No. 881,663. PATENTED MAR. 10, 1908.

G. H. CARROLL.

FIRE ALARM.

APPLICATION FILED NOV. 9, 1907.

Fig. 1.

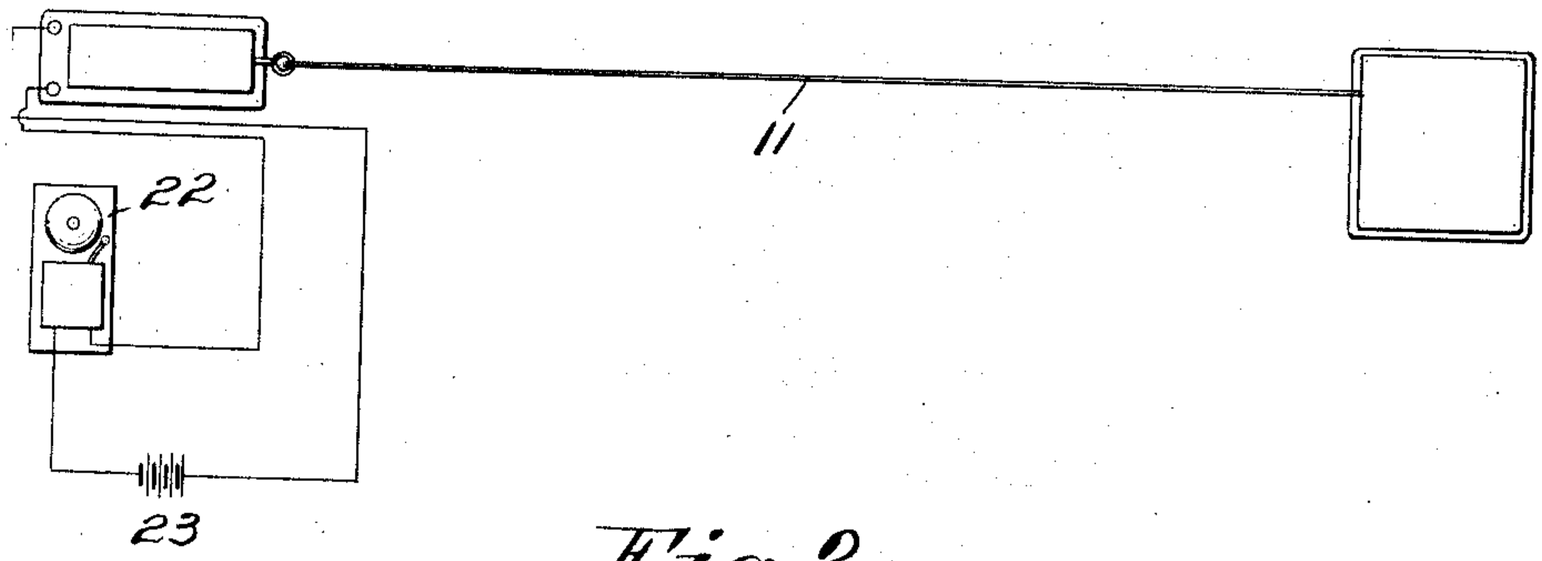


Fig. 2.

