

### CHIMNEY DESIGN

Although slightly less draft is required for oil heating equipment than is required for coal fires and a smaller chimney area would be satisfactory it is recommended that the chimney be designed to meet the boiler manufacturers requirements as specified for coal burning. It is preferable to have the oil burner flue isolated from other flues as this may be helpful in preventing any mechanical sound from being transmitted to the rooms of the house. A well designed chimney that will insure uniform draft conditions is just as important to an oil burner as it is to a coal fired heating plant.

### DOMESTIC FUELS

There are two grades of oils generally used for oil heating in domestic installations; furnace oil which is about 38 deg. A.P.I. gravity and light domestic fuel oil that is sometimes known as 28-32 deg. A.P.I. gravity. In some localities there are special grades of fuel that may vary as to gravity but their other physical characteristics are quite similar to those of the oils mentioned. These oils do not require preheating for pumping or atomizing.

The amount of oil for a heating season can be estimated from the chart, Fig. 1, if the average coal consumption is known. The chart figures should be corrected if the heat value of the fuels used is different than those upon which the chart is based.

### COMPARATIVE COSTS

Comparative cost figures for various fuels depend entirely on the heat content of each fuel and the efficiency with which each is utilized. Charts shown as Fig. 1 and 2 give comparative consumption of oil against a seasons coal requirement and against hourly gas consumption. These figures are based on an oil containing 140,000 B.t.u. per gallon. By referring to Fig. 3 these figures can be corrected for other grades of oil.

## CHAPTER XIII

### HEATING WITH GAS

**H**HEATING buildings with gaseous fuel brings in no new or peculiar problems so far as the distribution and utilization of the heat are concerned. The only problem peculiar to heating with gas is one of fuel utilization. Gas is a high grade fuel, supplied in a form that makes it easy to handle and control. This ease of control renders great economy and luxury possible, and the appliances in which it is used should therefore be designed and selected to take full advantage of this potential economy and luxury.

The use of gas for building heating purposes has been stimulated within the past year or two by the increasing tendency of manufactured gas companies to grant special rates to users of gas for heating. Realizing that the load is a valuable and desirable one, they are making what are in some cases, quite radical concessions in the way of reduced rates. The most recent tabulation of rates compiled by the *American Gas Association* lists 208 communities in the Continental United States and Canada, in which the corporations supplying manufactured gas quote what they term House Heating Rates. These communities are of a widely diversified character as to size, climate, geographical situation, and industries. They are served by both large and small corporations and by both privately and municipally owned plants. There are no boundaries, of a geographic nature, or of any other nature, to limit the advance of gas as a fuel for heating buildings.

There are many other communities aside from those included in the enumeration above, in which the basic rates for domestic gas supply are sufficiently low to attract a large number of people to use it for heating. In the natural gas territory, the rates, while showing a tendency to increase, are still such that gas is a cheap fuel for any purpose. Natural gas companies have not gone so far in the making of special house heating rates, partly because a special rate is not needed to encourage the use of gas for heating and partly because reduced rates would encourage the waste of a valuable natural resource. The most marked effect of more costly natural gas has been the increasing demand for efficient appliances.

The user of gas for heating is in the very peculiar situation of having the corporation from which he purchases his fuel, display a continued interest in the upkeep and efficient operation of the fuel burning appliance. This is in marked contrast with the situation in which the user of solid or liquid fuel finds himself. A large proportion of the gas burning heating appliances that are installed are marketed through gas companies. The gas company then stands ready to see that the purchaser of the