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J. H. BRUHN ET AL

2,527,875

THERMOSTATIC SWITCH

Filed May 28, 1948

Fig 1

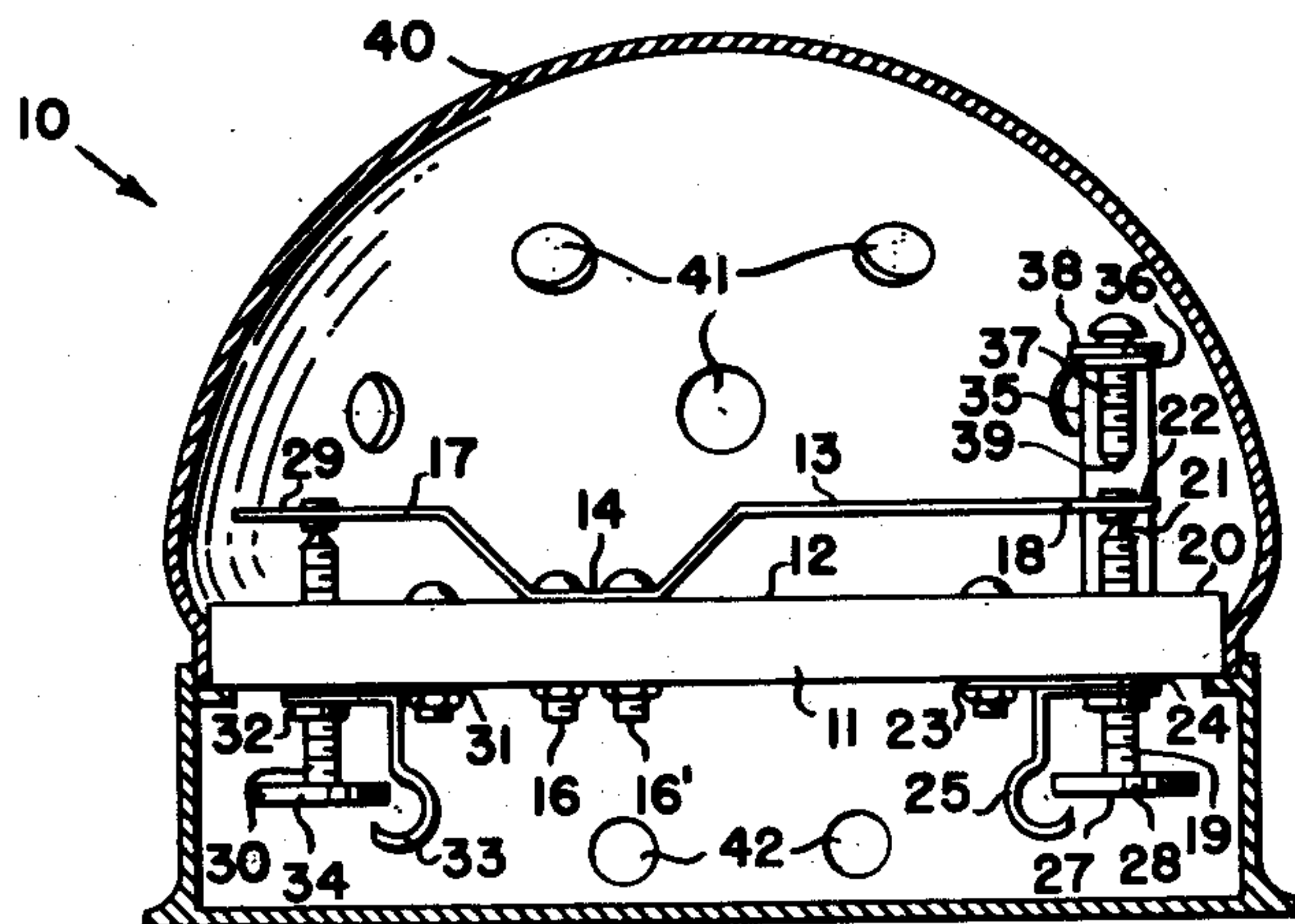


Fig 2

