No. 892,819. PATENTED JULY 7, 1908.

A. E. FISCHER.

LOCKING DEVICE FOR THE WELL DOORS OF DUMB WAITERS.

APPLICATION FILED DEC. 19, 1907.

2 SHEETS—SHEET 1.

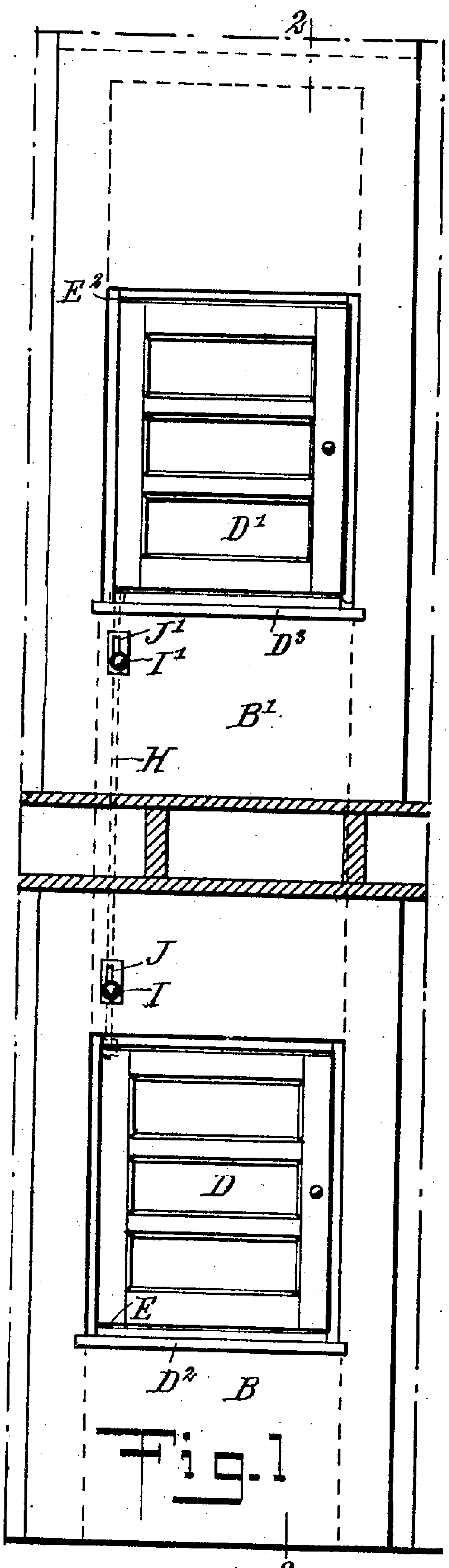

Fig. 1

