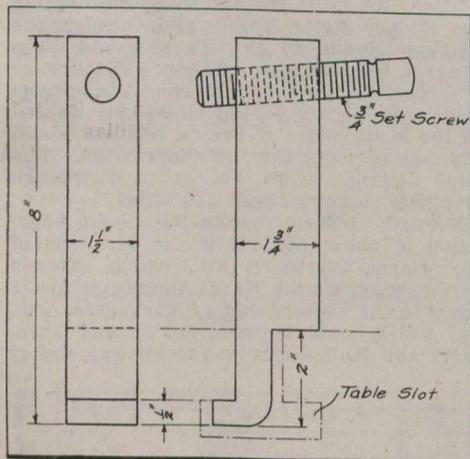


# Railway Mechanical Methods and Devices.

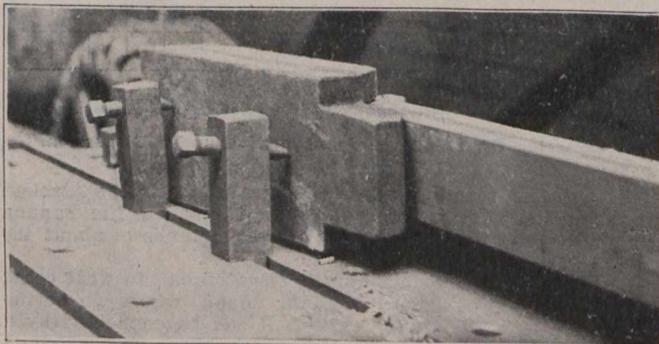
## A Handy Planer Stop.

A handy stop for the planer, in use in the Toronto, Hamilton and Buffalo Ry. shops, Hamilton, Ont., is shown in the accompanying illustration. The planer has the usual T slots the length of the table, with round stop holes in rows between. In these holes pins can be fitted, with set screws through the upper end for bearing against the work.



Planer Table Stop to Fit in the T Slots.

As the holes are some distance apart, it frequently happened that intermediate blocking was required to hold the work being planed. The result of this disadvantage was the introduction of the stop, shown herewith, which fits in the table slot, intermediate to the ordinary stop holes. The upper portion is the same as the usual pin stop. We are indebted to E. Glavin, Foreman, Machine Shop, for this information.



Jig on Planer for Planing Outside Faces of Shoes and Wedges.

## Planing Shoes and Wedges.

A method of machining shoes and wedges on the planer with a minimum of time required in setting up the work has been developed in the Toronto, Hamilton, and Buffalo Ry. shops, Hamilton, Ont. In the first stage of the machining they are laid in a row on the planer table, and the inner faces planed out, the locating of the shoes and wedges for this operation not requiring a great deal of accuracy, as there are no finished surfaces up to this stage. The next operation consists of planing the sides of the shoes and wedges, an operation that is performed in the manner shown in the accompanying illustration.

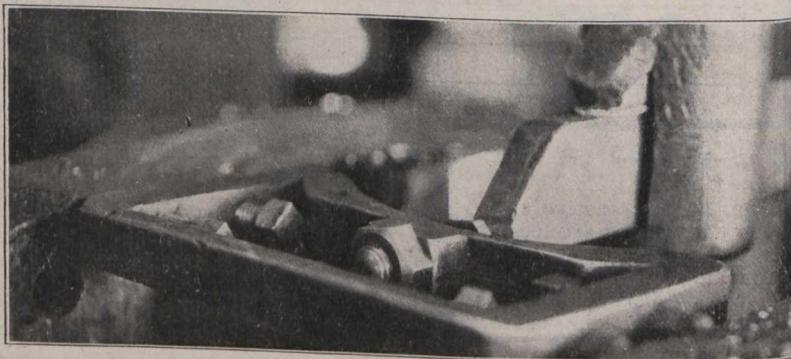
Bolted to the planer table there is a casting, roughly of a base and upright form, the upright section being finished on the outer face to the inside dimensions of the shoe or wedge. Against this face the inside finished

face of shoe or wedge is placed and held in position by planer stops and set screws, and in this position one face of the shoe or wedge is finished. Reversing the position, the other face is finished. Both these operations can be performed on several shoes or wedges at a setting.

