F. LAVRYK.

COMBINED LOCK AND ALARM.

APPLICATION FILED SEPT. 14, 1917.

1,282,089.

Patented Oct. 22, 1918.

2 SHEETS—SHEET 1.

Fig. 2.

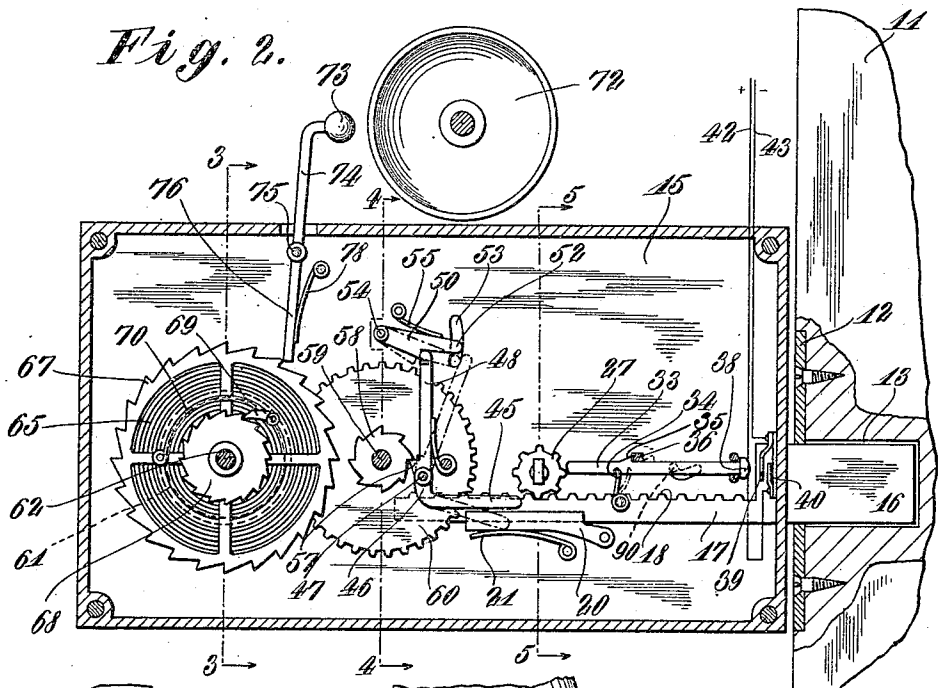
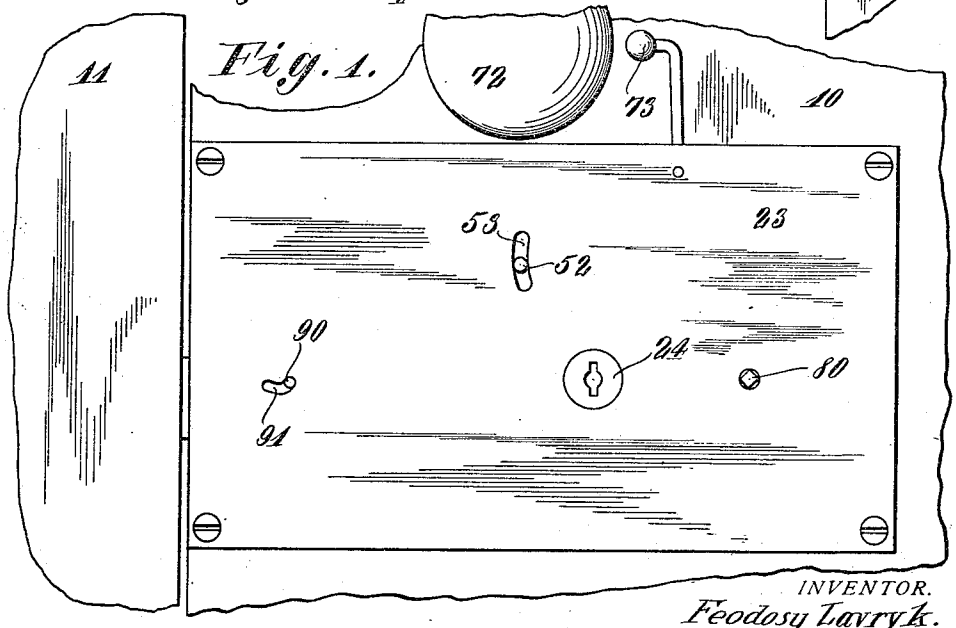


