

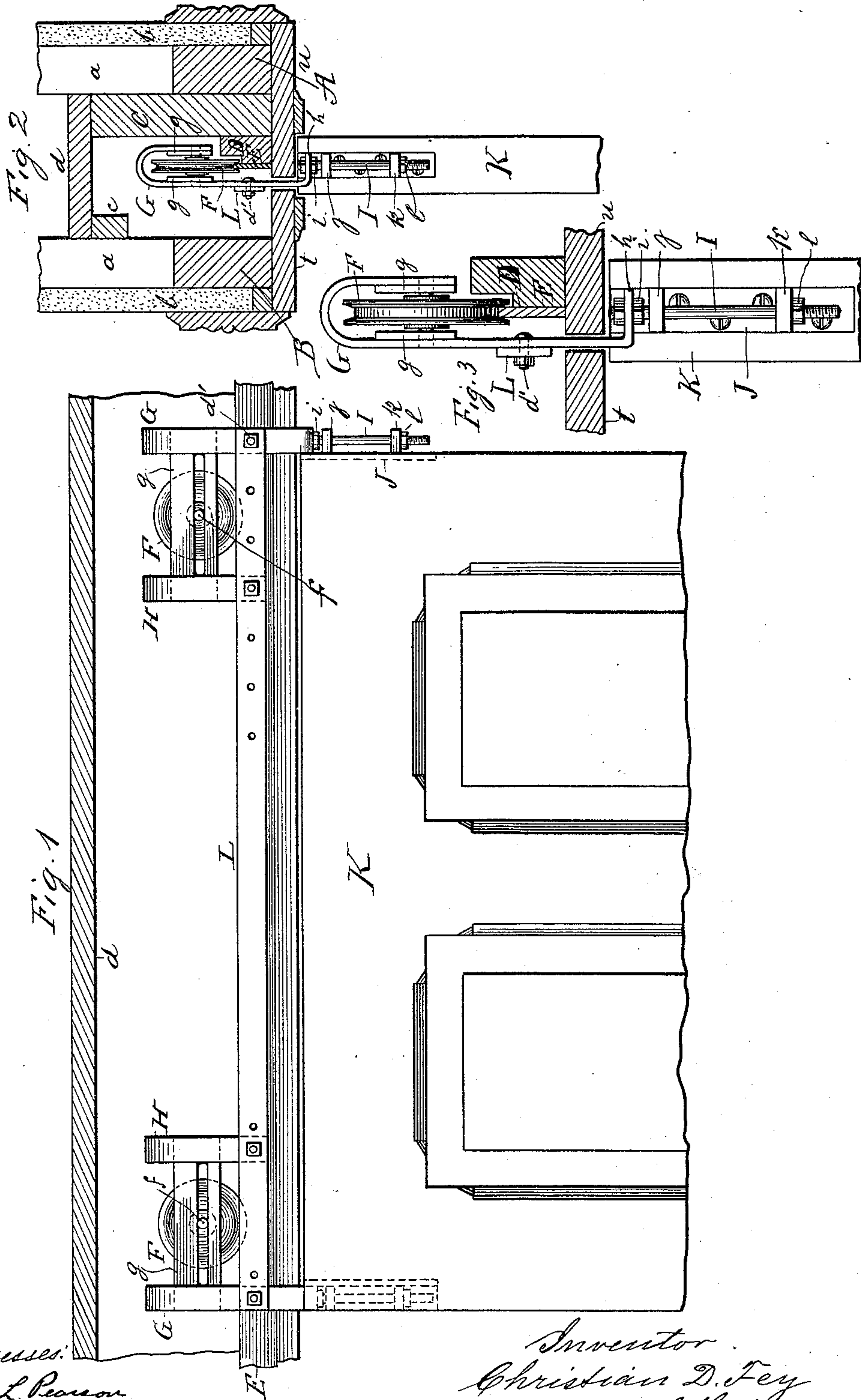
(No Model.)

2 Sheets—Sheet 1.

C. D. FEY.
SLIDING DOOR.

No. 431,570.

Patented July 8, 1890.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHRISTIAN D. FEY, OF CHICAGO, ILLINOIS.

SLIDING DOOR.

SPECIFICATION forming part of Letters Patent No. 431,570, dated July 8, 1890.

Application filed March 12, 1890. Serial No. 343,669. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN D. FEY, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sliding-Door Hangers; of which the following is a specification, reference being had therein to the accompanying drawings.

Heretofore hangers for parlor sliding doors have generally been made each with two wheels riding upon double rails, which double rails from the uneven settling of the house have frequently been moved out of line with each other, whereby the track-wheels, with the heavy doors suspended thereto, following such uneven rails were swung out of their true vertical positions, and therefrom, being on twisted positions relative to their journal-bearings, have been causing so much impediment from frictional contact that it has been very hard work, and sometimes an impossibility, to move such doors; and it is the object of this my invention to provide a device by which a single rail only will be required, and in which the wheels are journaled in hangers extending through a very narrow slot in the upper frame, with the door suspended thereto in a manner to be vertical on a central line with such wheels for enabling the attachment of the hanger devices to the edges of such door, with provision for a vertical adjustment, and in which also the hangers can be lifted off their rail for removing the door without disconnecting such hangers by simply removing one of the ceiling-boards of the door-frame; and with these objects in view my invention consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents an elevation of the upper portion of a door as suspended to hangers; Fig. 2, an end or edge view of the same with the door-frame in section, and Fig. 3 a similar view of the hanger and rail on an enlarged scale. Figs. 4, 5, and 6 represent side elevations and an edge view of modifications.

