

No. 662,657.

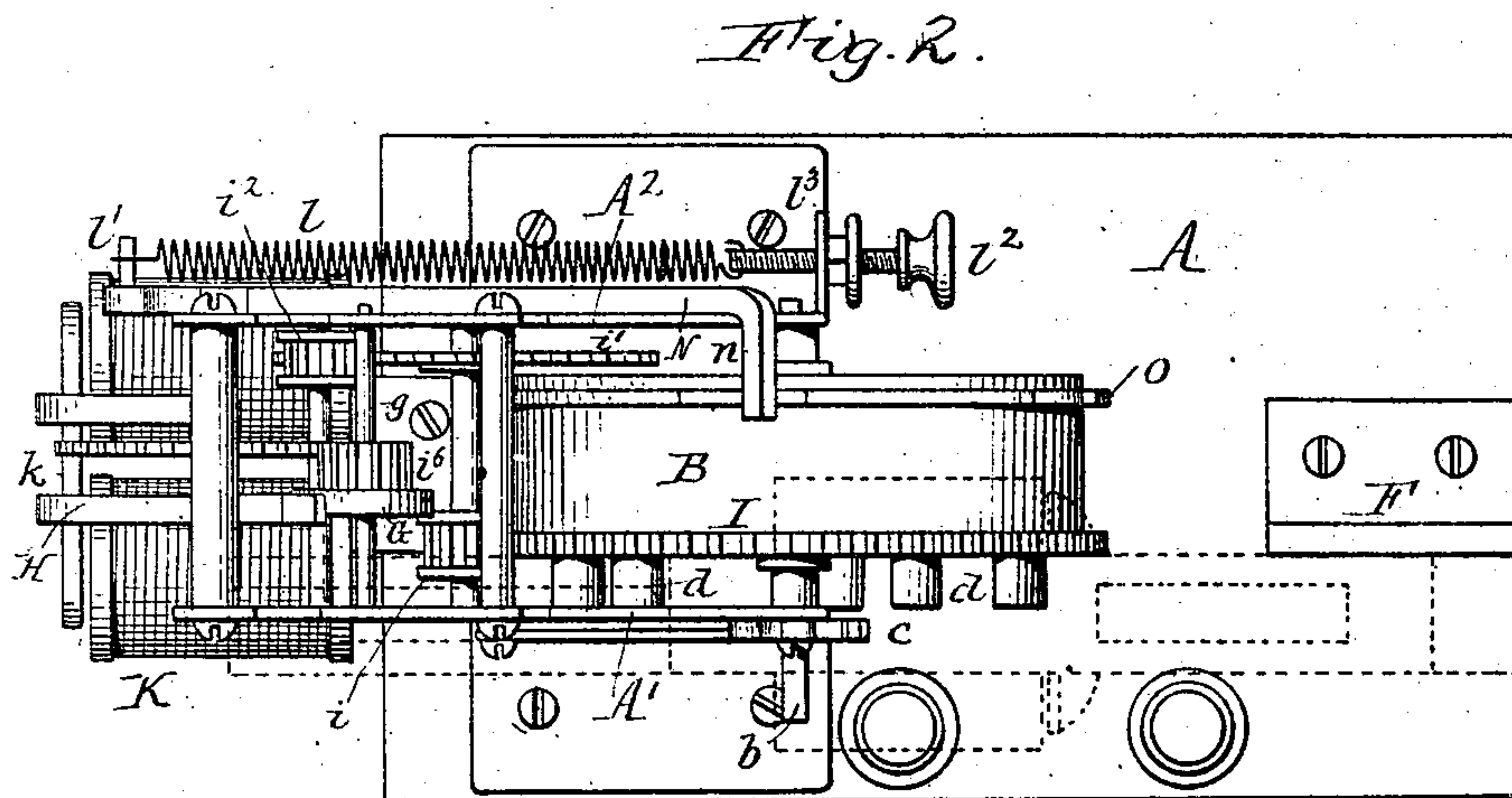
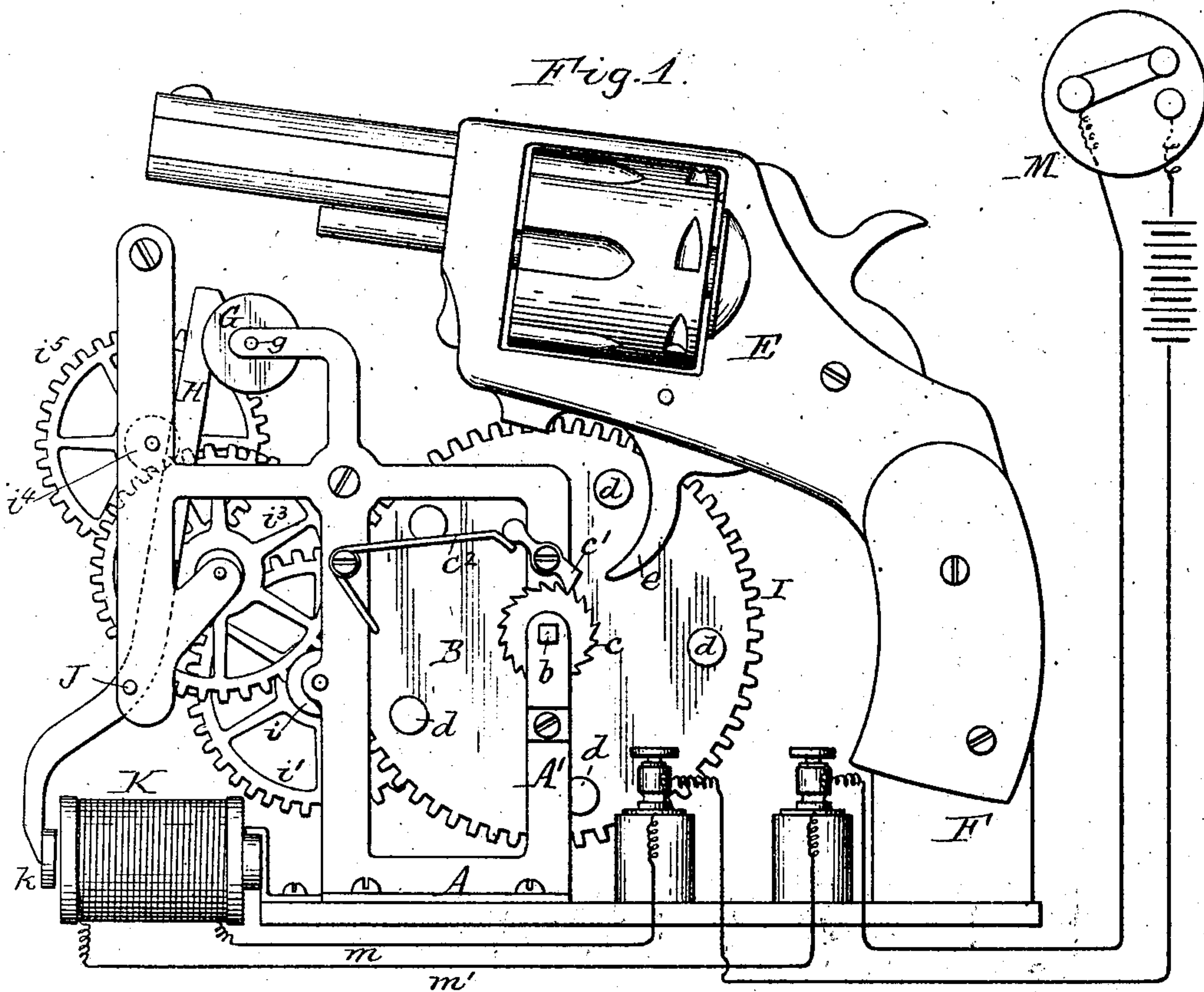
Patented Nov. 27, 1900.

