

appliance designed for gas, when gas is to be the fuel, perhaps apply even more strongly to furnaces than they do to boilers.

Codes for the proportion of warm-air heating plants, such as that formulated by the *National Warm Air Heating Association* (see Chapter VIII), are equally applicable to gas furnaces and coal furnaces. Recirculation should always be practiced with gas-fired warm-air furnaces. It not only aids in heating, but is essential to economy. Where fans are used in connection with warm-air furnaces for residence heating, it is well to have the control of the fan and the gas so coordinated that there will be sufficient delay between the turning on of the gas and the starting of the fan, to prevent blasts of cold air being blown into the heated rooms.

SPACE HEATERS

In residence heating work, the space heater is most commonly used in the form of a radiant heater. Radiant heaters make admirable auxiliary heating appliances to be used during the occasional cool days at the beginning and end of the heating season; when heat is wanted in some particular room for an hour or two. The radiant heater gives off its heat in the form of radiant energy emitted by an incandescent refractory that is heated by a Bunsen flame. Radiant heaters, and all other types of space heaters as well, are preferably flue connected and should never be operated in unvented rooms, particularly bedrooms.

Luminous flame reflector heaters diffuse a large part of their heat by virtue of the radiating power of the bright yellow flame. They are usually backed by a polished copper sheet which reflects radiant heat into the room.

Convection type heaters are typified by the gas-fired steam radiator, the gas-fired tubular heater (built in radiator form) and the floor furnace. The radiator types of gas-fired heaters provide an economical form of heating apparatus for intermittently heated spaces, such as stores, small churches, and some types of offices and apartments. Since they give off the greater portion of their heat by convection they do not produce a *hot spot* within the room and are therefore capable of being operated under thermostatic control. The floor furnace is a convection type heater that is hung underneath the floor. It is generally installed with a duplex register having a warm-air outlet and a cold-air return, so that complete recirculation is secured.

COMBUSTION OF GAS

Most gas