

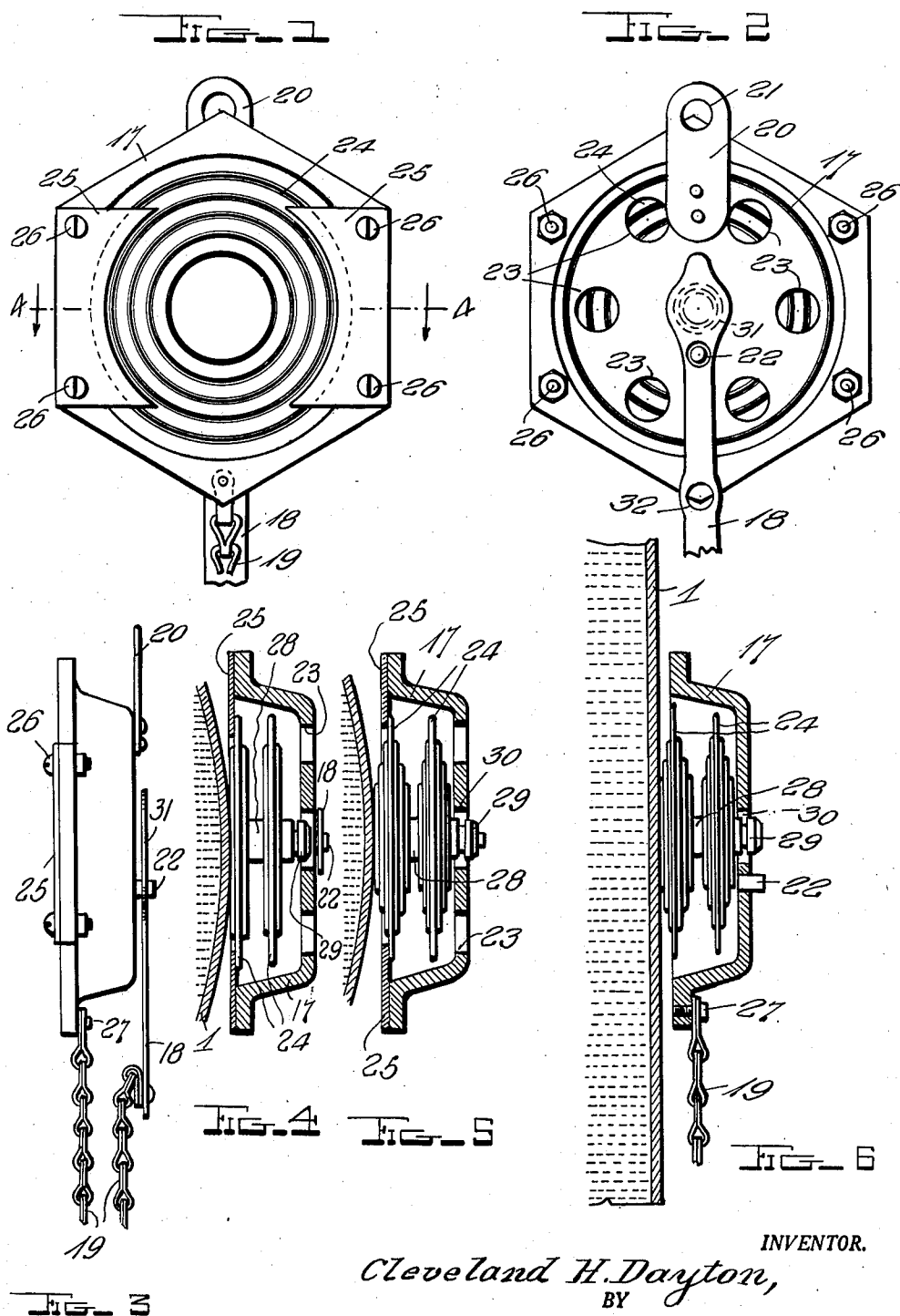
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THERMOSTAT TRIP DEVICE

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THERMOSTAT TRIP DEVICE

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5 Claims. (Cl. 74—2)

The present invention relates to thermostatically-operated trip devices and more particularly is concerned with apparatus operated by a thermostat for extending the length of the cable or the like having the same interconnected therein. The present application is a division of applicant's copending application Serial No. 298,146, filed October 5, 1939.

