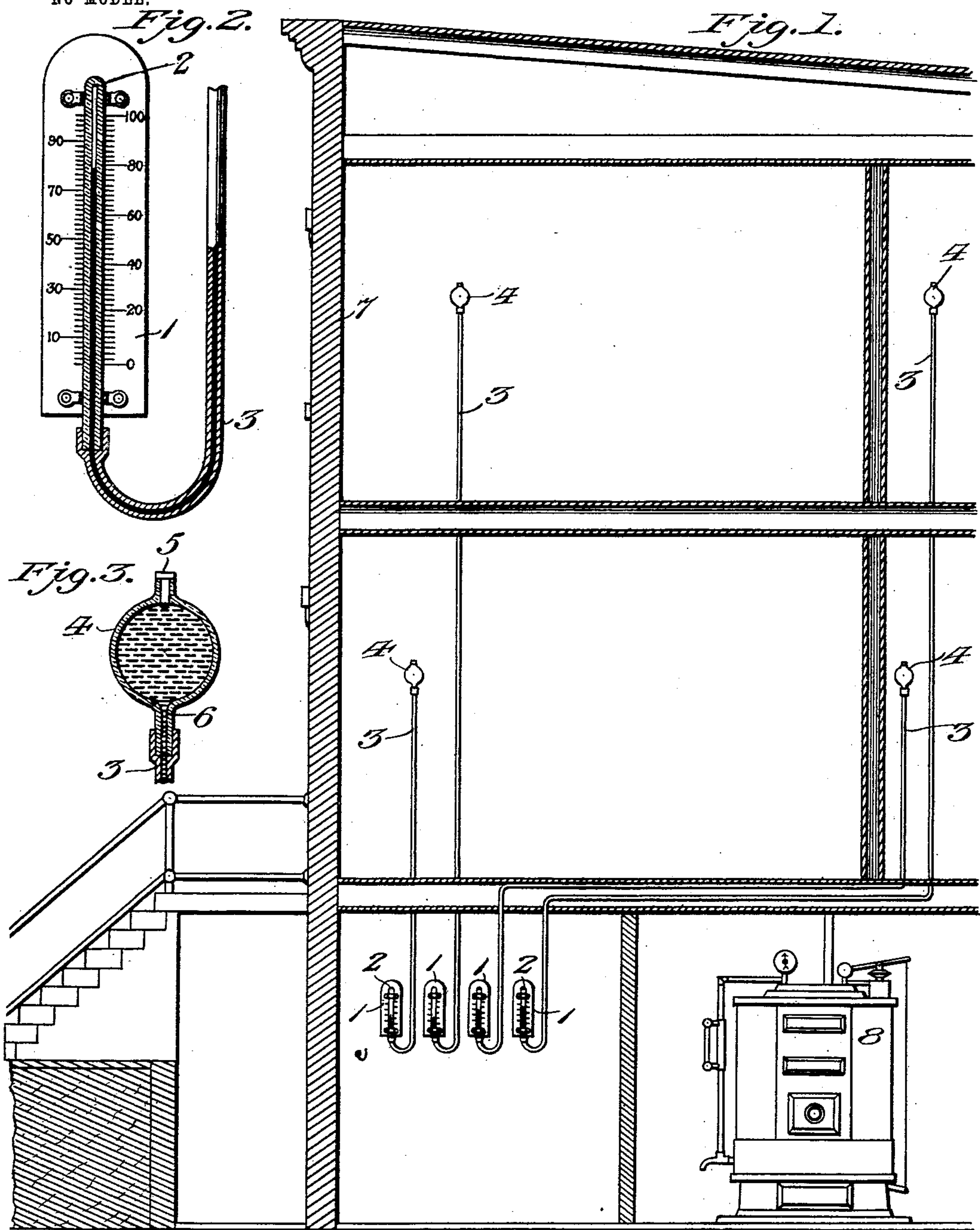


J. T. SMITH.
HEAT INDICATOR.

APPLICATION FILED MAY 13, 1903.

NO MODEL.



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Witnesses

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UNITED STATES PATENT OFFICE.

JEROME T. SMITH, OF SCOTLAND, SOUTH DAKOTA.

HEAT-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 745,740, dated December 1, 1903.

Application filed May 13, 1903. Serial No. 156,968. (No model.)

To all whom it may concern:

Be it known that I, JEROME T. SMITH, a citizen of the United States, residing at Scotland, in the county of Bonhomme and State of South Dakota, have invented new and useful Improvements in Heat-Indicators, of which the following is a specification.

My invention relates to new and useful improvements in temperature-indicating mechanism especially adapted for use in structures containing two or more compartments adapted to be heated by apparatus located in one of said compartments. Its object is to provide an indicator which is located adjacent to the heating apparatus and which will accurately indicate the temperature in each of the rooms in the structure.

The invention consists in arranging a bulb within each compartment and connecting the same by means of a suitable tube with a preferably glass tube located adjacent to the heating apparatus. The board upon which this tube is mounted is graduated to indicate degrees of temperature, and the bulb and tube are filled with mercury or alcohol or other suitable material adapted to expand or contract according to the temperature of the surrounding atmosphere.

The invention also consists in the further novel construction, combination, and arrangement of the several parts, which will be more fully hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a section through a structure having my improved indicating apparatus therein. Fig. 2 is a section through one of the indicators used in connection with the apparatus, and Fig. 3 is a section through a bulb.

Referring to the figures by numerals of reference, 1 1 are boards or plates suitably graduated, and each has a glass tube 2 thereon which is closed at its upper end. The lower end of this tube is connected to a tube 3, of any suitable material, which extends upward into the room the temperature of which is to be indicated. Within this room is located a bulb 4, the upper end of which is normally closed by means of a plug 5, while

the lower end has a tubular extension 6, which opens into the tube 3, before referred to. One of these bulbs 4 is located in each compartment of the structure 7 in which the apparatus is located, and the tubes 3 of these bulbs extend downward to the tubes 2, which are preferably arranged close to each other at a point adjacent to the heating apparatus 8 of the structure.

In using this apparatus each tube 3 and bulb 4 is filled with mercury or alcohol, and the lower end of the tube is then connected to the lower end of its glass tube 2. The liquid contained within the bulb and tube will flow downward by gravity and cause the air contained in tube 2 to be compressed. Additional liquid is then placed in bulb 4, so as to replace the liquid which has been forced from tube 3 into tube 2, and the closing-plug 5 is then placed securely in position within the bulb. It will be seen that when the temperature within the compartment increases the alcohol or mercury within bulb 4 will be expanded and cause the air within tube 2 to become compressed. The liquid will, as is obvious, rise within tube 2 and accurately indicate the temperature in the room to which said tube is connected.

By providing one of these indicators for each room and arranging them adjacent to the heating apparatus it is obvious that the engineer or other person in charge may quickly determine the temperature in the various rooms without the necessity of leaving his post.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new is—

1. In an apparatus of the character described, the combination with an air-containing tube closed at its upper end; of a bulb removed therefrom and having a normally closed inlet, a tubular extension to said bulb,

a tube connecting said extension with the open end of the air-containing tube, and expansible liquid within the bulb and tubes.

5 2. In an apparatus of the character described, the combination with a graduated board having an air-containing tube thereon closed at one end; of a bulb removed from said tube and having a normally closed inlet, a tubular stem extending from said bulb, a

tube connecting said stem with the open end 10 of the air-containing tube, and expansible liquid within the bulb and tubes.

In testimony whereof I affix my signature in presence of two witnesses.

JEROME T. SMITH.

Witnesses:

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C. J. DICKSON.