No. 865,046. PATENTED SEPT. 3, 1907.

J. L. KAIL.

MEANS FOR HANGING LATERALLY MOVABLE DOORS.

APPLICATION FILED JAN. 2, 1907.

Fig. 2.

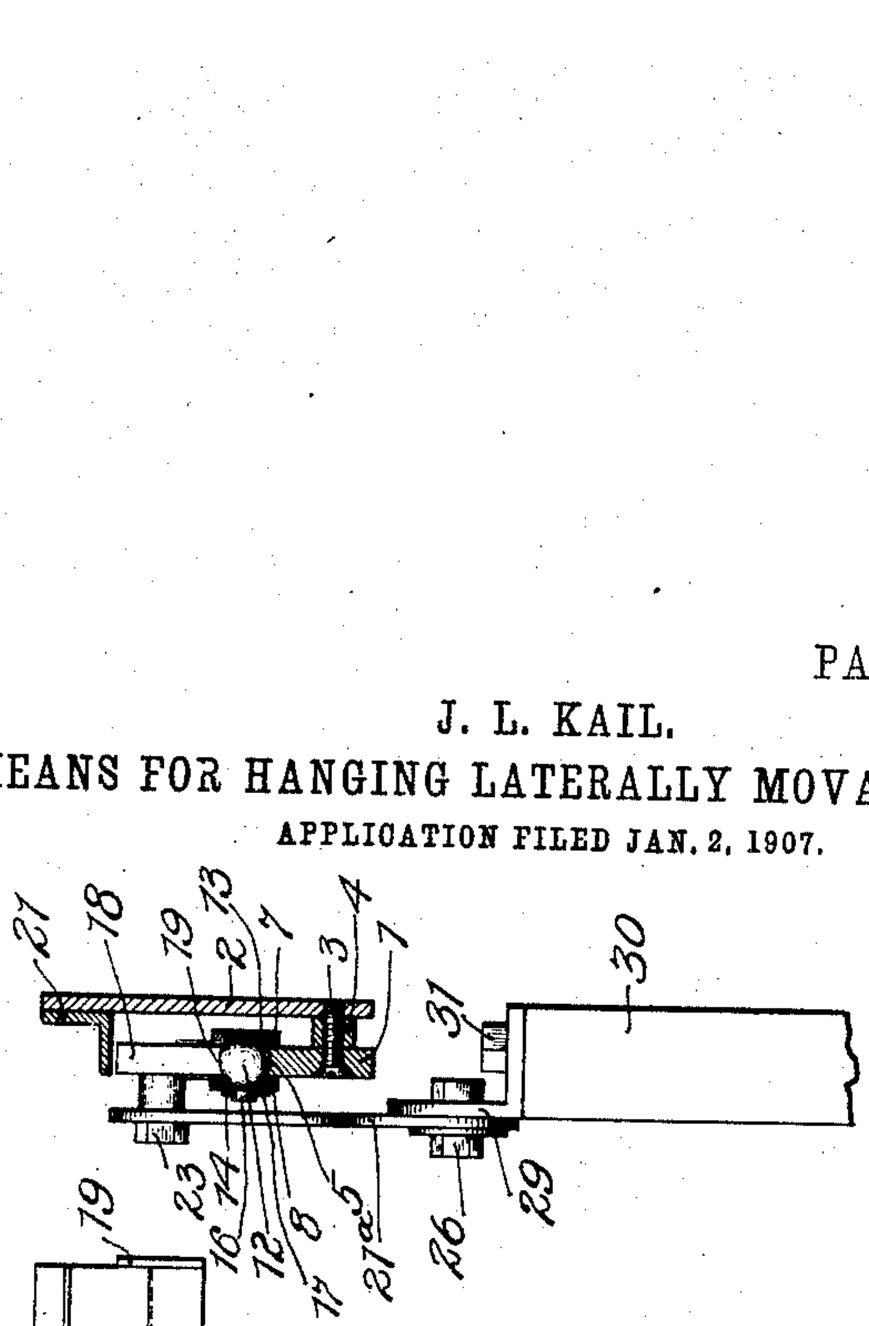


Fig. 1.

