

No. 843,141.

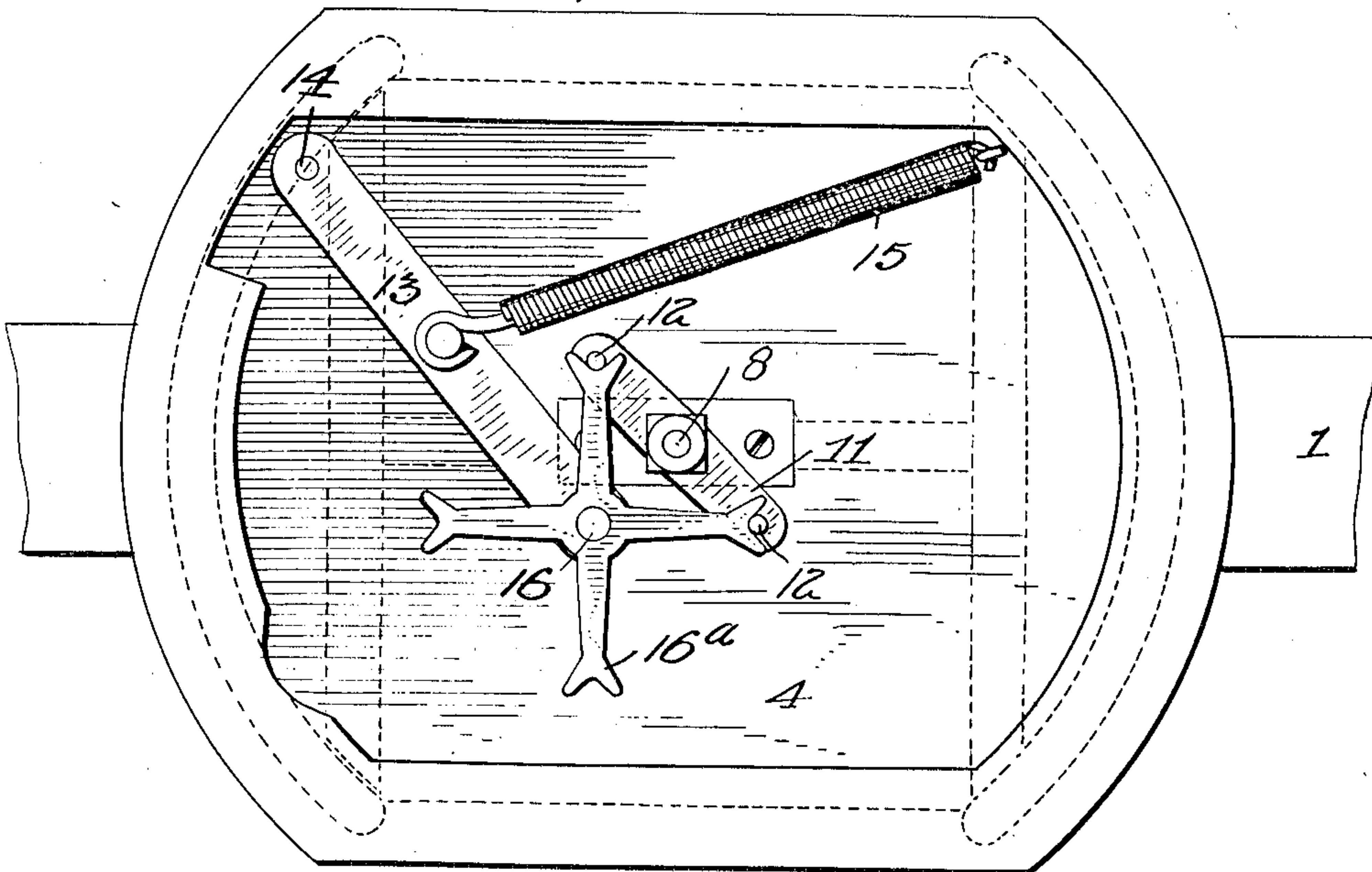
PATENTED FEB. 5, 1907.

