

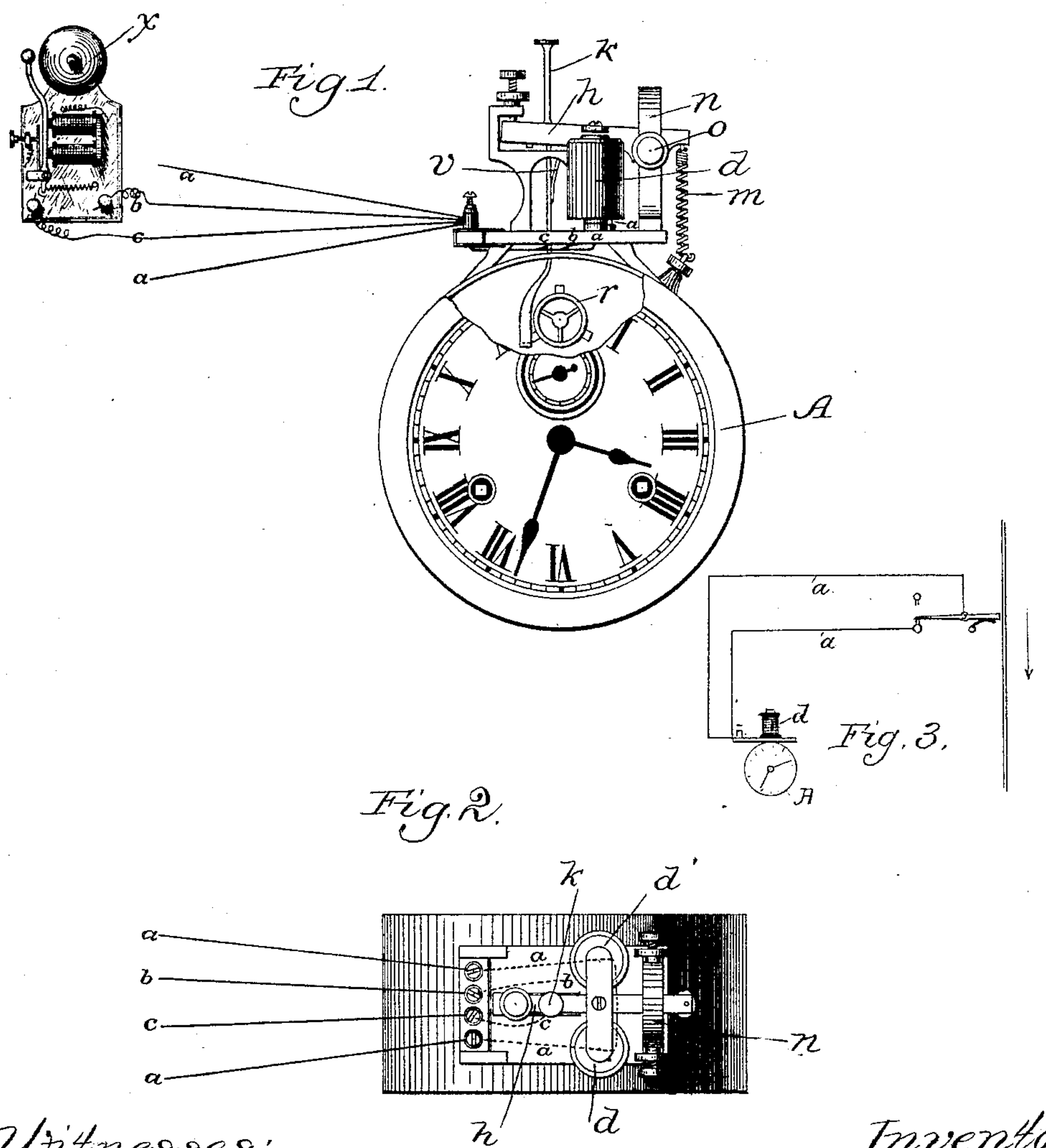
(No Model.)

