

temperatures, and a combined air washer and humidifier for cleaning and moistening the air. The fan is a three-quarter housing steel plate centrifugal with double discharge. It is driven by a direct current motor by means of a chain drive. At full speed it delivers 45,000 cubic feet of air per minute, and by means of a rheostat in the field circuit of the motor two lower running speeds may be used. The coils are of the mitre type, which are usually employed for hot water, as the resistance to circulation is very low, and in this case they are used with low pressure steam for the same reason. Tempering coils are placed between the inlet and sprays to bring the air at least above freezing point. A temperature of 50 to 55 degrees is found necessary in the spray chamber, because the temperature in this chamber affects the humidity, and because some air by-passes the heating stack on the discharge side of the fan, and, therefore, goes to the rooms without a further increase of temperature. The distributing ducts beginning beyond each heating stack carry separately, hot air which passes through the heating coils, and tempered air which goes above them. These ducts are kept separate until the mixing damper is reached, of which a detail is shown in Plate 1. In each duct there is a balanced damper, and the two are joined together by a link, so that when one is open the other is shut, and vice versa. Thus a constant volume of air is supplied at a temperature varying in such a way as to balance the heat losses from the building. In most rooms the dampers are controlled by thermostats, to give a constant temperature, but in some they are arranged for hand regulation.

The air washer and humidifier is shown in detail in figure 1. It consists of a number of spray nozzles in a plane at right angles to the course of the air, and a box of baffle plates which remove the dust and water carried mechanically. The sprays are shown clearly in the drawing, and require no further description, but there are several novel features in the "dry box" which need explanation. In the fan room of the hospital space is very valuable, for every foot is below the ground level, and excavation is expensive. If the cross section of the dry box is to be reduced, we must figure on a higher velocity of air in order to handle the same quantity. In this case a velocity of about 350 feet per minute is used, and the loss in friction is so small as to be almost negligible. Considering that each plate is but two inches long, and the total thickness of the box but 12 inches, it seems impossible that the moisture can be completely removed. A piece of dry paper placed behind the box at any point will show no trace of drops of water, however, nor is there any perceptible moisture on the last bend of the plates. The first bends are purposely left without projec-