

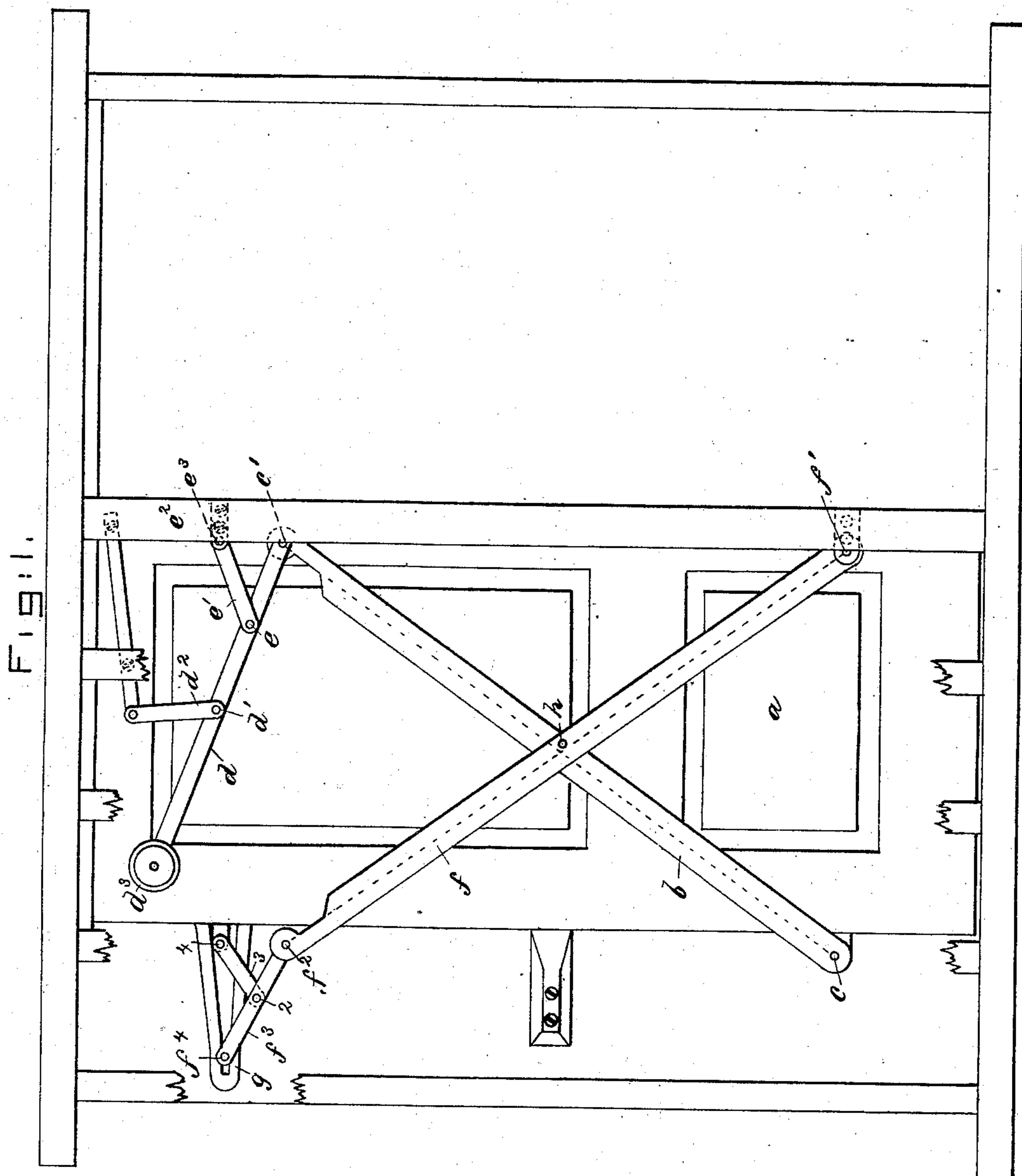
(No Model.)

2 Sheets—Sheet 1.

E. PRESCOTT.  
Sliding Door Hanging.

No. 238,310.

Patented March 1, 1881.



WITNESSES -

Arthur Reynolds  
W. D. Dearborn.

