

These two buildings communicate with each other and with the mill space by a track through the buildings into the end of the mill space, which is used for the bringing in of lumber stock to the mill. The dry kiln is 52 by 16 ft., and has a projecting side wing on the south side. Communication at both ends is through tight sliding doors. In this projecting wing, on the houth side, there is a heating unit consisting of a bank of pipe coils, with a 4 ft. fan direct connected to a small engine, the steam being received from the power house near by. The lumber shed to the rear is 113 by 30 ft., provided with piling racks on each side for the select woods.

Along the south side of the car department section, there is a projecting wing containing lavatories, office and heating unit, all exactly the same as the arrangement in the machine shop section.

The general stores department is the long building at the southerly end of the transfer table, communicating with the main shop at that point. The east end of the stores building is two stories high at the sides, with the upper stories for offices. On the south side is the office of the Superintendent of Rolling Stock, and on the north, that of the General Storekeeper. To the rear of this point is the stores section, the south side of which is shown in fig. 12. That side consists of a

platforms on the track sides. The west end of this floor is to be an oil barrel storage space, arranged with a frame work of iron to carry five double tiers of oil barrels, practically a carload of oil in all. The other end of the room is for a Bowser oil tank installation, the tanks for which will be located in the basement. The basement is entered by an outside stairway on the west side. In it in addition to the tanks, there will be a waste treating plant for impregnating the waste with oil and packing it in barrels for sending to the different divisional points. In the cellar entrance way, there is a hoist for lifting the barrels, with an overhead track running out in front of the building for transporting the barrels out on the stores car.

The power house is located to the west of the oil house, and is a brick structure, 52 by 58 ft., divided into boiler and transformer room by a brick partition. The boiler room contains three 175 h.p. boilers, carrying 100 lbs. of steam. To the rear of the boilers is a fuel economizer, the scraper for which is operated by a 3 by 2½ in. vertical engine. The boiler feed is provided for by a 10 by 6 by 10 in. feed pump, but under normal conditions, it is not required in service, as the city water pressure is 125 lbs.

The transformer room of the power house contains three 50 k.w., and one 30

power house. From the north east corner of the power house to the south west corner of the main building, there runs a 5 by 6 ft. concrete tunnel, with 12 in. walls, and a 6 in. reinforced concrete roof, the latter 18 in. below the level of the ground, and designed to carry a loading of 400 lbs. per sq. in. The steam and return pipes are carried on the walls of the tunnel on roller brackets secured to the walls by hooked bolts in the concrete, and located at 8 ft. centres. The tunnel along the walls of the shop through which the pipes pass is similar in design, and is the duct through which the hot air is led through the shop.

The steam from the boiler through the tunnel comes in an 8 in. main, continuing the same size to the first heating apparatus room, following the wall. From that point on along the south and east walls to a point near the second apparatus room the main is reduced to 6 ins., reducing still further to 4 ins. The return from heating the second apparatus is through a 2½ in. pipe, increasing to 3 ins. at the first apparatus room, passing through the tunnel in a 4 in. pipe. At the extreme end of this steam and return piping, i.e., at the second apparatus room, there is a 1¼ h.p. vacuum pump in a pit, for looking after the return of the condensation, sending it back to the boiler room through the return pipe.



Fig. 11.—Arrangement of Paint Finishing Shop.



Fig. 12.—Arrangement of South Side of General Stores Building.

series of 11 cross tiers of store bins, and on the north side, there are lower bins for heavier stores. The north side also has an upper gallery, along which is a tier of store drawers for light parts such as screws and other stores that are required in large quantities. This gallery communicates directly with the General Storekeeper's offices and also has a stair to the floor level. At the west end of the south side, there is a vault structure, 35 by 18 ft. which is used for the storage of patterns. The rooms under the offices are for springs, gears and pinions.

Through the centre of the stores building runs a track, by which the stores can be brought directly into the building, and loaded again directly on the stores car for distribution over the system. This track to the rear leads out through scrap bins that are now under construction. These bins are arranged along both sides of the track and are covered. The bins on the south side have a narrow gauge track along the front for the passage of the scrap into the desired bin and for sorting, and midway in this track is a track scale for weighing the material.

These scrap bins extend to the oil house, a one story and basement structure, 37 by 17 ft., to the west of the stores building. Like the other buildings it is of brick, with a concrete floor. Entrance to the main floor is through sliding doors from

k.w., transformers. The former receive power from the high tension lines to the shops at 13,200 volts, dropping it to 2,200 volts for transmission to the shops. At the shops, as shown alongside the impregnating room in fig. 1, there are transformers mounted on a bracket on the machine shop stores room wall, receiving power from the power house at 2,200 volts, and dropping it to 220 volts for shop use. The fourth transformer in the power house is for dropping the 2,200 volt power to 110 volts, for the shop lighting system.

To the west of the power house is the coaling plant, consisting of a trestle ramp, open below upon which the coal cars are run and dumped. Between the trestle piles below, it is the intention to lay a narrow gauge track for a short industrial line to carry the coal into the boiler room to replace the present wheelbarrow method. An ash handling plant is under construction at the upper end of the ramp. In front of the boilers, there will be a long worm in a channel, which will carry the ashes out to an elevator at the end of the ramp, raising them to a chute projecting over the car.

HEATING SYSTEM.—Hot air is used for the heating of the main building, with the heating plants located in the south and east sides of the buildings, in projecting wings. Steam for this purpose is brought through tunnels inside the walls from the

The heating of the general stores building is by coil radiation, the steam for which is drawn off from the main along the south wall in the wing of the main building at the south end of the transfer table by a 2 in. pipe. The return from this heating system is through a 2 in. pipe leading directly to the first apparatus room through the tunnel. The dry kiln is supplied from the 8 in. main as it emerges from the boiler room tunnel, a 2½ in. pipe leading to the heating set in that building, with a 2 in. return, joining the main return at the tunnel.

In the two heating apparatus rooms is a heating unit, consisting of a 9 by 5½ by 5 ft. box, filled with 1 in. pipe, open on one side to the shop, and on the other into a 12 ft. fan, driven by a 9 by 12 in. engine, by which the heated air is forced through the heating tunnels around the shop.

The second apparatus room heats the whole of the shop east of the transfer table, and the first apparatus room the balance of the shop west of the transfer table. The central location of the second in the east wall, makes the tunnel construction in both directions along the wall under the floor practically similar. The fan delivers the heated air under the floor through a 54 by 60 in. tunnel, a deflector in the centre dividing the flow. The southward flow tunnel from that point is 46 by 42 in., reducing to 24 by 24 in. at the end