

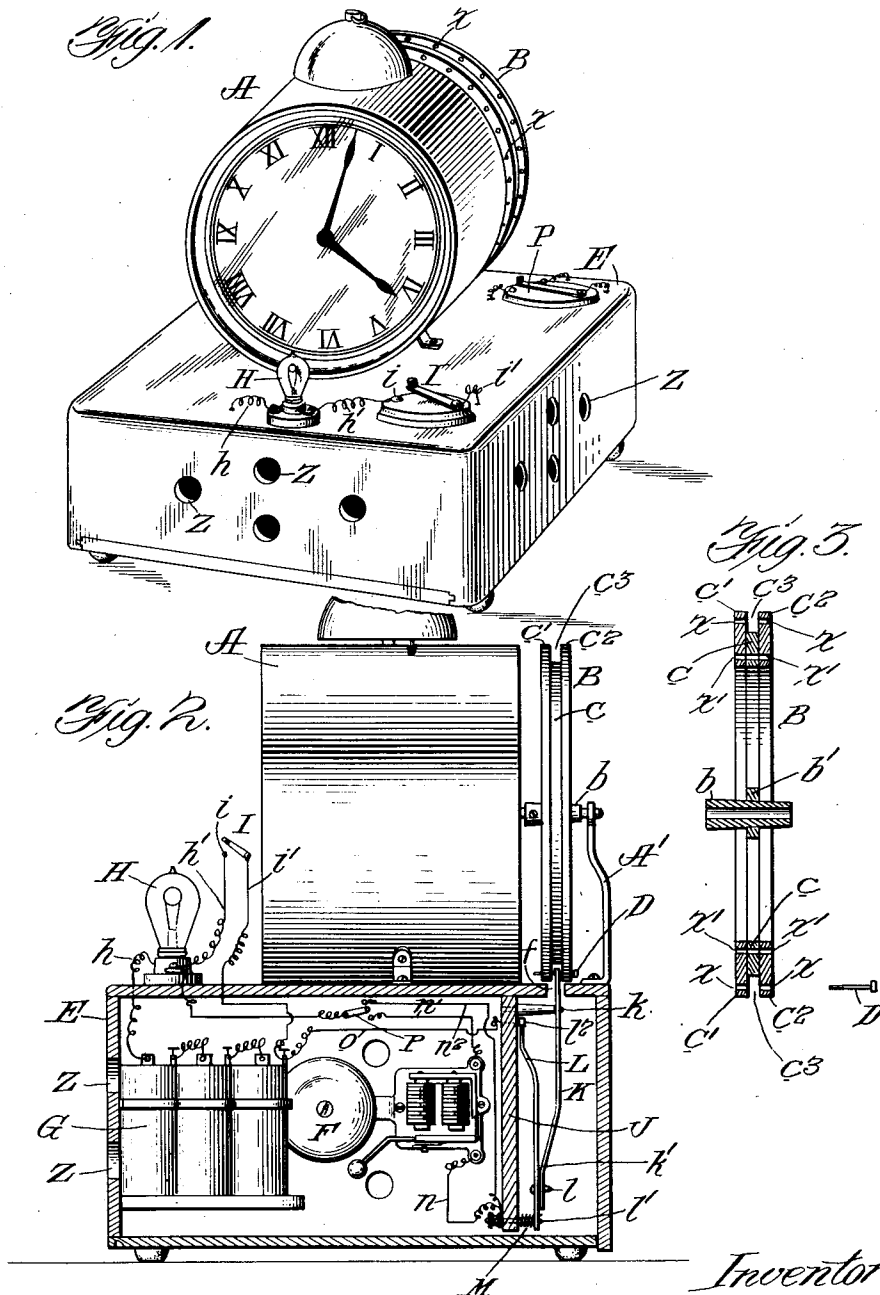
No. 890,134.

PATENTED JUNE 9, 1908.

V. S. GAILLARD.
ALARM CLOCK.

APPLICATION FILED MAR. 18, 1908.

2 SHEETS—SHEET 1.



Witnesses

Paul J. Gathmann.
M. S. Adams.

