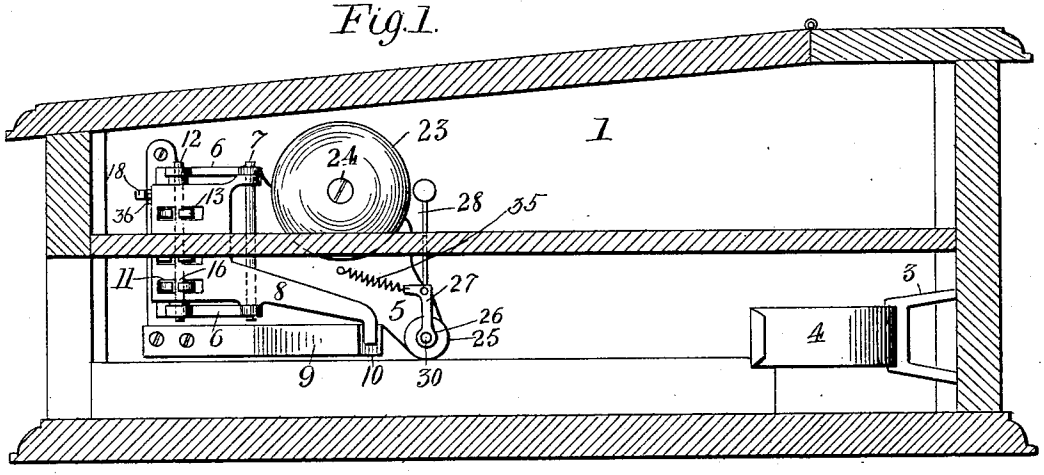
(No Model.)

H. M. WILLIAMS.

COMBINED TILL ALARM AND LOCK.

No. 590,249. Patented Sept. 21, 1897.

Fig. 1.



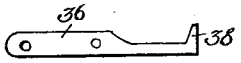


Fig. 2a.

Fig. 2.

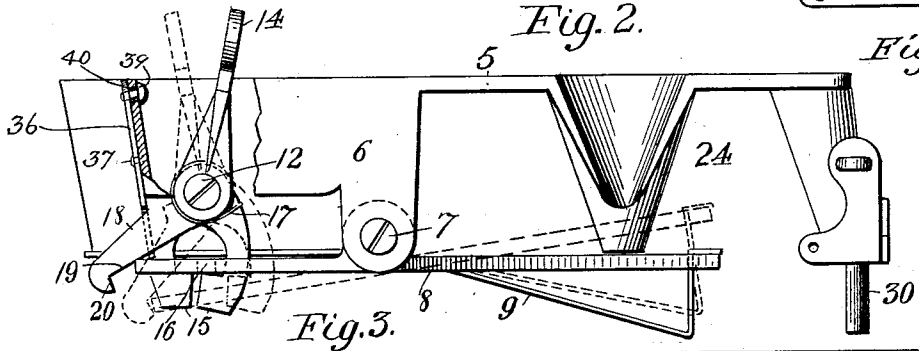


Fig. 3.

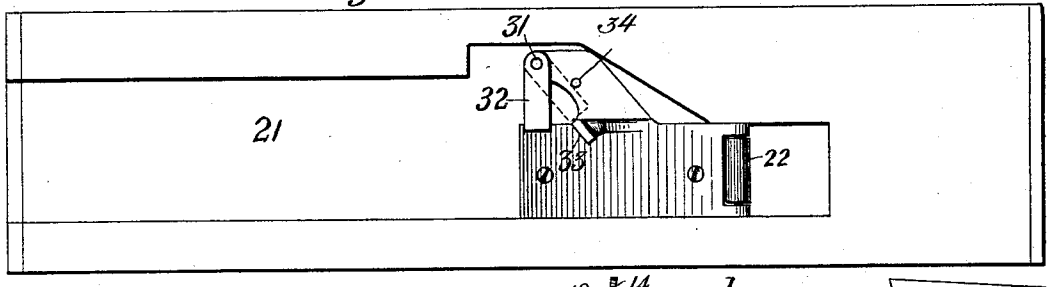


Fig. 4.

