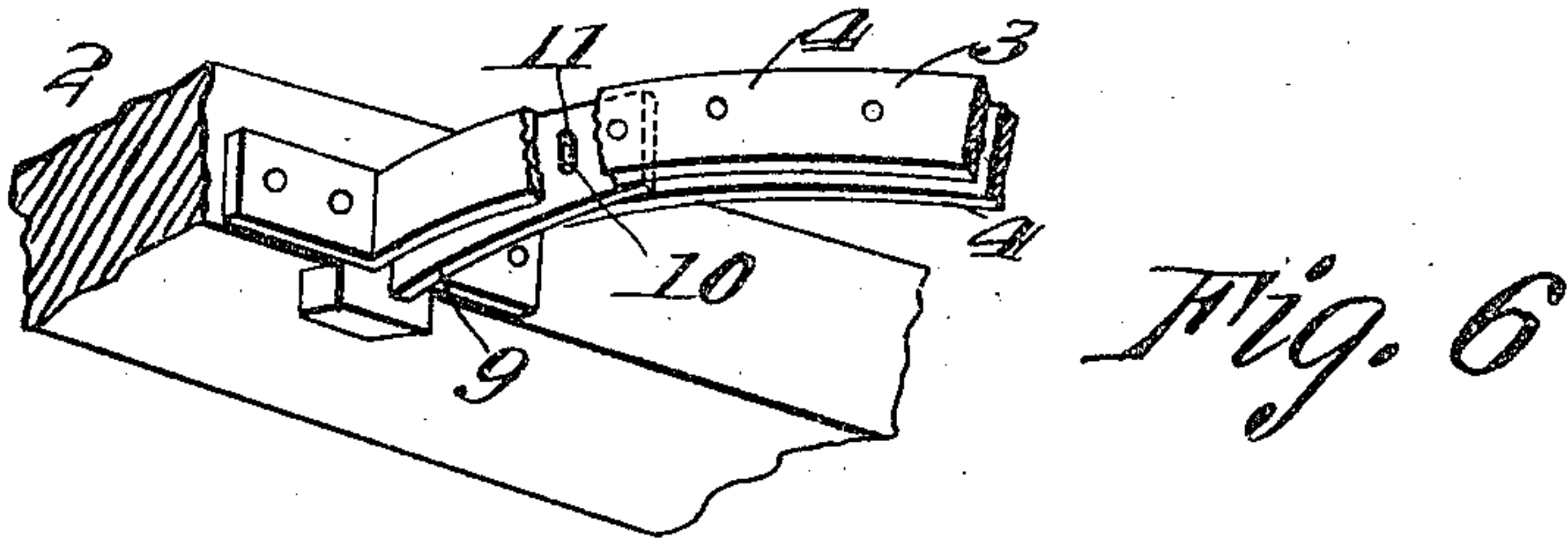
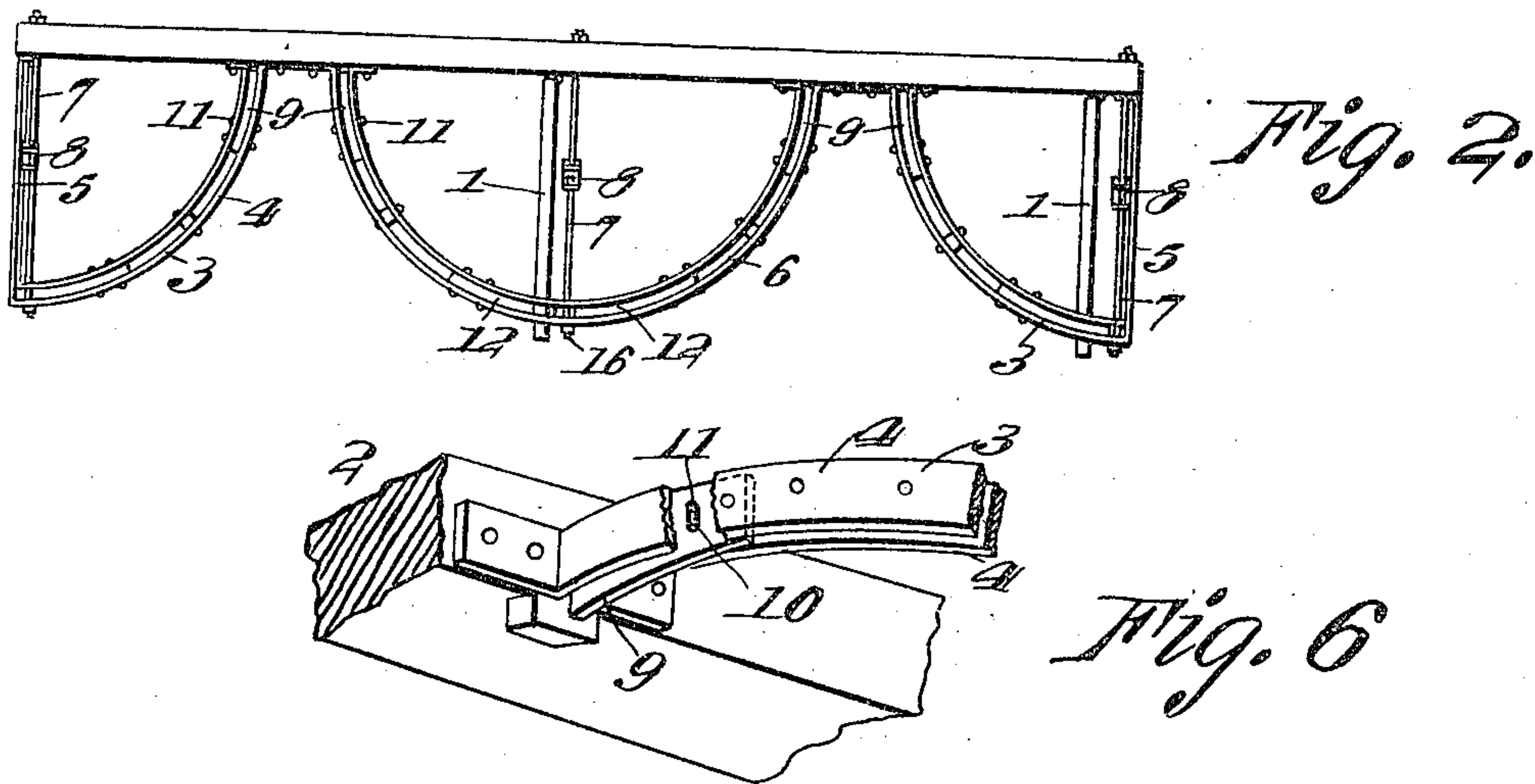
