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COMBINED THERMOMETER CASE AND TIMING DEVICE

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Fig. 1

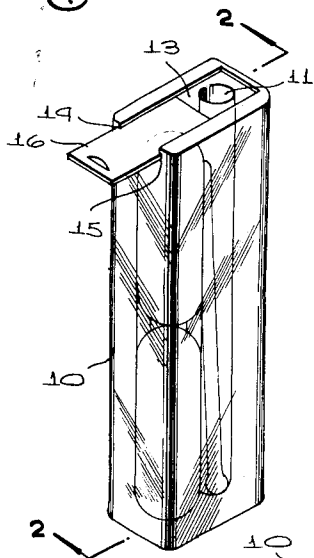


Fig. 2

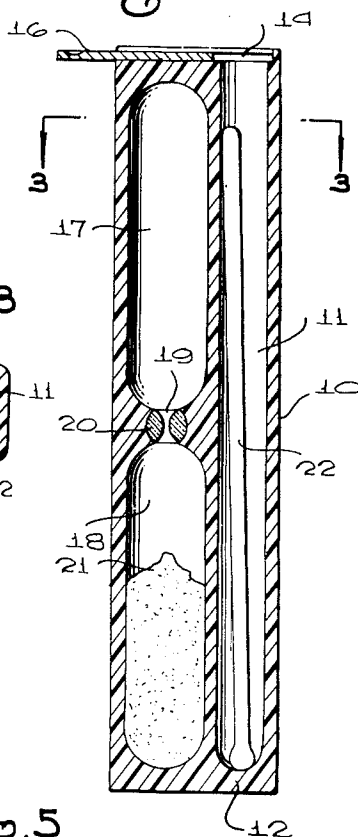


Fig. 3

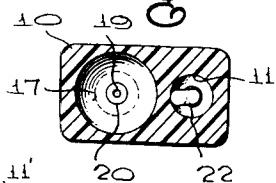


Fig. 4

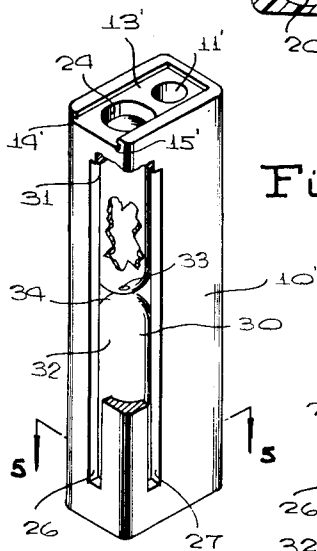
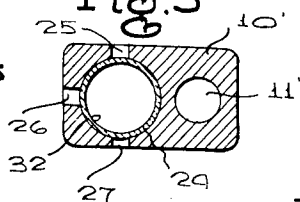


Fig. 5



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COMBINED THERMOMETER CASE AND
TIMING DEVICE

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1 Claim. (Cl. 206—38)

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This invention relates to portable thermometer cases and more particularly to a case for a clinical thermometer used by an individual to take his own temperature and including a timing device for advising a person using the associated thermometer when the thermometer has been held in the mouth for a sufficient length of time to obtain a correct temperature indication.

It is among the objects of the invention to provide an improved thermometer case which will receive at least one clinical thermometer and includes a timing device in the form of an hourglass; which is of rigid construction to provide full protection to a thermometer disposed therein and provides adequate visibility of the timing device; and which is simple and durable in construction, economical to manufacture, and neat and attractive in appearance.

Other objects and advantages will become apparent from a consideration of the following description and the appended claim in conjunction with the accompanying drawing wherein:

Figure 1 is a perspective view of a combined thermometer case and timing device illustrative of the invention;

Figure 2 is a longitudinal cross sectional view on a somewhat enlarged scale on the line 2—2 of Figure 1;

Figure 3 is a transverse cross sectional view on the line 3—3 of Figure 2;

Figure 4 is a perspective view similar to Figure 1 of a somewhat modified form of the device with a portion broken away to better illustrate the construction thereof; and

Figure 5 is a transverse cross sectional view on the line 5—5 of Figure 4.

With continued reference to the drawing, the combined thermometer case and timing device includes a body 10 of elongated, rectangular shape having a length somewhat greater than the length of a conventional clinical thermometer and preferably having rounded edges. This body has its end surfaces substantially in planes disposed perpendicular to the longitudinal center line of the body, so that the body will stand in upright position on either end and the body is provided with a longitudinally extending bore 11 disposed adjacent one side of the body and closed at one end by the corresponding end portion of the body, as indicated at 12. The bore opens to the other end of the body and the body is provided at the end to which the bore opens with a recess 13 of rectangular shape extending across the end of the body in the direction of the major dimension of the rectangular cross sec-

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tional shape of the body with its side edges spaced inwardly from the side edges of the corresponding end of the body and one end spaced inwardly from the adjacent end edge of the body. The recess 13 is undercut along its side edges to provide guideway grooves 14 and 15 disposed in spaced apart and substantially parallel relationship to each other, and a flat closure member or cover 16 of elongated, rectangular shape is disposed in the recess 13 with its side edges slidably received in the guideway grooves 14 and 15, so that the cover can be longitudinally moved into and out of closing relationship with the open end of the thermometer receiving bore 11.

