

(No Model.)

O. J. MERRITT.

LOCKING MECHANISM FOR MOB AND BURGLAR PROOF DOORS.

No. 564,388.

Patented July 21, 1896.

Fig. 1.

Fig. 2.

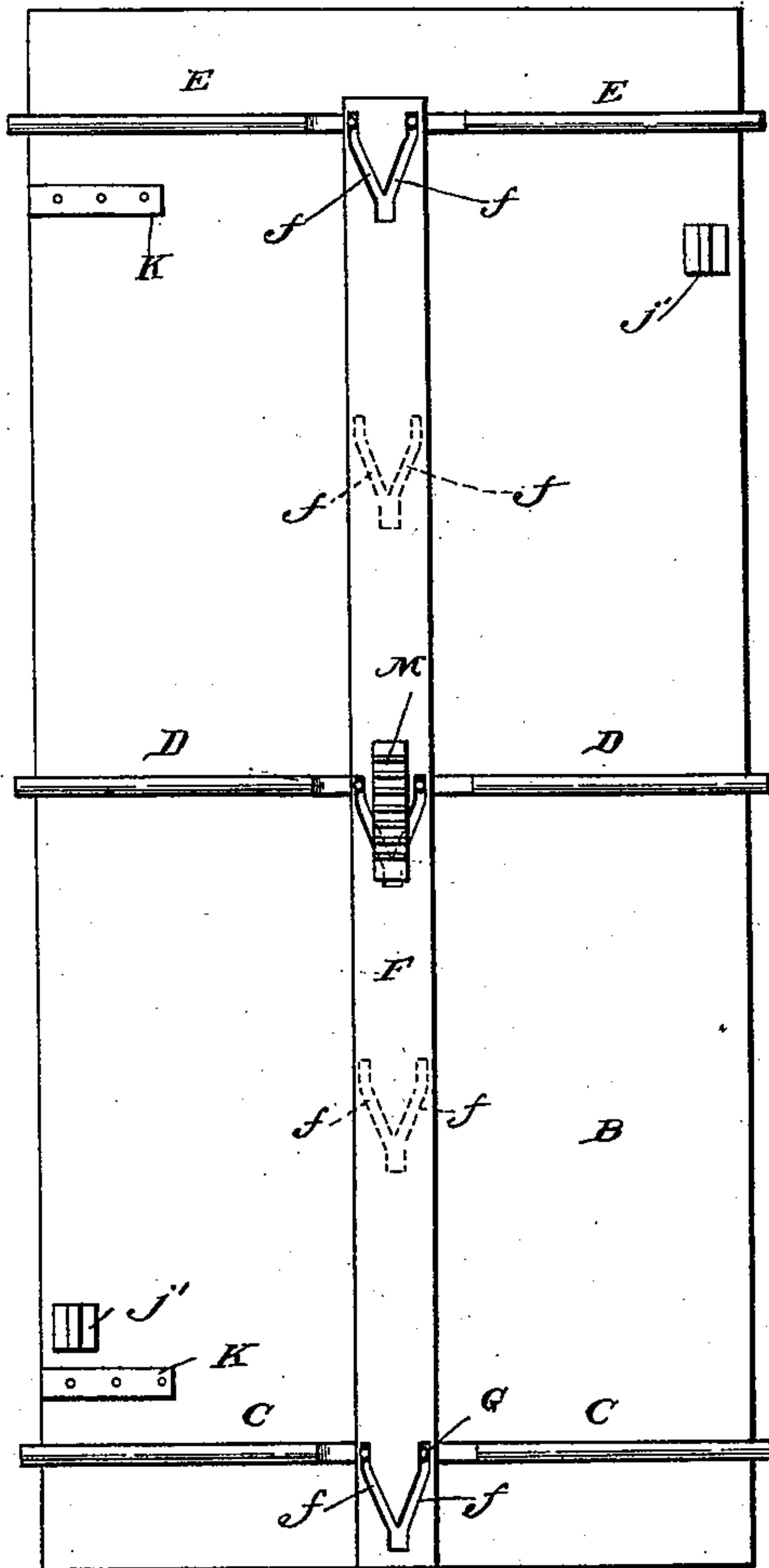
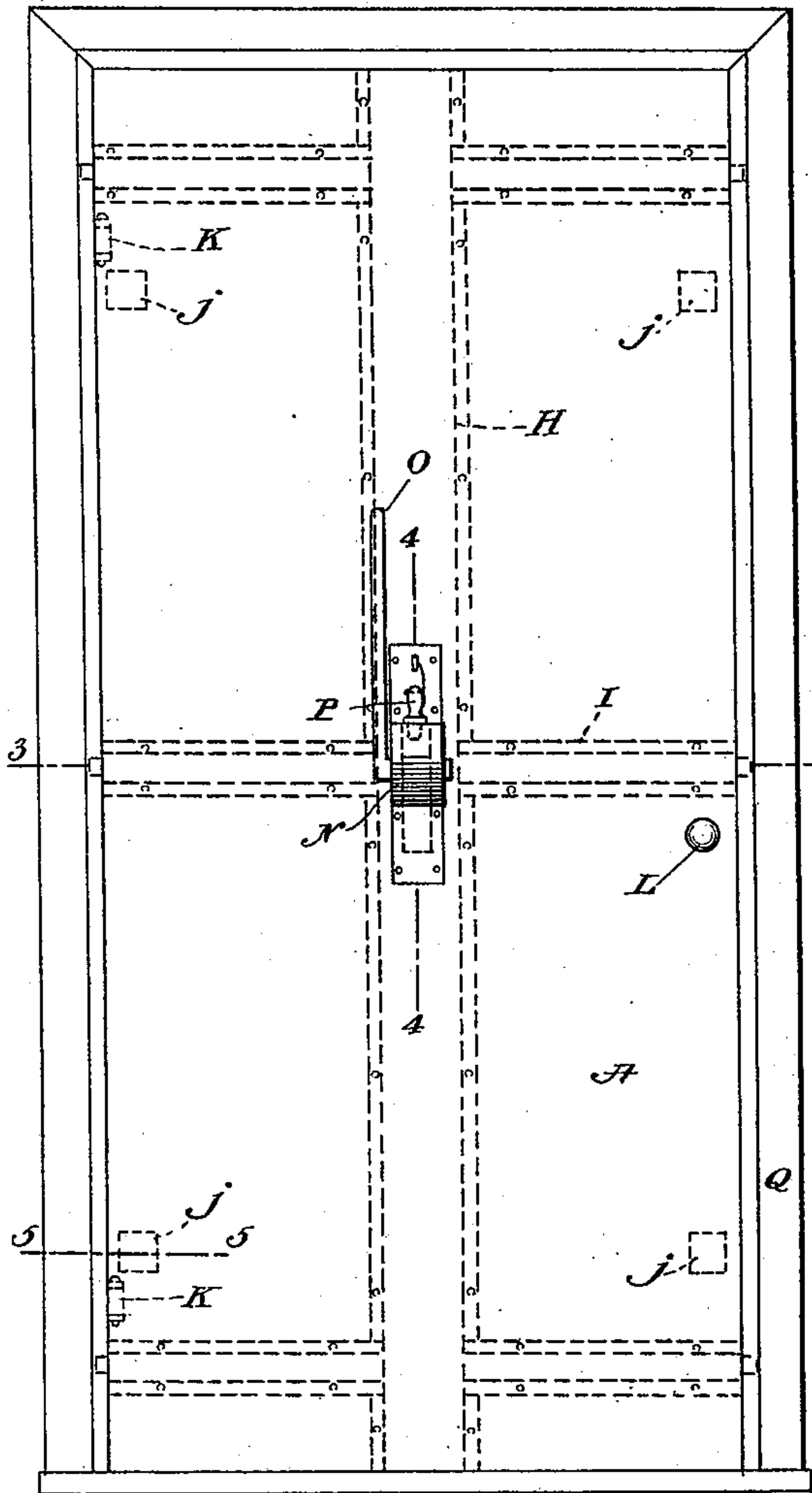


Fig. 3.