H. ROHRDANTZ.
ELECTRIC BURGLAR ALARM.

(Application filed Apr. 14, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
E. A. Volk.
Henry L. Deck.

Henry Rohrdantz Inventor
By Wilhelm Bonnet
Attorneys.

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2 Sheets—Sheet 2.

Fig. 3.

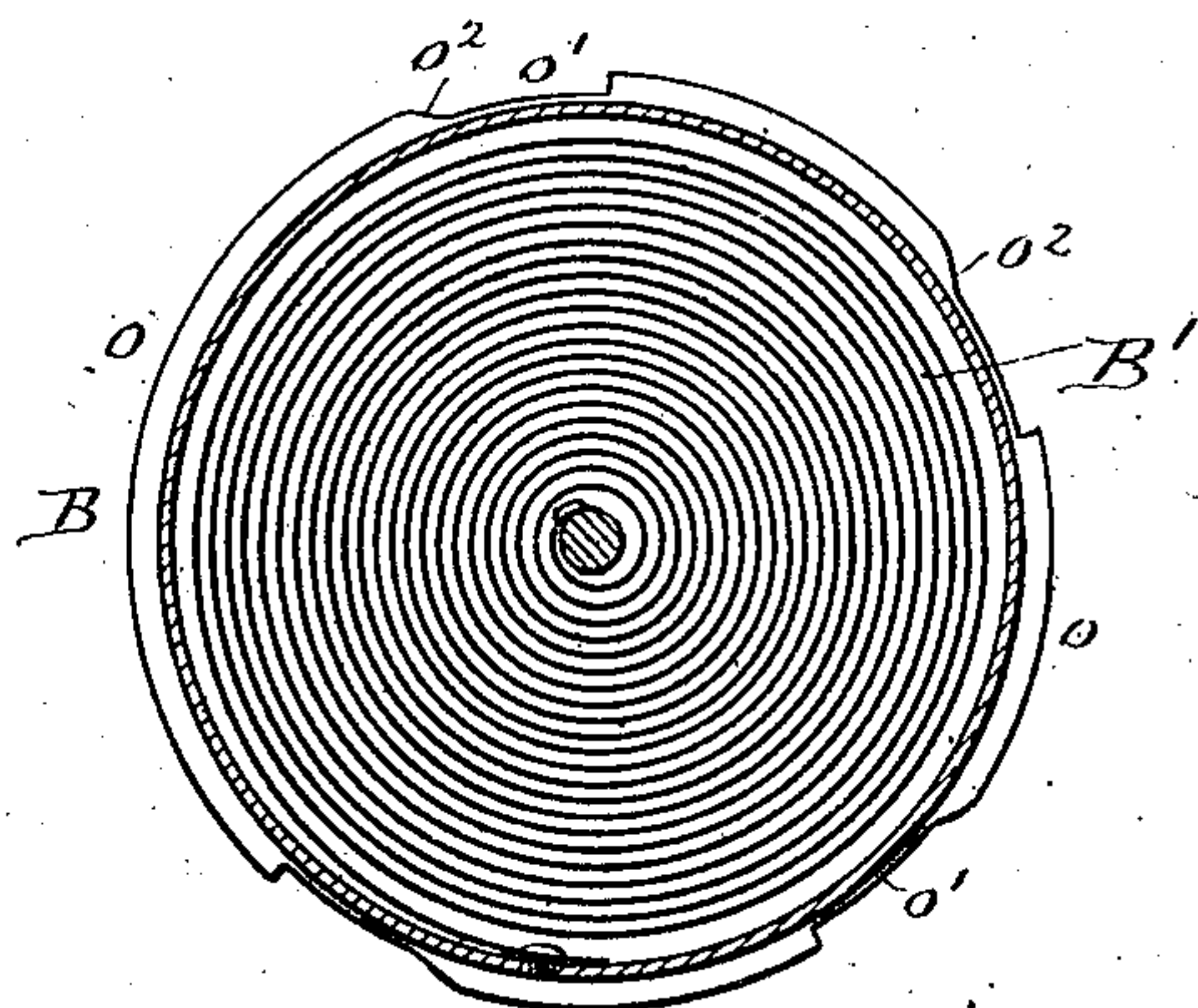
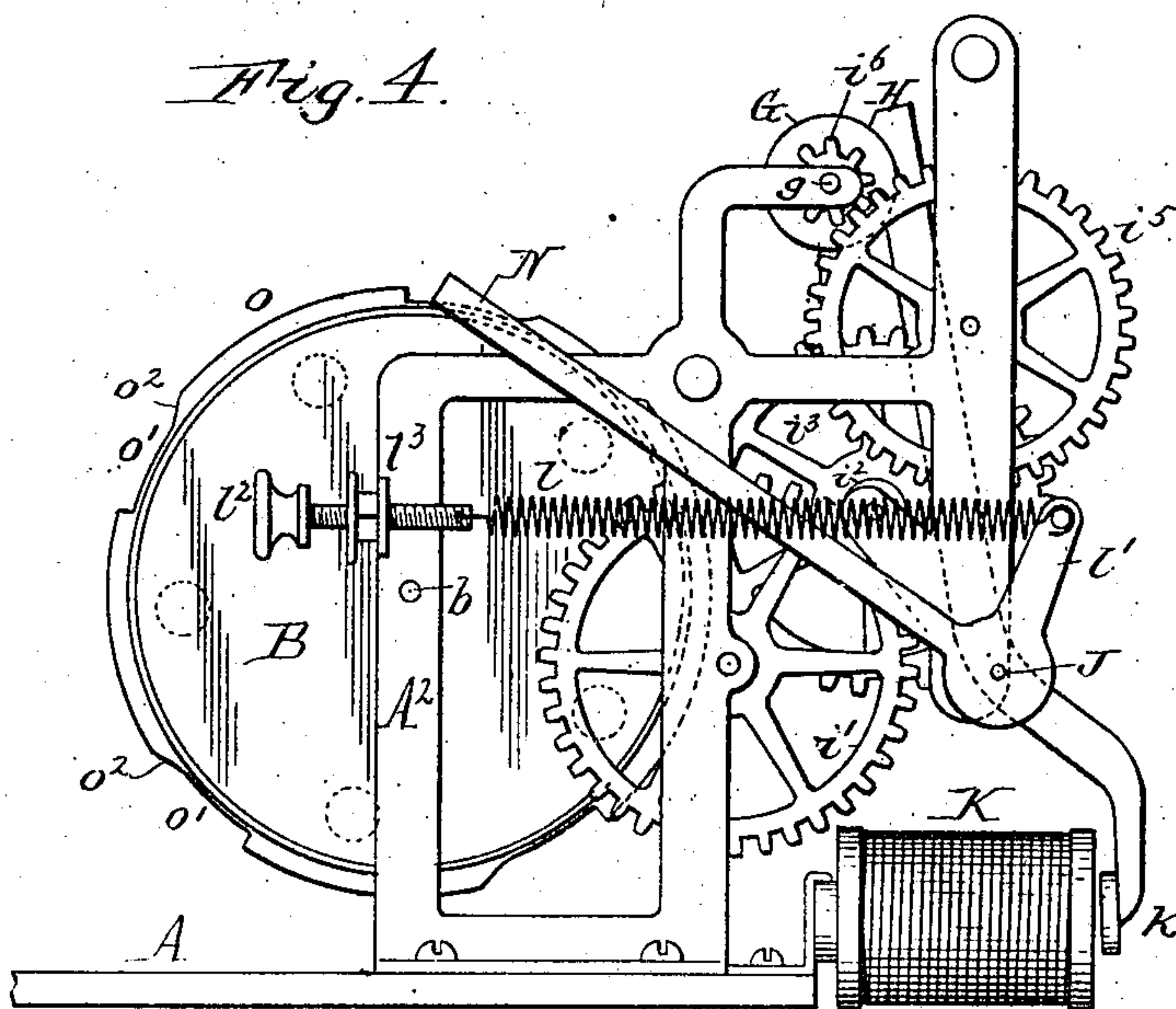


