of the frame, for the handling of the stock while being worked. Powerful 12 ft. plate rolls, capable of handling the heaviest boiler plate, face the lay out floor on the west. The vertical movement of the upper roll is power operated through a 15 h.p. d.c. motor, and the rolling, through a 25 h.p. d.c. motor. Alongside is a 24 in. gap punch driven by a 15 h.p. d.c. motor, the plate for which is handled by an 8 ft. jib. To the rear of this machine and the rolls, and adjoining the through tender tracks, there is a tender storage rack for the convenient location of such tender parts as coiled springs, truck columns, etc.

Along the north wall from the east are 8 ft. hand rolls, a plate trimmer with 10 in. circular shears and a horizontal flange punch driven by a 15 h.p. d.c. motor and equipped with a 15 ft. jib. Adjoining, in a 15 h.p. group drive, there is a 4 spindle plate drill, a 3½ ft. fan for the flange fire, a double 18 in. emery, and a double 2½ in. staybolt threader, completing the equipment of the boiler and tank departments, with the exception of a small forge fire between pits 23 and 24 on the other side of the shop.

The tool room for the local supply of air hammers, snaps, beading tools, and all tools required for boiler work, is located against the east wall, beside the big end door. The foreman's office adjoins.

Both locomotive and tender trucks are handled on the two longtitudinal tracks, fig. 7, just north of the line of columns separating the main and north bays. These truck tracks extend from the through track of 21 to the through track of 17, the tender trucks being handled from track 21 to the cross tracks, and the locomotive trucks from track 17. A 25 ft. section of the truck tracks in section 19 is elevated on 18 in. pedestals, for the more convenient approach of mechanics repairing it or dismounting the parts.

To the north of the truck repair tracks, along the wall, is the lagging department, with flat topped sheet working table, and a lagging rack adjoining.

As before mentioned, the driving wheels from the wheeling pit are run across into the main bay. From here, they take either one of two courses, depending on whether retiring or only returning is necessary. If tiring is necessitated, the wheels are run straight across into the north bay, where the several pairs of wheels are mounted in a row on trestles over the through tracks, and the worn out tires removed by heating with a band pipe in the conventional manner. In this position, new tires are mounted by the same means, the wheels then retracing their steps to the central bay, from which point the steps are the same as for wheels that only require returning.

The wheels are picked up by the central crane and placed in a row, fig. 8, in the direction of the shop length, on the driving wheel floor, which adjoins the through track immediately to the east. The first step is the removal of the driving boxes, and after cleaning, their disposition in the driving box department for renewal and repair. The wheels are then in turn placed in the 90 in. driving wheel lathe for the turning, from which on completion they are removed and placed on end on supports for the pouring of new babbitt thrust bearings, which are renewed on both ends of a pair, the babbitting department for all work being located close at hand to the east of the driving wheel lathes. They are then mounted in the 60 in. driving wheel lathe, where the journals and thrust bearings are trued down. This completed, the set of wheels is mounted in a row across the central bay against the through tender track of section 21, where planks are mounted on low trestles, as in fig. 8, under each journal, at a convenient height for the slipping on of the driving wheel brasses for fitting, these having at this stage arrived from the driving box department. On completion of the fitting, the boxes are mounted on the journals, and the finished wheels set to one side on the wheel floor for the rewheeling of the locomotive under the wheeling crane by a reversal of the former procedure.

Immediately to the west of the wheeling track there is a 300 ton hydraulic press for mounting or removing crank pins and axles when these operations are required. Behind this press is located a 90 in. boring mill, used for the most part on driving wheel work, boring and turning wheels and tires.

The driving box department is located on each side of the north door of the through driving wheel track. In this department, from west to east, there are an hydraulic press, 14 in. slotter with 6 ft. jib attached, 7 ft. radial drill, 32 in. boring mill, vertical miller with 10 ft. jib and a 36 in. planer with 8 ft. jib. The first two are on the end of the side rod group drive, the drill, boring mill and vertical miller on a 15 h.p. group drive, and the planer on an individual 10 h.p. drive.