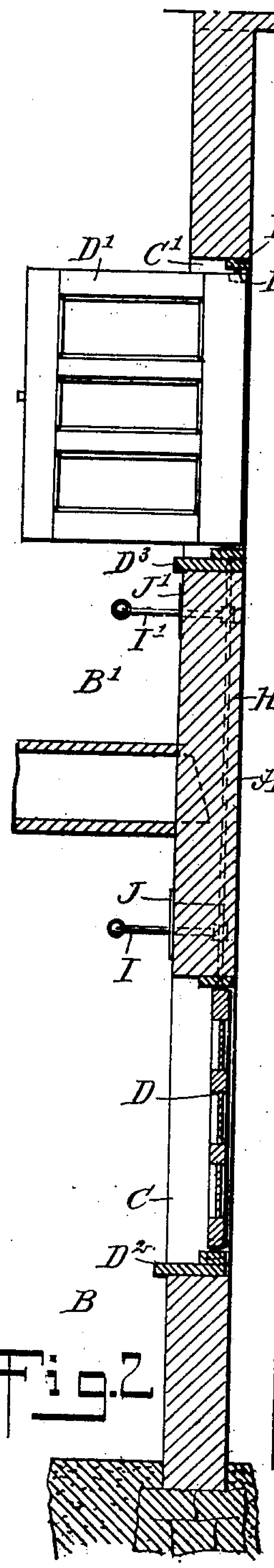

Fig. 2

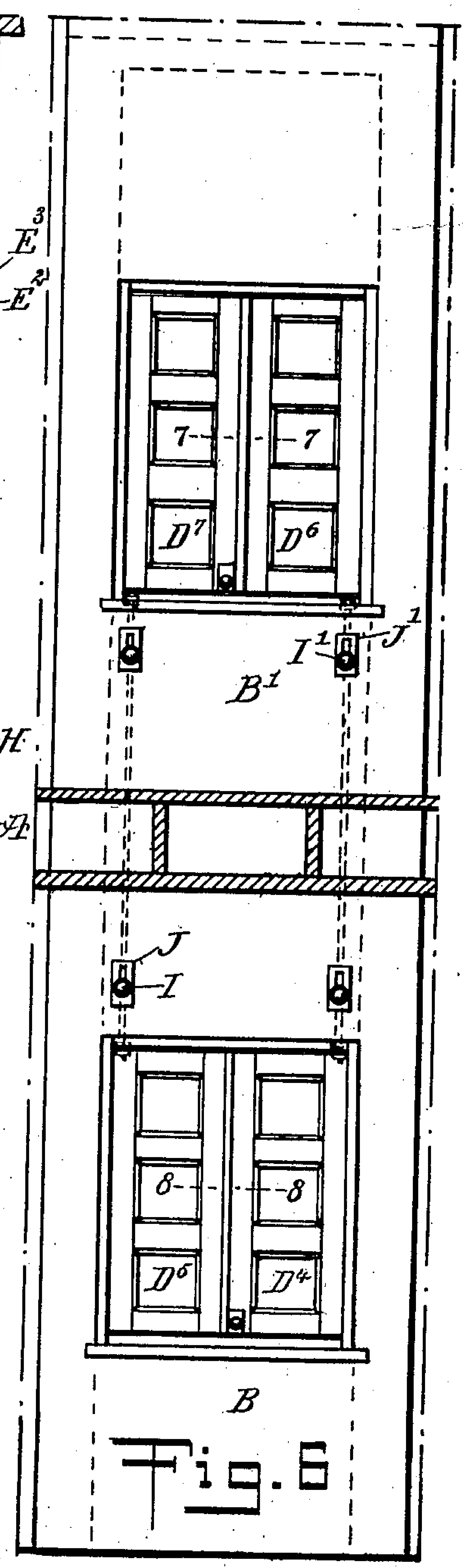

Fig. 6

WITNESSES

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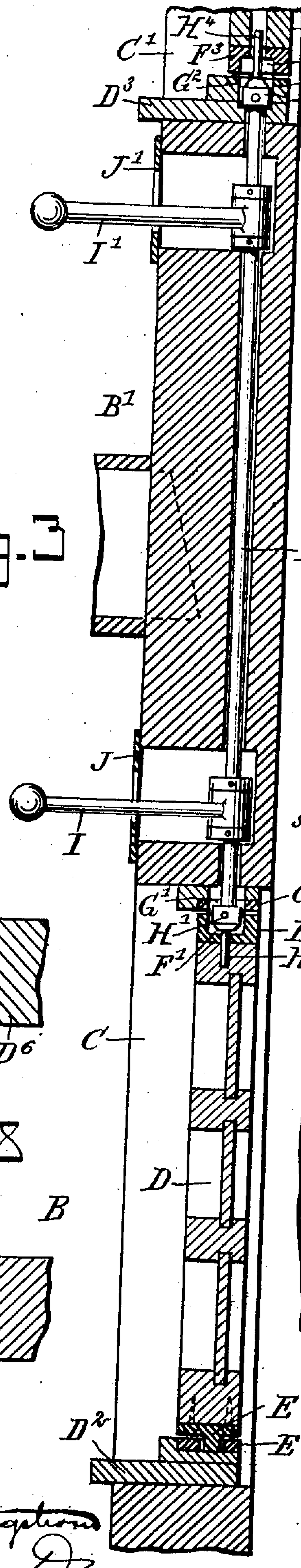
2 SHEETS—SHEET 2.

