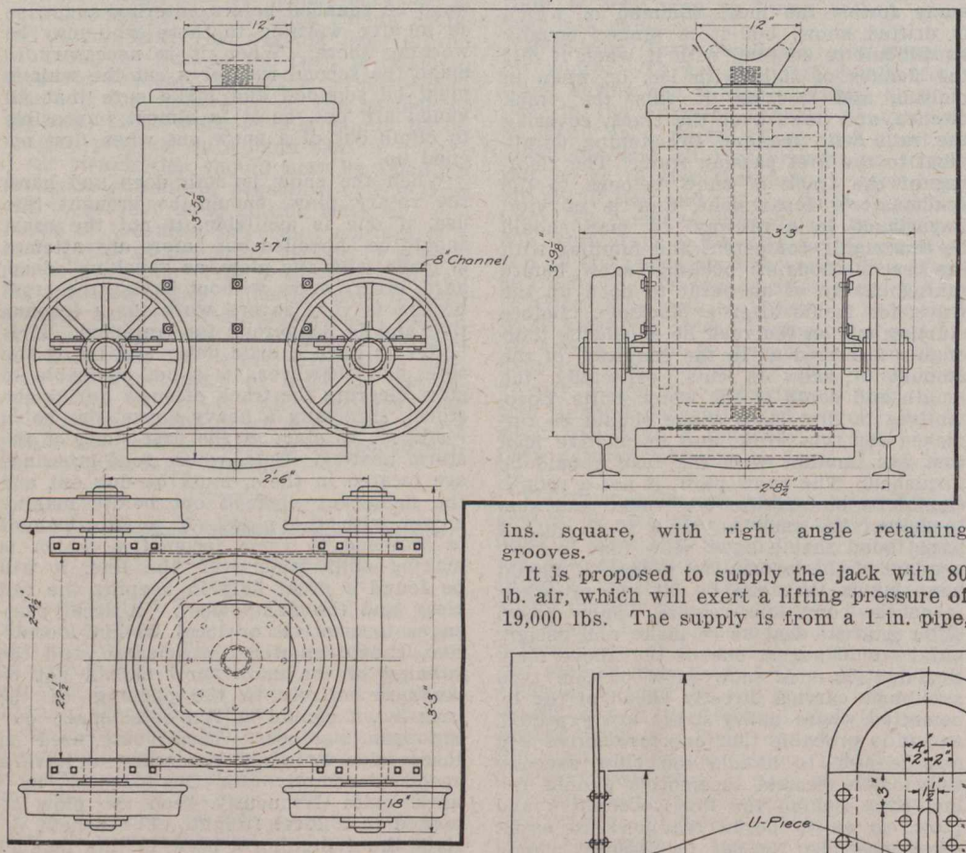
Railway Mechanical Methods and Devices.

Drop Pit Jack on Canadian Northern Railway.

A 10 ton drop pit jack, of the design shown herewith, has been made standard for use on the C. N. R. Of light construction, it is



10 Ton Drop Pit Jack on Canadian Northern Railway.

to be used for the removing of driving wheels, tender truck wheels and car wheels, and general repair pit service. While small in size, the telescopic action of the cylinder gives it as great a range as the larger jacks commonly in use, and it can be employed in pits only 5 ft. 5½ ins. deep.

The outer jack cylinder is carried by two lugs on the side, on two 8 in. channels, 3 ft. 7 ins. long, one on each side, to the under side of which, near each end of the channels, are bolted bearings at 2½ ft. centres. The axles carried in these bearings are 4½ ins. diam., with a 3 in. wheel fit, and are 3 ft. 3 ins. long. The wheels are 18 ins. diam., and have a spread of 28½ ins., to suit the rail centres of 32½ ins.

