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TEMPERATURE REGULATOR FOR MECHANICAL REFRIGERATORS

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Fig. 1

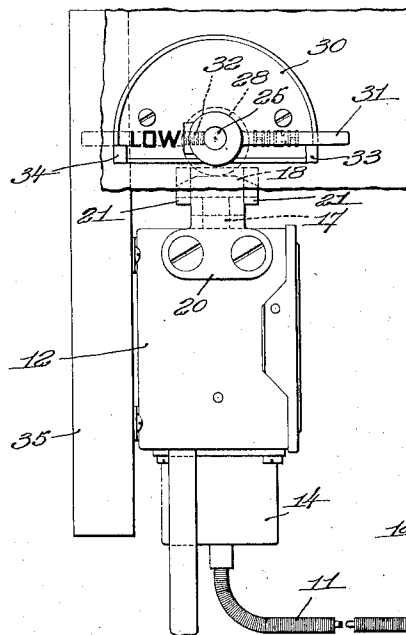


Fig. 3

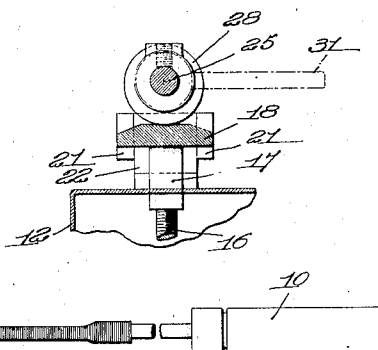
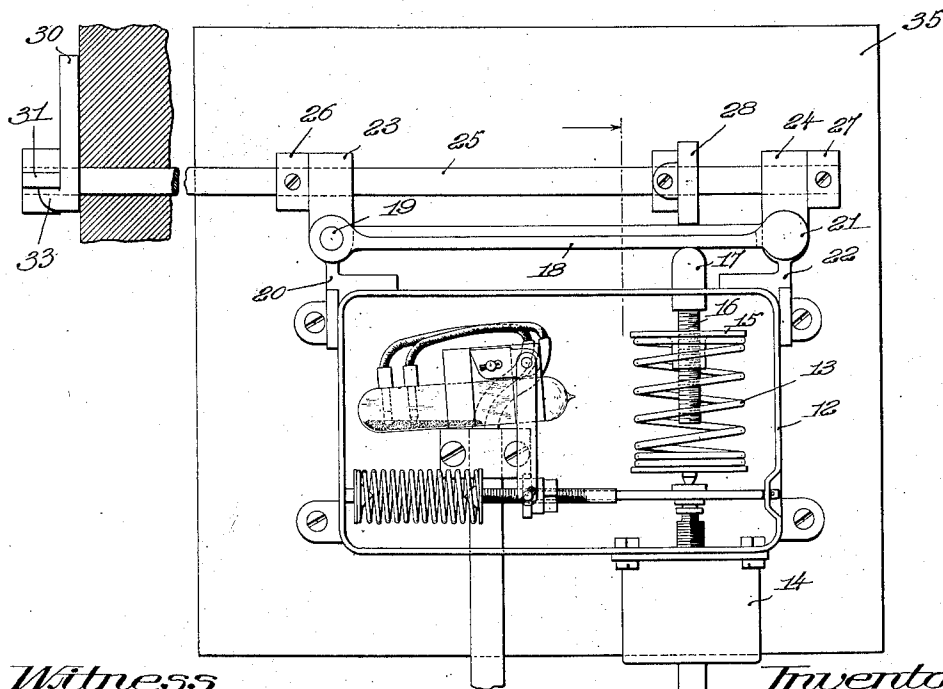


Fig. 2



Witness

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TEMPERATURE REGULATOR FOR MECHANICAL REFRIGERATORS

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The present invention relates to an improvement in temperature regulators for mechanical refrigerators.

The object of the present invention is to produce a regulator for mechanical refrigerators having provision by virtue of which the temperature at which the refrigerator is maintained may be changed from one temperature to another temperature. The invention consists in the apparatus hereinafter described and particularly defined in the claims.

In the accompanying drawings illustrating the preferred form of the invention, Fig. 1 is an end elevation of the apparatus; Fig. 2 is a front elevation of the same; and Fig. 3 is a detail view hereinafter described.

The illustrated embodiment of the invention is described as follows:

The apparatus comprises a heat sensitive element 10 connected by a flexible connection 11 with the so-called mercoid control 12. This mercoid control is made by the American Radiator Company, and is a well known device on the market. This mercoid control is provided with a spring 13 which opposes the pressure of a diaphragm in the box 14. The follower 15 is mounted on the screw 16 which is (as the mercoid is regularly constructed) riveted in the wall of the box of the control 12. Then the temperature to which the mercoid maintains the refrigerator is regulated or adjusted or changed by turning the follower 15 on the screw 16. When the follower 15 is moved up, it reduces the pressure on the spring 13, and the temperature at which the refrigerator is maintained is lowered. When the follower 15 is screwed down on the screw 16, the temperature at which the refrigerator is maintained is raised. According to the present invention, the position of the screw 16 is made capable of being manually changed. To this end, the head 17 of the screw 16 (as modified for the present use) is square and is received in a square hole in the top of the box 12. Upon this screw head 17 there rests a lever 18 pivoted at 19 on a bracket 20 secured to the box 12. The free end of the lever 18 is provided with two ears 21 which embrace the opposite sides of the bracket 22 secured to the box 12. Ears