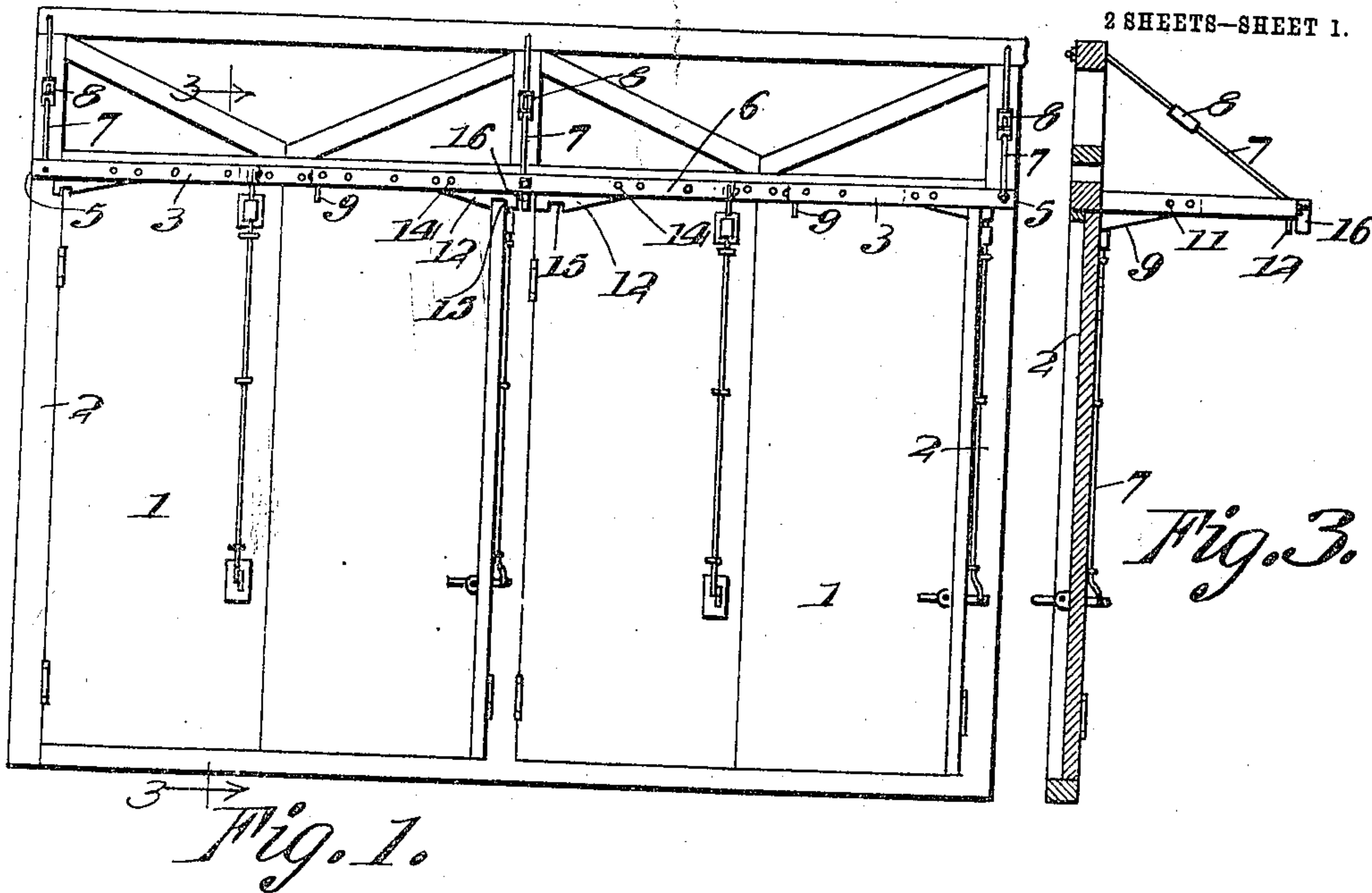


