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STERILIZING HOLDER FOR CLINICAL THERMOMETERS

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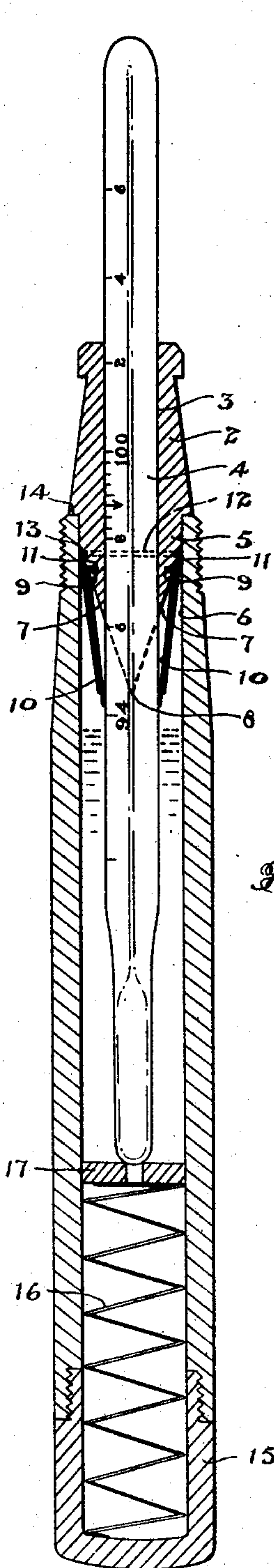


Fig. 3.

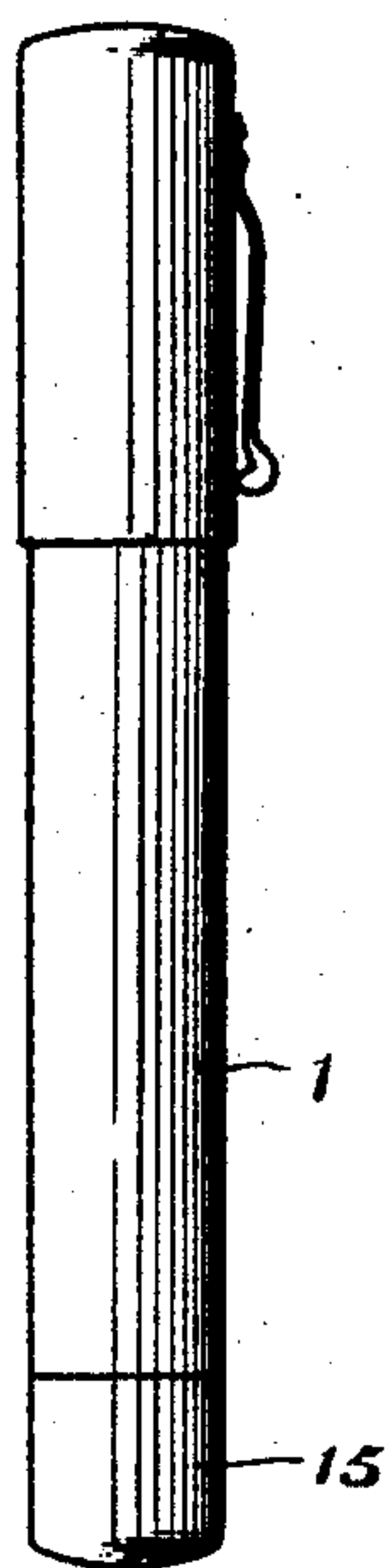


Fig. 1.

