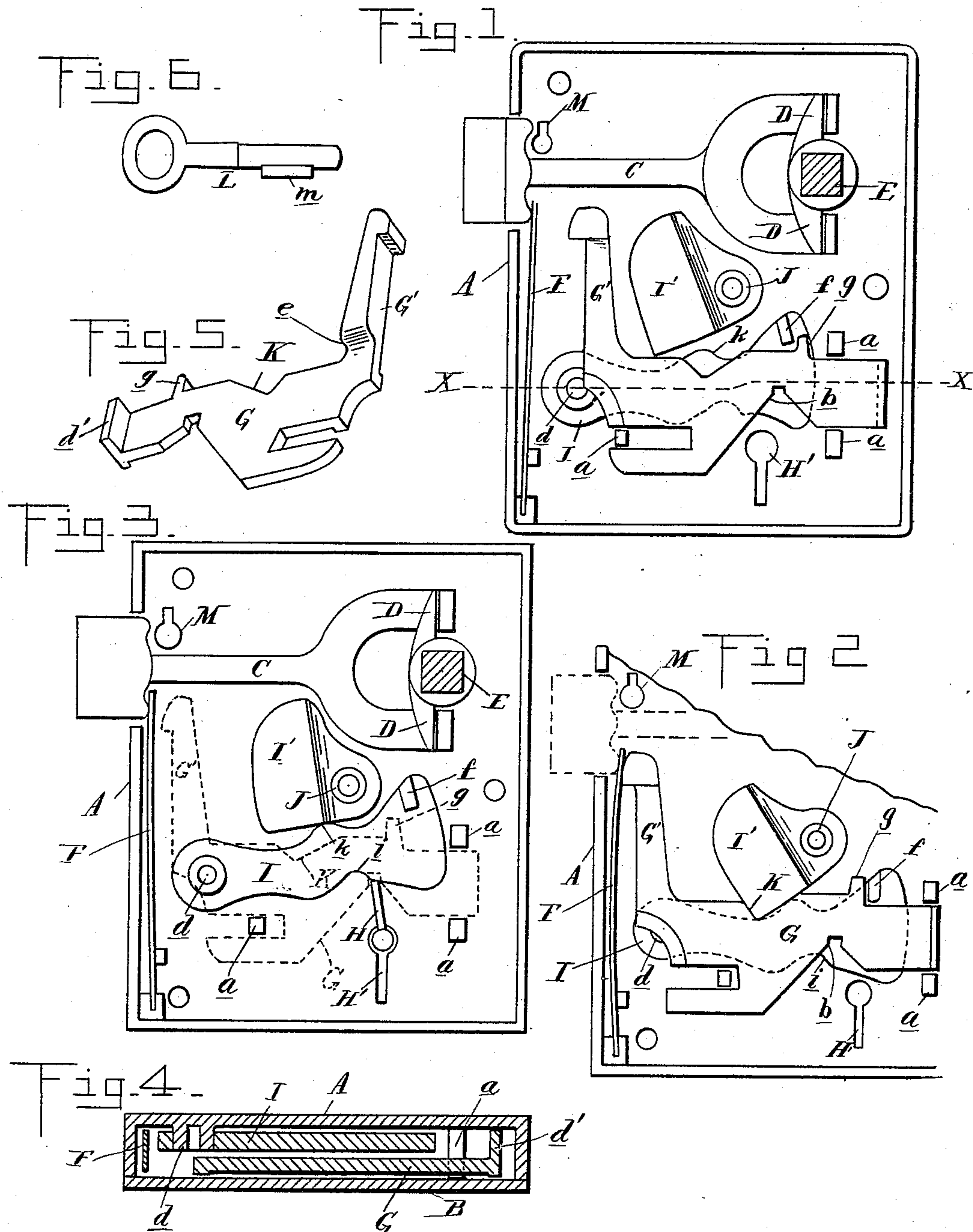


(No Model.)

T. MARTIN.
LATCH AND LOCK COMBINED.

No. 426,834.

Patented Apr. 29, 1890.



Witnesses:

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UNITED STATES PATENT OFFICE.