M. C. GAGE.  
ROTATING DOOR.

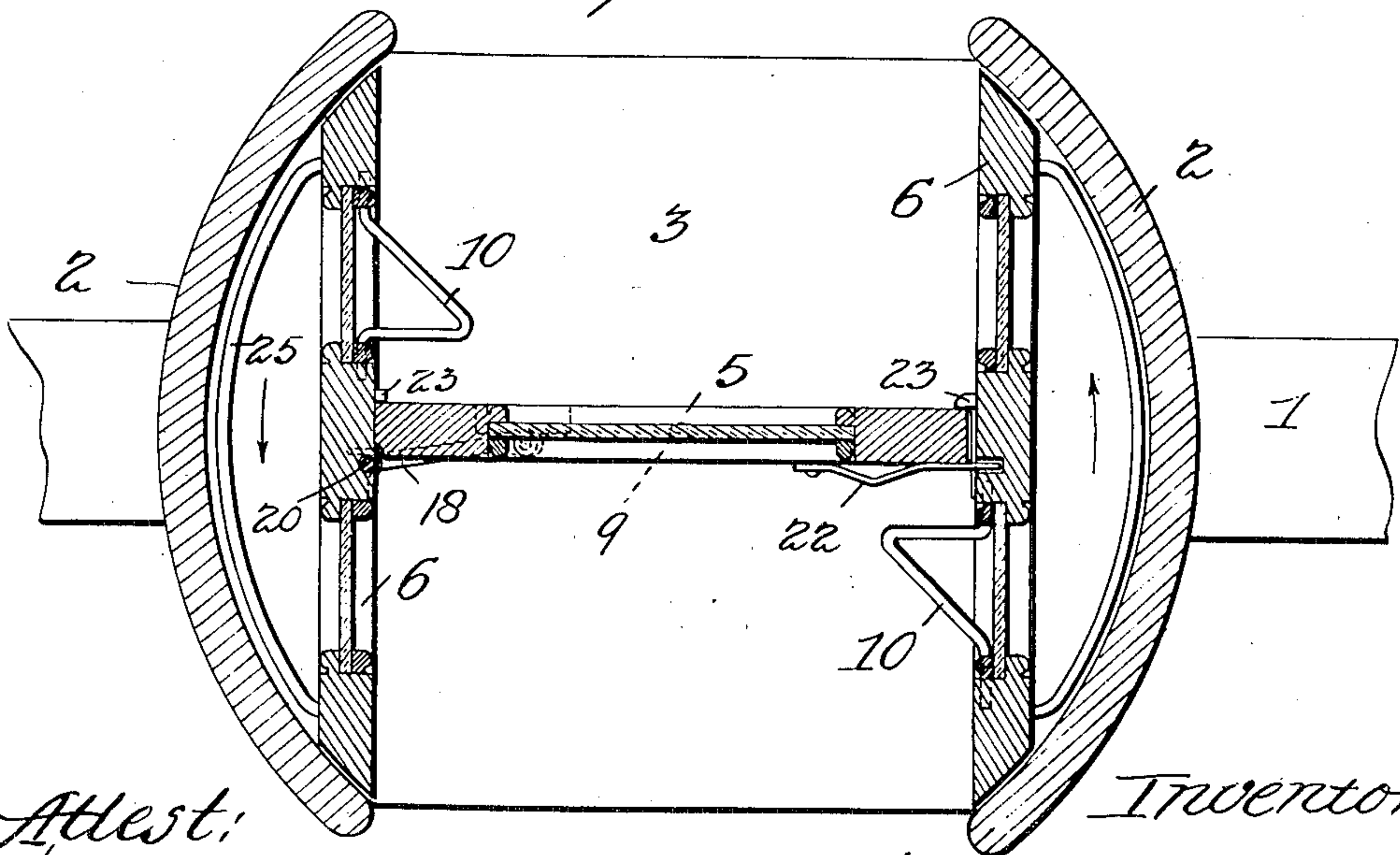
APPLICATION FILED MAY 14, 1906.

3 SHEETS—SHEET 1.

*Fig. 1.*



*Fig. 2.*



*Attest:*

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*Edward N. Sartou*

*Inventor.*

*Mortimer C. Gage.*

*By Allen Middleton Donnellson*  
*Att'y*

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3 SHEETS—SHEET 2.

Fig. 3.

