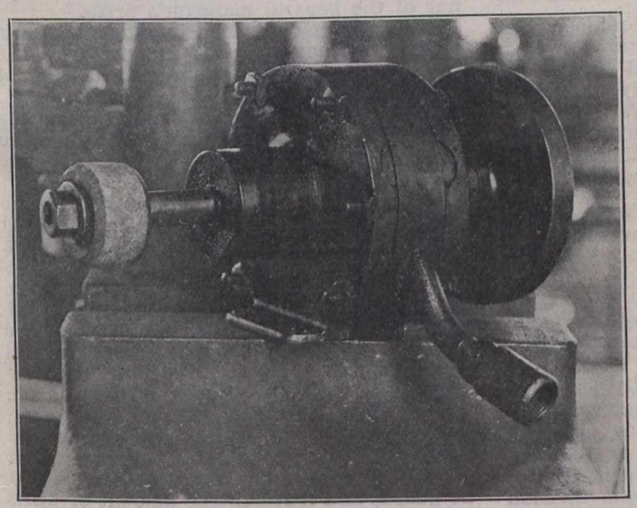
Methods and Devices in the Timiskaming and Northern Ontario Railway Shops.

A Small Air Motor.

The oft repeated statement that necessity is the mother of invention is exemplified in a small air motor used in the T. and N.O.R. shops, and which is shown herewith. Occasion arose some time ago to grind out the bore of a damaged air hammer, and as there was no spindle grinding machine in the shop, it became necessary to construct some sort of apparatus that would fulfill requirements. The result was the production of this little motor by E. McGahey, who is employed in the locomotive machine shop.

The end, or bearing members, of the motor, are old heads removed from the ends of disinfectant receptacles in passenger car lavatories, which had been scrapped. From their very nature they proved most serviceable, as they had side flanges, which serve as a base on which to set the motor. Between these two head members, which are about 6 ins. diam., there is secured a ring, about 1 in. thick, by means of bolts passing through both heads and the ring, from side to side as shown. The rotor consists of a set of 12 thin galvanized iron blades set in the central spindle. This spindle extends through the heads, and on one end there is a light flywheel, and on the other the emery grinder. Air enters through a ¼ in. pipe, and exhausts through a small slit on the opposite side. It is the intention to modify the construction so as to make the size of the exhaust variable as required.

The motor can be bolted on the carriage of a lathe, and with the member to be ground in the chuck, excellent results can be accomplished. A wide range of uses has been found for this motor.



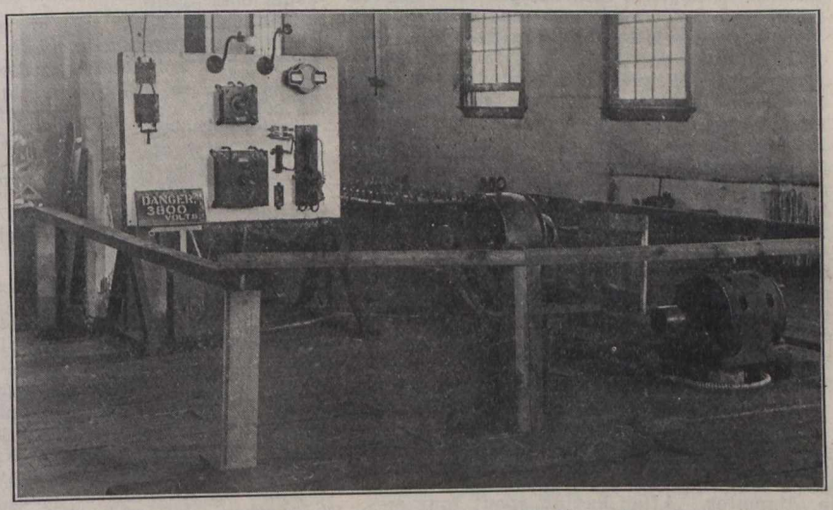
Small Grinder Air Motor, made from Scrap Parts.

A Battery Charging Installation.

On some of the more recently acquired equipment of the T. and N.O.R., especially the steel passenger cars received last year, electric lighting is used. To handle the battery charging on these cars, special provision was made at the North Bay shops to take care of this phase of car work, by equipping a charging station in one end of the locomotive house, between a pair of the tracks. The accompanying illustration shows the power apparatus, and the battery charging stand in the background.

