

No. 859,770.

PATENTED JULY 9, 1907.

T. HITCHEN.
BAKE OVEN DOOR.
APPLICATION FILED MAY 28, 1906.

2 SHEETS—SHEET 1.

FIG. 1

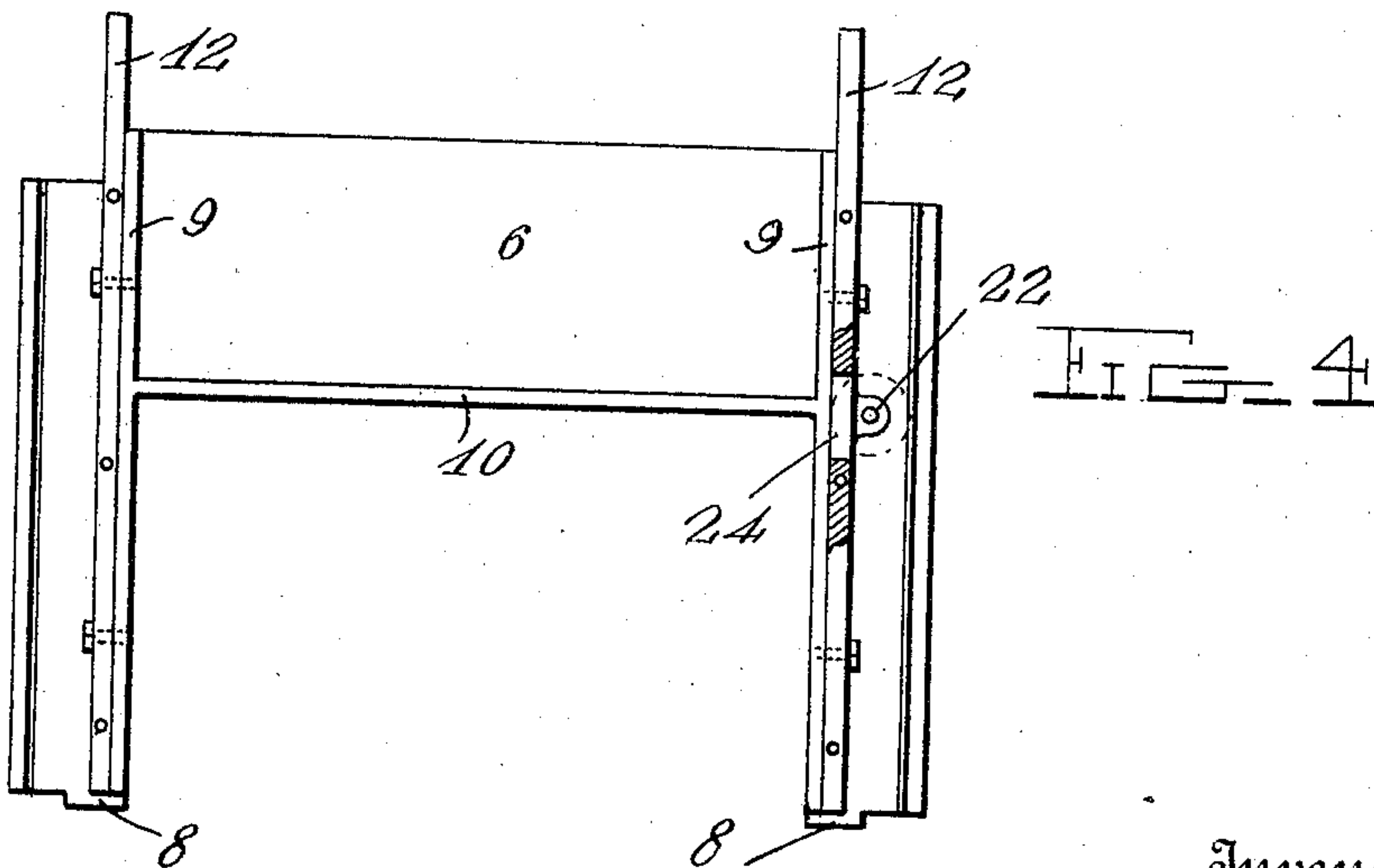