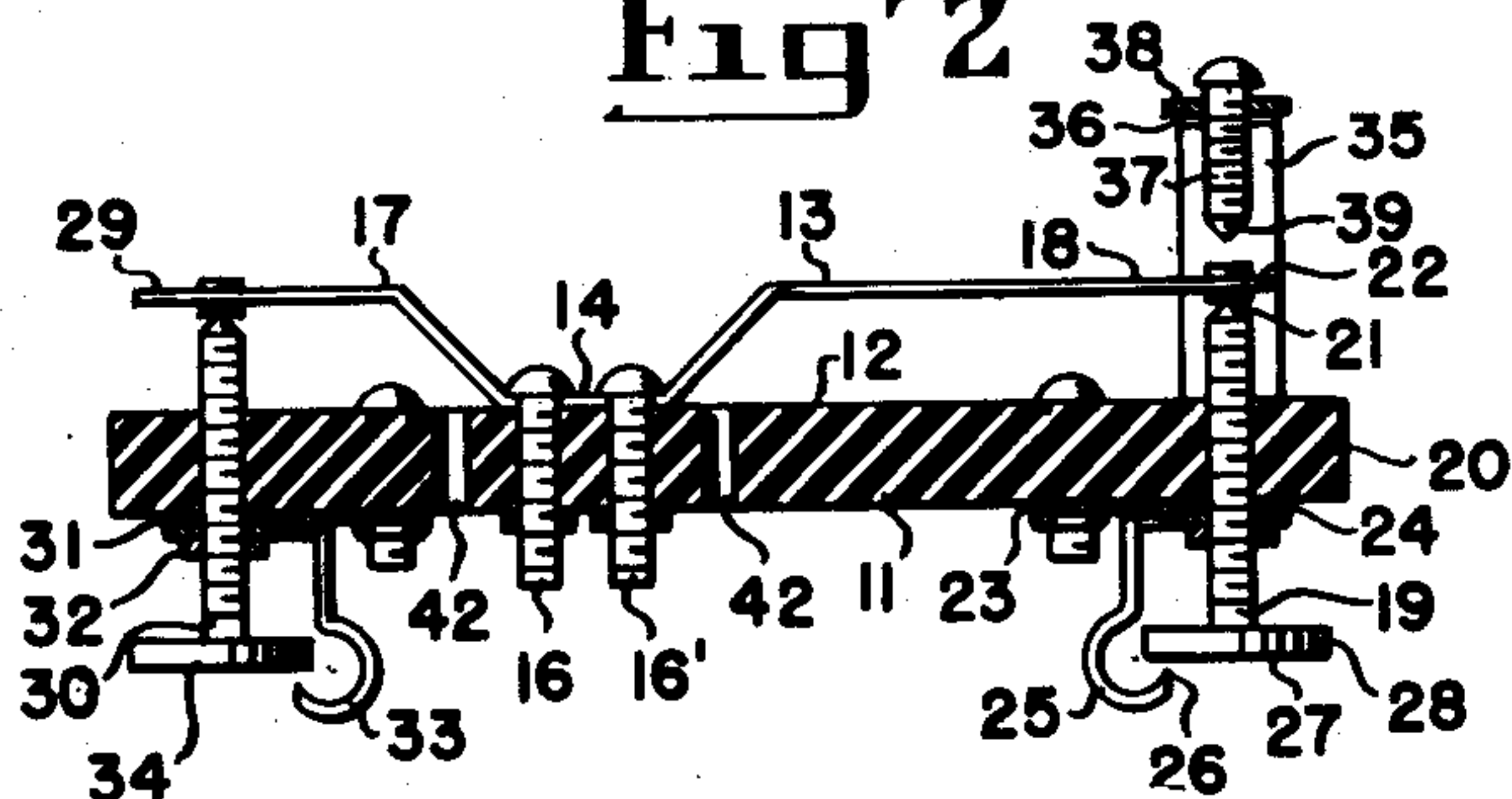


Fig 5

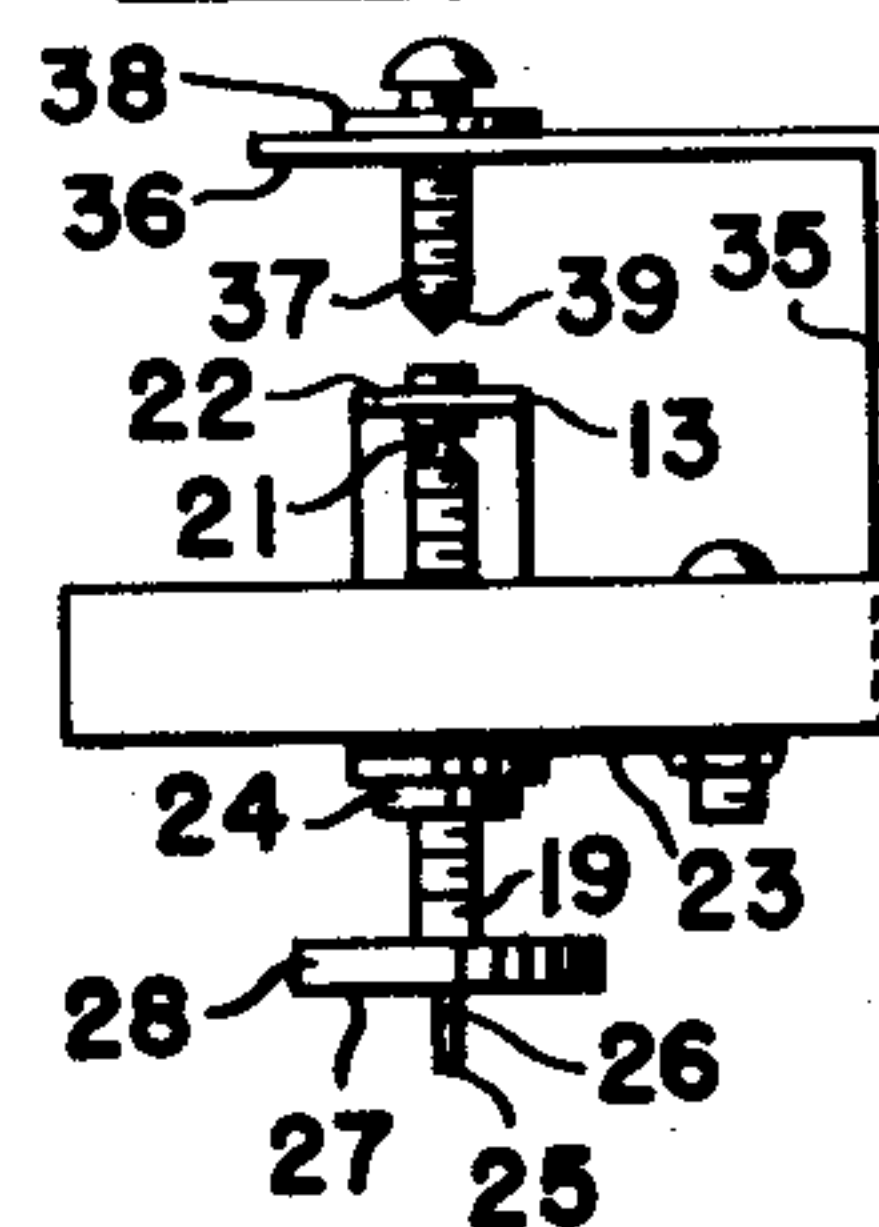