Fig. 3

Fig. 7



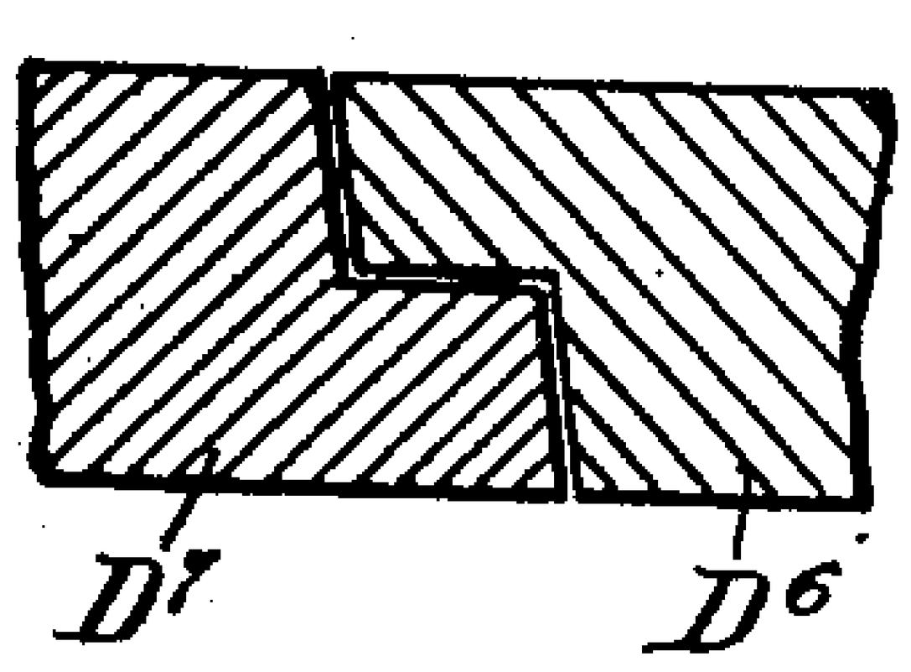


Fig. 8

