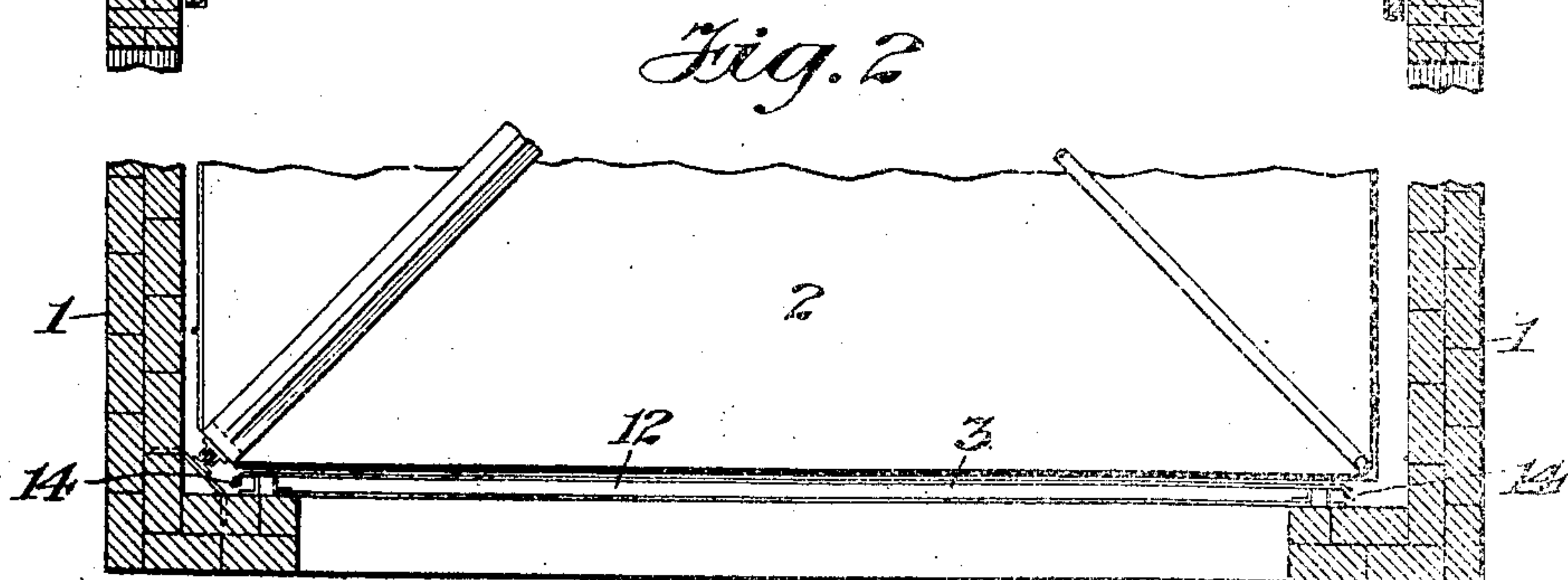
