E. R. WEAVER.

ELECTRIC ALARM CLOCK.

APPLICATION FILED FEB. 15, 1911.

1,006,322.

Patented Oct. 17, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

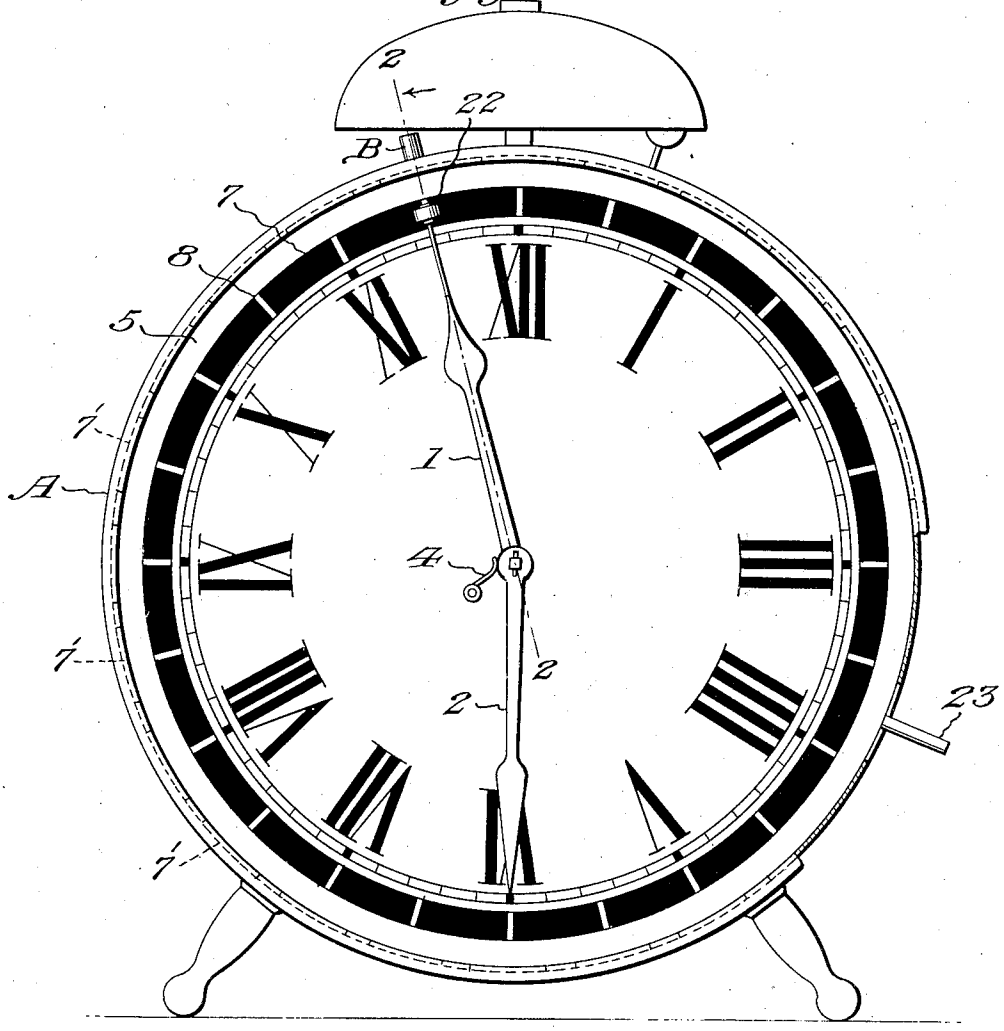
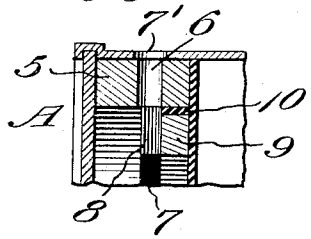