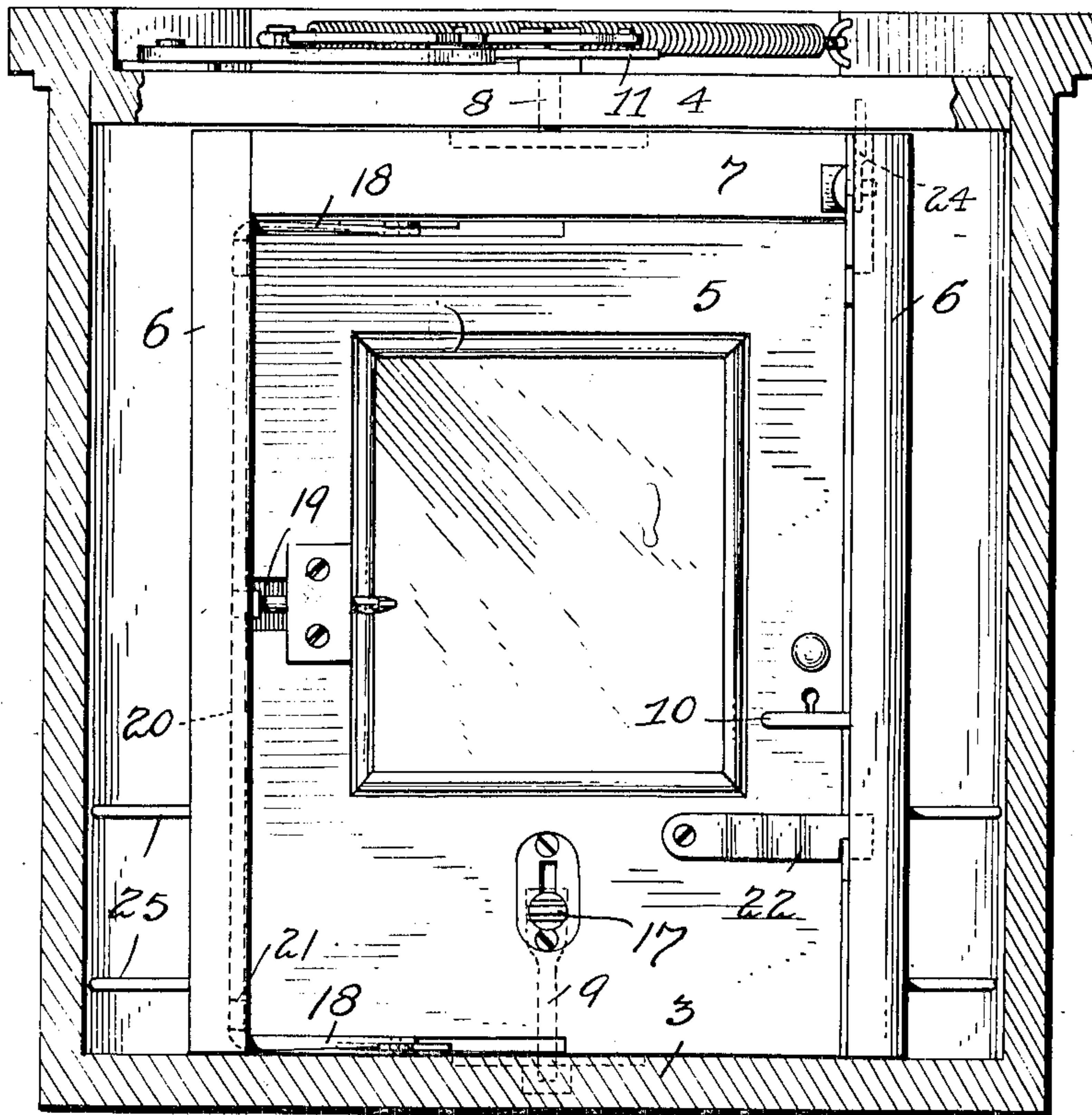


Fig. 4.

