(No Model.)

J. C. STURGEON.

TILL ALARM LOCK.

No. 305,766. Patented Sept. 30, 1884.

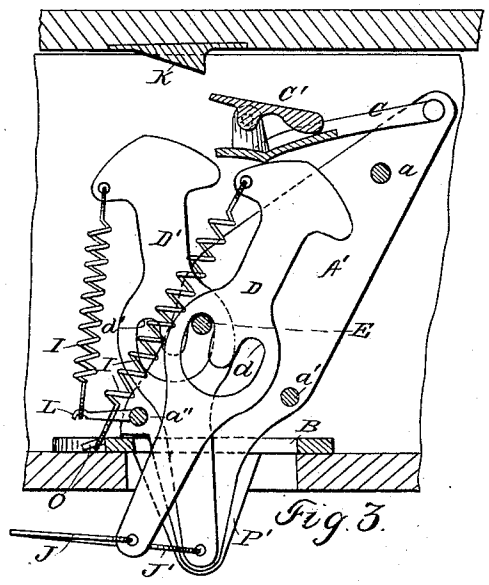


Fig. 3.

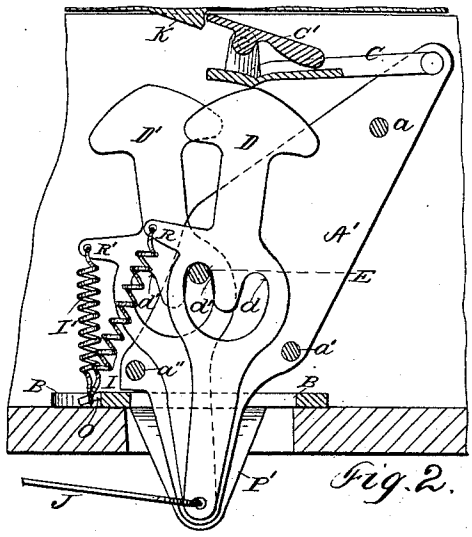


Fig. 2.

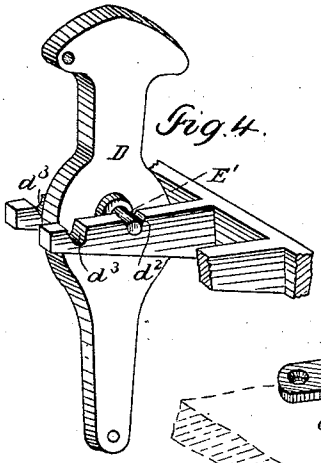


Fig. 4.

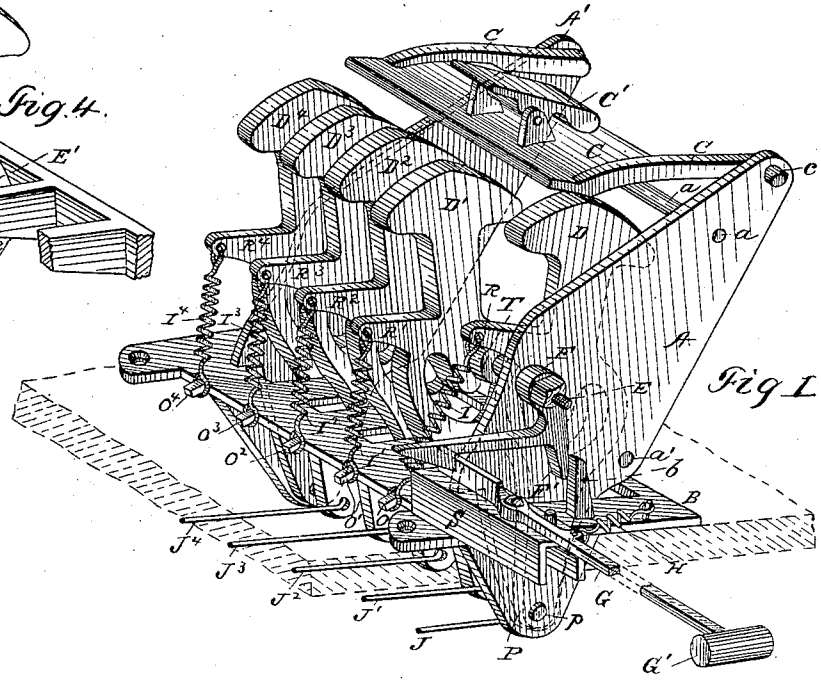


Fig. 1.

Witnesses
W. R. Edelen, Jr.
N. J. Clark.

Inventor
John C. Sturgeon

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN C. STURGEON, OF ERIE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM VARNUM, OF SAME PLACE.