Fig 3

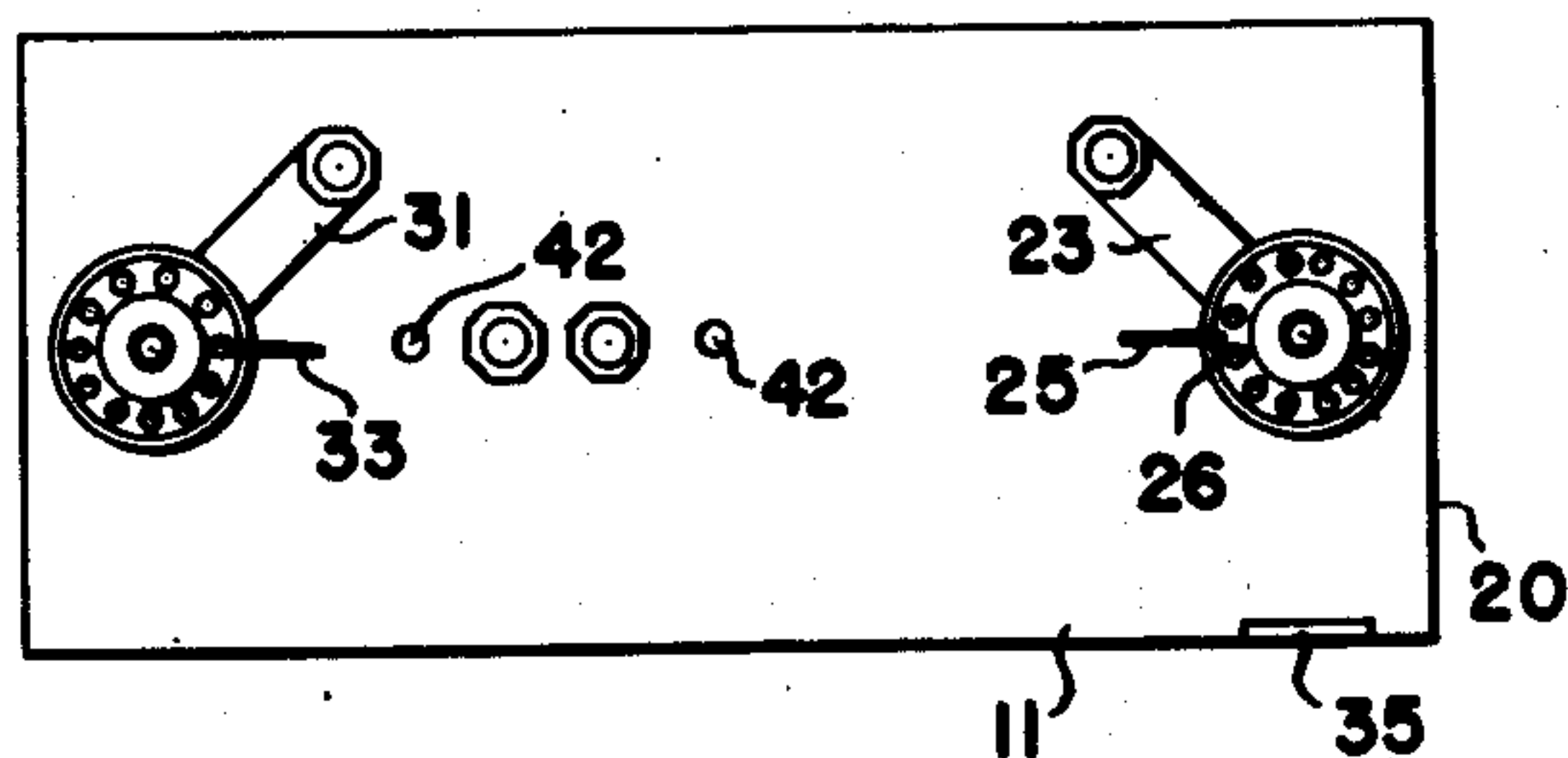
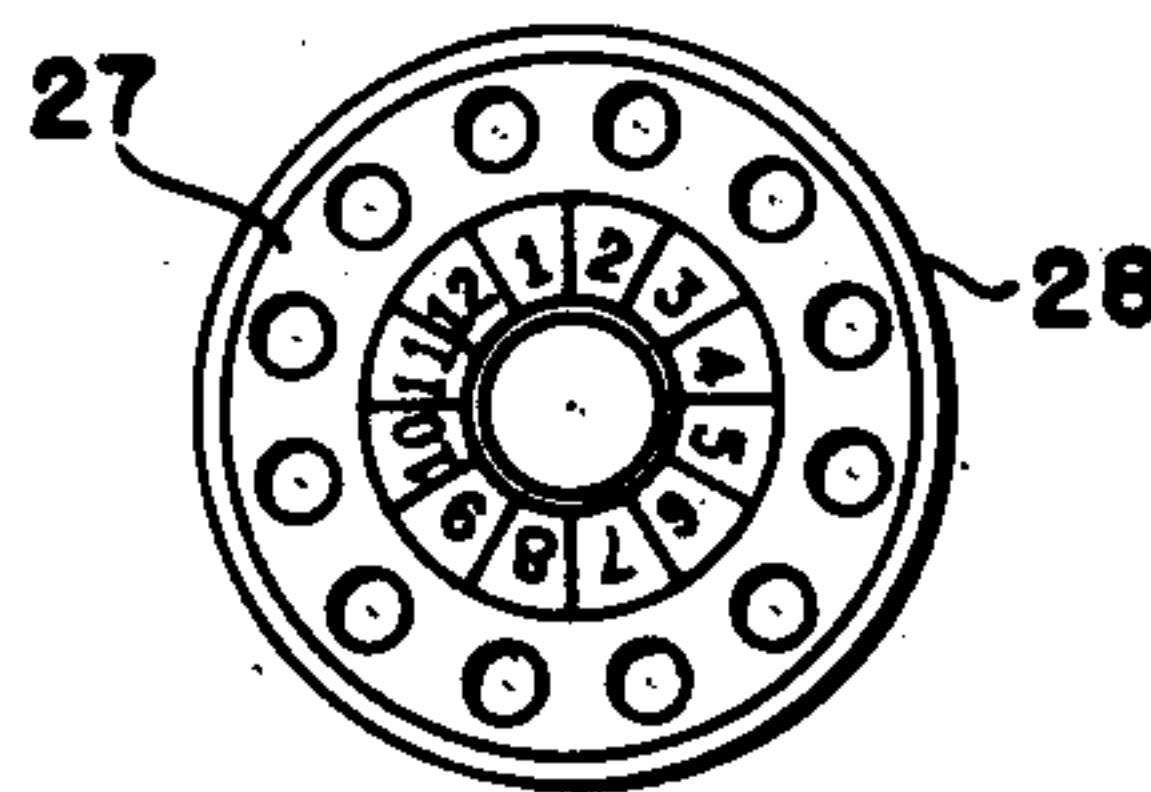


