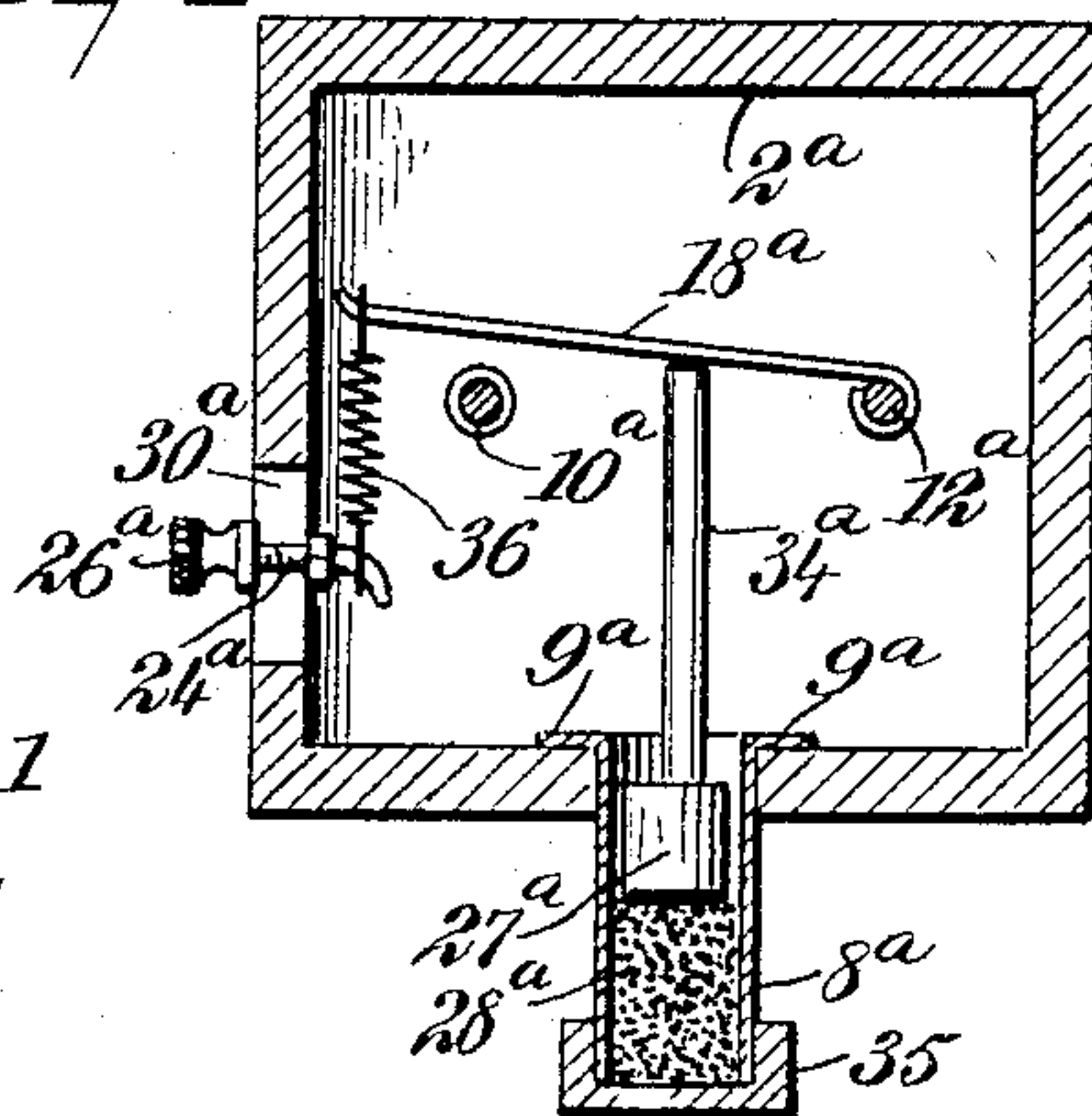