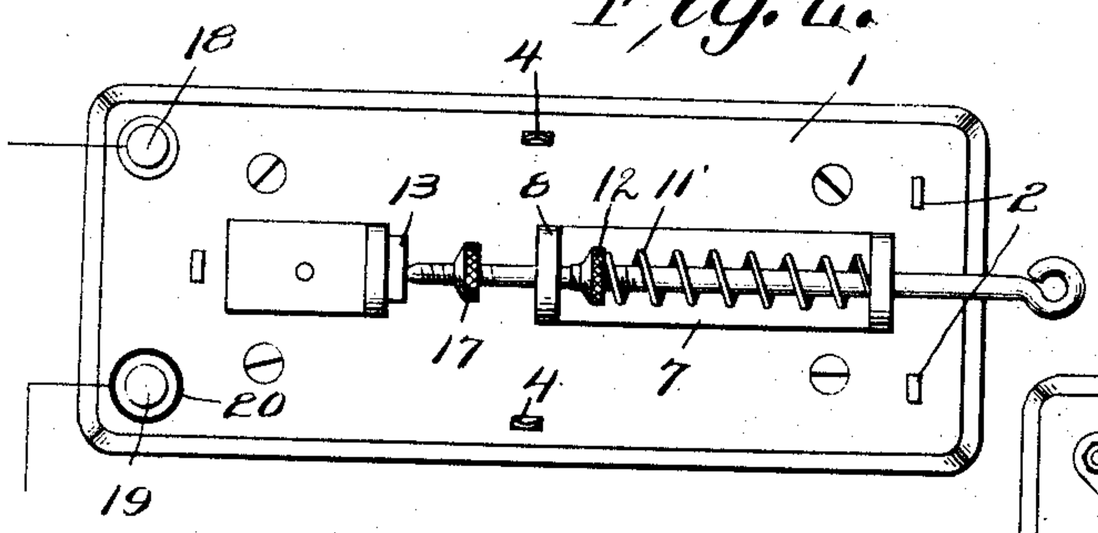


Fig. 5.

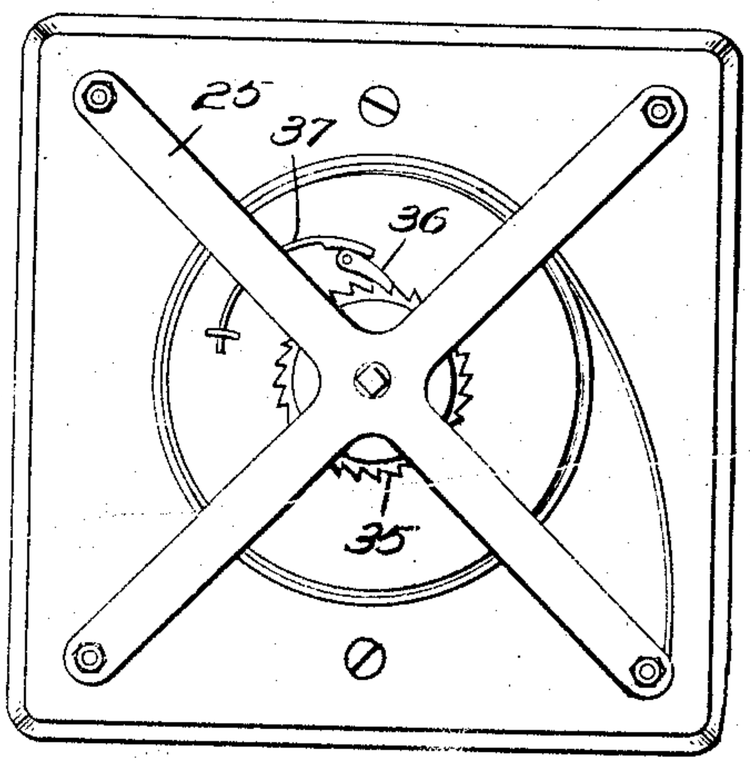


Fig. 3.

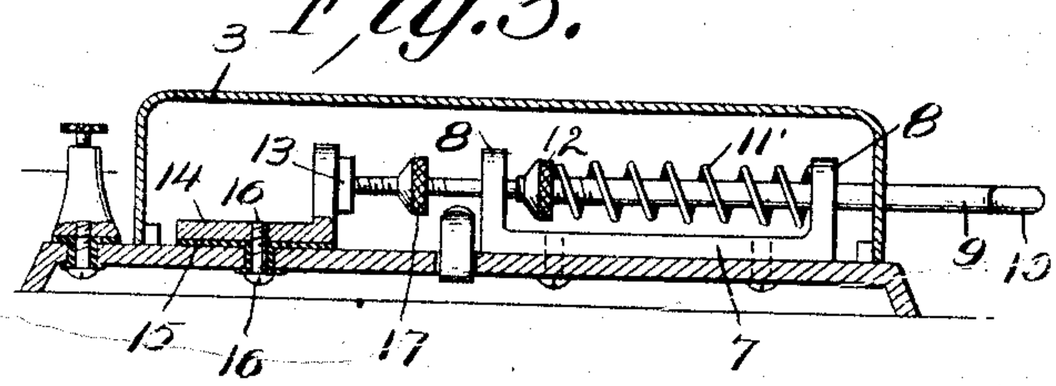


Fig. 4.