A timing device in the form of an hourglass is provided in the body 10 and, in the form of the invention illustrated in Figures 1, 2 and 3, the body is formed of transparent material and the timing device comprises elongated chambers 17 and 18 formed in the body 10 and spaced apart longitudinally of the body in longitudinal alignment with each other. Each of the chambers 17 and 18 has a length somewhat less than one-half the length of the body 10, and these chambers are disposed at respectively opposite sides of the mid-length location of the body and are connected at their adjacent ends by a restricted orifice 19 extending through a bead or grommet 20 of a hard material, such as glass.

A body 21 of granular material, such as dry, graded sand or a similar substance, is disposed in at least one of the chambers 17 and 18 and will flow from the upper to the lower of these chambers when the body 10 is stood on one end or the other. The time that is required for all of the sand 21 to flow through the orifice 19 from the upper into the lower of the chambers 17 and 18 measures a time interval which will provide a correct temperature reading or indication on the associated clinical thermometer 22, if the thermometer is held in the mouth during this time interval.

In order to place the sand 21 in the chambers 17 and 18 an opening may be provided between one end of the body 10 and the adjacent end of the nearest chamber and the sand poured through this opening into the corresponding chamber, the opening being later closed by material of the same character as that of which the body 10 is formed, so that it is not apparent in the finished device.

In the form of the invention illustrated in Figures 4 and 5, the body 10' is of substantially the same size and shape as the body 10 illustrated in Figures 1, 2 and 3, and described above, and has the thermometer receiving bore 11' extend-

ing longitudinally thereof and opening to one end of the body, an undercut flat recess 13' in the end of the body to which the bore 11' opens providing guideway grooves 14' and 15' and a closure or cover, similar to the closure 12, but not illustrated, for opening or closing the open end of the bore 11'.

Instead of having the timing device chambers 17 and 18 formed directly therein, the body 10' is provided with a second bore 24 extending longitudinally thereof spaced from and parallel to the bore 11' and opening to the same end of the body as that to which the bore 11' opens. The bore 24 is of larger diameter than the bore 11' and is connected to the side surfaces of the body by closed slots 25, 26 and 27 extending longitudinally of the body between locations spaced inwardly from the respectively opposite ends of the body. The slots 25 and 27 are provided respectively in the opposite side surfaces of the body 10' and are disposed symmetrically of a plane which includes the longitudinal center line of the bore 24 and is disposed perpendicular to the side surfaces of the body, while the slot 26 is disposed in the edge surface of the body 10' nearest the bore 24 symmetrically of a plane which includes the longitudinal center line of the bore and is disposed substantially parallel to the opposite side surfaces of the body.

A preformed hourglass device 30 is disposed in the bore 24 and extends longitudinally of this bore. This device is formed of a suitable transparent material, such as a synthetic resin plastic, and includes end portions 31 and 32 enclosing chambers equivalent to the chambers 17 and 18 illustrated in Figure 2 and described above, the adjacent ends of the chambers being interconnected by a restricted orifice 33 extending through a neck 34 of the structure between the adjacent ends of the end portions 31 and 32. A body of granular material corresponding to the body of sand 21 is disposed in the hourglass device 30 and is movable from the upper into the lower chamber of this device as the body 10' is stood on one end or the other.

In the form of the invention shown in Figures 1, 2 and 3, the movement of the sand through the orifice 19 is clearly visible through the transparent material of the body 10, and in the form shown in Figures 4 and 5, the movement of the sand through the orifice 33 is visible through the slots 25, 26 and 27 and through the transparent hourglass structure 30.

When the thermometer case stands on one end, all of the sand will flow from the upper chamber into the lower chamber of the timing device. When it is then desired to use the thermometer, the thermometer is removed from the thermometer receiving bore in the case and placed in the patient's mouth either by the patient himself, or

by an attendant, and the case is inverted and stood on its opposite end at a location conveniently within the observation of the patient. As soon as all of the sand has passed from the upper chamber of the timing device to the lower chamber, sufficient time will have elapsed to provide a correct temperature reading or indication on the thermometer and the patient may now remove the thermometer from his mouth and either read the temperature indication himself, if he is able, or call the attendant to make the temperature reading and return the thermometer to the case.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claim are, therefore, intended to be embraced therein.

What is claimed is:

A protective case for a clinical thermometer comprising a body of elongated shape and having its end surfaces in planes substantially perpendicular to the longitudinal center line of the body so that the body will stand in upright position on either end and having a longitudinally extending bore closed at one end and opening at its other end to one end of said body, said bore being adapted to receive a clinical thermometer therein, closure means movably mounted on said one end of the body for opening and closing the open end of said bore, and time measuring means disposed in said body adjacent said bore and visible from the exterior of said body, said body being formed of transparent material and said time measuring means comprising closed chambers formed in said body and spaced apart longitudinally thereof, means providing a restricted orifice interconnecting said chambers at their adjacent ends, and a body of granular material in said chambers movable through said restricted orifice from the upper to the lower of said chambers when said body is set on one end or the other.

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