Corresponding letters of reference in the several figures of the drawings designate like parts.

A and B denote two side beams above the

door-opening, upon each of which are secured scantlings *a*, which, with the plastering *b*, will form a double wall. Against the inward face of beam A is secured a beam C of greater width, upon which and upon a strip *c*, spiked against the scantlings *a*, is secured a cap-board *d*, and against the inward face of beam C is fixed a strip D, all the beams A, B, and C and the strip D being with their bottom edges on the same level. The strip D is rabbeted on its upper inward corner, and against it is secured a flat iron rail E, projecting with its upper edge above the rabbet of strip D. This rail E extends the entire distance the door or doors may occupy while being opened or closed.

Upon the rail E will ride the wheels F, each grooved in its rim to provide side flanges lapping over the corners of such rail, and each wheel F has journals *f* projecting from each side, each journal *f* moving in a longitudinal slot of a bar *g*. The ends of the slotted bars *g* are secured to be parallel with and opposite each other against the inward faces of the two parallel shanks of hanger-yokes G and H, the connecting portion between the two shanks of each yoke being semicircular to clear the peripheries of wheels F. One shank of each yoke G being elongated downward it has formed to its lower end a rectangular eye-lug *h* for securing a bolt I by its head resting on top of lug *h*, and by a nut *i*, screwed on such bolt against the bottom face of lug *h*. Each such bolt I is passed through two eye-lugs *j* and *k* of a plate J, rigidly secured by wood-screws against one end of the door K, that is to be suspended, with the plates J, for the meeting edges of double doors or for the edge of a single door to meet the jamb-lining of the door-frame secured in recesses cut in such door edges for the projecting lugs *j* and *k* to be flush with the door edge, and upon the bottom end of each bolt I is screwed a nut *l* to butt against lug *k* for supporting the door K to be vertically adjustable on such bolts. These bolts I thus being vertically in line with the wheels and the lugs *j* *k* being central of the door edge, the door will be suspended centrally to the wheels and rail. Against the longer shanks of the two yokes G thus secured to the opposite edges of a door K is secured by bolts *d'* a bar L, connecting the

same, and against this bar L are secured again by bolts the longer shanks of the intermediate yokes H, and for the purpose of making this bar suitable for different width of doors the bar L may have punched a series of holes for coupling yokes G and H. By this arrangement, as will be readily seen, the elevation of the door K can be adjusted from both edges of such door, and no fastenings for the suspension of the same are required to be fixed to the door intermediate of its side edges.

For very wide and thick doors the bar L would have to be very heavy flat iron, which would add more weight than desirable, in which case I can make the hanger-yokes for each wheel F, both alike, and while I suspend the door K to the yokes G in the same manner as before described I use for the intermediate yokes G' a shorter bolt I'. The bottom of the yoke G' in this case is entered in a mortise *m* in the top edge of the door, with a washer *n* placed in the bottom of such mortise, and another mortise *o*, I cut in one side of the upper portion of the door K. Then I bore a hole from mortise *m* to mortise *o* for bolt I', which will also pass through a washer *p* in mortise *o*, against which the nut *l'* will butt, and then I close the mortise *o* by a plate *q* let in the wood to be flush with the face of the door, and to be removably secured by wood-screws *r*, all as shown by Fig. 4.

For light common doors, I can use for each wheel F a single yoke G', in which, upon a bolt *s*, passed through holes in both shanks of such yoke, is loosely pivoted the wheel F, as shown by Figs. 5 and 6, the connection with the door K of such yoke G' being made similar to the device shown by Fig. 4.

The ceiling-boards *t* and *u* of the door-frame

are secured under the beams A, B, and C to leave a narrow opening only just wide enough for clearing the longer shanks of hanger-yokes G.

It will thus be readily seen the eye-lugs *h* to the ends of yokes G with either arrangement will place the hanger-bolts I centrally under the wheels F, which hanger-bolts I, again, will be connected centrally to the door.

What I claim is—

1. In a door-hanger, and in combination with rigid single rails E, wheels F, riding upon such rail, and hanger-yokes G, supported on such wheels and having to their longer shanks rectangular eye-lugs *h* for coupling bolts I, to be vertically in line with wheels F, and such bolts I being connected with the door for vertical adjustment to be on an edge-wise central line therewith, substantially as set forth.

2. In a door-hanger, and in combination with the rigid single rail E, wheels F, riding upon such rail, and each provided with journals *f*, moving in slotted bars *g*, each pair of such bars *g* being secured between two hanger-yokes G and H, the yokes G having longer shanks connected with the ends of the door, and both yokes G of a door being connected by a bar L, and both yokes H, intermediate of yokes G, being secured to such bar L, all substantially as set forth, for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTIAN D. FEY.

Witnesses:

WILLIAM H. LOTZ,
OTTO LUEBKERT.