For the final operation of finishing the backs of the shoes or wedges such a jig cannot be used, as, due to the inequality in wear on the mating faces of the shoes and wedges, where they are used in repair work, as in this shop, it is necessary to lay out lines on the ends of the shoes and wedges to which to plane. We are indebted to E. Glavin, foreman machine shop, for this information.

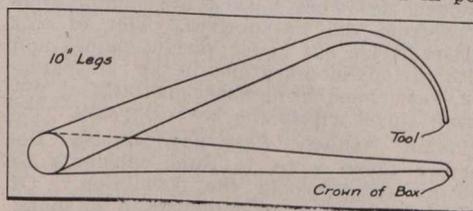
## Calipering Driving Wheel Boxes.

In the Toronto, Hamilton, and Buffalo Ry. shops, Hamilton, Ont., for the purpose of calipering the inside diameter of driving wheel boxes, there is in use a most excellent method, which is in many ways superior to anything the writer has seen in use elsewhere. Good as it is, a still better method is being developed which will supersede the first, more on account of speed than want of accuracy. As the crown bearing of the driving wheel box is only a half circle it is impossible to caliper in the inside diameter while boring in the boring mill, the method followed in these shops. In some shops it is considered better practice to slot the inside diameter, instead of boring, but the boring appears to have certain advantages. The method followed in these shops is as follows: After setting up the work on the boring mill table, and centring, the boring tool is set as closely as possible by judgment, to bore the correct diameter. The tool is then fed down into the work just far enough to present a



Calipering Driving Wheel Boxes, Old Method.

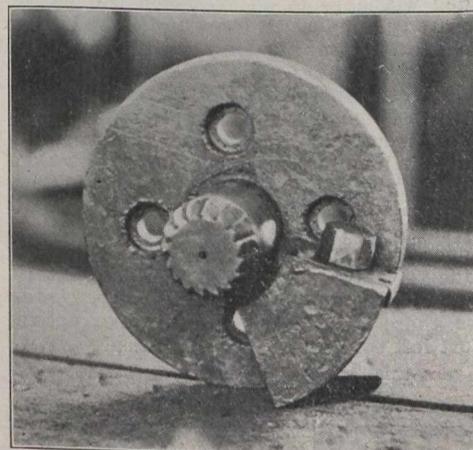
calipering shoulder. In the open side of the box there is fitted a special calipering jig. This latter consists of an open frame of the shape shown herewith, and which is a forged member. This frame is held in po-



Calipering Driving Wheel Boxes, New Method.

sition in the box opening by two set screws on each side, bearing against the box walls. In the centre of the frame there is a flat head bolt, the head projecting inwards towards the tool, and the outer end carrying a lock nut. After the

calipering shoulder is cut in the box the table is swung around until the tool is opposite the flat head of the bolt, the latter being adjusted until it just touches the tool. This gives the other side of the boring diameter, which can thus be calipered, the crown of the box as one side of the diameter and the flat head of the bolt as the other side. The tool can be adjusted after this preliminary calipering until finally correct, when the calipering jig may be removed. In the above method plain



Chamfering Tool for Safe Ends.

inside calipers are employed.

In the method now being introduced the calipering frame is eliminated, and instead an unusual pair of calipers of the shape shown in the accompanying illustration is used. After passing through the preliminary calipering shoulder, cut as in the previous instance, the table is swung around so that the tool is opposite the crown. Placing the tip of the straight caliper leg on the tip of the tool

gives the diameter to which the tool is set, from which an adjustment of the tool may be speedily made if found necessary. These two methods have been developed under E. Glavin, foreman machine shop.

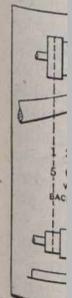
## Chamfering Tool for Safe Ends.

In the Toronto, Hamilton, and Buffalo Ry. shops, at Hamilton, Ont., a very handy method of chamfering the tube pieces that are used in safe ending is in use. Its advantage lies largely in the fact that the tool can be used in the bolt machine without much special fitting. The tool consists of a steel disc, which can be secured by four cap screws to the head of a bolt machine. Concentric in this disc there is a pin of the same inside diameter as the tube, the outer end of which is fluted like a reamer, for removing inside burrs in the tubes. On one side of the pin there is a radial projection, to one

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