Inventor:

V. S. Gaillard.

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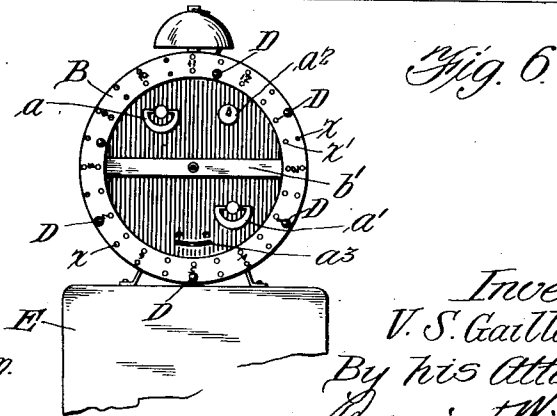
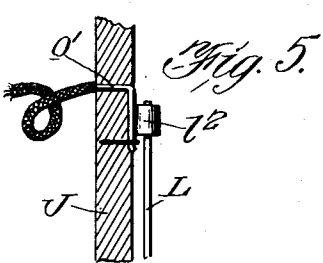
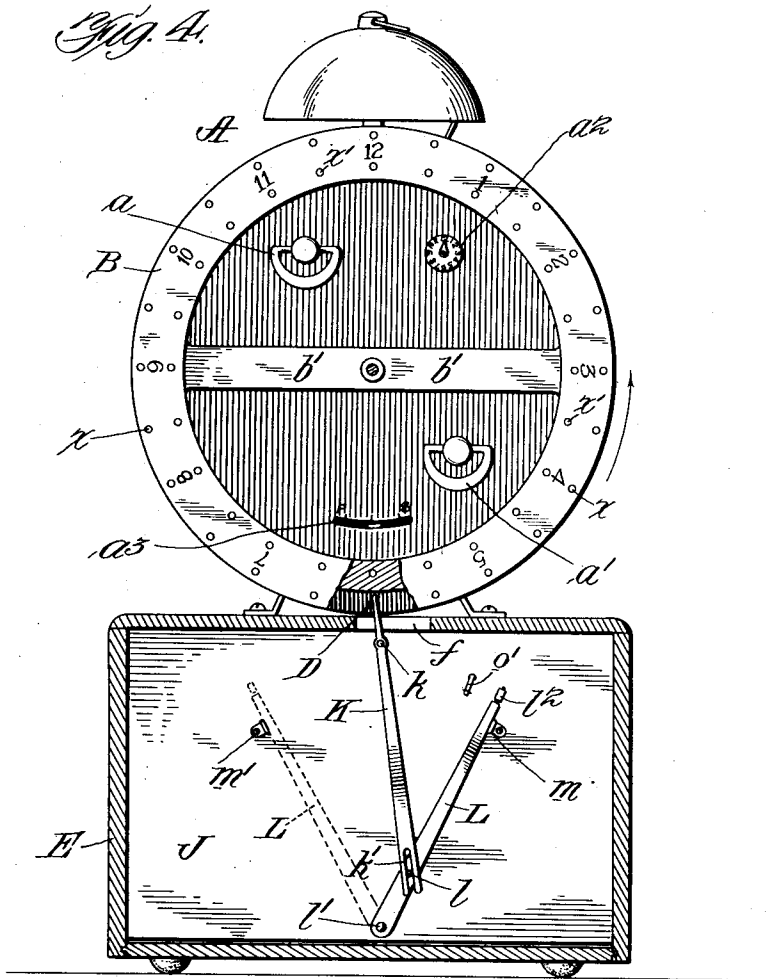
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2 SHEETS—SHEET 2.



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Inventor:
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UNITED STATES PATENT OFFICE.

VALERE S. GAILLARD, OF TORRINGTON, CONNECTICUT.

ALARM-CLOCK.

No. 890,134.

Specification of Letters Patent.

Patented June 9, 1908.

Application filed March 16, 1908. Serial No. 421,353.

To all whom it may concern:

Be it known that I, VALERE S. GAILLARD, a citizen of the United States, residing at Torrington, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Alarm-Clocks, of which the following is a specification.

