

(No Model.)

F. B. BROWNELL.

DOOR HANGER.

No. 371,419.

Patented Oct. 11, 1887.

Fig. I.

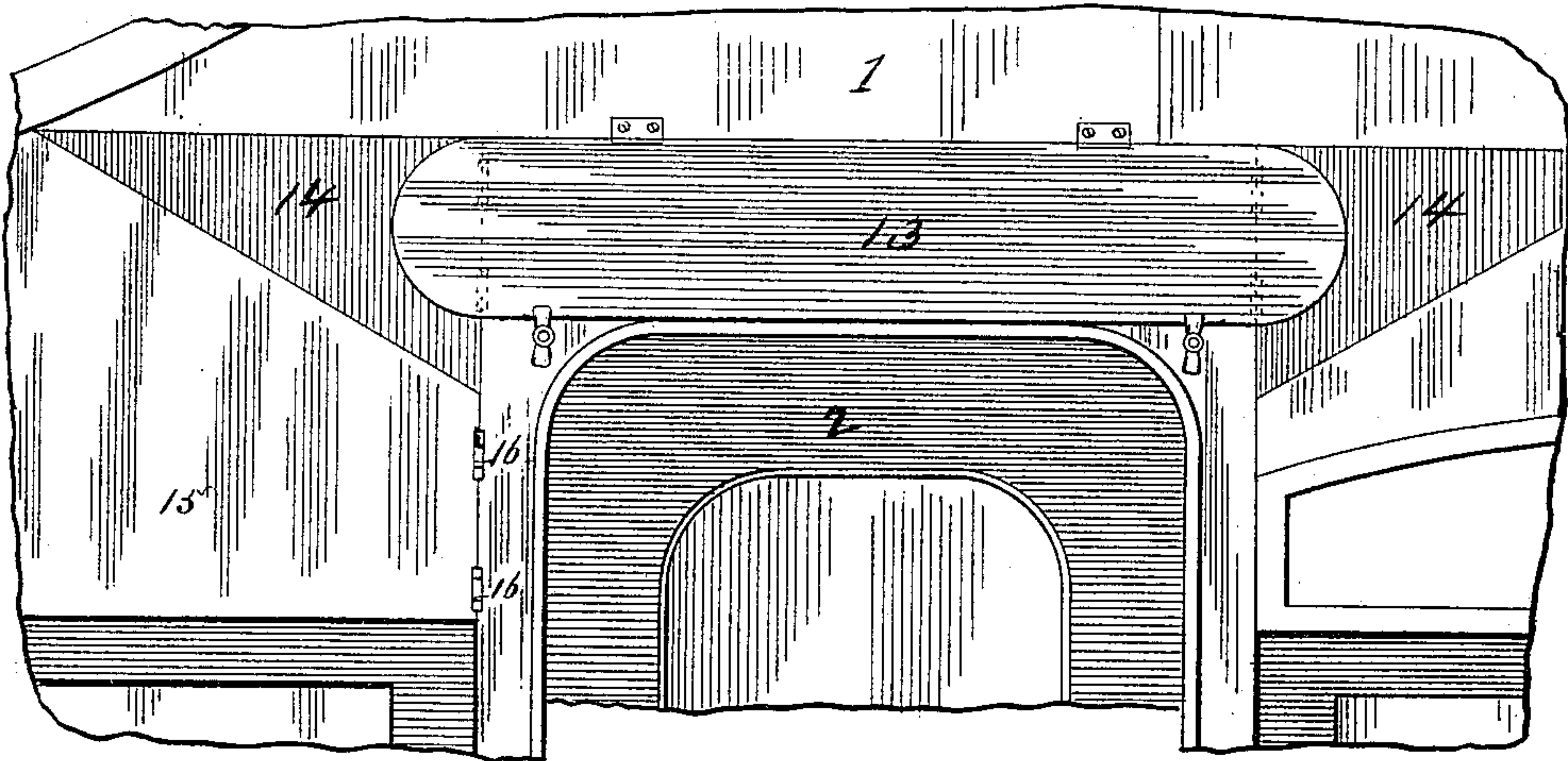


Fig. II.