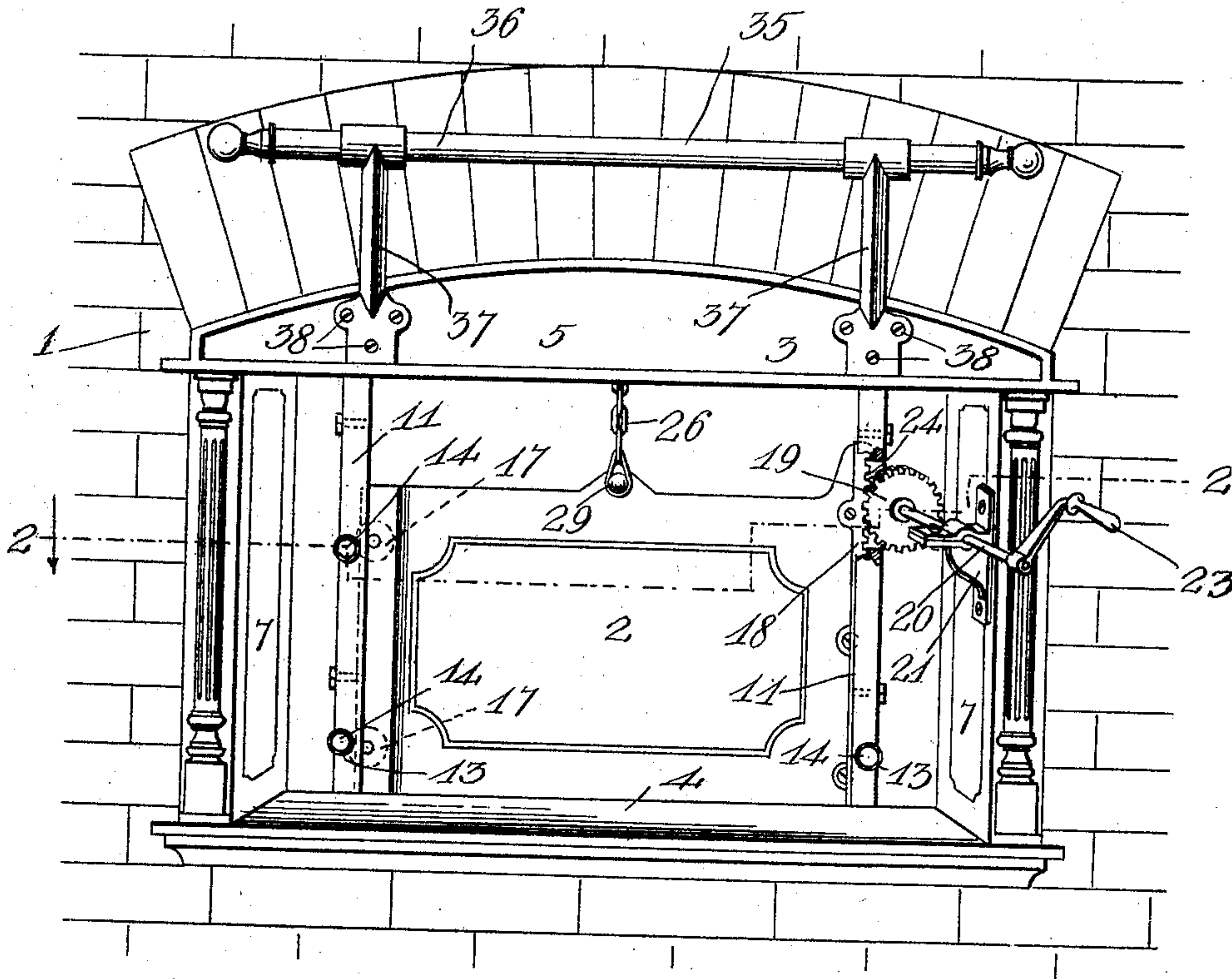


FIG. 4

Witnesses

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2 SHEETS—SHEET 2.

