

Railway Mechanical Methods and Devices.

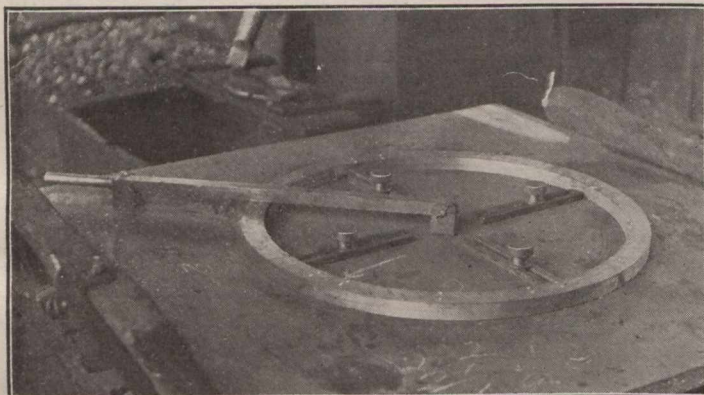
Laying Off Segmental L Packing in Michigan Central Shops.

The arrangement shown in the accompanying illustration is in use in the Michigan Central Rd. locomotive shops at St. Thomas, Ont., for laying out segmental L packing rings preparatory to cutting and rivetting the sections together. The two component rings from which the final

edge. This scribed mark is then placed opposite the radial angle, which locates the second scribed line, and so, forth, until all the lines are marked off.

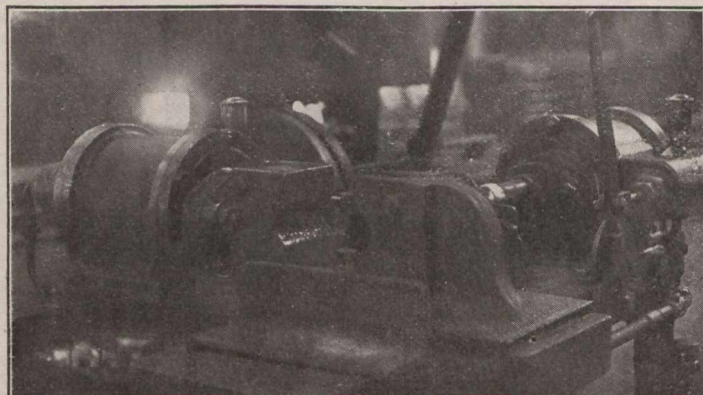
The rings are cut off in the lathe by mounting on a table on the tool carriage, with a saw cutter on an arbor between the lathe centres. Following the cutting up, the parts are drilled and rivetted together, forming the commonly found L piston packing ring.

One of these slide valves is shown on the right, the valve on the other cylinder being hid by the cylinder itself. The valve of the cylinder on the right is operated by the short vertical handle, while the other valve is operated from below by a treadle, located directly below the immediate foreground. The tube to be operated on is placed on the angle iron support, against the near jaw, the other jaw being forced against it by a pressure



Laying off Segmental L Packing Rings.

segmental ring is made are first machined and fitted the one on the other, and then taken to the table for laying off. The table consists of a planed face cast iron sheet, which can be mounted on any convenient stand or bench. On it are scribed a number of circles, varying in diameter by about $\frac{1}{4}$ in., for setting. On the face are four arms, held in quartering positions by means of knurled thumb



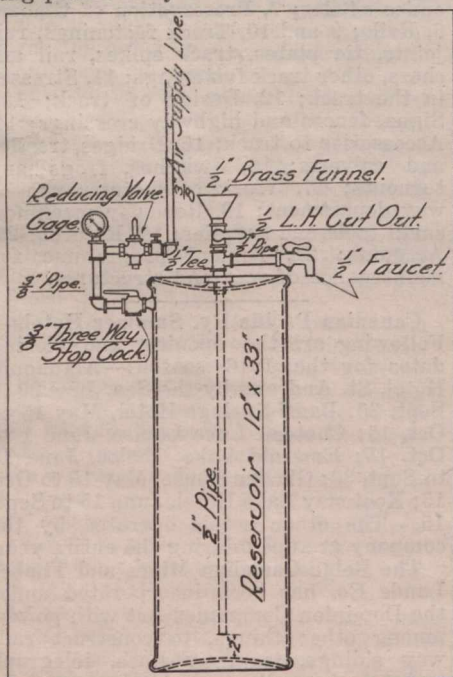
Hydraulic Tube End Expanding Machine with Piston Valves.