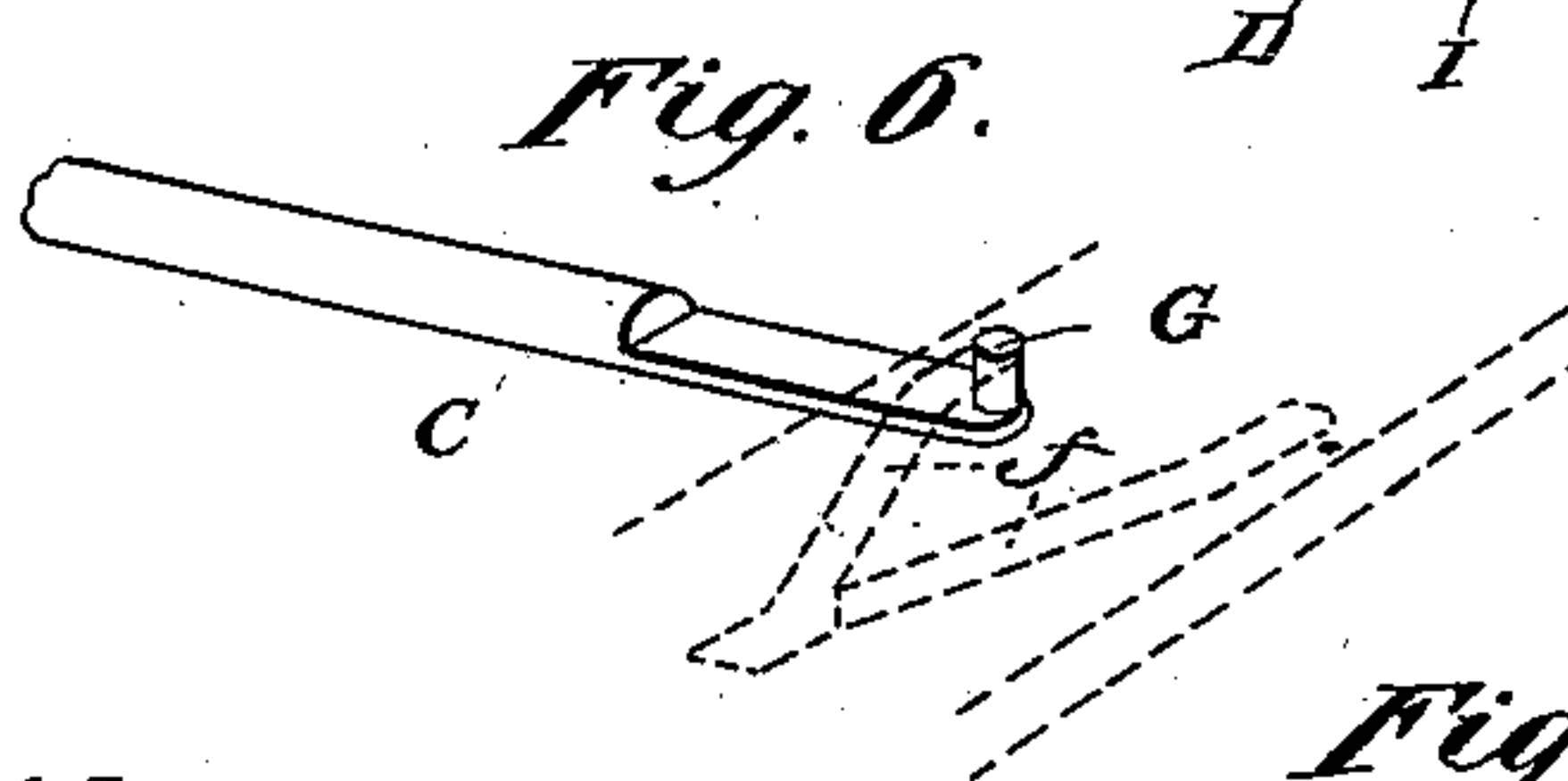
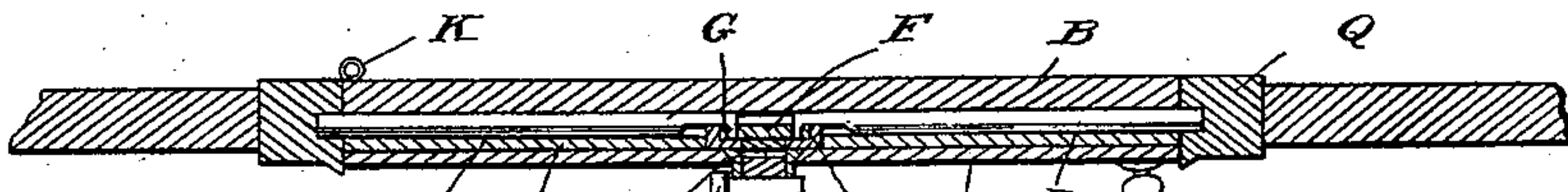


