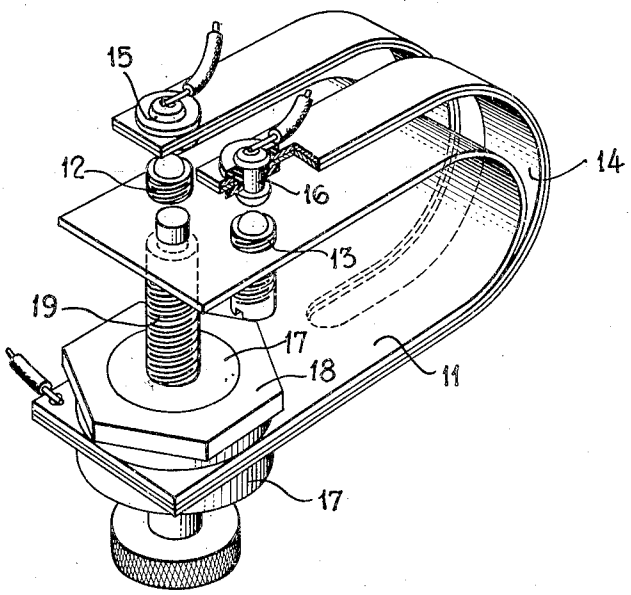
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THERMOSTAT

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THERMOSTAT

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6 Claims. (Cl. 200—138)

This invention relates to thermostats; the present application being a division of my copending application, Serial No. 335,085, filed May 14, 1940.

An object of this invention is to provide a thermostat which includes a movable contact-carrying arm for adjusting the setting of the thermostat.

Another object is to provide a dual thermostat comprising a bifurcated bimetallic blade which carries a contact element on each of its branches; and an arm carrying contact elements cooperable with those of the bimetallic blade, the arm being movable to simultaneously adjust the operative settings of the individual pairs of contacts.

Another object is to provide a thermostat, of the character described in the preceding objects, wherein the bimetallic blade and the arm are both of U-shape; the arm being of resilient metal and lying within the confines of the U-shaped blade.

Other objects and advantages of the invention will be found in the description, the drawing, and the claims; and, for full understanding of the invention, reference may be had to the following detailed description and accompanying drawing, the single figure of which is a view, in perspective, of a thermostat embodying the invention.

In the drawing, the numeral 11 indicates a U-shaped metallic arm or strip, the side arms of which are urged by their own resilience in a direction toward each other. Threaded in the free end portion of the upper arm of this strip are laterally-spaced electrical contact elements 12 and 13. A U-shaped bifurcated blade 14, of bimetallic material, insulatingly carries on the free end portion of each of its upper spaced arms a contact element, 15 and 16, which are cooperable respectively with the contact elements 12 and 13. The U-shaped strip 11 lies within the confines of the U-shaped bimetallic blade, and the lower arms of the strip and the blade are clamped together by a short hollow screw 17, extending through openings in these arms, and a nut 18; these parts forming a base for the strip and blade. Threaded in the hollow screw 17 is an adjusting screw 19, the reduced upper end portion or tip of which freely extends through an opening in the upper arm of strip 11, the shoulder of the screw below its tip engaging the underside of that arm.

When the thermostat is employed for sequential operation of the contacts, one of the contact elements 12 and 13 (element 12, as shown in the drawing) is adjusted so that it is somewhat closer to its cooperating contact 15 than element 13 is to contact 16; therefore, upon change of temperature such as to cause the upper arm of blade 14 to warp downwardly, contacts 12 and 15 first engage, and subsequently contacts 13 and 16 additionally engage. The adjusting screw 19 controls the temperature setting of the thermostat, the same differential of engagement of the pairs of contacts being maintained at different settings. As shown, the connecting leads are preferably soldered directly to the contacts 15 and 16 and to the contact-carrying strip 11.

The specific embodiment of my invention herein shown and described is to be regarded as illustrative of the invention and not as a limitation; the scope of the invention being determined only by the appended claims.

I claim as my invention:

1. In a thermostat: a blade of bimetallic material mounted at one of its ends on said base, a resilient metallic arm so mounted at one of its ends on said base that its free end portion lies between the free end portion of said blade and the plane of said base and in spaced relation to the blade, said free end portion of the blade being bifurcated and carrying at its respective ends a first pair of electrical contact elements, a second pair of electrical contact elements carried by said free end portion of the arm and cooperable respectively with said first pair of contact elements, and means mounted on said base for so moving the free end portion of the arm as to adjust the relative operative positions of said contact elements.

2. In a thermostat: a base, a U-shaped blade of bimetallic material mounted by one of its side arms on said base, a U-shaped resilient metallic arm so mounted by one of its side arms on said base that the free end portion of the other of its side arms lies between the base and the free end portion of the other of the side arms of the blade and in spaced relation to the base and the blade, said other side arm of the blade being bifurcated and carrying on its respective end portions a first pair of electrical contact elements, a second pair of electrical contact elements carried by said other side arm of said U-shaped arm and cooperable respectively with said first pair of contact elements, and means extending from said base for so moving said other arm of the U-shaped arm as to adjust the relative operative positions of said contact elements.

3. A thermostat, as defined in claim 2, wherein said U-shaped arm is so arranged that it lies

substantially within the confines of said U-shaped blade, and the means for moving the arm comprises a screw threaded in a portion of said base.

4. A thermostat, as defined in claim 2, wherein at least one element of one of said pairs of contact elements is adjustable with respect to the element cooperable therewith.

5. In a thermostat: a base, means forming a plurality of blades of bimetallic material mounted at one of their respective ends on said base, a contact element carried by the free end of each of said blades, a resilient metallic arm mounted at one of its ends on the base and carrying at its free end a plurality of contact elements cooperable respectively with the contact elements carried by the blades, at least one of said contact elements being adjustably mounted, and means mounted on the base for moving the free end of said arm so as simultaneously to adjust the operative positions of all the contact elements.

6. In a thermostat: a base, means forming a plurality of U-shaped blades of bimetallic material mounted by one of their respective side arms on said base, a contact element carried by the free end of each of the other side arms of said blades, a U-shaped resilient metallic arm mounted by one of its side arms on the base and carrying at the free end of the other of its side arms a plurality of contact elements cooperable respectively with the contact elements carried by the blades, at least one of said contact elements being adjustably mounted, and means mounted on the base for moving said other side arm of the U-shaped arm so as simultaneously to adjust the operative positions of all the contact elements.

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