B. B. MEARS.

FIRE ALARM.

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899,749.

Patented Sept. 29, 1908.

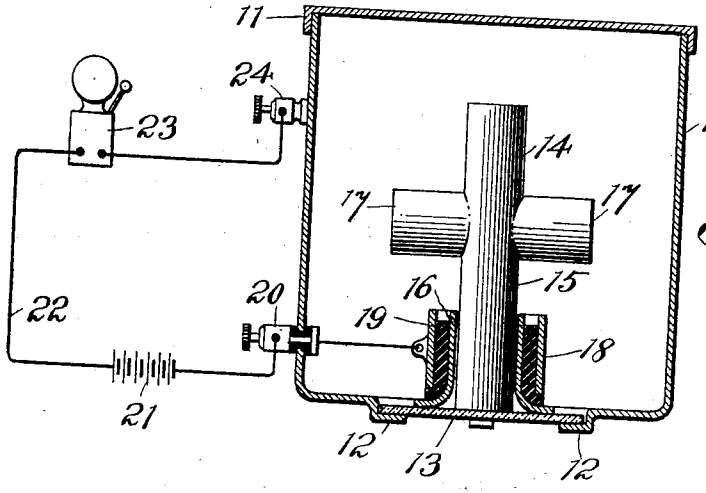

Fig. 1.

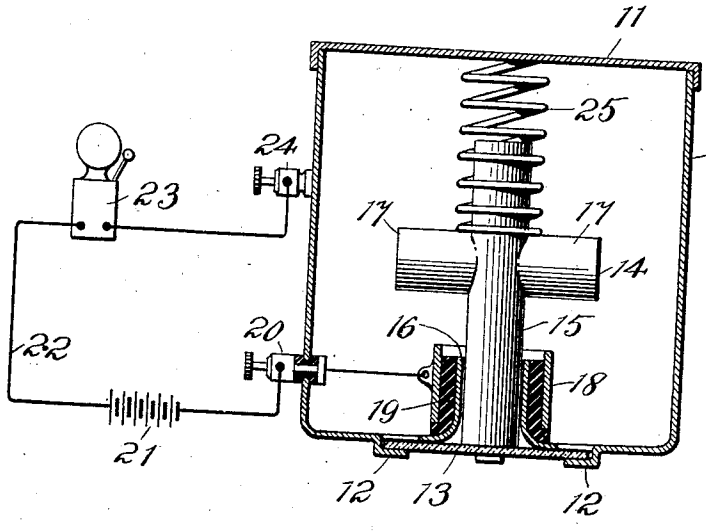

Fig. 2.

WITNESSES

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FIRE-ALARM.

No. 899,749. Specification of Letters Patent. Patented Sept. 29, 1908.

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To all whom it may concern:

Be it known that I, BERNARD B. MEARS, a citizen of the United States, and a resident of the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Fire-Alarms, of which the following is a full, clear, and exact description.

This invention relates more particularly to an alarm which may be automatically or otherwise set into action so as to ring a signal at a distant point.

The primary object of the invention is to provide a simple and efficient device which has destructible means normally sustaining a circuit-closer in a position to retain the circuit normally open, and which, when the means supporting the circuit-closer is destroyed by fire, heat, or in any other way will close the circuit and thereby cause a bell or other signal to be operated at any suitable and convenient point.

A further object of the invention is to provide a device which may be cheaply made, and which comprises very few parts; which may be readily installed in houses, factories or other places to automatically or otherwise sound an alarm, and which is so made that it will not readily get out of order.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a vertical section, partly in elevation, of one form of device embodying my invention; and Fig. 2 is a view similar to Fig. 1 except that positive means is provided to operate the circuit-closer.

The casing 10 may be cylindrical, square or other form and of any suitable metal, and said casing may be provided with a cover 11, which may be held thereto in any suitable way. This casing 10 has tongues 12 extending outward from the base thereof and which are preferably formed integral with the casing, and said tongues provide a space under the base in which is adapted to be supported a destructible diaphragm 13. This diaphragm may be of celluloid or any other suitable material which may be easily destroyed, and while I find celluloid answers very well for the purpose for which it is used by reason of the fact that it may be readily ignited, and will burn quickly in case a light or undue heat is applied thereto, I may employ other supporting means than the celluloid diaphragm if desired.

The celluloid diaphragm 13 normally holds and supports a circuit-closer 14 within the casing, and said circuit-closer has its base or stem 15 guided in a sleeve 16, which may be formed integral with the base 10, or may be attached to the casing as preferred. This circuit-closer may be variously constructed. As shown it is substantially cross-shaped, and has outward-extending arms 17, which when the circuit-closer is released are adapted to engage the upper edge of the sleeve 16, and a separate and independent sleeve 18, which surrounds and is concentric with the sleeve 16 and is insulated therefrom by a washer 19. By this means, it will be seen that if the diaphragm 13 is destroyed by heat or by lighting a match so that the circuit-closer is released, the arms 17 thereof will engage the upper edges of the sleeves 16 and 18, and will form a metallic connection therewith for the electric current as will be presently described.