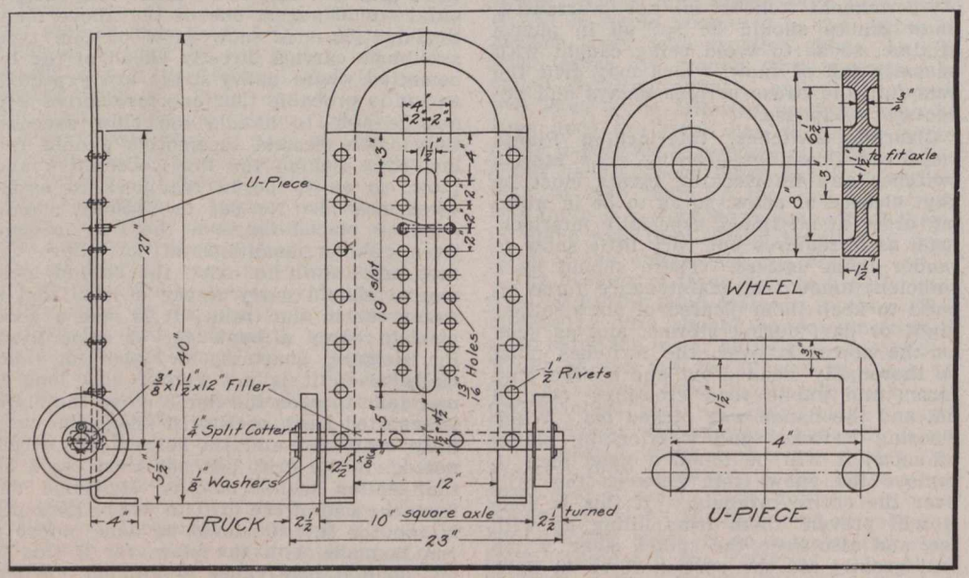
The jack proper consists of two telescoping cylinders, the inner one having a bore of 16 ins., and containing a piston of the same diameter, having three ½ in. packing rings. The inner cylinder, which, in a sense, is an outer piston, is 20 ins. diam., and is similarly fitted with packing rings. That a combined lift of 4 ft. is possible is due to the fact that the inner piston on reaching the top of its stroke, that is when it strikes the head of the inner cylinder, the latter, which as explained is also a piston, is carried upward until its flanged rim strikes against the stop collar of the outer cylinder. This makes it possible to operate in the 5 ft. 5½ in. pit, which is deemed to be a considerable advantage from the fact that it is more convenient for working, and much less dangerous. The top cover for the inner cylinder head is secured by twelve ⅞ in. studs, and the ring passing around the inner cylinder and fastened to the main cylinder is secured thereto by eight 1 in. studs, countersunk flush with the top face of the ring. The block on the upper end of the piston is 12 ins. square, with right angle retaining grooves.

It is proposed to supply the jack with 80 lb. air, which will exert a lifting pressure of 19,000 lbs. The supply is from a 1 in. pipe, fitted with a cut out valve and check valve. The exhaust is of similar size. A rubber hose connection is made on the far side of the cut out valve on the supply line. A ½ in. air release vent is fitted to the top cover of the inner cylinder, to enable the latter to fall back into its inactive position.

Cylinder Head Truck on Canadian Northern Railway.

The C. N. R. mechanical department has developed a handy truck for handling front cylinder heads, and placing them in position on the cylinders, which is illustrated herewith. The main part of the frame consists of a U member, 40 ins. long, of 2½ by ⅜ in. bar iron, the ends of which are bent at right angles to form 4in. shoulders. Across the face of this U form, there is a sheet of ⅜ in. plate, rivetted to the legs of the U, and with a 19 in. slot down the centre. Each side of the slot there is a row of 13-16 in. holes at 2 in. centres, in which may be inserted a U piece for a stop, this U piece being made of ¾ in. round iron. Near the base of the U frame, there is a 1½ in. square axle, the ends of which are turned for 1½ in. journals, with 8 in. wheels on the end, held in place by washers and cotter pins.

The cylinder head is placed on the truck with the lifting stud projecting through the central slot in the truck facing. On the end of the stud which projects through in this manner, there is secured a nut and washer, which holds the head securely on the truck. The head is adjusted in position, so that when the truck is swung up into its vertical position, the head will be practically in position to slip over the cylinder studs. The U piece mentioned is placed in the correct pair of 13-16 in. holes alongside the slot, and the head may be adjusted when the truck is in its vertical position by using a crowbar in the slot, resting on this U piece. By moving the truck forward, the head may be slipped over the studs.



Cylinder Head Truck for Fitting Heads without a Crane.

Montreal Harbor Commissioners Ry.—We are officially advised that the commissioners are not at present contemplating changing the operation of the lines on the Montreal Harbor property from steam to electricity.

The Canadian Northern Ry. moved into its new offices in the McLeod Block, McDougall Ave., Edmonton, Alberta, Nov. 2. The ticket, telegraph, express and freight offices are now located in the one building.

Surface Plate for Lathe Work in Timiskaming and Northern Ontario Railway Shops.

The use of the horizontal boring mill in railway shops has become so general that a great many mechanics would find it difficult to otherwise handle a job that would ordinarily be performed on such a machine. It is almost universally employed for boring holes which parallel plane surfaces, these latter being usually finished in the planer,