R. E. HASKINS.
AUTOMATIC DOOR CATCH.
APPLICATION FILED AUG. 2, 1909.

952,735.

Patented Mar. 22, 1910.

2 SHEETS—SHEET 1.



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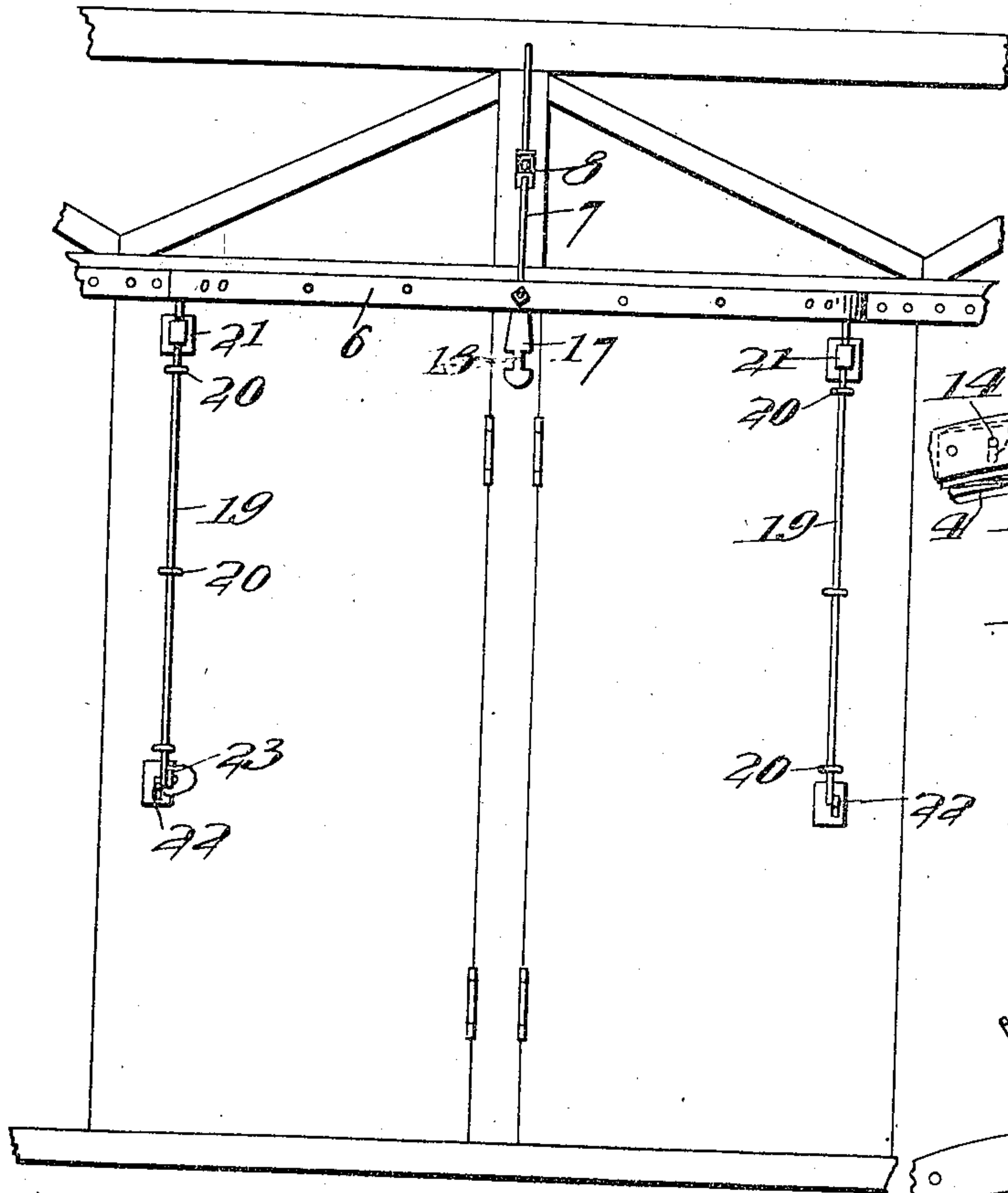