The principal object of the present invention is to provide a thermostatically-operated trip device of a simple and efficient construction and which is economical to produce.

Another object of the present invention is to provide a thermostatically-operated device which can be connected to a cable, bar or similar member and which will extend the length of the cable or the like upon the thermostat being subjected to a given heat.

Another and equally important object of the present invention is to provide a thermostatically-operated trip device of a new and novel construction which is simple to operate and which will function with the maximum efficiency.

Further objects of the present invention will be in part pointed out and in part obvious from the following detailed description of the accompanying drawing.

In the drawing:

Fig. 1 is an enlarged detail rear view of the thermostat control device according to the present invention.

Fig. 2 is a front view of the device shown in Fig. 1.

Fig. 3 is a side view of the aforementioned device.

Fig. 4 is a top cross sectional detail view of the control device as mounted upon the periphery of a hot water tank with the elements of the device in their closed or cold position.

Fig. 5 is a view similar to Fig. 4 but showing the members of the control device when in their extended or heated position, and

Fig. 6 is a side cross sectional detail view of the thermostatic control device in contact with a hot water tank and with the members thereof in their extended position.

Referring now more particularly to the accompanying drawing wherein like and corresponding numerals designate similar elements, numeral 1 refers to a hot water tank which is included for the purpose of illustration only.

The thermostatically-operated control device comprises a casing 17 which has a plate 20 mounted upon the front face thereof and which plate 20 has an opening 21 formed therethrough

through which one end of a cable, not shown, can be passed for connection to casing 17. Also mounted upon the front face of the casing 17 is a peg 22 upon which a bar 18, as shown in Figs. 2 and 3, is mounted by inserting said peg 22 within an opening formed in said bar 18. An annular series of openings 23 is also formed through the front face of casing 17 for permitting the ready admittance of air to within the casing for assisting in at times rapidly cooling thermostats 24.

A pair of expandible wafer-type thermostats 24, each of which consists of a pair of corrugated metallic discs joined together at their outer edge portion, are mounted within the casing by a pair of plates 25, each of which plates is connected to the outer edge portion of one of said thermostats 24 and is also connected to casing 17 by nuts and bolts 26, as shown. The thermostats 24 are connected to one another by means of a joining rod 28 which is connected at each end to one of the metallic discs comprising a portion of each of the thermostats 24. The inner of said thermostats 24, that is, relative to casing 17, has a button 29 connected to the front face thereof and said button is positioned for movement through an opening 30 formed in the central portion of the front face of casing 17 and, as shown in Fig. 8 of the drawing, said opening 30 is positioned above peg 22 in such a manner as to permit button 29 to at times contact the broad head portion 31 of bar 18, which, as shown, is shaped to simulate an arrow.

A chain 19, which is connected to one end of bar 18, is further connected to casing 17 by a screw 27. This arrangement permits bar 18 to be at times connected to the casing 17 by peg 22, as shown in Fig. 3, or when button 29 extends outwardly, forcing bar 18 off of peg 22, then it is connected to casing 17 by the chain 19. A further opening 32 is provided in bar 18 between the connection of chain 19 thereto and the opening for receiving peg 22 and this additional opening is for receiving an end of a cable or the like, similar to that positioned through opening 21.

One manner in which the present thermostatically-controlled trip device can be used is to connect an end of a cable to plate 20 with the opposite end of the cable supported in any manner and then place an end of a second cable through opening 32 and thereby connecting the same to bar 18. Either or both of the aforementioned cables can be a portion of a thermal control apparatus, as for example as is shown in the aforementioned parent application, whereby

the outer of the thermostats 24 will be maintained against the periphery of a hot water tank 1.

