

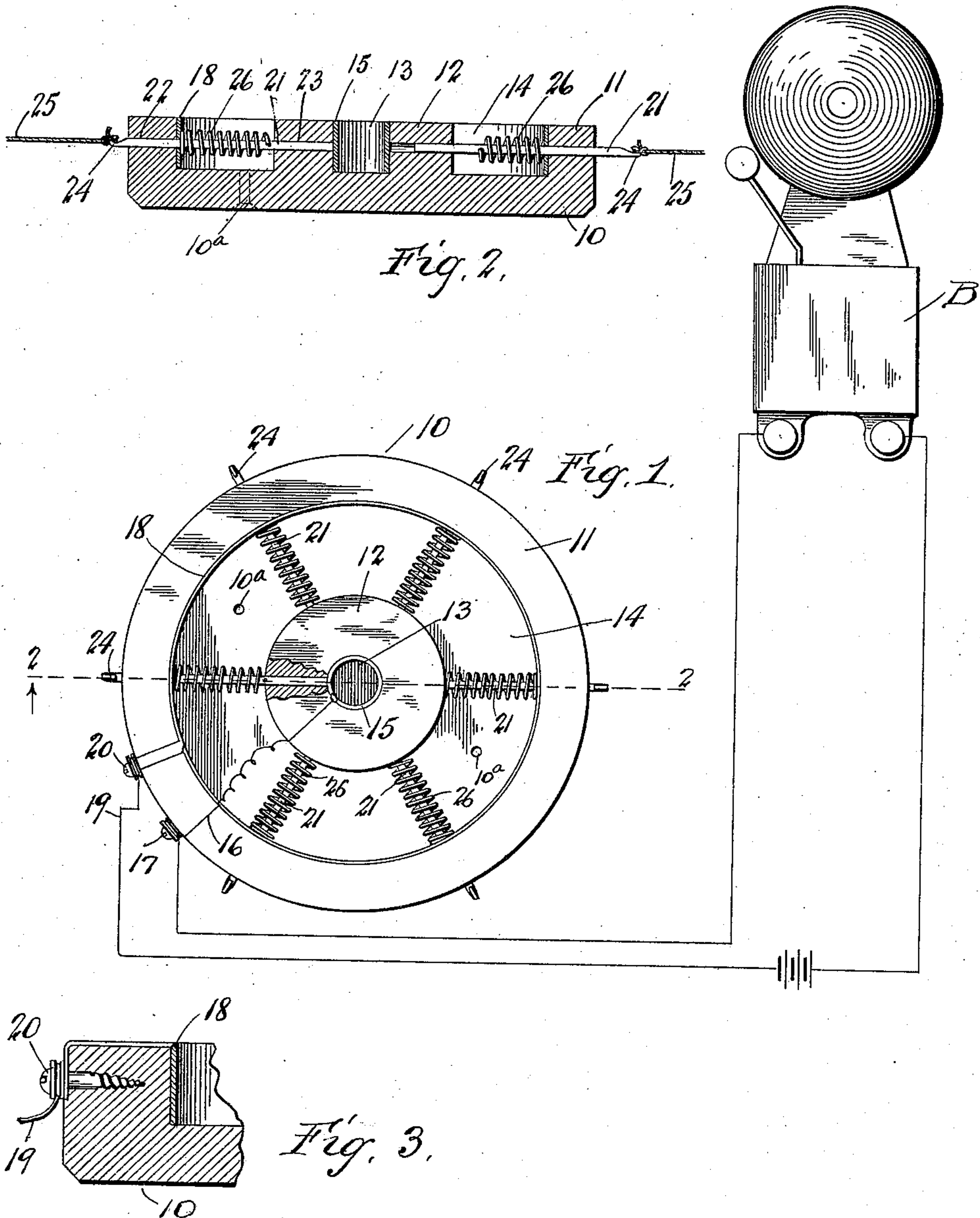
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A. W. HANSEN & S. C. W. HARRISON.  
FIRE ALARM.

(Application filed Mar. 25, 1901.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 689,817, dated December 24, 1901.

Application filed March 25, 1901. Serial No. 52,851. (No model.)

*To all whom it may concern:*

Be it known that we, AUGUST W. HANSEN and SAMUEL C. W. HARRISON, citizens of the United States, and residents of Evanston, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Fire-Alarms, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

Our invention relates to improvements in fire-alarms, and has for its object to provide an electrically-operated device of that character which shall be simple in construction and automatic in operation and which may be cheaply manufactured and easily installed, the invention consisting in the various parts and arrangement of parts, as hereinafter fully described, and as illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of the invention, partly in section, and showing its electrical connections in diagram. Fig. 2 is a section on the line 2 2 of Fig. 1, and Fig. 3 is an enlarged detail in section.