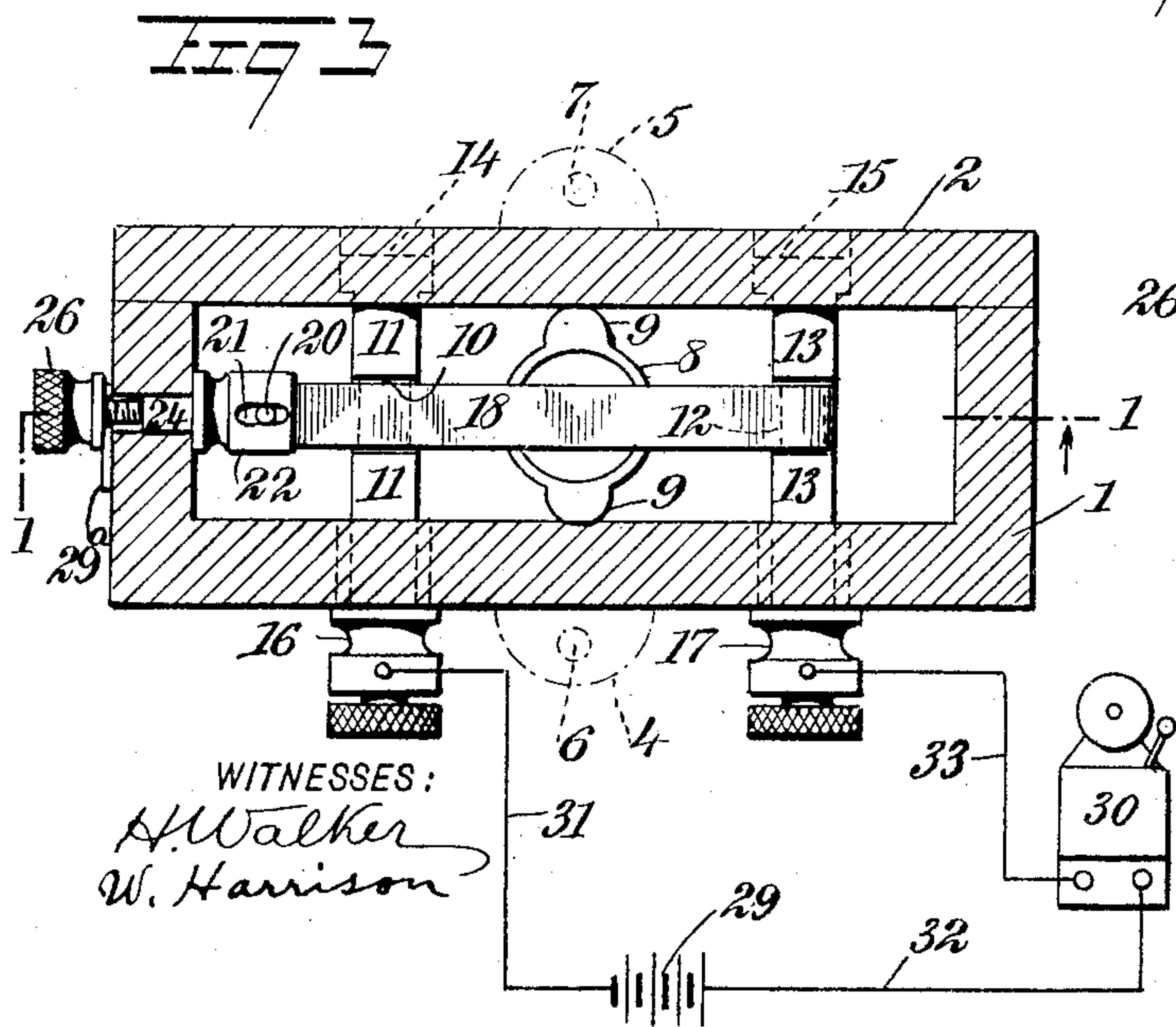
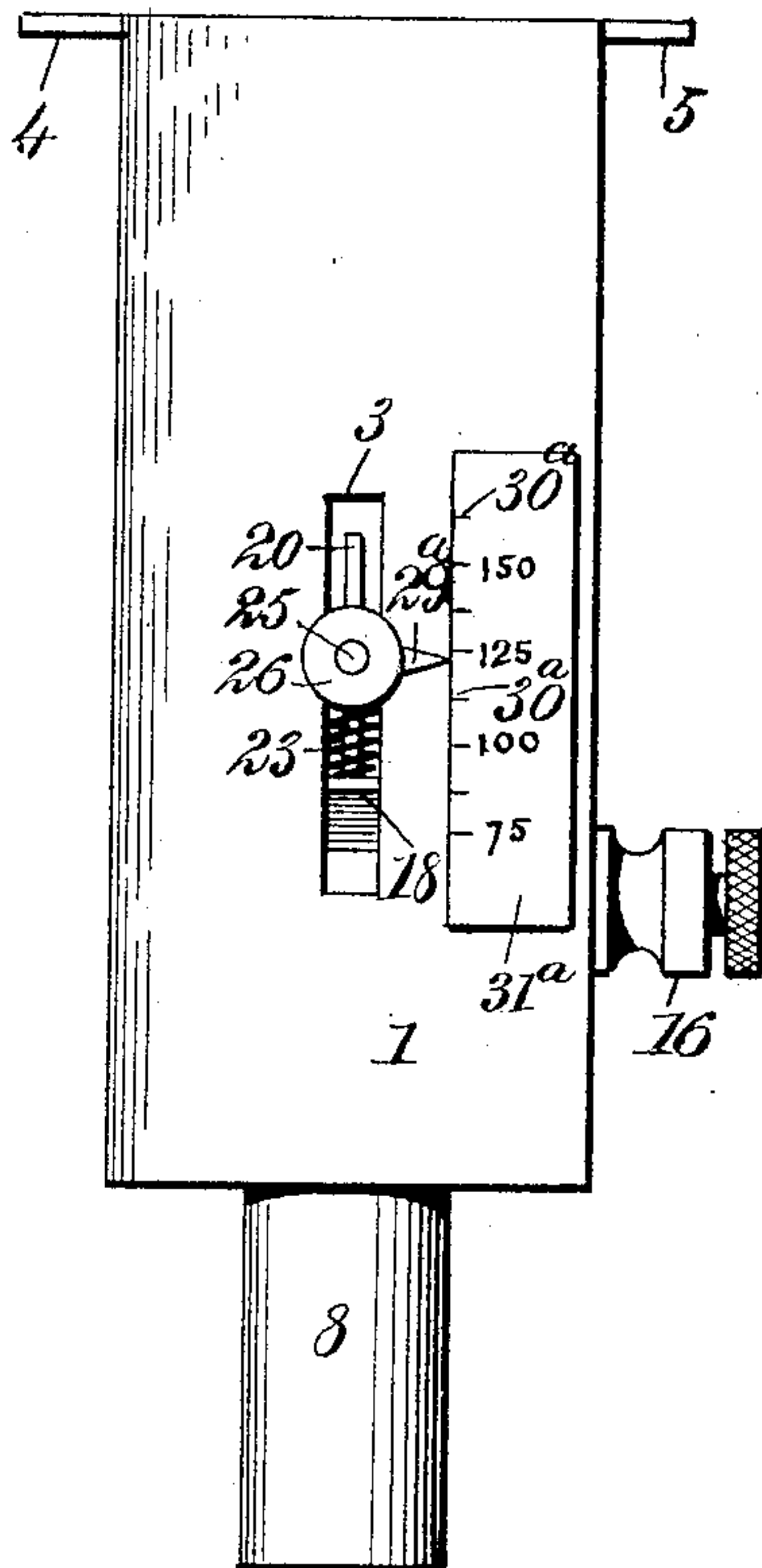