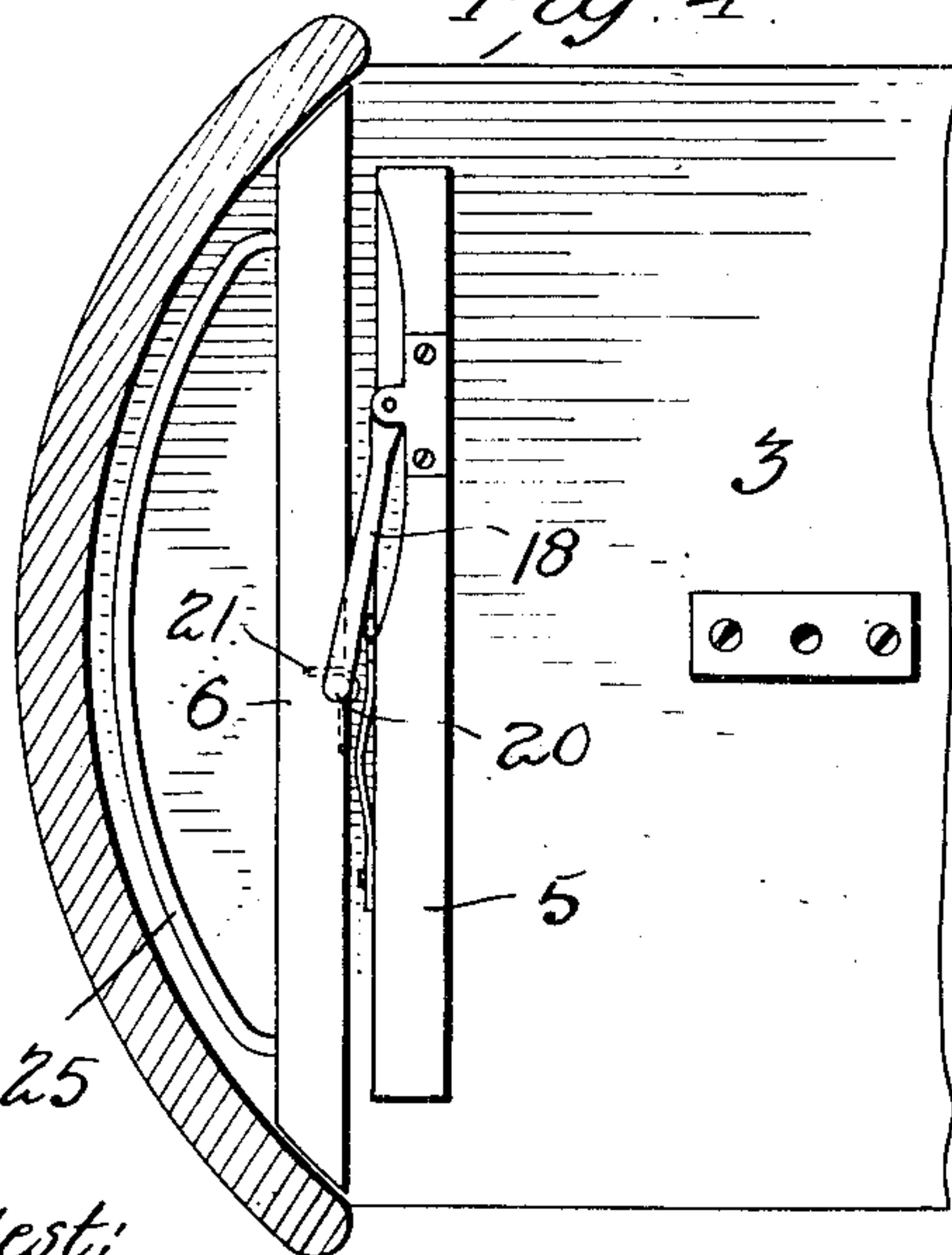


Fig. 5.