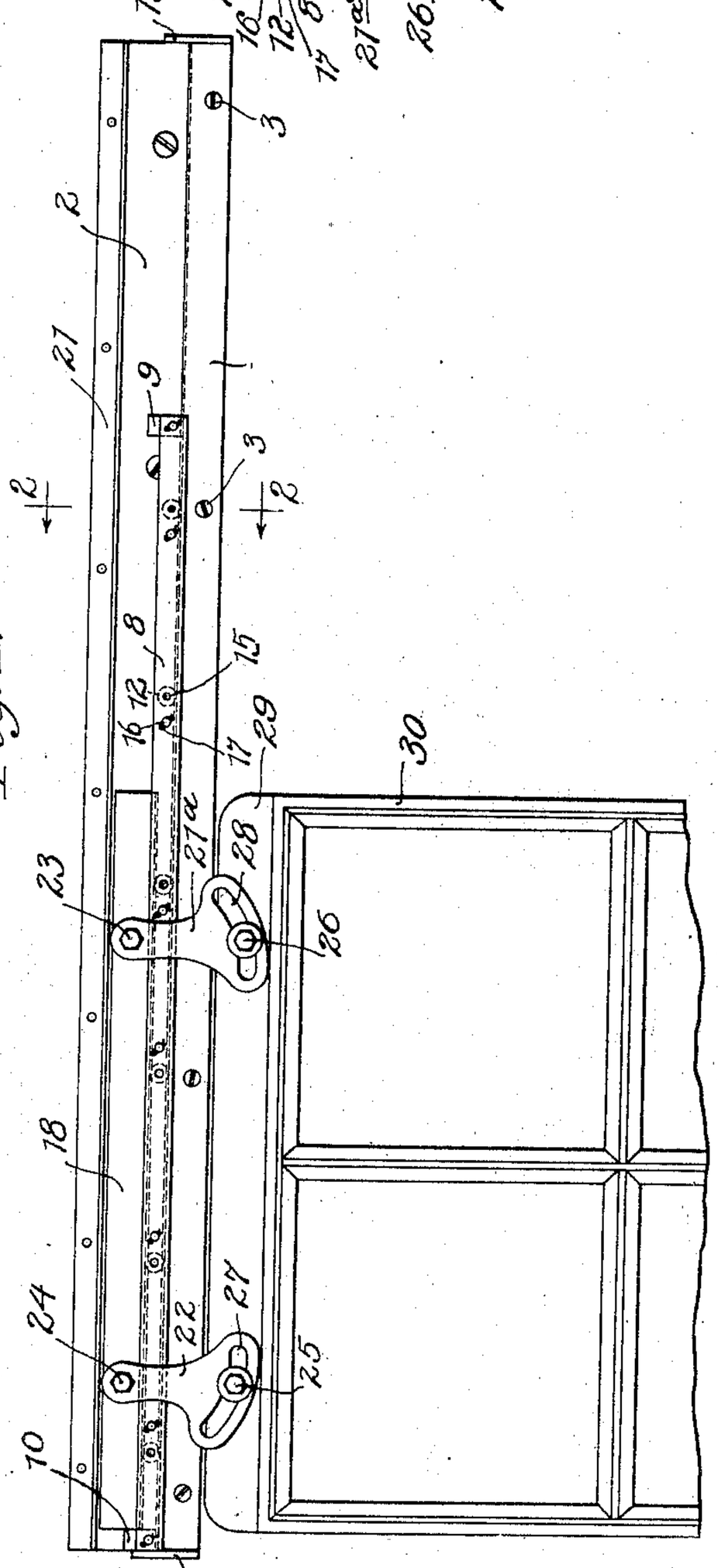


Fig. 3.

