No. 837,051. PATENTED NOV. 27, 1906.

R. W. GATEWOOD.

TIME OPERATED KEYHOLE GUARD.

APPLICATION FILED MAY 22, 1906.

2 SHEETS—SHEET 1.

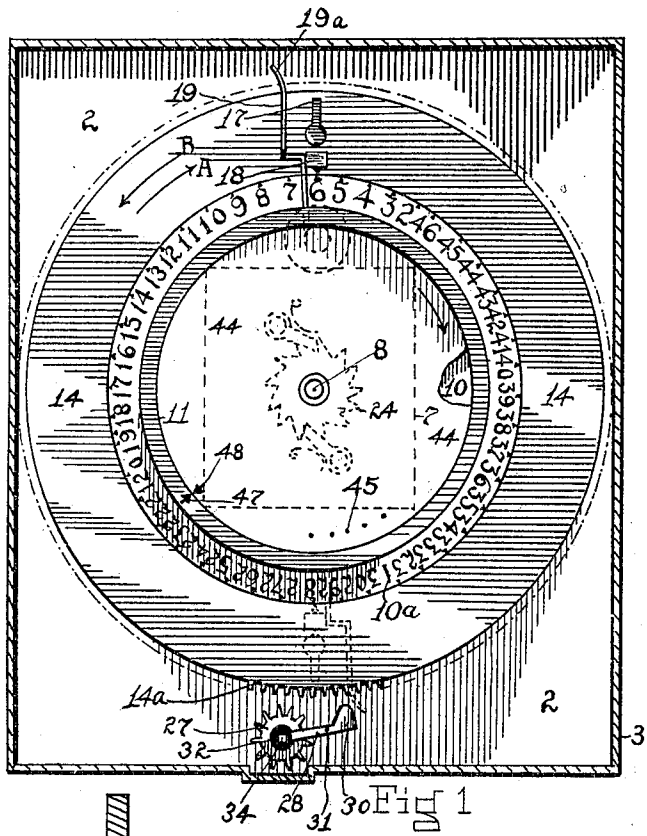


Fig 1

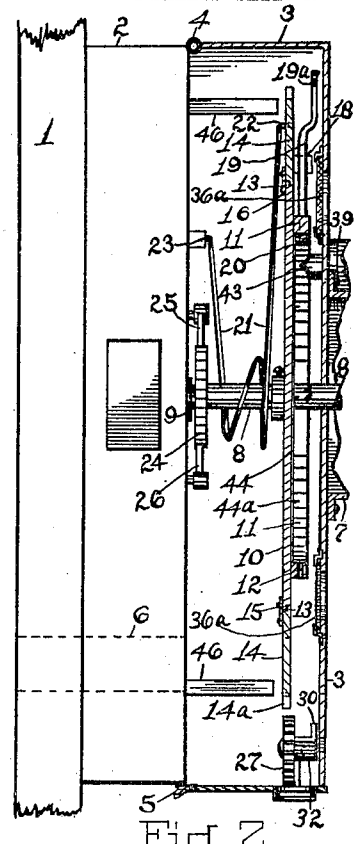


Fig 2

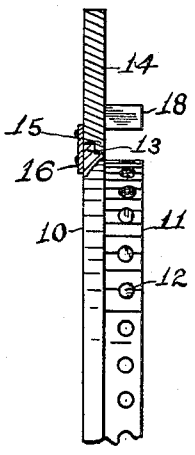


Fig 3

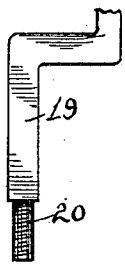


Fig 4

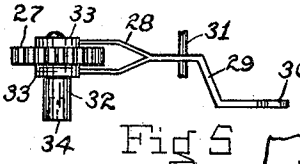


Fig 5

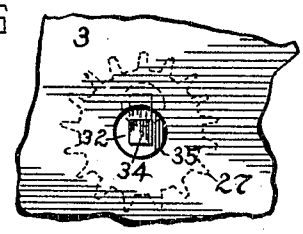


Fig 6

Ribourne W. Gatewood Inventor

Witnesses
George L. Bonney.
V. I. Burrow.