Fig. 4.

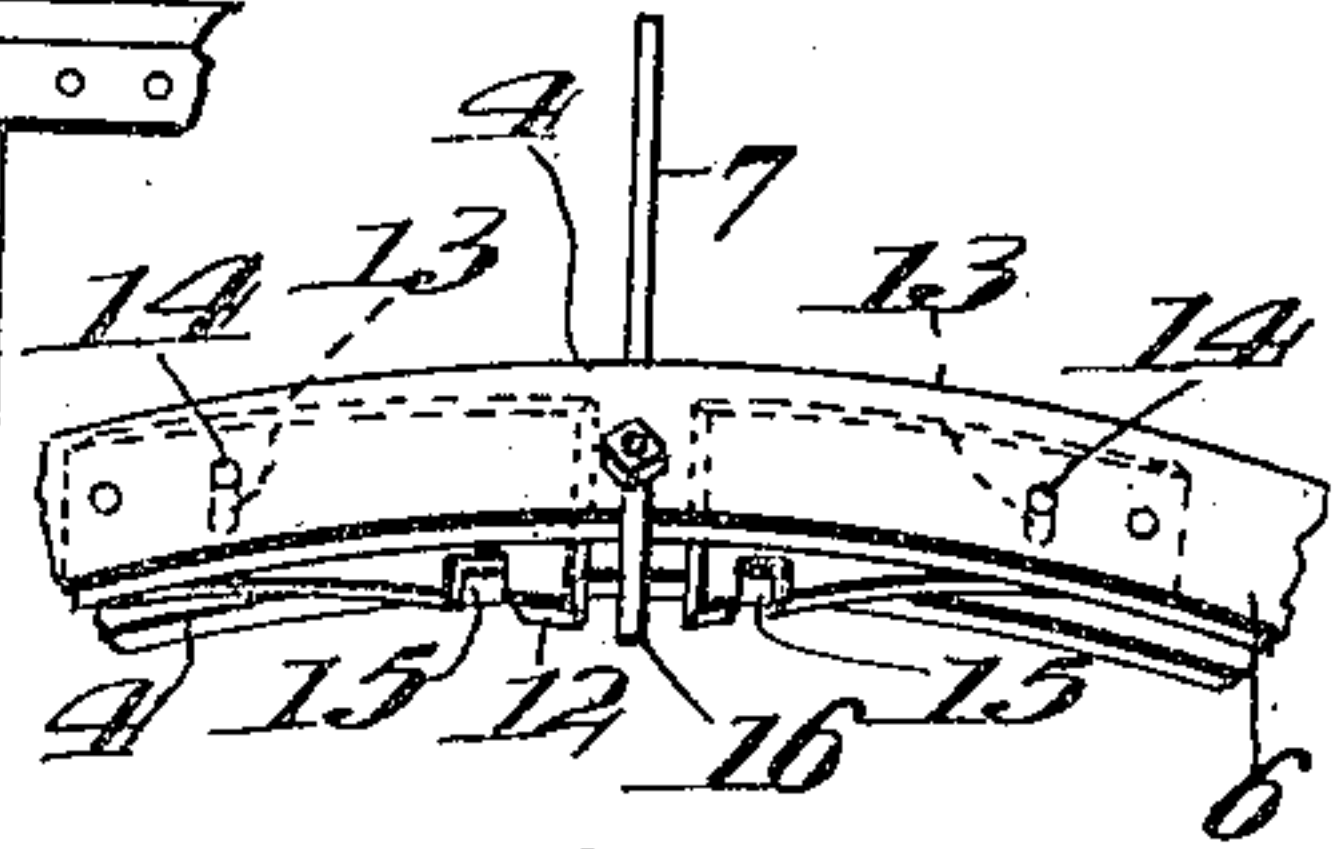


Fig. 7.