A disk 10, of any suitable material, but preferably of wood, because of its inexpensiveness, is provided with or has formed on one of its faces at its periphery a flange 11 and a concentric central flange 12, centrally socketed, as at 13, providing between them an annular recess 14.

Seated in the socket 13 is a metallic contact-sleeve 15, serving as a terminal for the conducting-wire 16, which is led to the sleeve 15 by way of the binding-screw 17 on the flange 11. A ribbon 18 is located within the annular recess 14, lining the inner face of the flange 11 and providing the other terminal, a wire 19, secured to the binding-post 20, connecting therewith.

A plurality of sliding rods 21 are set radially within the disk 10, passing through apertures 22 and 23 in the flange 11 and center piece 12, respectively, their inner ends being adapted to have contact with the sleeve 15 and the ribbon 18, through which the rods also pass and through which the circuit is closed. The outer ends of the rods 21 project beyond the periphery of the disk and are pro-

vided with hooks 24, to which are attached inflammable strings or cords 25.

An expansion-spring 26 is coiled around the body portion of each of the rods 21 within the annular recess 14, and one of its ends being passed through an aperture in the rod reacts against the contact-ribbon 18 of the flange 11, so as to force the rod 21 inwardly to secure its contact with the sleeve 15 of the socket, thereby closing the circuit when the rods are released by the burning of the cords, which are designed to hold the rods out of contact with the sleeve, as will be hereinafter explained.

The disk 10 is secured through the apertures 10<sup>a</sup> by suitable fastening means to the ceiling of a chamber, preferably, although it may be placed in any other convenient location, and the inflammable cords 25 are attached to the hooks 24 at the ends of the sliding rods 21 and conducted along the walls of the various apartments of a building through the angles in the furnace heating-pipes, where, by reason of the accumulation of light dust, a fire is very likely to originate, or to any other point where a fire may occur.

When the alarm system is installed, the cords 25 being drawn taut and their ends secured, and the rods 21 being pulled out against the resistance of the springs 26, contact with the sleeve 15 is broken and the circuit opened. Should a fire occur in the locality of one of the cords, the latter would become ignited in the incipency of a blaze, and, parting, permit the spring of the rod to which the burning cord was attached to force the rod against the sleeve 15, and, closing the circuit through the rod 21, the sleeve 15, and the ribbon 18, sound the alarm B.

The device is of a very simple character, easily made, is free from complication, and the works by reason of their disposition in the annular recess are hidden from view and protected from dust.

The central flange 12 not only serves as a pocket to hold the terminal 15, but also guides the ends of the rods 21 and insures their contact with the sleeve when the rods are released by the burning of the cords. We do not wish, however, to confine ourselves to



this precise construction, and instead of the flange 12 a solid hub or projection may be provided and the contact-sleeve 15 placed around the same, or the flange 12 may be dispensed with altogether and the central terminal adapted to close the circuit through any one of the series of radiating rods employed alone.

We claim as our invention—

- 10 1. A circuit-closer for fire-alarms comprising a member having an annular recess, an electrical terminal located in the recess, a second terminal set in the inner wall of the recess, a plurality of radially-disposed sliding rods located in the recess and having contact with one of the terminals, a cord attached to each of the rods for holding it out of engagement with the other terminal, and means adapted to move the rod into contact with such latter terminal when the rod is released.
- 25 2. A circuit-closer for fire-alarms comprising a member having an annular recess, an electrical terminal located in the recess, a second terminal set in the inner wall of the recess, a plurality of radially-disposed sliding rods located in the recess and having contact with one of the terminals, a cord attached to each of the rods for holding the rods out of engagement with one of the terminals, and spiral springs located in the recess and surrounding the rods to cause the rods to contact with such latter terminal when the cords are released.

3. In an electrical fire-alarm, in combination, a body having a recess, the walls of which are concentric and the inner wall being a socketed hub, a sleeve seated in the socket and serving as a terminal, a ribbon located in the recess and serving as the other terminal, a plurality of spring-actuated radially-disposed sliding rods passing through the terminal located in the recess and adapted to be moved into contact with the terminal in the socket, and a cord attached to each of the rods to hold it out of engagement with such terminal against the resistance of its spring.

4. In an electrical fire-alarm, in combination, a disk having on one face thereof a pair of concentric flanges, a metallic sleeve located within the inner flange and serving as an electric terminal, a ribbon set in the recess between the flanges and against the outer flange providing the other terminal, a plurality of radially-disposed sliding rods passing through the flanges and having contact with the terminal in the recess, an expansion-spring coiled around each of the rods within the recess and adapted to force the rods in contact with the sleeve, and inflammable cords to hold the rods out of contact with the sleeve.

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