The object of my invention is to provide an alarm clock which, instead of giving an alarm lasting some minutes or several seconds by repeatedly ringing a bell, will give the alarm by a single short sound as by the striking of a bell once only. This is desirable in many instances and for various reasons. For example, in a sick room it is often desirable to be reminded at definitely prescribed intervals when a dose of medicine should be administered, but it is also desirable that the patient should not be disturbed by the repeated sounding of an alarm. The battery should not be drawn on too heavily, as would be required if the alarm were sounded for any great length of time.

According to my invention I provide certain attachments to a clock of ordinary construction by which the objects of my invention may be accomplished. Such clock need not be an alarm clock of the usual kind operated by a spring, but I can apply my improvements to an ordinary alarm clock so that when desired such clock may be used in the usual way, or my improved alarm mechanism may be used independently thereof. In connection with my improved alarm mechanism I may use an electric lamp which may flash when the alarm is sounded, or it may be used for a longer period if desired.

In carrying out my invention I attach to the hour hand arbor of the clock a pin-carrying wheel which is adapted to operate a system of levers, one of which is connected with one pole of a battery and which is adapted to make electrical connection with a contact connected with the other pole of the battery. The pin-carrying wheel revolves once in twelve hours and the pins are so set as to operate the alarm mechanism at the desired intervals. An electric lamp is arranged in the circuit of the alarm mechanism so as to flash when the alarm is sounded and it is also separately connected with the battery so that it may be used for a longer interval if desired.

In the accompanying drawings,—Figure 1

is a perspective view of a clock with my improved alarm mechanism connected therewith. Fig. 2 is a view partly in side elevation and partly in vertical section of the clock and alarm mechanism indicated in Fig. 1. Fig. 3 shows a vertical central section through the pin-carrying wheel. Fig. 4 is a view partly in rear elevation and partly in vertical section with some of the parts broken away of the mechanism shown in Figs. 1 and 2. Fig. 5 is a detail view in section of certain contact devices. Fig. 6 is a rear elevation on a smaller scale indicating how the pins may be set for operating the alarm.

The clock A may be of any usual kind. As shown it is an ordinary alarm clock and may whenever desired be used as such.

a indicates the handle for winding the alarm mechanism, *a'* the handle for winding the clock movement, *a''* the alarm setting devices, and *a'''* the regulating devices. Any other ordinary time-keeper without alarm mechanism may be used just as well.

To the rear end of the arbor of the hour hand is attached a wheel B, which I call the pin-carrying wheel. It is preferably constructed with a central hub *b* attached to said arbor and has two radial spokes *b'* on opposite sides of the hub supporting a rim preferably made, as shown most clearly in Fig. 3, of three circular layers of wood or other suitable material, the central layer *c* being of smaller diameter than the other layers *c'*, *c''*, thus leaving an annular space or groove *c'''* between the layers *c'*, *c''*.

The rim is provided with two annular concentric series of pin holes *x*, *x'*, the outer series *x* being for the purpose of holding the pins in operative position, while the inner series *x'* hold reserve pins. The outer series of holes *x* are arranged outside the periphery of the layer *c*, so that when a pin is inserted in a hole of the outer series, it will bridge the groove *c'''*.

The holes *x* are placed to correspond with the dial of the clock and may be arranged at every hour mark, half hour mark, or in any other desired way. The pins *D* are adapted to enter the holes *x* easily but to fit snugly so as to remain in the position to which they are set until intentionally removed. The pin wheel may be easily attached to the hour arbor of any ordinary clock, taking the place of

the knob usually employed for setting the hands. The hands may be set by moving the wheel.

The clock A is secured to the top of a box or casing E containing an electric alarm bell F, a battery G and certain devices for controlling the ringing of the bell.

A' indicates a bracket supporting the rear end of the hour hand arbor, which may be made somewhat longer than usual in some cases.

The battery G may be located at any suitable part of the box or casing as may also the bell F.

H indicates a small electric lamp placed on the top of the casing in front of the clock face and connected by a wire *h* with one pole of the battery G and by a wire *h'* with the contact *i* of a switch I, which latter is connected by a wire *i'* with the other pole of the battery. If the switch is made to engage the contact *i*, the lamp will be lighted, but it is not my intention that the lamp should be lighted for any considerable time as this would soon exhaust the battery. The switch and the circuit connections described will, however, enable one to light the lamp for a short time to allow the clock dial to be inspected without sounding an alarm.

