Jan. 13, 1942. C. P. OWEN 2,269,859

THERMOMETER MERCURY REDUCER

Filed March 17, 1941

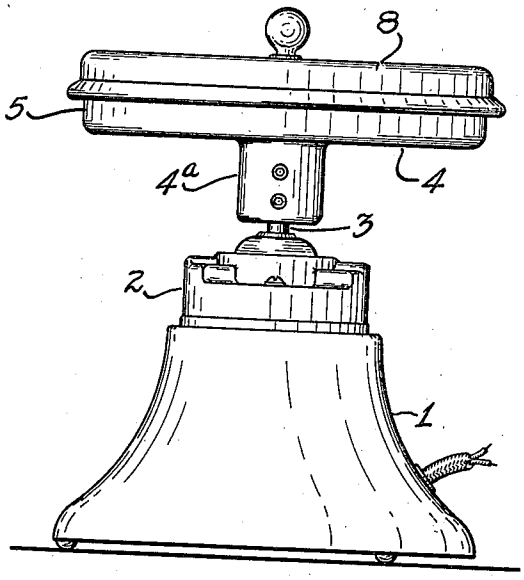


Fig. 1

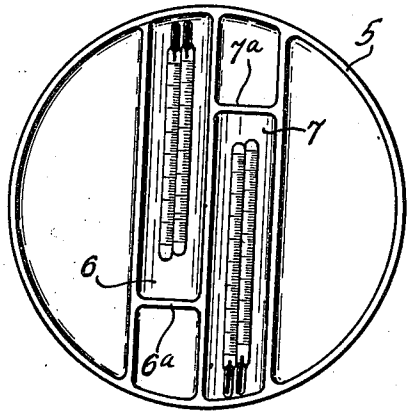


Fig. 2

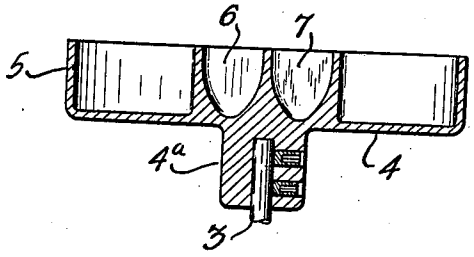


Fig. 3

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THERMOMETER MERCURY REDUCER

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1 Claim. (Cl. 73—373)

This invention relates to an improved apparatus for shaking thermometers so as to cause the mercury to be moved along the tube thereof, as for instance in connection with the use of thermometers in a hospital.

Although there have been prior attempts to devise such an apparatus, yet it is still the general practice for the nurse to "shake down" the thermometers by hand so as to move the mercury towards the bulb thereof. Obviously, this practice is quite laborious and slow, bearing in mind the number of thermometers which require this attention in the hospital each day. So far as I am aware, there has not as yet been devised a practical form of apparatus for this purpose and I believe that my present improved form of device is the first to merit adoption by the hospitals.

Accordingly, it is the object of this invention to devise a practical form of apparatus that is motor-operated and is capable of shaking a plurality of thermometers at one time so as to reduce the time and labor in performing such operation.

More specifically, the present object is to devise a comparatively simple and compact and yet efficient and dependable form of apparatus that is calculated to prove acceptable for universal adoption in the hospitals.

Other objects will appear from the following description and claim when considered together with the accompanying drawing.

Fig. 1 is a side elevation of my improved device;

Fig. 2 is a top plan view of the tray with cover removed; and

Fig. 3 is a vertical transverse sectional view through the tray and its means of connection to the motor shaft.

It is to be understood that the present form of disclosure is merely for the purpose of illustration and that there might be devised various modifications thereof without departing from the spirit of the present invention as herein set forth and claimed.

Mounted in the top of the weighted base 1 is an electric motor unit 2 which has the shaft 3 extending vertically therefrom so as to receive the circular tray 4 for holding the thermometers. Any suitable means of operative connection between the shaft 3 and the bottom of the tray may be provided so that the tray may be readily connected to or disconnected from the shaft whenever desired. For instance, the tray may have a bottom projection 4a which fits over the shaft 3 and a set screw may be employed for releasably securing this operative connection.

The tray has the peripheral upstanding wall 5 of substantial depth and is provided with two comparatively narrow trough-shaped compartments 6 and 7 which are sufficiently wide and deep to accommodate a number of thermometers at one time, the length of each compartment corresponding with that of the thermometers. These compartments extend in a direction corresponding with that of the diametrical zone of the tray and are arranged side-by-side for a substantial extent, while their opposite outer ends terminate at the peripheral wall 5 and their inner ends 6a and 7a terminate substantially inwardly of the wall 5. According to the present illustration, the inner end of each compartment terminates at a point approximately mid-way between the center of the tray and the wall 5; so that the maximum length of the column of mercury in the thermometer will correspond approximately with the outer portion of the compartment which, in turn, corresponds approximately with the radius of the tray.

According to the structure of the present specific form of tray, the two compartments have the same inner wall, and all of the walls of the two compartments are of the same height as the wall 5 so that their upper edges are flush with each other. Thus the tray is well adapted to receive a cover 8 which may merely engage the wall 5 with light friction so as to be readily removable while at the same time it will effectively cover the tray during operation of the device.

According to one preferred size of tray which I have already constructed and demonstrated, it is about six inches in diameter, about one inch deep, and each compartment is about one inch wide and about four and one-half inches long. The two compartments are of the same dimensions and, as will be seen, each compartment is capable of holding a number of thermometers. The bottom of each compartment is concaved transversely so as to facilitate removal of the thermometers therefrom.

It is to be understood that the thermometers will be placed in the compartments with their bulbs at the outer ends of the compartments so that the centrifugal force, due to rotation of the tray, will cause the mercury to move towards the bulbs thereof. Such operation may be produced by merely plugging in the electric cord at the standard base or wall socket so as to start the electric motor of this device.

Either before or after the operation of shaking down the thermometers, in the manner explained, the tray with the thermometers therein may be dipped into a sterilizing solution, with the cover 8 removed.

Thus it will be seen that I have produced a simple form of device which, however, is very efficient and dependable in its operation and is capable of being manufactured and sold at a reasonable price. As a result, the nurses may, for the first time, be relieved of the laborious and slow manual method of shaking down the thermometers; and this form of apparatus might well be adopted quite universally for hospital use.

Furthermore, with my particular construction, it is possible to have a plurality of compartments of sufficient length within a tray of comparatively small diameter; and also the continuous peripheral wall serves as a means for attaching the cover or as a guard to protect the hands of the operator during rotation of the tray in case the cover be not used.

Other advantages resulting from this improved form of device will suggest themselves to those who are familiar with the art to which this invention relates.

What I claim is:

In a thermometer shaker, the combination of a base, motive means housed within said base and having a vertically disposed operating shaft, a circular tray having means of readily detachable operative connection with said shaft so that said tray can be readily removed therefrom, said tray having an annular peripheral upstanding wall and having two parallel narrow trough-shaped compartments located within the diametrical region of said tray, said compartments each being of a length greater than the radius and less than the diameter of said tray and having their major inner end portions overlapping each other laterally and terminating substantially short of the said peripheral wall of said tray while their outer ends extend to and terminate at said peripheral wall of said tray, each compartment having a length corresponding approximately with that of a thermometer to be placed therewithin and having sufficient width and depth to house a plurality of thermometers, the radius of said tray corresponding approximately with the maximum height of the mercury within the thermometer, whereby rotation of said tray will, by virtue of centrifugal force, move the mercury along the tube of each thermometer.

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