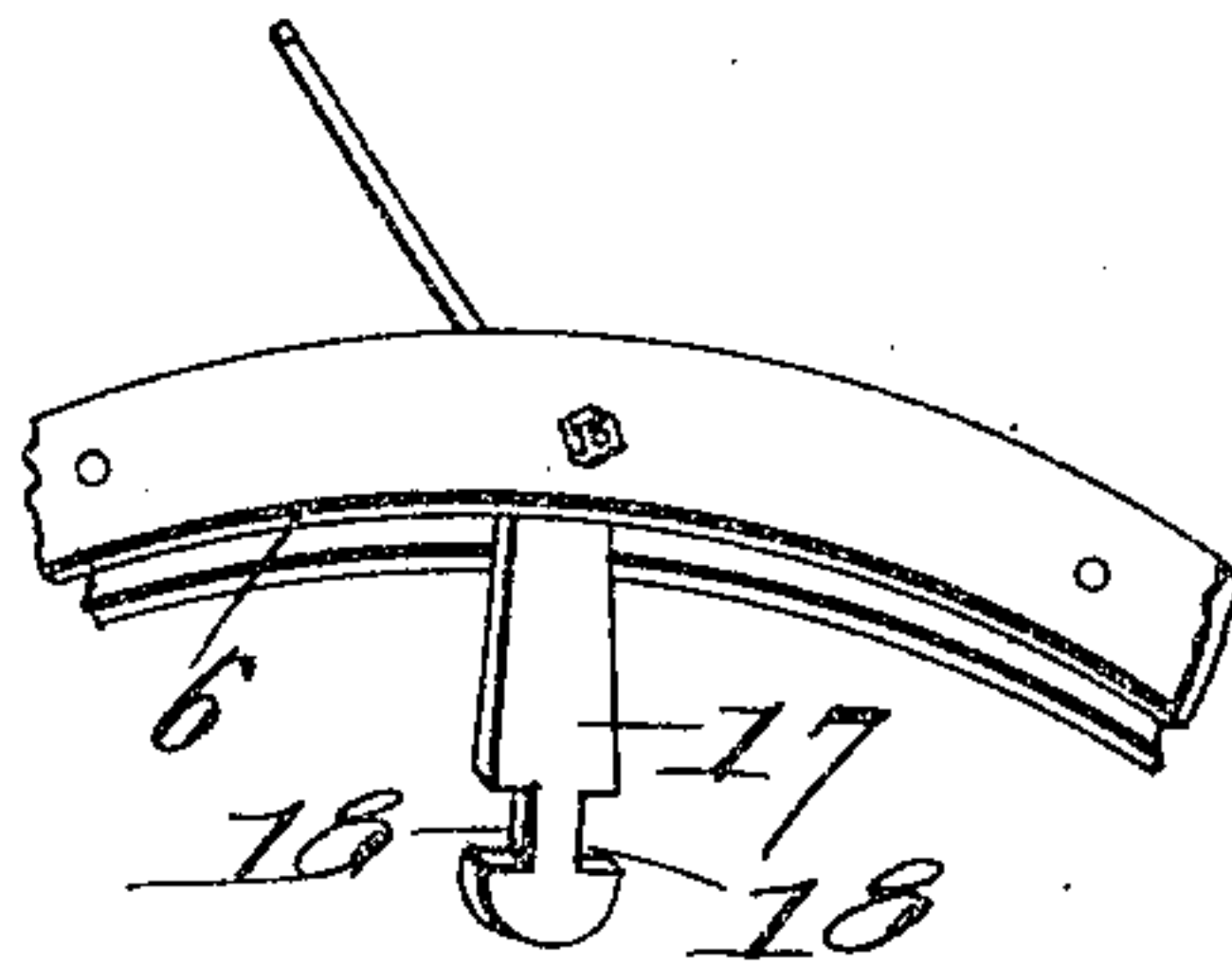


Fig. 8.