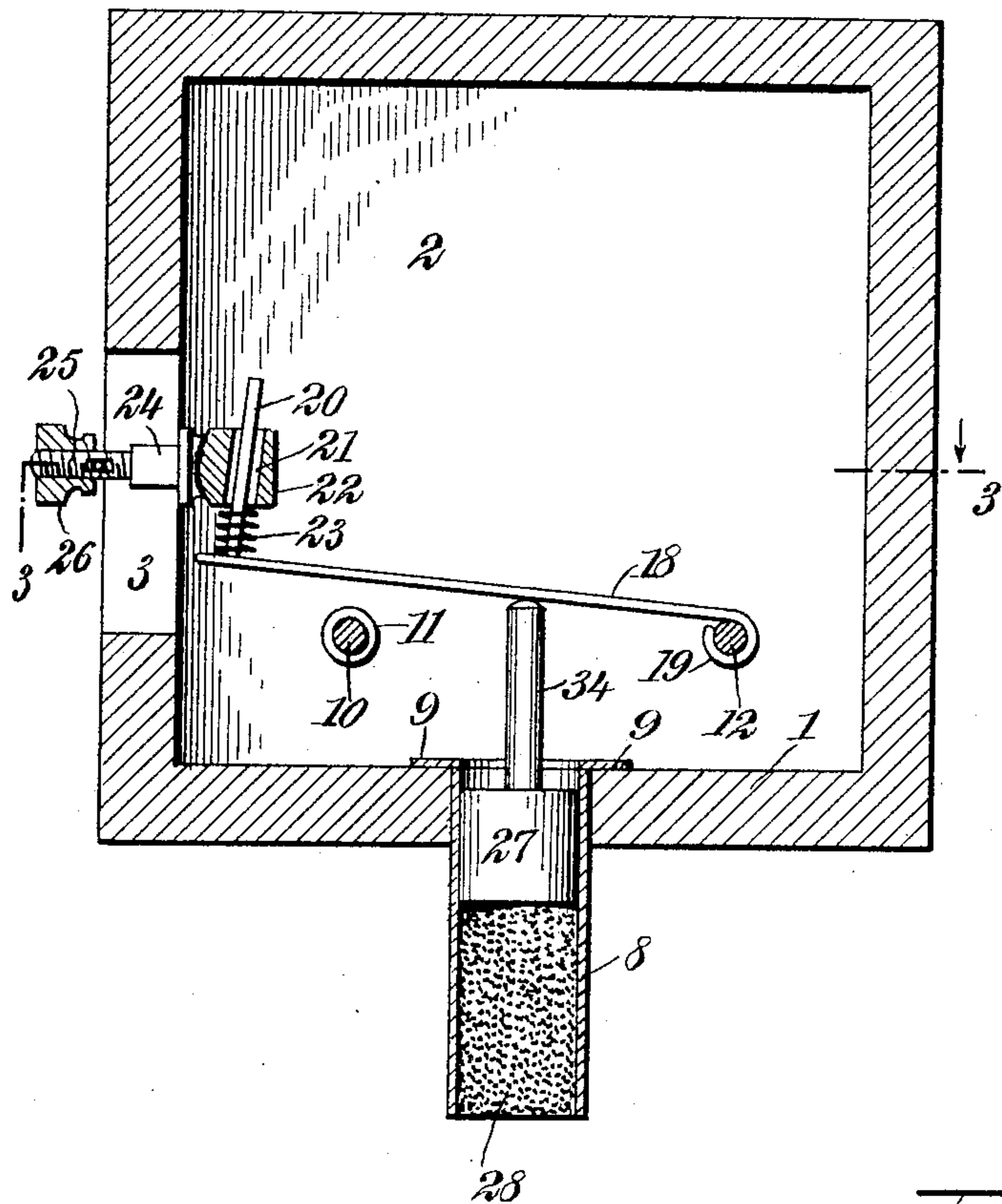