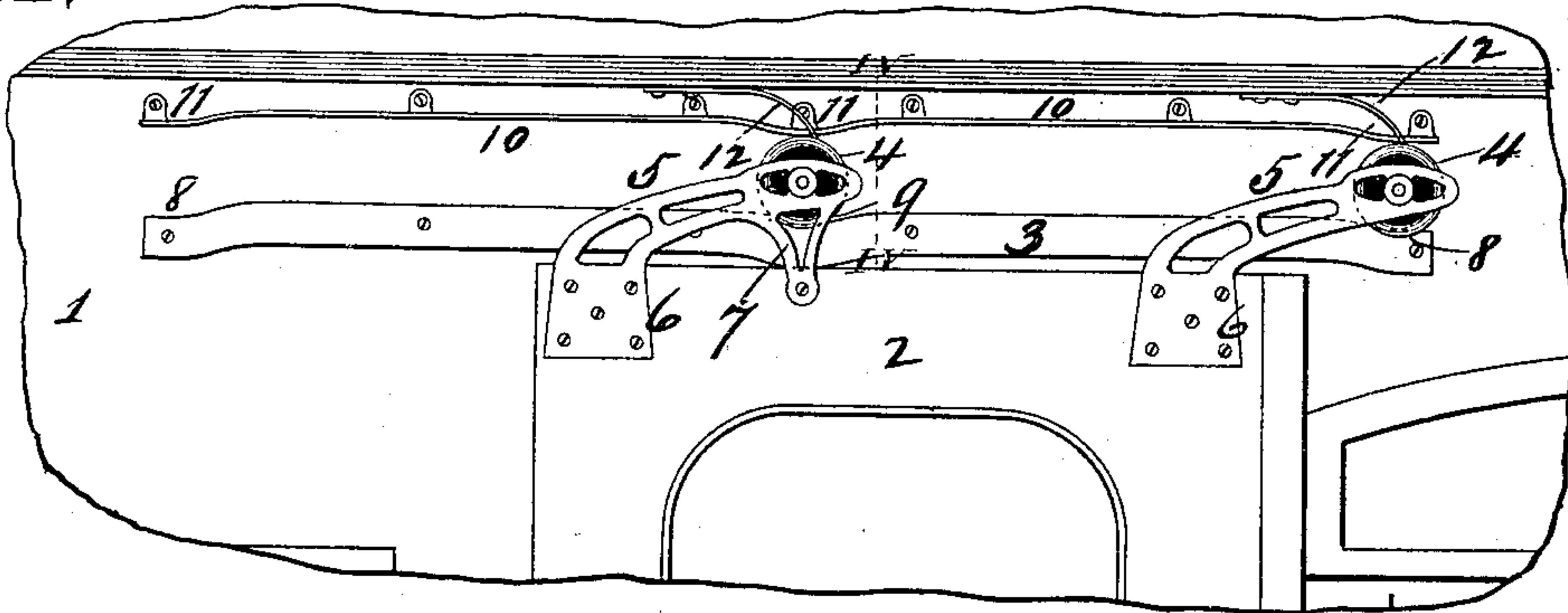


Fig. III.

