

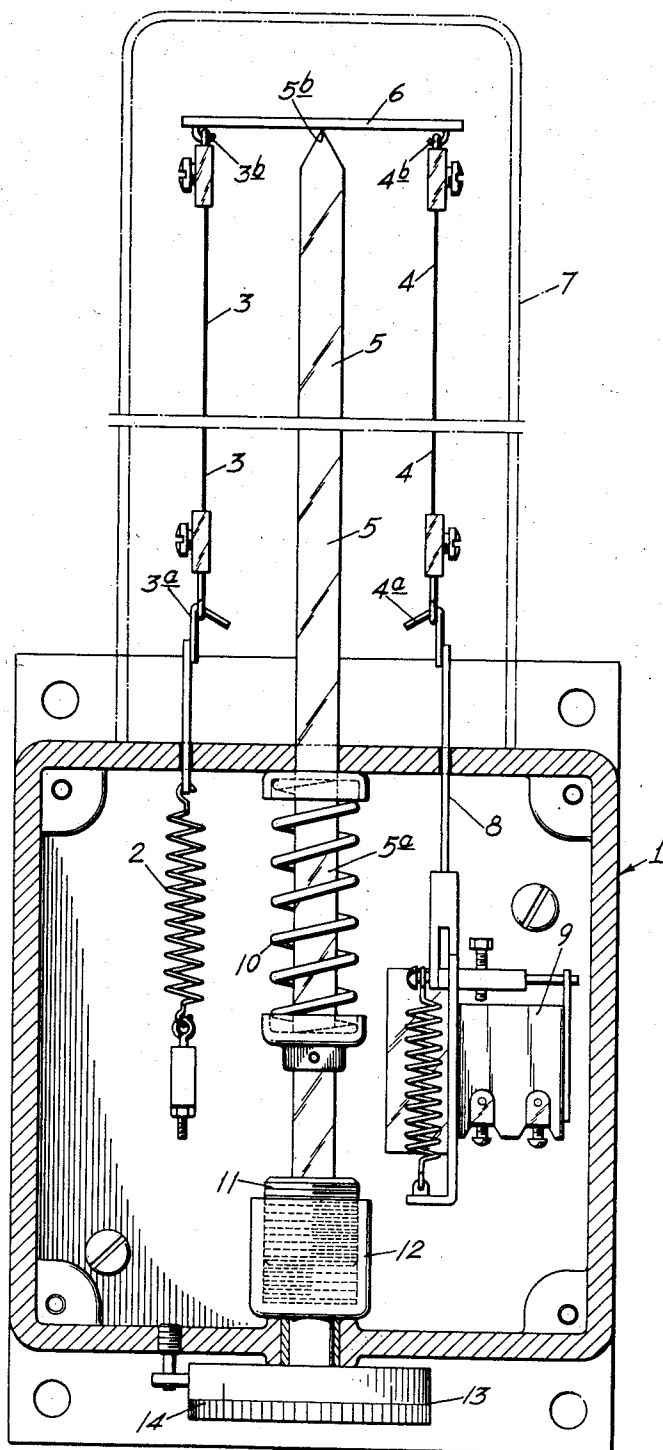
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HYGROSTAT

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HYGROSTAT

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4 Claims. (Cl. 200—61.06)

The present invention relates to a novel and improved design of a hygrostat with two moisture responsive means consisting of bundles of hair or the like and impulse means for an outer circuit actuated by said responsive means and enclosed in a casing, one of the said responsive means being at its one end connected with a support that may be adjustable and is attached to said casing, and the other responsive means being at its corresponding end, within said casing, connected with said impulse means, while outside the casing the responsive means are each connected with one end of a lever resting on an edge at the end of a bar journaled in said casing. According to the characteristics of this invention the bar supporting said lever can be axially displaced by turning a nut engaging the end of the standard being located within said casing, which end is provided with a threaded portion and that the nut is turned by means of a knob arranged outside the casing and provided with a scale with graduation in degrees of relative humidity. The invention makes it possible that the operation range of the hygrostat can easily be varied without any need of demounting the hygrostat or parts thereof. According to a preferred embodiment of the invention, the journaled portion of the bar has, at each side of the wall of said casing, a non-circular, preferably rectangular cross-section, which provides the most simple manner of guiding the bar during its movements.