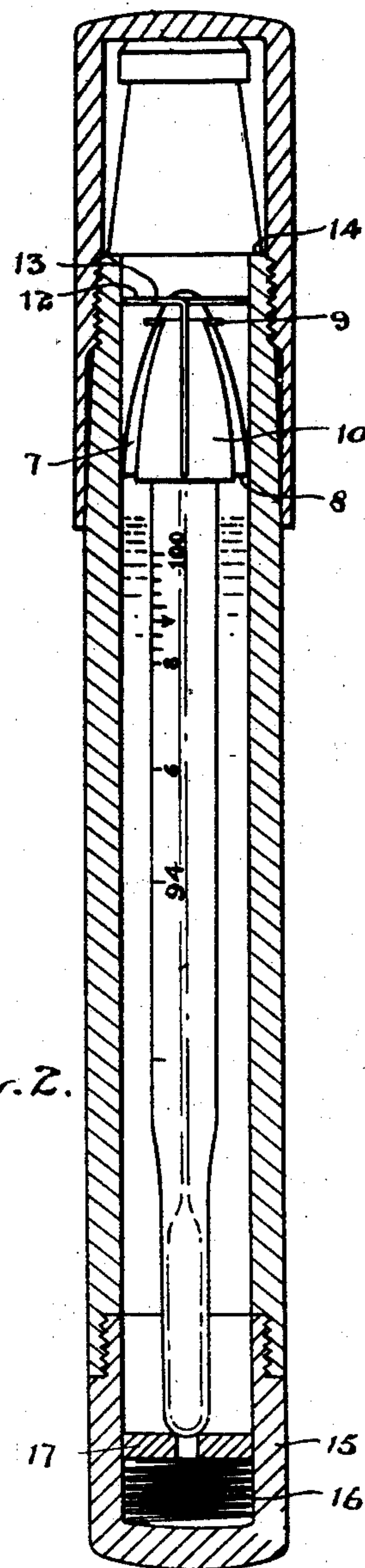


Fig. 2.

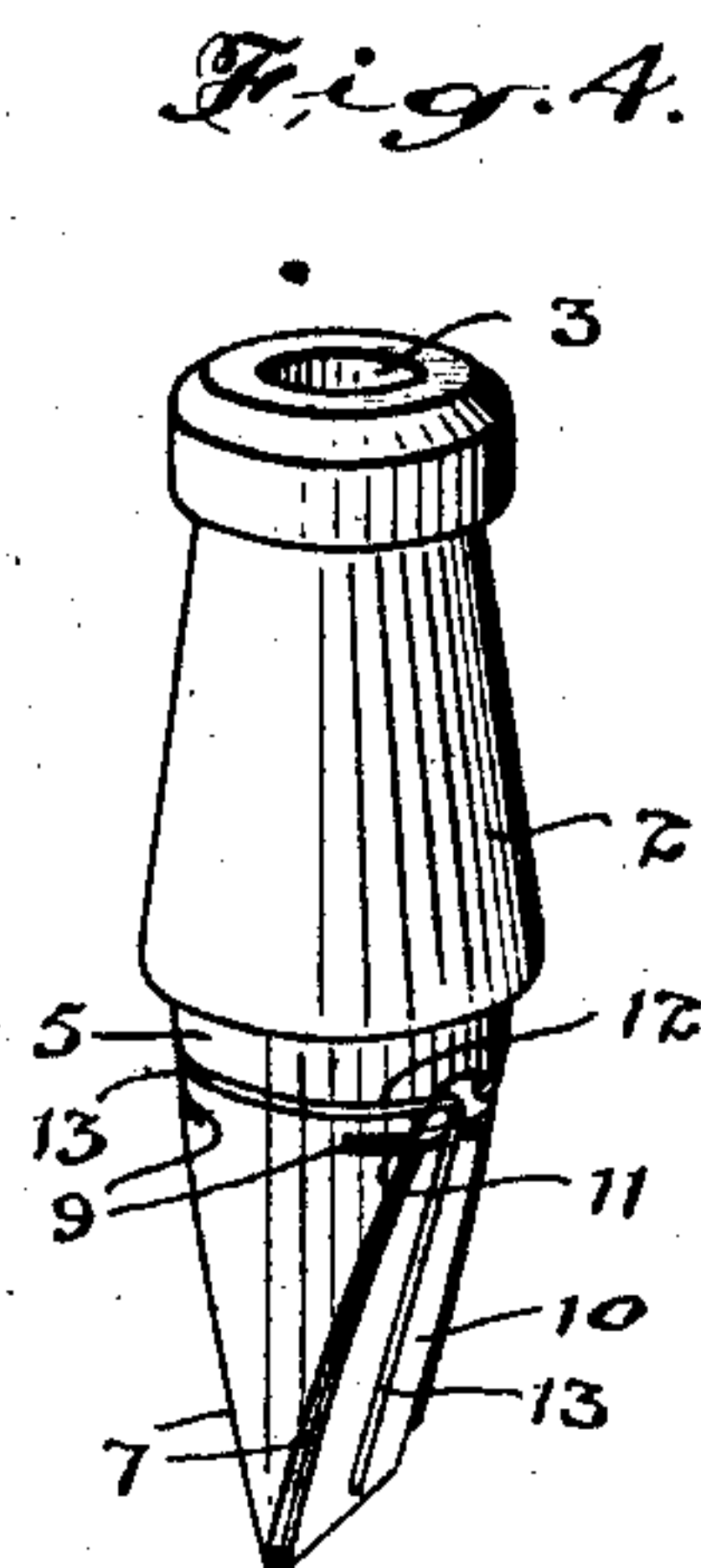


Fig. 4.