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

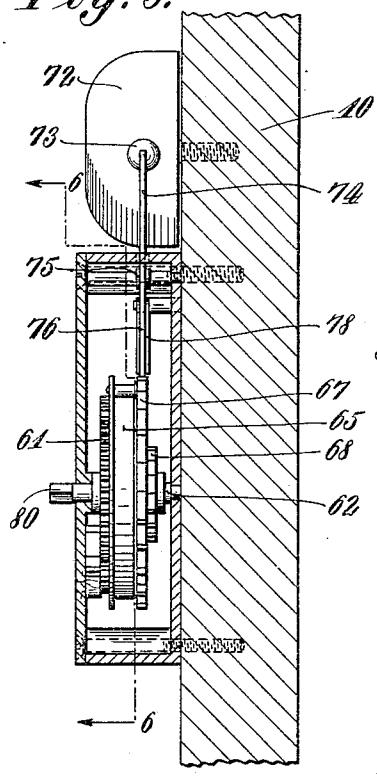


Fig. 4.

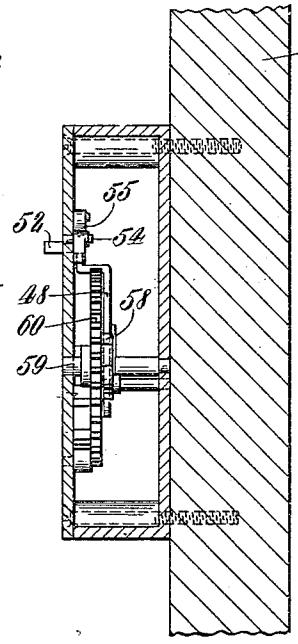


Fig. 5.

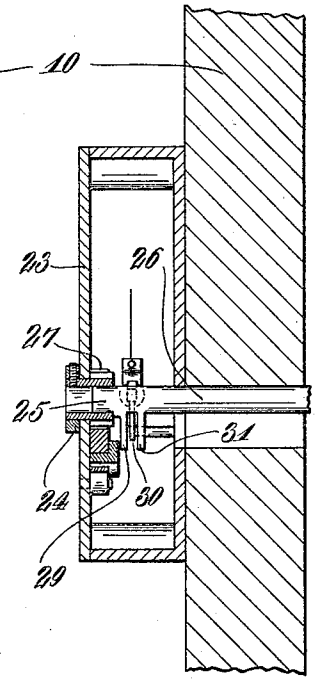
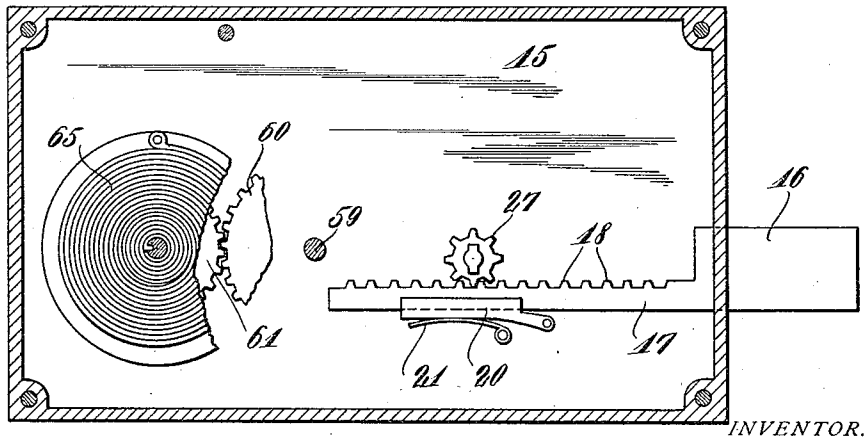


Fig. 6.



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UNITED STATES PATENT OFFICE.

FEODOSY LAVRYK, OF CHICAGO, ILLINOIS.

COMBINED LOCK AND ALARM.

1,282,089. Specification of Letters Patent. Patented Oct. 22, 1918.

Application filed September 14, 1917. Serial No. 191,348.

To all whom it may concern:

Be it known that I, FEODOSY LAVRYK, a citizen of Russia, resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Combined Locks and Alarms, of which the following is a specification.

This invention relates to improvements in locks, and particularly those which are adapted to make an audible signal when an attempt is made to manipulate the same by an unauthorized person.

The principal object of the invention is to provide a lock which may be operated by a proper key in the usual manner, and having combined therewith an alarm device by means of which announcement is given if attempts are made to negotiate the lock by means other than a proper key.

A further object is to provide means which will give an audible annunciation of unauthorized attempts at opening the lock, in the immediate vicinity, combined with means which will operate other signals at a distance therefrom.

These and other like objects are attained by the novel construction and combination of parts hereafter described and shown in the accompanying drawings, forming a material part of this disclosure, and in which—

Figure 1 is a side elevational view looking from the exterior of the lock.

Fig. 2 is another side elevational view looking from the interior of the lock.

