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J. HARTLEY.

FIRE ALARM AND FIRE EXTINGUISHING APPARATUS.

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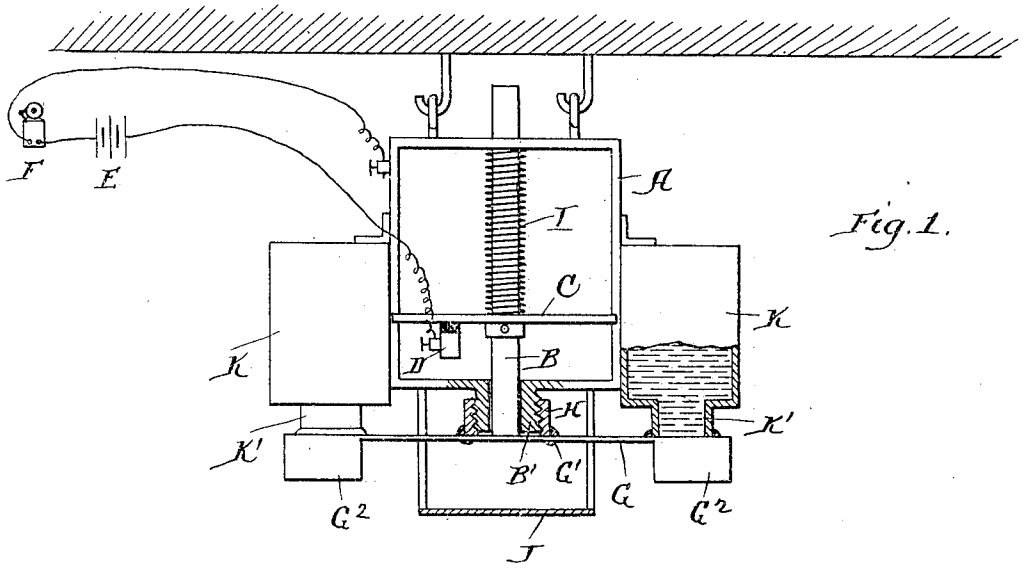
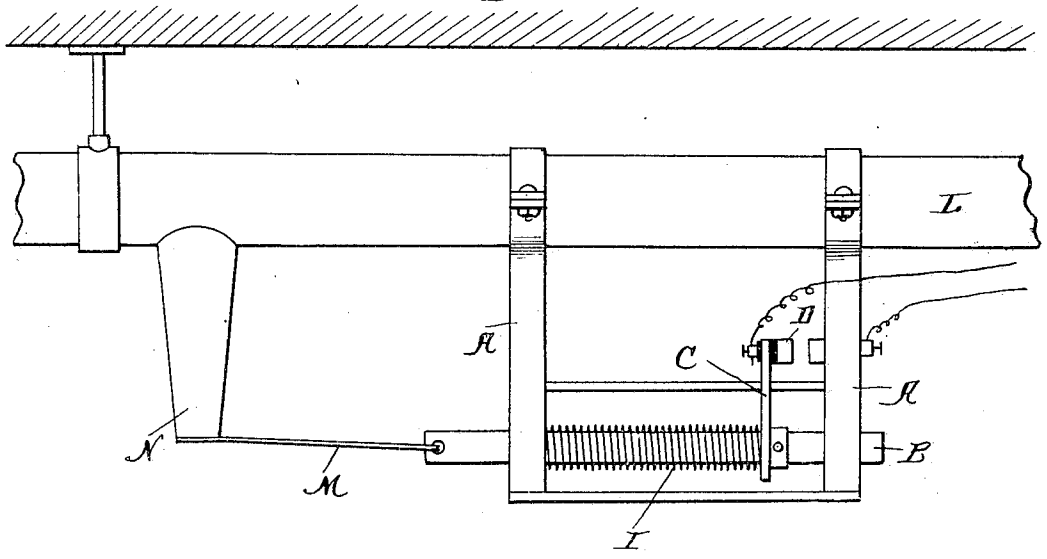


Fig. 1.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES HARTLEY, OF PHILADELPHIA, PENNSYLVANIA.

FIRE-ALARM AND FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 788,152, dated April 25, 1905.

Application filed July 1, 1904. Serial No. 214,863.

To all whom it may concern:

Be it known that I, JAMES HARTLEY, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Fire-Alarm and Fire-Extinguishing Apparatus, of which the following is a specification.