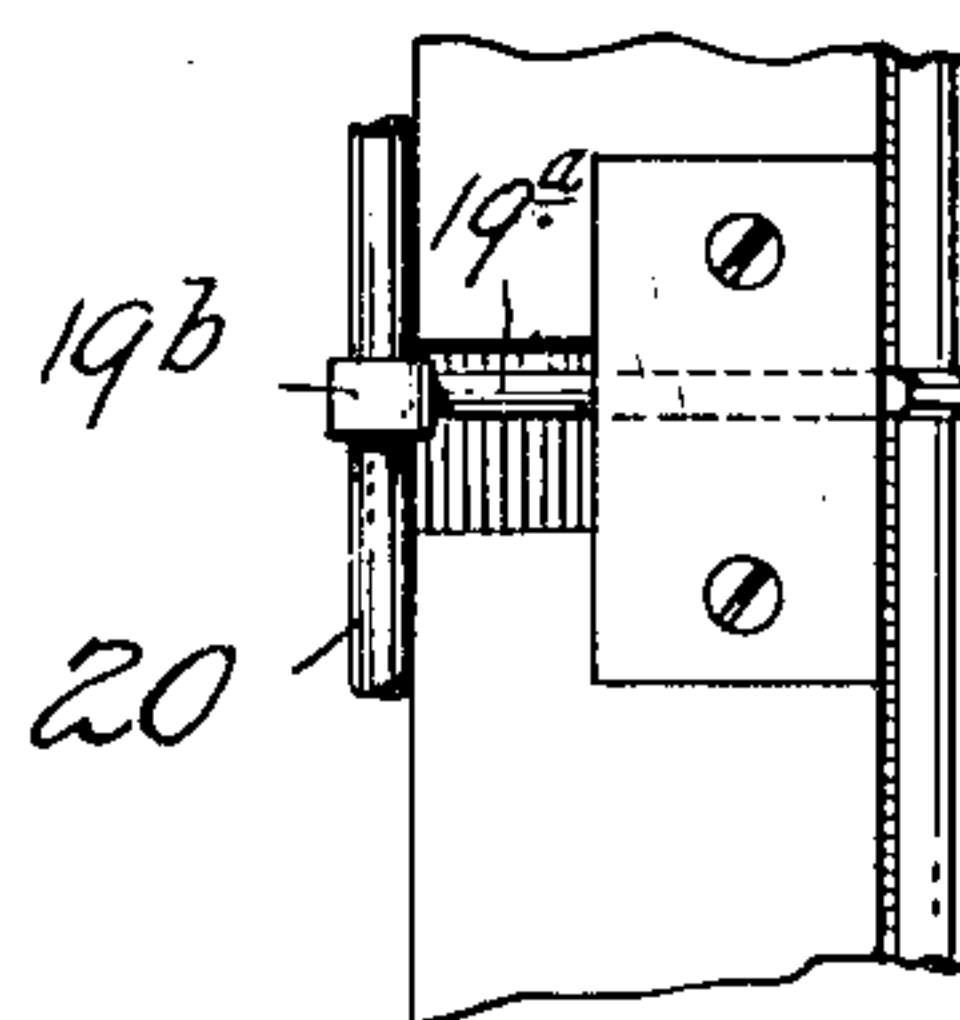
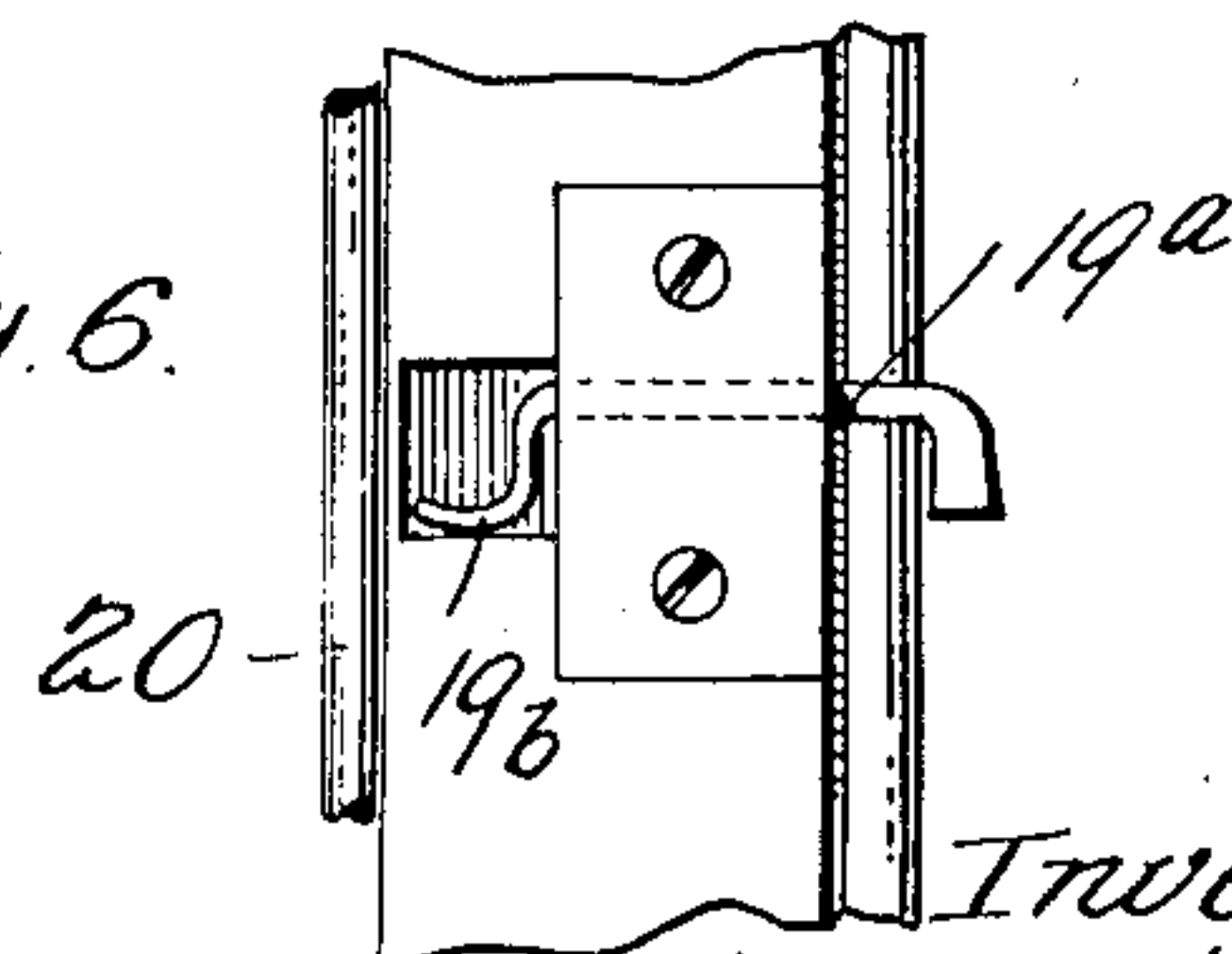


Fig. 6.