Fig. 4.



Witnesses:

C. A. Lotk.

Henry L. Deck.

Henry Rohrdantz, Inventor.

By Wilhelm Fournet.

Attorneys.

UNITED STATES PATENT OFFICE.

HENRY ROHRDANTZ, OF BUFFALO, NEW YORK.

ELECTRIC BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 662,657, dated November 27, 1900.

Application filed April 14, 1900. Serial No. 12,806. (No model.)

To all whom it may concern:

Be it known that I, HENRY ROHRDANTZ, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Electric Burglar-Alarms, of which the following is a specification.

This invention relates to an electromechanically-operated burglar-alarm in which a detonating device, such as a revolver, is employed for producing the alarm.

The object of this invention is to provide a simple, durable, and inexpensive alarm of this kind which can be actuated repeatedly and at different intervals, if desired, without the necessity of resetting the device after each alarm or rewinding the motor which actuates the detonating device and in which the stop device of the motor can be released with comparatively little power.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of my improved burglar-alarm. Fig. 2 is a top plan view thereof, the revolver being shown by dotted lines. Fig. 3 is a detached vertical section of the motor-drum and its spring. Fig. 4 is a fragmentary side elevation of the alarm viewed from the side opposite that shown in Fig. 1, the revolver being omitted.

Like letters of reference refer to like parts in the several figures.

A is the base of the apparatus, and A' A² are two upright parallel frames or standards rising from the base and arranged lengthwise thereof.

B is an upright rotary drum or spring-motor mounted loosely on a transverse shaft or axle b, which turns in openings or bearings formed in the standards A' A².