Power is received from outside sources at high potential, and is stepped down before bringing it to the switchboard shown, which is equipped with all the necessary apparatus for handling the motor and generator, and battery charging. The motor is a 5 h.p., 60 cycle, 104-208 volt, 48-24 amp., 1,750 r.p.m. single phase machine, belt connected to a 7.5 k.w. 125 volt, 60 amp., 1,000 r.p.m. direct current generator, which supplies the storage batteries. The supply to the batteries is controlled through the switchboard, and a long cable connects up the batteries in series on the stand in the background.

The cars, as received from the builders, are minus the lighting equipment, which is installed in the shops. The set of batteries in the background is for one of the new steel cars, and has just been charged preparatory to placing in the cars.

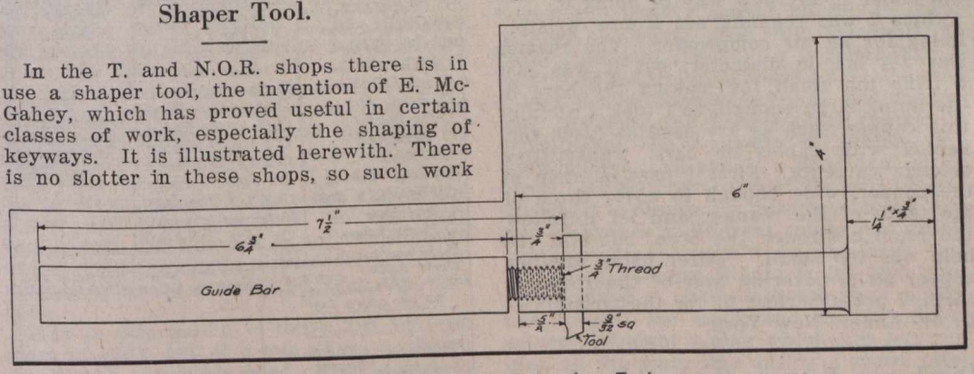


Battery Charging Equipment in the T. and N.O. Ry. Shops.

Shaper Tool.

In the T. and N.O.R. shops there is in use a shaper tool, the invention of E. McGahey, which has proved useful in certain classes of work, especially the shaping of keyways. It is illustrated herewith. There is no slotter in these shops, so such work as the slotting of keyways, which is usually done on that machine, must be done otherwise.

The tool, as will be noticed, is similar in most particulars to the ordinary screw clamp tool used for a variety of purposes, the essential difference being that instead of a set screw being used in the end of the bar to clamp the tool, there is an extension rod, of the same diameter as the bar, with a threaded end, which fits into the set screw hole, clamping the tool in this manner. The advantage of this arrangement is that it serves as a handle for lifting the tool out of the cut on the return stroke, and also acts as a guide for the operator.



Shaper Tool with Extension End.

A Flange Lubricator.

On a railway line that has a great many curves, such as the T. and N.O.R., which traverses a very rough and hilly country, where the locating engineers, in order to secure economical gradients, were forced to follow a circuitous route, the flange wear due to the rounding of so many curves, is very great. The amount of tangent is comparatively small on this line, which follows circuitous valleys and along the edges and winding shores of rocky lakes, making the number and degree of curves high as compared to lines more favorably situated in agricultural country. The flange wear on the locomotives became so great that steps had to be taken to minimize it if possible. The method followed has not only materially reduced it, but has the additional advantage of removing most of the oil that is carried out from the air compressor in the exhaust, this oil formerly having an injurious effect in coating the exhaust cavity and corroding the exhaust tip. The flange lubricant is this otherwise injurious oil, which, by the means adopted, is put to a useful purpose.

A Westinghouse dust collector, with 1¼ in. pipe connection, is placed in the exhaust pipe line from the air compressor to the exhaust, and is attached between the frames on the cross brace just back of the crosshead guides. The exhaust enters through the top, and from the forward side it passes out and thence through the former course to the exhaust cavity, but the passage through the dust collector, changing the direction of flow of the exhaust, causes the heavy oil in the exhaust to be