FIG. 2

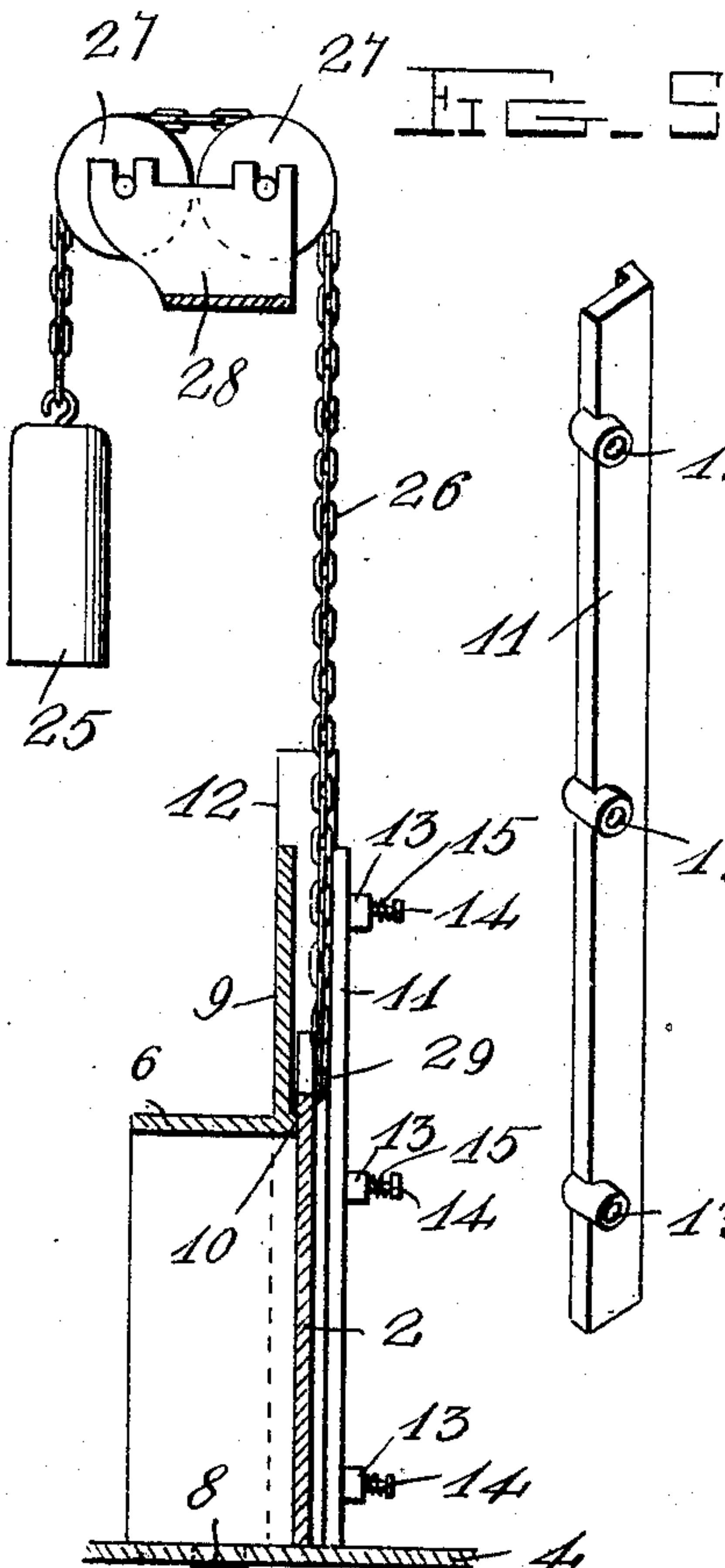
