

fluctuating load of the hoist, and thus reduce the power bills. Another object was to furnish current for operating the hoist if alternating current supply is interrupted.

The demand of the hoist motor when lifting a load of  $7\frac{1}{2}$  tons was estimated at 470 amp. for 10 sec. followed by a demand varying from 410 down to 230 amp. for a period of 80 sec., the voltage being approximately 550 volts. Under the conditions of maximum schedule it was estimated that the load period of 90 sec. would be followed by a 3-minute rest, thus providing for a trip of the hoist every  $4\frac{1}{2}$  min. For handling a 10-ton load, the maximum 10-second demand was estimated at 530 amp. followed by 80 sec. of load varying from 470 down to 310 amp. The hoist is designed to handle a 15-ton load occasionally, but this will not occur when the battery is handling the entire

of the Tudor type and six of the plates being negative of the box type. The plates are supported in glass jars mounted on glass sand trays, the entire battery being installed on wooden racks. The capacity of this battery is 200 amp. for one hour on continuous discharge. For intermittent service extending over several hours the ampere-hour capacity will be somewhat greater and it is estimated that this battery will operate the hoist under the average load conditions cited above over  $1\frac{3}{4}$  hours with the power supply entirely cut off; or if the schedule is reduced, so that the trips of the hoist are made less frequently, the hoist can probably be kept in operation for several hours.

Under normal conditions, with the motor generator supplying the average load, the battery does not become

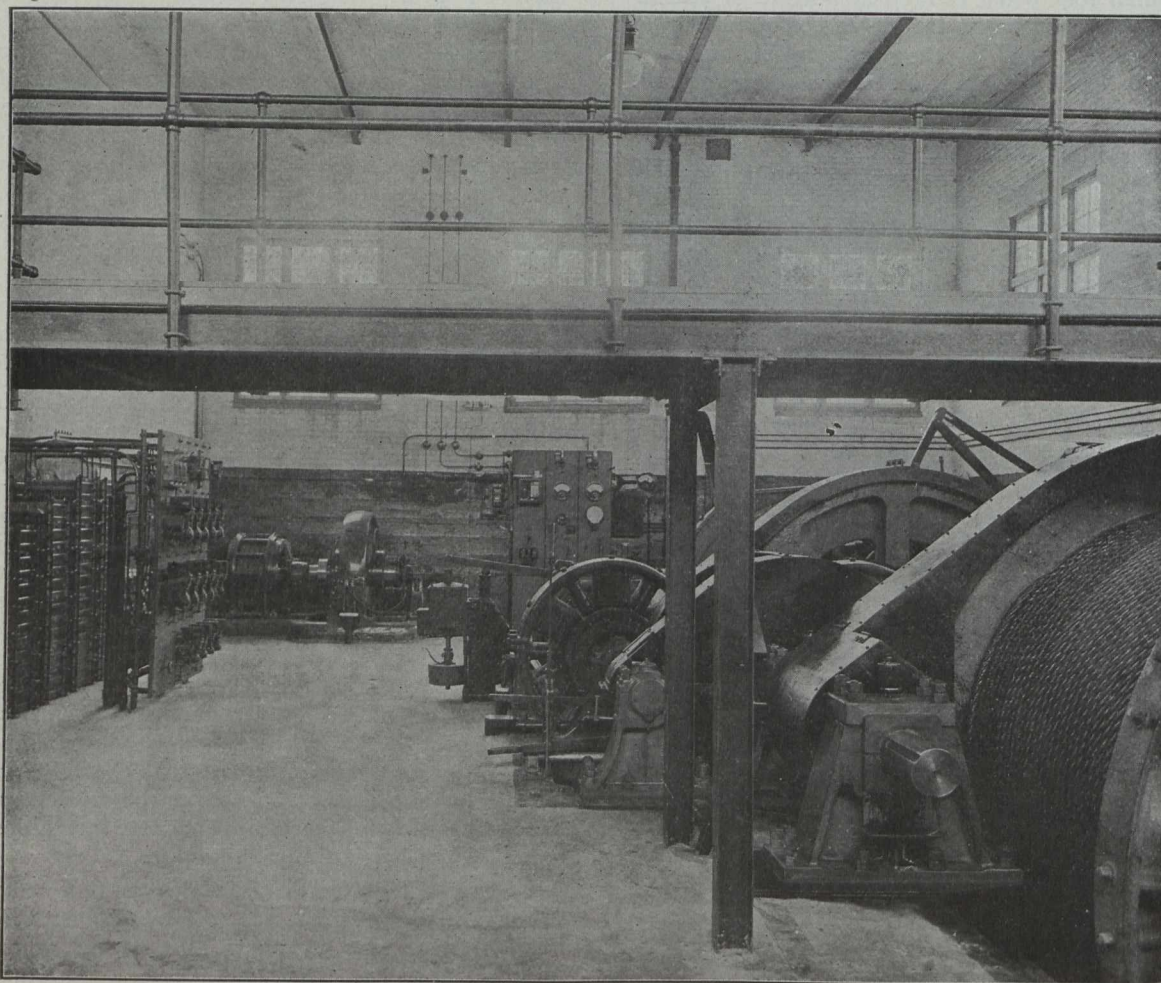


Fig. 3.—Interior Arrangement of Hoisting Machinery and Control Apparatus.

load with the power supply cut off. It is believed that hoisting a  $7\frac{1}{2}$ -ton load every  $4\frac{1}{2}$  minutes will represent the average conditions during the hours of maximum traffic. The average load is 112 amp. on this basis.

The battery consists of 262 cells of the Tudor-box type. Each cell contains 11 plates, measuring approximately 11 in. x  $10\frac{1}{2}$  in., five of the plates being positive

exhausted, but receives back sufficient charge during the period of rest between trips to make up for the discharge while the hoist is in operation. The battery, therefore, while relieving the motor-generator and power line of the severe load fluctuations is maintained at all times practically full and ready to supply the entire demand in case of interruption to the power supply.

According to a recent report of the Department of Trade and Commerce, there is an immense demand throughout the British West Indies for galvanized iron sheets, both corrugated and plain. The corrugated iron sheets are used almost universally for roofing in the country and quite extensively in the towns for fences. On the estates not only the

houses of the managers but all the barracks are roofed with corrugated iron. While some of the peasants have huts with thatched roofs, those that are able to build houses of a little better class often have them roofed with corrugated iron sheets. They stand the climate and protect against heavy tropical rains better than any other roofing.