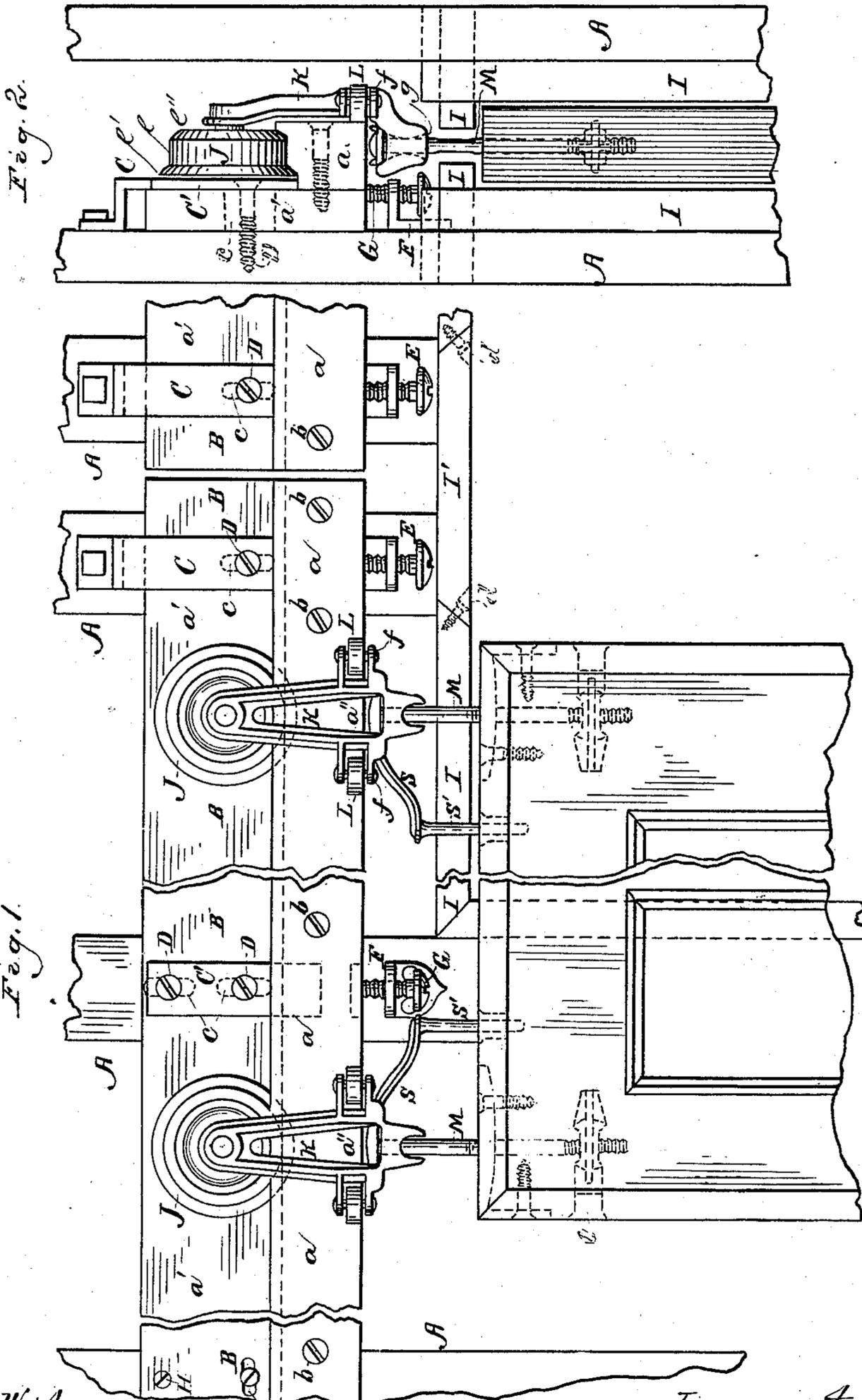


C. BRINTON.  
DOOR HANGER.

No. 286,774.

Patented Oct. 16, 1883.



Witnesses  
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*J. J. Kuhnlein.*

Inventor,  
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(Model.)