TILL ALARM-LOCK.

SPECIFICATION forming part of Letters Patent No. 305,766, dated September 30, 1884.

Application filed July 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. STURGEON, a citizen of the United States, residing at the city of Erie, in the State of Pennsylvania, have invented a new and useful Till Alarm-Lock, of which the following is a specification.

My invention relates to improvements in till alarm-locks having lever-tumblers operating a locking-lever arranged so that any one or more of them may be used in combination to operate said locking-lever, the combinations of the lever-tumblers being changeable, and having an alarm-gong operated by the movement of the lock-frame.

The objects of my improvement are, first, to construct the lever-tumblers in the lock each in a single piece with two points of vibration, which may be alternately used for changing the combination; second, to construct an oscillating lock-frame carrying all of the mechanism of the lock, and hung on bearings on the bed-plate of the lock for operating the bell-hammer; third, to so construct the lock that the combinations of the lever-tumblers can be readily changed without removing or disarranging any portion of the lock; fourth, to simplify the mechanical construction of the lock and alarm, and facilitate thereby their operation.

I attain these objects by the mechanism illustrated in the accompanying drawings, which form part of this specification, in which—

Figure 1 is a perspective view of my improved till alarm-lock. Fig. 2 is a vertical section of my device, showing the relative positions of lever-tumblers in and out of combination, with the latch of the locking-lever engaging the catch in the till-cover. Fig. 3 is a vertical section of an alternative construction of my device, showing the action of the lever-tumbler in combination in unlocking the till, and the latch of the locking-lever disengaged from the catch in the till-cover. Fig. 4 is a perspective view of an alternative construction of my lever-tumbler, and also a section of the support therefor.

Similar letters refer to like parts of my device throughout the several views.

The frame of my lock is constructed of a bed-plate, B, which has ears P P′ extending downward, and also openings through which the side plates of the oscillating frame and the lower ends of the lever-tumblers project. To the ears P P′ at *p p′* are hinged the side plates of the lock-frame A A′. These side plates are kept in place by means of rods or braces *a a′ a″*, and the bolt E, which passes entirely through the lock-frame holding it together, and at the same time forming a support or bearing for the lever-tumblers D, D′, D^2, D^3, and D^4. These lever-tumblers are constructed with U-shaped openings through them near their centers, the arms of said openings being designated as *d d′*, (see Figs. 2 and 3,) either arm of this U-shaped opening forming the bearing upon which the lever-tumbler rests and vibrates upon the supporting-rod E. The lower ends of the lever-tumblers extend downward through openings for that purpose in the bed-plate B, below the bottom of the lock, a sufficient distance to connect with the down-pull wires J J′, &c., which connect the lever-tumblers with ordinary finger-pieces on the under side of the till, and not shown in the drawings. The tumbler-levers D D′, &c., are kept at a suitable distance apart by means of washers T on the supporting-rod E between them. The upper ends of the lever-tumblers D D′, &c., are made of suitable shape, (preferably as shown in the drawings,) to operate under the locking-lever C, hereinafter described. On the front sides of the lever-tumblers D D′, &c., I construct short arms R R′, &c., to which I attach springs I I′, &c., as shown in Figs. 1 and 2. The other ends of the springs I I′, &c., I attach to suitable hooks or lugs, O O′, &c., on the front edge of the bed-plate B.

In the alternative construction shown in Fig. 3, I dispense with the arms R R′, &c., and fasten the upper ends of the springs directly to the tops of the lever-tumblers, as shown, and the lower ends of the two outside springs, I and I^4, I attach to lugs O and O^4 on the bed-plate B. The three remaining springs, I′, I^2, and I^3, I attach to hooks L, &c., attached to the