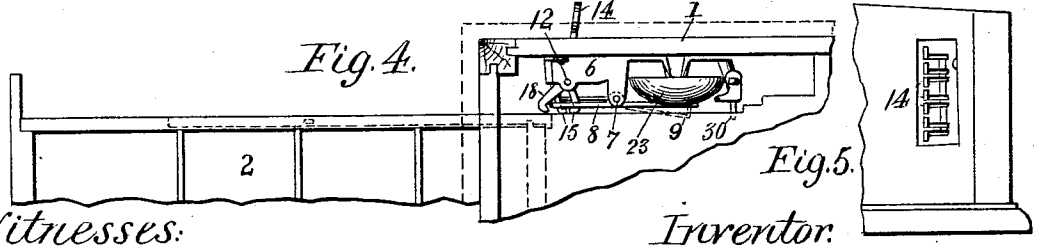


Fig. 5.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY M. WILLIAMS, OF BLOOMINGTON, ILLINOIS.

COMBINED TILL-ALARM AND LOCK.

SPECIFICATION forming part of Letters Patent No. 590,249, dated September 21, 1897.

Application filed April 22, 1896. Serial No. 588,595. (No model.)

To all whom it may concern:

Be it known that I, HARRY M. WILLIAMS, a citizen of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in a Combined Till-Alarm and Lock; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in combined locks and till-alarms, the object in view being to produce a simply-constructed lock and till-alarm; the same being adapted to permit of the opening of the till only by the operation of a certain combination of keys and to sound an alarm when so opened.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 is a transverse vertical sectional view of my lock and till-alarm, the till being removed. Fig. 2 is a partial plan view, the desk-lid being removed. Fig. 2ª is a detail view. Fig. 3 is a top plan view of the till-alarm and locking mechanism. Fig. 4 is a side elevation of a portion of the till, the view being taken at that side thereof that coacts with the alarm and locking mechanism. Fig. 5 is a detail hereinafter referred to.

Like numerals indicate like parts in all the figures of the drawings.

In practicing my invention I employ a desk or case 1, in which is located a till 2. The lid, which may form a desk, is of course provided with a suitable lock, the key to which is carried by the proprietor or other authorized person.

Arranged upon a suitable post or bracket 3, secured to the rear wall of the desk, is a curved spring-buffer 4, against which the rear wall of the till or drawer abuts when said till or drawer is closed, the spring yielding to compression and serving when the drawer is released to throw the same forward to a partially open position.

Through the instrumentality of my lock and alarm mechanism the till or drawer can only be unlocked and opened by the operation of a certain combination of key-levers known only to the authorized, and even when opened by such combination of levers an alarm will be sounded which will call attention to the opening of the drawer or till.

To the inner side of the desk or casing, opposite which the recording mechanism is located, there is bolted a casting 5. This casting is formed with upper and lower laterally-disposed flanges 6, in the rear edges of which is located a vertical shaft 7, upon which is fulcrumed a lever 8. This lever 8 is extended in rear of its fulcrum and depends and engages with the rear bent free end of a spring-catch 9, as indicated at 10. The front portion of the lever 8 is considerably wider than the rear end, and the same is provided with a vertical series of pairs of perforations 11, in rear of which, in the front corners of the flanges 6, there is located a vertical post 12.

Loosely fulcrumed on the post 12, opposite the openings 11, is a series of pairs of levers 13. Each of the levers extends through a slot formed in the wall of the desk or casing and terminates in a push button or key 14. The inner ends of each pair of levers terminate in hooks 15, that are oppositely disposed, and these levers are so located with relation to the pairs of openings 11 that those hooks 15 that are forwardly disposed will engage with the intermediate portion or vertical bar 16, that is produced between the pairs of openings through which the inner ends of the levers 13 project, and the rearwardly-disposed hooks of said levers 13 will not normally engage with the said bars 16. The levers are all yieldingly held by springs 17 in the positions thus described. Upon the shaft 12 a lever 18 is also pivotally mounted, the same terminating at its outer end in a button or key 14, as are the others. This lever, however, which I designate as the "liberating-lever," unlike the levers 13, has its inner end diagonally disposed, as at 19, so as to pass beyond the edge of the locking-lever 8, and finally terminates in an abrupt shoulder 20.

