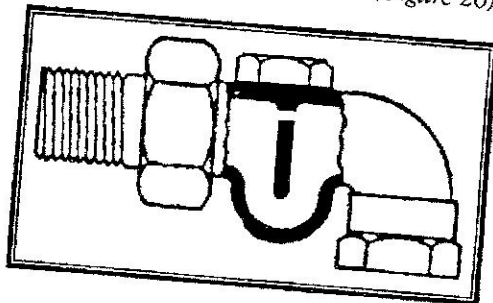


(Figure 26)



(Figures 27a)



(Figures 27b)

10. THE BROOMELL SYSTEM

This was the first vapor system to be used extensively in America. One of the things that made it so popular was that it used relatively small, half-inch returns lines.

Broomell also used hot water-type radiators with special supply valves. (Figure 26)

These valves were known as "quintuple valves" because each had five different-sized holes. You could turn the valve handle to open or close two or more of these holes. You could really fine-tune the amount of steam entering each radiator with these valves!

The radiator heated from the top to the bottom. This was another classic characteristic of many vapor systems. The top-to-bottom heating gives closer control than, say, a bottom-connected, one- or two-pipe steam radiator. Remember, steam is lighter than air, and if you can introduce it through the top of the radiator you could keep it from diffusing so much. That leads to greater control of the radiator's temperature.

Instead of a trap, Broomell used a special type of under elbow on the return side of the radiator. (Figures 27a & 27b)

This elbow contained a small P-trap which filled with water on the first cycle. They drilled a small hole in the metal partition dividing the P-trap elbow. That allowed system air to pass through to the dry return. If that hole plugged up with dirt, the radiator stopped heating. You could clean it, though, by removing the plug and sticking a thin wire into the hole.

At the boiler, there was a special receiver/regulator which controlled the draft doors of the boiler. A copper float inside this receiver rose and fell with boiler pressure, moving a chain and controlling the draft doors.

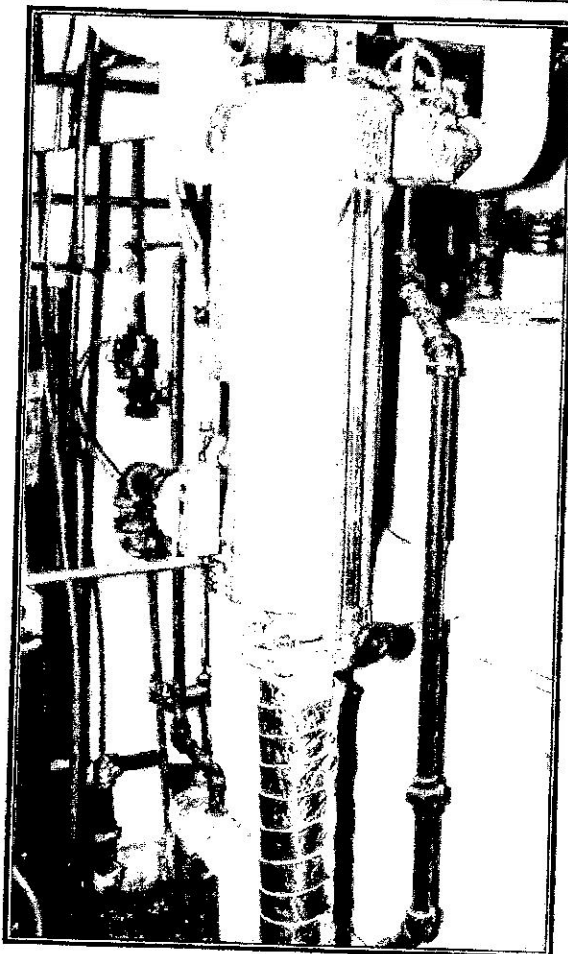
The dry return ended in this receiver/regulator chamber. (Figure 28)

There was also an air line connected to a condensing radiator mounted on the basement ceiling. This radiator took care of any steam that made its way to the radiators. The condensing radiator was, in turn, connected into the chimney.

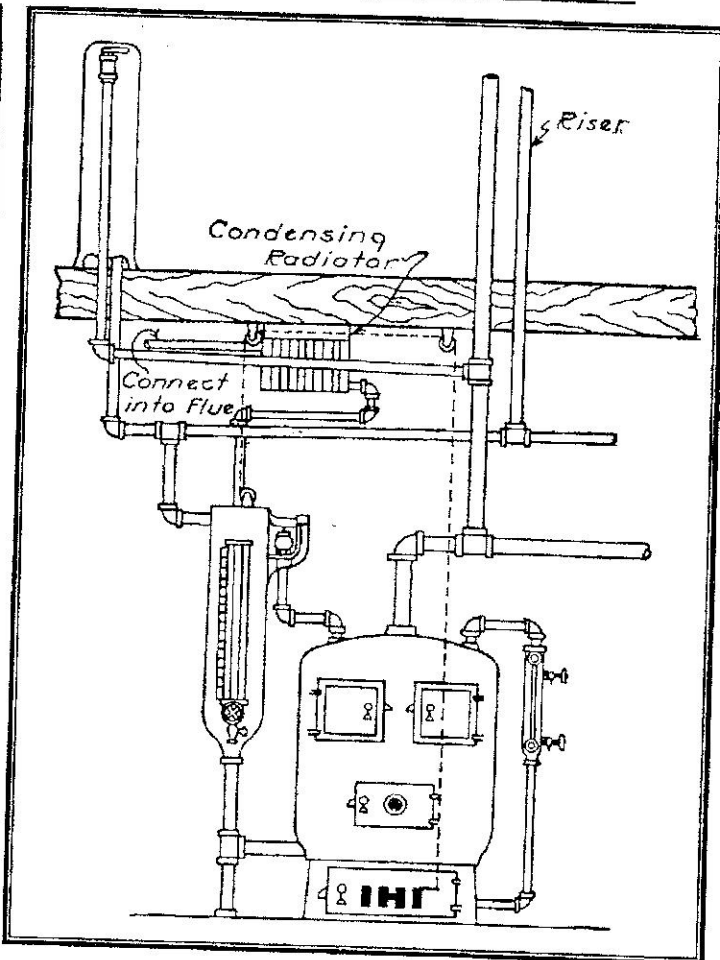
They used the flue draft to pull air from the system and heat in the distribution of the steam. Hard to believe, isn't it?

Broomell could heat a house very quickly with only a little of pressure. In fact, there was a relief valve built into the receiver/regulator that would open at seven ounces of pressure. That was the maximum high limit for this one!

Naturally, if you're working on one nowadays, you'll need...



(Figure 28)



(Figure 29)

Vaporstat instead of a Pressuretrol.

Because the Broomell System had no moving parts, many of them are still around. You have to pay especial attention to water lines when it comes time to replace the boiler. The different levels between the boiler and the system components are what made this old beauty work.

Here's what the whole system looked like. (Figure 29)



11. THE VAPOR ENGINEERING COMPANY (also known as VECO)

This is nearly identical to the Broomell System except for some minor differences in the receiver/regulator.

As far as I can tell, VECO was a regional system, found mostly on the Connecticut coast in the Greenwich-to-New Haven area. However, I have seen this system as far north as Boston. This is a common phenomenon with vapor heating; some manufacturers marketed in only a few states, some in just one.

VECO is a thing of beauty. No moving parts, nothing to