Other units are available in which a target spray humidifier is substituted for the evaporative type thereby supplying humidification in winter for application in rooms with other existing heat sources. However, this spray will not provide a great deal of humidification unless the water or air passing through the unit is heated.

Still another remote type of unit is available in which the fans are mounted at the top of the unit delivering directly through a grille and drawing their air supply through the cooling and heating coils. Other variations in proportion and details of construction of this general arrangement are common. With this type of unit, ventilation is usually provided by means of a separate duct connected to the inlet of the unit.

An entirely different arrangement of the remote air conditioner for multiple installation is shown in Fig. 8. This places both the air inlet and the discharge at the top of the unit. The fan at one side discharges the air downward to the bottom where it turns and passes horizontally

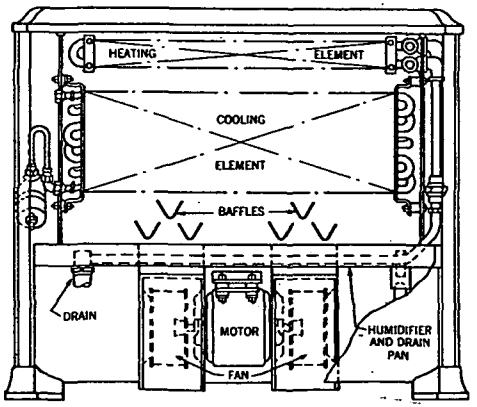


FIG. 7. FLOOR TYPE REMOTE ROOM AIR CONDITIONING UNIT FOR HEATING AND COOLING

through an atomizing spray air washer. The path then continues upward through eliminators, a cooling surface and a heating surface before it leaves the unit. With steam or hot water connected to the heating element, this unit gives controlled temperature, humidity, air cleaning, and air movement in both summer and winter. Excess water is run to waste. Acoustical treatment of the housing and outlet baffles permits installation where noise requirements are exacting.

Application

In the application of unit air conditioners it is important to consider the following points:

1. Location of the unit.
2. Air distribution.
3. Use of multiple units in lieu of a central plant system.
4. Self-contained units vs. remote air conditioners.
5. Water usage of self-contained units and methods of water conservation.

In locating air conditioning units, the characteristics of the conditioned space, the building construction, the type of system employed, the duct connections, the accessibility of the unit for servicing, as well as the sources of power, water, refrigeration, heating, and drain connections should be considered.

Locating units in the conditioned space demands serious attention to insure proper air distribution. If ventilation air is required, or if the condenser of a self-contained unit is of the air cooled type, the proximity to a source of outdoor air should be considered when locating the units. Self-contained units with water cooled condensers should be placed close to the water supply and drain, and care must be exercised that the ambient temperature is never below 32 F to prevent freezing the water in the condenser. It is, of course, important to locate the unit so that panels may be easily removed so that parts are easily accessible in case of trouble.

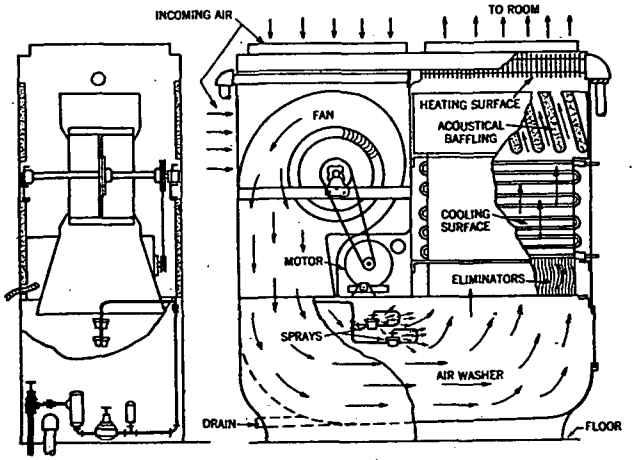


FIG. 8. REMOTE TYPE ROOM AIR CONDITIONING UNIT WITH TOP INLET AND OUTLET

Location of the remote type of unit also requires consideration of the source of refrigeration or heating. In the smaller sizes these units are placed in the conditioned space. The larger sizes are frequently located externally to the occupied and conditioned space and are connected thereto by means of delivery and return ducts. Such an arrangement permits the location of the conditioning unit convenient to either the source of refrigeration or outside air or both. It frequently permits the use of the basement or of space less valuable than that on the level or floor of the occupied zone. The design then approaches that of a *Central System*, (see Chapter 21). Oftentimes the same type of unit may find application in an exposed position for one job and in a concealed location for another. Frequently conditioning units are built into the structure or into the architectural design of a room so that they are entirely concealed except for the discharge and return grilles which are designed so as to correspond to the decorative scheme of the room.