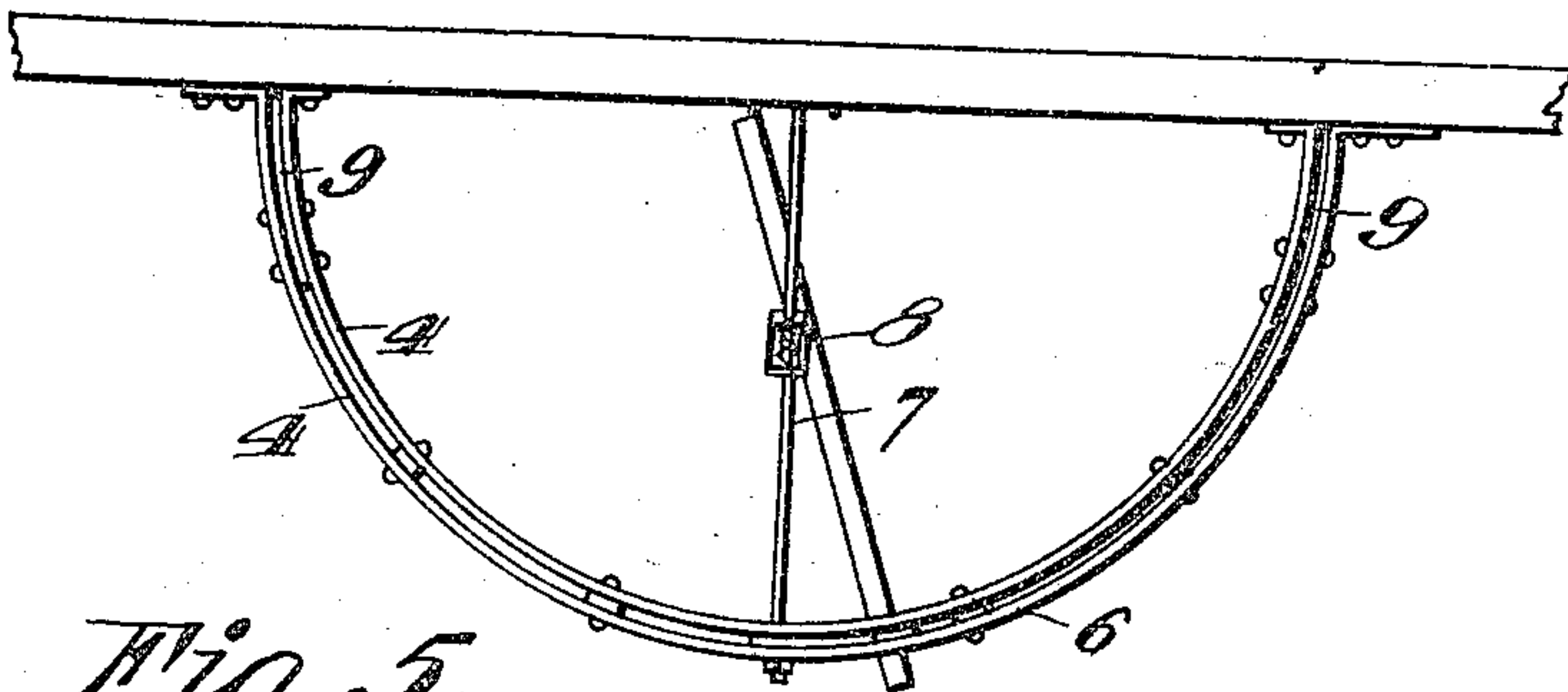


Fig. 5.