In the rear part of the casing E is a false back J to which are pivoted two vertically arranged levers, K and L. The lever K is pivoted at *k* a comparatively short distance below its upper end and the upper portion of the lever above the pivot extends through an opening *f* in the casing and projects into the groove *c* of the pin-carrying wheel. A portion of the lever X below the pin *k* extends down across the rear face of the false back and at its lower end is slotted at *k'* where it engages a pin *l* carried by the contact lever L pivoted at its lower end by a pin *l'* to the false back and extending up from the pin *l'* for a considerable distance, being provided at its extreme upper end with a contact roller *l²*. Normally the levers are in the position shown in Fig. 4 with the contact lever resting against a stop *m*, but when the upper end of the lever K is moved to the right, the upper end of the lever L will be thrown over to the left against the stop *m'*. In order to return the levers quickly to their normal position I provide a spring M arranged on the pivot pin *l'* of the lever L and secured to the false back and to the lever in any suitable way.

The pivot pin *l'* is connected by means of the wire *n* with the electro-magnets of the bell F, and these magnets are connected by a wire *n'* through a switch P with the lamp H, which lamp is connected with the battery by the wire *h* as hereinbefore described. The other pole of the battery is connected by a wire *o* with a contact *o'* arranged in the path of the contact roller *l²* of the lever L. Preferably the contact *o'* is made by baring the in-

sulated wire, as shown in Fig. 5, the bared end being passed through the false back J, bent down at right angles and secured in place by a staple, as indicated.

In order that the sound of the bell may not be deadened by the casing I preferably provide the latter with perforations or openings as indicated at Z.

If no pins are arranged in any of the holes *z*, the pin-carrying wheel will revolve without sounding an alarm, but if one pin is arranged in a hole *z* the alarm will be sounded once in twelve hours, or as soon as the pin wherever set comes in contact with the lever K. By placing pins at any desired intervals of time, the alarm may be sounded at each of such intervals, for instance, as indicated in Fig. 4, if there is only one pin set at six, the alarm will be sounded at six o'clock only. In Fig. 6 pins are set at 1, 3, 5, and 7, and the alarm will be sounded during such periods every two hours apart. It is obvious that the pins may be set to sound the alarm at any desired time, or at any desired intervals. Thus where a doctor prescribes medicine to be given to a patient at intervals of two hours, the attending nurse, by means of my improvements, may be reminded at such intervals to administer the medicine either during the night or during the day, while the alarm will sound for such a short period and may be arranged to sound so faintly as to merely attract the attention of the nurse without disturbing the patient. The mechanism may, of course, be used for other purposes and in other connections to call attention to the lapse of various intervals of time.

A very slight movement given to the upper end of the lever K will cause the lower end thereof to make a comparatively long movement and a much longer and quicker movement will be given to the upper end of the lever L. The movement of the upper end of the lever L is, however, sufficiently slow to allow the contact between the roller *l²* and the contact *o'* to be made long enough to complete the circuit and sound the alarm once without allowing the bell to repeatedly ring. After the lever K is disengaged from the pin the spring M moves the levers quickly back to their normal position and in doing this the roller *l²* passes so rapidly over the contact *o'* that the electric circuit is not made long enough to ring the bell. The electric lamp, as hereinbefore described, may be made to flash each time that the alarm is sounded, or it may be made to glow for a longer period by means of the switch I, if desired. The closing of the switch in no way interferes with the sounding of the alarm.

I have shown in Fig. 2 another circuit-wire marked *n²*, leading from the switch P to the pivot-pin *l'*. When the switch P is connected with the wire *n²*, a circuit may be closed through the lamp without ringing the

bell. It may be desirable, sometimes, to operate a visible signal which will attract attention without making any sound and if preferred, the lamp H may be given some distinctive color, such as red. The bell F may, of course, be so wired as to make and break the circuit rapidly as long as the contact-arm L is on the contact o', or it may be wired so as to ring once only, no matter how long the circuit is closed. These two kinds of bell are well known. If the contact o' is made longer or any other means is adopted for prolonging the closed circuit the bell may be caused to give a single sound while the lamp is lighted for a considerable time so that after the audible signal is given the clock face will be illuminated long enough to enable one to ascertain the time. After the time is ascertained the circuit may be broken by means of the switch P and by means of this switch the apparatus may be converted from a combined audible and visible signal to one which is visible only.

