

No. 701,892.

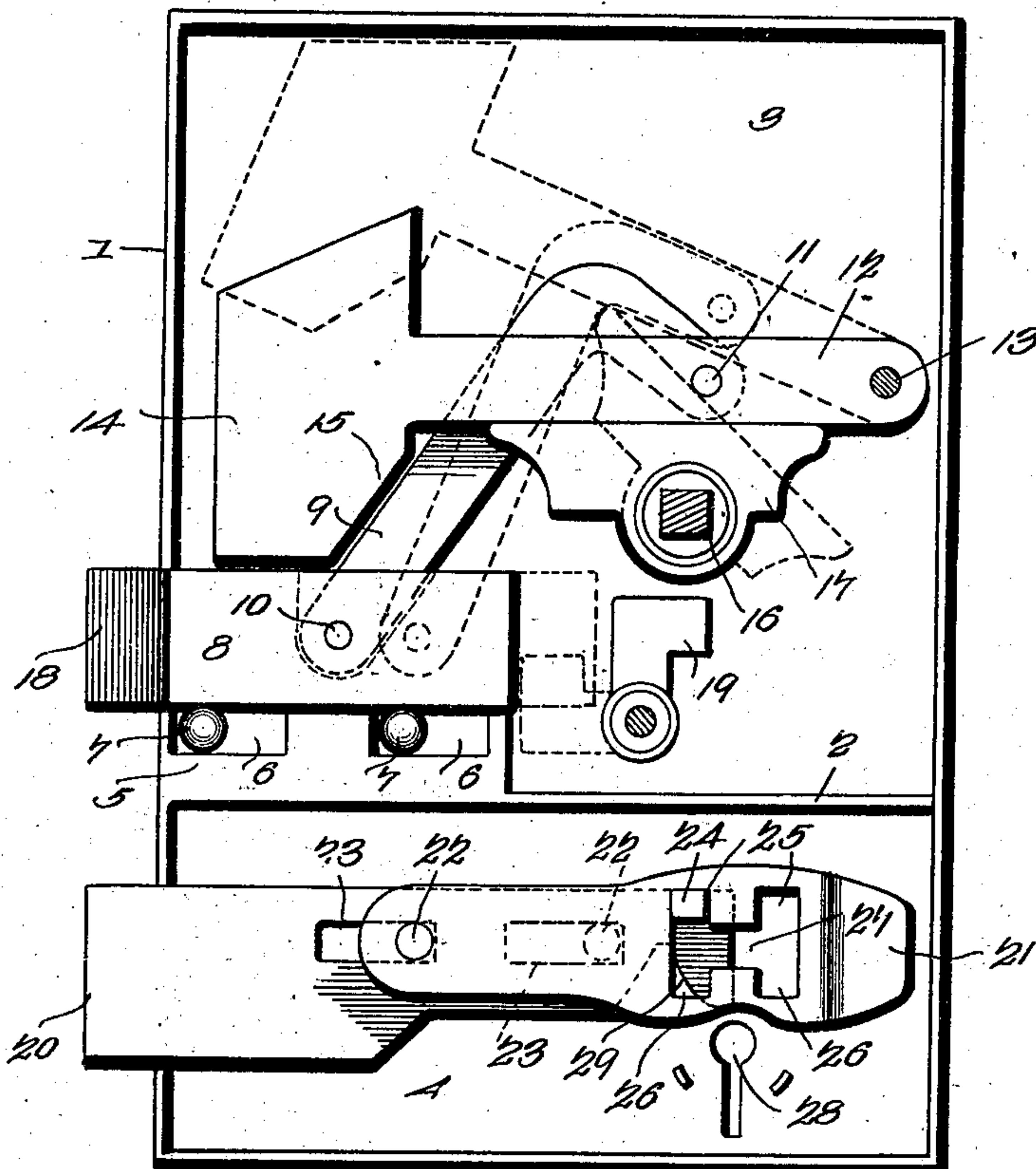
Patented June 10, 1902.

D. J. KENNEDY.

GRAVITY LOCK.

(Application filed Sept. 20, 1901.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## GRAVITY-LOCK.

SPECIFICATION forming part of Letters Patent No. 701,892, dated June 10, 1902.

Application filed September 20, 1901. Serial No. 75,867. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID J. KENNEDY, a citizen of the United States, residing at Independence, in the county of Jackson and State of Missouri, have invented a new and useful Gravity-Lock, of which the following is a specification.

This invention relates generally to door-locks, and particularly to that class wherein the employment of springs to cause automatic return of parts after actuation is dispensed with and the same result is effected by gravity.

The object of the present invention is to present a lock of this character wherein the number of parts shall be reduced to a minimum and in which the parts employed will be so constructed, assembled, and operated as to present a thoroughly efficient, durable, and cheaply-constructed article.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a gravity-lock, as will be hereinafter fully described and claimed.

In the accompanying drawing, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, there is illustrated a form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the scope of the invention, and in this drawing the figure is a view in front elevation, exhibiting the lock characterizing this invention.