INVENTOR -

Edwin Prescott  
by Crosby & Gregory  
Attys

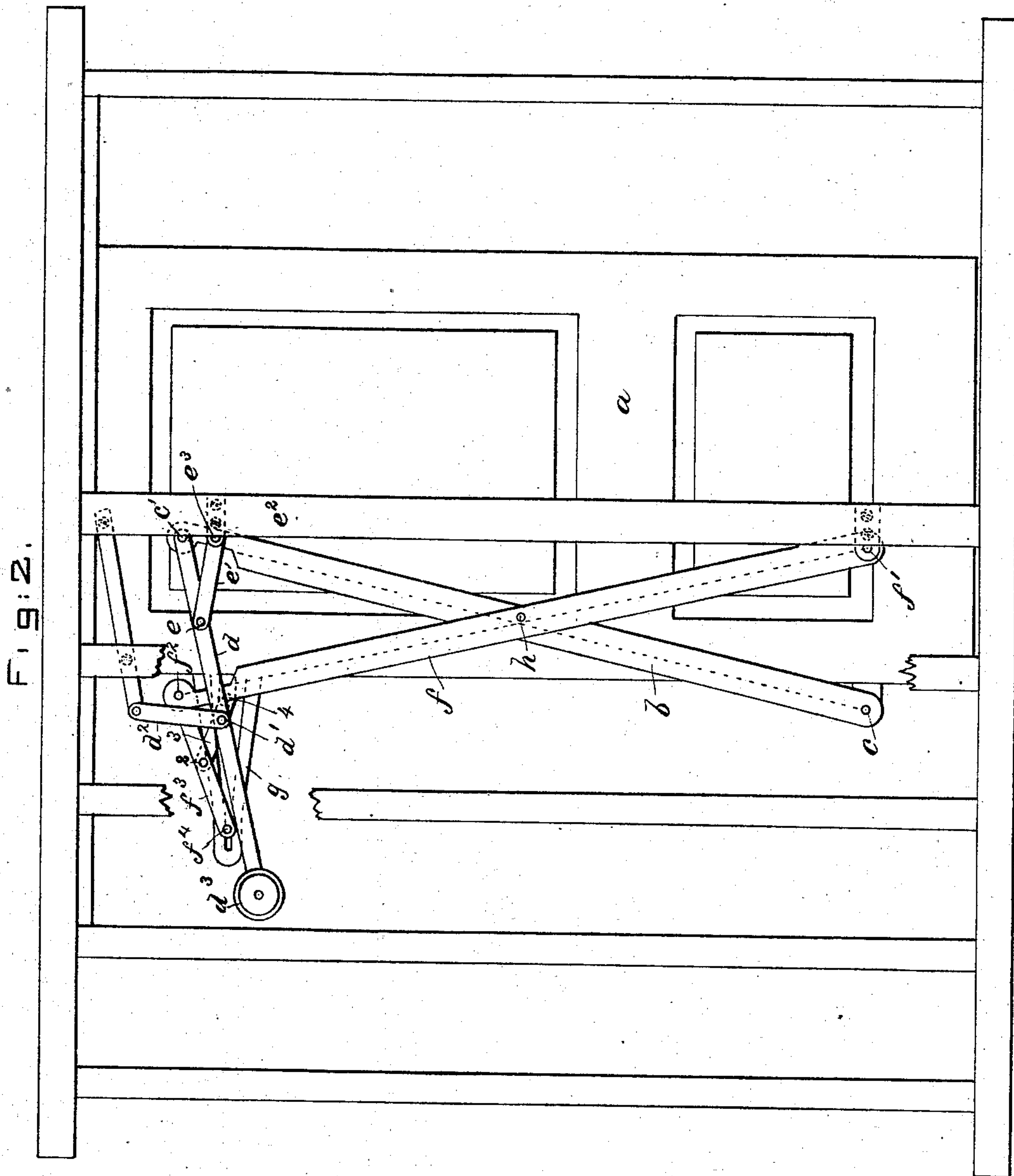
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# UNITED STATES PATENT OFFICE.

EDWIN PRESCOTT, OF HAMPTON FALLS, NEW HAMPSHIRE.

## SLIDING-DOOR HANGING.

SPECIFICATION forming part of Letters Patent No. 238,310, dated March 1, 1881.

Application filed October 30, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN PRESCOTT, of Hampton Falls, Rockingham county, State of New Hampshire, have invented an Improvement in Hangings for Sliding Doors, of which the following description, with the accompanying drawings, is a specification.

This invention relates to improvements in hangers for doors, gates, &c., of that class wherein the doors, gates, &c., are arranged to slide rather than to swing; and my present invention is an improvement on United States Patents No. 183,325, October 17, 1876, and No. 196,990, November 13, 1877, and No. 205,763, July 9, 1878, heretofore granted to me, and to which reference may be had. In this class of hanger the weight of the levers must be so proportioned or balanced with relation to their points of support as to obviate the tendency of the center of gravity of the hangers to seek the center line of their mean support.

One chief object of this my present invention is to counterbalance the weight of the hanger, and thus overcome its tendency toward equilibrium or its center of gravity. I have arranged the common pivot of the door and post levers at the door-jamb side of the intersecting point of lines drawn longitudinally along the door and post levers, and intersecting their points of connection or bearing upon the post and door, such arrangement of pivots causing the door to rise as it is opened, enabling it to act as a counter-balance to the weight of the hanger or the tendency of the levers to spread at their ends, turning about the common pivot. For very heavy doors, where heavy hangers are used, this arrangement alone would not suffice.

