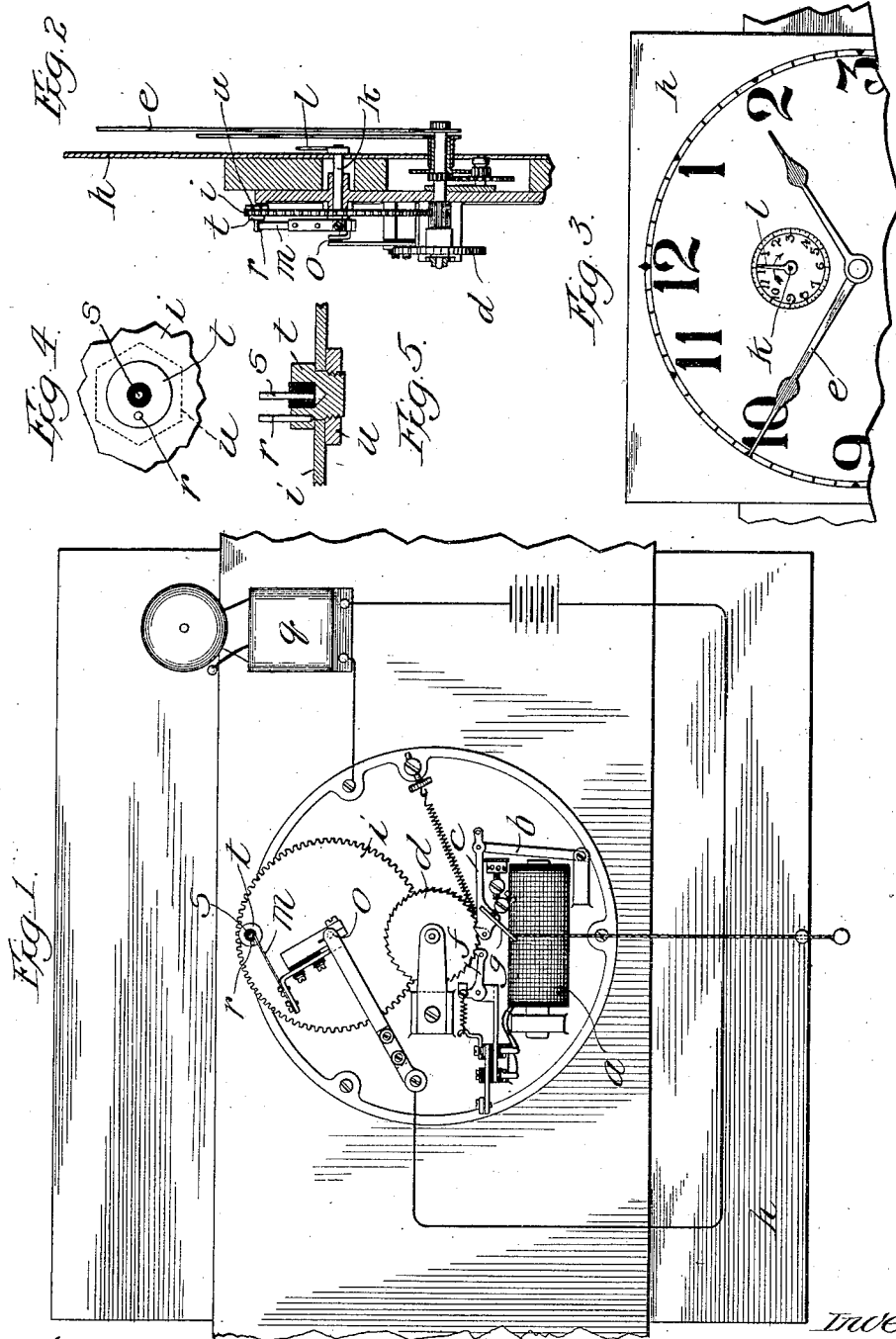


E. E. YAXLEY.
TIMING MECHANISM.
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1,019,113.

Patented Mar. 5, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

ERNEST E. YAXLEY, OF CHICAGO, ILLINOIS.

TIMING MECHANISM.

1,019,113.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed June 29, 1910. Serial No. 569,476.

To all whom it may concern:

Be it known that I, ERNEST E. YAXLEY, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Timing Mechanism, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to timing devices and has for one of its objects the provision of improved apparatus for governing alarm or other circuits that may be controlled thereby.

My invention has for another object the provision of means whereby a pawl which is coöperatively related with a clock hand moving ratchet wheel may be manually withdrawn from the ratchet wheel when a clock hand is to be reset.

I will explain my invention more fully by reference to the accompanying drawing showing the preferred embodiment thereof, in which—

Figure 1 is a rear view of the operating mechanism of the timing device, together with an alarm circuit governed thereby; Fig. 2 is a sectional view taken through the axis about which the hands of the timing device move; Fig. 3 is a front view of part of the apparatus illustrated in Fig. 1. Fig. 4 is a fragmentary elevation on an enlarged scale; and Fig. 5 is a sectional view taken through the center of the structure illustrated in Fig. 4.

Like parts are indicated by similar characters of reference throughout the different figures.