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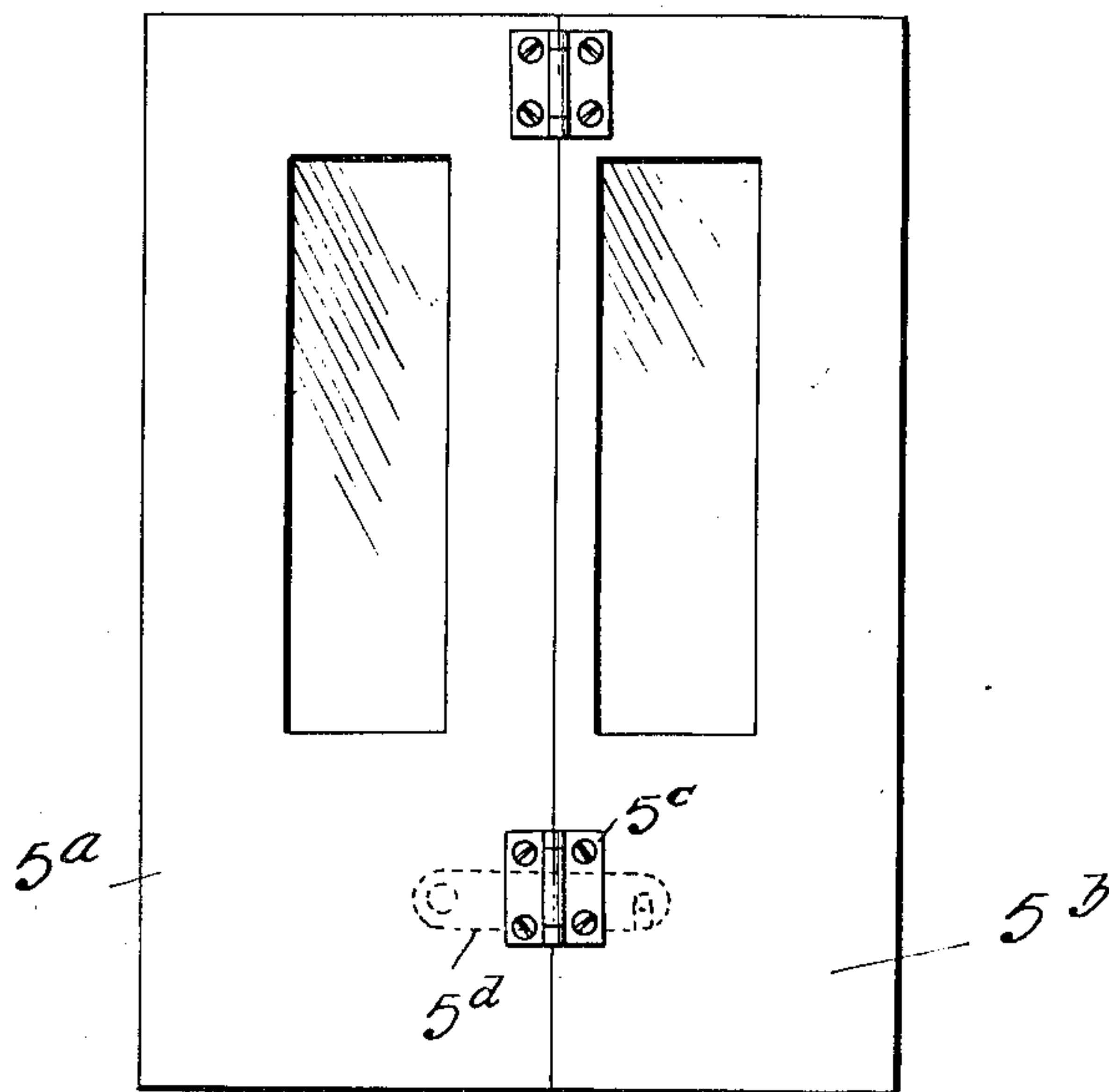
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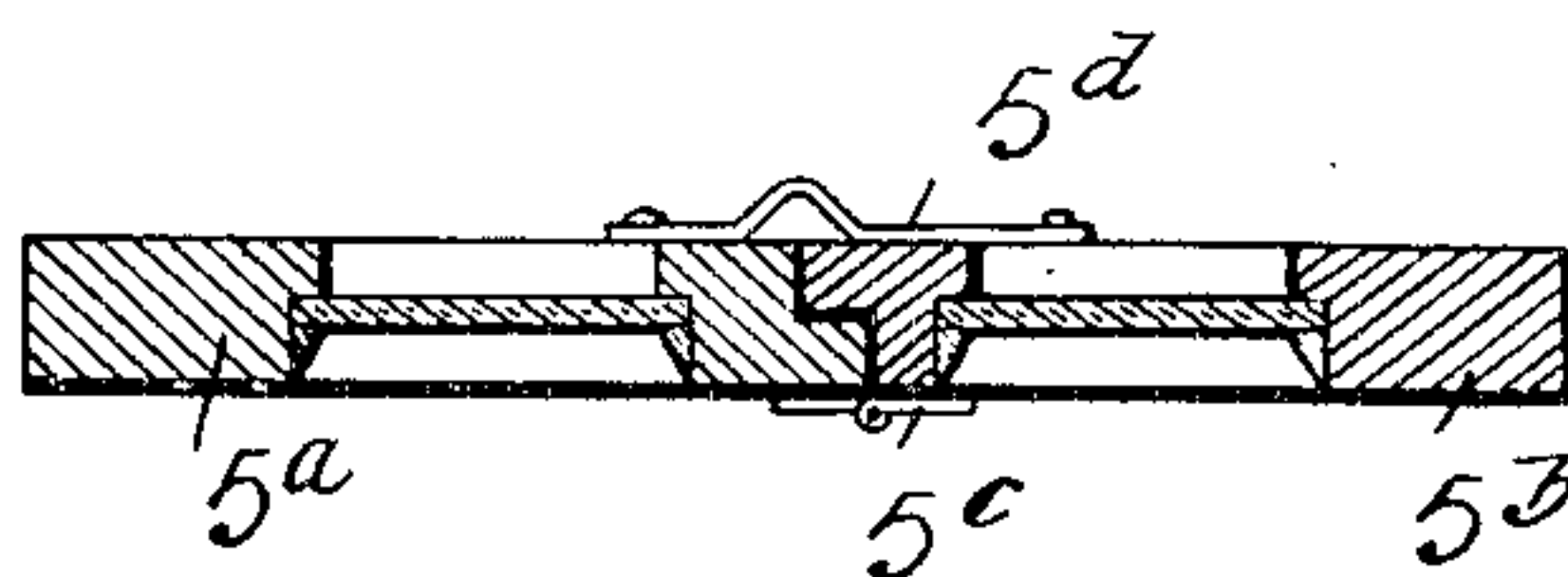
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3 SHEETS—SHEET 3.