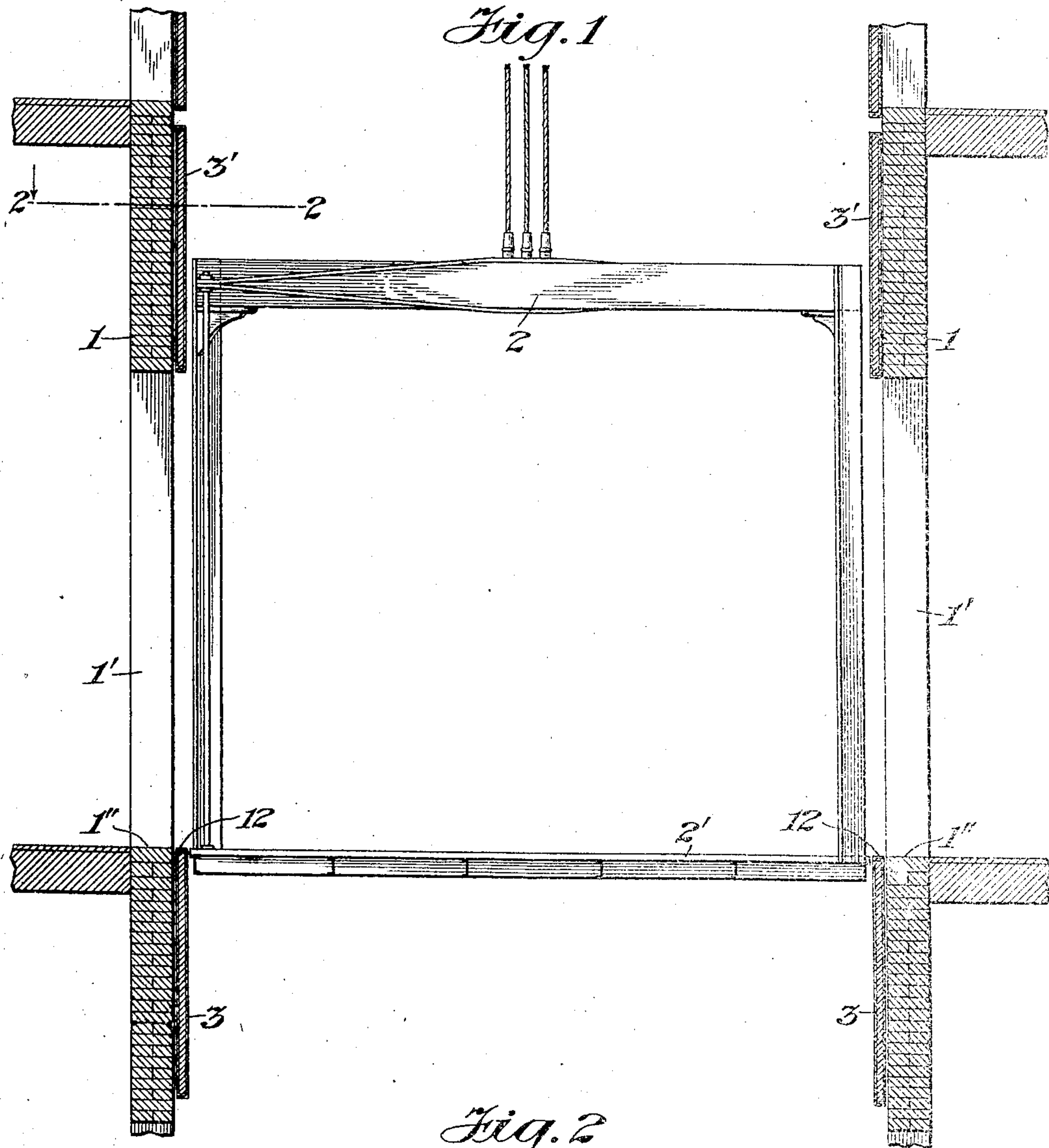


