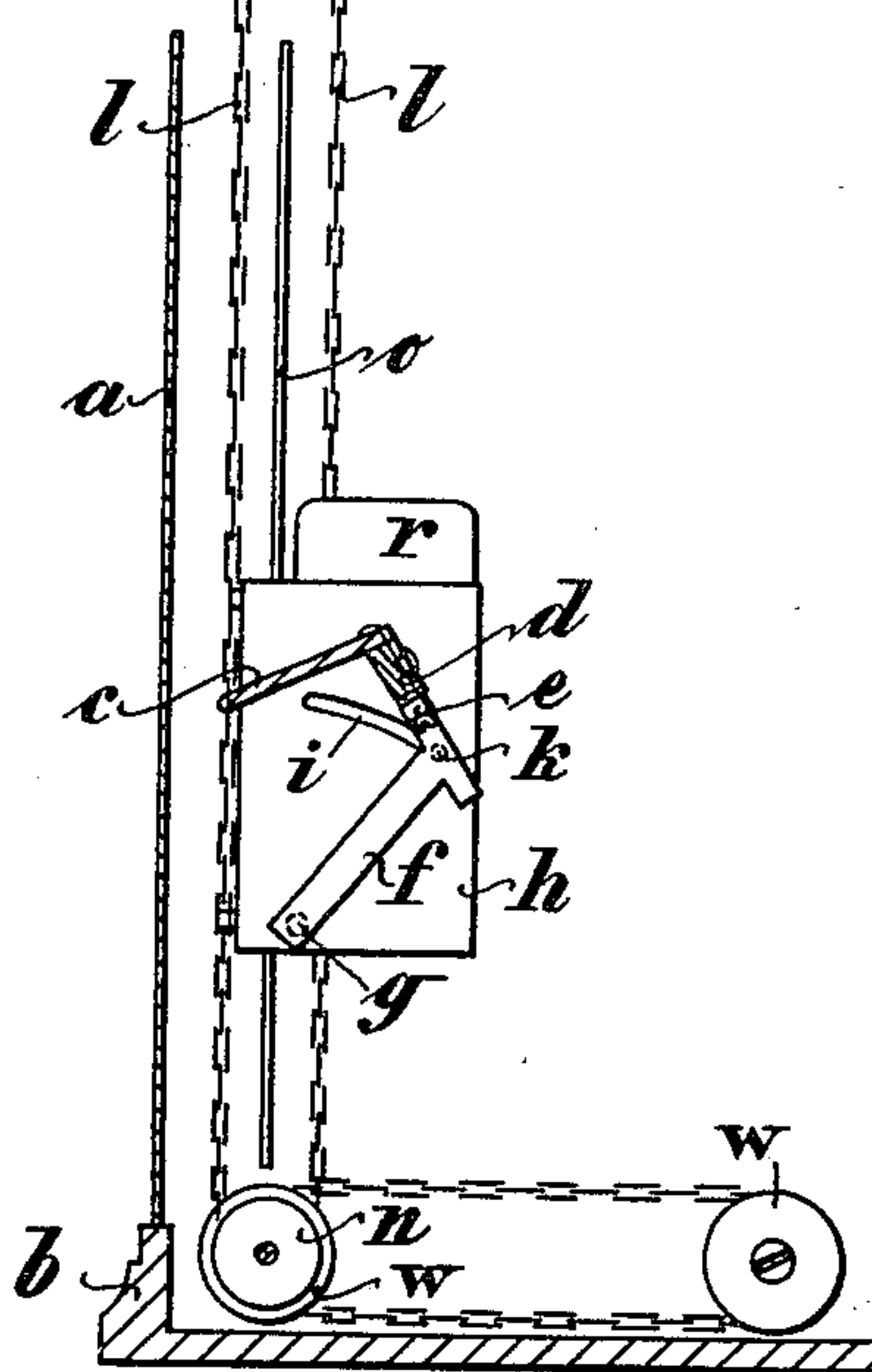