2 Sheets—Sheet 2

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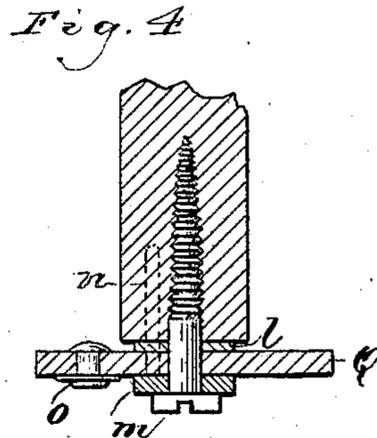
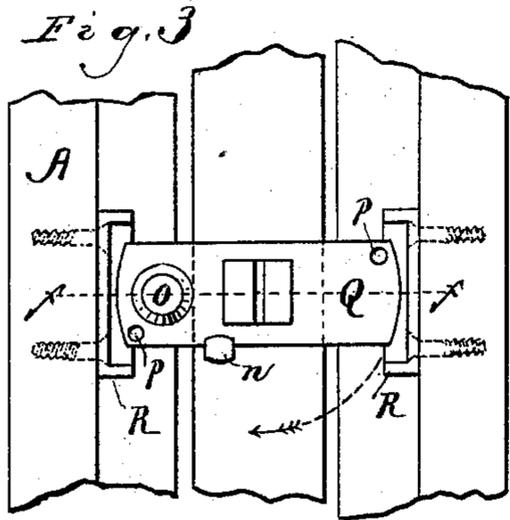


Fig. 5.

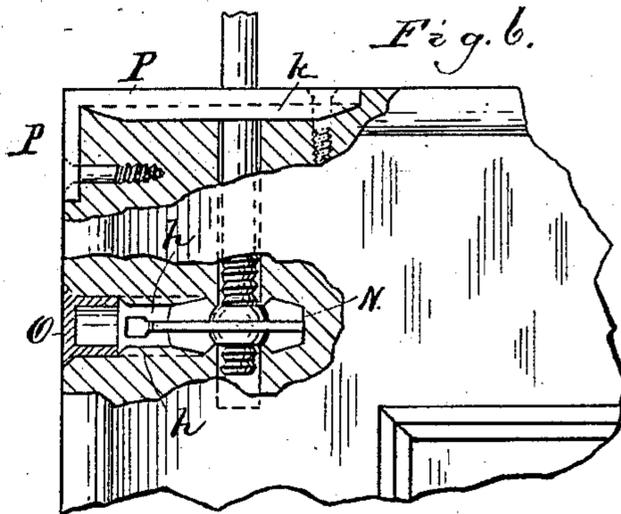
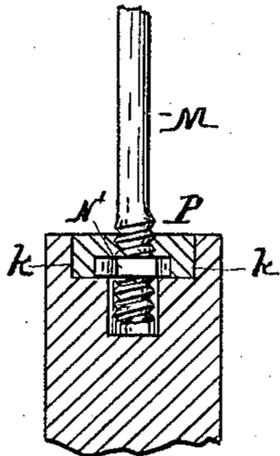
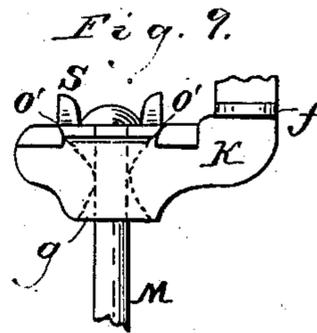
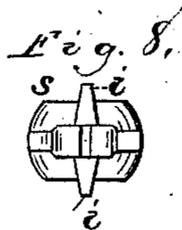
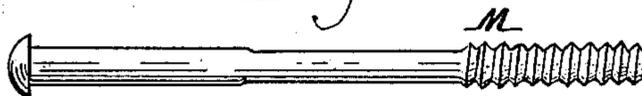


Fig. 7.



Witnesses.

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# UNITED STATES PATENT OFFICE.

CALEB BRINTON, OF CHICAGO, ILLINOIS.

## DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 286,774, dated October 16, 1883.

Application filed October 26, 1882. (Model.)

To all whom it may concern:

Be it known that I, CALEB BRINTON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Door-Hangers, of which the following, in connection with the accompanying drawings, is a specification.

Figure 1 is a side elevation of the hanger represented as when applied to the use for which  
10 it is intended. Fig. 2 is an end or edge view of the same. Fig. 3 is a face view of the door-stop, shown in connection with the parts operating therewith. Fig. 4 is a section in the  
15 plane of the line *x x* of Fig. 3. Fig. 5 is a sectional view of the door, showing a modification in the mode of connecting the door-bolt thereto. Fig. 6 is a side view of the door, represented as partly broken away, in order to  
20 show the mode of connecting the door-bolt to the door by means of an internal nut. Fig. 7 is a detail of the door-bolt. Fig. 8 is a detail of the internal nut; and Fig. 9 is a side view of the bracket-brace, bracket, and door-bolt,  
25 showing the beveled bearings between said brace and bracket.

Like letters of reference indicate like parts.

In the drawings, A A represent the studding of the wall or partition in which the doors  
30 are hung.

