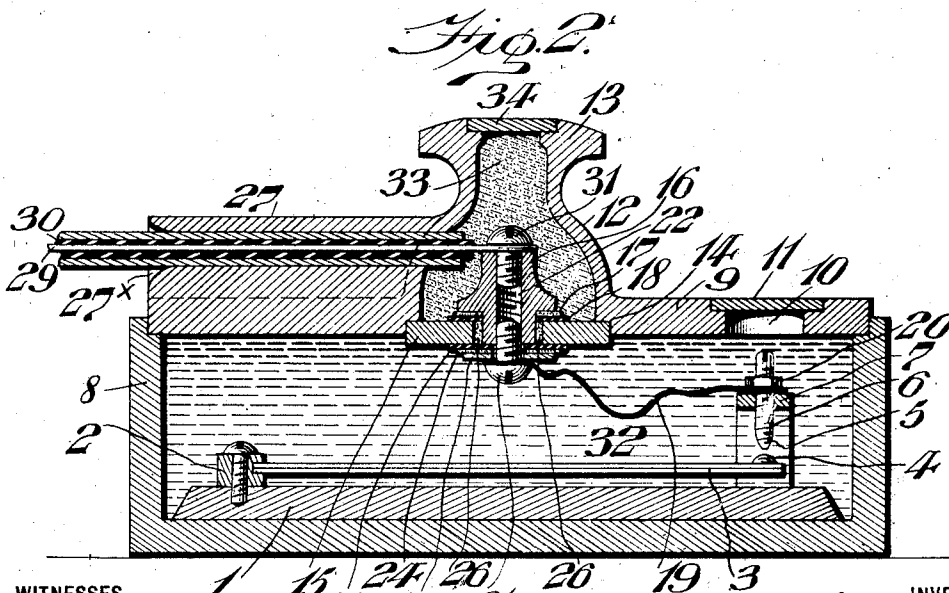
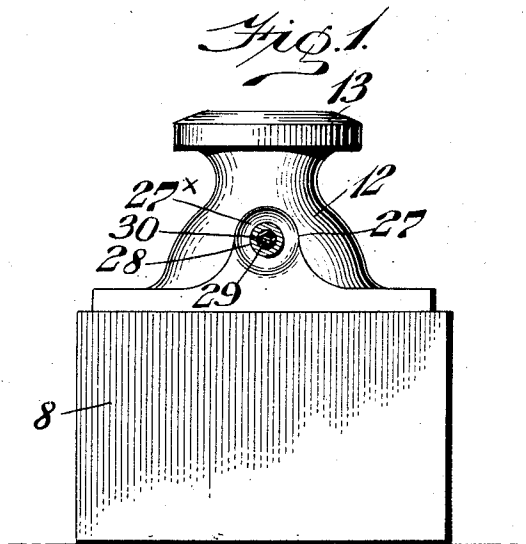


G. P. WILD.
THERMOSTAT.
APPLICATION FILED MAR. 8, 1911.

1,012,953.

Patented Dec. 26, 1911.



WITNESSES

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THERMOSTAT.

1,012,953.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed March 8, 1911. Serial No. 613,018.

To all whom it may concern:

Be it known that I, GÜNTHER PHILIP WILD, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Thermostat, of which the following is a specification.

My invention consists of an improved closure for thermostats of the character disclosed in Letters Patent, Nos. 976,747, 976,748 and 976,749, granted on the 22nd day of November, 1910, to Frederick W. Schmidt.

It further consists of improved means for connecting an electrical conductor to such thermostat.

It further consists of other novel features of construction all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents an end view of a thermostat embodying my invention. Fig. 2 represents a vertical section of the same.

The thermostat has a metallic base-plate, 1, usually of brass, having a short post, 2, at one end, into which one end of a composite metal thermostat-bar, 3, is secured. The free end of said bar has a contact-point, 4, preferably of a metal fusible at a high temperature, only, which registers and may have contact, when the bar is flexed owing to the difference in the coefficients of expansion of the two metals from which the bar is formed, with a contact point, 5, of the same metal and secured to the end of a contact-screw, 6, threaded, to be adjusted to bring its point nearer to or farther from the contact-point of the thermostat-bar in a yoke or bracket, 7, secured upon but insulated from the base-plate. The base-plate and thermostat are inclosed in the body, 8, of a casing, preferably of rectangular form, and having a cover, 9, secured liquid-tight to the upper edges of the side-walls, and

said cover which forms a wall of the casing has an opening, 10, registering with the head of the contact screw and closed by a seal, 11. The casing and cover are formed from an acid-resisting and electrically-conducting material, such as lead, which has been found in practice to be the best material, and the cover is formed, preferably at its middle, with a domed and flanged neck, 12, having a shouldered seat, 13, in its top opening. The bottom-opening of the neck is formed with an annular shouldered seat, 14, against which an annular disk, 15, preferably of lead, is seated to form a closed chamber within such neck. A flanged stud, 16, preferably of brass, has its reduced lower end passed through the central opening in said disk and has its flange seated against the upper face of the disk with a mica washer, 17, and a rubber washer or gasket, 18, interposed. A wire, 19, is secured upon the contact-screw and bracket of the thermostat by a nut 20, and has its other end connected to the stud by a binding screw, 21, threaded into the lower end of a screw threaded axial bore, 22, in the stud, and having its head bearing against a metal washer, 23, which has a mica washer, 24, and a rubber washer or gasket, 25, interposed between it and the under side of the annular disk. A sleeve, 26, of mica, insulates the reduced lower end of the stud from the annular disk.

