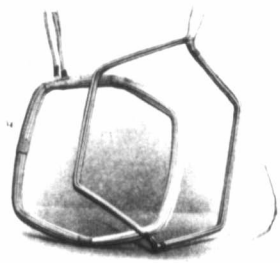
Stator With Windings in Place

consist of insulated copper bars, both ends of which are securely fastened to cast metal end rings by copper plated iron machine screws. The windings of the smallest size consist of insulated round copper rods riveted to the core end plates, which are also of copper. In all sizes the windings have the general form of the wheel of a squirrel cage, from whence comes the name "squirrel cage windings."

Ventilation. On the end plates of the rotor cores of all frames larger than No. 5, are vanes, or blades. When the motor is in operation, these blades drive powerful currents of air between the rotor end rings and the core, and through all the openings in and around the stator windings and core, thus keeping all these parts cool. The direction of the air currents is such as to expel dust and other foreign matter from the motor, thus protecting the insulation and generally safeguarding the machine.

Clearance. The clearance between the rotor and stator is as large as is compatible with good operating characteristics. A reasonable clearance is essential, otherwise the least wear on the bearings will allow the rotor and stator to rub. On the other hand, a large clearance has a detrimental effect on the power factor and efficiency. In the Westinghouse type CCL motors good power factors and efficiencies are obtained without sacrificing the mechanical advantages of a safe clearance. The use of partially closed slots in the stator and rotor greatly reduces the electrical air gap, while allowing a larger mechanical clearance for a given effect on the operating characteristics than is possible with open slots.



Stator Coils