Fig. 4.

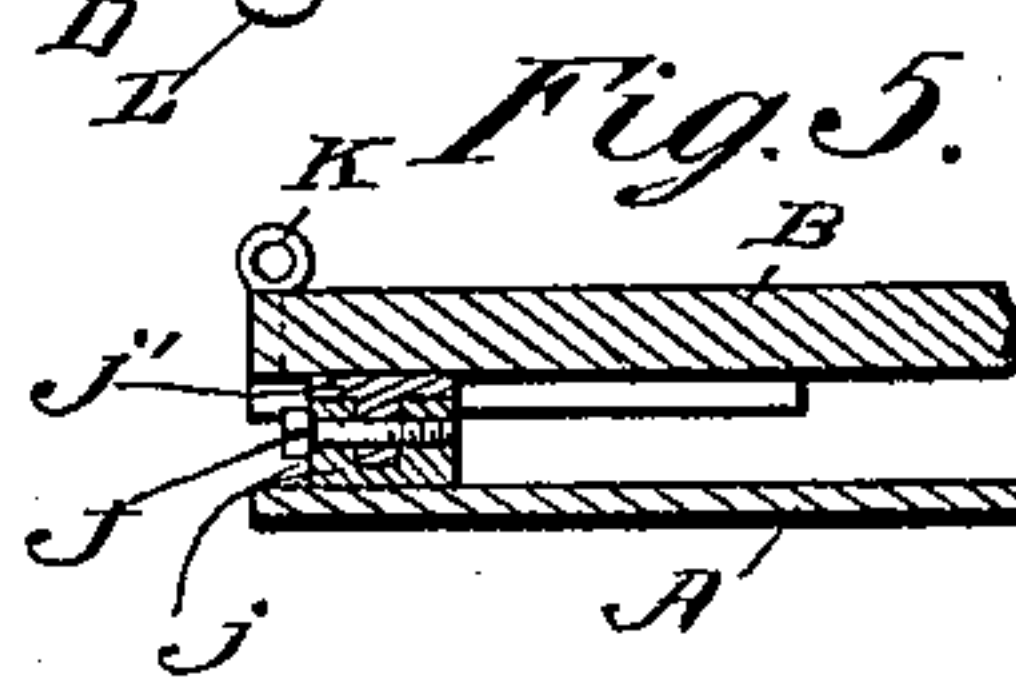
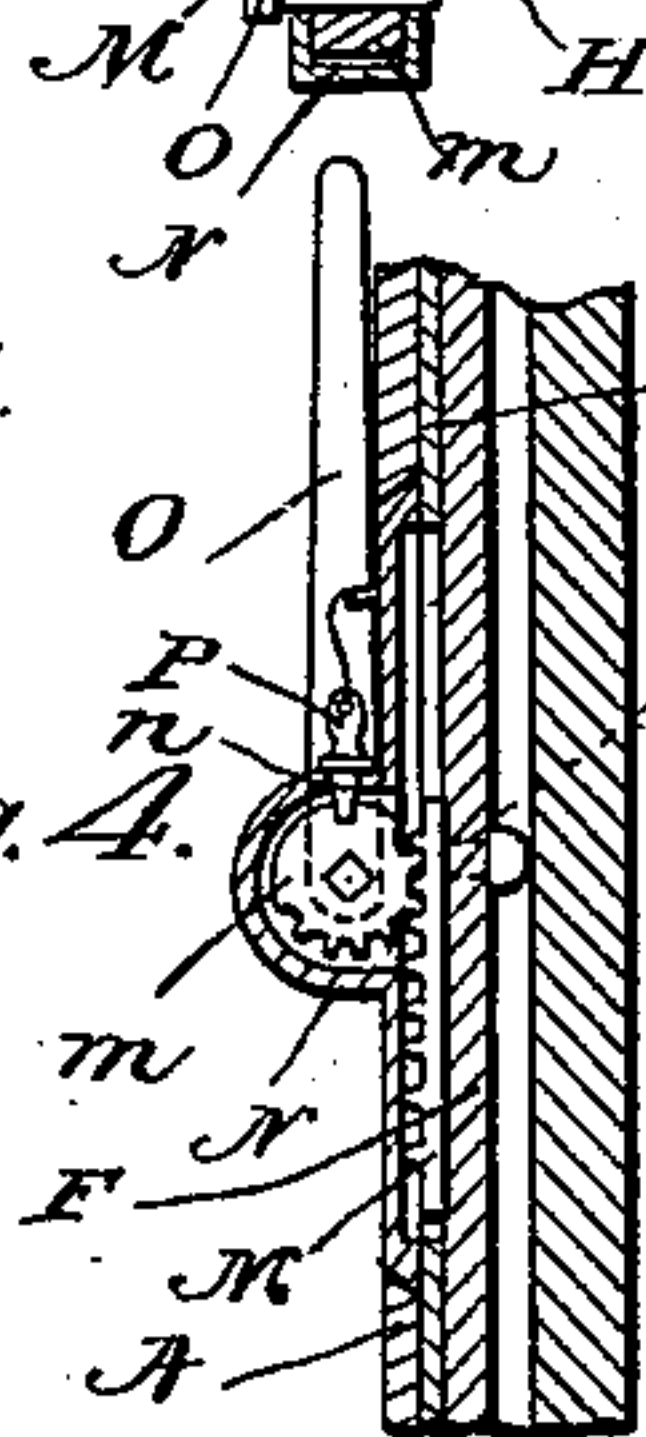


Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

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LOCKING MECHANISM FOR MOB AND BURGLAR PROOF DOORS.

SPECIFICATION forming part of Letters Patent No. 564,388, dated July 21, 1896.

Application filed December 28, 1895. Serial No. 573,655. (No model.)

To all whom it may concern:

Be it known that I, OTIS J. MERRITT, a citizen of the United States, residing at Seneaguoteen, in the county of Kootenai and State of Idaho, have invented certain new and useful Improvements in Locking Mechanism for Mob and Burglar Proof Doors, of which the following is a description, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

My invention relates to improvements in locking mechanism for mob and burglar proof doors.

The object of my invention is to provide a strong door which may be used whenever fire and burglar proof qualities are desirable, as, for example, in vaults, grain-elevators, prisons, and some residences. The details of the invention will be hereinafter set forth.

In the drawings, Figure 1 is a view showing the door in front elevation and indicating also in dotted lines the interior mechanism. Fig. 2 is a view in elevation showing the door with its bolt-work exposed. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a sectional detail on the line 4 4 of Fig. 1. Fig. 5 is a sectional detail on the line 5 5 of Fig. 1. Fig. 6 is a perspective view, partly in full and partly in dotted lines, showing one of the door-bolts and the means for actuating it.

My improved door comprises a front plate A and a back plate B, which should be of any desired material, usually of hardened metal, although wood covered with metal may be used.

