July 2, 1957 E. F. KANNENBERG 2,797,682

THERMOMETER MOUTHPIECE

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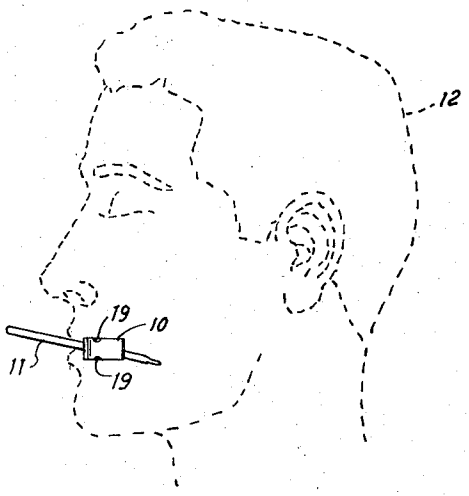

Fig. 1

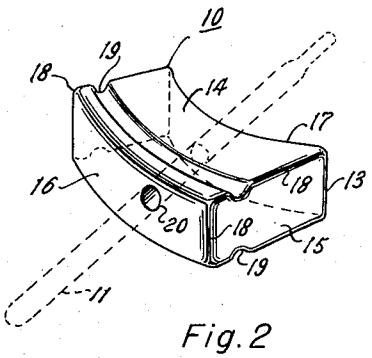

Fig. 2

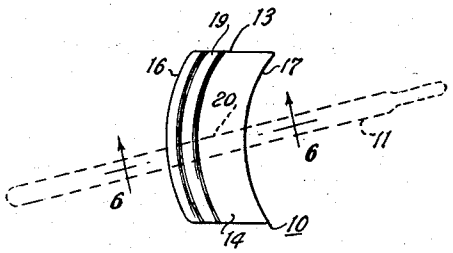

Fig. 3

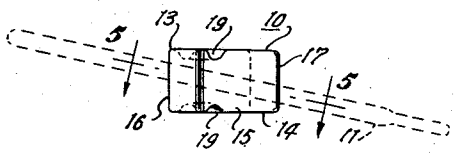

Fig. 4

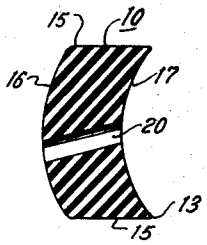

Fig. 5

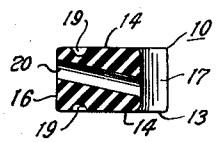

Fig. 6

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THERMOMETER MOUTHPIECE

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5 Claims. (Cl. 128—2)

This invention relates to new and useful improvements in thermometer mouthpieces.

One object of the invention is to provide an improved mouthpiece for supporting a clinical thermometer by the gums or teeth of a patient to prevent biting and breaking of the thermometer as well as dropping of said thermometer from the mouth of a child or unconscious or delirious patient, whereby the danger of injury to the patient and damage to the thermometer are obviated.

A particular object of the invention is to provide an improved thermometer mouthpiece of such construction as to conform to the gums or teeth and permit supporting of a clinical thermometer in the correct position by engaging the mouthpiece between the gums or teeth of a patient to prevent displacement of the thermometer while permitting closing of the lips in a relaxed or natural manner.

An important object of the invention is to provide an improved thermometer mouthpiece of suitable material and of a shape readily engageable between the teeth of a patient, which has grooves for biting engagement by the gums or teeth and an inclined opening for supporting a clinical thermometer beneath the tongue of the patient in the correct as well as a comfortable position, the thermometer being adjustable with respect to the mouthpiece while being confined against shifting or accidental displacement from beneath the tongue.

Another object of the invention is to provide an improved thermometer mouthpiece, of the character described, wherein the contour of the grooves conform to the curvature of the gums or teeth and may vary to accommodate small, medium and large mouths, the construction of the mouthpiece permitting supporting engagement with the gums of a patient as well as with uneven and protruding teeth and use thereof when teeth are missing.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing, wherein an example of the invention is shown, and wherein:

Fig. 1 is a side elevational view of a thermometer mouthpiece constructed in accordance with the invention and shown mounted between the gums or teeth of a patient,

Fig. 2 is a perspective view of the mouthpiece with the thermometer in broken lines,

Fig. 3 is a top plan view of the mouthpiece,

Fig. 4 is a side elevational view of the mouthpiece,

Fig. 5 is a transverse, sectional view, taken on the line 5—5 of Fig. 4, and

Fig. 6 is a transverse, vertical, sectional view, taken on the line 6—6 of Fig. 3.

