

(No Model.)

W. BARRY.  
DOOR HANGER.

No. 434,651.

Patented Aug. 19, 1890.

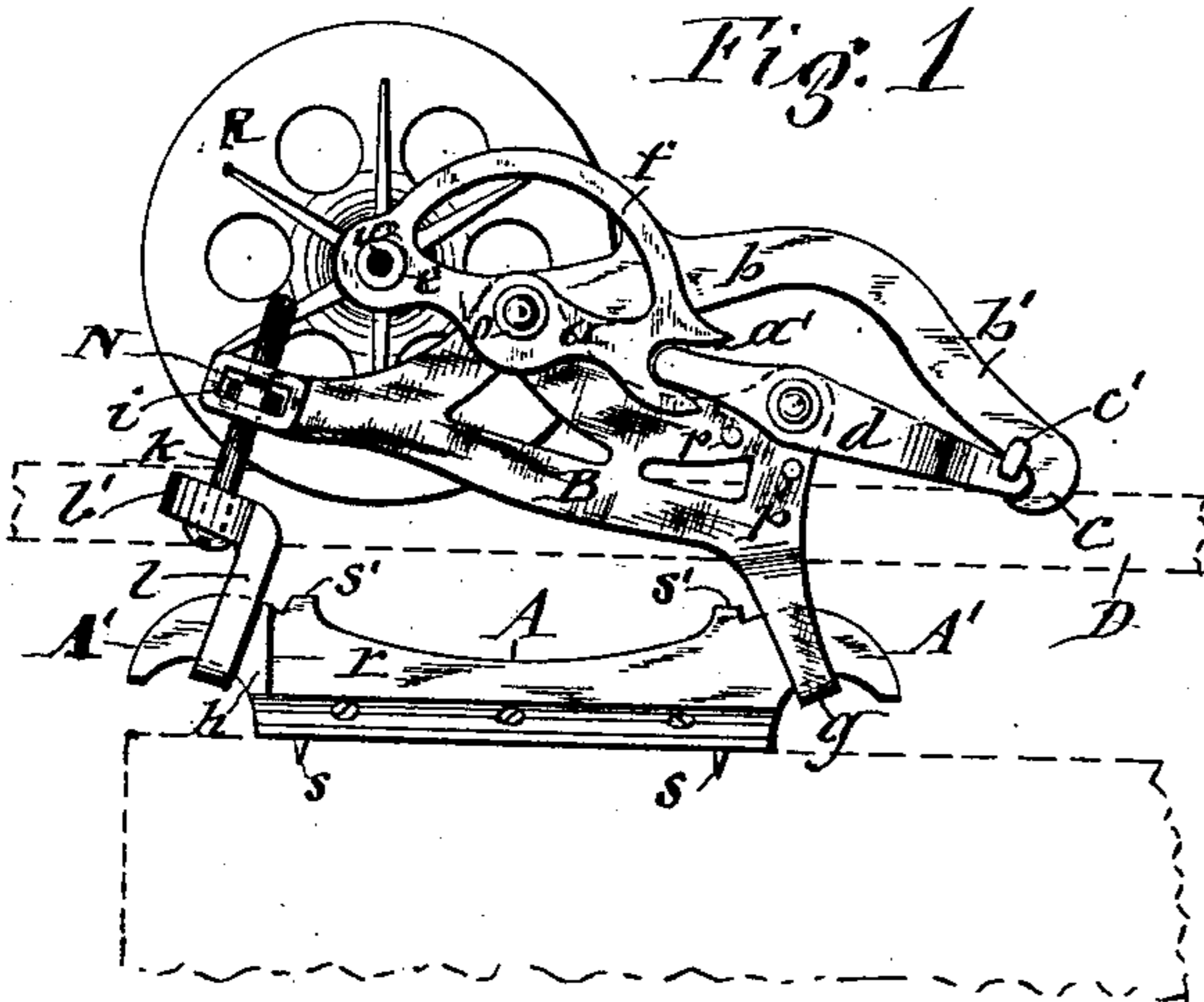


Fig. 1

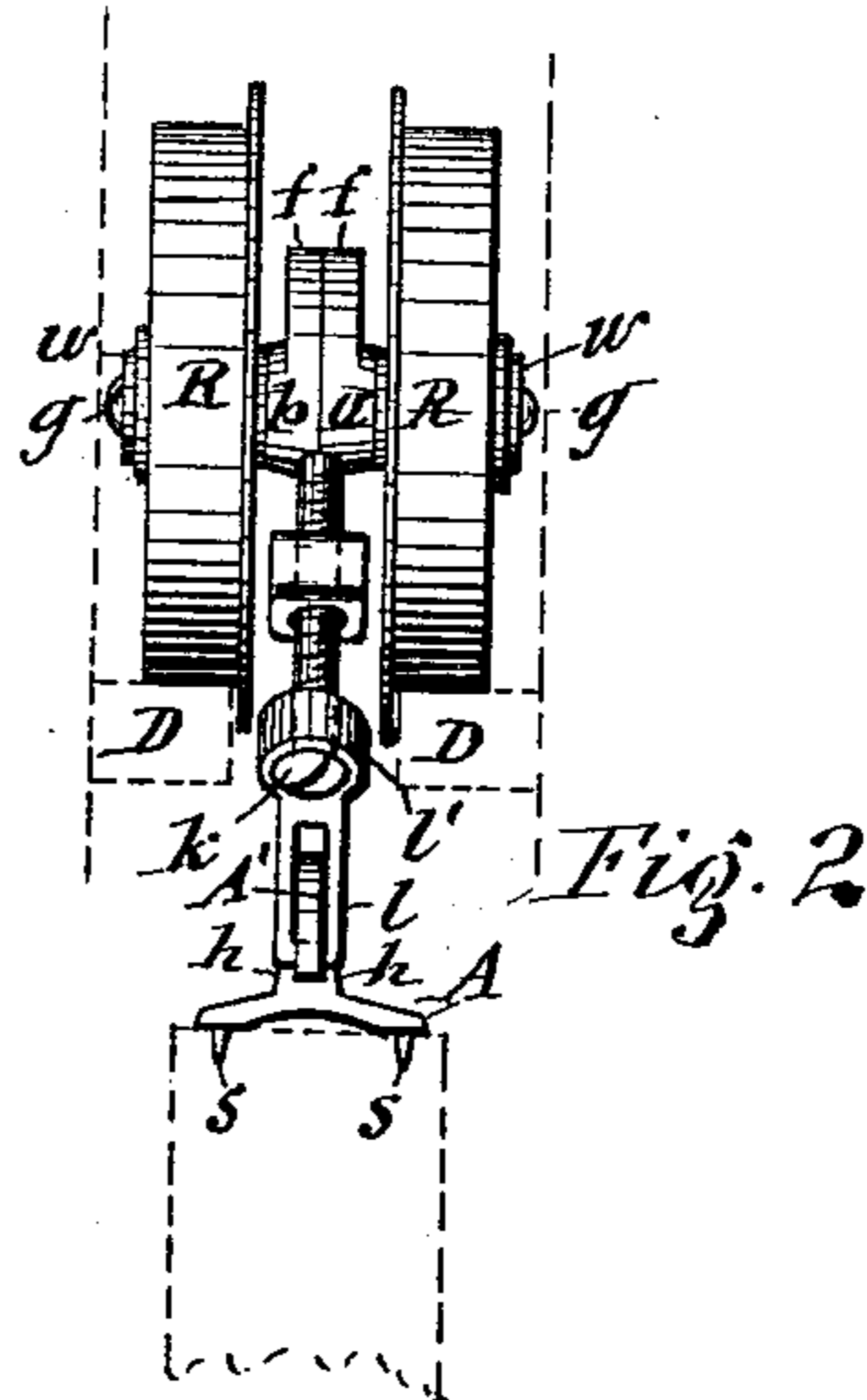


Fig. 2

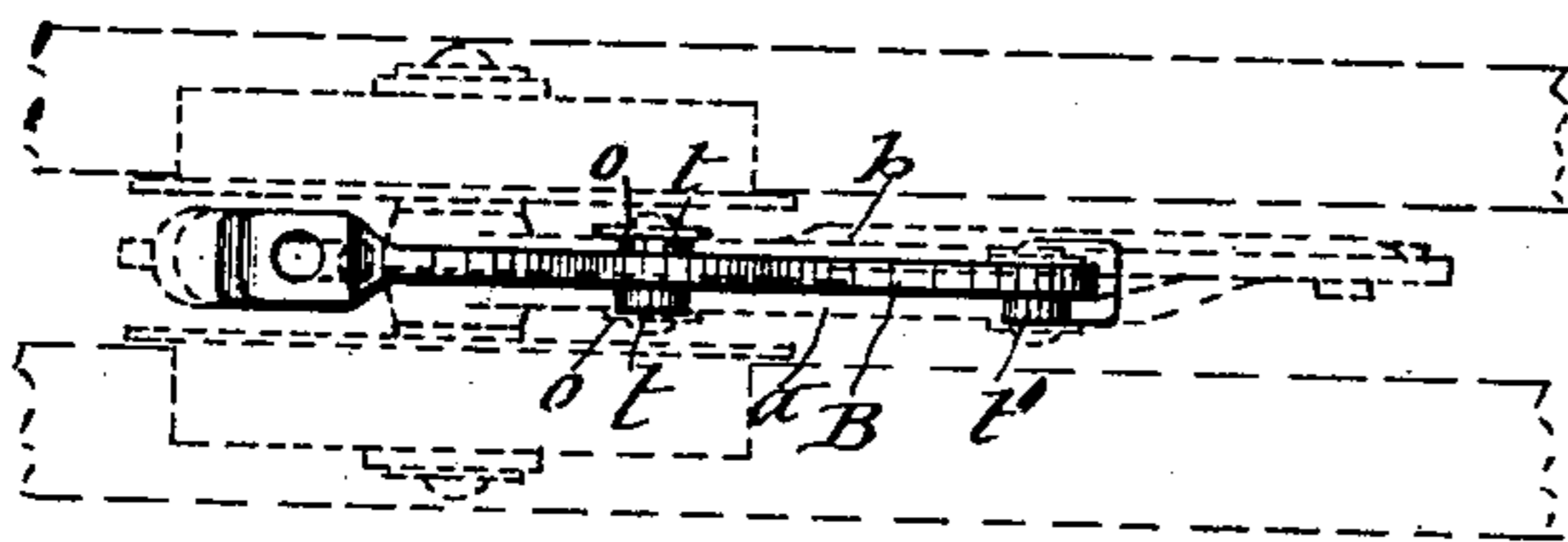


Fig. 3

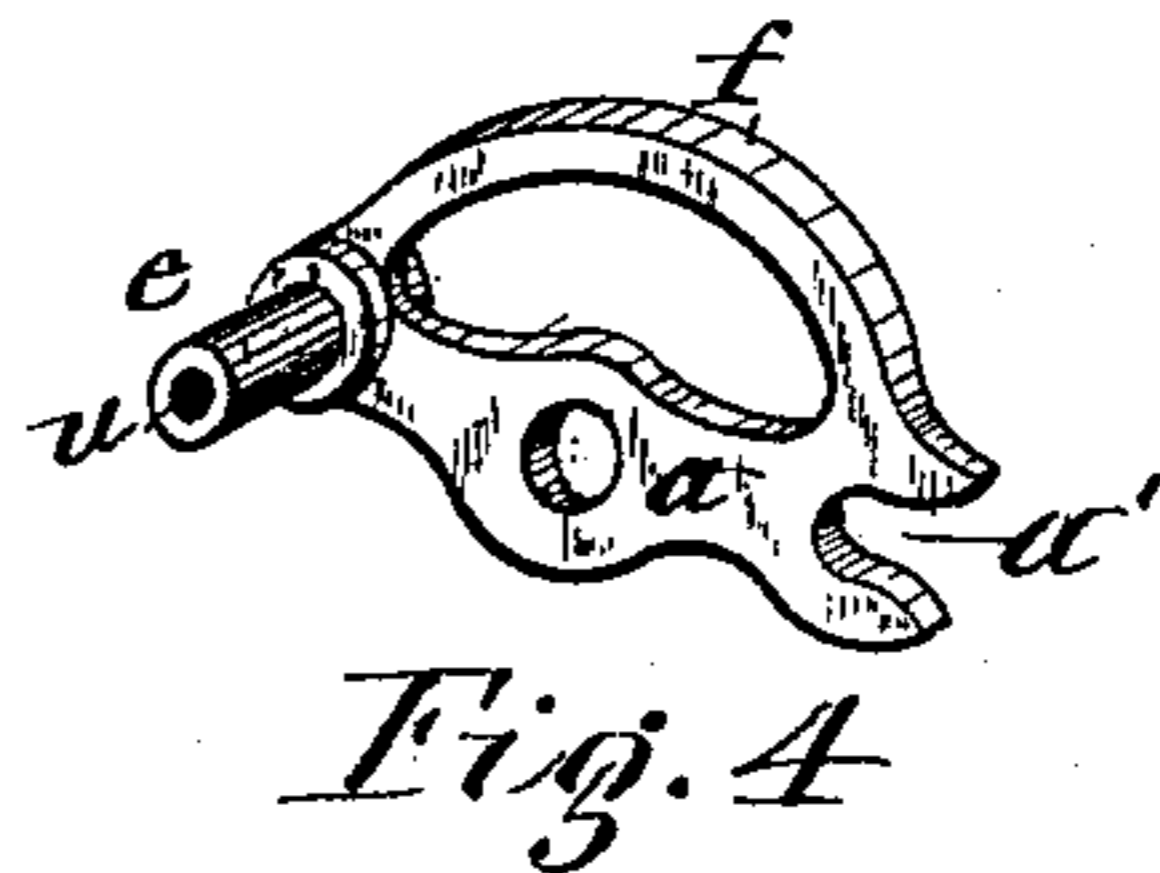


Fig. 4

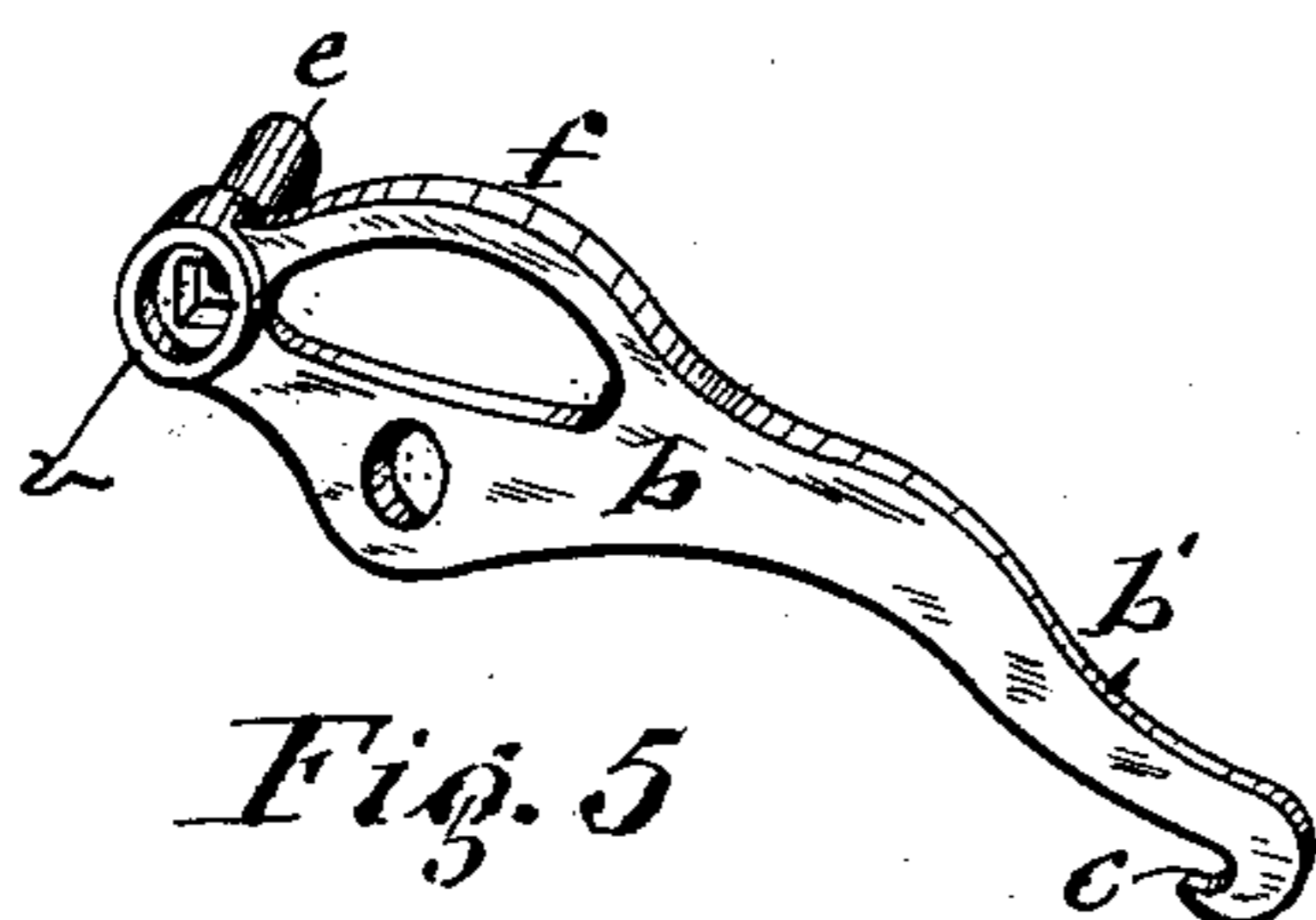


Fig. 5

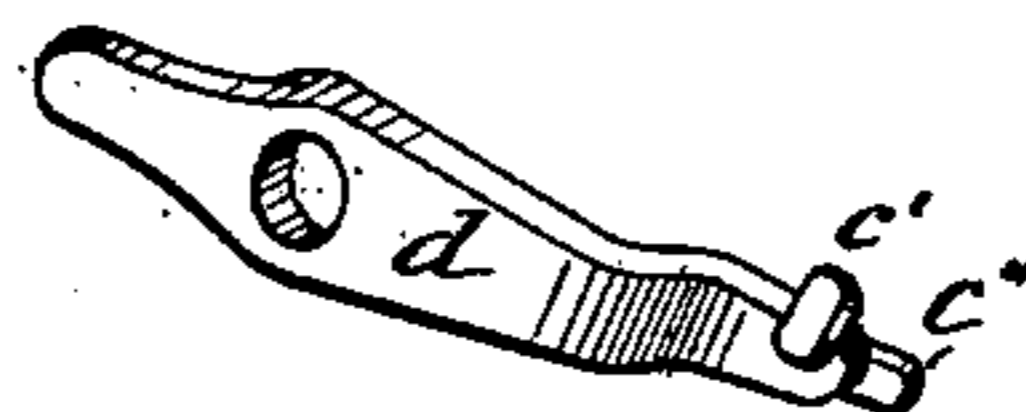


Fig. 6

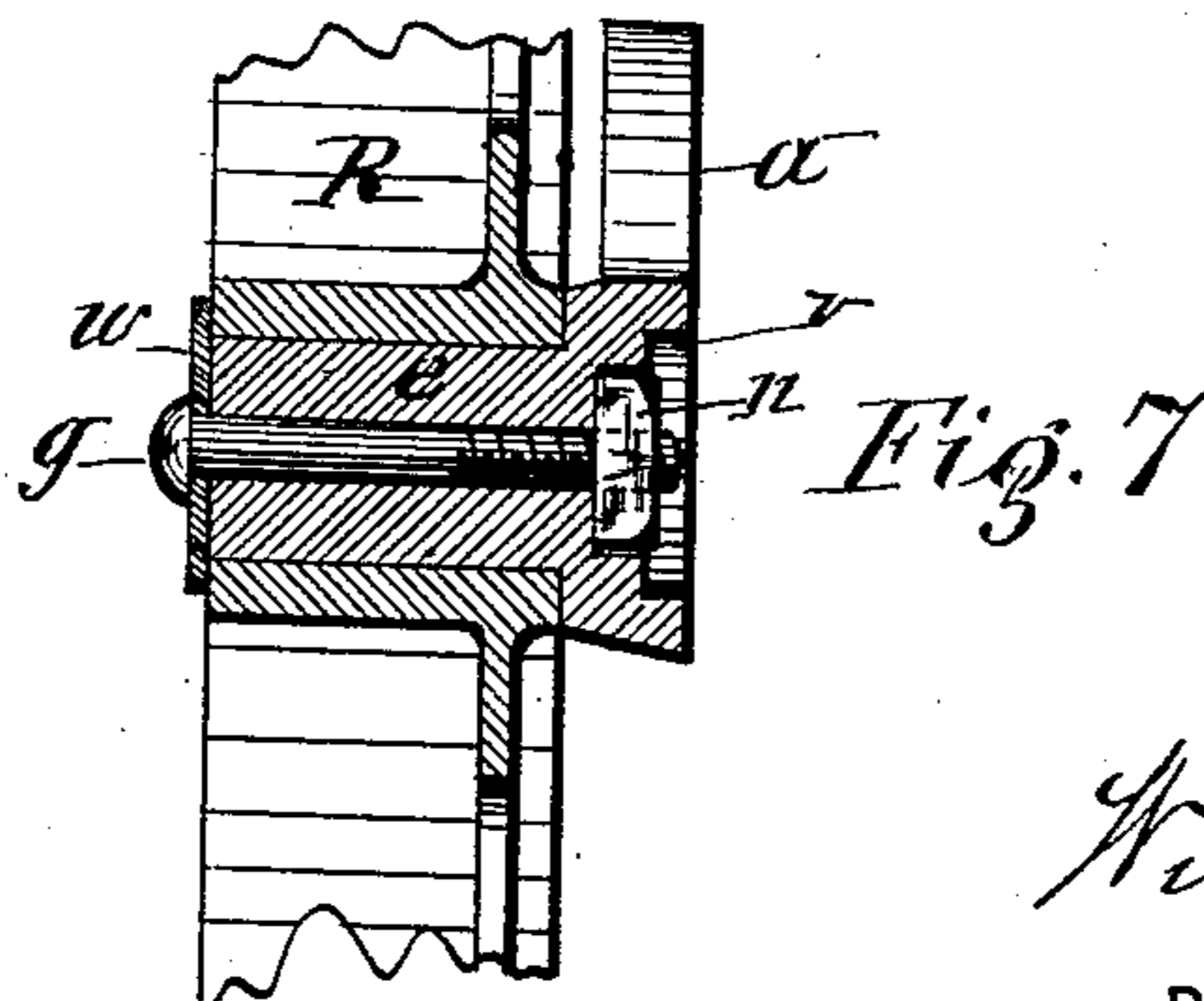


Fig. 7

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# UNITED STATES PATENT OFFICE.