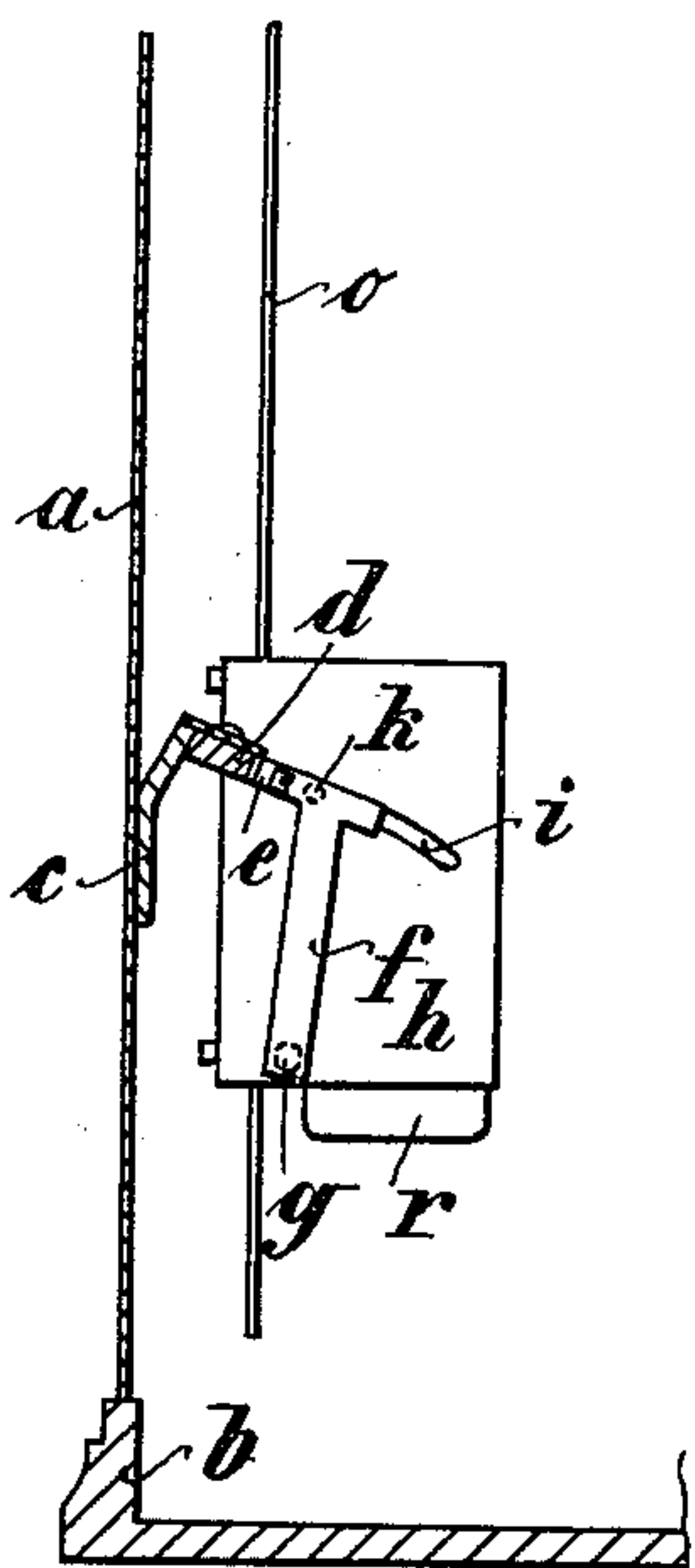