By Walter B. Burrow.
Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

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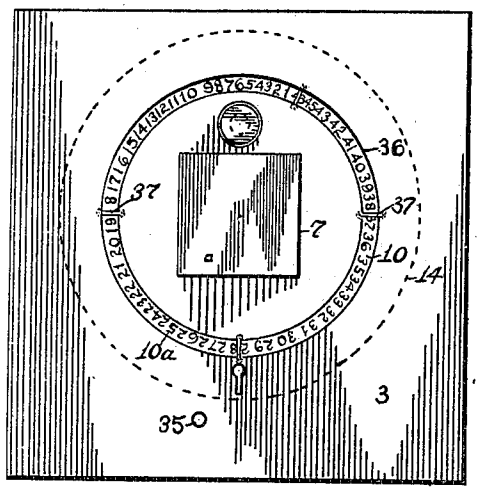


Fig 7

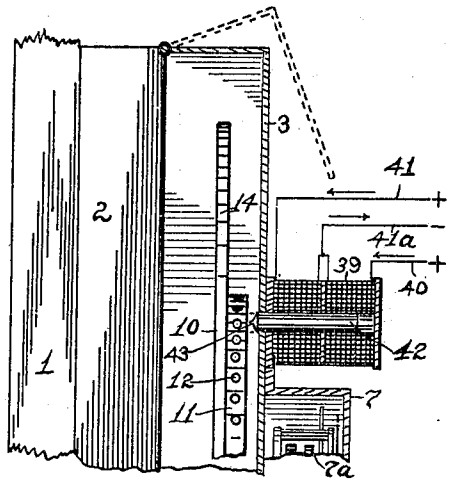


Fig 8

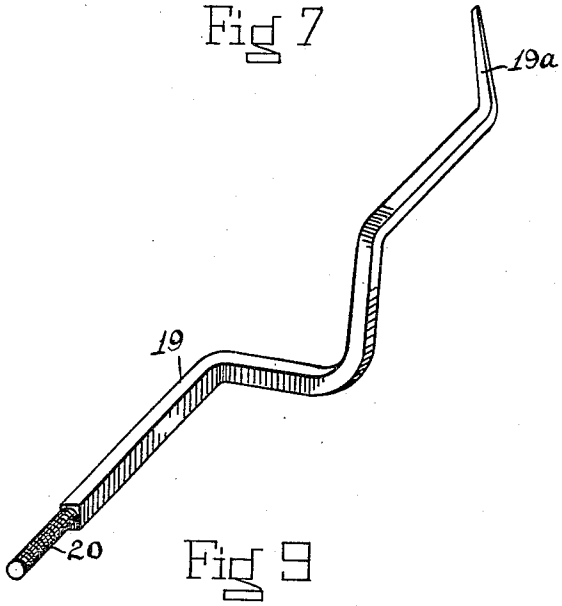


Fig 9

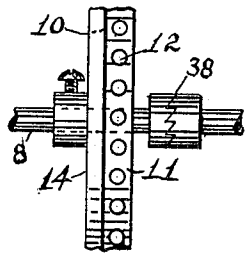


Fig 10

Witnesses
George L. Bonney.
V. I. Burrow.

Ribourne W. Gatewood Inventor

By Walter B. Burrow
Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

RIBOURNE W. GATEWOOD, OF NORFOLK, VIRGINIA.

TIME-OPERATED KEYHOLE-GUARD.

No. 837,051. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed May 22, 1906. Serial No. 318,147.

To all whom it may concern:

Be it known that I, RIBOURNE W. GATEWOOD, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Time-Operated Keyhole-Guards, of which the following is a specification.

My invention relates to time-operated keyhole-guards.

The object of the invention is to provide means whereby the device may be readily applied to the outside or casing of an ordinary lock, so that a key may not be inserted in the keyhole, and consequently throwing the bolt, except at a certain time previously set.