Fig 4



Inventors

John H. Bruhn
Leonard H. Bruhn

UNITED STATES PATENT OFFICE

2,527,875

THERMOSTATIC SWITCH

John H. Bruhn, Des Moines, Iowa, and Leonard
W. Bruhn, Kansas City, Mo.

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4 Claims. (Cl. 200—138)

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This invention relates to thermostats and an object thereof is to provide a two action thermostat.

Another object of the invention is to provide a double duty thermostat.

A still further object of our invention is to provide a thermostat for operating both visible and audible alarm systems.

A further object of this invention is to provide a thermostat so constructed that it will operate first one and then another alarm system.

Another object of the invention is to provide a thermostat to alternately operate a plurality of alarm systems.

Another object of this invention is to provide a thermostat having adjustable means whereby it may either open or close electric alarm systems at predetermined atmospheric temperatures.

A still further object of our invention is to provide a thermostat formed of a bimetallic bar each end of which is adapted to control an independent electric system.

Still another object of the invention is to provide a thermostat formed of a bimetallic alloy metal bar having a long and a short arm each adapted to actuate at different degrees of temperature to open or close independent electric circuits.

With the above and such other objects in view as may hereinafter more fully appear, we have invented the thermostat illustrated in the accompanying drawings in which:

Figure 1 is a sectional elevational view of our thermostat,

Figure 2 is a longitudinal sectional view of the thermostat shown removed from its casing,

Figure 3 is a bottom plan view thereof,

Figure 4 is an enlarged detail view of an indicator.

Figure 5 is an end view showing high and low contact.

In the following specification as well as in the accompanying drawings like reference characters indicate like parts throughout and in which 10 refers to our thermostat as an entirety and 11 indicates a non-conductor base. Attached to the upper surface 12 of this base is a bimetallic bar 13, which is bent down intermediate its ends to form a seat 14 which is secured to the upper surface 12 of base 11 by bolts 16 and 16'. Said seat 14 is formed nearer the short arm 17 than the long arm 18 of bar 13 for a purpose presently to be explained.