brace a'' of the oscillating frame A A′, either form of construction operating satisfactorily. The springs I I′, &c., operate in a double capacity. First, they retain the lever-tumblers D D′, &c., seated in their bearings on the rod E in proper position, and second, they hold the oscillating lock-frame A A′ in its normal position, their elasticity only permitting it to be forced back to ring the alarm-gong, as hereinafter described. The locking-lever C is hinged in the upper ends of the lock-frame A A′ at *c*, and extends outward so that its inner edge rests upon the apex of the lever-tumbler, in combination, as shown in Figs. 1 and 3, and has upon its upper side a latch, C′. The locking-lever C vibrates up and down freely upon its bearings *c*, and when the till is locked, the latch C′ engages with the catch K in the till-cover, the locking-lever C resting upon such of the lever-tumblers D D′, &c., as are arranged in combination, and retaining the latch C′ in place. By pulling the lower ends of the tumbler-lever in combination forward, as shown at Fig. 3, the locking-lever C is let down a sufficient distance to disengage the latch C′ from the catch K, permitting the drawer or till to be easily opened; but if the lower ends of any of the lever-tumblers not in combination are pulled forward at the same time with those in combination, they pass under the front edge of the locking-lever C and prevent its dropping, so as to disengage the latch C′ from the catch K, and the drawer remains locked. The latch C′ operates simply in closing the till, as when the till is being closed as it passes under the catch K the front end of it is pressed down by K, allowing it to pass over C′ freely, when it falls back into place by the weight of its longer arm automatically. To change the combination of lever-tumblers to be used in unlocking the till, any one or more of the lever-tumblers D D′, &c., can be raised up and carried forward or backward, as the case may be, a sufficient distance to seat it or them on the supporting-rod E in the opposite bearing of the U-shaped opening *d d′* in the lever-tumblers D D′. For example, if a lever-tumbler is seated on the rod E in the bearing *d* of the U-shaped opening, and is raised and set over so that the bearing *d′* rests on the rod E, the lever-tumbler so arranged is in the combination as shown in the drawings.

In the alternative construction shown in Fig. 4 a similar effect is produced by changing the bearing E′ of the lever-tumbler D from its seat d^2 to d^3, and vice versa. Thus far I have described the locking portion of my invention only without reference to the alarm portion of it. For operating the alarm the lock-frame A A′ oscillates on the bearings *p p′* in the ears P P′ on the bed-plate of the lock B, and is retained in its normal position, as shown in the drawings, by the springs I I′, &c. Upon the step S, cast on one side of the bed-plate B, is hung the arm G of the bell-hammer G′, on a suitable stud-pin for that purpose. The longer portion of the arm G has attached thereto a spring, H, one end of which is attached to a lug on the bed-plate B. On the outside of the oscillating frame-plate A, I cast a boss around the hole for the rod E, this boss extending outward a sufficient distance to form a bearing for the hooked lever F. This lever F is constructed with a bearing to fit over the boss on the plate A, and has a main arm extending forward horizontally a sufficient distance, so that the hook thereon engages the shorter arm of the bell-hammer arm G. The hooked arm F has also an arm, F″, extending downward toward the bed-plate B. Upon the bed-plate B and back of the arm F″, I cast a projection, *b*, extending upward a sufficient distance to engage the arm F″, this projection *b* being back far enough to permit the hooked arm F to be drawn back some distance before the arm F″ and the projection *b* engage each other. In operating the lock, when the proper combination of lever-tumblers is pulled the till opens freely, and the oscillating frame A A′ remains undisturbed in its normal position, as shown in the drawings; but any attempt to pull open the till without using the proper combination, so as to first disengage the latch C′ on the locking-lever C from the catch K in the till-cover, forces the oscillating frame A A′ back from its normal position, pulling with it the hooked arm F, which draws back the arm G of the bell-hammer G′, with which it engages until the arm F″ strikes the projection *b* on the bed-plate B, which immediately trips the hooked lever F, freeing the arm G, the spring H of which causes the hammer G′ to strike a sharp blow upon the gong, (not shown in the drawings,) when the strain upon the till is released. The tension of the springs I I′, &c., acting upon the frame A A′, causes it to immediately resume its normal position, and the hooked lever F to again engage the arm G of the bell-hammer G′, ready to again ring an alarm at any time the till is attempted to be opened without using the proper combination.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a till alarm-lock, the lever-tumblers D D′, &c., having U-shaped openings forming two bearings, *d d′*, upon which they alternately rest upon a support, E, according as they are in or out of combination, substantially as and for the purpose set forth.

2. In a till alarm-lock, the lever-tumblers D D′, &c., provided with two points of oscillation resting upon a bearing, E, and kept in place by springs I I′, &c., in combination with a locking-lever, C, pivoted in the frame A A′, and having a latch, C′, thereon, substantially as and operating as described and set forth.

3. In a till alarm-lock, the bed-plate B and the oscillating lock frame A A′ hung thereon, in combination with lever-tumblers D D′, &c., the locking-lever C, and a catch operating the lever of the bell-hammer, the locking-lever and

catch being both mounted on the frame A A′, all constructed and operating together substantially as and for the purpose set forth.

4. In a till alarm-lock, the oscillating lock-frame A A′, in combination with the hooked arm F, pivoted on said frame, the tripping-stop *b* on the base-plate of said frame, and the bell-hammer arm G, all constructed and operating together substantially as and for the purpose set forth.

In testimony whereof I have signed my name hereto.

JOHN C. STURGEON.

Witnesses:
SELDEN MARVIN,
W. R. EDELEN.