23 and 24 on the brackets 20 and 22 are provided with aligned holes which receive the shaft 25. Two collars 26 and 27 mounted on the shaft, hold it from longitudinal movement. A cam 28 mounted on the shaft engages the upper side of the lever 18. When the cam occupies the position shown in Fig. 3, the lever 18 occupies its lower position because the cam in such position presents its higher side to the lever 18. When the upper portion of the cam 28 is presented to the lever 18, the lever is raised, and consequently the screw bolt 17 is raised and the temperature at which the mercoid control maintains the refrigerator is lower than when the high point of the cam is presented to the lever 18. The rod or shaft 25 extends out through the wall of the refrigerator and through a plate 30 fastened on the outside. On the outer end of this shaft 25 the handle 31 is secured by means of the set screw 32. The shaft is shown in Fig. 1 with the handle in the position which it occupies when the cam 28 occupies the position shown in Fig. 3, and the word "High" appears upon the plate opposite the lever at this position. 180° from the position "high" the word "Low" appears upon the plate and when the lever is thrown to the "low" position, a low part of the cam 28 engages the lever 18 and permits it to rise and thereby causes the control to maintain the refrigerator at a "low" temperature. Two stops 33 and 34 are provided on the plate for limiting the throw of the handle.

The mercoid control and the parts of the apparatus described, are mounted on the panel or base 35, which is adapted to be secured to a wall of the refrigerator after a hole has been bored to receive the shaft 25. The panel is then moved into place (the handle 31 being removed from the rod 25) and the outer end of the rod 25 is thrust through the hole. Then the panel is secured in place in the refrigerator, after which the plate 30 is pushed over the rod 25 and secured in place on the outside of the refrigerator by screws. The handle 31 is then applied to the rod and the set screw 32 is screwed up. The operation of the apparatus is as follows:—For all ordinary purposes, the lever 31 is left in the "high"

position. Then the follower 15 is adjusted so that the mercoid control will maintain the refrigerator at the desired normal temperature. When it is desired to freeze desserts or other things, the hand lever is thrown to the position dotted in Fig. 1, that is, to the "low" position, thereby turning the rod 25 and causing the cam to permit the lever 18 to rise, which in turn permits the screw 16 to rise and thereby causes the mercoid control to maintain the refrigerator at a certain "low" temperature.

The regulator may be adjusted by moving the cam 28 along the shaft 25. Thus, when this cam occupies a position at the left hand end of the shaft 25, the low part of the cam causes the control to maintain the chest at a certain low temperature and will operate thus because the cam is nearer the pivot of the lever 18, whereas when the cam 28 is adjusted toward the right hand end of the shaft 25, the throw of the cam will operate to permit the lever to move a lesser arcuate distance, and consequently the low chest temperature is raised. But irrespective of the position which the cam 28 occupies on the shaft 25, the "high" temperature is unmodified because the high part of the cam 28 is of such a height with respect to the distance between the shaft 25 and the lever 18 that such high part of the cam 28 maintains the lever 18 in the same position irrespective of the position of the cam 28 on the shaft 25.

It will be seen that the mercoid has a temperature setting device, namely, the follower 15 for the spring, and that this setting device may be moved up and down to determine the chest temperature adapted to be maintained by the control, and that there is also provided a manually operative secondary setting device for operating on the control setting device to cause the latter to maintain the chest temperature at a low temperature, that is to say, at a temperature below the normal temperature of the chest. Furthermore, this secondary setting device has provision for adjustment of the low chest temperature without modification of the normal or high temperature setting.

Having thus described the invention, what is claimed is:

1. A temperature regulator for mechanical refrigerators having, in combination, a control comprising a spring, an abutment, a follower carried by the abutment for opposing the pressure of the spring having provision for adjustment on the abutment to regulate the normal chest temperature, a cam having a low part and a high part, co-operating with the abutment when turned to move to its position, the high part of the cam providing a support for the abutment in position to maintain the normal chest temperature, and the low part of the cam operating

to support the abutment for low chest temperature.

2. A temperature regulator for mechanical refrigerators having, in combination, a control for maintaining the chest temperature constant, comprising an abutment, a lever engaging the abutment, a shaft, a cam on the shaft provided with a high part and a low part, the high part of the cam when in engagement with the lever holding it parallel to the shaft so that adjustment of the cam longitudinally of the shaft will be inoperative to change the position of the lever, and the low part operating to change the position of the lever when adjusted longitudinally of the shaft to adjust the low temperature of the chest.

In testimony whereof I have signed my name to this specification.

ERNEST G. HODGKINS.