B' is the spring of the motor-drum, arranged within the latter and secured at its outer end to the drum and at its inner end to the drum-shaft.

c is a ratchet-wheel secured to the drum-shaft, and c' a detent-pawl which is held in engagement with said wheel by a spring c². One end of the drum-shaft is square and adapted to receive a key for turning it. The rotary motor-drum is provided on one side with an annular row of projecting pins or tappets d, which are adapted to successively trip or actuate the trigger e of a self-cocking

revolver E or similar detonating device which is adapted to be loaded with blank cartridges. The revolver is rigidly mounted on a standard F in such a position that its trigger stands in the path of the tappets d of the motor-drum, as shown in Fig. 1.

The rotation of the motor-drum is controlled by a stop device, which consists, preferably, of a friction or brake wheel G and a brake-lever H, which is adapted to bear against the periphery of said wheel. This brake-wheel is secured to a transverse shaft g, which is journaled in the standards A' A², and the wheel is connected with the motor-drum by a suitable train of gear-wheels and pinions i i', which are so proportioned as to give the brake-lever H a favorable leverage over the motor-drum and enable the latter to be held against turning by applying a comparatively small force or pressure to said lever. The initial pinion i of the gear-train meshes with a gear-rim I of the motor-drum, while the final pinion i' of the train is mounted on the shaft of the brake-wheel G. The brake-lever H is secured to a transverse rock-shaft J, journaled in the standards A' A², and its lower arm carries the armature k of an electromagnet K, so that when this armature is attracted by the energizing of the magnet the upper arm of the brake-lever is moved out of contact with the brake-wheel G, thereby releasing the motor-drum. The brake-lever is normally held against the brake-wheel by a spring l, which is connected at one end to an arm l' of the rock-shaft J and at its other end to an adjusting-screw l², whereby the tension of the spring can be properly regulated. This adjusting-screw is arranged in a screw-threaded opening formed in an ear l³, which projects from the adjacent standard A². The electromagnet K is included in a suitable electric circuit, the terminals m m' of which are adapted to be connected by a suitable make-and-break device, such as a switch-lever M, when it is desired to operate the burglar-alarm.

In order to cause the motor-drum to turn for a greater or less period after the magnet-circuit has been broken, a supplemental retracting device is provided for holding the brake-lever H out of engagement with the brake-wheel G after the armature has ceased

to perform that function. This retracting device consists of an arm N, secured to the rock-shaft J and provided at its free upper end with an inwardly-extending lip *n*, which
 5 is adapted to ride on an annular flange *o*, arranged on the periphery of the motor-drum. This flange is provided at intervals with notches or recesses *o'*, which receive the lip of the retracting arm N and which are of such
 10 a depth that when said lip rests in one of the notches the brake-lever is permitted to swing inward sufficiently to bear against the brake-wheel. The rear ends of these notches are beveled so as to form cams *o''*, which pass un-
 15 der the lip of the retracting arm N as the drum rotates, thereby raising the arm to the edge of the flange *o*, on which latter it rides until the next notch of the flange arrives op-
 20 posite said lip, when the arm is swung inwardly into the notch by the action of the spring *l*. The retracting arm is thus held in its elevated position by the flange *o* during
 25 the time that the drum turns a distance corresponding to the interval between two successive notches of the flange, and the retracting arm in turn holds the brake-lever out of contact with the brake-wheel during the same time.

My improved burglar-alarm is designed to
 30 be used in connection with an electric call-bell arranged in a circuit which is normally open, but is closed by suitable make-and-break devices arranged on the adjoining portions of the window frames and sashes or the doors
 35 and jambs of the house, so that as soon as a sash or a door is opened without authority the call-bell circuit is closed and the alarm given to the occupants of the house. This call-bell circuit and its make-and-break devices form
 40 no part of my invention, and as the same are well known they are not shown in the drawings.