THEODORE MARTIN, OF WALLACEBURG, ONTARIO, CANADA.

LATCH AND LOCK COMBINED.

SPECIFICATION forming part of Letters Patent No. 426,834, dated April 29, 1890.

Application filed September 20, 1889. Serial No. 324,575. (No model.)

To all whom it may concern:

Be it known that I, THEODORE MARTIN, a citizen of Great Britain, residing at Wallaceburg, in the county of Kent and Province of Ontario, Canada, have invented certain new and useful Improvements in a Combined Lock and Latch, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in a locking-latch; and the invention consists in the peculiar construction, arrangement, and combination of the parts, all as more fully hereinafter described, and shown in the drawings which accompany this specification, and in which—

Figure 1 is an elevation of my improved lock with the cover of the casing removed and the parts shown in the position in which the device operates as an ordinary latch-lock. Fig. 2 is a similar elevation, showing the parts in the position when the device operates as a locking-latch. Fig. 3 is a similar elevation, with the locking-bolt shown in dotted outline only and with the key in the act of operating the locking-bolt. Fig. 4 is a horizontal section on line X X in Fig. 1. Fig. 5 is a detached perspective view of the locking-bolt. Fig. 6 is a detached elevation of the detachable stopper.

A is the casing of the lock. B is the cover, removably secured thereto. C is the latch, D are the spindle-cranks, and E is the actuating-spindle carrying the door-knobs, all as in the usual construction.

F is the latch-spring. This is made in the form of an ordinary leaf-spring, and is secured in vertical position against the front wall of the casing, with its lower end secured between suitable lugs formed on the inside of the casing and with its free end engaging on the head of the latch. This arrangement brings this spring out of the way of all operating parts, prevents it from becoming accidentally displaced, and when not in use relieves it from any strain.

G is an internal locking-bolt slidingly secured in position by suitable lugs—such as the lugs *a*—formed integral with the casing and adapted to support and guide the locking-bolt in its horizontal sliding movement. The front

end of this bolt has a vertical arm *G'*, which extends upwardly into proximity to the latch-bolt, and is adapted to engage with its free end on the head of the latch-bolt, as shown in Fig. 2.

The locking-bolt is slidingly operated by a suitable key *H*, which when inserted through the key-hole *H'* is adapted to engage on suitable offsets on the under side of the locking-bolt to throw the same back and forth.

The locking-bolt is controlled by a tumbler *I*, which is pivotally secured at *d* to the casing, the locking-bolt being provided with the flange *d'* and offset *e* to keep it the necessary distance away from the casing to permit the tumbler to freely move on its pivot. This tumbler is provided with a lug *f* near its free end, which is adapted to engage with a stud *g*, formed on the upper edge of the bolt *G*, all so arranged that when the tumbler is raised by means of the key, as in Fig. 3, the lug *f* is disengaged from the stud *g*, to allow the key to move the tumbler backward or forward.

When the locking-bolt is projected, as in Figs. 2 and 3, the lug *f* drops in behind the stud *g* and prevents the locking-bolt from sliding back, thus locking the latch. When the locking-bolt is retracted, the lug *f* drops in front of the stud *g*, as shown in Fig. 1, and the latch is free to be operated while the locking-bolt is locked out of engagement. Thus, without the use of a key the locking-bolt cannot be operated, and the latch presents all the advantages of a latch and lock, with the additional advantage that the space in the front of the casing is advantageously utilized for the latch-spring.

It is well known that the latch and bolt springs in most locks are a continual source of trouble. They are indifferently held in position, are of necessity cramped and small, and by the mere loss of tension or from wear soon become displaced and inoperative.

My latch-spring is of the most simple and effective form. It cannot be interfered with by the movable parts. It cannot be accidentally displaced, and in its normal position it may be entirely free from tension.

I am aware that locking-latches have been constructed heretofore; but the form of my locking-latch is new, in that it is provided

with the vertical arm G' , which permits of placing the locking-bolt as far below the latch-bolt as desired to bring the key-hole in a convenient position where the spindle-knobs are not in the way.

