(No Model.) 2 Sheets—Sheet 1.

W. H. SMITH.

COMBINED LATCH AND LOCK.

No. 485,667 Patented Nov. 8, 1892.

FIG. 1.

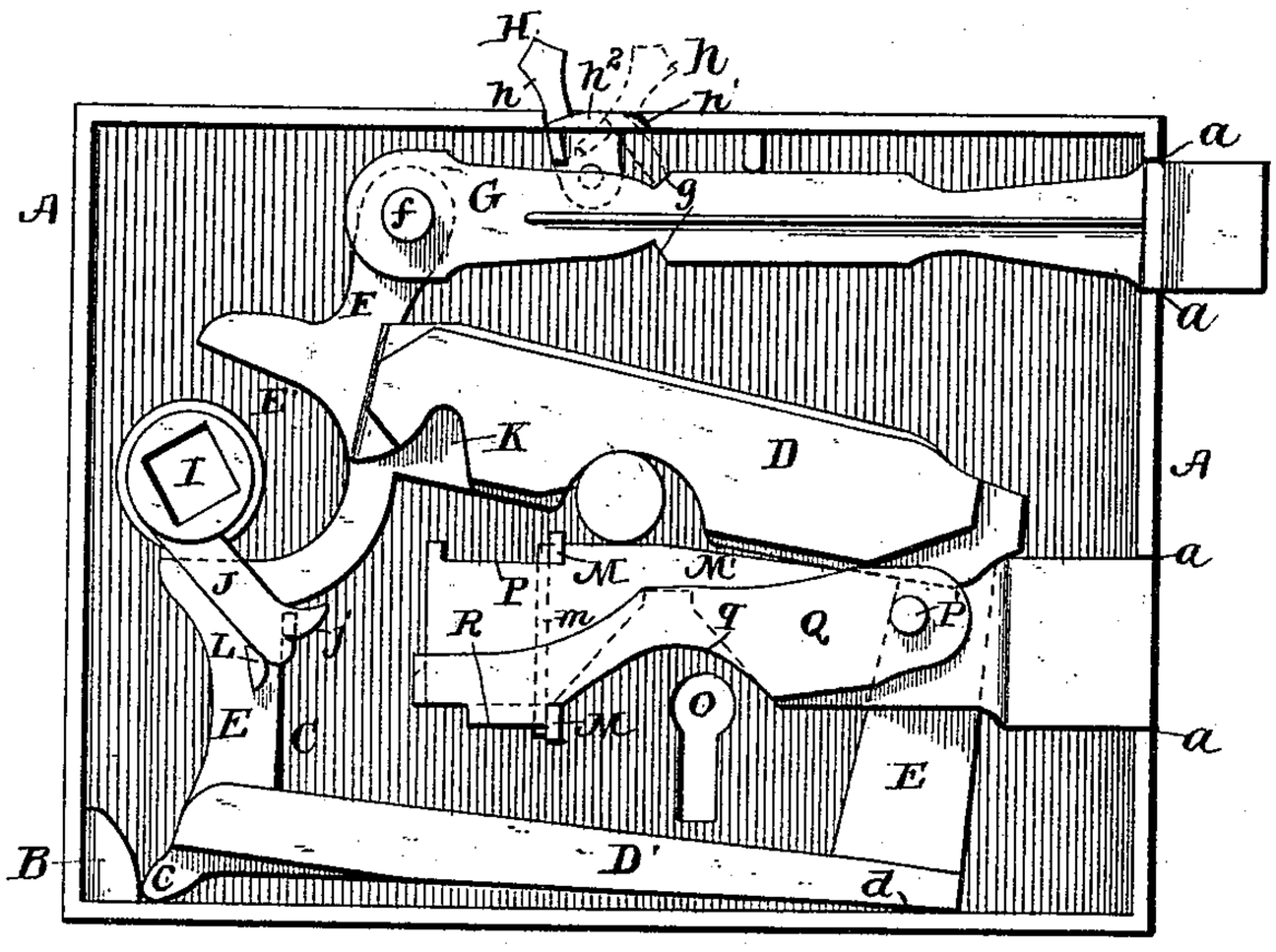
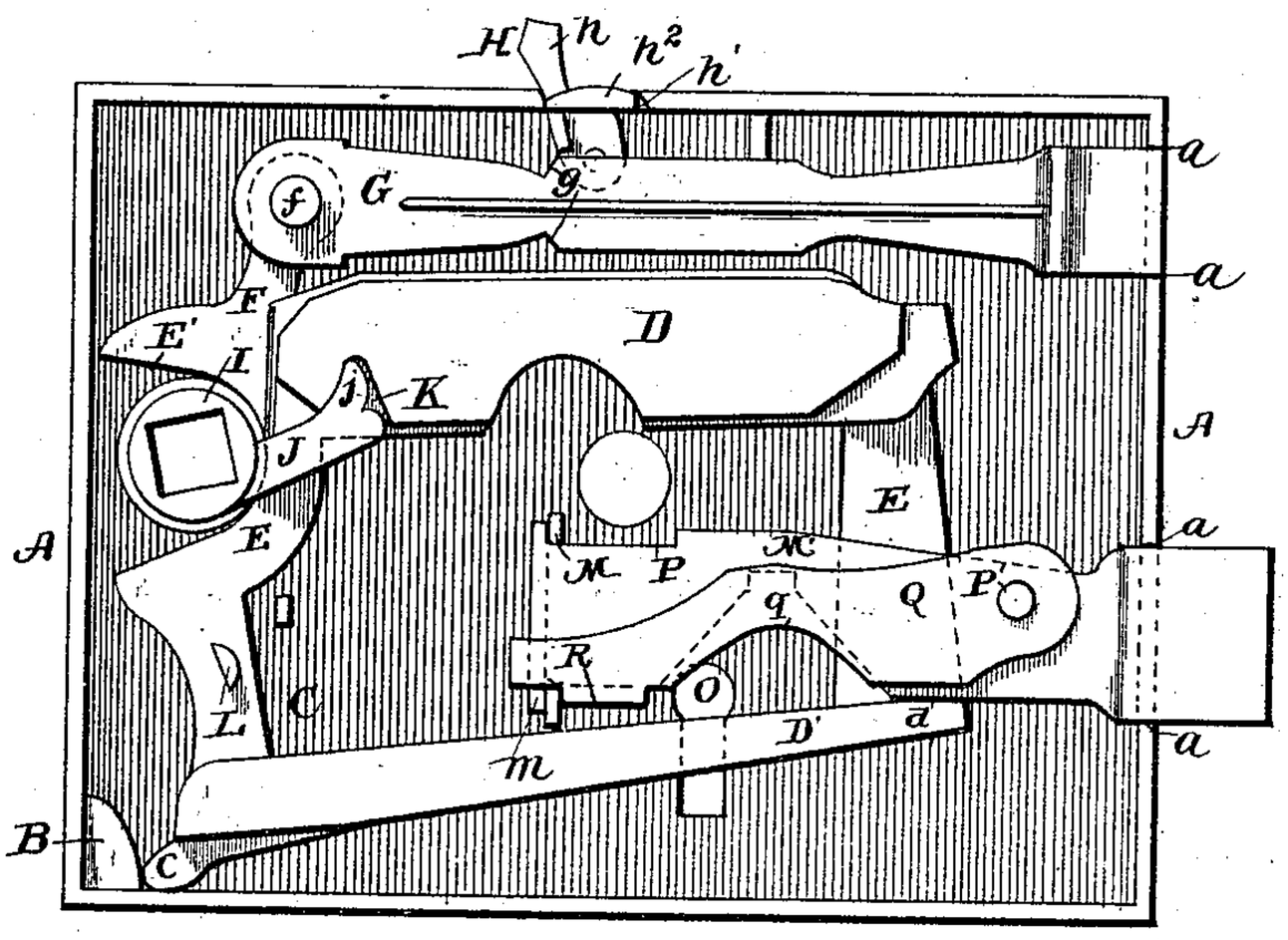