No. 871,735.

PATENTED NOV. 19, 1907.

J. RASHKIN.  
DOOR FOR ELEVATOR SHAFTS.  
APPLICATION FILED JUNE 14, 1905.

2 SHEETS—SHEET 1.



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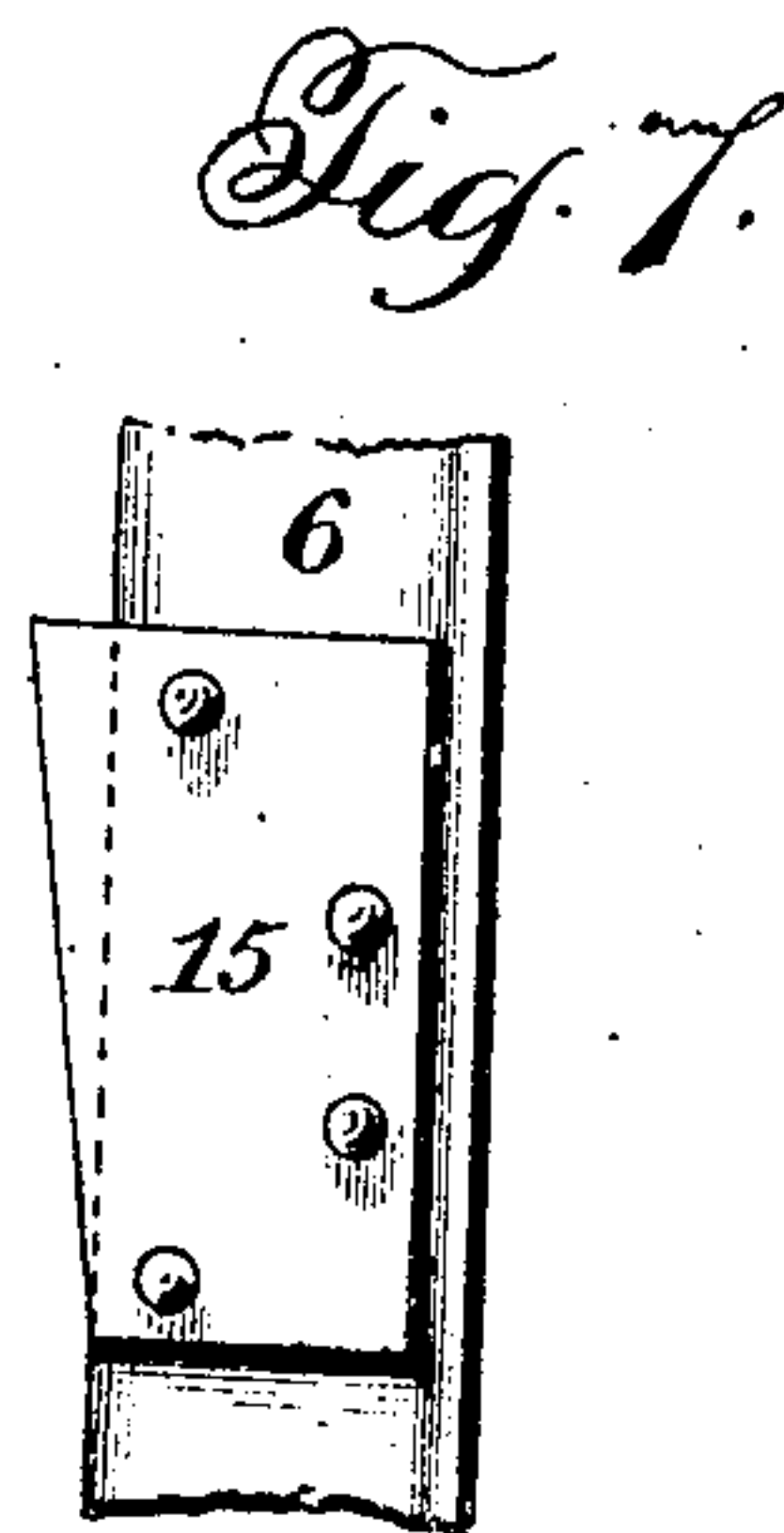
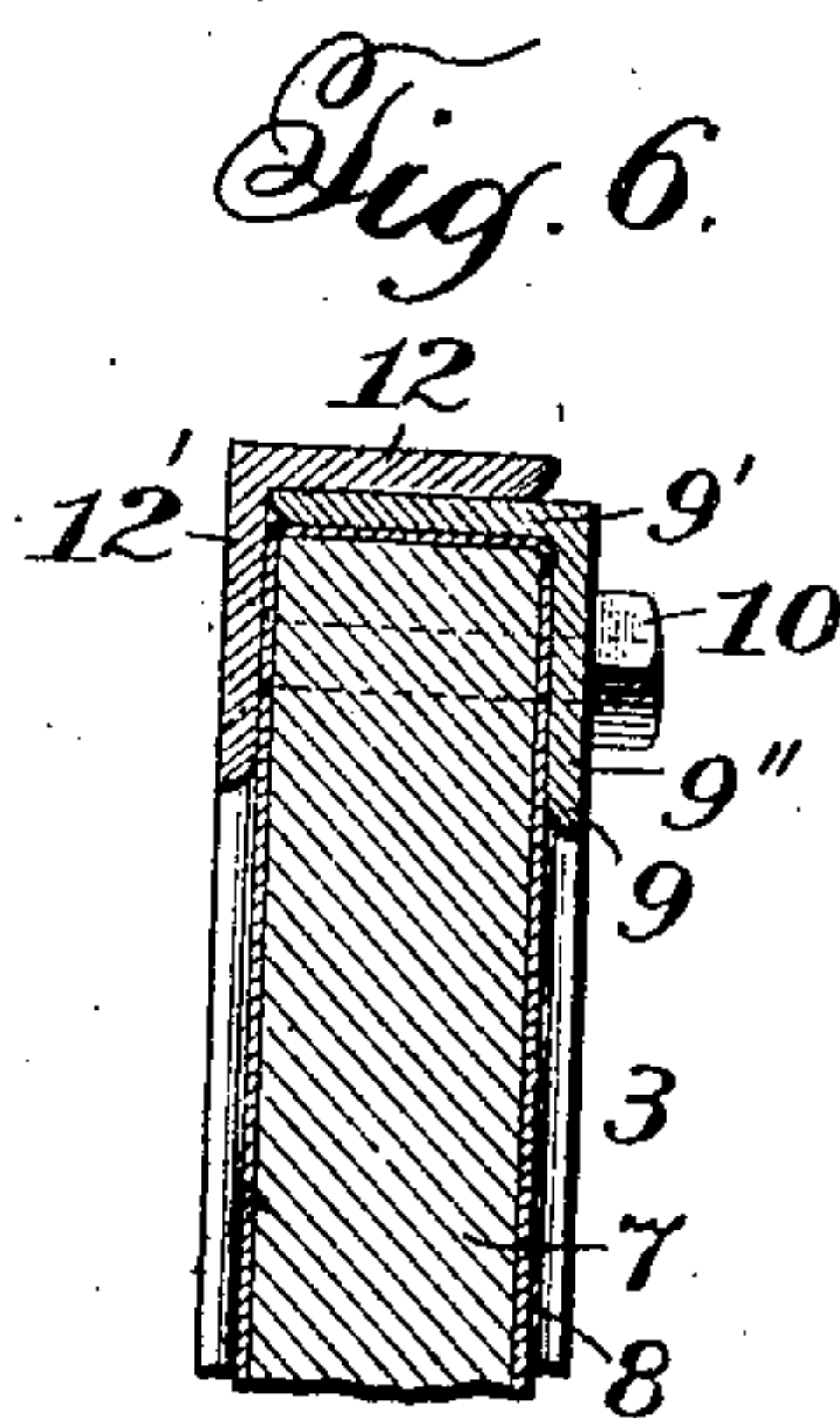