WILLIAM BARRY, OF SYRACUSE, NEW YORK, ASSIGNOR TO FRANK A. AUSTIN, WILLIAM H. BROWN, AND SLATER LAYCOCK, ALL OF SAME PLACE.

## DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 434,651, dated August 19, 1890.

Application filed February 28, 1890. Serial No. 342,092. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM BARRY, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and  
5 useful Improvements in Door-Hangers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention pertains to the class of door-  
10 hangers which carry the doors suspended from an overhead double track and have the carrying-wheel connected to the hanger-frame so as to oscillate vertically but independently of each other, and thus adapted to accommo-  
15 date themselves to any unevenness that may exist in the tracks.

The object of the invention is to facilitate the attachment of the hanger to the door, and also to reduce to a minimum the lathe-work  
20 required in the construction of the door-hanger and render the same more reliable and efficient in its operation; and to that end the invention consists in the improved construction and combination of parts, as hereinafter  
25 fully described, and set forth in the claims.

In the annexed drawings, Figure 1 is a side elevation of a door-hanger embodying my invention, the front wheel being omitted to better illustrate the construction of the hanger-  
30 frame. Fig. 2 is an end view of the door-hanger. Fig. 3 is a top plan view of the hanger-frame with its attachments indicated by dotted line. Figs. 4 and 5 are detached perspective views of the rock-arms. Fig. 6 is  
35 a detached perspective view of the equalizing-lever; and Fig. 7 is an enlarged longitudinal section of the journal of one of the wheels, showing the attachment of said wheel.

Similar letters of reference indicate corre-  
40 sponding parts.

A represents the door-plate, which is secured to the top edge of the door by means of screws passing vertically through said plate and into the door. To facilitate the attach-  
45 ment of this plate, I provide the under side thereof with spurs *s s* and form the top of the plate with a central stiffening-rib *r* and with striking-hubs *s' s'* on said rib over the afore-  
50 said spurs. In securing the said plate to the door the plate is placed in its requisite position,

and then by striking upon the hubs *s' s'* the spurs *s s* enter into the wood and serve to retain the plate in its position while the attaching-screws are being inserted and tightened.