*Fig. 7.*



*Fig. 8.*



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# UNITED STATES PATENT OFFICE

MORTIMER C. GAGE, OF BINGHAMTON, NEW YORK.

## ROTATING DOOR.

No. 843,141.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed May 14, 1906. Serial No. 316,813.

*To all whom it may concern:*

Be it known that I, MORTIMER C. GAGE, a citizen of the United States, residing at Binghamton, New York, have invented certain new and useful Improvements in a Rotating Door, of which the following is a specification.

One object of the invention is to provide a rotary door having a portion which shall be capable of being opened and closed like an ordinary door when circumstances are such as to render the use of the rotary door unnecessary or undesirable.

Another object is to so arrange the said portion that it may be folded completely out of the way when the weather necessitates the doorway being completely open.

Still another object is to so construct the revolving door that all danger of persons getting caught between the wings and doorway will be avoided.

I have also aimed to provide means by which the door will always come to rest in the proper position for people to operate it readily in passing in or out and which will serve also to prevent its moving too rapidly and continuing to rotate after a person has passed through.

Finally I have sought to improve the door generally as to its various features of construction with a view to increasing its efficiency and durability and rendering it capable of being produced at a lower cost.

With these objects in view the invention includes the various features of construction and arrangement and combination of parts hereinafter described, and particularly set forth in the appended claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view. Fig. 2 is a horizontal section. Fig. 3 is an elevation, partly in section. Figs. 4, 5, and 6 are detail views. Fig. 7 and 8 are detail views of a modification.

Referring by reference characters to the drawings, the numeral 1 designates the wall of a building, and 2 the quadrantal door-casings of substantially the ordinary form and located on opposite sides of the door-opening. The floor of the doorway is designated 3 and the top or cover 4.

The rotating door comprises a central portion or member 5 and two side members or wings 6, which are arranged parallel to each

other and between which the member 5 stands at right angles when the door is used as a rotating door. These side wings or members 6 are rigidly connected at the top by a cross-bar or member 7, which has a shaft or pivot-stud 8, extending up through and journaled in a suitable bearing in the top wall 4. The central portion 5 carries a centrally-arranged pivot pin or stud 9, which engages a corresponding bearing-recess in the floor 3 and serves as a lower pivot or axis of rotation for the rotating door.

The side wings are provided with push-rails 10, which are made folding for the purpose hereinafter described, and it will be readily seen that when a person desiring to pass through the doorway presses against one of these push-rails the central portion and side wings will all rotate together, and the rectangular space provided by the central member and side wings will, with a minimum sized door, afford a large amount of space for the person passing through.

In order that the door may always be brought to rest with the central member or portion 5 extending transversely of the doorway and with the side wings in position for ready entrance of a person into the space between them, I provide the following mechanism:

The pivot-stud 8 is rigidly secured to the cross-bar 7 and carries above the top wall a bar 11, fast thereto and forming oppositely-disposed arms from which project the pins or studs 12.

An arm 13, pivoted at 14 to the top wall 4, is placed under the tension of a spring 15 and carries at its free end a star-wheel 16, which has four forked arms 16<sup>a</sup>. The forks of successive arms are located at a distance from each other corresponding to the distance the pins 12 are from each other, so that the pull of the spring upon the arm 13 will cause two of the forked arms 16<sup>a</sup> to bear against the pins or studs 12 and hold the door in proper position.