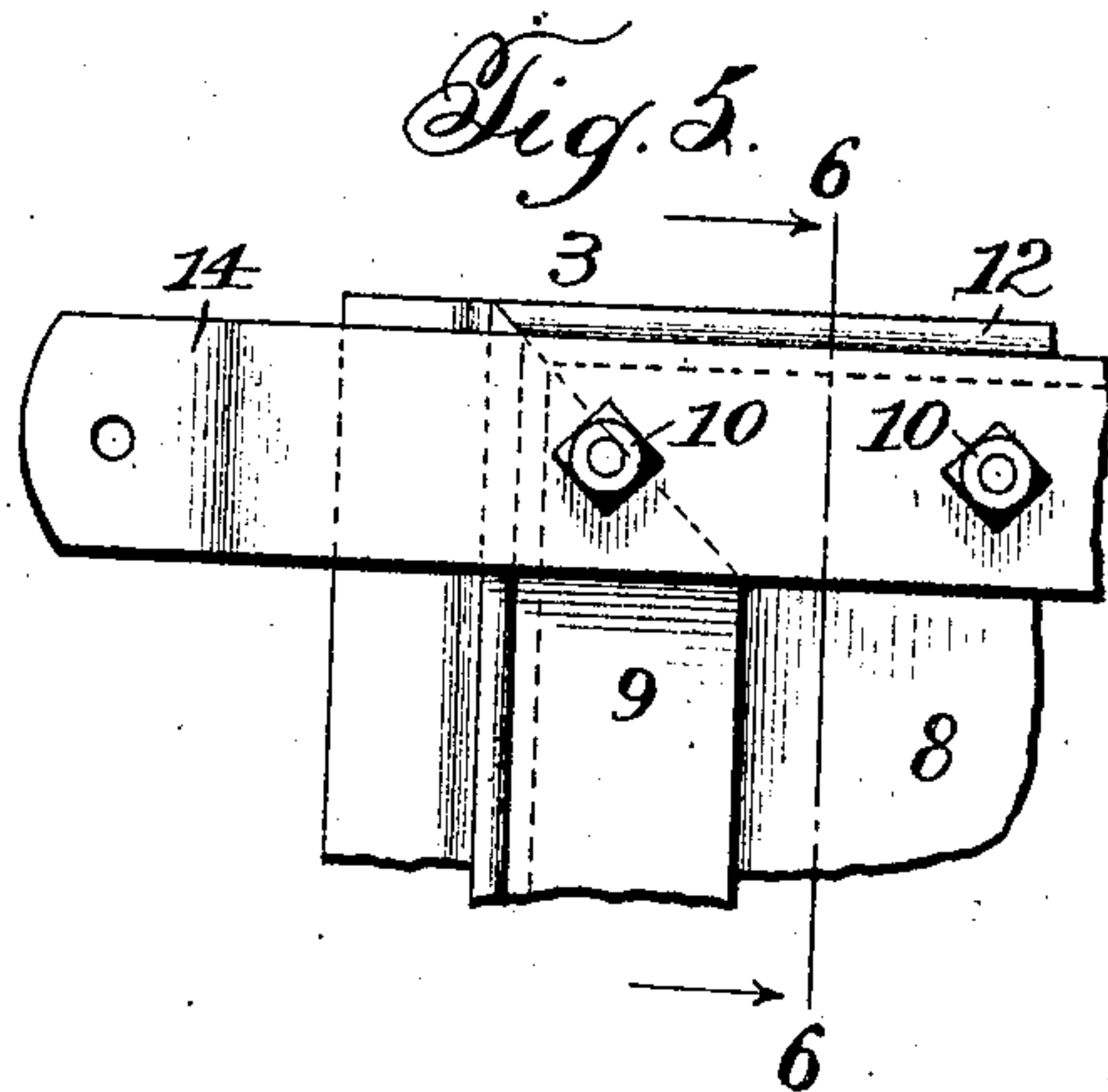
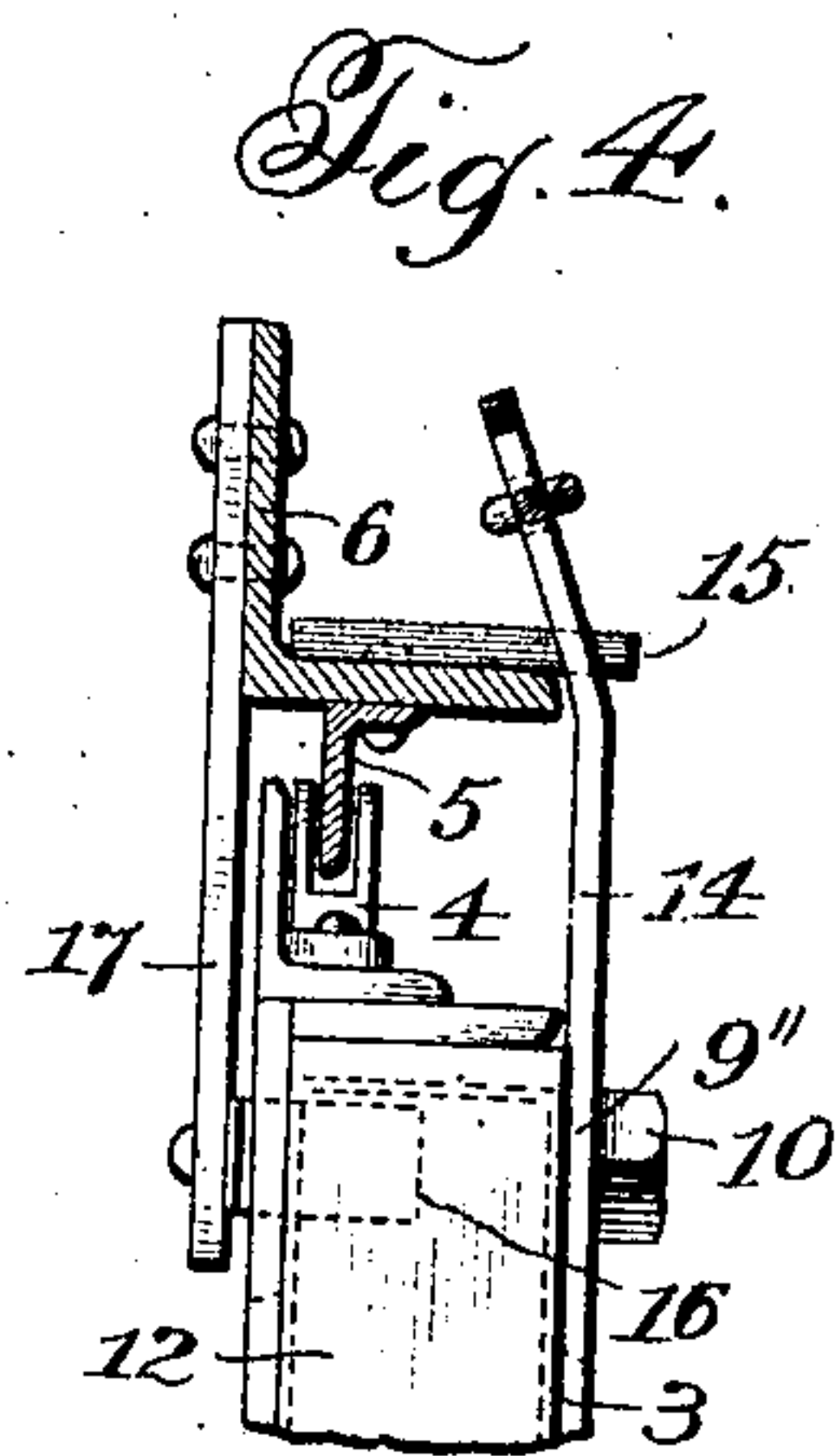
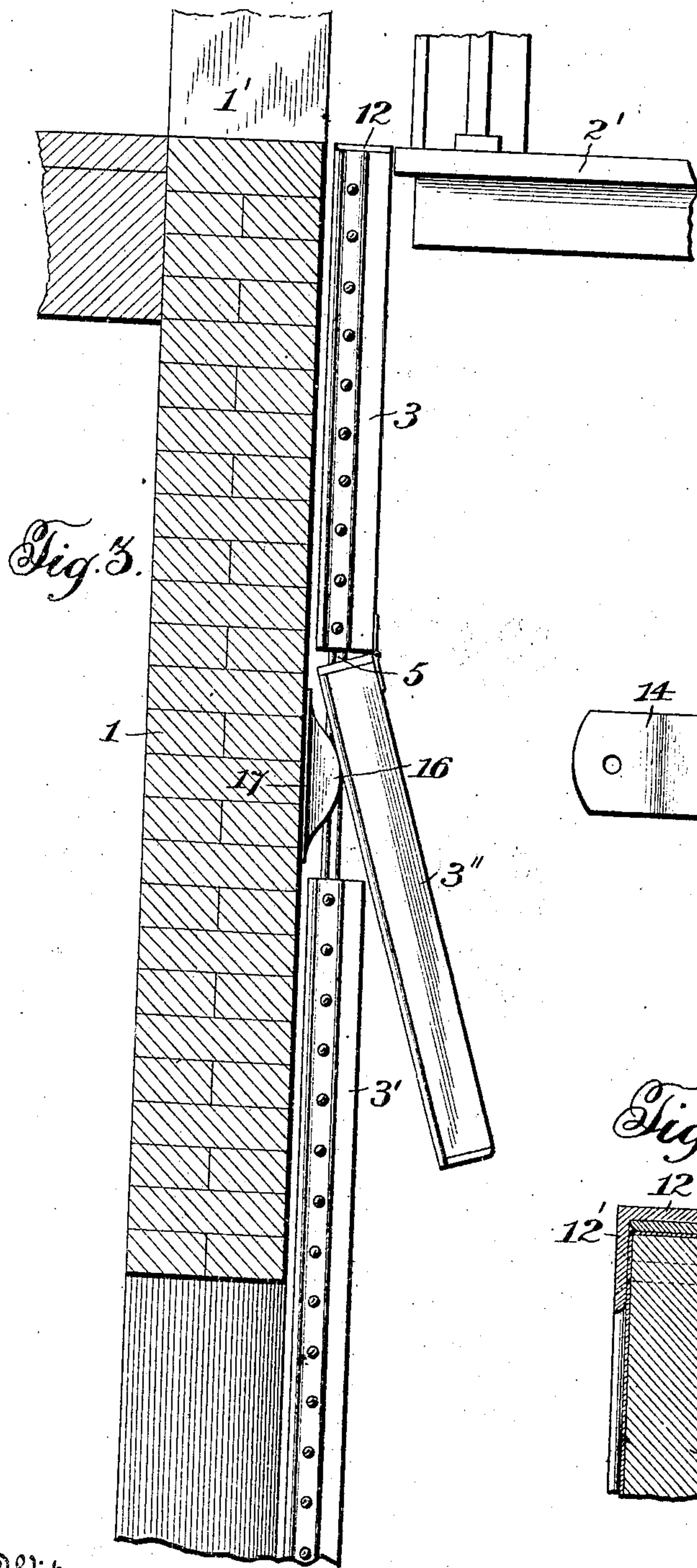
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2 SHEETS—SHEET 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH RASHKIN, OF NEW YORK, N. Y.