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 2.

Fig. 4 is a similar transverse sectional view taken on line 4—4 of Fig. 2.

Fig. 5 is another transverse sectional view taken on line 5—5 of Fig. 2, and

Fig. 6 is a vertical sectional view taken on line 6—6 of Fig. 3.

In the drawings, the numeral 10 represents a door, and 11 a fragment of the jamb or door casing, in which is secured the keeper 12, leading to the bolt receiving recess 13.

A rectangular lock casing 15 is here shown in which is slidably engaged a bolt 16, having an inwardly extending stem 17, its upper surface being formed with rack teeth 18, and the stem supported in a pivoted guide 20, pressed normally upward by the spring 21.

Set in the plate or cover 23 of the lock is a revoluble bushing 24, through which the point 25, of the key 26, may enter, there being attached to the inner element of the bushing 24 a spur pinion 27 engageable with the teeth 18 of the bolt stem and by means of which it is operated longitudinally, close engagement between the teeth of the rack and pinion being maintained by the spring 21.

The wards 29 and 31 of the key extend at some distance outwardly from the shank 26 and have formed between them an opening or recess 30, normally alinable with the outer end of a sliding bar 33, pressed in the direction of the stem by the spring 34, and having on its side a projection 35, engageable with a fixed lug 36 secured in the lock casing, and which, upon being pushed forward by a key other than that properly formed, causes its outer end 38 to press together the parts 39 and 40, thereby placing in circuit the wires 42 and 43, which may lead from a battery to a signal bell (not shown) in an obvious manner.

The opening 30, between the wards of the key, when the same is properly inserted is also in register with the end 45, of a lever 46, pivoted on the pin 47 in the frame, the upper end 48 of the lever being so formed as to be engageable with a swinging detent 50, having an extending pin 52, engaging through a slot 53, formed in the cover of the lock, the detent being pivoted by the pin 54 and pressed normally downward by the flat spring 55, it being understood that the pin 52 extends through the slot to such a distance that it may be operated by the fingers when it is desired to reset the lever.

Formed in the lever 48, near the pivotal point 47, is a tooth 57, engageable in the ratchet 58 mounted on a spindle 69, passing through the lock casing, there being also secured to the spindle 59 a spur gear 60, meshing with a mating gear 61, secured on a spindle 62, rotatably mounted in the casing, on which is also secured a spring 65, the outer end of which is engaged with a ratchet 67, and which is held normally against rotation by means of another ratchet 68, engaged with which is a pawl 69, pressed downwardly by the spring 70.

Mounted upon the door adjacent to the lock casing, is a bell 72, contactable with which is a hammer 73, carried on a lever 74, pivoted on the pin 75, the lower end 76, of the lever being engageable with the teeth of the ratchet 67, and against which it is normally held by the flat spring 78, in such

manner that as each tooth of the ratchet 67 is moved past the end of the lever the hammer is caused to make contact with the bell, it being understood that the spindle 62 extends through the casing and is provided with a squared end 80 for a wrench or key by means of which the spring can be wound.

When a key of the proper shape is inserted through the escutcheon of the lock, and its end entered so that it will rotate the pinion 27, the bolt is moved in the ordinary manner and no signal is given. However, if a key of improper shape is entered, it makes contact with the end of the lever 45, pressing it downward and releasing the tooth 57 from engagement in the ratchet 58, the lever being held in that position by the detent 50, thereby permitting the spring to actuate the spindle 62, rotating the shaft 59 as well and causing the hammer to make a rapid and continuous contact with the surface of the bell, thereby announcing that an attempt has been made to tamper with the lock.

In addition the bar 33 is moved forward causing the electrical connections to be put in circuit, setting up an alarm which may be had in any desired point, it being possible to reset the bar 33 by manipulating the pin 90, which extends through an opening 91, which extends through an opening formed in the cover plate 23 of the lock.

The structure and operation of the device having been described, what I claim as new and desire to secure by Letters Patent, is.—

In an alarm lock, the combination with a lock casing, and a bell arranged adjacent thereto, of a bolt slidably in said lock, a stem formed with said bolt having rack teeth upon one of its edges, a pinion engageable with the teeth of said rack stem, said pinion having an opening receptive of a key, a ratchet revolubly mounted in said lock casing, a pivoted hammer for said bell actuatable by said ratchet, a spring actuated gear train for operating said ratchet, a lever extending outwardly in the path of the ward of the entered key, a detent formed with said lever engageable with said gear train and by means of which it is held against movement, said lever being operable by the insertion of the false key, and means for normally holding said lever out of engagement with said gear train.

In testimony whereof I have affixed my signature.

FRED LAVRYK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."