July 14, 1936. C. S. J. RUSSELL 2,047,801

SHAKER FOR THERMOMETERS

Filed Feb. 11, 1936

FIG. 1.

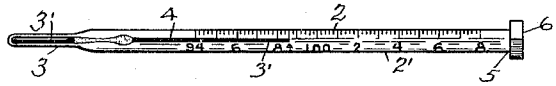


FIG. 2.

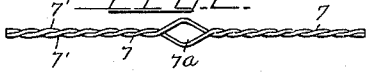


FIG. 3.

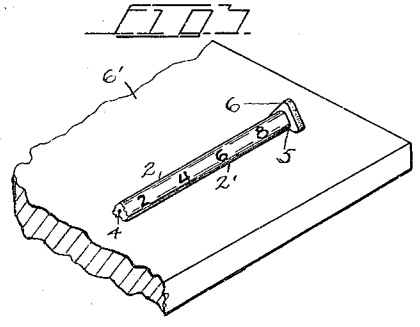


FIG. 4.

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SHAKER FOR THERMOMETERS

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1 Claim. (Cl. 73—52)

The columns of mercury of clinical thermometers, after each application for indicating and determining temperatures, invariably remain extended in the tubes or barrels and prevent further practical use of the thermometers unless the columns are shaken back towards the bulbs. Numerous expedients have been adopted with the view of remedying this trouble or defect, but these efforts, it is believed, have not been entirely successful.

The present invention relates to novel, extremely simple and practical mechanical means for effecting this shaking back of the columns of mercury in the particular type of thermometer, and has for its object to provide a stiff shaking or twirling member, which may be readily, quickly and temporarily applied to the barrel of the thermometer in such manner that the whole assembly may be moved circularly manually in opposite directions for contracting the column of mercury to its normal status, ready to expand and indicate a new temperature reading. A further object is to provide the barrel of the thermometer with an upset head or top, preferably in the form of an integral triangular flange that is disposed transversely, overhangs the barrel and constitutes an abrupt shoulder or stop that cooperates with the shaking member to render the twirling of the thermometer effective; the said upsetting also providing a three-finger grip, by which the thermometer may be initially poised to bring the scale indicia, as well as the status of the mercury column, into direct range of the operator's vision; the said shaking or twirling member preferably firmly engaging the triangular shoulder for normally supporting the barrel perpendicularly to said member, and for forming, together with the mercury barrel, a T-shape that facilitates the twirling or shaking of the whole back and forth rotarily for setting up within the barrel and bulb, a strong centrifugal action that forces the elongated column axially towards the bulb, ready for the next temperature reading.

I attain these objects by the means set forth in the detailed description which follows, and as illustrated by the accompanying drawing, in which—

Figure 1 is an elevation of a clinical thermometer showing the column of mercury extended as at the final reading of the temperature; also showing the triangular head. Fig. 2 is a plan view of the shaker bar. Fig. 3 is a broken perspective of the head or top portion of the tube mounted upon a plane surface and indicating the initial poising of the thermometer for facilitating the reading of temperatures. Fig. 4 is a view showing in full and dotted lines the mercury charged tube mounted on the medial loop of the shaker bar in the act of being whirled for shaking the mercury back towards the bulb by the manipulation of the dual-handlebar.

In the drawing, 2 represents generally the "Faichney" type of clinical thermometer, comprising an elongated tube or barrel 2', having at its reduced end the usual bulb, as 3, which contains the supply of mercury, as 3', that plays longitudinally in an axial duct 4 when the mercury is at expansion and contraction. The top or head 5 of the tube 2' is preferably upset to provide a triangular flange 6, that projects laterally, overhangs the tube 2' and constitutes a three-finger grip adapted to aid the operator or user in poising the tube so as to facilitate sight reading of various temperatures indicated by the fluctuations of the mercury in the duct 4. The scale indicia for fever thermometers of the present type usually ranges from 94° to 108° F., whereas the normal human temperature is standardized at 98.6° F. The inner face of the head 5 provides an abrupt shoulder or stop that is so constructed and disposed relatively to the scale that if the user places the thermometer upon a flat surface 6', as shown in Fig. 3, the numbers and graduations of the barrel 2' will come within his vision. Then if the operator leans forwardly slightly over the reclining tube 2' without disturbing the tube, he will clearly see the column of mercury 3' (see Figs. 1 and 4), whether or not the same has been expanded or contracted.

The present device for shaking or forcing back the column of mercury following a previous operation, comprises a dual-handle substantially straight and stiff fabricated drawn metal bar or tool 7, which preferably consists of a pair of equal length wires 7' that are placed side by side and twisted spirally, like a rope, substantially throughout their full length (see Figs. 2 and 4), to provide a medial diamond-shaped opening or loop 7a, that is arranged, owing to a slight restriction of the loop strands, to grip the barrel 2' between the bulb 3 and the triangular flange 6, which enables the barrel to be passed, with the bulb forward, substantially its full length through the loop 7a, or until the latter makes positive contact with the inner face of the triangular flange, as shown in Fig. 4. This leaves the ends of the aligning handle portions 7 projecting laterally in opposite directions, and forming with the barrel a T-shape (see full lines in Figs. 2–4) that enables the oper-

ator of the thermometer to grasp the respective handle portions with the thumbs and first fingers of both hands and twirl the whole assembly by rolling the free ends of the bar **1** forwardly and backwardly between said thumbs and fingers three or four times, and during which performance, the barrel **2'** describes several complete revolutions in a plane substantially at right angles to the bar (see Fig. 4), and sets up a strong centrifugal action in the barrel **2'** that forces the elongated column of mercury axially back towards the bulb **3**, ready for the next scaling and temperature reading, and so on.

Having thus described my invention, what I claim, is—

In combination with a thermometer or the like having stop means adjacent its head portion, a shaking device composed of a pair of wires having free ends twisted to form finger grips and to provide a medial loop to receive and frictionally grip the barrel of the thermometer and to abut the stop means, said finger grips being substantially stiff so as to require turning of each thereby to twirl the barrel to force the mercury in a direction toward the bulb.

CLAUDE S. J. RUSSELL.