

creosote acts on a small quantity of mercury in the tube, which rises or falls as the creosote expands or contracts.

In each of the tubes above the mercury is a small metallic index, having a hair attached to it, which, pressing against the glass tube, acts as a spring, and keeps the index in its place, so as to be read off and recorded.

It is evident that the bulb of the thermometer would be exposed to the pressure of the water as well as the temperature; to prevent this, an additional bulb is blown outside the bulb of the thermometer; this is partially filled with spirit, which is boiled before it is hermetically closed, so that it contains in addition to the spirit some spirit vapour. The pressure now acts on the outer and not on the inner bulb, which is therefore only affected by temperature. These thermometers are tested by hydraulic pressure, from two to three tons on the square inch, and are considered trustworthy up to 3000 fathoms.

On commencing the operations of sounding, the weighted sounding-rod, the water-bottle, and the thermometers are suspended to the line, and lowered from the sounding-bridge by reversing the engine for 500 fathoms; the line is then let go and allowed to run out freely. As it runs out, the exact time of each 100-fathom mark entering the water is registered and set down in its appropriate column in a