One of the switches or other make-and-break devices M is designed to be located in each
 45 bedroom of the house, and these switches are normally open, as shown in Fig. 1. In the normal position of the parts the retracting arm N rests in one of the notches *o'* of the drum-flange *o*, thus allowing the spring *l* to
 50 hold the brake-lever H against the brake-wheel and holding the motor-drum against turning under the action of its spring. When the call-bell referred to gives an alarm, indicating that a door or window has been
 55 opened, one of the occupants closes the nearest switch M, thus closing the circuit containing the magnet K. The attracted armature of the magnet swings the brake-lever H out of contact with the brake-wheel G, thereby re-
 60 leasing the motor-drum and allowing it to turn. The tappet *d* of the drum immediately in front of the trigger of the revolver E now trips the trigger, thus discharging one of the blank cartridges and giving a loud report,
 65 which is calculated to frighten the burglar away. The rotation of the drum causes the retracting arm N to be raised and ride on

the edge of the flange *o*, as hereinbefore described, thereby holding the brake-lever out of contact with the brake-wheel until the next
 70 notch of the flange arrives opposite the lip of the retracting lever, when the latter is moved into said notch, allowing the spring *l* to draw the brake-lever against the brake-wheel and stopping the motor-drum. By this construc-
 75 tion a sufficient rotation or travel of the motor-drum is insured to cause one of the tappets *d* to fire the revolver upon operating the alarm. Should there be reason to believe that the first
 80 shot has not had the desired effect, the switch M may be again closed for firing one or more additional shots.

If desired, some of the notches of the flange *o* may be arranged at such long intervals that
 85 the motor-drum is permitted to turn far enough to cause two or more of its tappets to trip the trigger before being stopped, thus causing a corresponding number of shots to be fired for one actuation of the alarm device.

By this construction the alarm may be re-
 90 peated until the cartridges are exhausted without requiring the motor to be rewound for each alarm or necessitating the resetting of the alarm devices, it being only necessary to rewind the motor when its spring becomes
 95 too weak to trip the trigger of the revolver and to reload the revolver.

In order to prevent the release of the motor-drum in case the armature *k* should be touched
 100 accidentally, the notches of the flange *o* are made comparatively long, so that one or two quick vibrations of the armature will not allow the motor-drum to turn a sufficient dis-
 105 tance to raise the retracting lever out of a notch of said flange.

In my improved alarm the revolver is op-
 110 erated directly from the spring-barrel B, thus utilizing the power of the motor to the best advantage and permitting the use of a correspondingly smaller and less powerful motor-
 115 spring. As the motor-drum is normally held against turning by a brake-lever and a friction-wheel, which latter is geared to have a favorable leverage over the motor-drum, comparatively little power is required to prevent
 120 rotation of the drum, and the power required to release the brake-lever is therefore correspondingly reduced. This frictional stop device also has the important advantage of per-
 125 mitting a comparatively rapid rotation of the motor for producing a prompt alarm and of allowing an abrupt stoppage of the motor without causing breakage of the teeth of the gear-train or other parts, which is liable to occur when the motor is suddenly arrested by
 130 a positive stop device.

I claim as my invention—

1. In a burglar-alarm, the combination with a rotary motor-drum having one or more tap-
 135 pets, and an alarm device having a trigger or actuating member arranged in the path of said tappets, of an electric circuit containing a make-and-break device and an electromag-
 140 net, a friction-wheel connected with said mo-

tor-drum by intermediate gearing, a brake-lever bearing against said friction-wheel and connected with the armature of said electromagnet, means for yieldingly holding said brake-lever against said friction-wheel, and a retracting device for said lever which is supplemental to said armature and which is operated from said motor-drum, substantially as set forth.

10 2. In a burglar-alarm, the combination with an alarm device having a trigger or actuating member, of a rotary motor-drum having a notched annular flange and one or more tappets arranged to trip said trigger, an electric
15 circuit containing a make-and-break device and an electromagnet, a friction-wheel geared with said motor-drum, a brake-lever bearing against said friction-wheel and connected with the armature of said electromagnet, a
20 retracting arm connected with said lever and bearing against said notched flange, and means for yieldingly holding said brake-lever against said friction-wheel and said retracting arm against said notched flange, substan-
25 tially as set forth.

3. In a burglar-alarm, the combination with an alarm device having a trigger or actuating member, of a motor-drum having a notched annular flange and one or more tappets arranged to trip said trigger, an electric circuit 30 containing a make-and-break device and an electromagnet, a friction-wheel geared with said motor-drum, a rock-shaft, a brake-lever mounted on said rock-shaft and bearing against said friction-wheel and carrying the
35 armature of said electromagnet, a retracting arm mounted on said rock-shaft and bearing against the notched flange of the motor-drum, and a spring connected with an arm of said rock-shaft and tending to hold said brake-
40 lever against said friction-wheel and said retracting arm against said notched flange, substantially as set forth.

Witness my hand this 9th day of April, 1900.

HENRY ROHRDANTZ.

Witnesses:

JNO. J. BONNER,
CYESTA HORNBECK.