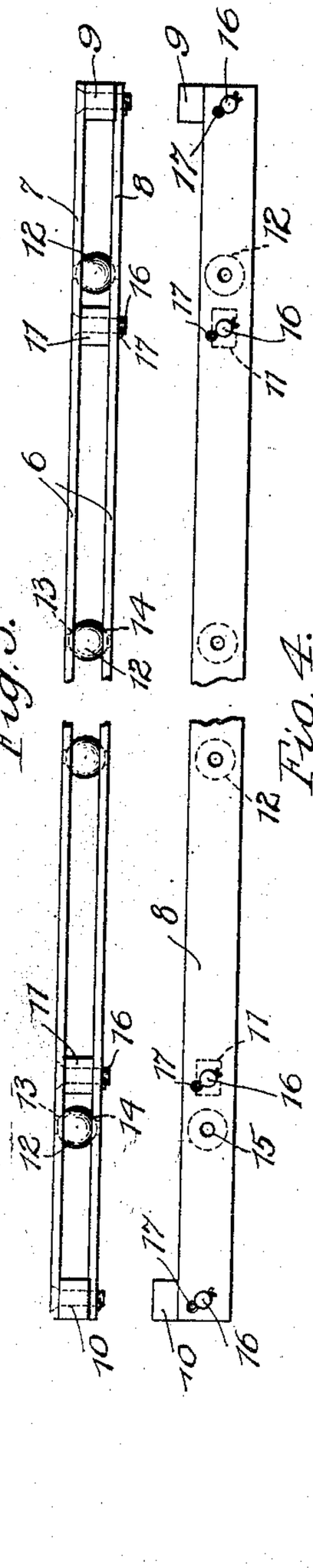
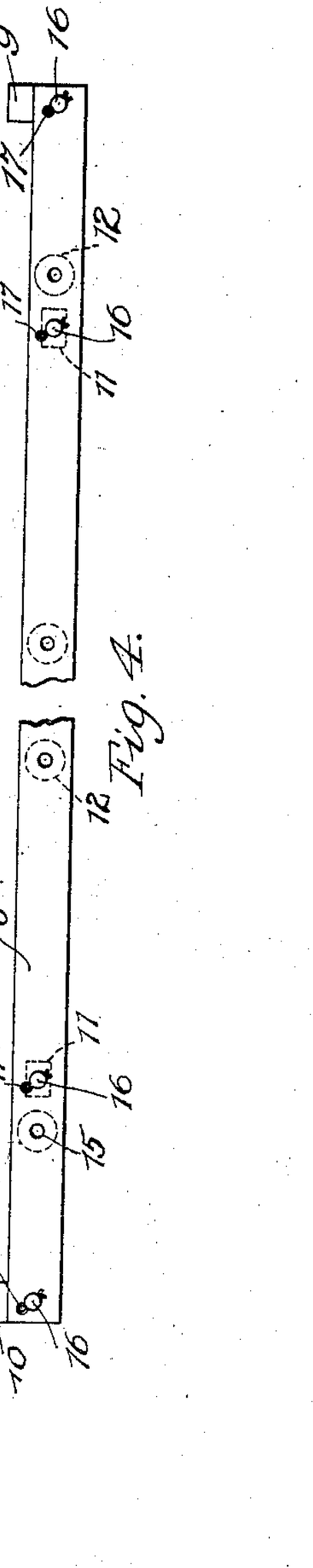


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MEANS FOR HANGING LATERALLY-MOVABLE DOORS.

No. 865,046. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed January 2, 1907. Serial No. 350,320.

To all whom it may concern:

Be it known that I, JACKSON L. KAIL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Means for Hanging Laterally-Movable Doors, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to door hangers for laterally movable doors or other objects and contemplates the provision of means whereby a door may be supported upon a track by ball bearings.

The object of my invention is to provide means whereby the door may be easily moved laterally and to prevent the binding or sticking of the door in any position.

A further object of my invention is to provide a hanger which can be easily movable, one that is durable and that readily permits the adjustment of the door in a vertical position.

My invention will be best understood by reference to the accompanying drawing, in which

Figure 1 illustrates my invention associated with a door; Fig. 2 is an enlarged sectional view taken on line 2—2 of Fig. 1; Fig. 3 is a top view of a movable frame, and Fig. 4 is a side view of Fig. 3.

A fixed track 1 is secured to a frame 2 by means of screws 3, 3, spacing blocks 4 being interposed between this track and the frame. The top of the track may have a groove as shown at 5. I have provided a suitable movable frame 6 which is adapted to reciprocate upon the track 1 upon any movement of a door which is adapted to move back and forth. The frame 6 consists of side bars 7 and 8 which are fastened at their ends to spacing blocks 9 and 10 and at intermediate places by blocks 11. These side bars form the means of holding anti-frictional members or ball bearings 12 which are retained in recesses 13 and 14 upon the bars. Openings 15 may be drilled so that oil can be admitted between the surfaces of the bars and the anti-frictional members.