The till or drawer at that side adjacent to the mechanism just described has a recess 21 formed therein, and within the recess, on an inclined plate, is located a small vertical roller 22, which constitutes a locking-shoulder designed to engage with the spring-catch 9 when

the drawer or till is closed. In the latter instance it will be observed that said drawer can only be opened subsequent to a withdrawal of the spring-catch 9, and that such withdrawal of the catch can only be accomplished by imparting a pivotal movement to the locking-lever 8, and, furthermore, that the locking-lever 8 cannot be thus moved by the liberating-lever 18 until it is disengaged at its front end with the forwardly-disposed hooks 15 at the inner ends of the levers 13. It therefore is obvious that only those levers 14 which have forwardly-disposed hooks 15, together with the liberating-lever 18, must be operated in order to unlock the drawer, and when this is done those hooks 15 that engage with the vertical bars 16 of the openings of the locking-lever 8 are withdrawn from such engagement, and the liberating-lever 19, being also operated, serves to throw the forward end of the lever 8 inward and the rear end outward, thus causing a withdrawal of the spring-catch 9 from the front of the shoulder 22 of the till or drawer, all as indicated by dotted lines. It will be obvious that all of those levers 13 that are in engagement with the lever 8 must be operated in order to unlock said lever, and, furthermore, that even after such unlocking the liberating-lever must then be operated in order to tilt the locking-lever 8 and to disengage the catch 9 from the shoulder 22 of the till or drawer. If this accuracy in the depression of levers is not observed most strictly (which would not be the case with a person to which the combination was not known) or any of those levers which have rearwardly-disposed hooks 15 were operated, no unlocking of the till would take place, for in the first event mentioned all of those levers whose hooks engage the lever 8 would not be disconnected therefrom, so that the lever 8 could not be tilted, and in the second event those levers which have rearwardly-disposed hooks 15 that do not normally engage the locking-lever 8 would by such operation be caused to so engage.

I have also provided for the sounding of an alarm-bell 23 at each opening of the till or drawer, the said bell being located at one side of the locking mechanism described and preferably upon a post 24, projecting from and formed upon the casting 5. Upon a similar post 25, also projecting from the casting 5 and located beyond the post 24, I pivot, as at 26, one branch of a three-way bell-crank lever 27. The inner branch of the bell-crank lever supports a bell-hammer and its rod 28, the same being vertically disposed and terminating adjacent to the bell 23. The lower branch of the bell-crank 27 may have journaled therein a supporting-roller 29. Within the channel or recess 21, before mentioned, the inner branch 30 of the bell-crank extends when the drawer is in position, and back of the shoulder 22, with which the plate is provided, there is pivoted, as at 31, a gravity-latch 32. Within the recess and at one side of the gravity-latch 32 and in advance of the same on the plate there is located a cam 33, adjacent to which the lower end of the latch 32 terminates when the latch swings forward. A stop 34 limits the forward swing of the latch. The under side of this cam 33 is inclined and its upper side rounded, as shown, so that the cam has a general triangular shape. The bell-crank is normally drawn to the front by a coil-spring 35, secured to the bell-crank and to the base of the casting 5.

As the drawer or till is pushed in the pin 30 of the bell-crank lever passes into the channel or recess 21 and contacts with the gravity-latch 32, swinging the same to the position shown by dotted lines. As the pin passes beyond the latch and in front of the cam 33 said latch is released and falls to its vertical position. In any withdrawal of the drawer the pin travels over the upper side of the cam 33 and is suddenly released by the cam, when its spring 35 will cause it to resume its former position, and in so doing the hammer 28 of the bell will be brought somewhat violently against the same, and thus an alarm will be immediately sounded, indicating to those around that the drawer of the till has been opened.