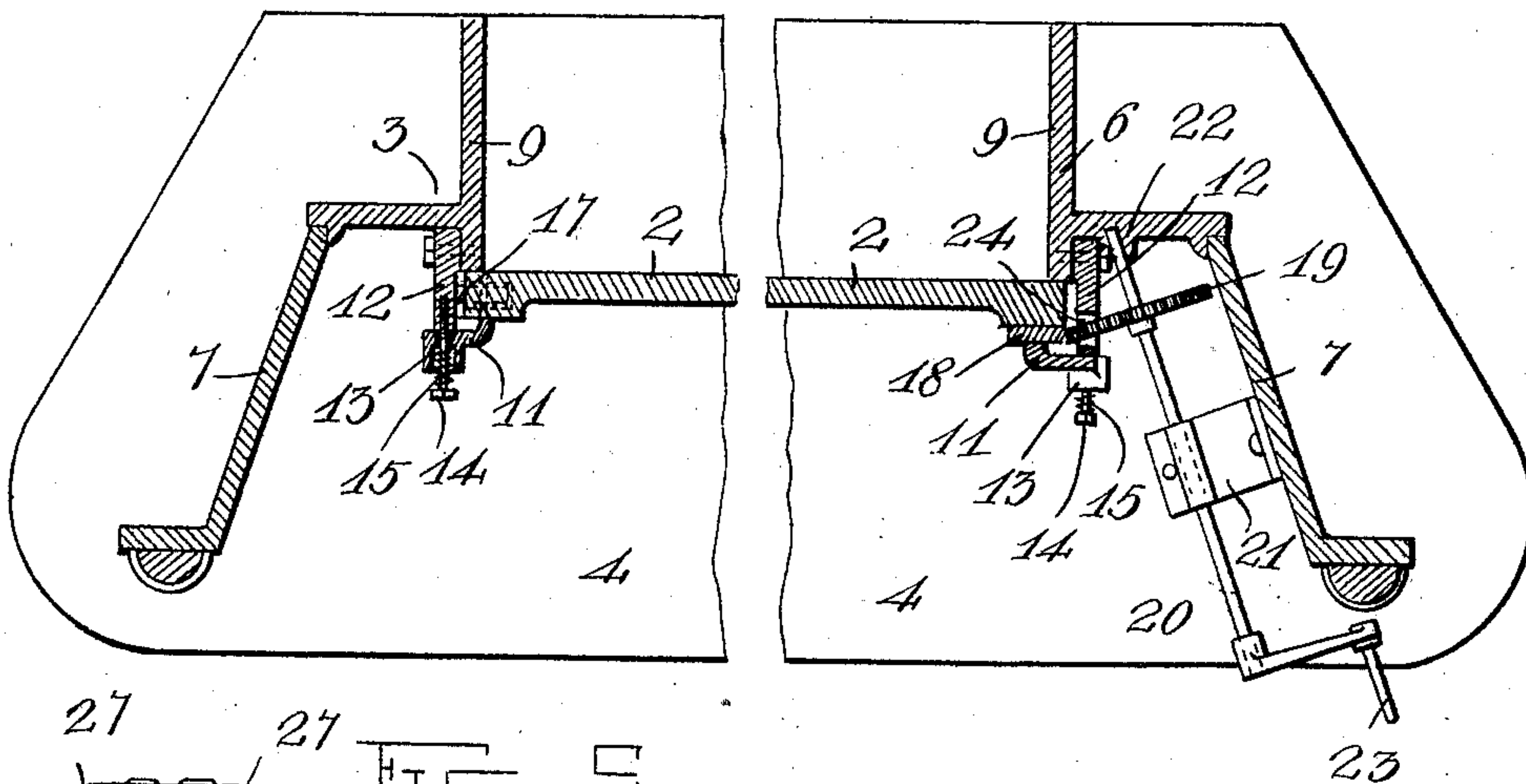


