

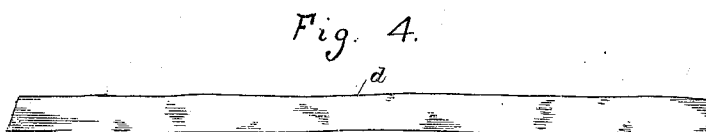
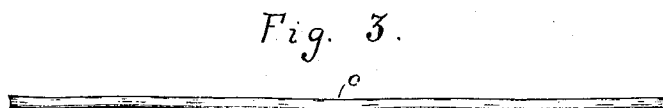
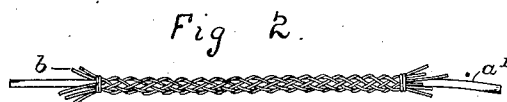
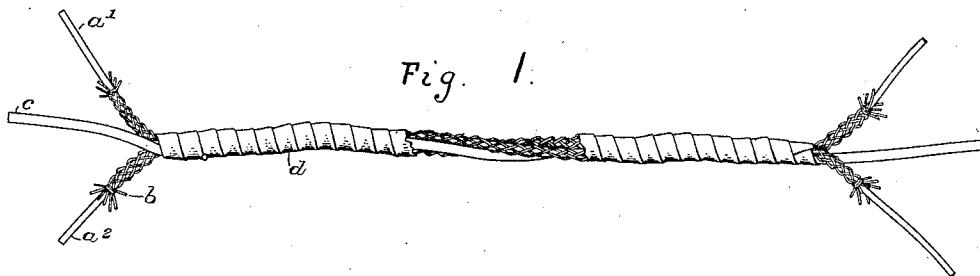
No. 647,565.

Patented Apr. 17, 1900.

H. V. HAYES & G. K. THOMPSON.  
ELECTRIC THERMOSTAT FOR FIRE ALARMS.

(Application filed Aug. 10, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

HAMMOND V. HAYES, OF CAMBRIDGE, AND GEORGE K. THOMPSON, OF MALDEN, MASSACHUSETTS, ASSIGNORS TO THE AMERICAN BELL TELEPHONE COMPANY, OF BOSTON, MASSACHUSETTS.

## ELECTRIC THERMOSTAT FOR FIRE-ALARMS.

SPECIFICATION forming part of Letters Patent No. 647,565, dated April 17, 1900.

Application filed August 10, 1899. Serial No. 726,791. (No model.)

*To all whom it may concern:*

Be it known that we, HAMMOND V. HAYES, residing at Cambridge, and GEORGE K. THOMPSON, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Electric Thermostats for Fire-Alarms, of which the following is a specification.

The thermostat is of the cable form, in which two wire conductors normally out of electrical contact are adapted to complete an electric circuit containing the fire-alarm apparatus by the fusion of a third wire composed of metal melting at a required temperature. In our improved construction the two conducting-wires are insulated from each other and from the fusible wire by open-work non-conducting material surrounding one or both of the wires and all three wires in a bunch are surrounded by asbestos cloth, asbestos paper, or other suitable material not readily destructible by heat.

A short length of cable constructed according to our invention is shown in the drawings, where are also shown separately or in lesser combinations the parts of which the cable is composed.

Figure 1 shows a short length of the cable, part of its covering being broken away to expose the conducting-wires forming part thereof. Fig. 2 shows a short length of one of the conducting-wires with its open-work covering of insulating material. Fig. 3 shows a short length of the fusible wire, and Fig. 4 shows a short length of the exterior covering of the cable.

The two conducting-wires are marked  $a'$   $a''$ . They are preferably of copper coated with tin. As shown, both are covered with an open-work braiding of insulating material  $b$ . Asbestos thread is the best material for such insulating material; but hard linen thread or cotton thread will answer the purpose, and it would also answer the purpose to cover but one of the conducting-wires with the braid. The fusible wire is marked  $c$ . As shown the three wires are twisted into a cord about six times to a foot; but any suitable means of keeping the three wires in similar close proximity may be adopted. The two conducting-

wires and the fusible wire thus insulated from each other are covered with a ribbon of asbestos paper  $d$ , wound in an overlapping cylindrical spiral or with any material not destructible by heat unless at a temperature far above that at which the material used for the fusible wire melts. In the operation this outer covering holds the molten metal to which the fusible wire is reduced by heat until the molten metal penetrating the open-work insulation of the conducting-wires establishes an electrical connection between them. Asbestos thread makes the best insulation, because there is no ash resulting therefrom when the fusible wire melts; but such ash as results from the combustion of cotton or linen thread does not materially interfere with the operation of the cable if the braiding is coarse in the sense that the openings between the threads are as large as possible consistent with normal good insulation.

It is unnecessary to show or describe electric fire-alarm apparatus with which the cable embodying our invention as above described may be used.

We claim—

1. An electric thermostat, consisting of two conducting-wires and a wire of fusible material covered with material not readily destructible by heat, the said conducting-wires being insulated from each other and from said fusible wire by open-work non-conducting material, substantially as described.

2. An electrothermostatic cable consisting of two conducting-wires and a wire of fusible material twisted into a cord, the said conducting-wires being insulated from each other and from the fusible wire by open-work non-conducting material, and the said cord being covered with asbestos, substantially as described.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 4th day of August, 1899.

HAMMOND V. HAYES.  
GEORGE K. THOMPSON.

Witnesses:

GEO. WILLIS PIERCE,  
JOSEPH A. GATELY.