By placing bar 18 upon peg 22, said bar 18 will, as shown in Figs. 2 and 3, be positioned close to plate 20 thereby drawing the ends of the aforementioned cables towards one another. As shown in Fig. 4, the outer of the thermostats 24 will be in direct contact with the water tank 1 and upon the water reaching a given temperature and the heat therefrom being conducted through the tank 1 to the thermostat and from there to the inner of the thermostats 24 by the connecting rod 28, both of the thermostats 24 will tend to expand, that is, the pair of corrugated discs forming each of the thermostats 24 will move one from the other, as shown in Fig. 5 of the drawing. This will cause button 29 to extend through opening 30, forcing head portion 31 away from the casing 17, thus dislodging bar 18 from peg 22, whereupon, the bar will drop downwardly until retained by the full extension of chain 19. The cable ends connected to the present device will therefore be spaced a considerable distance one from the other, creating a movement which can be converted in numerous manners for operating fuel control devices or other apparatus.

The extension of chain 19 will draw the casing 17 from tank 1 whereupon air will enter through openings 23 and around plates 25 for rapidly cooling thermostats 24, whereupon, button 29 will be withdrawn within casing 17, as best shown in Fig. 4, by thermostats 24. The trip device can at that time be again placed in condition for further use by returning bar 18 to peg 22.

The present device is readily capable of being modified and any such changes thereto which come within the scope of the appended claims are considered to be a part of the present invention.

I claim:

1. A thermostatically-operated control device for hot water tanks comprising an open ended casing, a pair of jointly connected and expandible wafer-type thermostats, means for suspending said thermostats within said casing, one of said thermostats projecting through the opened end of said casing, a trip control connected to the other of said thermostats and means for supporting said casing whereby the thermostat projecting through the opened end of the casing will be retained in direct heat exchange contact with the hot water tank.

2. A thermostatically-operated control device for hot water tanks comprising a cup-shaped casing, a pair of jointly connected and expandible wafer-type thermostats, means for mounting said thermostats within said casing whereby they will be supported in spaced relation there-

to, a trip control connected to one of said thermostats and projecting from one side of said casing, the other of said thermostats projecting through said casing and means for supporting said casing in spaced relation to the hot water tank whereby said thermostat projecting through the casing will be retained in direct heat exchange contact with the hot water heater.

3. A thermostatically-operated control device for hot water tanks comprising a casing, a pair of supporting plates each having one end attached to said casing, a pair of jointly connected and expandible wafer-type thermostats, means for connecting the opposite ends of said supporting plates to one of said thermostats whereby the latter will be suspended in spaced relation to and within said casing and a trip control connected to one of said thermostats.

4. A thermostatically-operated control device for hot water tanks comprising a cup-shaped casing having a plurality of openings formed therein and extending therethrough, a pair of supporting plates, means for connecting one end of each of said supporting plates to said casing, a pair of jointly connected and expandible wafer-type thermostats connected to said supporting plates and arranged within said casing, a trip control extending through said casing and connected to one of said thermostats, and means for supporting said casing whereby the latter will be retained in spaced relation to the hot water tank and one of said thermostats retained in direct heat exchange contact with the hot water tank.

5. A thermostatically-operated control device for hot water tanks comprising an open ended casing, a wall of said casing opposite to the open end thereof having a plurality of openings formed therein, a pair of supporting plates, means for detachably connecting one end of each supporting plate to said casing, a pair of jointly connected and expandible wafer-type thermostats connected to said supporting plates and suspended within said casing, one of said thermostats extending through the opened end of said casing, a button carried by the other of said thermostats and extending through said casing, an attaching plate connected to said casing and retaining said thermostat projecting through the opened end of said casing in heat exchange contact with the hot water tank, said supporting plates retaining said casing in spaced relation with the hot water tank, a bar removably supported by said casing in direct line with said button whereby the latter may at times cause said bar to be forced from said casing and a flexible member connecting one end of said bar to said casing.

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