The driving boxes as removed from the wheels on the driving wheel floor, are there cleaned and then trucked to the hydraulic press, where the brasses are forced out. New brasses are machined on the 14 in. slotter to fit and then removed to the press for forcing into place. These two machines, it will be noticed, are adja-

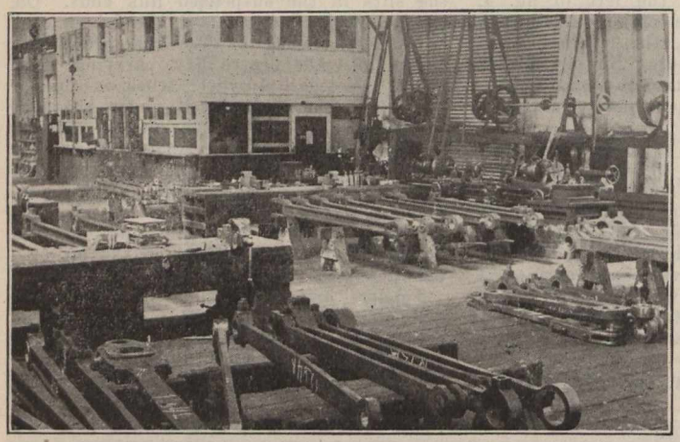

Fig. 5.—Rod Department and Tool Distributing Room.

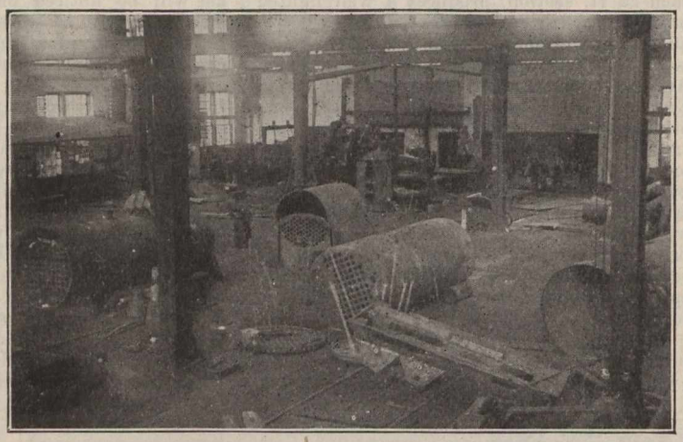

Fig. 6.—Boiler and Tank Shop Floor.

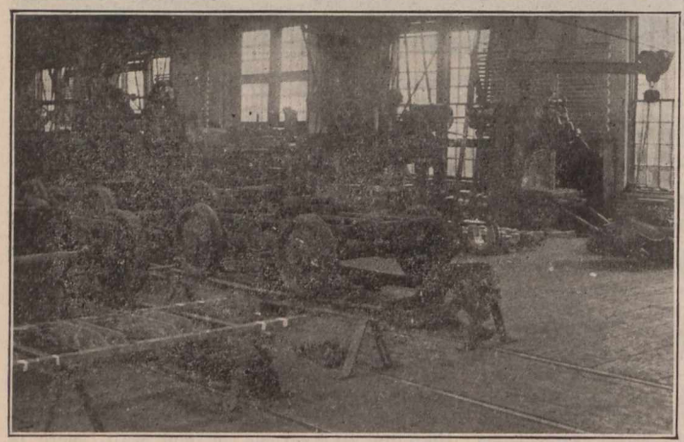

Fig. 7.—Locomotive and Tender Truck Department.

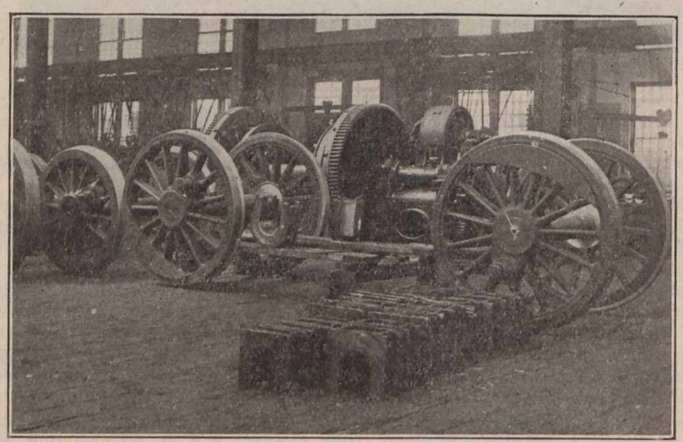

Fig. 8.—Driving Wheel Department.