The bolt-work of the door is housed between the front and rear plates A B, where it is most efficiently protected from heat or violence. The bolt-actuating mechanism extends through the front plate into convenient position for locking and unlocking.

My improved door is provided with a number of parallel pairs of horizontal bolts, in the present instance three pairs or sets, C C, D D, E E, being shown. A central bar F is arranged to be moved vertically, the bolts being at right angles thereto and on both sides thereof. The bar G is formed with angular inclined or V-shaped slots *f f*, preferably formed with parallel portions at their diver-

gent ends, and each bolt is provided with an actuating-pin G. The pins G extend at right angles from the bolt and into the slots *f*, and the bolts C D E are suitably flattened in their portion adjacent to the pins G, so as to permit of their sliding under the bar F. The bolts are held in horizontal position, so as to permit of longitudinal movement. When the bar F is moved up or down, the pins G are forced to slide in the grooves *f*, which by their converging form draw in or push out the bolts C D E, according as the bar F is moved up or down.

As indicated in dotted lines in Fig. 1 and in section in Fig. 3, a housing or casing H is fitted over the bar F, either along its entire length, as indicated, or along portions thereof, the said casing H being suitably attached to the rear door-plate B. Similar casings I are fitted over each one of the bolts C C D D E E, movably sustaining them in their respective vertical and horizontal positions.

It will be understood that any desired number of sets of bolts C C, D D, E E may be employed, two additional sets of slots *f* being indicated in dotted lines in Fig. 2.

The front and rear plates A B are separable to permit access to the bolt-work, and they are conveniently united by bolts J, said bolts passing through interfitting extensions *j j'*, Fig. 5, the parts of which are integral with or secured to the front and rear plates of the door, respectively.

Hinges K are secured to the rear plate of the door in any desirable manner, and the front plate A is provided with a knob L.

The vertically-moving bar F is provided with a rack M. A wheel *m* is provided with a sufficient number of teeth to engage the teeth of the rack, and is held in position thereon by a casing N, which contains the wheel and fits over and incloses the rack M, being secured in position upon or formed as a part of the casing H, which is suitably apertured to permit the wheel *m* to engage the rack M. The wheel *m* is provided with a central opening, which is squared to receive the correspondingly-squared end portion of an operating-lever O. The casing N is suitably apertured to permit the insertion of the squared end of the operating-lever, and for locking the bar F

in its raised or lowered position, and thereby locking the bolt-work, the wheel *m* is provided with additional notches. An opening *n* is provided in the casing *N*, said opening
5 registering with notches in the wheel *m* when in the desired position for locking, whether the bolts be in or out, and a pin *P* is provided, which is adapted to pass through the opening in the casing *N* to enter one or other of the
10 locking-notches to hold the parts in the desired positions.

A suitable door-frame *Q* is properly supported in the wall and provided with openings to receive the ends of the locking-bolts *C C*
15 *D D E E*.

Various modifications in the structure herein described may be made in view of the foregoing without departing from the invention.

20 Having described my invention, what I claim is—

In combination, a door comprising front and back plates separably united, a series of horizontal movable locking-bolts, each bolt pro-
25 vided with a pin extending at right angles through its inner end, a vertically-moving bar

formed with angular or V-shaped slots engaging the pins of the locking-bolts and adapted when said bar is raised or lowered to push out or draw in all the bolts simultaneously, a cas- 30 ing secured to the back plate of the door between said front and back plates and inclosing the bar and securing it in operative position, and similar casings applied to each of the bolts for securing them in the described 35 position with respect to the vertically-moving bar, and means for imparting vertical motion to the said bar to lock and unlock the door, said means comprising a rack secured to the bar, a pinion engaging the rack, a casing in- 40 closing the rack and pinion and sustaining the pinion in operative relation to the rack, said casing extending partly through the front plate of the door, and an adjustable lever for actuating the pinion and through it the lock- 45 ing mechanism.

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

OTIS J. MERRITT.

Witnesses:

F. E. EMPEY,

JAMES H. HARTE.