FIG. 2.



Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 3.

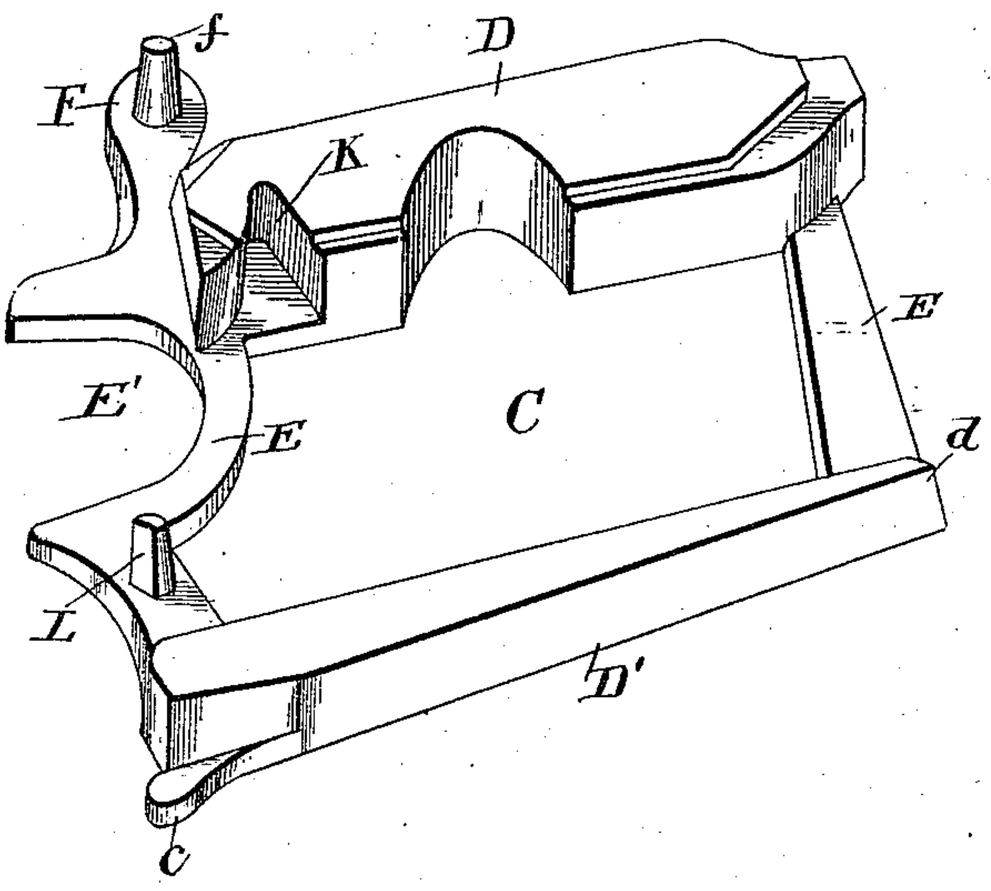


FIG. 4.

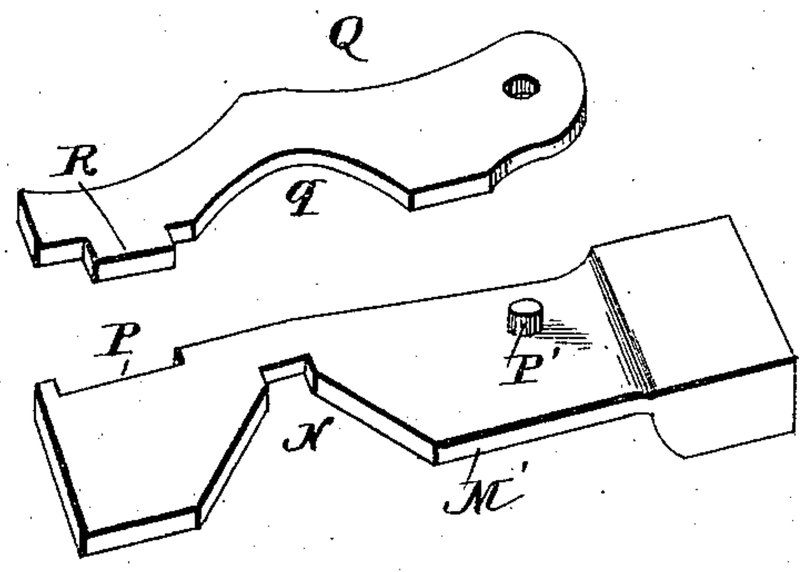


FIG. 5.

