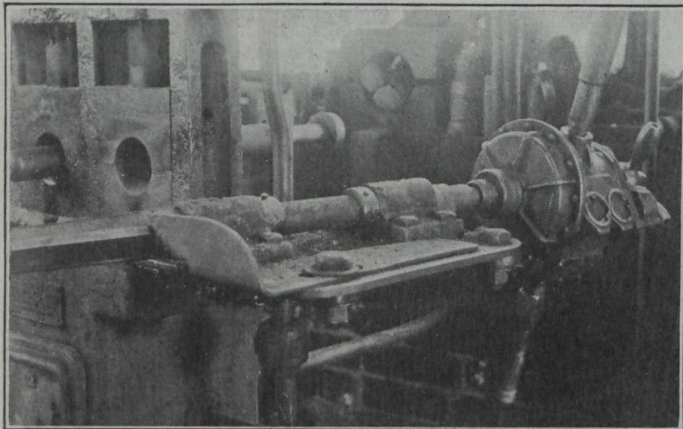


Railway Mechanical Methods and Devices.

Tube Expander at Toronto, Hamilton and Buffalo Railway Shops.

Numerous methods of flaring the ends of boiler tubes preparatory to safe ending are in vogue at different shops, the majority employing the taper pin method, the heated end of the tube being forced by impact on the end of a taper pin, flaring the end slightly.



Rotary Tube Expanding Mandrel.

The method used in the T. H. & B. R. shops at Hamilton, Ont., W. T. Kuhn, Master Mechanic, is unique, and has some features about it that recommend the practice. Instead of the impact force alone being used for the flaring, a rotary motion of the flaring pin is employed in conjunction, the arrangement being as shown in the accompanying illustration. In addition, the taper pin resembles in some respects a taper reamer, with four equally spaced shallow flutes extending the length of the pin. The body of the pin is carried in two bearings on an elbow support from the side of an automatic air hammer, where the subsequent welding operation is performed. The rotary motion of the pin, in conjunction with the flutes, causes the tube end to spread more rapidly, producing an excellent job. The pin is driven by an air motor as shown. An adjustable stop plate on the surface of the supporting elbow gauges the depth to which the tube must be forced over the revolving pin.

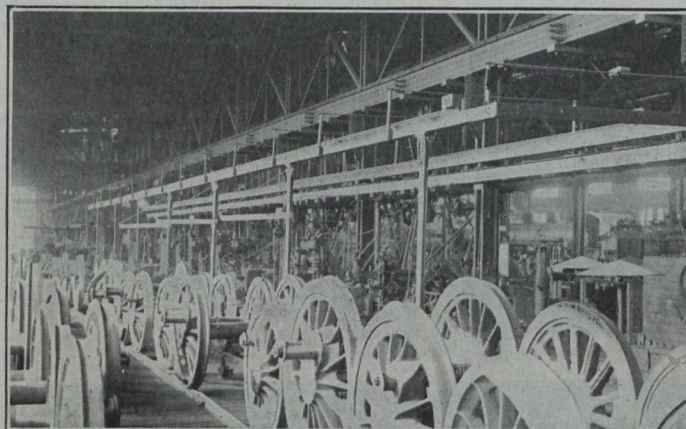
Loading Wheels at Grand Trunk Pacific Railway Shops at Rivers.

A novel method of loading mounted car wheels is used at the G.T.P.R. shops at Rivers, Man. The wheels as mounted at the wheel press in the shops are rolled out to the storage yards, where they are stored on interlocking double tracks in the conventional manner.

These storage tracks lie at right angles to the locomotive house lead track. When it is required to load a flat car with wheels for shipment to another divisional shop, the car is spotted on the lead track about 200 ft. away from the wheel storage tracks, and blocked in that position. On the storage track end of the flat car, two lengths of rail are placed, sloping up from the track rail to the car platform, and secured in place, forming a rail ramp. The wheels to be loaded are placed on the lead track opposite the storage space, and with re-

cessed end sticks several men put the wheels in motion, increasing the speed of the wheels, a pair at a time, until by the time they have reached the rail ramp up to the car, they have a considerable impetus, and run up the ramp by their own momentum on to the car. This method is very rapid, but of course is not at all economical on account of the number of workmen required. It might be found useful at small shops.

consequence is that the tool when boring in trying to swing away from the work, is prevented from so doing by the butt end of the tool being stopped by this tool rest. The fit of the tool rest block must be such as to prevent any lifting action from the tool in swinging tipping the block over on a corner. This is taken care of by making the block of such a height that the rear of the tool rests on the upper surface of the block.



Light Crane Over Driving Box Department.

Department Crane in the Canadian Pacific Railway Winnipeg Shops

In the C.P.R. locomotive shop at Winnipeg, the driving wheel and driving box departments are located side by side in one of the side bays of the building. The driving wheels as stripped from the locomotives are run in on tracks, with the driving box still attached. In this location the boxes are removed.

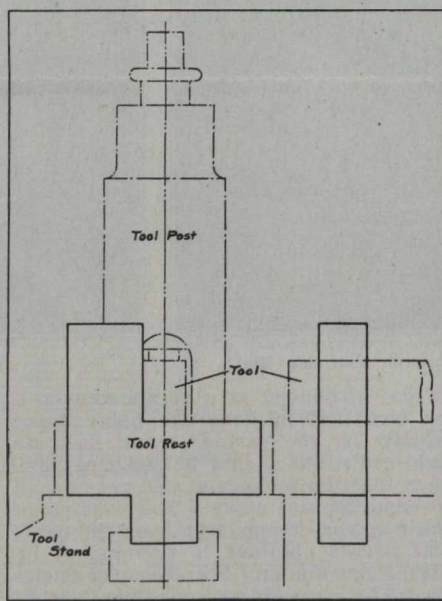
The crane way shown in the illustration covers the length of the driving box department, a small traveller accommodating all the machines. On three of the crane supporting columns are attached small jib cranes, by which the driving boxes are swung over from the driving wheel tracks into the driving box department, where they are carried to one end, where they are thoroughly cleaned on a cleaning stand, and then taken to the different machines in the department.

The crane is of simple construction, but is a most useful adjunct in the handling of the work through the department.

Air Operated Punch at Grand Trunk Railway London Shops.

In the blacksmith shop of the G.T.R. car shops at London, Ont., of which T. Treleven is Master Car Builder, there is a small punch for piercing small holes in thin metal, the unique feature of the press being the fact that it is home made and operated by air.

On a cast iron frame, there is placed a 2½ in. plank as the illustration shows, on the rear end of which there is mounted vertically an air cylinder, bottom down. Straddling the air cylinder is a loop of ¾ x 4 in. bar iron, holding in the upper end of the loop a couple of large chunks of rubber such as are used in the Bradley hammer. These cushion the plunger of the air cylinder at the upper end of the stroke, when relieved from the



Tool Rest That Insures Parallel Boring.

Lathe Tool Support at Grand Trunk Railway Stratford Shops.

For internal boring in the engine lathe, unless the cut be extremely light, the tool has a tendency to back away from the work and produce a hole tapering from the entering end. All mechanics have doubtless experienced this difficulty.

A simple expedient for the removal of all trouble from this cause is in use in the G. T. R. locomotive shops at Stratford, Ont., and is illustrated herewith. Fitting into the groove of the tool stand, and breaking up under the tool at the rear, there is a block of steel. This tool rest block has an upward projecting arm on the left against which the tool is set when fitting in the tool post. The