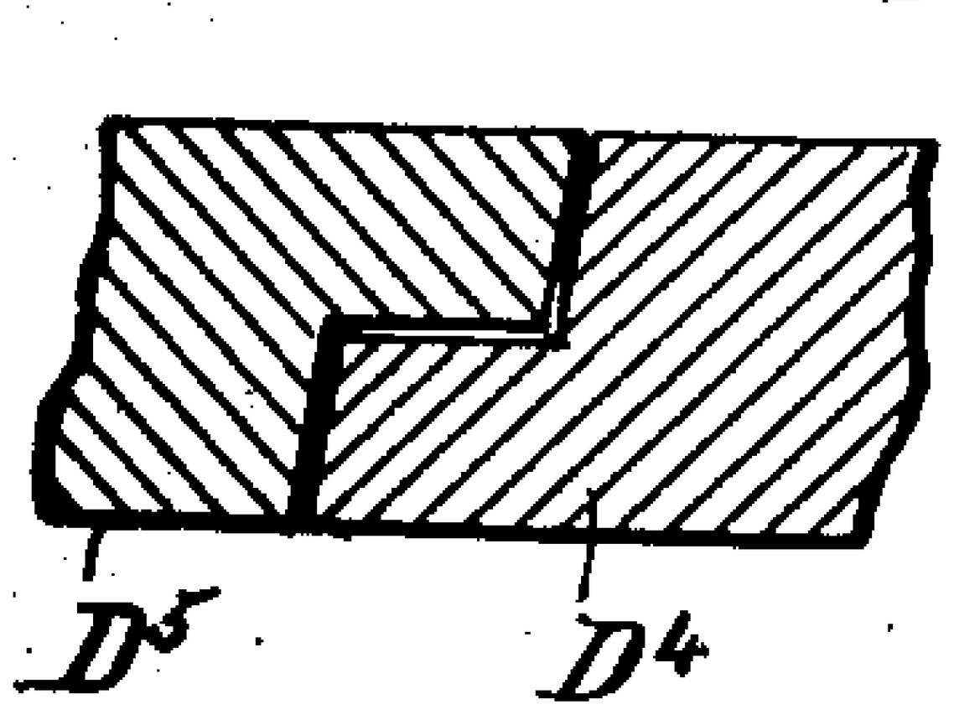
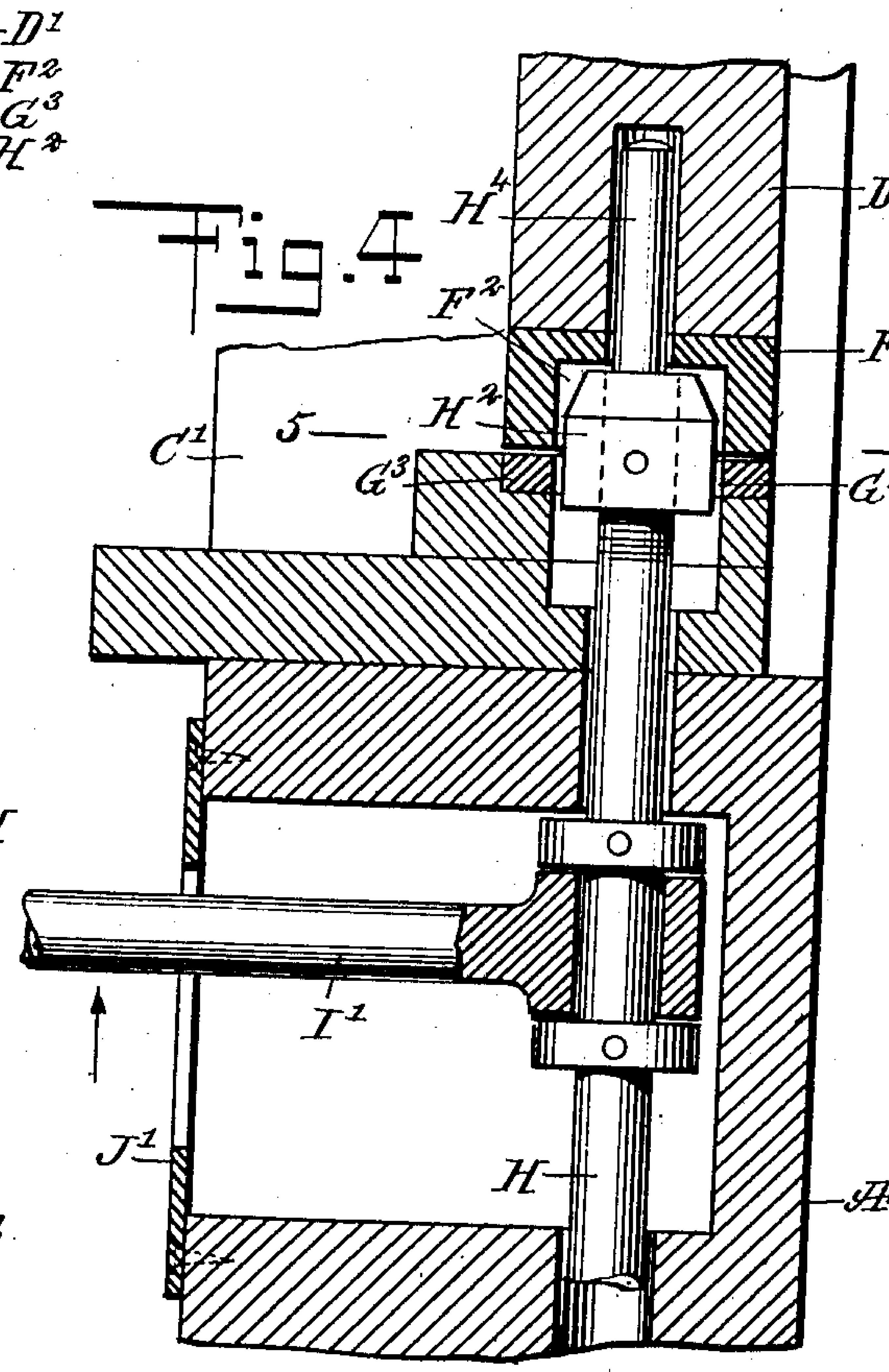