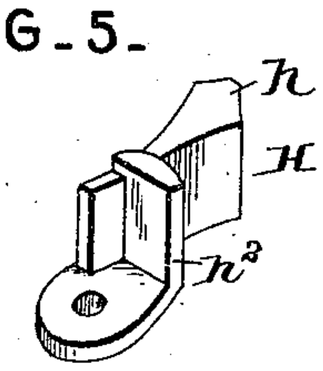
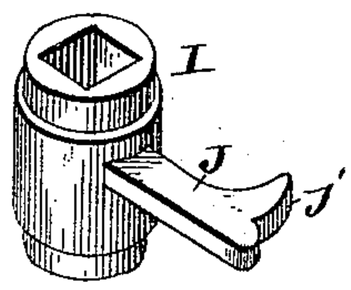


FIG. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM H. SMITH, OF BOLIVAR, MISSOURI.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 485,667, dated November 8, 1892.

Application filed February 20, 1892. Serial No. 422,278. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SMITH, a citizen of the United States, residing at Bolivar, in the county of Polk and State of Missouri, have invented a new and useful Combined Latch and Lock, of which the following is a specification.

This invention relates to locks; and it has for its object to provide an improved combined latch and lock adapted particularly for locking doors and latching the same, and which will avoid the use of springs, thereby rendering it nearly impossible for the lock to become out of order and the various parts disengaged, as is quite usual in ordinary spring-locks.

It is the main object of this invention to avoid these difficulties and to provide a combined latch and lock which is greatly simplified and improved in point of construction over ordinary locks.

With these and many other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a front elevation of a combined lock and latch with the cap-plate removed, exposing the various parts in their normal positions. Fig. 2 is a similar view showing the locking-bolt locked in position and the latch-bolt withdrawn. Fig. 3 is a detail in perspective of the rectangular weight-frame. Fig. 4 is a similar view of the lock-bolt and locking-tumbler. Fig. 5 is a similar view of the latch-bolt catch. Fig. 6 is a similar view of the knob-spindle hub.

Referring to the accompanying drawings, A represents the lock-casing, which accommodates the various parts of my improved lock and latch and is provided with the usual latch and lock bolt openings *a* in one end thereof. The said casing is provided in one of the lower corners thereof with a rounded bearing-block B, against which the lower inner corner of the rectangular weight-frame C is designed to normally bear and forms a pivot therefor, thus providing a pivot for said frame without the use of pins or studs, which in time work loose and prevent the easy manipulation of the lock, while at the same time such construction provides for mounting the frame in the casing and entirely disconnected therefrom, and therefore capable of an easy removal. The said weight-frame C is approximately rectangular in shape and is provided with the upper and lower weighted pieces D and D′, respectively, which are connected at their ends by the lighter end pieces E. The said rectangular weight-frame C is provided at its extreme inner and lower corner with the projecting bearing-stud *c*, which loosely bears against the bearing-block and allows the said frame to be moved up and down. The lower piece D′ of said frame is beveled at *d*, so as to allow the front end of the said frame to rest upon the bottom of the casing below the horizontal plane. The said rectangular weight-frame is further provided at its upper inner corner with the upwardly-extending pivot-arm F, carrying the integral pivot-stud *f*, which pivotally engages the inner end of the bevel latch-bolt G, which is normally held without the casing, as usual; but by the position of the gravity or weight frame, which is normally in a tilted position, is thus held normally without the casing. The said latch-bolt G is provided with the locking-notches *g*, which, when desired, are engaged by the pivoted latch-bolt catch H. The said pivoted latch-bolt catch H is pivoted within the casing A alongside of the latch-bolt and is provided with a thumb-grasp *h*, working through the opening *h′* in the top of the casing, and with the locking-flange h^2, which by moving the catch upon its pivot is thrown into engagement with the notch *g* in order to lock the said latch-bolt in its normal position extending without the casing. The said weight-frame C is provided at its rear inner end in one of the connecting-pieces E with a curved recess E′, which works over the knob-spindle hub I, working in the casing at this point and operated by the knob in the usual manner. The said hub I carries an offstanding arm J, which as the said hub is rotated is thrown up into the angular recess K, located in the upper weighted piece D of said weight or gravity frame, and by continuing to turn the hub the said arm J throws the weight-frame C up into a horizontal position, and thus withdraws the latch-bolt into the casing.