C. W. WHITED.

ELECTRIC TIME REGISTER AND ALARM.

No. 338,323.

Patented Mar. 23, 1886.



Witnesses:

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CHARLES W. WHITED, OF BATTLE CREEK, MICHIGAN, ASSIGNOR OF ONE-HALF TO W. H. PETTIBONE, OF SAME PLACE.

ELECTRIC TIME-REGISTER AND ALARM.

SPECIFICATION forming part of Letters Patent No. 338,323, dated March 23, 1886.

Application filed June 10, 1884. Serial No. 134,494. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. WHITED, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented an Improved Electric Time-Register and Alarm, of which the following is a specification.

My invention relates both to the stopping of a time-keeping mechanism and to the giving of an alarm by the opening or closing of an electric circuit; and it consists, essentially, in the use of a permanent magnet, with which the circuit-wires are connected, and of a lever controlled by the attraction of the magnet, said lever by being released when such attraction ceases, operating by means of the force of a spring or weight to stop the time-keeping mechanism.

My invention further consists in an alarm which is operated by the current of electricity at the same time that the lever or arm, controlled by the attraction of the magnet, is released.

I have illustrated my invention by the accompanying drawings, in which Figure 1 is an elevation of my improved electric time-keeping register and alarm, with the casing removed so as to show the interior mechanism; also, with a section of the face of the clock broken away for the purpose of showing the connection by means of which the clock is stopped, and further showing an alarm device with a portion of the casing removed, with which alarm the circuit-wires are connected. Fig. 2 is a plan or top view of the same. Fig. 3 represents my register applied to a railroad-track.

Like letters refer to like parts in the several views.

A indicates the clock.

d indicates the magnet, which rests upon the base *w* of the supporting-frame.

n is an upright standard connected with the base *w*. This standard supports the lever or arm *h*, which turns upon the fulcrum *o*.

m indicates a spring, which is connected with the outer end of the lever or arm *h*, and which acts to elevate the opposite end of said arm or lever when released from the influence of the magnet.

k is a rod which extends upward through the arm or lever *h*, being insulated therefrom, which rod is raised or lifted by lever *h* whenever this lever is thrown upward by the influence of the spring *m*. As will be seen, rod *k* extends downward far enough to come in contact with the balance-wheel of the clock.

r is this balance-wheel, upon which rod *k* acts when lifted by lever *h*.

v is a spring connected with rod *k*, which operates to make a connection with the alarm through the wires *b* and *c*. This spring *v* may be operated by means of a closed circuit, if preferred.

x indicates the alarm, to which the circuit-wires *b* and *c* pass.

a a are the wires of the circuit, extending to the magnet *d*. I have shown two magnets in Fig. 2; but a single magnet may be used, if preferred.

It is not essential that the connection between my device and the time-keeping mechanism should be that which I have shown, as such connection may be made with other than the balance-wheel, or with the pendulum or hands of the clock. The construction shown is especially designed for use in connection with an automatic electric railway-track key invented by me, and for which I have applied for Letters Patent, but is capable of a far more general use, as the same may be applied to either a clock or watch for the purpose of stopping the same at any desired moment. The operation of the same may be governed by either an open or closed electric circuit. Likewise the alarm device may be applied in various ways.

The parts shown may be made of brass, steel, or other suitable material, such as any electrician would readily understand to be capable of the required use.

The dimensions of my device are not a material matter, provided that they are such as to admit of the use specified. The clock to be used in connection therewith is likewise a secondary matter, as the application may be made to any form or style of clock or watch.