Hydraulic Tube End Expanding Machine in Grand Trunk Shops.

The process of handling locomotive boiler tubes through the safe-ending operation, as practiced in the G.T.R. shops at Stratford, Ont., was described in detail in Canadian Railway and Marine World for Nov. 1912, the article outlining the machine used for clamping the tubes while the end was being expanded

on the treadle, clamping the tube. Pushing in the other handle forces up the expanding mandrel into the tube. With the slide valve, the pressure required on either valve is very small, as the internal valve pressures are equalized as in a locomotive piston valve, as opposed to the ordinary D valve.

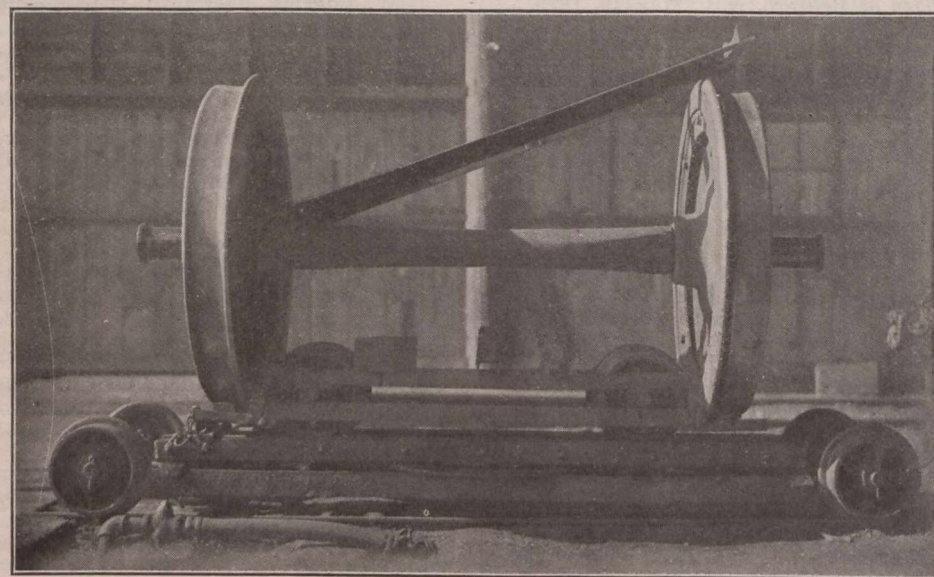
Elevator Record at Fort William.—It is announced that the Grand Trunk Pacific Elevator Co. has established a record



Coal Oil Storage Tank.

screws, and which can be radially adjusted as may be seen. By means of the scribed circles the radial fingers may be set for the particular sized ring to be marked. Hinged from the centre of the plate is a straight edge arm, fitting when depressed into a block in one corner. Marked on the face of the plate are radial scribed lines at the different angles to which the rings are to be cut.

A mark is first made on the ring with a scribe along the edge of the straight



Car Wheel Handling Truck.

by the forcing in of a mandrel. As originally made, this machine consisted essentially of two hydraulic cylinders, actuated by two flat slide valves. While performing the work satisfactorily, the hydraulic pressing on the back of the flat slide valve made the latter so hard to move that to handle the machine for a whole day was most fatiguing to the operator, especially as each tube end required four valve movements. In consequence, the machine has since been redesigned with piston valves, as shown in the accompanying illustration.

at its elevator at Fort William, Ont., in unloading from cars, between Oct. 1 and Dec. 23, 1915, 21,994,000 bush., or 18,500 cars of grain. This is an average of 241 cars a day of 12½ working hours. During October, 6,500,000 bush. were loaded into vessels, 8,987,000 bush. in November, a daily average of 300,000 bush. Between Dec. 1 and 12, 5,700,000 bush. were loaded into vessels, a daily average of 475,000 bush.

Railway employees in Canada and the United States number approximately 1,900,000.