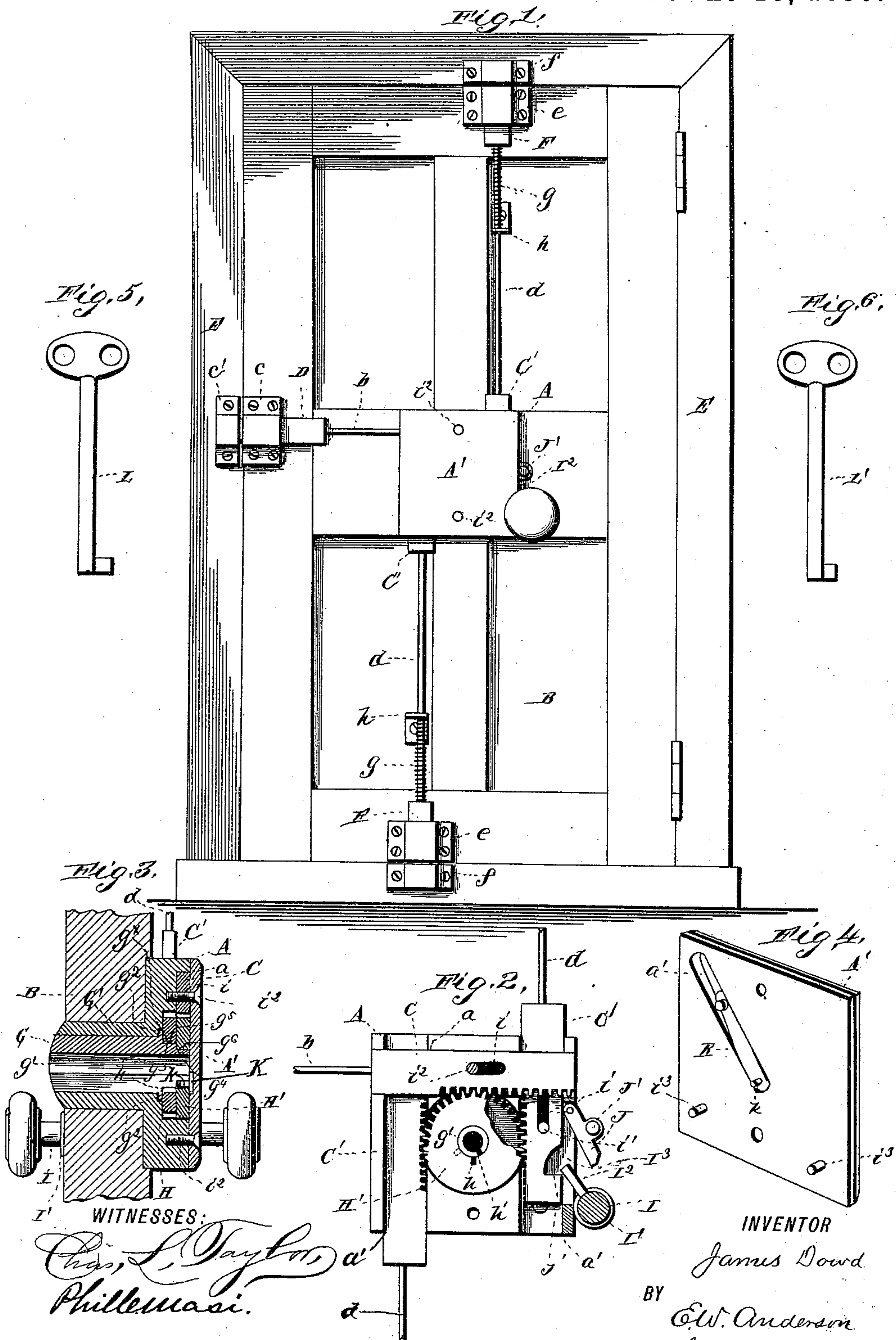


(No Model.)

J. DOWD.
LOCK.

No. 430,072.

Patented June 10, 1890.



UNITED STATES PATENT OFFICE.

JAMES DOWD, OF BLACKSTONE, MASSACHUSETTS.

LOCK.

SPECIFICATION forming part of Letters Patent No. 430,072, dated June 10, 1890.

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To all whom it may concern:

Be it known that I, JAMES DOWD, a citizen of the United States, and a resident of Blackstone, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Locks; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a view in side elevation of my invention as applied to a door and its frame. Fig. 2 is a somewhat enlarged detail side view, partly in section, of the lock or tumbler mechanism. Fig. 3 is a detail vertical sectional view taken through the same mechanism and door, the latter being broken away. Fig. 4 is a perspective view of the cap-plate of the lock mechanism containing case removed, showing the spring and its stud for locking one of the pinions of the said lock mechanism; and Figs. 5 and 6 are separate views of the keys used in connection with my lock.

This invention relates to certain improvements in bolt mechanism or locks for doors, especially designed for outside doors of stores or dwellings; and it consists of the novel construction and combination of parts, as will fully appear from the following description and accompanying drawings.

In accordance with my invention I provide a tumbler case or closure A, which is bolted or fastened to the door B at about its center upon the inside and is provided with three tumbler ways or passages $a\ a'\ a''$, the parallel passages or ways $a'\ a''$ being vertical, while the passage or way a is horizontal and crosses the said passages $a'\ a''$.