## DOOR FOR ELEVATOR-SHAFTS.

No. 871,735.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed June 14, 1905. Serial No. 265,145.

*To all whom it may concern:*

Be it known that I, JOSEPH RASHKIN, a subject of the Czar of Russia, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Doors for Elevator-Shafts, of which the following is a specification.

My invention relates to improvements in doors for elevator-shafts of the general type disclosed in my prior patent No. 756,524, dated April 5, 1904, wherein a pair of doors, or two sections of one door, are slidably supported on suitable tracks in a manner to be movable toward and from each other, the same being operatively connected by a suitable cable operating over a stationary pulley. These doors are arranged to slide on tracks in the elevator shaft in a position between the wall of the latter and the elevator so that when the lower section or door is lowered to an open position there is a space between the main door-sill and the floor of the elevator which it is desirable should be occupied by a sill or floor-section capable of withstanding the passing and trucking of heavy loads thereover. It has therefore been one of the objects of my present invention to provide a filler or bridge element for occupying the said space between the door-sill and the floor of the elevator when the door is opened which will be automatically movable to and from its operative position upon the opening and closing of the door.

The doors for the elevator shaft, as before stated, are supported to slide on track-rails located within the shaft, which track-rails are usually continuous throughout the length of the shaft, or, if not continuous, arranged in the same vertical planes. Because of the doors on several floors of a building thus operating on the same continuous track-rails or in the same vertical planes, it is desirable that there should be sufficient space between the door-sill at one floor and the top of the door at the lower floor to permit of the raising and lowering of each pair of doors without hindrance by contact with the door at the next floor. Usually there is sufficient space provided between the door-ways on different floors to permit of such operation of the doors, but it sometimes happens that the said space is insufficient, and it has therefore been a further object of my present invention to provide a simple and effective means whereby a door may be fully opened

without interference with the doors on the next floor in those cases where the space between the door-ways on different floors is insufficient under the conditions referred to.

Both objects of my invention referred to are obtained by means of the novel features of construction and combinations of parts as hereinafter set forth in detail and pointed out in the claims.

Referring now to the accompanying drawings forming part of this specification, Figure 1 is a vertical section through part of an elevator shaft, showing the relative arrangement therein of an elevator and a pair of doors, the latter being in section and in opened position. Fig. 2 is a section through line 2—2 of Fig. 1. Fig. 3 is a detail view in side elevation of a door and one of its track rails showing my improved construction for use in case of insufficient space between the adjacent doorways to permit of the use of regular doors. Fig. 4 is an enlarged detail view showing the connection between a door and one of its track rails, the latter being sectioned. Fig. 5 is a detail view in front elevation of a portion of the lower door or section. Fig. 6 is a section through line 6—6 of Fig. 5, and Fig. 7 is a detail view of a portion of a track-rail having a stop-support thereon for limiting the downward movement of the lower section of a door.

Similar reference characters designate like parts in the several figures of the drawings.

To explain in detail, 1 indicates the walls of an elevator-shaft having the usual doorway openings 1' therein; 2, an elevator supported to move vertically in said shaft; and 3, 3', a pair of doors supported to slide in the said shaft in a position between the wall thereof and the elevator. These doors 3, 3', in the present case, are provided at their edges with grooved plates 4 which engage with suitable track-rails 5 carried by angle-plates 6 which are suitably attached to the inner walls of the shaft, in the usual manner. In order that each pair of doors may move in unison and counter-balance each other, the same will preferably be connected by a suitable cable operating over a stationary pulley (not shown) in substantially the same manner as disclosed in my said prior patent No. 756,524.

The doors 3, 3', may be of any suitable or desired construction, but the same will preferably comprise a wooden body portion



7 having a tin or other metallic covering 8 and being framed in at its edges by angle irons or plates 9, the latter being secured to the said body portion 7 of the doors by suitable fastening means, such as the bolts 10.

In accordance with my present invention, I provide a metallic filling or bridge plate 12 for occupying the space between the elevator-floor 2' and the door-sill 1" when the doors are opened which may be supported and operated in any suitable manner to be movable to and from its said operative position upon the opening and closing of the doors, the said filling or bridge plates in the present case being shown as resting and having its bearing upon the horizontal flange 9' of the angle-plate 9 at the upper edge of the lower door section 3, whereby it will be supported and operated by the latter. This filling or bridge plate 12 may be secured in position on the door in any suitable manner, the same in the present case being the horizontal flange of an angle-plate 12' which embraces that corner of the door opposite the angle-plate 9 and being secured in position on the door by the bolts 10, as indicated by dotted lines in Fig. 6.

The lower door 3 may be supported in its lowered open position with the filling or bridge plate 12 filling the space between the elevator floor 2' and the door-sill 1", as shown in Fig. 1, by any suitable means, but in the present case I have provided the vertical flange 9" of the angle plate 9 at the upper edge of said door with an extension 14 at each end thereof which are adapted to engage with suitable stops when the door has reached its lowest limit of movement, the said stops in the present case being formed by plates 15 secured to the track-rails 5 with one edge extending into the path of movement of the said extensions 14, as shown in Fig. 4. By reason of the stop extension 14 being connected with or formed upon the angle plate 9 as described, the support afforded by said angle-plate 9 to the filling or bridge plate 12 is direct and positive, and any wear or strain on the door proper caused by the passing or trucking of heavy loads over the bridge-plate is thereby avoided.

When the space between the door-ways on different floors is sufficient for the complete opening of a pair of doors on one floor without interference with those on the adjacent floors, each of the two doors of each pair will be formed in one part or section as shown in Fig. 1. When, however, the space between the door-ways is insufficient the lower door will be formed with a lower hinged section 3", and suitable means will be provided for engaging with said hinged section upon the lowering of the door to deflect it inwardly from its normal path of movement, as shown in Fig. 3, whereby it will be caused to move downwardly past and behind the top of the

adjacent door 3<sup>a</sup> on the next floor only the upper edge of which is shown in Fig. 4. Any suitable means may be provided for so deflecting the said hinged door section from its normal path of movement, the means herein shown comprising a cam block 16 secured to a plate 17 which is attached to the rail-carrying plate 6.