The rib *r* terminates with hooks *A' A'*, pro-  
55 jecting rearward from the rear end of the plate and forward from the front end thereof. To these hooks is connected the hanger-frame B, which consists of a metal plate disposed vertically and lengthwise of the door-plate A, 60 and is formed at its rear end with a loop *g*, through which the inner hook *A'* passes, and thus couples said end of the hanger-frame to the door-plate in such a manner as to allow  
65 the frame B to oscillate vertically on the plate A.

The outer end of the hanger-frame is formed with a horizontal transverse aperture *i* and with a vertical perforation intersecting  
70 said aperture, and is adjustably connected to the door-plate A by means of a separate loop *l*, receiving through it the outer hook *A'* and formed with a vertically-perforated outward offset *l'*, for the reception of the coupling-  
75 bolt *k*, which is inserted from the under side of said offset and provided with a suitable head thereat for turning the bolt either by a screw-driver or wrench. The nut N of said  
80 bolt is seated in the aperture *i*, in which it is held from turning while turning the bolt in said nut. To properly sustain the loop *l* at  
its requisite angle in relation to the door-plate, I form the rib *r* with shoulders *h h* on oppo-  
85 site sides of the fixed end of the hook *A'*, against which shoulders the loop *l* rests by its inner side.

The object of the detached connection of the loop *l* to the outwardly-projecting hook *A'* is to facilitate the operation of hanging the  
90 door, which is readily effected by placing the door in its requisite position under the tracks D D. The plate A having previously been secured to the top of the door and the hanger being mounted on the aforesaid tracks, the  
95 rear end of the hanger is easily slipped onto the rear hook *A'* of the plate A, and then the loop *l*, which is connected to the outer end of the hanger-frame by the coupling-bolt K, can  
100 be slipped onto the outer hook *A'* to connect the outer end of the hanger to the door-plate

A, which latter connection is then adjusted to carry the door at the proper distance from the floor by turning the coupling-bolt K.

*a* and *b* denote two rock-arms pivoted to opposite sides of the hanger-frame, as herein-after described. The inner end of the rock-arm *a* is formed with a bifurcation *a'*, and the same end of the other rock-arm *b* is formed with an extension *b'* beyond the end of the rock-arm *a* and terminating with a hook *c*. Between the said ends of the two rock-arms is an equalizing-lever *d*, pivoted eccentrically in relation to its length to the hanger-frame and engaging by its outer end the bifurcation *a'* of the rock-arm *a*, and having its inner end inserted into the hook *c* of the rock-arm *b*, and retained in said hook by means of lips *c'* *c''*, formed on the lever *d* and engaging opposite sides of the hook end of the rock-arm *b*. To brace the rock-arms laterally, I form the top portions thereof with segments *ff* concentric with the pivots of the rock-arms and projecting laterally over the top of the hanger-frame, so as to cause the two segments to bear against each other, the bottom portions of the rock-arms being sustained laterally by their bearing on the sides of the hanger-frame.

To limit the oscillations of the equalizing-lever *d* so as to maintain the same in its engagements with the rock-arms, as before described, I provide the hanger-frame with projections or stops *pp* at opposite sides of the fulcrum of said lever.

In order to impart maximum stability and durability to the door-hanger, I connect the rock-arms *a* and *b* and the lever *d* to the hanger-frame by means of tubular trunnions *tt* and *t'*, formed integral with the hanger-frame B. The trunnions *tt* are axially in line with each other, and the rock-arms *a b* are formed with circular eyes encompassing said trunnions, and the lever *d* is mounted in the same manner on the trunnion *t'*. On the ends of the trunnions are placed washers *oo* of sufficient diameter to retain the rock-arms and lever on their respective trunnions, the washers being secured to the trunnions by means of bolts or rivets passing through the washer and through the axial channels of the trunnions. It will thus be observed that said bolts or rivets are entirely relieved from friction of the rock-arms and lever and from the weight of the suspended door.

