that some of its parts will move because of change of temperature in the surrounding air the motion so produced being used either directly or indirectly to open dampers or valves, and so control the supply of heat. Second, means of transmitting and often of multiplying the slight motion of the parts of the thermostat produced by the change of temperature in the room to the valves or dampers controlling the supply of heat. Third, a motor or mechanism for opening the valves or dampers, which may or may not be independent from the thermostat.

In some systems the thermostat is directly connected to the valves or dampers and no independent motor or mechanism is employed. In this case, the power which is used to open or close the valves or dampers regulating the heat supply is generated within the thermostat and is obtained either from the expansion or contraction of metallic bodies or by the change in pressure caused by the vaporizing of some liquid, which boils at a low temperature. The force generated by slight changes in temperature is comparatively feeble and the motion produced is generally very slight so that when no auxiliary motor is employed it is necessary to have the regulating valves constructed to move very easily and not be liable to stick or get out of order. In most systems, however, a motor operated by clock work, water, or compressed air is employed and the thermostat is required simply to furnish power to start or s'op the motor.

The limits of this paper will not permit an extended sketch of many of the earlier forms used. Those which are in use may be classified either according to the general character of the thermostat or the construction of the motor employed to operate the heat regulating values as follows:

Thermostats { Moved by expansion or contraction. Moved by change of pressure. (No auxiliary (Expansion or contraction.

Temperature regulators	motor.	Pressure.
	Motor	Clock work. Water. Compressed air.

Regulators operated by direct expansion metals of various kinds expand when heated and contract when cooled and this fact has often been utilized in the construction of temperature regulators. A single bar of metal expands so small an amount that it is of little value for this purpose unless very long or unless its expansion is multiplied by a series of levers. Several forms have been used some of which may be mentioned: A bent rod with its ends confined so that expansion tends to change