$C\ C'\ C''$ are tumblers or racks arranged in the passages or ways $a\ a'\ a''$ of the case or closure A, the horizontal one C being connected by a rod b to a bolt D, sliding in a guide c at the front edge of the door and engaging a keeper c' on the door-casing E. The vertical tumblers or racks $C'\ C''$ are connected by rods $d\ d'$ to bolts F F', sliding in guides $e\ e'$ at the bottom and top edges of the door and engaging opposite keepers $f\ f'$ upon the door-

casing E. The rods $d\ d'$ have applied to them springs g , which are confined between brackets h on the door and the bolts F, to normally hold the latter in engagement with their keepers. The horizontal rack or tumbler C and one of the vertical tumblers C' has each a guide-slot i , one of which receives a guide stud or pin i' , projecting from the inside of the case A, while the other guide-slot receives one of the securing-screws i^2 of the cap-plate A' of the lock-case A, to limit their movement, the movement of the other vertical rack or tumbler being accordingly limited by its fellow rack or tumbler, both being actuated by the same pinion, as presently seen. The tumbler C, lying across the tumblers $C'\ C''$ at their upper ends, and the cap-plate A', resting upon the tumbler C and having inward-projecting pins or studs $i^3\ i^3$ whose inner ends stand closely to the tumblers $C'\ C''$ near their lower ends, effect the holding of the several tumblers in proper working position.

G is the key-receiving spindle, arranged or seated to turn in a bushing or cylinder G' integral with the case A and extending through and projecting slightly beyond the door B, where it is finished or beveled off, as shown. The key-hole g' extends through the spindle G from end to end, while the spindle itself is provided with a bearing-flange g^2 , resting in a recess g^x in the end of the bushing G', and is stepped at its inner end, so as to form two steps or shoulders $g^3\ g^4$ thereon and to produce it with two lesser diameters $g^5\ g^6$ thereat, as shown.

H H' are two pinions, which are fitted or slipped loosely on the two different diameters $g^5\ g^6$ of the double stepped portion of the spindle G, having openings h' for that purpose, and which are received into a socket-like chamber in the case A, the outer one resting against the case, the teeth of one of which pinions, however, does not extend entirely around its circumference. The openings h' in the pinions H H' are provided with slots $h\ h$, which are designed to register with the slots of the key-hole in the spindle G, but which do not register with each other, thus preventing the using of any one key to effect an entrance. The pinion H engages the vertical racks or tumblers $C'\ C''$, while the pin-

ion H' engages the horizontal rack or tumbler C to actuate, respectively, the bolts F D.

I is a knob-spindle having a knob on each end and suitably seated in a bushing or cylindrical bearing I', secured in and passing through the door closely to the lock-case A, and provided with an arm I², which is adapted to enter the adjacent edge of said case through a slot I³ therein and engage the shoulder of a notch j in one of the vertical racks or tumblers C', to permit the actuating of the bolts operated thereby by hand from the inside. To prevent this being done from the outside, however, a locking-lever J, pivoted at one end in the slot I³ and having a knob or handle J', is adapted to stand at its free end in the way of the arm I² by suitably manipulating it by its handle, and thus prevent the engagement of the said tumbler by said arm of the knob-spindle.

Within a slot a' upon the inside of the cap-plate A' is secured one end of a flat metal spring K, the opposite or free end of which has a projection or stud k, which normally engages the slot of the pinion H' and prevents the actuation of the tumbler C, consequently preventing the withdrawal of its bolt only by the particular key adapted therefor.

L L' are two keys having ribs of different lengths, one being adapted to engage and actuate the pinion H and consequently operate the vertical racks or tumblers and their bolts, while the other key is adapted to engage and actuate the pinion H' and consequently operate the horizontal rack and its bolt. It will be seen that when the key actuating the pinion H' is inserted to its maximum extent its rib will force the stud or pin k of the spring K out of the slot of said pinion, the yielding action of the spring permitting this, and thus release said pinion to allow its actuation by the key.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The door-lock having the three-way bolt mechanism comprising independently-actuated pinions engaging racks of said bolt

mechanism, and one of which is engaged and held from turning by a spring-stud of the lock-case and adapted to be actuated by separate keys, one of which engages said spring-stud, disengaging it from its respective pinion, substantially as set forth.

2. The combination, with the case having a pinion provided with a slot and actuated by a key-hole spindle and key, of the bolt connected to a rack engaging said pinion, and the spring connected to said case and having a stud or projection engaging the slot of said pinion, substantially as set forth.

3. The combination, with the case having pinions actuated by a key-hole spindle and keys, and one pinion having a slot, of racks or tumblers engaged by said pinions and connected to bolts normally held under spring-pressure in engagement with their keepers, and the spring-stud secured to said case and engaging said slot, substantially as described.

4. In a door-bolt mechanism, the combination, with one of the tumblers or racks, of the knob-spindle carrying an arm adapted to project through a slot in the tumbler-case and engage said tumbler or rack, and the lever hung or pivoted in said slot and adapted to engage said arm, substantially as set forth.

5. The combination of the tumbler closure or case having a projecting bushing or tubular bearing, the key-hole spindle held in said bearing and having a doubled-stepped inner end, the two pinions arranged loosely upon the different diameters of said stepped portion of said spindle and having key-rib-receiving slots standing out of alignment with each other, and the racks or tumblers, one engaging one of said pinions and carrying a bolt and the other racks or tumblers carrying an upper and a lower bolt and engaging the other pinion, said pinions being actuated by separate keys, substantially as specified.

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

JAMES DOWD.

Witnesses:

WILLIAM F. COSTIGAN,
THOMAS J. ROWEN.