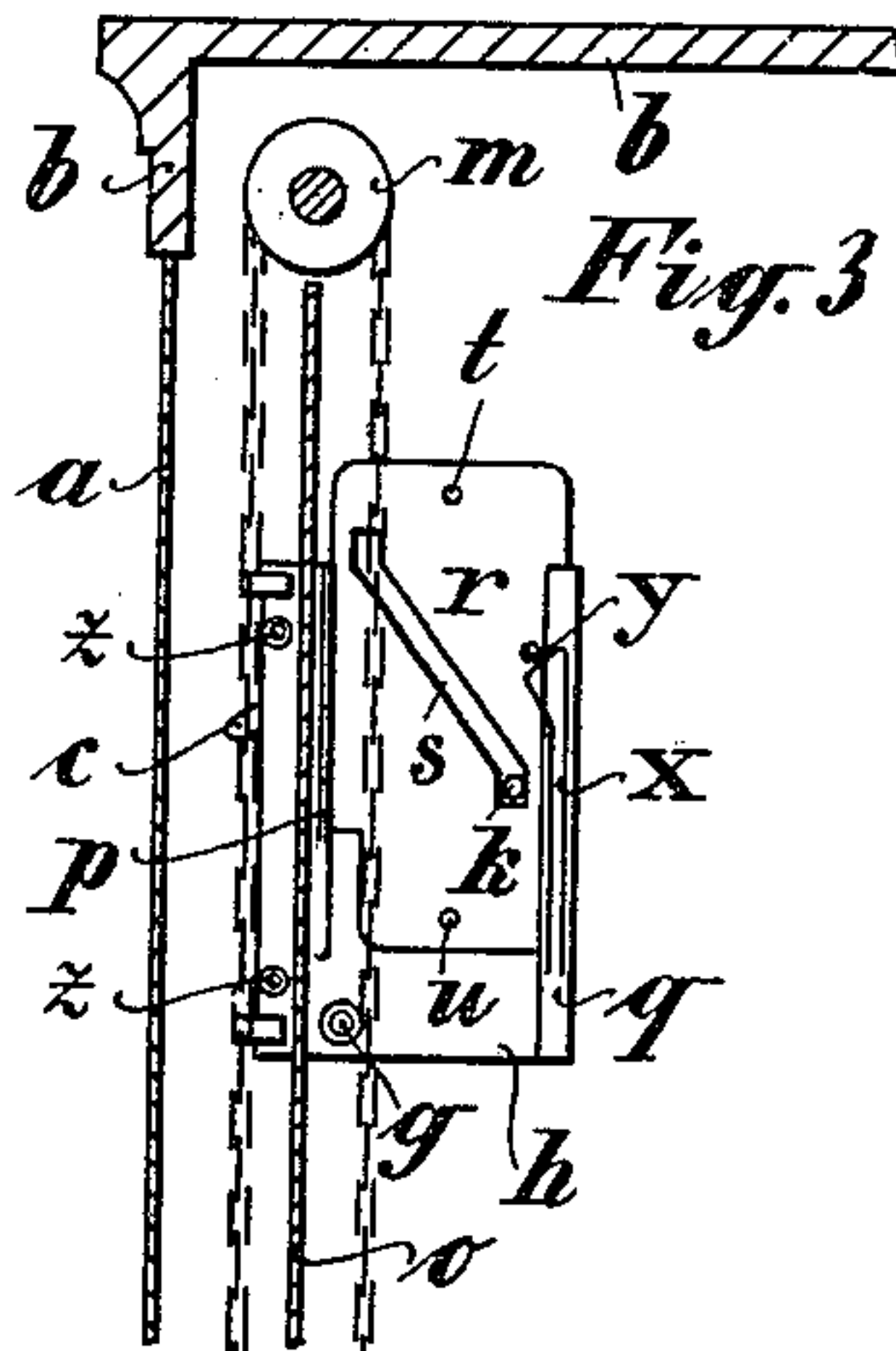