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UNITED STATES PATENT OFFICE.

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AUTOMATIC DOOR-CATCH.

952,735.

Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed August 2, 1909. Serial No. 510,717.

To all whom it may concern:

Be it known that I, ROBERT E. HASKINS, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Automatic Door-Catches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in automatic door catches for hinged or swinging doors.

One object of the invention is to provide an improved construction and arrangement of door catches designed particularly for use in connection with the doors of locomotive round houses or railroad shops or in connection with other forms of heavy swinging doors whereby they may be held in a closed or an open position.

Another object is to provide an arrangement of door catches of this character which will be automatically operated by the doors to engage and secure the same in open or closed position and to provide means arranged on the doors to release the catches from engagement therewith thus permitting the doors to be moved to an open or closed position.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is an outside view of four doors and their supporting frames, showing the arrangement of the catches, two of the doors being shown in open position and two in closed position, parts of the catch supporting mechanism being broken away to show the construction of the catches; Fig. 2 is a top plan view of the same; Fig. 3 is a vertical sectional view on the line 3-3 of Fig. 1, showing the arrangement and operation of the catch for holding the doors in closed position; Fig. 4 is a front view of two doors in closed position, showing a slightly modified form of the catch for holding the doors open beyond an angle of 90°; Fig. 5 is a top plan view of the parts shown in Fig. 4 with one of the doors held open by the catch; Fig. 6 is a detail view of one of the catches for

holding one of the doors in closed position; Fig. 7 is a similar view of one of the catches for holding the doors in open position; Fig. 8 is a similar view of the modified form of catch shown in Figs. 4 and 5.

Referring more particularly to the drawings, 1 denotes a series of doors which are here shown somewhat as they are arranged in a locomotive round house and 2 denotes the supporting frames or jambs of the doors. The doors 1 are hingedly connected at their inner edges to the jambs, the outer doors of the series being hinged to swing outwardly, while the inner doors are hinged to swing toward each other when opened. Secured to the frame above the outer doors of the series are outwardly projecting horizontally disposed catch supporting frames 3, said frames being segmental, or arc-shaped and extending to the distance of a quarter of a circle. The frames 3 are formed of parallel bars 4 which are spaced a suitable distance apart and are secured, at their inner ends, to the upper portion of the door frame and at their opposite or outer ends are connected to a right angularly projecting brace 5 which may be, if desired, formed of a continuation of the bars 4. The inner end of the brace is bolted or otherwise secured to the upper portion of the door frame, as shown.

Between the guide frames 3 and above the two inner doors is arranged a semi-circular guide frame 6 which is constructed in the same manner as the outer frames 3 except that the frame 6 has both of its ends secured directly to the upper portion of the door frame, as shown. The frames 3 and 6 are braced and supported by supporting rods 7, the outer ends of which are suitably connected to the guide frames while their inner ends are secured to the upper portion of the frames 2. The rods 7 are provided with turn-buckles 8 by means of which the guide frames are adjusted and held in a perfectly horizontal position.

Between the bars 4 of the frames 3 and 6, adjacent to the inner ends of the latter, are pivotally mounted catches 9. The catches 9 are provided near their inner pivoted ends with slots 10 which are engaged by transversely disposed pins 11 which extend through the bars 4 of the frame and serve to limit the pivotal movement of the catches 9 and to support the same in operative position to secure the door in a closed position. When the door is closed, the upper edge of

the door will spring beneath and engage the lower edge of the catch 9 thus raising the catch between the bars 4 thus permitting the door to swing to a closed position, at which time the door will have cleared the catch, thus permitting the same to drop down behind or into engagement with the outer side of the door, as clearly shown in Fig. 3 of the drawings, thus holding the door in closed position.

Pivotaly mounted between the bars 4 in the outer portions of the frames 3 and 6 are catches 12 in which are formed slots 13 adapted to be engaged by pins 14 and limit the downward movement of the catches and to hold the same in operative position to be engaged by the doors. In the lower edge of the catches 12, adjacent to their outer ends, are formed door engaging notches 15 which, when the doors are swung to an open position, will drop into engagement with the upper edges thereof and thus hold the doors open.

In order to prevent any possibility of the doors being swung beyond the catches a door stop or strike is provided, said stop being here shown in the form of a lug 16 which projects downwardly from the outer portion of the guide frame 3, as shown.