To sound the alarm when the circuit-closer is made to engage the sleeves 16 and 18, I connect the sleeve 18 through an insulated binding post 20 with one pole of a battery 21 of an electric circuit 22, and included in this circuit is a bell or other alarm 23, and the casing 10 by connecting the wire of the electric circuit to the binding post 24. As the circuit-closer engages the sleeves 16 and 18, the current from the battery will pass through the alarm 23 to the binding post 24, casing 10, sleeve 16, circuit-closer 14 to sleeve 18, and from there to the battery, thus causing the alarm to ring.

In practice it may be desirable to place a few matches convenient to the casing 10 so that when it is desired to ring the alarm 23 or otherwise signal to a distant point a match may be lighted quickly and the celluloid diaphragm destroyed as such material will burn very readily, and in this way complete the circuit as already explained, though of course in case of a fire the heat or flame will destroy the diaphragm and will cause the alarm to ring automatically. In some cases it may be desirable to connect the device with the usual door bell so that the said bell may be included in the electric circuit in order that it may be used for signaling purposes, and it will be understood that while

the device is more particularly adapted as a fire alarm, it may be employed for various purposes and in various connections, so long as the circuit-closer has its supporting means arranged to cause the circuit-closer to complete the circuit through the bell or other alarm.

In Fig. 2 the construction of the device is substantially the same as shown in Fig. 1, and the principal difference is that I employ a light spring 25 which surrounds a part of the circuit-closer 14, and has its end abutting against the under surface of the lid 11, so that when the diaphragm 13 has been destroyed the spring will force the circuit-closer downward to complete the circuit instead of depending entirely upon the weight of the circuit-closer. The sleeve 16 need not extend as high as the sleeve 18 as a proper contact may be made between the casing and circuit-closer through the spring 25, or between the sleeve 16 and said circuit-closer.

From the foregoing it will be seen that a simple, efficient and inexpensive device is provided which may be used in various connections to ring an alarm or other signal; that said device may be made to operate automatically by subjecting the same to a light, or it may be made to automatically sound an alarm in case there should be a fire where the device is located, and that said device is so made that it will not readily get out of order.

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

1. A device of the character described, comprising a casing having a sleeve formed integral therewith and having tongues projecting from a part thereof, a celluloid diaphragm supported by the tongues immediately adjacent to the sleeve, a substantially cross-shaped circuit-closer having its stem guided in the sleeve and supported by the celluloid diaphragm, a sleeve insulated from the first-mentioned sleeve of the casing and concentric therewith, a battery, an alarm, and electric connections between the battery, alarm, casing, and insulated sleeve whereby the circuit through the alarm may be completed when said diaphragm is destroyed.

2. A device of the character described, comprising a casing having a sleeve and provided with tongues projecting from a part thereof, a combustible diaphragm supported by the tongues immediately adjacent to the sleeve, a circuit-closer having a stem guided in the sleeve and supported by the diaphragm, a sleeve insulated from the first-mentioned sleeve of the casing and concentric therewith, a battery, an alarm, and electric connections between the battery, alarm, casing, and insulated sleeve.

3. A device of the character described, comprising a casing having a sleeve, a destructible diaphragm supported on the casing, a substantially cross-shaped circuit-closer having its stem guided in the casing and supported by said diaphragm, a sleeve insulated from the first-mentioned sleeve of the casing and concentric therewith, a battery, an alarm, and electric connections between the battery, alarm, casing, and insulated sleeve.

4. A device of the character described, comprising a casing having a sleeve, tongues projecting from a part thereof, a celluloid diaphragm supported by the tongues, a circuit-closer having its stem guided in the sleeve and supported by said celluloid diaphragm, a sleeve insulated from the first-mentioned sleeve of the casing and concentric therewith, an alarm, and electric connections whereby the circuit through the alarm may be completed when the celluloid diaphragm is destroyed.

5. A device of the character described, comprising a casing having a sleeve formed integral therewith, a second sleeve insulated therefrom and concentric therewith, a substantially cross-shaped circuit-closer guided in the sleeve of the casing, a celluloid diaphragm supporting the circuit-closer, an alarm, electric connections between the sleeves and alarm, and a spring normally forcing the circuit-closer against the diaphragm for the purpose set forth.

6. A device of the character described, comprising a box-like casing having a cover closing one end thereof, an inward-projecting sleeve formed integral with the casing, a circuit-closer having its stem guided in the sleeve of the casing, a second sleeve concentric with the first-mentioned sleeve and insulated therefrom, a destructible diaphragm arranged adjacent to the sleeve and normally supporting the circuit-closer, an alarm, and electric connections whereby the circuit through the alarm may be completed.

7. A device of the character described, comprising a casing having a sleeve formed integral therewith, a second sleeve insulated therefrom and concentric therewith, a substantially cross-shaped circuit-closer guided in the sleeve of the casing, a celluloid diaphragm supporting the circuit-closer, a spring normally forcing the circuit-closer toward the diaphragm, an alarm, and electric connections between the sleeves and alarm.

This specification signed and witnessed this fourteenth day of November A. D. 1907.

BERNARD B. MEARS.

Witnesses:
SAMUEL J. FISHER,
A. H. FISHER.