B is the track, which consists of a rail, *a*, and  
35 of a board, *a'*. The rail *a* is rigidly fastened to the face of the board *a'*, near its lower edge, by means of screws *b b* or other suitable fastenings.

C C are plates attached rigidly to the studding, and bent or formed to overlap the board  
40 *a'* and to extend underneath its lower edge. The board *a'* is slotted, as indicated by the dotted lines *c c*, and D D are screws passing through the said plates and slots into the studding.

These screws are aids in holding the board  
45 *a'* and plates C C properly in place.

E E are screws passing upward through the  
50 lower ends of the plates C C, and the lower side of the track B rests on these screws. C' is a plate attached to the studding by screws D D, as explained. The said plate overlaps the outer face of the board *a'*.

F is a bracket applied to the studding, and

G is a screw passing upward through the said bracket and meeting the lower side of the track B.

H and H' are screws securing the rear end  
55 of the board *a'* to one of the studs. The screw H' should pass through a somewhat oblong hole, as indicated by the dotted lines there shown.

I is the door-frame, a part of which, as at  
60 I', is directly below the screws E E. I make this part I' in a separate part or piece, secured removably in place by means of screws *d d*.

My purpose in connecting the rail to the  
65 board and the track to the studding, in the manner described, is to permit the track to be adjusted or made level, and prevent its bending or getting out of order by uneven settling of the walls or otherwise. To render the track  
70 level I insert a screw-driver or wrench through the opening in top of the door-frame, and through which the door-suspension bolts pass, and turn the screws E E and G, either in one  
75 direction or the other, as may be required, at which time the track will turn on the screw H as a pivot. Access may be had to the screw G by sliding the door below it out into the  
80 doorway far enough to permit that screw to be reached either by the hand or by means of a screw-driver inserted through the space commonly occupied by the door. The part I' of  
85 the frame may be removed, to obtain better access to the screws E E, and also to facilitate hanging the doors and to remove the several parts of the hanger and track for repairs, if  
90 necessary. The upper ends of the said plates may, in some instances, be secured to the lintel or longitudinal beam located (usually) above the track. Either adjusting device described may be employed to adjust the track  
95 when there is sufficient space between the under side of the track and the top of the door-frame to admit the bracket. It may be best to insert small metallic plates between the upper ends of the said adjusting-screws and the  
under side of the track B.

J J are the wheels or sheaves. These wheels  
100 have a straight face or tread, *e*, a beveled flange, *e'*, and a beveled web, *e''*, and the rail *a* has its bearings for the beveled portion

of the wheel, by preference, slightly convex in form, so as to reduce friction between said parts, as is clearly shown in Fig. 2.

K K are bifurcated brackets, in the upper 5 ends of which the axles or spindles of the wheels J J are rigidly secured. The brackets are formed to hang down over the outer face of the rail *a*, and also to project horizontally under the said rail, as shown in Fig. 2. The 10 opening *a''*, between the depending arms of the brackets, serves for the passage of the door-suspension bolt into or from its place in the bracket, without removing said bracket from the rail, thus facilitating hanging the doors.

L L are rollers having bearings in arms *ff*, 15 extending laterally from the bracket K, which rollers ride on the outer or vertical face of the rail *a*, as shown in Fig. 1, thereby preventing a wobbling movement of the wheels J J.

M M are the door-suspending bolts, the upper 20 ends of which are headed. The bolts depend freely from the horizontal parts of the brackets K K, and the holes through which they pass are somewhat elliptical or flaring, 25 being larger at the lower than at their upper ends, as indicated by the dotted lines at *g* in Fig. 2. By this means a slight swinging movement of the bolts is permitted. These bolts M M depend from points or hang in planes 30 between the center of the face or tread of the wheels J J and the beveled web *e''*, so that the weight of the doors, when hung, will cause the wheels J J to run free from the board *a'*. This elliptical form of the opening through which 35 the bolt M depends is only a matter of preference; but when employed the long diameter of said opening should be in the direction of the wheel-axle. By this means the slight oscillatory movement of the door in the same 40 direction will be permitted, and thus any tendency to binding or cramping, resulting from warping or twisting of the rails, will be prevented. The bolts M M enter the upper 45 edges of the doors, near the top, I make a horizontal bore, *h*, into which I drive a nut, N, having a central screw-hole, to receive the lower end of the door-bolt, which is screw-threaded to enter said nut. This nut is ribbed 50 on its top and bottom and sides, as shown at *i i*, Fig. 8, so that it may be crowded firmly into the bore *h*, and these ribs are beveled off toward their ends, so that the nut may be inserted and driven with facility, and so that it 55 may be rocked or tilted somewhat, both vertically and laterally, until it assumes its proper position for said bolt to enter. The central portion of this nut is spherical or rounded, so as to permit of this adjustment. The rear or 60 outer end of this nut may be notched slightly, as shown at *i'*, Fig. 8, so that a screw-driver or other suitable tool may be employed in adjusting the nut. A small hole may also be made vertically through the rear part of the nut, 65 so that a hook-shaped wire may be employed for drawing the nut from its socket; but as all

these details of construction are not absolutely essential, and do not constitute the most important features of my present invention, I have not here shown them with particularity. 70