I have shown and described the way now best known to me of carrying out my invention but it is obvious that the details of construction may be changed or considerably re-organized without departing from the novel features of my improvements.

I claim as my invention:—

1. Alarm mechanism comprising a clock train, an electrically operated alarm, a contact operating device moved by the clock train, and a contact actuated to move at a speed greater than that of its operating device to momentarily close the circuit of the alarm.

2. Alarm mechanism comprising a clock, a bell, an electric circuit for the bell, a contact operating device moved by the clock train and a contact actuated at a speed greater than that of its operating device to momentarily close the alarm circuit.

3. Alarm mechanism comprising a clock, a bell, an electric circuit for the bell, a contact operating device moved by the clock train, and a contact actuated to move at a speed greater than that of its operating device to close the circuit of the bell long enough only to allow the bell to strike once.

4. Alarm mechanism comprising a clock, an electrically operated alarm, a contact lever connected with the alarm circuit, a contact also connected with the alarm circuit, and a contact operating device moved by the clock train which engages said contact lever and moves it at an accelerated speed to traverse the contact and close the alarm circuit momentarily only.

5. Alarm mechanism comprising a clock, an electrically operated alarm, a lever operated by the clock and another lever operated by said first mentioned lever which is included in the alarm circuit and opens and closes it.

6. Alarm mechanism comprising a clock, an alarm circuit, a pivoted contact lever connected with the alarm circuit, a contact in the alarm circuit with which said contact lever engages, a pivoted lever connected with and adapted to operate said contact lever and which is in turn operated by the clock mechanism.

7. The combination with time mechanism, of a pin-carrying wheel connected therewith, an alarm circuit, a lever operated by the pin-wheel and a contact lever operated by said first mentioned lever which opens and closes the alarm circuit.

8. The combination with time mechanism, of a pin-carrying wheel having a groove in its periphery and pierced by a circular series of transverse holes, an alarm circuit, a pivoted lever having one end projecting into the groove of the pin-carrying wheel, and a contact lever operated by said first mentioned lever and which opens and closes the alarm circuit.

9. The combination with clock mechanism, of an alarm circuit, a contact lever for opening and closing the alarm circuit, and a lever operated by the clock work and having a bifurcated lower end connected with the contact lever.

10. Alarm mechanism comprising a clock, an alarm circuit, an electric lamp included in the alarm circuit, a contact operating device moved by the clock train and a contact actuated to move at a speed greater than that of its operating device to momentarily close the alarm circuit.

11. Alarm mechanism comprising a clock, an alarm circuit, an electric lamp included in the alarm circuit, a contact operating device moved by the clock train, a contact actuated to move at a speed greater than that of its operating device to momentarily close the alarm circuit and to cause the electric lamp to flash and immediately go out.

12. Alarm mechanism comprising a clock, an alarm circuit, an electric lamp included in the alarm circuit, a contact operating device moved by the clock train and a contact actuated to move at a speed greater than that of its operating device to momentarily close the alarm circuit, another circuit for the electric lamp and means for opening and closing this circuit.

13. Alarm mechanism comprising a clock, a bell, an electric lamp, a contact operating device moved by the clock train, a contact actuated to move at a speed greater than that of its operating device, circuit connections between the bell, the lamp and the contact, and switching devices whereby both the bell and the lamp may be simultaneously included in the circuit or the lamp only may be so included.

14. The combination of a clock, a revolving pin-carrying wheel connected therewith,

a contact lever, a lever connected therewith
and engaging the pin-carrying wheel, an
alarm circuit, electrical connections between
the alarm circuit and the contact lever, an
5 electric lamp included in the alarm circuit, a
separate circuit for the lamp, and means for
opening and closing this circuit.

In testimony whereof, I have hereunto
subscribed my name.

VALERE S. GAILLARD.

Witnesses:

JAMES E. MALLETT,
MARY C. CAHIR.