Fig. 7.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

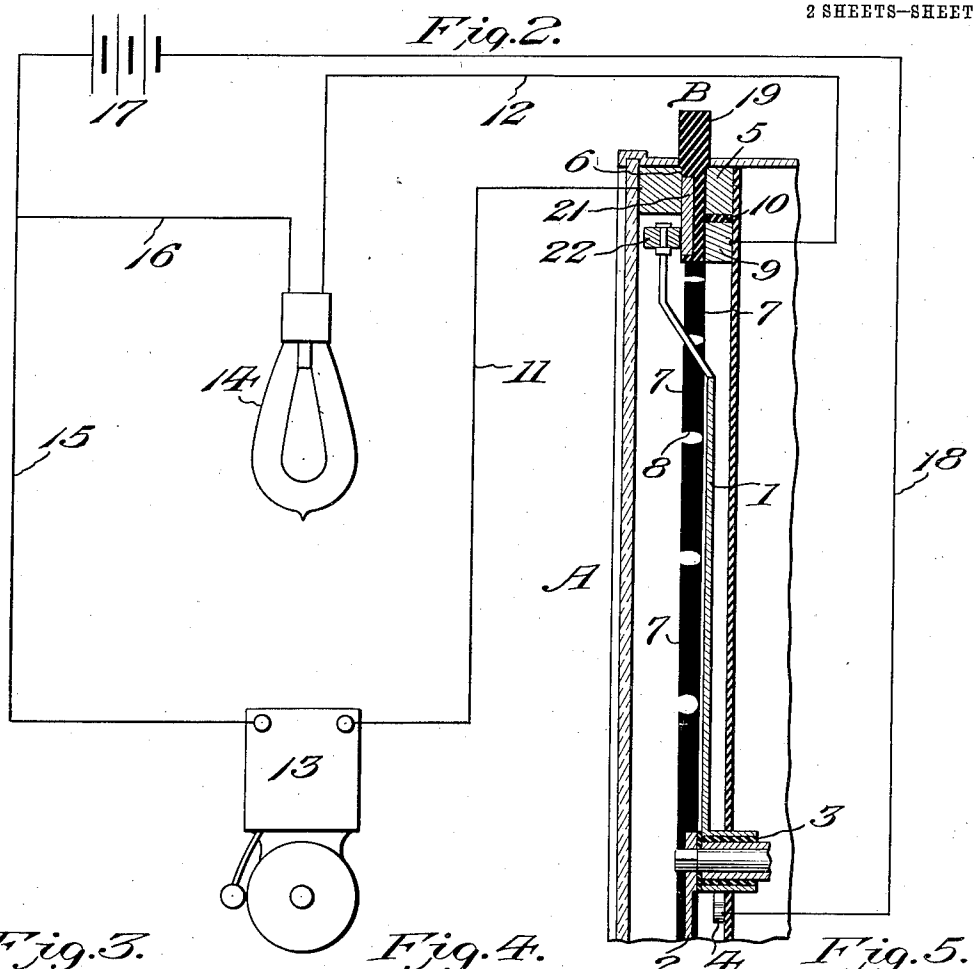


Fig. 3.

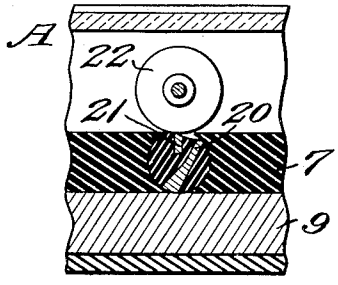


Fig. 4.

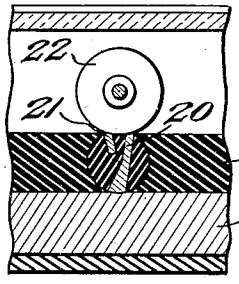


Fig. 5.

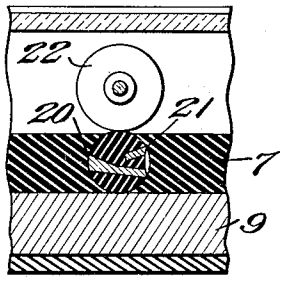
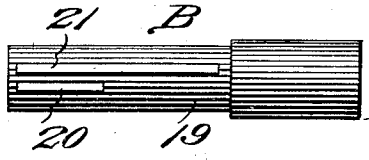


Fig. 6.



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UNITED STATES PATENT OFFICE.

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ELECTRIC ALARM-CLOCK.

1,006,322. Specification of Letters Patent. **Patented Oct. 17, 1911.**

Application filed February 15, 1911. Serial No. 608,707.

To all whom it may concern:

Be it known that I, ELBERT R. WEAVER, a citizen of the United States, residing at Homosassa, in the county of Citrus and State of Florida, have invented new and useful Improvements in Electric Alarm-Clocks, of which the following is a specification.

This invention relates to an alarm clock that includes an electrically operated bell that can be cut into circuit at any desired hour or fraction thereof.

The invention has for one of its objects to improve and simplify the construction and operation of clocks of this character so as to be reliable and efficient in use, comparatively inexpensive to manufacture, and capable of being readily set to sound an alarm at any desired time.

Another object of the invention is the provision of means whereby an electric lamp will be lighted at about the time the electric bell is sounded so that by the aid of the light one can see to administer medicine to himself or a patient, the clock being especially useful in sick rooms, although it may be serviceable otherwise.

Another object of the invention is the provision of improved circuit making and breaking devices whereby either the bell or lamp circuit or both can be closed at any desired time.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularly in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a front view of a clock constructed in accordance with the invention. Fig. 2 is a detail sectional view of a portion of the clock on line 2—2, Fig. 1, and a diagram of the circuit connections. Figs. 3, 4 and 5 are enlarged sectional views showing different positions of the plug of the make and break device for cutting the lamp and bell into and out of circuit. Fig. 6 is a plan view of the plug. Fig. 7 is a fragmentary sectional view of the portion of the clock showing the socket for the switch plug.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates a clock of any approved construction having hour and minute hands 1 and 2, the hour hand being insulated from its arbor by a sleeve 3, Fig. 2, and in electrical connection with the hand there is a brush 4 for connecting the hour hand in electric circuit.

