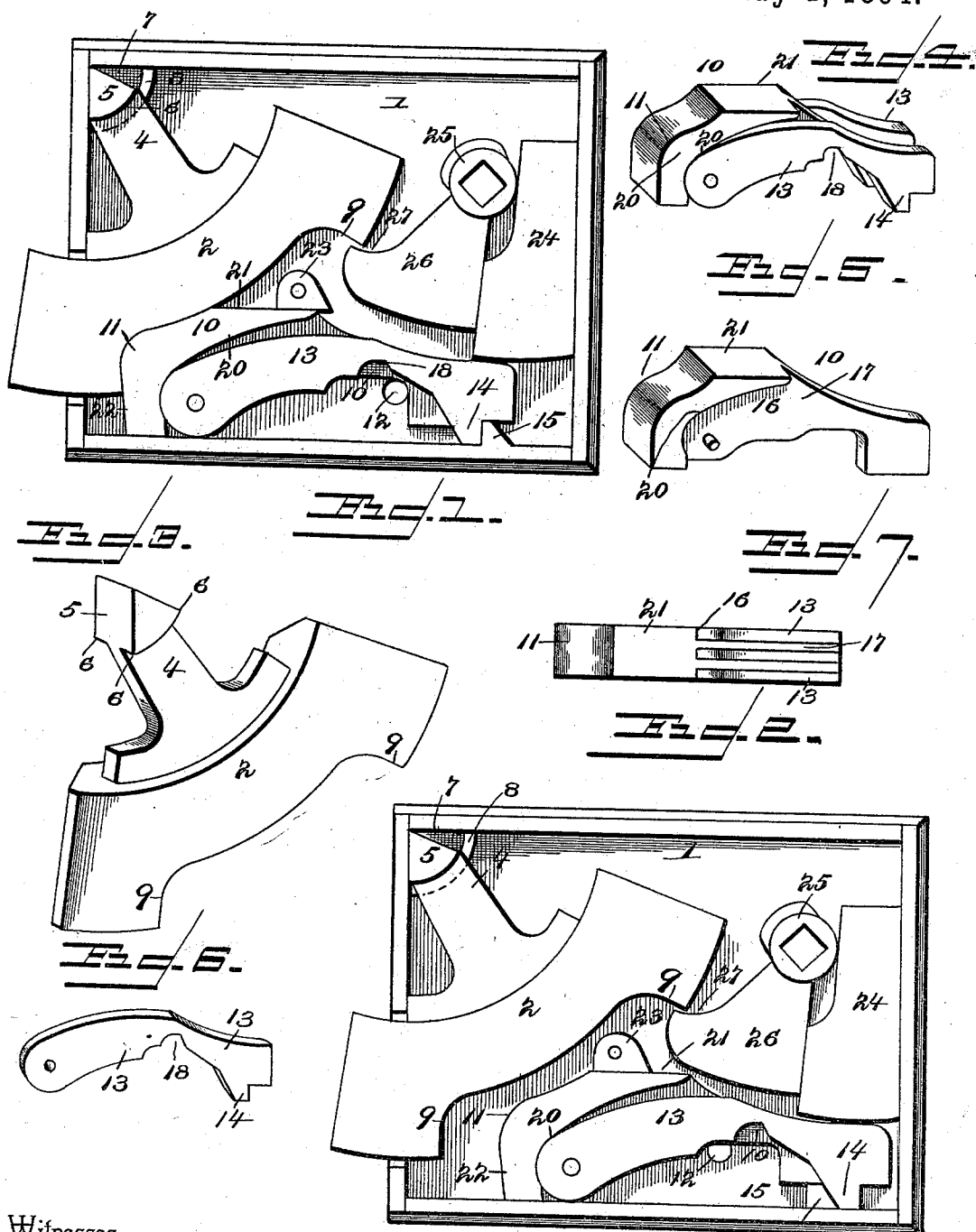


(No Model.)

N. B. GREGORY.
COMBINED LATCH AND LOCK.

No. 519,284.

Patented May 1, 1894.



Witnesses

E. K. Stewart.

C. B. Wyke.

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UNITED STATES PATENT OFFICE.

NATHAN B. GREGORY, OF JOPLIN, MISSOURI, ASSIGNOR OF ONE-HALF TO
ELBRIDGE B. HOBSON AND GEORGE E. JAMES, OF SAME PLACE.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 519,284, dated May 1, 1894

Application filed March 31, 1893. Serial No. 463,462. (No model.)

To all whom it may concern:

Be it known that I, NATHAN B. GREGORY, a citizen of the United States, residing at Joplin, in the county of Jasper and State of Missouri, have invented a new and useful Combined Latch and Lock, of which the following is a specification.

My invention relates to a combined latch and lock for doors, &c., and it has for its object to provide a device of the class named which shall be devoid of springs and depend entirely upon gravity for its automatic action, and shall embody, in a compact form, means for either latching or locking a door, such means being capable of operation by either a knob or a finger-hold.