PATENTED JAN. 19, 1904.

ELECTRIC FIRE ALARM.

APPLICATION FILED APR. 30, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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ELECTRIC FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 750,150, dated January 19, 1904.

Application filed April 30, 1903. Serial No. 154,919. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH A. BARTEN and SAMUEL R. SNEERINGER, citizens of the United States, and residents of Philadelphia, in the
5 county of Philadelphia and State of Pennsylvania, have invented a new and Improved Electric Fire-Alarm, of which the following is a full, clear, and exact description.

Our invention relates to automatic electric
10 fire-alarms of the type in which a fusible substance is melted when the apparatus reaches a certain temperature, thereby sounding an alarm.

Reference is to be had to the accompanying
15 drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a central vertical section through the apparatus on the line 1 1 in Fig. 3. Fig.
20 2 is a front elevation of the same. Fig. 3 is a horizontal section upon the line 3 3 in Fig. 1 looking in the direction of the arrow; and Fig. 4 is a section similar to Fig. 1, but showing another form of certain details of the ap-
25 paratus.

A casing 1 is provided with a lid 2 and with a longitudinal slot 3. The casing is also provided with lugs or ears 4 5, provided with apertures 6 7 and disposed at the top of the
30 casing, whereby the same may be suspended from a ceiling or other convenient point, preferably elevated. Connected with the bottom of the casing and depending therefrom is a tube 8, provided at its upper end with lobe-
35 flanges 9, as indicated more particularly in Figs. 1 and 3. A cylindrical contact member 10 is provided with enlarged portions 11 and with a head 14, whereby the same is mounted in position. A cross-rod 13 is pro-
40 vided with a reduced cylindrical portion 12 and with a head 15, as indicated in Fig. 3. The two cross members 11 13 are provided with binding-posts 16 17. Mounted upon the cylindrical portion 12, which serves as a
45 journal, is a contact-tongue 18, having, preferably, more or less elasticity and provided with a bearing 19, as indicated in Fig. 1. The contact-tongue 18 is movable relatively to the contact member 10. Mounted upon

the tongue 18 is a guide-rod 20, which passes 50 loosely through an aperture 21 in a head 22. A spiral spring 23 rests upon the tongue 18 and engages the head 22 so as to normally force the tongue 18 downward and into con-
55 tact with the fixed member 10. A boss 24 passes through the slot 3 and is engaged by a screw 25, upon which is mounted a nut 26, whereby the position of the head 22 relatively to the slot 3 may be regulated at will. A
60 piston 27 is slidably mounted within the cylinder 8 and normally rests upon a fusible substance 28. This fusible substance may be paraffin, stearic acid, rosin, wax, tallow, or
65 lead or any similar substance or mixture of several substances and may be of such nature as to melt at any desired temperature. A battery 29 is connected with a bell 30 or
70 equivalent signal and with the binding-posts 16 and 17 by means of wires 31, 32, and 33, these connections being of the usual kind. Upon the piston 27 is mounted a rod 34 in-
75 tegrally connected therewith and normally sustaining the downward pressure of the tongue 18 due to the pressure of the spring 23.