My invention relates to a new and useful improvement in fire-alarms and fire-extinguishing apparatus, and has for its object to provide a device of this description which will be extremely simple in construction, so that it may be manufactured at a small cost, but will be durable and efficient in action and will sound an alarm instantly in any predetermined place when a fire occurs in a place where the fire-alarm apparatus is installed.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of one of my improved fire-alarms, a portion of the same being shown in section; Fig. 2, a side elevation of a modified form of construction adapted to be used in connection with a water-ceiling pipe and sprinklers.

The apparatus, as shown in Fig. 1, consists of a frame A, designed to be suspended from the ceiling in any suitable manner, and through this frame projects a rod B, the lower end of the rod extending through an exteriorly-threaded boss B′ formed with the frame.

C is a cross-bar secured to the rod B and adapted to be guided in its vertical movement in any suitable manner, here shown as engaging the side bars of the frame A. This cross-piece C carries a contact-point D, insulated from the cross-piece, and a wire leads from this contact D to one terminal of a suitable source of electricity E and from the other terminal through an alarm device F back to the frame A, to which it is connected. Thus when the contact D comes in contact with the frame a circuit will be established, sounding an alarm. This contact D is normally held upward out of contact with the frame by means of a strip G, soldered to an interiorly-threaded ring H, which ring is threaded upon the boss B, so that the rod B will come in contact with the strip G, and therefore the rod, cross-piece C, and contact D will be held raised.

I is a spring interposed between the upper surface of the cross-piece C and the frame A, tending to force the rod B and cross-piece downward.

In operation whenever a fire occurs the heat from the same will melt the solder G′ securing the strip G to the ring H. This strip will then fall downward, allowing the rod B, cross-piece C, and contact D to descend. Thus a circuit is established, sounding the alarm. J is a cage or guard depending from the frame A, adapted to catch and hold the strip G when it falls, so that it will not fall entirely to the floor. The strip G may be weighted at G^2 upon each end to aid in its descent.

If desired, receptacles K may be secured to each side of the frame A, these receptacles having openings K′ in their lower ends, and the neck surrounding said openings are soldered to the upper surface of the strip G, so that the contacts cannot normally escape. The solder which closes these receptacles is made to melt at the same temperature as the solder which secures the strip to the ring H, so that the strip G will be relieved at all points at one time, and the fire-extinguishing liquid within the receptacles K will flow out of said receptacles and aid in extinguishing the fire, while at the same time the balance of the apparatus will sound the alarm.

In Fig. 2 I have shown my apparatus as applied to a sprinkling-pipe in which the frame A is suspended from the sprinkling-pipe L. The rod B slides through the frame and is also provided with a cross-piece C, carrying the contact D; but in this case the contact D is held out of contact by means of a wire M, one end of which is connected to a plate soldered so as to close one of the sprinkling-spouts N, and the other end of the wire is connected to the rod B. Thus when the heat

rises to a certain temperature the solder will be melted at the sprinkling-pipe and at the same time releasing the wire M, allowing the spring I to act to force the contact D into contact with the frame, so as to complete the circuit, as before described.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a device of the character described, a frame secured in juxtaposition to the ceiling, a sliding rod arranged within said frame, two contacts carried by and insulated from the rod, the other arranged upon the frame, wires leading from each contact to and through a suitable source of electricity, an alarm device, a spring tending to force said contacts together, means for holding the contacts normally apart, said means being held in position by solder adapted to melt at a predetermined point, a fire-extinguishing device containing a fire-extinguishing fluid, said fluid held against escaping by the same means as holds the contacts apart so that the fluid is released and the contacts forced together simultaneously, as and for the purpose specified.

2. In a device of the character described, a frame suspended from the ceiling, a vertically-sliding rod extending through the frame, a cross-piece secured to said rod, a contact carried by said cross-piece and insulated therefrom, a wire extending from said contact to one terminal of the source of electricity, a wire extending from the other terminal of the source of electricity through a suitable alarm device back to the frame, a spring coiled about the rod tending to force said contact in contact with the frame, an exteriorly-threaded boss depending from the frame through which the lower end of the rod extends, an interiorly-threaded ring normally threaded upon said boss, a strip soldered across the lower end of said ring with a solder adapted to melt at a predetermined temperature, the lower end of said rod resting upon said strip, receptacles secured to the frame containing fire-extinguishing fluid, said receptacles provided with openings through their lower end, said strip extending normally across said openings and being soldered to the receptacles to hold the liquid within the same, weights secured to each end of the strip, and a guard or cage depending from the frame to catch the strip when it falls, as specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JAMES HARTLEY.

Witnesses:

JOSEPH T. BEESON,

EDWARD H. MULVIHILL.