Further objects and advantages of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a view of a lock embodying my invention, with the face-plate removed; the bolt being locked. Fig. 2 is a similar view showing the parts adjusted for use as a latch. Fig. 3 is a detail view, in perspective, of the bolt. Fig. 4 is a perspective view of the locking-bar provided with the tumblers carried thereby. Fig. 5 is a similar view of the skeleton of the locking-bar, the tumblers being removed. Fig. 6 is a similar view of one of the tumblers. Fig. 7 is a plan view of the locking bar.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a casing which may be of any preferred form or construction, to adapt my improved lock to be used either as a mortise or a rim lock; the construction shown in the accompanying drawings being that of an ordinary rim-lock. Pivoted within the casing is an arc-shaped bolt, 2, both ends of which are beveled upon the same side, (as shown clearly in the detail view, Fig. 3,) after the manner of an ordinary latch bolt, whereby when one end of the bolt projects through the bolt-opening, 3, in the end of the casing the beveled side thereof faces one side of the door, and when the bolt is reversed so that the

other end thereof projects through said bolt-opening the beveled side faces the opposite side of the door. In this way the bolt, without changing any of the coacting parts of the lock, (as will appear hereinafter) may be adapted for either a right or a left-hand door. The arm, 4, of the bolt occupies the position of a radius of the circle of which the bolt forms an arc, and it is provided at its free end with a V-shaped terminal, 5, the apex of which marks the center of the circle of which said bolt is an arc. This V-shaped terminal is arranged in an angle of the casing of the lock, with its apex fitting closely in said angle to form a center for the movement of the bolt. The V-shaped terminal or head, 5, is enlarged beyond the thickness of the arm, 4, to form curved or convex shoulders, 6, upon opposite sides of the arm, the curvature of said shoulders being concentric with that of the bolt. A segmental seat, 7, bounded by a flange, 8, is arranged in the angle of the casing to receive one end of the head, 5, the shoulder of which is adapted to operate in contact with the said flange. The length of the bolt is preferably that of a quadrant. The outer or convex side of the bolt is cut away to form rounded shoulders, 9.

10 represents a locking-bar, which is slidably mounted in the casing, at or near its lower side, and is provided with a rounded head, 11, to engage the shoulder, 9, of the bolt, to lock the bolt in its extended position. This locking bar is capable of being operated by means of a key (not shown) which may be inserted in the casing in the ordinary way, with its terminal fitting in the socket, 12, shown in Figs. 1 and 2.

The locking-bar carries suitable locking devices to hold it in its locking position, such devices consisting, in the construction illustrated, in gravity tumblers, 13, which are pivotally connected to the locking-bar adjacent to its head and are provided at their free rear ends with shoulders 14, to engage a lug or stop, 15, which is permanently attached to the casing.

The body portion of the locking-bar is preferably provided with a series of kerfs, 16, (as shown in Fig. 5) thus forming parallel webs,

or wards, 17, between and upon the outer sides of which are arranged the tumblers, 13. In this way any desired number of wards and tumblers may be provided, their thickness may be varied, and the relative number of wards and tumblers may be varied. This may be accomplished by either arranging the webs or wards so as to inclose or lie outside of all the tumblers, or channeling the sides of the bar to receive tumblers, (this form being shown in the drawings, Fig. 5,) or channeling one side of the bar, &c. The tumblers are provided with notches, 18, to be engaged by the web of the key, and by making such notches of different depths, other variations of the lock, necessitating corresponding variations in the keys required for their manipulation, may be made.

The upper side of the locking-bar is provided with a solid portion forming a stop, 20, to limit the upward movement of the free ends of the tumblers, and the upper edge of the bar is made straight, as shown at 21, and the lower edges of the terminals of the bar are similarly shaped, as shown at 22, said straight edges 21 and 22 forming guides to limit and direct the movement of the bar. The guide, 21, operates in connection with the flattened under side of a bushing or post, 23, and the lower guides 22 operate respectively in contact with the lower wall of the casing and the lug or stop, 15.

24 represents a vertically slidable weight, which is arranged super-jacent to and in contact with the free ends of the tumblers, to depress the latter after having been elevated by means of a key or other manipulation of the lock. It will be understood that the construction of the tumblers is such as to operate independently of the weight, but the latter serves to insure the simultaneous action of all of the tumblers.

25 represents a revoluble sleeve, provided with an angular bore for the reception of a knob-shaft, (not shown,) and carrying and operating lever, 26, to engage one of the exterior shoulders, 9. Said operating lever is provided with a concave nose, 27, which is adapted to slide upon said shoulder and lift the bolt when the latter is not locked in place by the locking-bar. It will be understood, furthermore, that while the knob and connections are preferable in the operation of my improved lock, the bolt may be provided with a simple finger-hold, to project through the

side of the casing. (Such construction is common and needs no illustration herein.)

The operation and advantages of my invention will be readily seen from the foregoing description taken in connection with the drawings, in Figs. 1 and 2 of which the parts are respectively shown in their locked and in their latched positions.

It will be apparent from the foregoing that changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of a casing provided at a point above its bolt-opening with a seat having a curved flange 8, of a segmental bolt provided with a radial arm having a convex shoulder to fit the concaved surface of said flange, and means for retracting the bolt, substantially as specified.

2. The combination with a casing having an angular seat 7, of a reversible, right and left segmental gravity bolt, provided with a radial arm having an angular head which is shouldered upon opposite sides to engage a segmental flange of said seat, and means to retract said bolt, substantially as specified.

3. The combination with a swinging segmental bolt provided with a pivoted arm and having shoulders, 9, in its convex side, of a horizontally slidable locking-bar provided with a head to engage a shoulder 9, pivotal tumblers arranged between parallel webs carried by the locking-bar and provided with projections to engage stationary lug, and a weight resting upon the free terminals of said tumblers, substantially as specified.

4. The combination of a reversible segmental gravity bolt operating upon a concentric pivot and provided in its convex side with shoulders, 9, a tumbler-controlled locking-bar slidably mounted in operative relation with the bolt to engage one of said shoulders, and an operating lever, 26, arranged to engage the remaining shoulder, substantially as specified.

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

NATHAN B. GREGORY.

Witnesses:

R. C. BONHAM,
D. W. PHILLIPS.