

all the main circuits being of three wires, and the branch circuits of two wires.

There are 415, 3.5 watt, 16 C. P. 102-volt incandescent lamps, and 17 arc lamps. The latter are of the enclosed type for multiple circuits, adjusted for 7 amperes and 107 volts, alternating current.

The buildings are wired for electric clocks, bells, and telephones, which are in use throughout the Mint.

OIL-FUEL PLANT.

Oil-Fuel Equipment.—The fuel used for melting and annealing purposes, and for the cupel furnaces in the Assay Department, is crude oil; its specific gravity being .850. The plant for storing, distributing, and burning this fuel consists of:—Four storage tanks (each of 2,000 gallons capacity), two rotary pumps for distributing the oil throughout the buildings, three pressure blowers, four melting furnaces for crucibles holding 90 lbs. each, one strip annealing furnace, one blank annealing furnace, one die hardening furnace, and three cupel furnaces and two small melting furnaces for the Assay Department. In the melting and cupel furnaces an air blast is used in conjunction with the oil; while in the annealing furnaces and die hardening furnace dry steam is used, at a pressure of 60 lbs. per square inch. The oil pumps are so arranged that the fuel is delivered to the furnaces at constant pressure. All oil pumped, but not used, is returned through a spring-loaded valve to the storage tanks.

The tanks are supported on concrete bearers, one at either end, and one at the centre of each tank—so that the air may circulate freely around them. The piping for these tanks is so arranged that each one may be filled or emptied separately. Each tank is also fitted with a return pipe from the pumps, and a vent pipe through which all fumes rising from the oil are lead to the roof of the building. The air for the blast used in the melting furnaces is drawn from the tank room, so that the air round the tanks is constantly changed.

This fuel is found to be very economical, and excellent results have been obtained from all the furnaces. The heat can be regulated without difficulty, and, in the melting furnaces, either nickel or aluminium may readily be melted.

DIE-MAKING PLANT.

Die Department.—The machinery in this department consists of a die-sinking press, two die-turning lathes, and a die-hardening furnace. The press and lathes are driven by a motor through an overhead shaft. In the die press the blow is given by a heavy fly-