O is a cap or removable plug, which I drive into the outer end of the bore *h* after the nut N has been properly arranged therein. It will be perceived that as the nut N is fixed or stationary, so as to be incapable of rotation in its 75 socket, the door may be either raised or lowered by turning the bolts M M, and that the turning of these bolts is facilitated for the reason that they are flattened in the manner shown in Fig. 7. 80

As the bolts M M in passing into the door may tend to weaken the door-tenons, I deem it best to employ the angle-plates P P, which I secure to the upper corners of the doors, as is clearly shown in Fig. 6. As the door-bolts 85 must pass through these plates the plates will be to some extent weakened; but to offset this weakening of the plates I make on the lower sides of the said plates ribs or webs *k k*, as is clearly shown in Fig. 5. 90

When this hanger is employed in connection with light doors, I locate a nut, N', directly underneath the plate P and at the point where the door-bolt enters the said plate, as shown in Fig. 5, and I screw the bolt M down through 95 this nut, as there shown. The webs *k k* serve to prevent the nuts from turning.

Q is the door-stop, which is pivoted to the rear edge of the door, between the washer *l* and a spring-cushion, *m*, as shown in Fig. 4. A 100 pin, *n*, is driven into the rear edge of the door, so as to support the stop horizontally, but yet admit of its being turned or swung vertically to some extent, as indicated in Fig. 3. I weight one end of the stop, as shown at *o*, so that it 105 will rest horizontally on the pin *n*.

R R are catches applied to the studding, and so located as to prevent the door from moving too far out into the doorway while the stop rests on the pin *n*. The spring-cushion *m* 110 serves to prevent jars and noise. The screw-bolt may be turned in or out of the door, so as to adjust the stop-latch to stop the door at a proper point. The washer *i* serves to prevent displacement of the stop or latch upon the 115 bolt, and facilitates the latch in turning. This stop may be manipulated by means of a thin tool, so that it will escape the catches R R and permit the door to pass entirely out into the doorway. 120

*p p* are holes, into which short strings may be tied for the purpose of aiding the shifting of the latch from one position to another.

S is a brace-arm, from which depends a bolt-like extension, S', adapted to enter the upper 125 edge of the door. This arm S S' may be made in one and the same piece with the bracket K; but I deem it preferable to make it in a separate piece, in which case it is arranged to rest upon the horizontal part of the said 130 bracket, and is there retained by means of the bolt M, which passes through it, as shown in

Figs. 1, 2, and 9. The under side of the part S, where it is in contact with the bracket K, has beveled edges  $o' o'$ , and its seat on the said bracket is made flaring, to receive the said edges, and the part S rests only on the flaring parts of its seat, so that the weight of the door will center the said arm or draw it to a central position on its seat, thus insuring the proper position of the bolt M with reference to the wheel J, as before described. A metallic bushing may be inserted into the upper edge of the door to receive the part S', as indicated by the dotted lines at s, Fig. 1. The function of the brace-arm is to aid in holding all the parts firmly together, and insure an even and free movement of the doors.

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

1. The combination, in a door-hanger, of the sheaves or wheels for suspending the door movably on a track, the brackets K K, and the bolts M M, depending from the said brackets and swinging therein, substantially as and for the purposes specified.

2. The combination, in a door-hanger, of the

wheels J J, having a horizontal portion or tread,  $e$ , and the beveled part  $e'$ , the rail  $a$ , having thereon a correspondingly-formed bed for the said wheels, the rectangular brackets K K, having therein the elliptical or flaring holes or openings  $g g$ , located in vertical planes passing between the center of the tread  $e$  and the bevel  $e'$ , and the door-suspending bolts M M, passing through or hung in the said openings, substantially as and for the purposes specified.

3. The combination, in a door-hanger, of the track B, consisting of the rail  $a$  and board  $a'$ , rigidly connected to each other, and the said board having therein the slots  $c c$ , the screws D D, the guide-plates, and the track-supporting screws, substantially as and for the purposes specified.

4. The combination, in a door-hanger, of the brace-arm S and the pendant S', with the door-suspending bolts and wheel-brackets, substantially as and for the purposes specified.

CALEB BRINTON.

Witnesses:

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