Further objects and advantages will be more fully set forth, and specifically pointed out in the claims, recourse being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front view of the hereinafter-described mechanism, showing the dial and its annulus or ring, the cover being removed to show the interior. Fig. 2 is a cross-sectional elevation of the same. Fig. 3 is a part edge view of the dial and ring. Fig. 4 is a part elevation of the stop or setting pin. Fig. 5 is a plan of the resetting-pinion and its rockable support. Fig. 6 is a fragmentary view of the dial-cover, showing an orifice for rotating the pinion by a suitable key. Fig. 7 is a front view of the cover inclosing the mechanism and showing the clockwork and solenoid thereon. Fig. 8 is a part cross-sectional elevation of the upper portion of the mechanism, mainly showing the punching-solenoid and core. Fig. 9 is a perspective view of the setting or stop pin; and Fig. 10 is a part edge view of the dial and ring and a portion of its shaft, showing the dental or crab coupling.

In the drawings like reference-numerals indicate similar parts in all the views.

1 is the door, to which is fixed the lock 2, which may be of any suitable construction, mainly that adapted for stores.

3 is a cover for the hereinafter-described mechanism, having its upper portion hinged, as at 4, so that it may be lifted to expose the working parts covered therewith.

5 is a snap tongue or latch to hold the cover firmly in place, as shown.

6 is the keyhole passing through the door, lock, and the casing, the latter orifice permitting the lock to be operated from the inside in the usual manner and as shown in Figs. 2 and 7.

7 is the clockwork casing or cover, containing the usual works 7^a of an eight-day lever-clock and is secured to the dial-cover 3, as shown.

The hour-hand shaft 8 of the clock mechanism extends within the cover 3 and its outer end supported on a collar or bearing 9 upon the lock-cover, as shown in Fig. 2.

Secured to the clock hour-hand shaft or spindle 8 is a dial 10, adapted to be rotated by the shaft, and is provided with a row of numerals 10^a, preferably forty-eight. Hence the clockwork carries the dial around once in forty-eight hours, more or less, in order to permit the dial to actuate certain devices to allow the lock-bolt to be in a position to be drawn, for example, on Monday morning after being set at eleven p. m. Saturday night and for any other future time.

11 is an annular bead or ring formed with or attached to the dial at one of its sides, the face or periphery of which is provided with threaded perforations 12 of the same number as the numerals 10^a, near the edge of the dial, but placed a little to the left of the numerals to offset the thickness of a lug which engages a pin in the perforations, as will be more fully described hereinafter.

The dial 10 is provided with a flange 13 around its outer circumference for engagement with a setting annulus or ring plate 14, having teeth 14^a, 15 being a similar flange on the ring forming a scarf-joint, and both the dial and the ring are prevented from coming apart by the small plates 16, thus permitting the ring to rotate on the edge of the dial. The setting-ring 14 is perforated, as at 17, Fig. 1, to form a keyhole which is adapted to be placed in alinement with similar keyholes 6, Fig. 2, either by the clockwork at a predetermined time or by hand.

18 is a projection or lug on the ring 14 and is placed above the keyhole when it is in line with the keyhole 6 and is for the purpose of causing the ring to be carried around with the dial by means of a stop or setting pin 19 when engaged with the lug, 19^a being a bent end of the pin for throwing a pinion in mesh

with the teeth 14ª on the ring, which will be more fully described hereinafter.

20, Figs. 4 and 9, is a screwed portion of the pin 19 for securing it into threaded perforations 12, placed around the circumference of the annulus or circular plate 11.

21 is a coiled spring encircling the hour-hand spindle 8, one end of which is secured to the ring 14 at 22, Fig. 2, and the other to the lock 2 or other fixed point, as at 23. The object of the spring is to cause the ring 14 to be rotated counter-clockwise when the lock-key is withdrawn in setting the mechanism.

24 is a ratchet-wheel fixed to the clock-spindle 8, and 25 and 26 are pawls placed upon the lock-casing or other stationary point and are for the purpose of preventing a jar or strain upon the clockworks when the ring is released by the key, as will be pointed out hereinafter.