Fig. 4



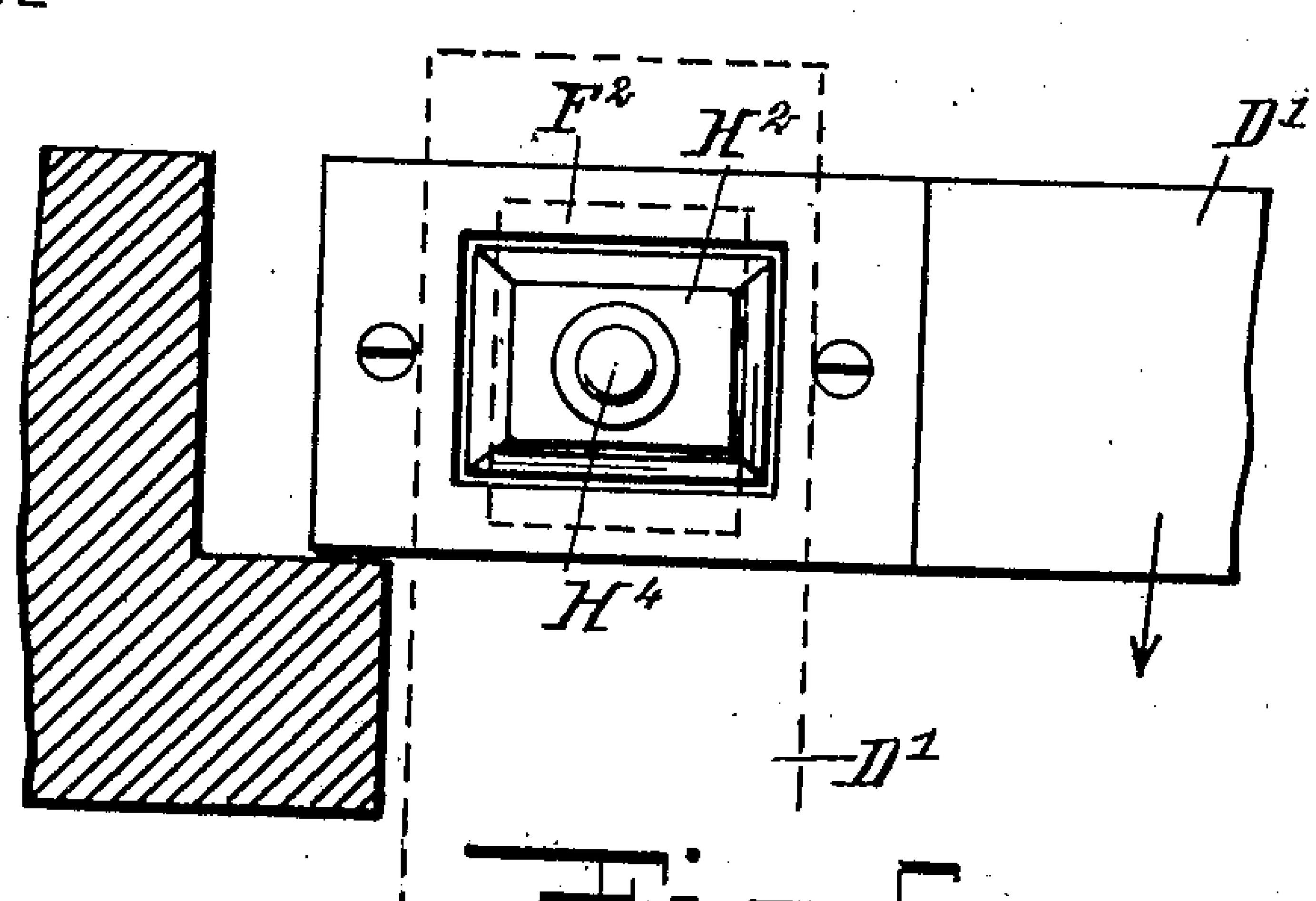


Fig. 5

WITNESSES

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ADAM E. FISCHER, OF NEW YORK, N. Y., ASSIGNOR TO AMELIA FISCHER, OF NEW YORK, N. Y.

LOCKING DEVICE FOR THE WELL-DOORS OF DUMB-WAITERS.

No. 892,819. Specification of Letters Patent. Patented July 7, 1908.