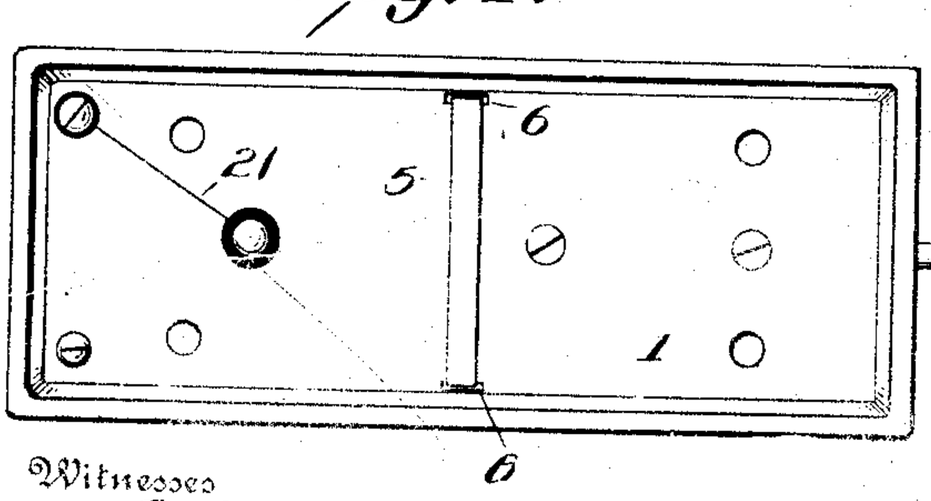
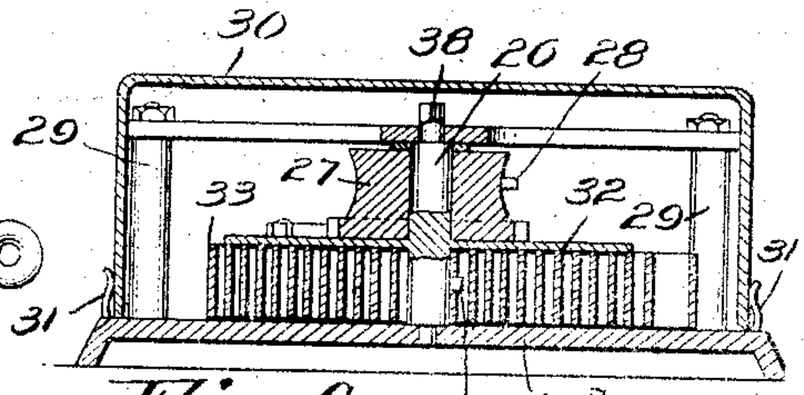


Fig. 6.



Witnesses

C. E. Smith.

P. M. Smith.

Inventor

George H. Carroll.

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

GEORGE H. CARROLL, OF VACAVILLE, CALIFORNIA.

FIRE-ALARM.

No. 881,663 Specification of Letters Patent. Patented March 10, 1908.

Application filed November 9, 1907. Serial No. 401,499.

To all whom it may concern:

Be it known that I, GEORGE H. CARROLL, a citizen of the United States of America, residing at Vacaville, in the county of Solano and State of California, have invented new and useful Improvements in Fire-Alarms, of which the following is a specification.

This invention relates to fire alarms, the object of the invention being to provide an alarm which is automatically set in operation by the action of the fire which destroys or injures a portion of the alarm mechanism, whereby the remainder of the alarm mechanism is released and allowed to become operative so as to establish an electrical circuit and ring an alarm included in said circuit.

With the above and other objects in view, the nature of which will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts hereinafter fully described, illustrated and claimed.

In the accompanying drawing—Figure 1 is a diagrammatic plan view of the apparatus of this invention. Fig. 2 is a plan view of the circuit closer. Fig. 3 is a longitudinal section through the circuit closer, showing the parts in the positions they assume when the circuit is closed. Fig. 4 is a bottom plan view of the circuit closer. Fig. 5 is a plan view of the tension device. Fig. 6 is a diametrical section through the tension device.

The circuit closer embodies essentially a base 1 provided at suitable points with lugs 2 for positioning a suitable inclosing case or cover 3 which sets on and against the base 1 and is held frictionally in place by means of a pair of clips 4 which engage opposite sides of the cover, as shown in Fig. 3, the two clips 3 preferably consisting of the opposite inbent extremities of a strip of spring metal 5 which passes under the base 1 and up through slots or openings 6 therein so as to bear against the opposite sides of the cover.