27 is a resetting-pinion supported on a yoked arm 28, having an offset portion 29 and a trip-lug 30, Figs. 1 and 5, and also provided with a shaft 31, so that the pinion may be raised and lowered by the oscillation of the yoke in such a manner as to throw the pinion in and out of mesh with the teeth 14ª of the ring 14 by means of the setting or stop pin arm 19ª when it is carried down in striking alinement with the trip-lug 30. The pinion is fixed to a shaft 32, which is supported in the ring-bearings 33, and is provided with a square or other polygonal hole or socket 34 for a key when the ring 14 is to be rotated by hand.

35 is a perforation in the cover 3 and is for the purpose of placing a key with a square-ended shank into the corresponding hole 34 in the shaft 32 when the pinion 27 has been placed in mesh with the teeth of the ring 14; but at other times the square hole or socket 34 and the perforation 35 are out of alinement, which prevents the key from being inserted.

36 is a circular slot in the cover 3, over which are placed glass plates 36ª, Fig. 2, in order to exclude dust and render the numerals on the dial 10 visible for setting the device. The disk formed by the slot 36 is secured to the main portion of the cover 3 by the bars o straps 37, Fig. 7.

38, Figs. 2 and 10, is a dental coupling or clutch on the outside of the dial 10 for permitting the cover 3, having the clockwork thereon, to be raised for reaching the working parts, which is done by lifting the cover 3 upon its hinge 4, Fig. 2, in the manner shown by dotted lines in Fig. 8.

Before proceeding to the detector or punching part of the mechanism I will describe the operation of the parts pertinent to the locking and unlocking features of the invention.

As described, the invention is strictly an attachment for any style of store-lock which is operated by a key. Suppose it is required to set the mechanism so that a key may be inserted to unlock the door at six p. m. Twenty-four hours from six p. m. the previous evening, as shown by the numerals in Fig. 1, the set-pin 19 is placed in the orifice to the left of the numeral 6 (the starting-point) so that it touches the lug 18 below the keyhole, as shown by full lines. After this is done and the door is ready to be locked the ring 14 is turned around by hand in the direction of the arrow A until the keyhole 17 is in line with that of the door and lock. Then the key is inserted and the bolt thrown, and upon withdrawing the key the ring instantly returns in the direction of the arrow B, Fig. 1, by the action of the spring 21, causing the lug 18 to strike the pin 19 on the dial, which is the point set for future time. Should the person whose duty is to unlock the door at the proper time be delayed, the keyhole in the ring 14 will have passed the lock and door keyhole, the pinion 27 is thrown into engagement with the teeth of the ring 14 by the bent end of the pin 19 pressing down the trip-lug 30, Fig. 1, which raises the pinion into mesh with the toothed portion of the ring. After a short time, depending on the length of the trip-lug 30, the pinion again falls from contact with the ring. When the pinion falls away from the ring, the square orifice in the pinion-shaft is out of line with the perforation 35. Hence the ring cannot be rotated.

39, Figs. 2 and 8, is a solenoid composed of two oppositely-acting coils, 40 and 41 being the feeder-wires, while that at 41ª is the common return for the two coils, as shown. The two coils are provided with a movable core 42, having a point 43 for punching marks, as at 45, Fig. 1, upon a paper disk 44, secured by points 44ª, Fig. 2, upon the inside of the annulus or bead 11.

The object of the above-described mechanism is for the purpose of allowing a watchman to register a mark upon the paper disk when a contact is made by a switch or push-button outside of the door, so that the next morning a record of his visits and the time he was in the vicinity of the door may be ascertained in the manner similar to the ordinary watchman's clock.

46, Fig. 2, represents lugs for the purpose of preventing any abnormal lateral movement of the dial by the key or solenoid, also as contacts for forming an electric circuit when the dial is moved inward; but I do not show such.

47 and 48 are arrow-heads on the ring 11 and the paper record-disk 44, respectively, and are for the purpose of registering a certain point on the disk and the ring, if necessary.

It will be seen that the invention is very cheap and simple and not liable to get out of order and particularly adapted to store and warehouse doors, to which it may be applied without making any change in the lock or door.

As shown, the clock when carrying the ring and the dial around will wind the spring or stop the clock, the spring 21 being only used in setting the mechanism, and to obviate this I use a suitable device, though for the sake of simplicity I do not show it, as it is a matter of construction.