To quickly assemble the frame and its associated members, the spacing blocks may be retained in position by means of pins 16, 16, which pass through openings in the bars and spacing blocks and which are held in place by means of the cotter-pins 17, 17. The anti-frictional members held in the framework 6 are adapted to ride upon the track 1 and are interposed between the track and a bar 18 which is adjustably secured to the door, this bar 18 having a groove 19 which engages the anti-frictional members. By thus providing these means there will be but a small amount of friction when the door is moved back and forth upon the track.

It will be apparent, of course, that the frame 6 will travel at one-half of the speed of the door and after the bar 18 has moved a distance so that it will engage the spacing block 9, the frame 6 will have traveled so that it engages a stop 19 formed upon or secured to the frame 2, a similar stop 20 being provided at the other end of the frame.

To prevent any displacement of the associated parts during the movement of the door, an angle bar 21 may be secured to the top of the frame and may serve as a guard for the bar 18. The frame of the door may be adjustably secured to the bar 18 by means of adjustable members 21^a and 22 pivoted to the bar at 23 and 24 and firmly held in engagement with the door by bolts 25 and 26. These members are provided with slots 27 and 28 disposed eccentrically with respect to the pivots 23 and 24, thus permitting the adjustment of the door when necessary. As shown, the bolts 25 and 26 are secured to an L-shaped member 29 which is fastened to the door 30 by means of the bolts 31.

It will be apparent that in providing the means which I have described there will be but very little friction when a door is moved from one position to another, and the associated parts are so constructed and disposed as to occupy as small a space as possible.

One of the advantages which my invention has over similar devices which have heretofore been used is that heavy doors can be moved from one position to another with comparative ease, and there is no tipping or binding action at either end of the excursion of the door.

It is obvious that my invention may be embodied in structures differing in ways that are not essential from the structure which I have shown as the embodiment in which I have practically employed it. I do not, therefore, wish to be limited to the precise construction set forth, but

What I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, the combination with a grooved track secured to a frame, of a movable frame adapted to retain ball bearings in said grooved track, a bar adapted to ride upon said bearings, hangers attached to said bar and provided with curved slots, a door, and bolts attached to said door and adapted to be adjustably secured in the slots of said hangers, substantially as and for the purpose set forth.

2. In a device of the class described, the combination with a grooved track secured to a supporting frame, of a movable frame having recesses for holding ball bearings, said ball bearings being adapted to run in said grooved track, a bar substantially shorter than said track adapted to ride on said ball bearings, hangers attached to said bar and provided with curved slots, a door, and bolts attached to said door and adapted to be adjustably secured in the slots of said hangers, substantially as described.

3. In a device of the class described, the combination with a door and a grooved track, of a supporting frame for said grooved track, ball bearings, a movable frame hav-

ing recesses for holding said ball bearings, said ball bearings being adapted to run in said grooved track, a bar adapted to run on said ball bearings, hanger members attached to said bar and having angularly disposed slots, and bolts attached to said door and adapted to be adjustably secured in the slots of said hangers, substantially as and for the purpose set forth.

4. In a device of the class described, the combination with a door and a fixed grooved track, of a movable carriage thereon, said movable carriage comprising parallel side bars extending below said fixed grooved track and adapted to retain spherical rollers upon said fixed grooved track, a bar adapted to ride upon said spherical rollers and extending below the upper edges of said parallel bars, hanger members 21^a and 22 secured to said bar and provided with curved slots, and bolts attached to said door and adapted to be adjustably secured in the slots of said hangers, substantially as described.

5. In a device of the class described, the combination with a door, of a fixed grooved track, a movable carriage therefor, said carriage comprising parallel side bars 7 and 8 with recesses 13 and 14 for retaining spherical rollers, spherical rollers adapted to move with said carriage, spacing blocks 9, 10 and 11, pins 16, 16 adapted to hold said spacing blocks in place, cotter pins 17, 17 for retaining said pins 16, 16, a bar adapted to ride above said carriage, and hanger members 21^a and 22 for securing the said door to said bar, substantially as described.

In witness whereof, I hereunto subscribe my name this 26th day of December A. D., 1906.

JACKSON L. KAIL.

Witnesses:
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