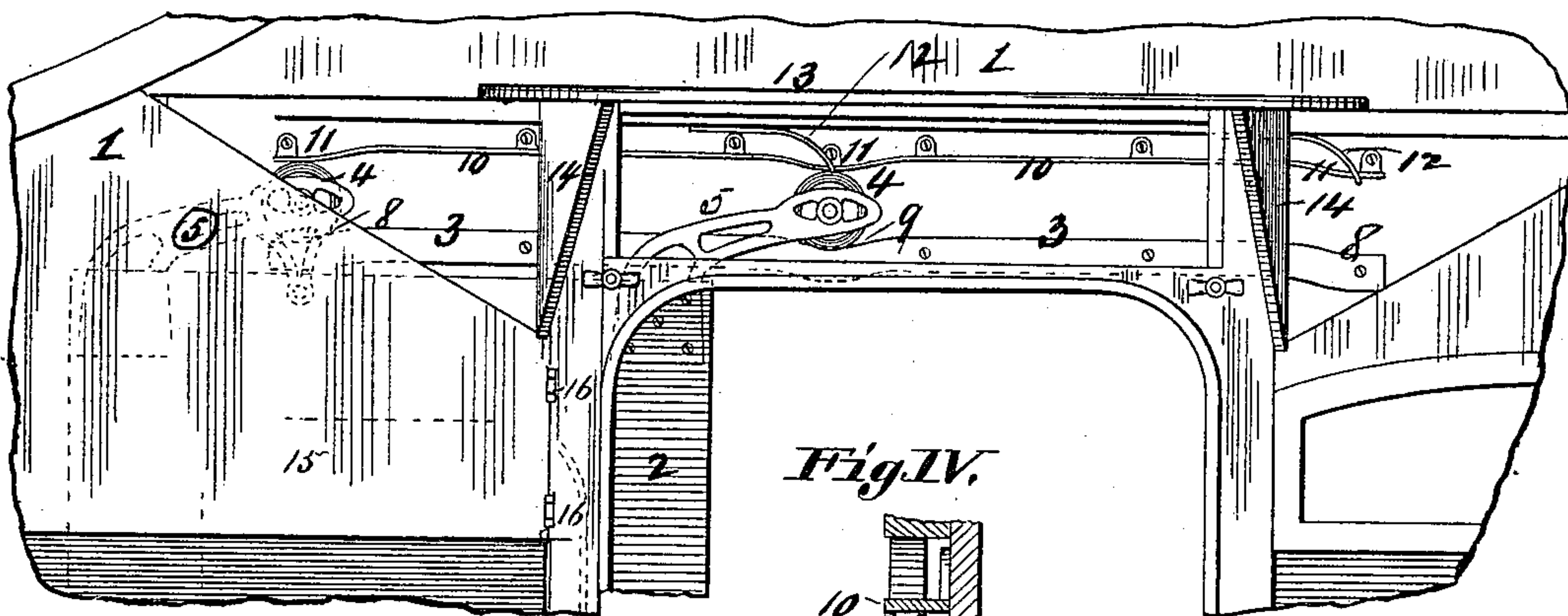
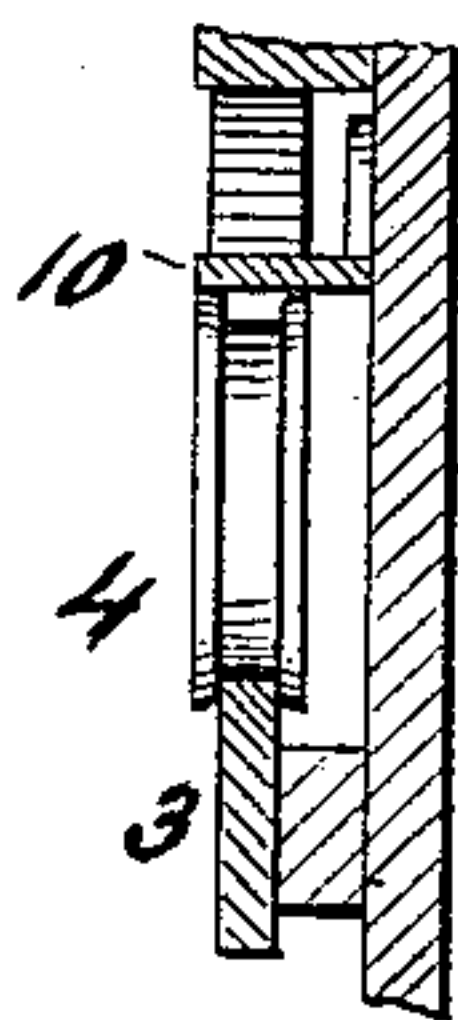


Fig. IV.



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UNITED STATES PATENT OFFICE.

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DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 371,419, dated October 11, 1887.

Application filed April 7, 1887. Serial No. 234,037. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK B. BROWNELL, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful
5 Improvement in Door-Hangers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

10 Figure I is a detail inside view of one end of a street-car with my improvement applied. Fig. II is a similar view with the inner wall removed, showing the tracks, the upper part of the door, and the hangers all in elevation.

15 Fig. III is a similar view to Fig. I, except that the flaps are opened, whereas in Fig. I they are closed. Fig. IV is an enlarged detail vertical section taken on line IV IV, Fig. II.

My invention relates to the manner of hang-
20 ing the doors of street-cars, and to the construction of the inner wall of the car which allows access to the hangers and tracks; and my invention consists in features of novelty hereinafter fully described, and pointed out in
25 the claims.

Referring to the drawings, 1 represents part of the end of a street-car, and 2 the door located between an outer and inner wall or casing, as usual.

30 3 represents a track or way, upon which bear or travel rollers 4, journaled in the upper ends of hangers or brackets 5, secured at their lower ends to the door 2 at 6. These hangers are preferably presented in a forward direction, as
35 shown in Fig. II, and the rear one is thus brought nearly over the center of the door, while the forward one projects a distance beyond the front edge of the door, as shown. By thus projecting the hangers forward the door
40 is not so liable to be tilted off its bearings when it is being opened, thus avoiding the binding on the door that has heretofore existed. The forward end of the rear hanger, 5, is preferably connected to the door by an extension, 7.