On the dial at the periphery thereof is a metallic ring 5 which has twenty-four or any other number of radial openings 6 which mesh with openings 7′ in the casing of the clock, and into any opening in the ring is inserted a plug B, Fig. 6, for controlling the time of setting off the bell and lighting the lamp. Arranged within the ring 5 are segments 7 of insulation that are spaced apart to provide sockets 8 that are in line with the openings 6. Under these segments is a metallic contact ring 9 which is insulated by an insulating ring 10 from the ring 5. As shown in Fig. 2, the rings 5 and 9 are connected respectively by wires 11 and 12 with an electric bell 13 and lamp 14, both bell and lamp being connected by wires 15 and 16 with a battery 17. From the battery leads a wire 18 which connects with the brush 4 that bears on the hub of the hour hand. The battery or cell 17 may be arranged within the clock casing as well as the bell 13 and the lamp may be supported on the outside of the casing in such a position as to light the face of the clock. The hour hand is adapted to be electrically connected at any set time with either or both rings 5 and 9, by means of a plug B, as shown in Fig. 2. This plug consists of a body of insulation 19 that has two longitudinally-extending contacts 20 and 21, the contact 20 having its opposite edges exposed in the circumferential surface of the plug so that one edge of the contact 20 can bear against the ring 9 while the opposite edge will be in a position to be engaged by the hour hand when the plug is inserted in any socket 8. The contact 21 has only one edge exposed in the circumferential face of the plug and it is of such length that it will make contact with the ring 5 by engaging the wall of the opening in such ring through which the plug is inserted. On the hour hand is a metallic roller 22 which is adapted to engage the plug B and close the bell or

lamp circuit when the proper time has arrived. When the plug is inserted in the position shown in Fig. 3, the roller contact 22 of the hour hand will engage the contact 21 of the plug and the circuit will then be closed through the wire 18, brush 4, hour hand 1, roller 22, contact 21 of plug B, ring 5, wire 11, bell 13 and wire 15. When the plug is inserted in the position shown in Fig. 4, the contact roller of the hour hand will engage both contact strips 20 and 21 of the plug successively so that an instant after the bell has been sounded, the lamp will light so that medicine or any other article can be readily obtained. The lamp circuit is completed through the wire 18, hour hand 1, roller 22, contact strip 21 of the plug or key B, ring 9, wire 12, lamp 14, wire 16, and battery 17. By turning the plug to the position shown in Fig. 5, the contact roller of the hour hand can pass over the plug without completing either circuit. As the plug sockets are arranged fifteen degrees apart, the bell and light can be energized every half hour.

If it is desired to sound the alarm at any time between the half hours, it is merely necessary to move the contact rings 5 and 9 and insulated socket ring formed by the segment 7 so as to bring the sockets 8 at any intermediate position. For this purpose, the outer metallic ring 5 may be provided with a handle 23 so that these rings can be moved as a unit around the axis of the clock. In order that the plug may be inserted in any desired socket after the rings have been adjusted, the openings in the casing of the clock must be elongated.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim as new, is:—

1. The combination of a clock including a contact hand, an insulating ring having spaced sockets, a plug adapted to be insulated in any socket and having separate contacts, separate insulated rings with which the contacts of the plugs are adapted to engage, and a contact on the hand adapted to coöperate with the plug to close light and signal circuits, said plug being adjustable to close one or the other or both or neither of the circuits.

2. The combination of a clock including a hand, a ring of insulation having spaced sockets each open at the side, a pair of metallic rings, a plug adapted to be inserted in any socket and having contacts adapted to engage the rings, said plug being adjustable in the socket to expose the contacts thereof through the open side of the socket in which the plug is inserted, a contact on the hand adapted to ride over the exposed portion of the plug, and bell and lamp circuits made and broken by the contact of the hand engaging and disengaging the contact and plug.

3. The combination of a clock including a hand, an insulating ring having spaced sockets each open at one side, a metallic ring surrounding the first-mentioned ring and having openings registering with the sockets, a second metallic ring insulated from the first metallic ring and underlying the insulation ring, a plug insertible in any opening of the first metallic ring and alining the socket, said plug consisting of a body of insulation having contacts capable of engagement with the metallic rings respectively and having portions capable of being exposed through the open side of the socket in which the plug is inserted, a contact on the hand adapted to ride over the plug and engage the contacts thereof, and bell and lamp circuits connected with the rings respectively and with the said hand.

In testimony whereof I affix my signature in presence of two witnesses.

ELBERT R. WEAVER.

Witnesses:
M. L. Weaver,
Sam F. Williamson.