A tube or tubular rib, 27, is formed upon the upper side of the cover, extending from the neck to one end of the same, and has a longitudinal bore which communicates with the interior of the chamber in the neck. A lead-covered cable has its leaden covering, 28, soldered into the bore of the tube, and contains a wire, 29, having rubber insulation, 30. The inner end of this wire is connected to the upper end of the stud by means of a binding-screw, 31. The outer end of the bore in the tube or rib is beveled or flared, as at 27^x, to allow the cable freedom of play and to prevent it from being cut at the entrance into the bore. The casing has a filling, 32, of liquid hydrocarbon which is a non-conductor of electricity and a conductor of heat, and also serves to quench arcs formed between the thermostat contacts, and the neck has a filling, 33, of paraffin or similar fusible and electrically non-conducting material which is poured in a melted state into the neck through its top opening, which

is thereupon closed by a leaden seal, 34, fused or soldered into the seat of the opening.

Thermostats of this character and employed for controlling the charging of storage batteries for electric vehicles are usually handled by persons without the technical knowledge or ethical inclination to exercise care, and I have found from the use of thermostats, such as disclosed in the above-named patents, under ordinary working conditions for controlling the charging of storage batteries for electrically propelled trucks, that uncovered binding posts are liable to be broken off from rough usage and are liable to get quickly fouled and thus fail to provide proper contact. In such exposed binding posts, a portion of the wire connected thereto is uncovered to provide contact and will be exposed to the action of the battery solution. For these reasons the connection between the thermostat and the circuit breaking device for the charging device is liable to be broken off, and the charging of the battery may be continued without automatic control until the battery is burned out. In my present device, the binding post and the wire connection is protected against violence and injurious action of the acid by the neck and tube or rib. The binding post is accessible for first securing the wire through the opening in the neck, which is thereupon sealed up and the post and wire require no further attention, as they are subject to no strain or action of the solution. If for some reason the cable breaks, it may be suitably spliced, and, if it breaks directly at the end of the tube, the solder securing it may be fused by external application of heat to the rib and the cable pulled out. after the solder securing the seal of the neck has been fused, the seal removed, the paraffin filling melted and poured out, and the binding screw unscrewed, whereupon the new end of the wire may be inserted and secured by the binding-screw, after the wire has been stripped of its covering for a suitable distance and an eye has been formed from such stripped end. The chamber in the neck may now be again filled and the seal replaced.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character stated, an acid-resisting and electrically-conductive casing, a thermostat within the same and having one contact electrically connected with the same, a cover for the casing and having a closed chamber formed upon it, a tube upon the cover and communicating with such chamber, a binding post in the chamber and connected to a contact of the thermostat, a cable secured in said tube and

post, and a filling of fusible and electrically non-conducting material in the chamber.

2. In a device of the character stated, an acid-resisting and electrically-conductive casing, a thermostat within the same and having one contact electrically connected with the same, a cover for the casing and having a closed chamber formed upon it, a tube upon the cover and communicating with the chamber, a lead-covered cable having an insulated conductor within it and soldered within the tube, a binding-post within the chamber and connected to the other contact of the thermostat and securing the conductor of the cable, and a filling within the chamber of fusible and non-conductive material.

3. In a device of the character stated, an acid-resisting and electrically conductive casing, an acid-resisting and electrically-conductive cover secured upon the same and formed with a closed chamber and with a tubular rib communicating with said chamber, a thermostat within the casing and electrically connected to the same, a binding post in the chamber of the cover and connected to the other contact of the thermostat, a lead-covered cable soldered within the tubular rib and having an insulated conductor within it connected to the binding-post, and a filling of fusible and insulating material within the chamber.

4. In a device of the character stated, an acid-resisting and electrically-conductive casing having one wall formed with a closed chamber and a tube leading into such chamber, a thermostat within such casing and having one contact electrically connected to the same, a binding post in the chamber and electrically connected to the other contact of the thermostat, a cable secured in the tube and having an insulated conductor connected to the binding-post, and a fusible and insulating filling within the chamber.

5. In a device of the character stated, an acid-resisting and electrically conductive casing having a wall formed with a chamber and with a tube communicating with such chamber, a thermostat within the casing and having one contact electrically connected to the same, an annular disk closing the communication between the interior of the casing and of the chamber, a stud secured in and insulated from the disk, a wire connected to the other contact of the thermostat, a binding-screw screwed into the inner end of the stud and securing the other end of the wire to it, a lead-covered cable secured in the tube and having an insulated conductor within it, a binding screw screwed into the outer end of the stud and securing the end of such conductor, and a fusible and non-conducting filling within the chamber.

6. In a device of the character stated, a

an acid-resisting and electrically-conductive casing having a wall formed with a chamber and with a tube communicating with such chamber a thermostat within the casing and having one contact electrically connected to the same, an annular disk secured to close the opening between the interior of the casing and the chamber, a flanged stud having its inner end projecting through the opening in the annular disk, insulating and packing washers upon the inner end of the stud, a metallic washer bearing against the same, a wire having one end connected to the other contact of the thermostat, a binding screw screw-threaded into

the inner end of the stud and securing said wire and washers against the inner side of the annular disk, insulating and packing washers between the flange of the stud and the annular disk, a cable soldered in the tube and having an insulated conductor, a binding-screw screw-threaded into the outer end of the stud and securing the end of the conductor to the same, and a fusible and non-conducting filling in the chamber. 20

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Witnesses:

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