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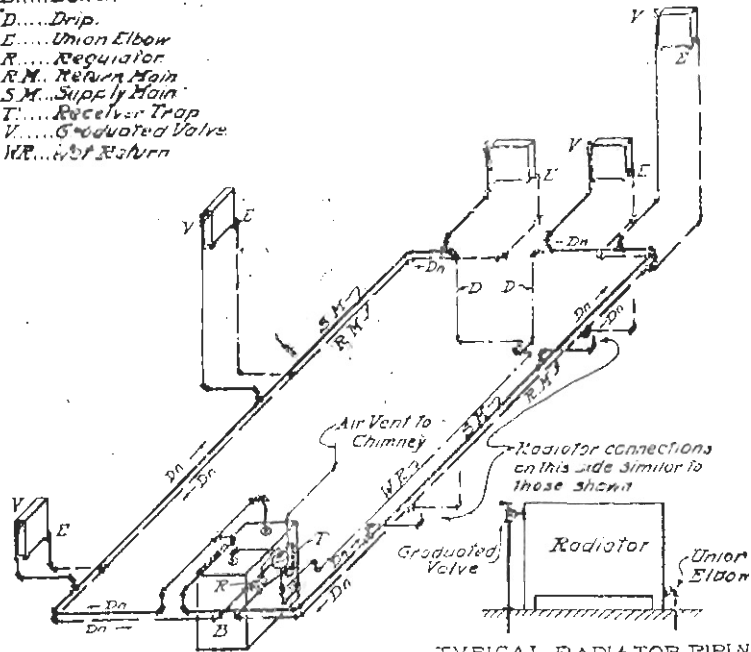
VAPOR HEATING.
The Hutchison System.

A distinctive feature of the Hutchison system, developed by the Hutchison Vapor Heating Corporation, Washington, D. C., is the fact that there is no trap at the individual radiators, the returns being trapped at the boiler by means of the Hutchison trap-receiver and damper regulator combination, shown in Fig. 3.

In Fig. 1 is shown a typical connections diagram for this system. Steam or vapor generated at the boiler flows out through the supply mains and risers and is admitted to the radiators through the Hutchison packless graduating valve (Fig. 2) of which there is one at the inlet end of each radiator. Condensation leaves the radiators through the Hutchison union elbow (Fig. 4) and is fed through the return lines to the trap-receiver at the boiler.

The Hutchison damper regulator is operated by the weight of water which is forced into its reservoir from the trap-receiver upon a rise of boiler pressure and which passes from this reservoir into the trap-receiver upon a fall of boiler pressure. This regulator

- B.....Boiler
- D.....Drip
- E.....Union Elbow
- R.....Regulator
- R.M. Return Main
- S.M. Supply Main
- T.....Receiver Trap
- V.....Graduated Valve
- W.R. Wet Return



TYPICAL RADIATOR PIPING

~ HUTCHISON SYSTEM ~

is adjustable from 2 to 6 oz. pressure by simply changing the setting of the reservoir on its indicator plate and figures opposite each setting on this plate show the pressure of the setting.

Hutchison special safety valves of the side lever, pop type are supplied in four sizes from 1 in. to 2 in. for boilers of 700 to 3500 sq. ft. radiation; for larger sizes it is recommended that 2 in. safety valves be used, arranged in tandem.

In installing this system the mains should be graded not less than 1 in. in 20 ft. when steam and condensation flow in the same direction, and not less than 3 in. in 20 ft. when steam and condensation flow in opposite directions. An addition of 20% to computations of required steam radiation is suggested, to insure complete condensation of the vapor in the radiator and keep steam out of the return lines. Radiators should be of the water type, tapped for top supply and bottom return, the return tapping being eccentric and either at the same or opposite end of the radiator from the steam connection. Return lines are vented to the atmosphere, and the vent line must be carried up at least 10 ft. above the level of the return line.

(Concluded on Sheet No. 132-Y)

VAPOR HEATING
The Hutchison System
(Concluded from Data Sheet No. 132-X)

The Hutchison graduating valve is of the packless type which opens and closes a port by the movement of a tapering slot attached to the valve spindle across the port opening as illustrated in Fig. 2. An extension valve stem is supplied for use in connection with enclosed or concealed radiators.

Pipe size for supply mains depends on the amount of radiation to be heated, the distance from the boiler to the furthest radiator, and the number of elbows contained

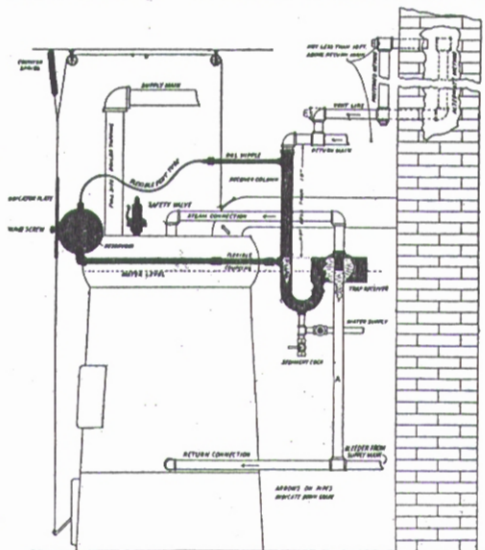


Fig. 3

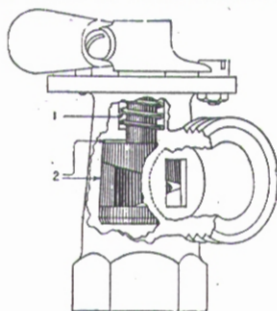


Fig. 2

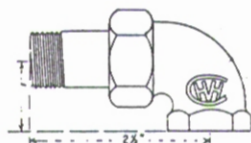
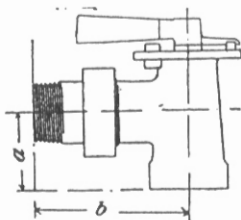


Fig. 4

in such line. The following table is calculated on the basis of an assumed pressure drop of 2 oz. between the boiler and the last radiator. In making measurements an allowance of 10 ft. for each right-angle elbow is suggested.

Nominal Size of Pipe In. Diam.	Length of Run of Main in Lineal Ft. _____			
	100 ft. or less	100-150 ft.	150-200 ft.	200-300 ft.
	Radiation in Square Feet.			
1 1/4	160	145	122	100
1 1/2	265	210	190	150
2	520	450	380	310
2 1/2	860	700	600	490
3	1500	1250	1070	900
3 1/2	2200	1800	1550	1250
4	3300	2600	2200	1800
4 1/2	4500	3700	3200	2600
5	6200	5000	4400	3600
6	8400	7200	5800



Roughing in Measurements for Radiator Valves

Sizes	a inches	b inches
1 inch	1 7/8	3 1/4
3/4 "	1 3/8	3 "
1/2 "	1 1/4	3 "