A contact screw 19 is threaded through one end 20 of the base 11 and its point 21 seats directly

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beneath the extreme free end 22 of arm 18. Mounted on the screw 19 is a conductor 23 and a lock nut 24, and secured to the under surface of the base 11 is the arm 25 by means of said conductor or otherwise. The arm 25 terminates in an indice pointer 26 which is turned up to the under surface 27 of the enlarged head 28 of said screw 19 and which surface is provided with indicia to indicate various temperatures at which the screw 19 may be set to either attract (or repel, as the case may be) the said terminal 22 of arm 18.

Mounted directly under the terminal 29 of the short arm 17 of member 13 is a conductor screw 30 on which is mounted a conductor 31, a lock nut 32, an indice 33 and indicia head 34, similar in all respects to the arrangement of screw 19.

Fixed to the base 11 adjacent its end 20, is a bracket 35 the upper end 36 of which is bent at right angles to extend over and above the said terminal 22 of arm 18. Threaded through said end 36 is a conductor screw 37 having an indicia head 38 and a contact point 39 which may be adjusted to contact (or leave) the arm 18 at a predetermined temperature.

The base 11 is mounted within a housing 40 which may be of any suitable material such as tin or lava, and it is provided with a series of apertures 41 above the base, and apertures 42 below the base, which base is provided with bores 43, whereby a free circulation of atmospheric air may be constantly in the housing.

The above described thermostat has been designed primarily for a combination of audible and visible fire alarm systems and first gives an alarm in the building where located due to the more flexible action of the long arm 18. The shorter arm 17 being more rigid requires greater heat to actuate it and this arm is connected up with a general alarm system connected with a fire house or other central point. Therefore if a fire is not extinguished after the first alarm the heat raises and actuates the second system.

The device is also adapted to operate signals at predetermined low temperatures as for use in orchards, cold storage plants, etc. In this latter case the screw 37 is connected with the circuit which preferably operates on an open circuit for activating signals when a predetermined low temperature is reached.

Having now described our invention that which we claim as new and desire to procure by Letters Patent is:

1. In an alarm thermostat having a base, circuit conducting means and a bimetallic thermo-

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static bar, a plurality of contact arms comprising said bar, each of said arms being of different lengths and having one extremity affixed to said base then extending upwardly to form an acute angle with said base and then outwardly in a plane substantially parallel to said base to form an obtuse angle with said upwardly extending portion.

2. An alarm thermostat comprising a bimetallic thermostatic bar having a plurality of contact arms of different lengths, points at which said arms make contact with a circuit conducting means and control indicia to regulate the exact temperature at which said contact as between said arms and points is to be made, the contact arms of said bi-metallic bar having one extremity affixed to said base and then extending upwardly to form an acute angle with said base and then outwardly in a plane substantially parallel to said base to form an obtuse angle with said upwardly extending portion.

3. An alarm thermostat comprising a bimetallic thermostatic bar having a plurality of contact arms of different lengths, points at which said arms make circuit contact, a plurality of said points being positioned below said bar and one of said points being positioned above said bar, and control indicia to regulate the exact temperature at which said contact as between said arms and points is to be made, the said contact arms of said bi-metallic bar having one extremity affixed to said base and then extending upwardly to form an acute angle with said base and then

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outwardly in a plane substantially parallel to said base to form an obtuse angle with said upwardly extending portion.

4. In an alarm thermostat having a base, circuit conducting means and a bimetallic thermostatic bar having a plurality of contact arms, a plurality of circuit contact points positioned below said arms, one circuit contact point positioned above one of said arms, and control indicia to regulate the exact temperature at which said contact, as between said arms and said points, is to be made, the said contact arms of said bi-metallic bar having one extremity affixed to said base and then extending upwardly to form an acute angle with said base and then outwardly in a plane substantially parallel to said base to form an obtuse angle with said upwardly extending portion.

JOHN H. BRUHN.
LEONARD W. BRUHN.

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