Application filed December 19, 1907. Serial No. 407,158.

To all whom it may concern:

Be it known that I, ADAM E. FISCHER, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Locking Device for the Well-Doors of Dumb-Waiters, of which the following is a full, clear, and exact description.

The invention relates to dumb waiter and similar hoist-ways, and its object is to provide a new and improved locking device for the well doors of a dumb waiter or similar hoist-way, and capable of being manipulated on any floor of the building for locking the closed well door of one floor while unlocking the closed well-door of another floor and vice versa, thus rendering it impossible for both doors to be open or partly open at the same time, thereby preventing draft in the well and consequently reducing the spread of flames by way of the dumb waiter well in case of a fire in the building in which the dumb waiter is located.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of the improvement as applied, both doors being in a closed position and the lower door being locked against opening while the upper door is unlocked to permit its being opened; Fig. 2 is a transverse section of the same, on the line 2—2 of Fig. 1, the upper door being shown in an open position; Fig. 3 is an enlarged cross section of the same, showing the upper door unlocked and the lower door locked against opening; Fig. 4 is an enlarged cross section of the improvement at the upper door and showing the latter locked against opening; Fig. 5 is a sectional plan view of the same on the line 5—5 of Fig. 4; Fig. 6 is a face view of the improvement as applied to a dumb waiter having double doors at each well opening; Fig. 7 is a sectional plan view on the line 7—7 of Fig. 6, of the joint between the doors of the upper double door; and Fig. 8 is a like view on the line 8—8 of Fig. 6, of the joint between the doors of the lower double door.

The dumb-waiter shaft or well A is provided at the different floors B, B′ of the building with entrance openings C, C′ adapted to be opened and closed by doors D and D′, each of which may be either a single door, as indicated in Fig. 1, or a double door, as illustrated in Fig. 6. The doors D and D′ are mounted to swing and the door D is for this purpose provided at its bottom with a pivot E engaging a bearing E′, attached to the door frame D^2 of the door D (see Fig. 3). The top of the door D is provided with a keeper F having a rectangular opening F′ adapted to register with a corresponding opening G′ in a keeper G, attached to the top cross bar of the door frame D^2.

The openings F′ and G′ are adapted to be engaged by a rectangular block H′, secured on the lower end of a rod H mounted to slide up and down in the wall of the well A, as plainly indicated in Figs. 3 and 4. The upper end of the rod H is provided with a block H^2, similar to the block H′, and adapted to register with openings G^2 and F^2 formed in keepers G^3, F^3, respectively, of which the keeper G^3 is attached to the sill of the upper door frame D^3, while the keeper F^3 is secured to the bottom of the door D′. The top of the door D′ is provided with a pivot E^2 engaging a keeper E^3 in the top cross bar of the door frame D^3 (see Figs. 1 and 2). The lower end of the rod H is provided with a pivot H^3 engaging the door D, and a similar pivot H^4, engaging the door D′, is arranged on the upper end of the rod H, it being understood that the pivots E, H^3, H^4 and E^2 are in vertical alinement with each other, so as to permit the doors D and D′ to swing on the said pivots when opening and closing the doors, as hereinafter more fully explained.

The rod H is provided on the floors B and B′ with handles I and I′ engaging suitable guideways J and J′ attached to the wall of the well A, so that the handles I and I′ extend into the rooms adjacent to the well door openings C and C′. Now a person on either floor B, B′ can take hold of the corresponding handle I or I′ and move the rod H up or down, with a view to shift the blocks H′, H^2

in such a manner that when the block H′ is in engagement with the keepers F, G (see Fig. 3), then the block H² is out of engagement with the keeper F³ on the door D′, to allow of swinging the latter door open, while the door D is held locked against opening by the rectangular block H′ engaging the correspondingly shaped opening F′ in the keeper F. When the door D′ is closed and the rod H is moved upward, then the block H² moves in engagement with the opening F² in the keeper F³, to lock the door D′ against opening (see Fig. 4), and at the same time the block H′ is moved out of engagement with the keeper F, thus allowing the door D′ to be swung open. When a door is open the rod H cannot be shifted either up or down, as the block H′ or H² stands transversely to the corresponding opening F′ or F² in the keeper F or F³, and only when the doors are closed is it possible to shift the rod H up or down. The lower end of the block H′ and the upper end of the block H² are slightly beveled, to permit ready entrance of the blocks into the openings F′ and F² when shifting the rod.