In the form of the device shown in Figs. 4 and 5, the outer latch 17 or the catch for holding the door in an open position is of double construction or provided in its opposite edges with door engaging notches 18 and said catch is pivoted between the bars of the semi-circular supporting frame 6 and is adapted to swing upwardly between the bars of the frame in either direction. The catch 17 is preferably formed on the curvature of the bars of the frame to permit the catch to swing freely between said bars when engaged by either of the inner doors 1 when swung to an open position. By arranging the catch 17 as shown, either of the doors when swung into engagement therewith, will be permitted to open beyond an angle of 90° before being caught by the notches 18 of the catch. It has been frequently found advantageous to open the doors to a greater angle than 90° and in order to permit this additional movement, the catch 17 is provided and arranged in the supporting frame in the manner described. In this form of the device, the catches 10 for holding the doors in closed position are arranged and constructed in the same manner as the catches 9 shown in Fig. 3 of the drawings and the supporting frame 6 of this form of the device is the same as shown in the first figures of the drawings.

In order to disengage the catches from the doors to permit the same to be swung to an open or closed position, I provide a suitable catch releasing mechanism comprising a rod 19 which is slidably mounted in suitable

bearings 20 arranged on the outer side of the doors. The rod 19 is provided on its upper end with a catch engaging head 21 which, when the releasing catch rod 19 is forced upwardly, will engage the lower edges of the catches, thus forcing the same upwardly between the bars of their supporting frames and thus permitting the doors to swing beneath the catches to an open or closed position. The rod 19 is connected at its lower end to an operating lever 22 which projects through a suitable aperture in the door and is pivotaly mounted in a bearing bracket 23 secured to the opposite side of the door, as shown.

By means of an arrangement of catches such as herein shown and described, large swinging doors may be securely held in open or closed position and the holding devices will be automatically operated by the movement of the doors to engage and hold the same in open or closed positions and by means of the releasing devices described, said holding devices are readily disengaged from the doors to permit the same to be moved.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

Having thus described my invention, what I claim is:

1. The combination with a door, of a catch supporting frame arranged above the door, catches arranged in said frame to hold the door in a closed or open position, said catches being automatically operated by the movement of the door to engage and secure the same in open or closed position.

2. The combination with a door, of a supporting frame arranged above the door, catches pivotaly mounted in said frame to hold the door in closed or open position, said catches being automatically operated by the movement of the door, and catch releasing devices carried by the door whereby the catches are released or disengaged from the door to permit the same to be opened or closed.

3. In an automatic door catch, a supporting frame, catches pivotaly mounted in said frame to hold the door in closed or open position, said catches having formed therein limiting slots, stop pins arranged in said frames to engage said slots and thereby hold said catches in operative position to be engaged and automatically operated by the movement of the door, means to limit the

opening movement of the door, a catch releasing mechanism carried by said door, said mechanism comprising a releasing rod slidably mounted on the door, a catch engaging head on the upper end of said rod, and a pivotally mounted operating lever connected to the lower end of the rod and projecting through the door.

4. In an automatic door catch, a catch supporting frame, said frame comprising parallel bars spaced apart and suitably secured to the door frame, a brace rod connected to the outer end of the frame, a catch pivotally mounted between said bars adjacent to the inner end of the frame to hold the door in a closed position, a catch pivotally mounted between said bars at the outer portion of the frame, to hold the door in an open position, said catch having formed therein a door engaging notch, means to limit the movement of said catches and to hold the same in position to be engaged and automatically operated by the movement of the door, and catch releasing mechanism carried by the door and adapted to be operated to disengage the catches from the

door to permit the latter to be swung to an open or closed position.

5. In an automatic mechanism for double doors, a semicircular catch supporting frame secured at its inner face to the door frame above the doors, catches pivotally mounted in said frame adjacent to its inner portion and adapted to automatically engage the doors to hold the same in closed position, a catch pivotally mounted in the outer portion of the frame and adapted to swing in either direction, said catch having formed in its opposite side edges door engaging notches adapted to engage either of said doors when swung to an open position to hold the door open at an angle greater than 90°, and means carried by the doors to release or disengage said catches to permit the doors to be opened or closed.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT E. HASKINS.

Witnesses:

DUNCAN K. COLEPAUGH,
MARTIN S. PHILLIPS.