In the drawing, the numeral 10 designates a mouthpiece for supporting a clinical thermometer between the upper and lower teeth of a patient indicated generally by the broken lines 12. The mouthpiece includes a substantially flat block or body 13, of rubber, plastic or other suitable material which is preferably elastic or deformable, having

a width approximately one-half of its length and approximately twice its thickness. Although the body is substantially rectangular, in that it has flat upper and lower surfaces 14 and perpendicular end surfaces 15, its longitudinal margins or surfaces 16 and 17 are arcuate or curved and disposed in concentric relation whereby the margins are equally spaced throughout their lengths and the outer margin is convex while the inner margin is concave. As shown by the numeral 18, the edge portions of the body 13 may be bevelled or chamfered to eliminate sharp corners and edges (Fig. 2). Due to the arcuate contour of its longitudinal margins, the body conforms to the curvature of the human teeth and permits comfortable positioning of the mouthpiece 10 without unduly distorting the lips or crowding the tongue of the patient. The length and width of the body are sufficient to provide an ample support for the thermometer 11, while the thickness of said body accommodates said thermometer without spreading the upper and lower teeth of the patient to too great an extent.

A pair of vertically-alined, arcuate grooves or curved recesses 19 extend longitudinally throughout the upper and lower flat surfaces of the body 13 in concentric relation to its longitudinal margins 16 and 17 for engagement by the upper and lower teeth. In order to permit confinement within the mouth without undue distortion of the lips, the grooves are contiguous the outer convex margin 16. Preferably, the grooves 19 are arcuate in cross-section. An opening 20 extends transversely through the body and its longitudinal margins for receiving and supporting the thermometer 11. The opening may be cylindrical as shown or may more closely conform to the contour of the thermometer which is substantially triangular in cross-section. For correctly positioning the bulb of the thermometer beneath the tongue and downwardly and laterally of the intersection of the horizontal and vertical axes of the body, the opening is inclined downwardly and inwardly from the outer convex margin 16 to the inner concave margin 17 (Figs. 4 and 6) and extends at an angle to the transverse axis of the body (Figs. 3 and 5). Manifestly, the thermometer is supported by the mouthpiece without discomfort to the patient.

It is noted that the mouthpiece prevents accidental biting and breaking of the thermometer by an unconscious or delirious patient or child and thereby eliminates the danger of injury due to the swallowing of mercury and/or broken glass. In addition, the mouthpiece provides a more positive support for the thermometer and prevents dropping of the same from the mouth of a patient and consequent breaking of said thermometer. Since the thermometer is supported at the correct angle, its bulb is properly positioned beneath the tongue to assure the obtaining of the temperature with the desired accuracy. The inward projection of the thermometer from the mouthpiece may be adjusted for the comfort of the patient. The arcuate grooves 19 of the body 13 of the mouthpiece assures positive mating engagement with the teeth and the curvature thereof as well as of the longitudinal margins 16 and 17 may vary to accommodate small, medium and large mouths. After being placed within a patient's mouth, the mouthpiece holds the thermometer in a fixed position and prevents shifting or slipping of said thermometer from beneath the tongue. The mouthpiece can be supported by the gums, uneven or protruding teeth and is capable of being used when some of the teeth are missing. Since the mouthpiece is supported by engagement with the teeth or gums, the lips may be closed in a natural or relaxed condition and need not be compressed to hold the thermometer in position. Although the body of the mouthpiece may be formed of any suitable material, it has been found that elastic or deformable material, such as rubber, is preferable since it is comfortable, durable and

may be sterilized in the same manner as the thermometer.

The foregoing description of the invention is explanatory thereof and various changes in the size, shape and materials, as well as in the details of the illustrated construction may be made, within the scope of the appended claims, without departing from the spirit of the invention.

What I claim and desire to secure by Letters Patent is:

1. A mouthpiece for supporting a clinical thermometer in the mouth of a patient including a body substantially conforming to the curvature of the gums or teeth, the body having an opening extending therethrough for receiving and supporting a thermometer with its bulb beneath the tongue of the patient, the opening being disposed in angular relation to the horizontal and vertical axes of said body for properly positioning the thermometer.

2. A mouthpiece for supporting a clinical thermometer in the mouth of a patient including a body having substantially flat upper and lower surfaces with grooves therein substantially conforming to the curvature of the teeth of the patient for biting engagement by the upper and lower teeth, the body having an opening extending therethrough in spaced relation to its upper and lower surfaces for receiving and supporting a thermometer with its bulb beneath the tongue of the patient.

3. A thermometer mouthpiece as set forth in claim 2 wherein the body has arcuate margins disposed in concentric relation to the grooves and substantially conforming to the curvature of the teeth.

4. A thermometer mouthpiece as set forth in claim 2 wherein the opening is inclined with respect to the horizontal axis of the body and disposed at an angle relative to the vertical axis of said body for positioning the bulb of the thermometer downwardly and laterally of the intersection of the axes.

5. A mouthpiece for supporting a clinical thermometer in the mouth of a patient including a body of elastic material having substantially flat upper and lower surfaces and opposed arcuate margins which are disposed in concentric relation whereby one margin is convex and the other concave, the upper and lower surfaces of the body having arcuate grooves adjacent the convex margin of said body and substantially conforming to the curvature of the teeth of the patient for biting engagement by the upper and lower teeth, said body having an opening extending therethrough from its convex margin to its concave margin for receiving and supporting a thermometer with its bulb beneath the tongue of the patient, the opening being inclined relative to the horizontal axis of said body for positioning the thermometer bulb downwardly and laterally of the intersection of the axes.

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