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

1. An apparatus of the class described and in combination with a lock and its keyhole, a circular dial-plate, a plate-annulus mounted on the edge of said dial-plate, a keyhole in the annulus adapted to be placed in alinement with said keyhole in the lock, and means for rotating said plate-annulus by the said dial-plate.

2. An apparatus of the class described and in combination with a lock and its keyhole, of a ratchet-controlled dial-plate, a perforated spring-controlled ring mounted thereon, means for rotating said ring in a clockwise direction by said dial to place said keyhole and perforation in line with each other, and means for rotating said ring in a counterclockwise direction by said spring.

3. An apparatus of the class described and in combination with a lock and its keyhole, a clockwork-actuated rotary disk or dial, a ring mounted on the edge of said disk, and means for normally closing the keyhole by the said ring.

4. An apparatus of the class described and in combination with a lock and its keyhole, a rotary ratchet-controlled disk or dial, a spring-controlled ring or plate-annulus mounted on the edge thereof, a perforation in said ring, means for normally closing the keyhole in the lock by said ring, means for causing said perforation to be in alinement with the keyhole at a certain period, and means for varying said period.

5. An apparatus of the class described and in combination with a lock and its keyhole, a rotary disk or dial, a plate-annulus rotatorily mounted thereon, a perforation or keyhole in said ring, means for normally closing said keyhole in the lock by the annulus, and automatic means for placing said keyholes in alinement.

6. An apparatus of the class described comprising a dial, an annulus mounted on the edge of the dial, a lug on the annulus, an adjustable stop or setting pin carried by said dial, and spring means for placing said pin in contact with the lug.

7. An apparatus of the class described comprising a clockwork-actuated dial, a ring on one side of the dial, a circular row of numbers on said dial, a series of holes on the circumference of the ring, a pin having a bent end in said holes, a ring rotatively mounted on the periphery of said dial, a lug on the ring, and means for rotating said ring by engaging the lug.

8. An apparatus of the class described comprising a clockwork-rotated dial, an annulus or circular bead on said dial, a series of holes arranged around the periphery of the bead, a series of numerals on said dial corresponding to the number of said holes, an angular stop and trip pin for insertion into any of the holes, a toothed annulus mounted on said dial, a rotatively-mounted pinion adapted to be placed in mesh with said toothed annulus by said trip or stop pin, and means for placing the pinion in mesh with the annulus independent of said pin.

9. An apparatus of the class described comprising a dial, a spring-pressed toothed annulus rotatively mounted thereon, spring means for rotating the annulus in a counterclockwise direction, clockwork means for driving the annulus in an opposite direction, and a rotatively-mounted pinion adapted to be put in mesh with the toothed annulus by said dial.

10. An apparatus of the class described comprising a dial having a circular bead on one of its sides, numerals on the dial, a toothed plate-annulus mounted on the edge of said dial, a lug on said plate-annulus, a stop-pin adapted to be placed at any point on the annulus, spring means for rotating said toothed annulus by contact with said lug for setting the same at a given point, and a rotatively-mounted pinion adapted to be placed in mesh with the toothed annulus by said stop-pin.

11. In combination with a lock and its keyhole, a hinged casing or cover for said lock, a clock-rotated dial, a toothed annulus rotatively mounted on the dial, a keyhole in the annulus adapted to be placed in alinement with the keyhole in the lock, a pinion, a shaft for said pinion having a key aperture or socket therein, a perforation in the casing or cover, and means for bringing said socket opposite said aperture when said keyholes are unalined.

12. In combination with a lock and its keyhole, a casing or cover hinged to said lock and provided with an annular perforation, a dial-plate, a shaft for mounting the dial, clockwork connection to said shaft, separable clutch mechanism between the clockwork and the dial, a toothed ring having a keyhole therein and mounted for rotation on said dial, means for placing said keyholes in aline-

ment with each other, a rotatively-mounted pinion, automatic means for placing said pinion in mesh with the ring when said keyholes have passed each other, and means for rotating said ring in an opposite direction to again bring the keyholes in alinement independent of said automatic means.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

RIBOURNE W. GATEWOOD.

Witnesses:
E. M. GATEWOOD,
E. P. GOODING.