From the foregoing description, in connection with the accompanying drawings, it will be apparent that I have provided a convenient and simple construction of a combined till-alarm and lock whereby unauthorized persons are prevented from successfully opening the till, and, furthermore, an alarm sounded regardless of the caution and adroitness employed in such opening.

I do not limit my invention to the precise details of construction herein shown and described, but hold that I may make such changes therein as experience may suggest and mechanical skill dictate without departing from the spirit of my invention or sacrificing any of its advantages. If desired, my till-alarm and lock may be employed in any suitable recording mechanism—as, for instance, as shown and described in a contemporaneously-pending application filed November 26, 1895, Serial No. 570,229.

To one side of the casting there is pivoted, as at 37, the secret safety-lever 36; the same being provided at its inner end with a hook 38, which, when the lever is elevated at said inner end, engages with and prevents the operation of the liberating-lever 18. A headed stud 39 is secured to the outer end of the lever 36, the shank of the stud moving in a curved slot 40, formed in the casting 5. The head of the stud 39 is so located as to be practically hidden from view, and by moving the lever through the medium of the stud the liberating-lever may be locked, so that a proprietor may secure the mechanism against possible operation by even those who are cognizant of the combination of keys. Of course this attachment may or may not be employed, as preferred.

Having described my invention, what I claim is—

1. The combination with the casing having openings in its side wall and the drawer having a locking-shoulder, of a lever fulcrumed at the inner side of the casing, a series of keys pivoted in rear of the lever and having their outer ends extending through the openings in casing and their inner ends provided with hook-shaped shoulders engaging the edge of the lever, springs for holding the keys in their locked position, a spring-latch connected to the lever and adapted to engage the shoulder at the side of the drawer, and a key bearing at its inner end against the lever and adapted to oscillate the same when disconnected from the hook-shaped shoulders of the keys, substantially as specified.

2. The combination with the desk or casing and the removable drawer having an engaging shoulder at one side, of a lever arranged at the inner side of the casing and at one side of its fulcrum having a plurality of pairs of openings, a vertical shaft in rear of said openings, a plurality of pairs of key-levers arranged on the shaft, the outer ends of said key-levers projecting through the casing and the inner ends thereof projecting through the openings in the lever and said inner ends of each pair of key-levers terminating in oppositely-disposed hooks, springs for pressing all of said levers in the same direction, a liberating key-lever arranged on the shaft and having its inner end located adjacent to one edge of the locking-lever and terminating in a shoulder, and a spring-catch 39 engaging the locking-lever, as at 40, substantially as specified.

3. The combination with the casing and sliding drawer, the latter having a channel at its outer side, the gravity-latch 32 pivoted as at 31, the cam 33 and the stop arranged as shown, of the alarm-bell 23, the bell-crank 27 pivoted at its lower end as at 56 to the post 25, the bell-hammer 28 extending from the bell-crank, the spring 35 for retracting said bell-crank and the pin 30 extending from the bell-crank in the path of the latch 32, substantially as specified.

4. The combination with the casing having openings in its side wall and the drawer having a locking-shoulder, of a lever fulcrumed at the inner side of the casing, a series of keys pivoted in rear of the lever and having their inner ends engaging the same, springs for holding the keys in their locked position, a liberating-lever adapted to oscillate the lever when disconnected from its keys, and means independent of the keys for locking said liberating-lever against movement, substantially as specified.

5. The combination with the casing having openings in its side wall, the sliding drawer having a shoulder, a casting secured to the casing and opposite the opening, a lever for engaging the shoulder, a series of keys pivoted in the casting and at their inner ends engaging the lever, a liberating-lever adapted to disengage the locking-lever with the keys when said liberating-lever is oscillated for the purpose, a safety-lever pivoted at one side of the casting and provided at one side with a hook for engaging the liberating-lever, and a headed stud at the outer end of the safety-lever moving in a slot in the casting, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY M. WILLIAMS.

Witnesses:
HENRY S. DOOLEY,
HENRY C. BISHOP.