The clock mechanism shown is that which belongs to a secondary clock which includes an electromagnet *a* whose circuit is governed by a master clock in a manner well known by those skilled in the art. This magnet is provided with an armature *b* that serves to operate an actuating pawl *c* that in turn operates a ratchet wheel *d* that, in this instance, is shown as being mounted on the same shaft or arbor that carries the minute hand *e*. A holding pawl *f* serves to prevent return movement of the ratchet wheel. A connection *g* extends from the pawl lever to a place exterior to the dial *h* so that when it is desired to adjust the position of the minute hand, the actuating pawl may, by pulling upon said connection, be

withdrawn from engagement with the ratchet wheel, thereby enabling said ratchet wheel freely to be rotated as pressure is exerted upon the minute hand to effect its adjustment.

My improved circuit governing mechanism, as preferably constructed, includes a gear wheel *i* that is indirectly driven by the ratchet wheel *d* to complete a revolution once each twelve hours. A shaft *k* extends through the dial *h* and carries an alarm contact setting hand *l* upon the front face of the dial and an alarm circuit terminal *m*, desirably in the form of a wiping spring, upon the rear of the gear wheel *i*. The shaft *k* is normally stationary but is movable when adjusting pressure is exerted upon the alarm contact setting hand.

The alarm or other circuit governed by the timing device may be traced from the contact spring *m* through the contact point *o* that is coaxial with the shaft *k*, the alarm or other translating device *q*, thence to the frame of the clock which is in electrical connection with the gear wheel *i*, the terminal of the circuit which is companion to the terminal *m* residing in a pin or projection *r* carried by the wheel *i*. By adjusting the position of the spring *m*, the time at which said spring may make contact with the pin *r* may be determined. The contact spring wipes over the contact pin, thereby having the desirable rubbing contact. I provide an abutment *s* which is positioned to engage the contact spring before said spring has opportunity to strike the contact pin, the abutment being so positioned as to bend the contact spring away from the contact pin, thereby assuring quick snappy contact between the two terminals of the alarm circuit, which quick contact occurs when the contact spring escapes the abutment. The pin *r* and abutment *s* are both located to one side of the axis of rotation of the rotating wheel *i* upon which they are both mounted, the elements *r* and *s* being preferably mounted upon a support *t* rotatably mounted upon the gear wheel *i* and secured in adjustment by a clamping nut *u*. Said support *i* operates to bring said complementary contact *r* in position to permit engagement between the contacts and then serves to engage said abutment with said stationary contact *m* to delay engagement between the contacts. By rotary adjustment of the contact pin about the abutment,

the line including the pin and abutment may be shifted, the duration of the closure of the alarm or other circuit may be adjusted, since the abutment arrests the contact spring and thereby determines the time at which circuit closure is to be effected.

While I have herein shown and particularly described the preferred embodiment of my invention, I do not wish to be limited to the precise details of construction shown, as changes may readily be made without departing from the spirit of the invention, but,

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:—

1. A timing device in combination with a circuit governed thereby, said circuit including a normally stationary contact; a complemental contact which is operated by the timing device and brought thereby into engagement with the aforesaid contact to alter the circuit governed by the timing device; an abutment serving to engage one of said contacts and temporarily withhold it from engagement with its companion contact; means whereby the line including the complemental contact and abutment may be altered to adjust the duration of closure of the circuit and a rotating support for said complemental contact and abutment which are mounted upon said support eccentric to its axis of rotation.

2. A timing device in combination with a circuit governed thereby, said circuit including a normally stationary contact spring; a complemental contact rotated by the timing device and brought thereby into engagement with the aforesaid contact spring to alter the circuit governed by the timing device; an abutment traveling with said complemental contact and serving to engage the spring contact and temporarily bend it away from its companion contact, thereby to insure quick engagement of the spring contact and the companion contact, which engagement occurs upon the escape of the abutment from the spring contact; means whereby the line including the complemental contact and abutment may be altered to adjust the duration of closure of the circuit and a rotating support for said

complemental contact and abutment which are mounted upon said support eccentric to its axis of rotation.

3. A timing device in combination with a circuit governed thereby, said circuit including a normally stationary contact spring; a complemental contact rotated by the timing device and brought thereby into engagement with the aforesaid contact spring to alter the circuit governed by the timing device; an abutment traveling with said complemental contact and serving to engage the spring contact and temporarily withhold it from engagement with its companion contact; means whereby the line including the complemental contact and abutment may be shifted to adjust the duration of closure of the circuit and a rotating support for said complemental contact and abutment which are mounted upon said support eccentric to its axis of rotation.

4. A timing device in combination with a circuit governed thereby, said circuit including a terminal contact; a complemental terminal contact which is operated by the timing device and brought thereby into engagement with the aforesaid contact to alter the circuit governed by the timing device; an abutment serving to engage the first aforesaid contact and temporarily withhold it from engagement with said complemental contact; a turning support for said complemental contact and abutment which are mounted upon said support to one side of its axis, said support operating to bring said complemental contact in position to permit engagement between the contacts and serving to engage said abutment with the first aforesaid contact to delay engagement between the contacts; and means whereby the line occupied by said abutment and complemental contact is varied with respect to the said terminal contact to adjust the duration of engagement between the contacts.

In witness whereof, I hereunto subscribe my name this twenty eighth day of June, A. D., 1910.

ERNEST E. YAXLEY.

Witnesses:

G. L. CRAGG,

R. E. ATHERTON.