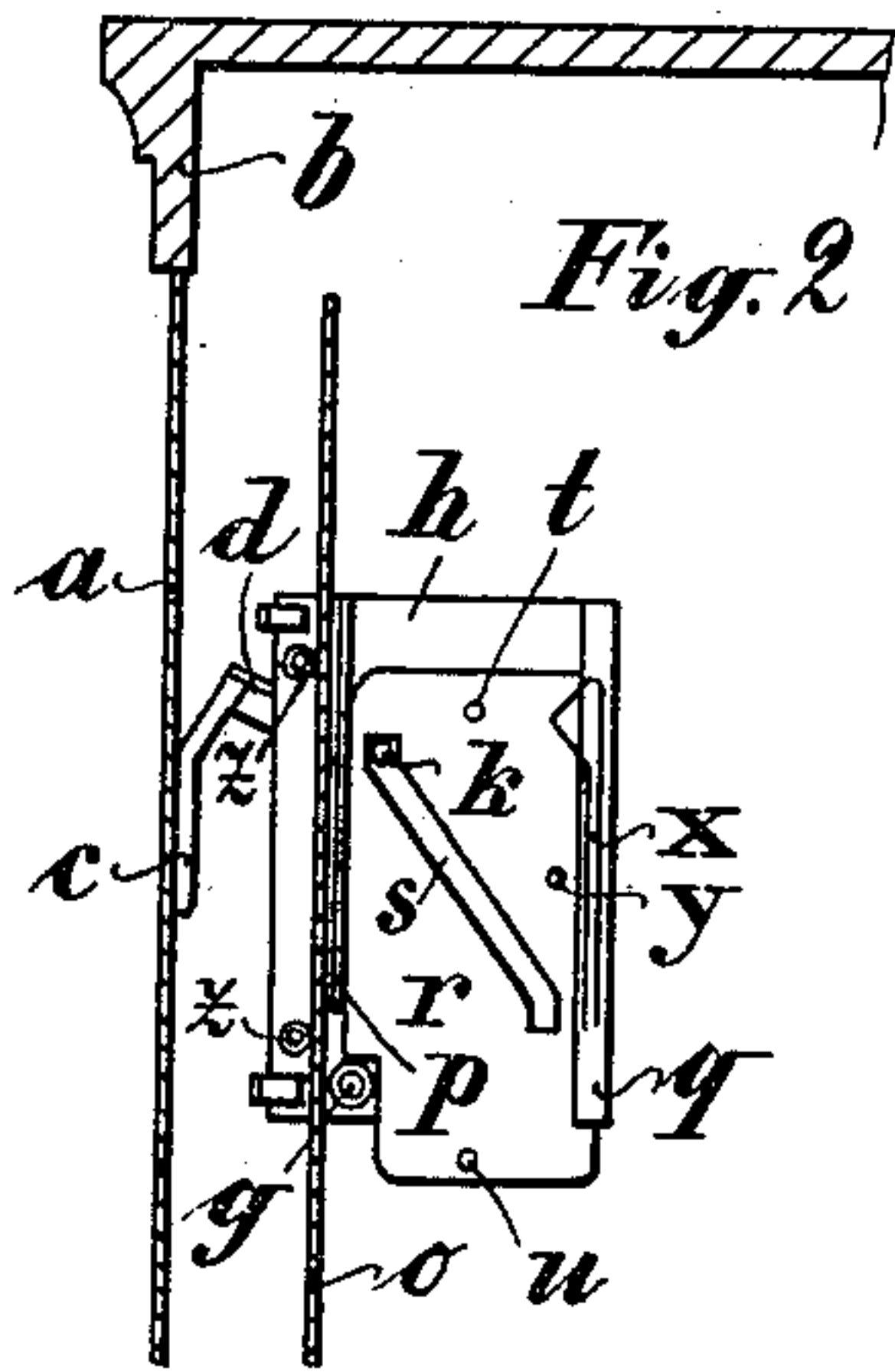
C. WERNICKE.