The invention will now be described more in detail with reference to the accompanying drawing, which illustrates an exemplifying embodiment of a hygrostat according to the invention.

In the drawing, reference numeral 1 designates a casing enclosing an impulse means which in the shown embodiment is a so called micro-switch 9. Numerals 3 and 4 designate two moisture responsive means consisting of hair bundles or some other hygroscopic material. The means 3 is at its one end connected with a support 3a that is resiliently attached to the casing 1 via a spring 2. The corresponding end of the other moisture responsive means, 4, is fastened to a support 4a connected over the rod 8 with the impulse means 9. The opposite ends, 3b and 4b, respectively, of the moisture responsive means are attached to the one end of a lever 6 resting on an edge 5b at the top of a bar 5 the opposite end 5a of which is journaled and guided in the casing 1. Numeral 7 designates a perforated protective envelope that could suitably be arranged round the moisture responsive means. The end 5a of the bar has a threaded portion 11 engaging a nut 12. The nut is secured to and can be rotated by means of a knob 13 having a scale of degrees 14. Upon rotation of the nut 12 the bar 5 is moved axially against the action of spring 10 whereby the desired operation range of the hygrostat can be adjusted. The construction of the impulse means can be varied within the scope of the invention.

What I claim is:

1. In a hygrostat adapted to control the relative humidity of a gaseous medium flowing in a duct, comprising a casing mounted outside of said duct, an elongated bar threaded at one end within said casing and slidably mounted for longitudinal movement through one end

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of said casing and projecting therebeyond into said duct; an equalizing lever pivotally supported on the projecting end of said bar as a fulcrum; two sets of humidity responsive means, each set being connected at one end to said lever, extending within said duct substantially parallel to said bar, and terminating at the other end in a member extending through said one end wall into said casing; an adjustable support in said casing for one of said members; switch means supporting the other of said members and operated by said member in response to changes in relative humidity of the gaseous medium in said duct; an auxiliary circuit connected to said switch means to control the relative humidity of said medium; and means to longitudinally displace said elongated bar comprising a rotary element journaled for rotation in the opposite end wall of said casing having a nut engaged with the threaded portion of said bar in said casing, and an actuating knob on said rotary element outside of said casing, said knob having a scale graduated in degrees of relative humidity.

2. A hygrostat according to claim 1 wherein said elongated bar has a non-circular cross-section in the portion which projects through said one end wall of the casing, and wherein further said end wall is formed with a corresponding non-circular aperture to slidably support said bar against rotation.

3. A hygrostat according to claim 2 wherein said non-circular cross-section is rectangular.

4. In a hygrostat adapted to control the relative humidity of a gaseous medium flowing in a duct, comprising a casing mounted outside of said duct, means in one end wall of said casing defining a rectangular aperture, an elongated bar threaded at one end within said casing, having a central portion of rectangular cross section slidably mounted for longitudinal movement through said aperture in the one end wall of said casing, and projecting therebeyond into said duct; a spring surrounding said bar within said casing and seated at one end against said one end wall and at the other end on said bar to bias said bar longitudinally toward the opposite end wall of the casing; an equalizing lever pivotally supported on the projecting end of said bar as a fulcrum; two sets of humidity-responsive means, each set being connected at one end to said lever, extending within said duct substantially parallel to said bar, and terminating at the other end in a member extending through said one end wall into said casing; an adjustable support in said casing for one of said members; switch means supporting the other of said members and operated by said member in response to changes in relative humidity of the gaseous medium in said duct; an auxiliary circuit connected to said switch means to control the relative humidity of said medium; and means to longitudinally position said elongated bar against the bias of said spring comprising a rotary element journaled for rotation in said opposite end wall of said casing and having a nut engaged with the threaded portion of said bar in said casing, and an actuating knob on said rotary element outside of said casing, said knob having a scale graduated in degrees of relative humidity.

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