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## UNITED STATES PATENT OFFICE

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STERILIZING HOLDER FOR CLINICAL THERMOMETERS

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The principal objects of this invention are to eliminate the highly unsanitary conditions incident to the use of clinical thermometers in the ordinary use of same with various patients where it is impossible for the physician to obtain access to proper sterilizers between calls, and to provide a very simple and convenient means for carrying a thermometer which will effectively retain a sterilizing liquid.

The principal feature of the invention consists in the novel construction of a closure for a tubular container which will allow the ready insertion and removal of the thermometer and which will effectively seal the opening to prevent the escape of the sterilizing fluid contained in the tube.

In the accompanying drawings Figure 1 is an elevational view of the holder.

Figure 2 is an enlarged longitudinal mid-sectional view of the device showing the valve for closing the top in elevation, and the thermometer in place therein.

Figure 3 is a view similar to Figure 2 taken at right angles to the view in Figure 2 and with the cap removed.

Figure 4 is an enlarged perspective view of the closure for the tube.

It has been the practice for many years for physicians to carry their clinical thermometers in a small case in the vest pocket and in the course of their professional calls the thermometer may be used for several patients without being properly sterilized.

Alcohol provides an excellent sterilizer but it has not been found feasible to use same, as suitable means for closing the receptacle against leakage when the thermometer is removed have not been available.

The present invention provides a closure which upon the removal of the thermometer, seals the tubular holder so that the alcohol will not escape if the holder is laid down or even if it is inverted.

The device comprises a tubular holder 1 which may be of a suitable diameter to be carried in the vest pocket without inconvenience. It is provided with a closure 2 having a central cylindrical passage 3 which is an easy sliding fit for the thermometer 4.

The closure is provided with a cylindrical portion 5 which is a snug fit for the cylindrical portion 6 of the top end of the tube 1. The inner end of the portion 5 is bevelled on opposite sides forming a wedge-shaped structure, the flat faces 7 of which meet at the apex. It will be seen that the bevelled faces 7 of the portion 5 intersect or cut into the passage 3 but that the side portions extend to a point of intersection 8 of the two bevelled faces.

A shallow groove 9 is cut in the closure member across each of the flat faces 7 adjacent to the top thereof and a thin flat plate 10, preferably of metal and shaped to conform to the contour of the flat face 7, is arranged to fit against each of said faces and is provided with a flanged edge 11 at the top to fit loosely in the transverse groove.

A circumferential groove 12 is cut in the cylindrical part 5 of the closure just above the grooves 9 and a fine wire 13 is bent to fit into said groove and the ends thereof are bent downwardly and inwardly and fit snugly against the plates 10 to hold them in close contact with the bevelled faces 7, said spring ends being firmly secured to the plates.

The closure is formed with a shoulder 14 which abuts the top end of the tube 1.

It will be readily seen that when the thermometer is removed the plates 10 form a pair of valves which effectively seal against the bevelled faces 7 and said valves are arranged so that their bottom edges close tightly together, thus sealing the tube so that a fluid contained in the tube cannot escape.

When the thermometer 4 is inserted in the passage 3 of the closure the valve plates spread outwardly being carried by their flexible springs and allow the thermometer to extend down into the well of the tube and to be immersed in the alcohol or other sterilizing fluid.

The bottom end of the tube is preferably provided with a removable portion 15 to allow for the ready filling of same and a spring 16 and floating plate 17 are provided to hold the thermometer from rattling and to protect it from injury and also to eject the thermometer when the cap is removed.



The device is extremely simple and the valves constructed as described are very effective and serviceable.

What I claim as my invention is:

5 1. In a tubular holder, a closure having a cylindrical end fitting into said holder and provided with a cylindrical longitudinal passage and having a pair of bevelled meeting faces at the inner end, a pair of flat valves  
10 closing against said flat faces and meeting at their inner ends and sealing the cylindrical passage, and spring means for holding said valves to said faces.

15 2. In a tubular holder, a closure having a cylindrical end fitting into said holder and provided with a cylindrical longitudinal passage and flat bevelled meeting faces at the inner end, transverse grooves arranged at the upper ends of said flat faces, a pair of flat  
20 valves adapted to close together and to fit against said flat faces, and each having a flanged edge at the top to enter said grooves, and spring means for returning said valves to their closed positions.

25 3. In a tubular holder, a closure having a cylindrical end fitting into said holder and provided with a cylindrical longitudinal passage and flat bevelled meeting faces at the inner end, a pair of flat valves closing against  
30 said flat faces and meeting at their inner ends and sealing the cylindrical passage, a circumferential groove formed in said closure above said flat faces, and a wire spring secured to said valves and seated in said groove.

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