By releasing the hub the weight of the rectangular weight or gravity frame immediately throws the beveled latch-bolt out into its normal position. Said arm J is provided with a curved pointed end *j* to accommodate itself to the curved angular notch K, and is limited in its backward movement by means of the stop-lug L, projecting from the end piece E below the circular recess therein. The said weighted frame is provided with the ordinary bearing projections to prevent friction and lateral displacement when the weight is in motion. Working over the front connecting end piece E of said weight-frame and between the opposite extended lugs M, projecting from the casing, is the horizontal lock-bolt M′. The said lock-bolt M′ is held above the weight-frame and works freely thereover upon the bearing-block *m* between said lugs and through the front openings *a*, designed for its reception. The said lock-bolt M′ is provided with the ordinary angular recess N, located adjacent to the ordinary keyhole O, so as to allow the same to be moved in and out of the casing. The said lock-bolt is further provided near one end with the elongated notch P, working over the upper one of the lugs M, and thus limiting the inward and outward movements of said bolt. Pivotally mounted at one end upon the bolt M′ at P′ is the locking-tumbler Q, which is provided with a recess *q* to accommodate the wing of the key, so that the same may be lifted, and also with the offstanding locking-tongue R near its other end, and which engages on each side of the lug M, upon which the same normally falls of its own weight when the bolt M′ is either in its withdrawn or extended positions, thus serving to lock the same in both positions until released by the ordinary key. The lock-casing is capped in the usual manner, and it will be noted that the rectangular weight-frame is provided with a number of notches and recesses to clear the various parts of the lock and projections from the casing, so that the same may be free to swing up and down.

It is now thought that the construction, operation, and many advantages of the herein-described lock are apparent without further description.

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

1. In a lock, the combination, with the casing having a rounded bearing-block in one corner, of a horizontally-sliding latch-bolt and an approximately-rectangular gravity or weight frame comprising upper and lower weighted pieces connected at their ends by lighter end pieces, the lower piece being beveled and adapted to normally rest on the bottom of the casing and provided at its upper inner corner with a projecting pivot-arm carrying an integral pivot-stud loosely engaging one end of said latch-bolt and an offstanding bearing-stud projecting from its corresponding lower corner and loosely bearing upon said rounded bearing-block in the casing, substantially as set forth.

2. In a lock, the combination, with the casing, of a horizontally-sliding latch-bolt, a rectangular weight-frame loosely connected at its upper inner corner to said latch-bolt and loosely bearing upon the lock-casing at its corresponding lower corner, said frame being provided with a curved angular notch or recess in the upper side of the same and an extended stop-pin or stud at a point below and out of line with said notch, and the spindle-hub provided with an offstanding arm having a curved pointed end registering with and working in said notch or recesses and limited in its backward movement by said lower stop-pin or stud, substantially as set forth.

3. In a lock, the combination, with the casing having a top opening, of a weight-controlled latch-bolt sliding beneath the top of the casing and provided with a locking-notch, and a bolt-catch pivoted to said casing alongside of said bolt and provided with a thumb-grasp extending through said opening, and a locking-flange adapted to be thrown into engagement with said locking-notch, substantially as set forth.

4. In a lock, the combination, with the casing having a keyhole and parallel projecting guide-lugs, of a sliding bolt adapted to move between said lugs and provided at one end with an elongated limiting-notch, which receives and slides over one of said guide-lugs, and an angular key-receiving recess adapted to be arranged near said keyhole, and a locking-tumbler working between said guide-lugs, said tumbler being pivoted at one end to said bolt and provided with an offstanding locking-tongue near its other end, adapted to normally drop behind the other lug in both positions of the bolt, and a recess or notch arranged over the angular recess in the bolt and adapted to receive the wing of a key, substantially as set forth.

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

WILLIAM H. SMITH.

Witnesses:
W. H. MASTEN,
T. A. WATSON.