The operation of my improved electric time-register is as follows: The magnet *d* being charged with electricity through wires *a a*

acts to draw downward the arm or lever *h*, until the same is brought in contact with said magnet, the electric influence or attraction being sufficient to overcome the action of the spring *m*. The only requirement in reference to this spring is, that it should not be of a strength to exceed the attractive power of the magnet. Should it be preferred, a weight may be used at the outer end of arm or lever *h* in place of the spring. When the electric current passing to the magnet ceases, lever *h* is released from the power of attraction and is thrown upward through the action of the spring. The upward movement of this arm or lever raises or lifts rod *k*, the lower end of which is so formed as to come in contact with the balance-wheel *r* when thus raised. It will thus be seen, at the moment when the electric current ceases to flow to the magnet, or, in other words, when the magnet ceases to exercise the power of attraction and releases the lever *h*, that the same acts to stop the wheels of the clock. When stopped in this manner, the clock can only be started by a downward pressure on rod *k* sufficient to release the same from contact with the balance-wheel *r*. As previously stated, this construction is particularly designed for railroad uses, or to have the clock in the signal-station stopped when a passing train controls the electric current by means of an automatic electric track-key. It is important to have the passage of trains registered and reported, and it not infrequently happens that night-operators neglect this duty. When my invention is used, the clock of the station is both stopped and the alarm sounded at the instant when the first wheel of the train passes over the switch-key. The clock, after being thus stopped, continues to indicate the time when the train passed until the rod which checks the balance-wheel has been pressed down by the operator.

It occasionally happens that a telegraph-operator will report a train which has passed a station as not yet having passed, and serious accidents have resulted therefrom. Such mistakes cannot occur where my improvement is used.

The adding of the alarm shown in Fig. 1, while not absolutely necessary, increases the effectiveness of my device, as it has the effect of calling the attention of the operator to the stoppage of the clock, also the effect of awakening an operator who may be asleep.

The importance of keeping an accurate account of all railway-trains is well known, and the improvements which I have herein described meet important requirements in this direction.

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

1. The combination, in connection with a time-keeping mechanism, of a magnet and an electric circuit therefor, an armature-lever for said magnet, mechanism actuated by said ar-

mature-lever to control the movement of the time-keeping mechanism, and an alarm-circuit and circuit-closer therefor, said circuit-closer being also actuated by the armature-lever, substantially as described, for the purpose set forth.

2. The combination of a railway-track circuit-controlling instrument, a circuit therefor, a magnet in said circuit, an armature-lever for said magnet, a time-keeping mechanism, mechanism between said armature-lever and said time-keeping mechanism for stopping or starting the time-keeping mechanism according to the position of said lever, and an alarm-circuit and a circuit-closer therefor, also operated by said armature-lever, whereby on the passage of a train the clock is stopped and simultaneously an alarm is given, substantially as described, and for the purposes set forth.

3. The combination of a railway-track circuit-controlling instrument, a circuit therefor, a magnet in said circuit, a time mechanism mechanically controlled by the armature-lever of said magnet, an alarm-circuit, and a circuit maker and breaker in said alarm-circuit controlled by the position of said armature-lever, whereby both the clock and the alarm are simultaneously actuated by a passing train, substantially as described, and for the purposes set forth.

4. The combination of a time-keeping mechanism, an electro-magnet and circuit therefor, an armature and armature-lever for said magnet, a spring or weight acting on the armature-lever in opposition to the magnet, mechanism actuated by the armature-lever and operating to arrest said time-keeping mechanism when the magnet is de-energized and to release it when the magnet is energized, and an alarm-circuit provided with a circuit maker and breaker controlled by the position of said armature-lever, substantially as described and shown.

5. The combination of a time-keeping mechanism, an electro-magnet and circuit therefor, a retracting spring or weight for said armature-lever, a stop for the escape-wheel or other moving part for the time-keeping mechanism, and connecting mechanism between said stop and said armature-lever, whereby when the armature-lever is under the influence of the magnet the stop is out of engagement with the time-keeping mechanism, but when the magnet is de-energized and the armature is under the influence of the spring or weight the stop is brought into engagement with the time-keeping mechanism preventing its further movement, and an alarm-circuit and a circuit maker and breaker therein controlled by the position of said armature-lever, substantially as described and shown.

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