Patent No. 205,763, July 9, 1878, shows a hanger in which the ends of the door and post levers connected with the door are longer than are their arms connected with the post or building, thus enabling me to utilize the weight of the door, as therein described, to counteract the gravitating tendency of the hanger; but with such levers the horizontal movement of the door is less than would be the case were the levers of equal length from their common pivot, and consequently the width of the door and its horizontal movement were both circumscribed.

In order to enable the hanger to give to a

door the greatest horizontal movement possible, I have discovered that the ends of the hangers from this common center or pivot should be of substantially equal length; but with levers of equal length, as in my Patent No. 183,325, October 17, 1876, there was no provision made for the rise of the door in order to enable it to act as a counter-balance to the gravitation of the hangers. So, to enable me to use this class of hangers having levers not so unequal in length, but that a long horizontal movement may be obtained, and at the same time impart to the door a rising movement when opening, I have devised the simple plan of placing the common pivot of the two levers on the door-jamb side of the point of intersection of lines drawn longitudinally through the end centers or connections of the levers with the door and building or post. The greater the distance of this pivot from the longitudinal lines referred to, the greater the rise of the door. In order to effect a perfect counter-balance by simply changing the location of this common pivot, I found in very heavy doors, when heavy hangers were used, that the rise given to the door was more than was desirable, and to prevent excessive rise, and yet enable me to avail myself of much of the advantage to be derived from this peculiar location of the common pivot of the levers, I devised for the hangers a counter-balance which I can easily proportion in weight to the weight of the hanger and door.

Figure 1 represents, in side elevation, a door hung in accordance with my invention, the door being shown as open; and Fig. 2 shows it partially closed.

The door *a*, at its inner edge or side, is supported by the door-lever *b*, connected with it at *c*, and pivoted at its upper end, at *c'*, upon the end of a counterbalancing-lever, *d*, having a movable fulcrum, *d'*, the said fulcrum being preferably supported by a pivoted link, *d<sup>2</sup>*. The lever *d* has upon it a suitable weight, *d<sup>3</sup>*. Between this movable fulcrum *d'* and the pivot *c'*, I connect with the said lever, at *e*, a radius-bar, *e'*, pivoted to the post *e<sup>2</sup>* at *e<sup>3</sup>*, or other proper permanent part of the building, the length of the said bar *e'* between its pivots *e<sup>2</sup>* and *e<sup>3</sup>* being equal to the length of the lever *d* between the pivots *e* and *c'*.

The so-called "post-lever" *f* is pivoted at one



end to the post  $e^2$  by the pivot  $f'$ , and at its other end it is connected, as herein shown, by the pivot  $f^2$ , with a lever,  $f^3$ , having a movable fulcrum,  $f^4$ , (shown as entered into a slot in a guide,  $g$ , connected with the door at its inner edge.) This lever  $f^3$  has pivoted upon it, at 2, a radius-bar, 3, the other end of which is also pivoted to the door at 4, and is of a length equal to the distance between the pivots 2 and  $f^2$ . These two levers  $b$  and  $f$  have a common pivot,  $h$ , which is located at the door-jamb side of the dotted lines, (see Figs. 1 and 2,) drawn longitudinally through the centers or pivots  $c c' f' f^2$  of the said levers, the said common pivot  $h$  being more or less removed from these longitudinal lines, according to the distance it is desired to permit the door to rise while being opened, as before described.

The weighted lever  $d$ , having a movable fulcrum, and the radius-bar connected with it, constitute what I herein denominate the "counterbalancing" mechanism for the hanger.

The radius-bar  $e'$ , joined with the post and lever  $d$ , constitutes a parallel-motion connection or device to direct and insure proper vertical movement of the loose end of the door-lever. The radius-bar 3 and lever  $f^3$  insure a like movement for the loose end of the post-lever. Instead, however, of this lever  $f^3$  and radius-bar 3, I may use, as in my former patents, a pin and guide-slot, or any other common sliding connection. This same counterbalance will operate equally well if the loose

ends of the crossed levers  $b f$  are below rather than above their common pivot, as would be represented were the drawing Fig. 1 turned upside down.

I claim—

1. In hangers for sliding doors, the post-lever and door-lever having a common pivot or center located at the door-jamb side of longitudinal lines drawn through the pivots or connections of the said levers with the door and post, substantially as described.

2. A hanger for a sliding door, composed, essentially, of a post-lever and door-lever having a common center, in combination with a connected counter-balance to counterbalance the weight of the hanger, as and for the purpose specified.

3. In a door-hanger for sliding doors, the door-lever and post-lever having a common fulcrum or pivot, combined with levers  $d$  and  $f^3$ , having movable fulcra and radius-bars, the said levers  $d$  and  $f^3$  and the said radius-bars being connected with the free or movable ends of the post and door levers, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN PRESCOTT.

Witnesses:

G. W. GREGORY,  
ARTHUR REYNOLDS.