FIG. 6

FIG. 3

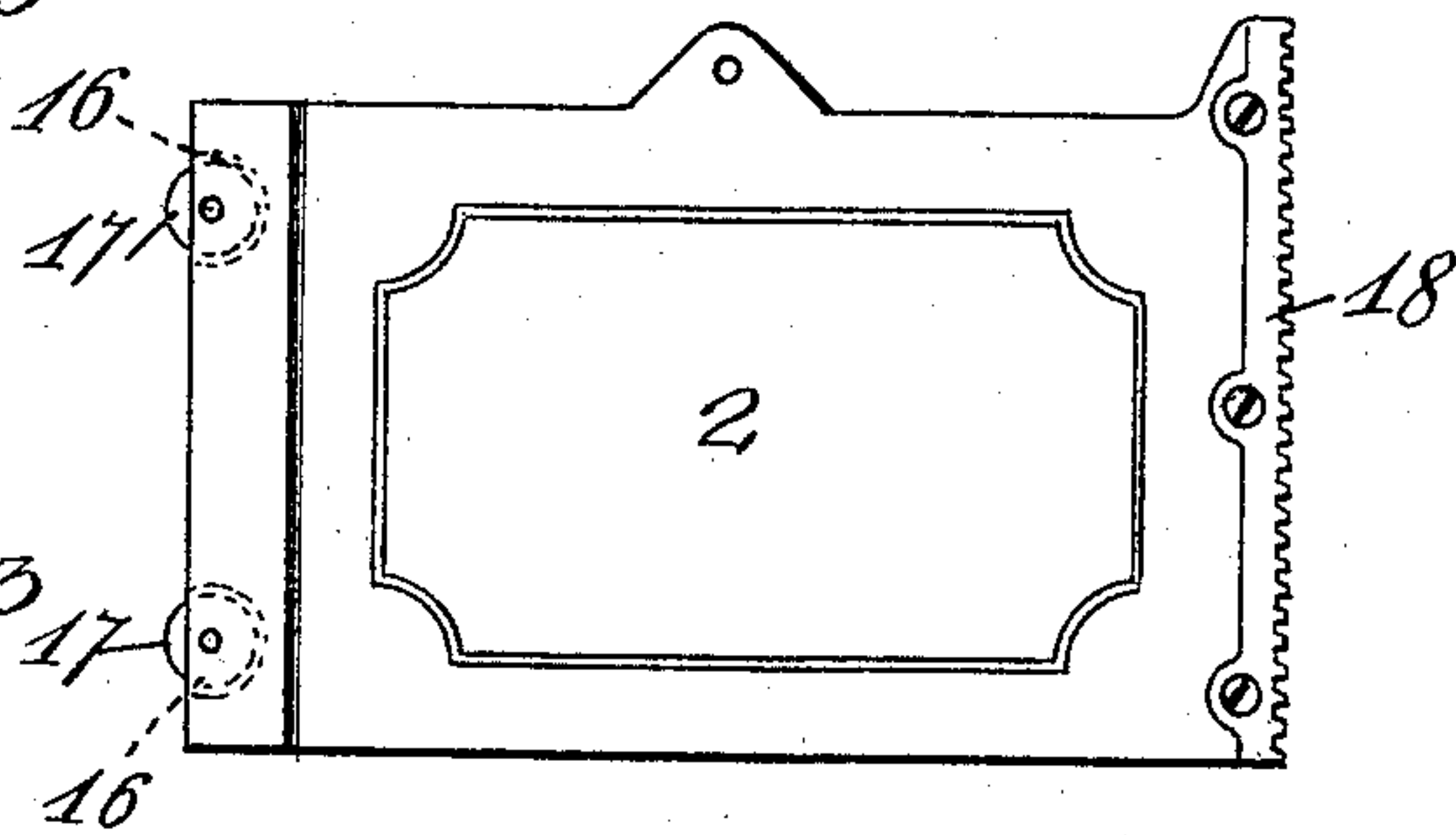
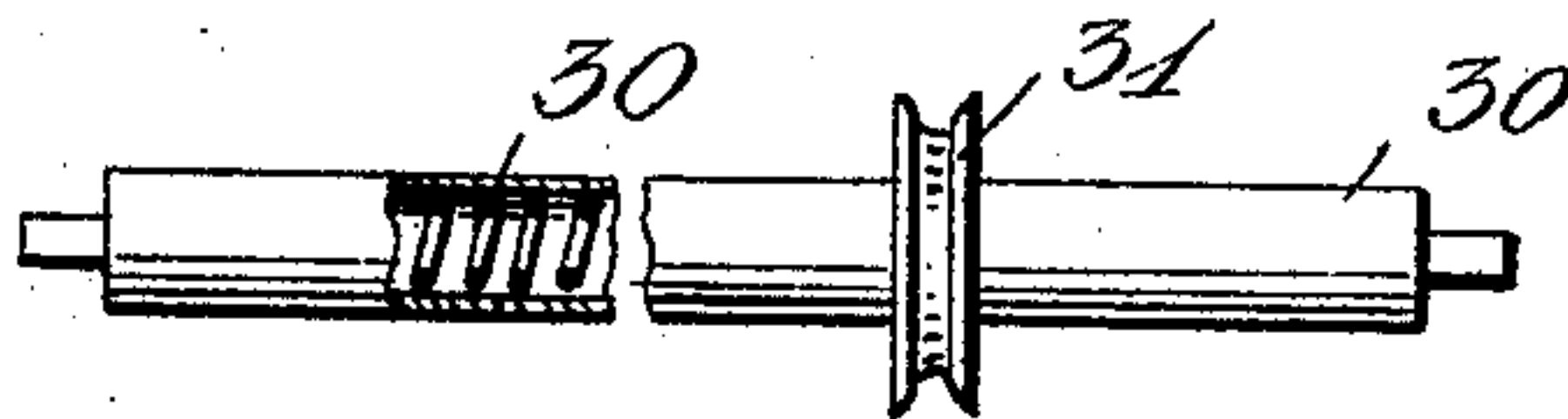