Referring to the drawing, 1 designates the casing of the lock, which may be either of a mortise or panel type. The casing is divided by a transverse partition 2 into two chambers 3 and 4, in the former of which is arranged the knob mechanism and in the latter the lock mechanism. The partition is provided at one side thereof with an upstanding extension 5, provided with two recesses 6, in each of which is housed a ball 7, constituting bearings for the latch-bolt 8, the said bolt being guided for longitudinal movement in a recess formed in the side of the casing, as

usual. The upper face of the latch-bolt, at a point intermediate of its ends, is provided with a recess or slot, in which works the lower end of a link 9, the same being held associated with the latch-bolt by a screw or rivet 10, passing entirely through the latch-bolt. The link 9 is bell-cranked in shape and has its upper end pivoted at 11 to a weighted tumbler 12, the rear end of which, or that farthest removed from the latch-bolt, being pivoted to the casing at 13. The forward end of the tumbler carries a weight 14, the rear side of which is beveled or cut away at 15 to correspond to the angular disposition of the lower member of the link 9, and the upper face of the tumbler is inclined toward the front edge of the casing, whereby when raised to the position indicated by dotted lines in the drawing it will not contact with the upper side of the casing before the latch-bolt shall have been moved the required distance rearward to clear the keeper on the door-casing. Carried by the knob-shank 16 is a two-armed lifter 17, which bears against the under side of the arm of the tumbler and is adapted upon being turned to the position indicated by dotted lines to lift the tumbler, whereupon the latter through the medium of the link will retract the latch-bolt; but upon release of the knob the tumbler through its weight 14 will drop to the position shown in full lines in the figure, thereby effecting automatic projection of the latch-bolt. When the door is to be closed, it is not necessary to turn the knob, as contact between the beveled face 18 of the latch-bolt and the door-keeper will lift the tumbler and permit the latch-bolt to recede within the casing. By reason of the provision of the balls 7 the action of the latch-bolt is rendered exceedingly easy, as but slight frictional resistance is presented to movement in either direction. While not herein shown, it is to be understood that the tumbler may be raised by the lifter when the latter is turned in either direction, as is ordinary with locks of this character generally in use. In order to present a night-latch without shooting the lock-bolt, a pivoted dog 19 is employed, which is arranged in rear of the latch and is adapted to be turned down back of its rear end, as is indicated by dotted lines in the figure, thereby



positively holding the latch-bolt against retraction. This dog may be operated from a key on the outside of the lock and from a knob or button on the inside thereof.

5 The idea of gravity-controlled means for holding the lock-bolt 20 in locked or unlocked position is carried into effect by the employment of a weighted keeper 21, mounted for pivotal movement upon one of a pair of studs  
10 or projections 22, provided for engaging slots 23 in the lock-bolt to guide the same in a right line, as is common in most door-locks on the market. The lock-bolt is provided with a laterally-projecting rectangular pin or pro-  
15 jection 24, which is designed to engage alternately with lock-notches 25, formed in the rear end of the keeper, the said notches being opposed by two similar notches 26, separating which is a passage 27, the notches 26  
20 being provided to permit the keeper being raised a sufficient distance to bring the pin 24 in alinement with the passage 27, whereupon the lock-bolt will be free to be projected or retracted, as the case may be. As  
25 herein shown, the bolt is in its projected or locked position, and to effect unlocking a key is inserted through the keyhole 28, and upon being turned one of the wards will first contact with the under side of the  
30 keeper and lift the same to bring the pin in alinement with the passage 27, further turning of the key bringing a ward of the same into engagement with one of the shoulders 29 of the key-slot in the bolt, whereupon the lat-  
35 ter will be retracted and will be locked in its retracted position by the pin 24 engaging the rear notch 25. The connection of the keeper with the stud 22 will be of a loose character, thereby obviating danger of the parts bind-  
40 ing or becoming rust-locked. This same feature of arrangement is also observed in the pivotal connection between the parts of the knob mechanism.

It will be seen from the foregoing descrip-

tion that by the manner of construction and 45 assemblage of the parts of this lock that certainty of operation under all conditions of use will be assured, and, further, the construction of the parts that are liable to break- 50 age is of such character as to permit replacement of a broken or damaged part by a new one by a mechanic of ordinary skill and ability.

Having thus fully described the invention, what I claim, and desire to secure by Letters 55 Patent, is—

1. In a lock, a latch-bolt, a tumbler pivoted in rear of the latch-bolt and carrying at its free end a weight disposed thereover, and a bent link having its terminals pivotally con- 60 nected with the latch-bolt and with the tumbler intermediate of their ends and adapted to move vertically with the tumbler.

2. In a lock, a latch-bolt, a tumbler pivoted in rear of the latch-bolt and carrying at its free end a weight disposed thereover, a bent 65 link pivotally connected at its terminals with the latch-bolt and with the tumbler intermediate of their ends, the link being adapted for upward movement with the tumbler, and a lifter engaging the under side of the tum- 70 bler.

3. In a lock, a latch-bolt, a tumbler pivoted in rear of the latch-bolt and carrying at its free end a weight disposed thereover, an L- 75 shaped link pivotally connected at its terminals with the latch-bolt and with the tumbler intermediate of their ends and freely movable vertically with the tumbler, and a dog adapted to be turned into the path of move- 80 ment of the rear end of the latch-bolt to lock all of the parts against movement.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DAVID J. KENNEDY.

Witnesses:

WM. F. RAMSEY,  
ED PETERSON.