I preferably dispense with the usual spring for the tumbler altogether, and use in lieu thereof a gravity-dog I' , which is pivotally secured above the tumbler on a stud J . This gravity-dog has a double function. It bears with its weight in the tumbler to perform the office of a tumbler-spring, and in addition it is adapted to engage in a notch K , formed on the locking-bolt, when the latter is in engagement with the latch, as shown in Fig. 2. Thus if it is attempted to force the latch-lock when it is locked the force is brought on the gravity-dog instead of on the lug f , and as the former is by far the stronger device to resist the forcing of the lock possible damage to the tumbler is thereby avoided, and if the lug f on the tumbler should wear out or break off the lock would be still operative. The tumbler itself is free to drop by its own gravity, and the weight of the dog I' is sufficient to insure its positive action. For additional safety, however, I relieve the tumbler on its under side at i , so that as soon as the key has lifted up the tumbler and dog by engaging on the portion j of the tumbler, as shown in Fig. 3, the abrupt relief i will allow the tumbler and dog to drop of a sudden and acquire momentum, which will render their operation quite positive. The dog is prevented from accidental displacement by striking with its back against the latch if thrown up too far. Its pivotal stud J is preferably provided with a screw-threaded aperture to receive one of the screws, by means of which the cover of the lock is secured to the casing, and a solid corner is formed on the dog to engage into the notch K of the locking-bolt and solidly abut against it without danger of being forced out.

In operation the key is adapted to project and retract the locking-bolt. In projecting it the key has to lift up the tumbler first to disengage the stud f from the locking-bolt. As soon as this is accomplished the key engages on the offset b of the locking-bolt and commences to project it, while it upholds the tumbler at the same time until the bolt is projected, when the tumbler is free to drop. By providing the tumbler with the raised portion k it will also lift the dog, and thus when it is free from the key the dog is free to fall a certain distance, so that its momentum will overcome any possible tendency to stick before it has fully dropped into the notch K . In unlocking, the tumbler is first raised by the key until the stud f is disengaged from the locking-bolt. At the same time the dog is lifted out of its engagement into the notch K the further movement of the key retracts

the bolt, upholding at the same time the tumbler and dog until the bolt is fully retracted, when the tumbler and dog fall back again into the positions shown in Fig. 1.

It is obvious that my improvement is adapted to be readily applied in whole or in parts to any style of latch-lock in ordinary use without requiring much change in the pattern, as the general dimensions and location of the different parts may be readily maintained, the only radical change required being merely that of providing a locking-bolt of my construction. It is further obvious that a safer lock may be obtained by using more than one tumbler in the well-known manner.

Should it be desired to provide my lock with a so-called "night-latch," I propose to use a stopper L , as shown in Fig. 6, which is adapted to be inserted in a suitable aperture M in the casing back of the head of the latch, a feather m , formed on the shank of the key, preventing it from falling out accidentally when the stopper is properly turned in the lock; but it may be withdrawn like any other key.

What I claim as my invention is—

1. In a locking-latch, the combination, with the latch C , of the interior horizontally-sliding locking-bolt G , slidingly secured to the casing and adapted to be operated by a key, the tumbler I , controlling said locking-bolt, and the gravity-dog I' , pivotally secured above the tumbler, substantially as described.

2. In a locking-latch, the combination, with the latch-bolt, of the interior locking-bolt G , the head G' thereof projecting at right angles therefrom into proximity with the latch-bolt, the flange d' and offset e on the locking-bolt, the tumbler I , pivotally secured between the casing and locking-bolt and adapted to control the locking-latch, the gravity-dog I' , adapted to bear on said tumbler, and the notch K or its equivalent on the locking-bolt, all arranged to operate substantially as described.

3. A locking-latch consisting of the casing A , the latch C , provided with the latch-spring F , the locking-bolt G , provided with the head G' , adapted to engage on the head of the latch-bolt, the tumbler I , controlling the latch-bolt and having the clearance i on its under side, the gravity-dog I' , bearing on the tumbler, and the notch K on the locking-bolt, all arranged to operate substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 20th day of August, 1889.

THEODORE MARTIN.

Witnesses:

ED. MCBREARTY,
P. M. HALBERT.