FIG. 7



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS HITCHEN, OF CAMPERDOWN, SYDNEY, NEW SOUTH WALES, AUSTRALIA.

BAKE-OVEN DOOR.

No. 859,770.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed May 28, 1906. Serial No. 319,195.

To all whom it may concern:

Be it known that I, THOMAS HITCHEN, a subject of the King of Great Britain, residing at Camperdown, Sydney, New South Wales, Australia, have invented certain new and useful Improvements in Bake-Oven Doors; 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.

My invention relates to improvements in doors and operating devices therefor, for use in bakers' ovens and similar structures.

The object of the invention is to provide a practical device of this character which may be conveniently operated and which will not be affected by the heat of the oven or furnace.

A further object of the invention is to improve and simplify the construction and operation of devices of this character and thereby render the same more efficient and durable in use and less expensive to manufacture.

With the above and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings,—Figure 1 is a front elevation of a portion of a baker's oven, showing my improved door and its operating device applied thereto; Fig. 2 is a horizontal sectional view through the same, taken on the plane indicated by the line 2—2 in Fig. 1; Fig. 3 is a front elevation of the sliding oven door; Fig. 4 is a similar view of the door frame; Fig. 5 is a sectional view through the door frame and door, showing the counterbalancing device for the latter; Fig. 6 is a perspective view of one of the door guiding and clamping strips, and Fig. 7 is a detail elevation with parts in section, showing a spring roller which may be substituted for the counterbalancing device for the door shown in Fig. 5.

Referring to the drawings by numeral, 1 denotes a portion of a baker's oven or similar structure, and 2 denotes my improved door which is adapted to slide vertically in a frame 3 mounted in the structure 1. The door frame 3 consists of a base-plate 4, a top plate 5, a door guiding frame or plate 6 and side plates 7. The latter and the frame 6 support the top 5 above the bottom or base-plate 4, which latter is formed with openings to receive tenons 8 upon the bottom of the frame or portion 6, as shown in Fig. 4.