When the apparatus is placed in the posi- 75 tion indicated in Fig. 2, the tension of the spring 23 is adjusted by means of a thumb-nut 26 and the piston 27 of course rests upon the fusible substance 28. The pressure of the
80 spring 23 is a factor in forcing the tongue 18 downward, the idea being that the greater the pressure of the spring the greater the tendency of the substance 28 to leave the cylinder 8, especially if the substance 28 be of a com-
85 posite nature. Suppose now that the surrounding temperature be elevated to such a point that the substance 28 moves sufficiently to be forced downwardly into the cylinder 8 by the
90 piston 27 under the pressure of the tongue 18, which is in turn forced downwardly by the spring 23. The tongue 18 is forced into en-
95 gagement with the contact member 10 and the alarm is sounded. As shown in Figs. 2 and 3, the nut 26 carries a pointer or index 29^a, which operates in connection with graduations 30^a on a plate 31^a, attached to the front of the cas-
ing 1, whereby the degree of tension of the spring 23 may be indicated.

In Fig. 4 is shown a slightly different form of the apparatus. The casing 2^a is provided with a slot 3^a and with a depending tube 8^a, provided with lobe-flanges 9^a. A fixed contact is shown at 10^a and a movable contact at 18^a, the movable contact being journaled at 12^a. The piston 27^a is appreciably smaller than the cylinder 8^a, containing the fusible substance 28^a, so that the fusible substance when melted may be forced upwardly around the sides of the piston, so as to flow over the top thereof, whereby the piston may become submerged. A cap 35 closes the lower end of the tube 8^a and prevents egress of the fusible substance when melted. The outer or free end of the movable contact 18^a is connected by a spiral spring 36 with a hook 24^a, which may be moved up or down relatively to the slot 3^a and secured firmly in position at any desired point by means of a thumb-nut 26^a. The piston 27^a and the vertical rod 34^a have substantially the same form as the piston 27 and the rod 34. (Shown in Fig. 1.)

When the form of apparatus shown in Fig. 4 is used, the casing is mounted in position, the tension of the spring-contact 18^a is adjusted at will, and the piston 27^a rests upon the substance 28^a. When the substance 28^a melts and flows upward around the piston 27^a, the movable contact member 18^a closes upon the fixed contact 10^a and sounds the alarm, as above described.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In an electric fire-alarm, the combination of a contact provided with a movable member, means for closing said contact when the temperature reaches a predetermined degree, a guide-rod mounted upon said movable member, a head mounted adjacent to said guide-rod, a spiral spring encircling said guide-rod and engaging said movable member and said head, and means controllable at will for securing said head at different points for the purpose of tensioning said spring to any desired degree.

2. In an electric fire-alarm, the combination of a frame, a contact provided with a movable lever, a fusible substance connected with said movable lever and normally opposing the motion thereof, spring mechanism for tensioning

said movable lever, an adjustable slide mounted upon said frame and engaging said spring mechanism, and means for indicating the relative position of said slide thereby showing the degree of tension upon said spring mechanism.

3. In an electric fire-alarm, the combination of a frame provided with a longitudinal slot, a contact provided with a movable lever, a fusible substance connected with said movable lever and normally opposing the motion thereof, a spiral spring mounted upon said lever, a movable member engaging said slot and free to move relatively thereto, and means controllable at will for securing said member in different positions relatively to said slot for the purpose of tensioning said spring.

4. In an electric fire-alarm, the combination of a frame provided with a longitudinal slot, a movable member mounted within said slot, a heat-controlled device normally restraining said member against movement, an electric contact closable by movement of said member but normally open, a spring connected with said member for moving the same, a member engaging said spring and also engaging said slot, and mechanism controllable at will for securing said member at different points relatively to said slot.

5. In an electric fire-alarm, the combination of a frame provided with a longitudinal slot, a movable member mounted within said slot, a heat-controlled device normally restraining said member against movement, an electric contact closable by movement of said member but normally open, a spring connected with said member for moving the same, a member engaging said spring and also engaging said slot, mechanism controllable at will for securing said member at different points relatively to said slot, and an index for indicating the position of said member engaging said slot thereby showing the degree of tension exerted by said spring.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOSEPH A. BARTEN.

SAMUEL R. SNEERINGER.

Witnesses:

JOSEPH H. STOPP,

R. L. GOLZE.