The rotation of the door will rotate the cross-bar 11, causing one of the studs to push upon the corresponding forked arm, thus swinging the arm 13 against the tension of the spring, which will be increased until the door has been moved through an arc ninety degrees, the star-wheel rotating with the



cross-bar. As soon as the dead-center has been crossed the spring will tend to cause the door to swing the remaining ninety degrees without being pushed by the operator, and as soon as the next forked arm of the star-wheel comes into contact with the other pin or stud the door will be brought to rest.

In order that the central portion 5 of the door may when desired be used as an ordinary door or be swung back entirely out of the way to provide an open passage I construct and support it in the manner which will now be described.

The pivot-stud 9 is made in the form of a vertically-sliding bolt which may be raised and lowered and clamped in either of its extreme positions by means of a thumb-screw 17. The door section or member 5 is connected at the top and bottom on one side with the corresponding side wing by links 18 and intermediate of these by a detachable latch connection 19.

I prefer to form the links 18 as angularly-bent arms or extensions of a rod 20, secured by the eyes 21 to the side wing, and make the detachable connection with this rod by the sliding bolt 19<sup>a</sup>, which has a curved end 19<sup>b</sup> to hook around the rod as the door swings.

The opposite edge of the door is provided with a suitable latch 22 for engaging the other side section or wing, and moldings 23 are provided on both side sections or wings, against which the door bears and which form a tight joint. From the arrangement just described it will be seen that when it is desired to use the door as an ordinary door the pivot stud or bolt 9 is raised to disengage it from its socket, the latch 22 disengaged, and the door may then be swung on the hinges formed by the rod 20, with its arms and the detachable latch 19.

One or more bolts 24 may be provided for holding the side wings against rotation at this time.

When it is desired to have the central door section or member permanently open, the hinge-bolt 19<sup>a</sup> is disconnected from the rod by sliding it inwardly, when a slight swinging of the member 5 will enable its hinge edge to clear the molding, when it may be folded flat against the side section or wing with its edges coincident therewith.

It will of course be understood that when the section 5 is to be swung independently of the side sections the push-rails are folded up out of the way. It is desirable to provide the central and side sections both with panes of glass, as shown.

I deem it advisable to provide a rail or rails 25 on the outer face of each side section, as these serve to prevent any one from attempting to pass into the space between the outer face of the sections and the casing.

Under some circumstances—as, for instance, where the doorway is a very large one—it may be found desirable when the door is to be used only as an ordinary hinged door to swing only a part of the section 5 instead of the whole of this section. This may be accomplished readily by forming this section 5 in two parts 5<sup>a</sup> and 5<sup>b</sup>, as shown in Fig. 7, the parts being connected together by hinges 5<sup>c</sup>. A latch 5<sup>d</sup> is provided, which in connection with the hinges serves to connect the two sections rigidly together except when the door is to be used as a swinging door, and when the parts are thus connected by the latch the two sections operate in precisely the same manner as the section 5, hereinbefore described.

Having thus described my invention, what I claim is—

1. In a rotary door, a pair of parallel connected side sections mounted to rotate in unison, a central section extending between the same, links connecting one edge of said central section to the center of one of the side sections, and a detachable connection between the opposite edge and the other section, substantially as described.

2. In a rotary door, a pair of parallel connected side sections mounted to rotate in unison, a central section extending between the same, links connecting one edge of said central section to one of the side sections, a detachable latch connection between said edge and said section and a detachable connection between the opposite edge and the other section, substantially as described.

3. The combination with a doorway having quadrantal side casings, of a rotary door comprising opposite parallel side sections rigidly connected and mounted to rotate together, a central section having a hinge connection with the center of one side section and a detachable connection with the other section, and a detachable pivotal connection between said central section and the door-casing, substantially as described.

4. The combination with a door-casing, of a rotating door, a cross member rotating in unison therewith, and a pivoted spring-pressed lever bearing a rotary member acting on said cross member.

5. The combination with a door-casing, of a rotating door, a cross-arm connected therewith having studs on its opposite ends, a spring-pressed lever and a wheel on said lever having forked arms for engaging said studs, substantially as described.

6. In a rotary door, a pair of parallel connected side sections mounted to rotate in unison, a central section extending centrally between the same, a vertical rod rotatably mounted in the face of one of the side sections and having horizontally-extending

arms connected to the central section at a suitable distance from its edge and forming link connections therefor, and a latch carried at the edge of the central section and adapted to detachably engage said vertical rod, and  
5 a latch connection for the opposite edge of the central section.

In testimony whereof I affix my signature in presence of two witnesses.

MORTIMER C. GAGE.

Witnesses:

JAMES F. PETTIT,  
PHINNIE R. ST. JOHN