The side plates 7 are angularly disposed and may be ornamented with columns upon their outer faces, as shown in Fig. 1. The door guiding frame 6 is preferably in the form of a casting and consists of two vertical sides 9 and a cross-piece 10. The front edges or faces of the

sides 9 and top 10 are machine planed, so that the plain rear face of the door 2 will fit snugly against them and remain in contact with them as it is raised and lowered to its opened or closed position. This door, which is of rectangular form as shown in Fig. 3, is retained against the portion 6 of the door frame by spring-pressed guide-plates or strips 11, which are mounted upon jambs 12 of the frame 6 and have their inner edges bearing against the front face of the door, as shown in Fig. 2. The portions 12 of the frame 6 may be cast integral with it or may be separate and secured thereon by bolts, as shown in Fig. 2. The strips 11 have formed upon their front faces, apertured bosses 13, through which extend screws 14 which enter threaded openings in the portions 12 of the door frame. Upon said screws, between their outer ends or heads and recesses in the bosses 13, are coiled springs 15 which press the strips 11 inwardly against the door 2 and force the latter against the frame 6. This construction renders the door air tight and at the same time allows the parts to expand so that the door will not bind.

In one of the vertical edges of the door are formed recesses 16, in which are journaled anti-friction rollers 17. The latter project slightly beyond the edge of the door and engage the jambs 12 of the frame 6, as shown in Fig. 2. Upon the other vertical edge of the door is formed or secured a rack bar 18, which meshes with a gear 19 secured upon the inner end of a horizontally disposed shaft 20. The latter is mounted in bearings in the bracket 21 upon one of the side plates 7 of the frame and in a bearing 22 provided upon one of the sides 9 of the frame 6. The gear 19 is preferably of such size that one rotation of it will elevate the door to an entirely open position, and it is preferably operated by a crank handle 23 provided upon the outer end of the shaft 20. A slot 24 is formed in the jamb 12 of the frame 6 to permit the gear to project there-through and engage the rack teeth 18.

The door 2 is preferably counterbalanced, as shown in Fig. 5 of the drawings, by providing a weight 25 upon one end of a chain or other flexible connection which extends over guide wheels or rollers 27 mounted in suitable bearings 28, and has its depending lower end attached to the center of the top of the door 2, as shown at 29. Instead of counterbalancing the door by means of the weight 25, I may substitute the spring actuated roller 30 shown in Fig. 7 of the drawings. This roller is mounted in suitable bearings and carries a wheel or drum 31, to which the upper end of the chain 26 is attached and upon which it is wound.

In order to permit baker's peels to be conveniently supported adjacent to the oven door, I provide a rest 35, which consists of a bar or tube 36 supported horizontally above the door and away from the front wall of

the oven by brackets 37, which have their lower ends bolted or otherwise secured at 38 upon the front of the top plate 5 of the door frame, as clearly shown in Fig. 1 of the drawings.

- 5 The construction, operation and advantages of the invention will be readily understood from the foregoing description taken in connection with the accompanying drawings. It will be seen that by means of the counterbalancing weight or the spring roller and the rack and
 10 pinion operating device, the door 2 may be quickly and easily raised or lowered, one rotation of the crank 23 moving the door to the limit of its movement in one direction. By mounting the door as shown and providing the friction rollers and the spring pressed strips,
 15 the oven will be practically air tight and there will be no danger of the door binding by reason of its expansion or contraction. The spring strips 11 also permit the door to be quickly removed and adjusted.

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

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent is,— 25

1. A device of the character described, comprising a door frame having vertical door guides, a vertically movable door having its inner side slidable on said guides, jamb pieces projecting from the guides and opposed to the vertical side edges of the door, and spring-pressed strips 30 secured to the jamb pieces and bearing against the outer side of the door near the side edges thereof.

2. A device of the character described comprising a door frame having vertical door guides, a vertically movable door having its inner side slidable on said guides, jamb 35 pieces projecting from the guides and opposed to the vertical side edges of the door, guide strips opposed to the outer side of the door at the side edges thereof, bolts connecting the guide strips to the jamb pieces and on which the guide strips are movable toward and from the 40 door, and springs on said bolts, bearing against the guide strips and pressing the latter against the outer edges of the jamb pieces and the outer side of the door.

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

THOMAS HITCHEN.

Witnesses:

JAMES ROBERT HITCHEN,
 PERCY PERICLES HITCHEN.