From the foregoing it will be seen that the locking device securely locks one door against opening while unlocking the other door and vice versa, and at the same time the pivots H³, H⁴ of the locking device form parts of the pivots for the doors D and D′ to swing on. From the foregoing it will be seen also that both doors are prevented from being open or partly open, at the same time thus preventing draft in the well A, and thereby reducing the spread of flames by way of the dumb waiter well A in case of a fire in the building in which the dumb waiter is located.

When the well openings C, C′ are provided with double doors D⁴, D⁵ and D⁶, D⁷, as shown in Figs. 6, 7 and 8, then a locking device as described is used for the doors D⁴, D⁶, and a similar locking device is employed for the doors D⁵, D⁷; the upper doors D⁴, D⁵ having their joint arranged in a reverse direction to the joint of the lower doors D⁶, D⁷, as will be readily understood by comparison of Figs. 7 and 8. Now by this arrangement neither of the doors D⁴ or D⁵ can be opened when only one of the locking devices is in position for unlocking the upper door D⁶ or D⁷, and neither of the doors D⁶ or D⁷ can be opened when only one of the locking devices is in position for unlocking the door D⁴ or D⁵. Thus both locking devices must be actuated to move the same in like positions for either unlocking either set of doors D⁴, D⁵ or D⁶, D⁷.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, a dumb waiter well having openings, upper and lower doors for closing the said openings, and a locking device common to both doors and arranged to lock one of the well doors and unlock the other well door and vice versa, members of the said locking device forming pivots for the doors to swing on.

2. A device of the class described, comprising the upper and lower doors a rod mounted to slide up and down a block on each end of the rod, and keepers held on the said upper and lower doors and adapted to be engaged by the said blocks, one of the blocks engaging its keeper at the time the other block is out of engagement with its keeper and vice versa.

3. A device of the class described comprising the upper and lower doors a rod mounted to slide up and down a block on each end of the rod, and keepers held on the said upper and lower doors and adapted to be engaged by the said blocks, the rod when raised moving the upper block into engagement with the keeper on the upper door and moving the lower block out of engagement with the keeper on the lower door, and the rod when slid downward moving the upper block out of engagement with the keeper on the upper door and moving the lower block into engagement with the keeper on the lower door.

4. A device of the class described, comprising the upper and lower doors a rod mounted to slide up and down a block on each end of the rod, keepers held on the said upper and lower doors and adapted to be engaged by the said blocks, the rod when raised moving the upper block into engagement with the keeper on the upper door and moving the lower block out of engagement with the keeper on the lower door, and the rod when slid downward moving the upper block out of engagement with the keeper on the upper door and moving the lower block into engagement with the keeper on the lower door, and keepers on the door frames in register with the keepers on the doors, the block engaging the keeper on a door at the same time it engages the adjacent keeper on the corresponding door frame.

5. A device of the class described, comprising the upper and lower doors a rod mounted to slide up and down a block on each end of the rod, and keepers held on the said upper and lower doors and adapted to be engaged by the said blocks, one of the blocks engaging its keeper at the time the other block is out of engagement with its keeper and vice versa, the terminals of the rod forming pivots for the doors to swing on.

6. A device of the class described, comprising the upper and lower doors a rod mounted to slide up and down a block on each end of the rod, keepers held on the said upper and lower doors and adapted to be engaged by the said blocks, one of the blocks engaging its keeper at the time the

other block is out of engagement with its keeper and vice versa, and handles on the said rod, one at each floor.

7. In combination, a dumb waiter shaft having upper and lower door openings, double swing doors for each door opening, and locking devices each common to a door for the upper and lower door openings, to lock the doors of one door opening and unlock the doors of the other door opening, the interlocking joints of the double doors for the upper and lower door openings extending in opposite directions.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADAM E. FISCHER.

Witnesses:

THEO. G. HOSTER,

EVERARD B. MARSHALL.