APPARATUS FOR CLEANING GLASS PANES.

(Application filed May 9, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

CARL WERNICKE, OF STASSFURT, GERMANY.

## APPARATUS FOR CLEANING GLASS PANES.

SPECIFICATION forming part of Letters Patent No. 639,956, dated December 26, 1899.

Application filed May 9, 1899. Serial No. 716,100. (No model.)

*To all whom it may concern:*

Be it known that I, CARL WERNICKE, a subject of the Emperor of Germany, residing at Stassfurt, Prussia, German Empire, have invented certain new and useful Improvements in Apparatus for Cleaning Glass Panes, of which the following is a description.

The cleaning of the plate-glass panes in show-windows, especially at the inside, frequently presents great difficulties and trouble, as in most cases it is not possible to reach the panes without first removing the merchandise exposed for sale. Still the cleaning is often necessary, as, especially with the changes of weather, the glass panes are very liable to become dimmed, and consequently less transparent. My invention is designed to overcome these difficulties and to allow of the cleaning of the glass panes at any time and without any disturbance of the merchandise exposed.

To this end my device consists of a strip of rubber, felt, or similar material held in a suitable horizontal holder extending across the glass pane, adapted to be moved up and down and so constructed that in its downward motion it is pressed firmly against the pane and that when the bottom is reached it is automatically removed from the pane and again raised without touching the same, so as to keep the moist strip of rubber, &c., away from the glass during such upward movement.

Said invention is fully shown and described in the following specification, of which the accompanying drawings form a part, wherein similar letters of reference designate like or equivalent parts wherever found throughout the several views, and in which—

Figure 1 is a view of a show-window equipped with my improved cleaning apparatus looking from the rear. Fig. 2 is a side view of such mechanism looking from the left, the upper portion of such Fig. 2 showing the outside of the left-hand portion of the mechanism as seen from the extreme right and the lower portion showing the inside of the like mechanism when at the bottom as viewed on the other or right side of the window from the center of the window, the rubber or felt strip being shown in contact with the glass as it appears during its downward movement; and Fig. 3 is a view similar to Fig. 2, showing the

strip out of contact with the glass as it appears during the upward movement. Figs. 4 and 5 show face and side views of the guide-plates, and Figs. 6 and 7 show details of the parts for holding and moving the rubber or felt strip.

Referring to the drawings, *a* represents the glass pane held in the sashes *b*.

*c* is a strip, made of rubber, felt, or similar suitable material, suitably held in the holder or carrier-bar *d*. This holder or carrier-bar *d*, which extends laterally over the entire width of the pane, is provided at each end with an arm *e*, connected to a lever *f*, pivoted to the stud *g* on the plate *h*. A stud *k* is provided upon the arm *e*, which guides the latter in a curved slot *i* of the plate *h*. Both plates *h* are attached to chains or cords *l*, running around rollers *m* and *n*, and thus allow of an upward-and-downward movement of the holder *d* with the rubber strip *c*. At each side are provided guides *o*, Figs. 2 and 3, against which press the rollers *z* of the plates *h*, and thus prevent any undue motion of said plates. The plates *h* are also provided with grooves *p* and *q*, in which slides a slide-piece *r*, Fig. 5, which is provided with an oblique slot *s*, the upper and lower ends of which are vertical. The stud *k* of the lever *f* passes through the slot *i* and is guided in the slot *s*, so that when the slide *r* rises the stud *i*, with the lever *f*, the holder *d*, and strip *c*, will swing backward, Fig. 3, so as to force the rubber strip *c* away from the pane, while with a downward motion of the slide *r* the lever *f* and the arm *e* are swung forward, Fig. 2, and the rubber strip is then pressed against the pane ready for the downward cleaning movement, and the vertical ends of slots *s* are designed to prevent the sliding back of the holder from its forward or backward position, as the case may be. In order to automatically effect this forward-and-backward motion of the strip and holder, the slides *r* are provided at the upper and lower ends with studs *t* and *u*. When the plates *h* reach their bottom position, the stud *u* abuts against a suitable projection *A*, (shown in Fig. 1,) whereby the slide *r* is pushed upward, and the rubber strip *c* swings away from the pane in the manner above described, ready for the upward non-working movement. When the appara-



tus has reached its highest position, the studs *t* abut against suitable projections *B*, and the slides *r* are by this pushed downward and the rubber strip is swung against the glass pane, ready for the downward cleaning movement. The carrier-bar *d* is then slowly lowered, and the strip *c* being pressed against the glass pane will clean the same or rub the moisture away, to be automatically swung away by the stop *A* from the pane when it has arrived at its lowest position, and thus to be pulled upward again.

