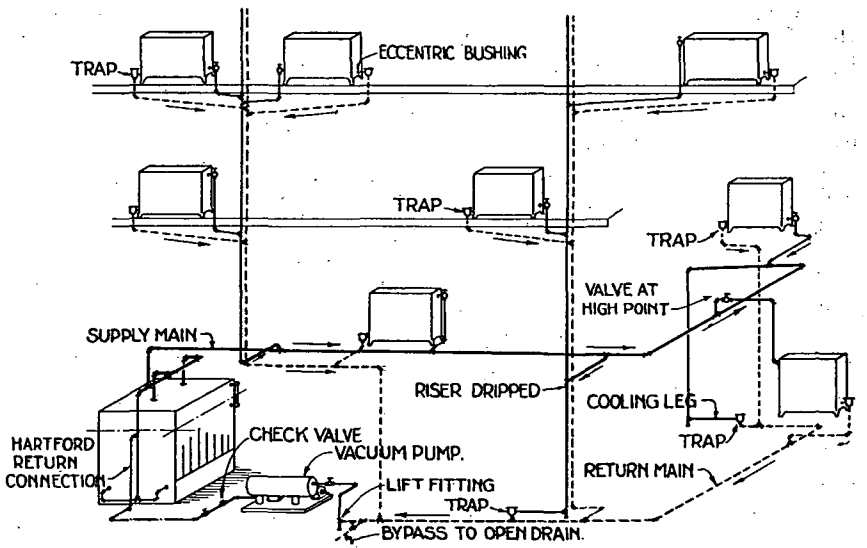

FIG. 5. TYPICAL INSTALLATION USING VACUUM PUMP

been developed to meet the requirements of the newer architecture of modern building construction and are based on well established engineering principles of control for occupancy, wind and sun effect, zone demands, etc. Descriptions of these systems will be found in the catalog section of THE GUIDE.

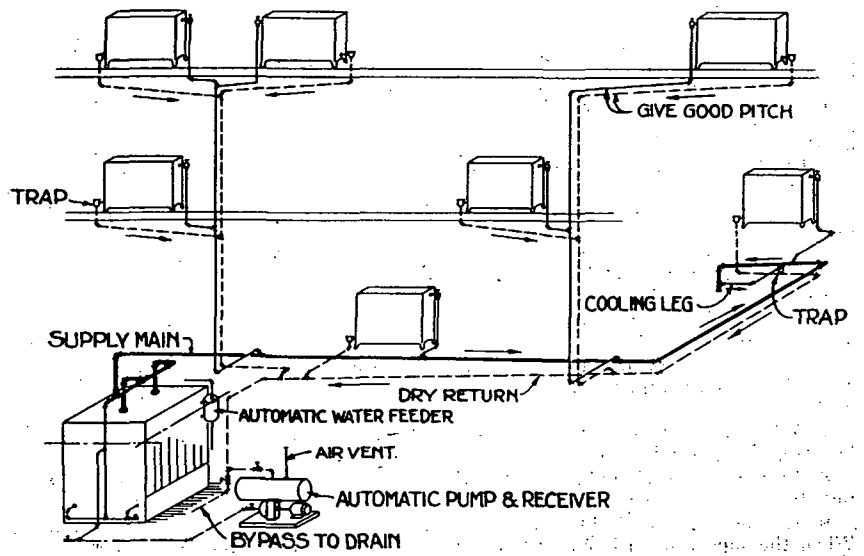

FIG. 6. TYPICAL INSTALLATION USING CONDENSATION PUMP

TEMPERATURE CONTROL

The heating surface installed in buildings must emit sufficient heat to maintain the desired temperature in the coldest weather. For higher outside temperatures, the radiators will be of greater capacity than required, and overheating will result unless the heat output is reduced. The amount of heat delivered by a steam radiator can be reduced by any one of the following three methods:

1. By lowering the pressure and thus the temperature of the steam.
2. By admitting steam to the radiator intermittently and thus reducing the length of time it is filled with steam.
3. By restricting the flow of steam into the radiator.

Vacuum or Pressure Control

If large buildings are controlled by a single thermostat, the heating surface should be carefully balanced against the heat losses of the building. The heat emission of the radiators may then be varied according to the heat losses of the structure by varying the pressure or vacuum on the system. The higher the vacuum the lower will be the temperature, and thus the temperature in the radiator will be reduced. This method is sometimes supplemented with thermostatically operated valves in rooms

TABLE 11. MAXIMUM ALLOWABLE CAPACITIES OF UP-FEED RISERS FOR TWO-PIPE LOW PRESSURE STEAM

Based on A. S. H. V. E. Research Laboratory Tests

Pipe Size Inches	Velocity Feet per Second	Pressure Drop Ounces per 100 Ft.	Capacity		
			Sq. Ft. Radiation	B.t.u. per Hour	Lb. Steam per Hour
A	*B*	*C*	*D*	*E*	*F*
¾	20	.....	40	9550	10.0
1	23	1.78	74	17,900	18.45
1¼	27	1.57	151	36,500	37.65
1½	30	1.48	228	55,200	57.0
2	35	1.33	438	106,100	109.5
2½	38	1.16	678	164,100	169.4
3	41	0.95	1129	273,500	282.2
3½	42	0.81	1548	375,500	387.0
4	43	0.71	2042	495,000	510.5

INSTRUCTIONS FOR USING TABLE 11

1. The capacities given in this table should never be exceeded on two-pipe risers.
2. Capacities based on ¼ lb. condensation per square foot equivalent radiation and actual diameter of standard pipe.
3. All pipe should be well reamed and free from constrictions. Fittings should be up to size. (See Tables 7 and 8).