Secured to the base 1 within the cover is a plate 7 having upstanding guides 8 in which is mounted a longitudinally movable slide 9 in the form of a rod provided at its outer end with an eye 10 adapted to have one end of a cord 11 attached thereto in the manner illustrated in Fig. 1.

Disposed around the rod or slide 9 is a coiled spring 11′, one end of which bears against one of the guides 8, while the opposite end bears against a collar 12 which is threaded upon the slide 9 so as to render said collar adjustable for varying the tension of the spring 11′ which acts to thrust the inner end of the slide in the direction of and against a contact plate 13 carried by a bracket 14 insulated from the base by an intervening insulating washer or strip 15 and secured in place on the base by means of a screw or other suitable fastener 16.

In addition to the adjustable collar 12, the slide 9 is provided with another adjustable collar 17 also threaded thereon, as shown in Figs. 2 and 3, the last named collar forming a stop which by striking against the adjacent guide 8 limits the outward movement of the slide 9 in the act of setting the apparatus in readiness for use.

The base 1 is provided with binding posts 18 and 19, one of which is in electrical contact with the base plate and the other of which is insulated from the base plate by means of an interposed insulating washer 20, the last named binding post 19 being electrically connected to the fastener or screw 16 by a short wire 21 which connects said parts and extends under the base, as shown in Fig. 4. A circuit containing an alarm bell 22 and battery 23 has the circuit closer above described included therein, one wire of the circuit connected to one of the binding posts and the other wire to the remaining binding post. Therefore, when contact is made between the slide 9 and the contact piece 13, the current passes from the binding post 18 through the base, through the plate 7 to the slide 9, then to the contact piece 13 through the bracket 14 and fastener 16 and wire 21 to the other binding post 19 to which the other wire of the circuit is connected. This sounds the alarm 22 which may be located at any desired point in a house, dwelling, store or other building.

In order to hold the slide 9 under tension, out of electrical contact with the contact piece 13, I employ a tension device which comprises a base 24 and a spider 25 in which is journaled the shaft 26 of a drum 27, said drum being provided with an eye 28 to which the opposite end of the cord 11 above described is secured. The spider 25 is connected at its extremities to a series of corner posts 29 extending upward from the base 24, and over and around the posts and spider and other contained mechanism there is placed an inclosing case or cover 30 which is engaged by spring clips 31 on the base and held in place thereby. The shaft 26 also

carries a housing plate 32 between which and the base 1 there is arranged a coiled spring 33, one end of which is connected to a shoulder 34 on the shaft 26, while the opposite end is connected to one of the posts 29, as illustrated in Figs. 5 and 6. The shaft is also provided with a ratchet wheel 35 which is engaged by a detent 36 held in engagement with the ratchet wheel by a suitable spring 37.

In use the cord 11 will be stretched across a room or series of rooms and preferably close to one of the walls thereof, and the cord which is easily fusible will be placed under tension by connecting the same to the drum 27 and winding the drum or placing the same under tension by means of the spring 33, this being accomplished with the aid of a suitable key applicable to the end of the winding arbor or shaft 26, which arbor or shaft is squared, as shown at 38, to receive such key. As soon as the fire reaches the cord 11, said cord snaps, and the spring 11′ then throws the slide into contact with the contact piece 13, thereby closing the circuit with the result above stated.

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

1. A fire alarm embodying a circuit closer, a tension device, and a fusible cord connecting the tension device and circuit closer, the circuit closer embodying a spring-actuated slide, means for adjusting the tension of said slide, a collar for limiting the movement of the slide in one direction, and a contact piece located in the path of the slide, the slide and contact piece being included in an alarm circuit, substantially as described.

2. Fire alarm apparatus embodying a circuit closer, a tension device, and a fusible cord connecting the two, the circuit closer comprising a slide and a contact piece in the path thereof, the said slide and contact piece forming portions of an alarm circuit, and the tension device embodying a spring-wound drum to which one end of the fusible cord is connected and upon which it is wound, substantially as described.

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

GEORGE H. CARROLL.

Witnesses:
W. W. LAWRENCE,
J. L. HAYES.