What I claim is:

1. The combination with an elevator shaft having a door opening in the wall thereof and an elevator car movable in the shaft, of a door supported to slide in said shaft between the wall of the latter and the car, a bar carried by the upper edge of the door and movable there with and means for arresting and rigidly supporting the bar in register with the building-floor whereby said bar will provide a fixed bridge between the car-floor and the building-floor.

2. In combination with an elevator shaft having a door-opening in the wall thereof, and an elevator movable in said shaft, of a door supported to slide in said shaft between the wall thereof and the elevator and being movable downwardly from its normal closed position opposite the door-opening to a position with its upper edge substantially flush with the door-sill, the said door being provided at its upper edge with an angle plate the horizontal flange of which forms part of the upper edge of the door and the vertical flange of which is extended at its opposite ends beyond the sides of the door, and means for engaging with the said end extensions of the angle-plate for supporting the door in its lowered position.

3. The combination with an elevator shaft having a door-opening in the wall thereof, and an elevator movable in said shaft, of a door supported to slide in said shaft between the wall thereof and the elevator and being movable downwardly from its normal closed position opposite the door-opening to a position with its upper edge substantially flush with the door-sill, the said door being provided at its upper edge with an angle plate the horizontal flange of which forms part of the upper edge of the door and the vertical flange of which is extended at its opposite end beyond the sides of the door, a metallic filling or bridge-plate resting upon the horizontal flange of said angle-plate and being of sufficient width to substantially fill the space between the door-sill and the elevator, and means for engaging with the said end extensions of the angle-plate for supporting the door in its lowered position.

4. In combination with an elevator shaft having a door-opening in the wall thereof, and an elevator movable in said shaft, of a door supported to slide in said shaft between the wall thereof and the elevator and being movable downwardly from its normal closed



position opposite the door-opening to a position with its upper edge substantially flush with the door-sill, the said door being provided at its upper edge and on the opposite corners thereof with two angle-plates arranged with the horizontal flange of one resting upon that of the other, the said upper horizontal flange forming a filling or bridge-plate for occupying the space between the door-sill and the elevator, and the vertical flange of the lower angle-plate being extended at its opposite ends beyond the sides of the door, and means for engaging with the said end extensions of the lower angle-plate to support the door in its lowered position.

5. The combination with an elevator shaft having a door opening in the wall thereof and an elevator car movable in said shaft, of a door supported to slide in said shaft between the wall of the latter and the car, a bar-carried by the upper edge of the door and movable therewith, and means for arresting the movement of the bar when in register with the building floor whereby the bar will provide a fixed bridge between the car floor and the building floor said means being located below the bar and acting independently of the carrying cables for the doors.

6. The combination with an elevator shaft having a door opening in the wall thereof and an elevator car movable in said shaft, of a door supported to slide in said shaft between the wall of the latter and the car, a bar carried by the upper edge of the door and movable therewith, and stops on opposite sides of the shaft located contiguous to the door opening and below the bar to be supported thereupon.

7. The combination with an elevator shaft having a door opening in the wall thereof and track rails associated with the shaft, an elevator car movable in the shaft on the

track rails and a door slidable in the shaft, of a bar movable with the door and designed in one position thereof to provide a fixed bridge between the car floor and the building floor, a support for said bar and stops arranged in the elevator shaft and co-acting with the support said stops being secured to the track rail below the support which co-acts with the same.

8. The combination with an elevator shaft having a number of door openings leading therein, of sliding doors associated with said openings, said doors being movable in a common vertical plane and one of said doors being provided with a hinged section, and means co-acting with said hinged section during the movement of the door to deflect it from said common path of movement whereby said section may pass out of register with the door located therebeneath.

9. The combination with an elevator shaft having a number of door openings leading therein, a pair of doors associated with each opening, said doors being slidably mounted to move toward and from one another in the opening and closing thereof and the several doors moving in a common vertical plane, the upper member of one pair of doors and the lower member of the immediately superimposed pair having less clearance therebetween when both of said doors are closed than the amount of movement of the said lower member in the maximum opening movement thereof, said lower-member having a lower hinged section and a cam located in the path of movement thereof and co-acting therewith to shift the same during the lowering of said section out of register with said upper member of the door located immediately therebeneath.

JOSEPH RASHKIN.

Witnesses:

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