

truth of this has been amply demonstrated in the case of hot-water heating. The customer paying a flat rate has no direct incentive to economize. He overheats his building and leaves windows open instead of shutting off radiators.

A few methods of measuring have been suggested or tried. Theoretically it is possible to design a meter which will record the actual heat used, since this is a function of the water flow multiplied by the temperature differential. The momentary values of this product must be integrated to obtain the total heat. Obviously the construction of such a meter would be complicated, and the cost would exceed commercial limits.

Another method uses a controller to maintain automatically a constant differential between the supply and return temperatures, and to meter

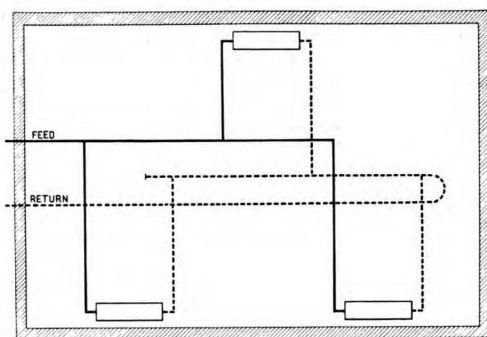


FIG. 155.—Three-Pipe System of Piping.

the flow of water. There seem to be possibilities in this direction. However, solution of the metering problem alone would not suffice to place hot-water heating on a competitive basis with steam.

Existing¹ hot-water systems, of which there are between 15 and 20 in the United States, use a rate based upon the amount of radiator surface actually installed, or upon the surface which is theoretically required

¹ Following hot-water installations reported as of 1930:

Atlantic City Electric Co., Atlantic City, N. J.;
 Frankfort Heating Co., Frankfort, Ind.;
 Indiana General Service Co., Elwood, Ind.;
 Interstate Public Service Co., New Castle, Ind.;
 Iowa Nebraska Light & Power Co., Red Oak, Iowa;
 Iowa Railway & Light Corp., Boone, Iowa, and Perry, Iowa,
 LaPorte Gas & Electric Co., LaPorte, Ind.;
 Logansport Utilities Co., Logansport, Ind.;
 Ohio Power Co., Fremont, Ohio;
 Peru Heating Co., Peru, Ind.;
 Public Service Company of Northern Illinois, Evanston, Ill., Waukegan, Ill., and Oak Park, Ill.;
 The Crawfordsville Heating Co., Crawfordsville, Ind.;
 The Ohio Utilities Co., Delaware, Ohio; and
 Toledo Edison Co., Toledo, Ohio.