45 By projecting the hangers forward from the respective sides of the door, as above stated, two important results are obviously obtained, to wit:

First. By thus curving or bending the rear
50 hanger forward the door may be opened back without bringing said hanger into contact with

the inclined roof of the car or necessitating the cutting away of the same, while I am enabled at the same time to make the doorway and place the track higher than if the said track
55 had to extend back the full distance which the door when open extends.

Second. By extending the forward hanger, as shown in the drawings, a considerable distance beyond the forward side of the door, the
60 same or perhaps a greater width of support is obtained than when the hangers are extended vertically, and it will be readily seen that by the construction shown in the drawings a greater portion of the weight of the door will
65 be supported by the rear hanger. It will be further seen that any inclination of the door to rock will be obviated by the bearing-point on the end of the long lever, (the forward hanger,)—that is, the roller confined between
70 the two tracks or bars—by which arrangement the door will be kept from rocking or binding when pressure is applied to the lower part thereof either in opening or shutting.

The track or way 3 has end depressions, 8, 75 and a central depression, 9, in which the pulleys 4 rest when the door is opened and closed, the rear pulley, 4, fitting in the depression 9 when the door is closed and the front pulley fitting in the forward depression, 8. 80 When the door is opened, the rear roller fits in the rear depression, while the forward roller fits in the depression 9. (See Figs. II and III.)

10 represents a track or plate secured to the end of the car and located over the rollers 4, 85 and which has depressions 11, corresponding to the depressions 8 and 9. This track or plate holds the rollers down upon the track or way 3 and prevents the rollers from being displaced upon the track. 90

When the rollers or track become slightly worn, there is danger of the rollers rattling in the hangers when the door is closed, and to avoid this I secure springs 12 to the end of the car over the depression 9 and the forward
95 depression, 8, and which bear against the wheels as the door is closed to prevent their rattling. With the door thus supported it opens freely without binding and requires but little force.

As the cars have been heretofore constructed, 100 it has taken a considerable time to get at the mechanism supporting the car-door, and to

provide an easy and quick means of accomplishing this I hinge a vertically-swinging flap, 13, to the end of the car, as shown in Fig. I, and hinge horizontally-swinging flaps 14 to the end of the car, the hinges of the flaps 14 being preferably hidden by the flap 13 when closed. Now, in case it is desired to get at the mechanism supporting the doors it is only necessary to raise the flap 13 and open the flaps 14, when the latter will support the former, as shown in Fig. III, and the entire mechanism can be reached.

It will be understood that the flaps 13 and 14 are cut out of the inner wall or lining of the end of the car, and when closed form part thereof.

The end walls have on the inner side flaps 15, hinged at 16 to the door-frame. These flaps may be swung open to give access to the door-hangers and rails.

I am aware that in hanging doors it is not new to make the rollers bear upon the tracks at points slightly to one side of the points of connection of the hangers and door; but this is not the equivalent of my arrangement of hangers, by which any inclination to bind on the part of the door by reason of rocking or uneven traveling along the track is completely obviated.

In using the relative terms "forward" and "rear" or "rearward" I refer to the direction in which the door moves in closing and opening, respectively.

I claim as my invention—

1. The combination of the door, track or way, hangers secured to the door, and rollers on the hangers, both of said hangers being projected forward from the points of attachment to the door in order to allow the door to pass considerably to the rear of the end of the

track while maintaining the distance between the rollers, as set forth.

2. The combination of the door, track or way, hangers secured to the door and projecting in a forward direction, rollers on the hangers, and extension 7 on one of the hangers, securing it to the door at its forward end, substantially as set forth.

3. The combination of the door, hangers secured to the door, rollers journaled to the hangers, track or way against which the rollers bear, track or plate located over the rollers, and springs 12, bearing against the rollers when the door is closed, substantially as and for the purpose set forth.

4. The combination of the door, hangers secured to the door, rollers journaled in the hangers, track or way having depressions upon which the rollers bear, and track or plate located over the rollers, provided with depressions, substantially as and for the purpose set forth.

5. The combination, with the door and mechanism for supporting the door, of hinged flaps forming the inner wall of the car and adapted to swing outward to allow access to the said mechanism, substantially as set forth.

6. The combination, with a door and mechanism for supporting it, of hinged flaps 14 and 15; forming part of the wall and adapted to be opened outward from the wall, the ends of the latter flap lapping and obscuring the hinges of the former, whereby it may rest on the former and be held in open position when all are opened, as herein set forth.

FREDERICK B. BROWNELL.

In presence of—

EDW. S. KNIGHT,
JOSEPH WAHLE.