*R R* represent the door-carrying wheels by which the door is suspended from the two track-rails *D D*, upon which latter the wheels travel in opening and closing the door. These wheels are pivoted to the rock-arms at corresponding ends and equidistant from the fulcrums thereof and preferably on trunnions *ee*, formed integral with the outer or free ends of the rock-arms *a b*, and are retained thereon by bolts *g*, passing through washers *w* on the free ends of the trunnions and through axial channels *u* in the trunnions and provided with heads on their outer ends and with

nuts *n* on their inner ends. The adjacent sides of the rock-arms are formed with square sockets *v*, in which the nuts *n* are seated, and thus countersunk and prevented from turning.

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

1. The combination, with the hanger-frame, of vertically-oscillatory rock-arms pivoted to said frame, wheels pivoted to said rock-arms at corresponding ends, and a lever pivoted to the frame and engaging the opposite end of the rock-arms to equalize the oscillations of said rock-arms in opposite directions from each other, as set forth.

2. The combination, with the hanger-frame, of vertically-oscillatory rock-arms pivoted concentric with each other to said frame and having the inner end of one rock-arm extending beyond that of the other, wheels pivoted to the outer ends of the rock-arms equidistant from the pivots of the latter, and an equalizing-lever pivoted eccentrically relative of its length to the inner end of the frame and having its short arm engaging the inner end of the short rock-arm, and the long arm of said lever engaging the inner end of the long rock-arm, substantially as described and shown.

3. In combination with the hanger-frame, the rock-arm *a*, formed with the bifurcation *a'* at one end; the rock-arm *b*, formed with the extension *b'* at the corresponding end and terminating with the hook *c*, the lever *d*, pivoted to the frame and engaging by its ends, respectively, the aforesaid bifurcation and hook of the rock-arms, and the wheels *R R*, pivoted to the opposite ends of the rock-arms and axially in line with each other, substantially as described and shown.

4. In combination with the hanger-frame, the rock-arms *a b*, pivoted concentrically to opposite sides of the frame and formed with the segmental bearings *ff* in direct contact with each other, and the wheels *R R*, pivoted to said rock-arms, substantially as described and shown.

5. The combination of the rock-arm formed with the integral trunnion *e*, having axial channel *u* and socket *v*, the wheel *R*, mounted on said trunnion, the washer *w* on the free end of the trunnion, the bolt *g*, passing through the aforesaid channel, and the nut *n*, seated in the socket, substantially as described and shown.

6. The combination of the door-plate A, formed with the outward or forward projecting hook *A'* on its outer or front end, the hanger-frame hung on the inner end of said plate, the loop *l*, hung detachably on the aforesaid hook and formed with the offset *l'*, and the bolt *K*, passing through said offset and adjustably connecting the hanger-frame to the loop, substantially as described and shown.

7. The combination of the door-plate A,

formed with the hooks *A' A'* and with the shoulders *h h* at the fixed end of the outer hook, the hanger-frame formed at its inner end with the loop *g*, receiving through it the inner hook *A'*, and provided at its outer end with the transverse aperture *i*, and vertical perforation intersecting said aperture, the loop *l*, receiving through it the outer hook and formed with the vertically-perforated outward offset *l'*, the bolt *k*, passing through the said offset and through the aforesaid perforation of the hanger-frame, and having its head on the under side of the offset *l'*, and the nut *N*, seated in the aperture *i*, substantially as described and shown.

8. The door-plate *A*, formed with the central rib *r*, spurs *s s*, and striking-hubs *s' s'* over said spurs, substantially as described and shown.

9. The hanger-frame formed with integral tubular trunnions *t t* on opposite sides and in line with each other, the integral tubular

trunnion *t'* on one side of the inner end portion, and stops *p p* near the latter trunnion, in combination with the rock-arms *a b*, formed with eyes encompassing the trunnions *t t*, the equalizing-lever *d*, engaging said arms and formed with an eye encompassing the trunnion *t'*, washers *o o*, and bolts or rivets passing through the washers and trunnions, substantially as described and shown.

10. The combination of the rock-arm *b b'*, formed with the hook *c*, and the lever *d*, having one of its ends inserted in said hook, and formed with lips *c' c''*, engaging opposite sides of said rock-arm, substantially as described and shown, for the purpose set forth.

In testimony whereof I have hereunto signed my name this 20th day of February, 1890.

WILLIAM BARRY. [L. S.]

Witnesses:

C. L. BENDIXON,  
C. H. DUELL.