Located upon the outer side of the turned-back fold of the plate *h*, forming the groove *q*, is a spring *x*, adapted to engage with a pin *y* on the slide *r*, so as to secure the cleaning-strip *c* firmly in its non-working position during the upward motion of the same, the non-engaged positions of such pin *y* and spring *x* being shown in the upper portion of Fig. 2 and the reverse or engaged positions being shown in the upper portion of Fig. 3.

Any desired means may be used for rotating the endless belts or chains *l* around the pulleys *m* and *n*; but I prefer to attach a pulley *w* to a shaft upon which the pulleys *n* are rigidly secured and then to rotate the pulley *w* first in one direction and then in the other by means of a belt or chain actuated by a like pulley *w'*, actuated by a crank *v*.

In some cases and where the carrier-bar *d* is made so heavy and stiff as not to twist plates *r* and *h* may be attached only to one end thereof with equal effect; but I prefer to make the bar *d* light and have such mechanism at either end, as shown, and consider all my claims to cover either of such forms. In some cases the plates *h* and *r* and the attached tripping and holding mechanism may be used only at one end of the bar, and while in obedience to the request of the Patent Office I have used plural terms in the claims, I consider that such plural terms cover the use of single devices, as well as a plural number thereof.

It is evident that many modifications in the construction, combination, and arrangement of the several parts of my improved window-cleaning device may be made without departing from the scope of my invention, and I do not intend to limit myself to the exact form or arrangement of the whole or of any of the parts thereof.

What I claim, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination with a window-pane, of a carrier-bar, a cleaning-strip carried by the car-

rier-bar, means for reciprocally moving the carrier-bar, and stops at either end of the movement for forcing the cleaning-strip into contact with the pane at the end of the movement of the carrier-bar in one direction, and out of contact therewith at the end of the reverse movement of such carrier-bar, substantially as shown and described.

2. In a device of the class described, the combination with a window-pane, of a carrier-bar, a cleaning-strip carried by the carrier-bar, means for reciprocally moving the carrier-bar up and down, and a stop at the top and a stop at the bottom for automatically tripping and moving the carrier-bar into contact at the upper and out of contact at the lower end of its reciprocal motion, whereby the cleaning-strip will be in contact with the glass pane only during the downward movement of the carrier-bar, substantially as shown and described.

3. In a device of the class described, the combination with a window-pane, of a carrier-bar, a cleaning-strip carried by the carrier-bar, levers *f* secured to the ends of the carrier-bar, plates *h* provided with a slot *i* pivotally connected with the levers *f* by a pivot-pin *g*, a sliding plate *r* provided with a diagonal slot *s* carried by the plates *h*, a pin *k* secured to the levers *f* and passing through the slots *i* and *s* of the plates *h* and *r*, stops *A* for forcing the slide-plates *r* downward, and a stop *B* for forcing the same upward, relative to the plates *h*, substantially as shown and described and for the purposes set forth.

4. In a device of the class described, the combination with a window-pane, of a carrier-bar, a cleaning-strip carried by the carrier-bar, levers *f* secured to the end or ends of the carrier-bar, plates *h* provided with a slot *i* pivotally connected with the levers *f* by a pivot-pin *g*, a sliding plate *r* provided with a diagonal slot *s* carried by the plates *h*, a pin *k* secured to the levers *f* and passing through the slots *i* and *s* of the plates *h* and *r*, stops *A* for forcing the slide-plates *r* downward, stop *B* for forcing the same upward, such movement being relative to the plates *h*, and a locking device for locking the plate or plates *r* in both positions, substantially as shown and described and for the purposes set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CARL WERNICKE.

Witnesses:

F. T. STEPHAN,  
M. DIEDERICH.