

Railway Mechanical Methods and Devices.

Improved Link Motion Arrangement.

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It is often found necessary to redesign link motions to get away from the springing of the parts, inherent in the older designs. Where transmission bars are used, they have invariably to be set to clear the

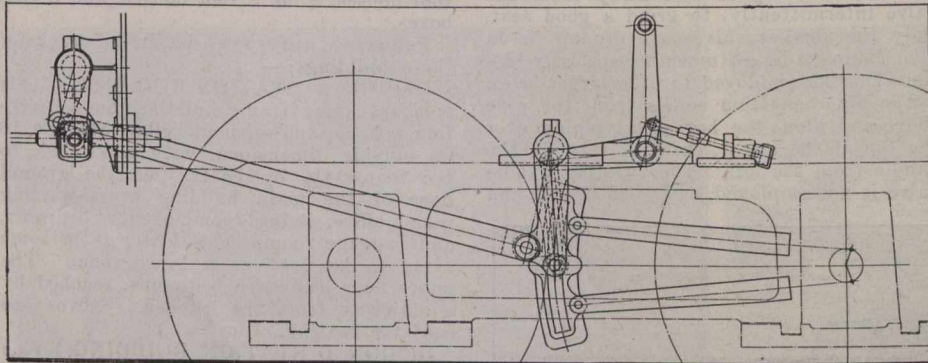


Fig. 1.—Proposed New Construction of Link Motion.

leading axle in connecting the link with the forward rocker. One arm of the forward rocker is usually set so that the transmission bar centre line, by means of pins, makes a 90 degree angle with the rocker arm, the object being to correct the distortion due to the angle the transmission bar makes with the motion centre line.

The gear arrangement shown in figs. 1 and 2 is a proposed redesign of an old gear. The diagrammatic view, fig. 2, shows the usual offset arm on the forward rocker, and a corresponding offset on the link rocker,

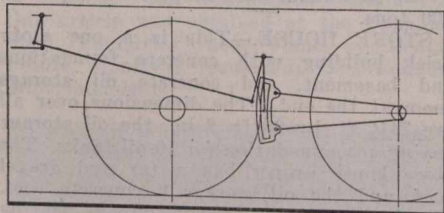


Fig. 2.—Diagrammatic View of New Construction.

imparting to the transmission bar a motion always parallel. The distortion in the angle of the transmission bar is thus corrected at both ends, instead of the usual correction at one end only. By doing this, a straight transmission bar is obtained, as by a combination of rocker arm lengths, the bar can be placed high enough to clear the forward axle without giving it any offset. An additional advantage lies in the fact that the usual long pin from the link block, providing bearing length for the rocker arm end and the transmission bar end, is shortened. Under this arrangement the transmission bar is attached to the link block pin in the manner indicated in fig. 1. The writer believes this construction is decidedly better than the usual transmission bar arrangement.

Tests on driving spikes in bored holes of treated ties, show that the point should be tapered on four sides to drive centrally. The holding power is slightly decreased by boring before treating, and while the tie is more thoroughly permeated, the condition of the fibre to withstand splitting and crushing is not as good.

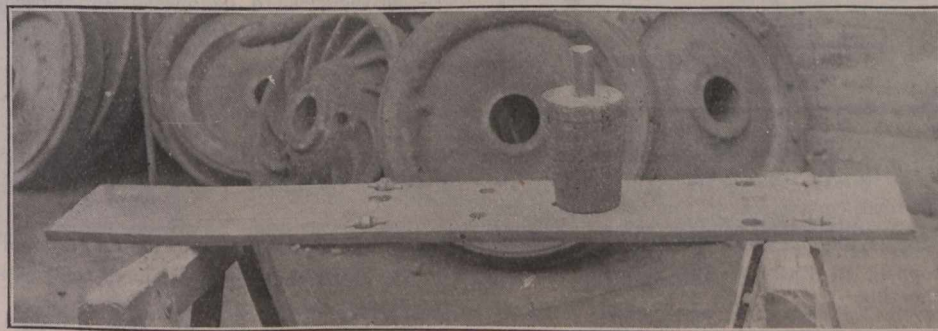
Drilling Retaining Rings at the Grand Trunk Railway Port Huron Shops.

In the machine shop at the G.T.R. car shops at Port Huron, Mich., one of the machines missed most is a radial drill, one of which they lack. In consequence, where it would be the practice in a great many places to do certain jobs on the radial, in

these shops the upright drill must be used, and to make this possible, a great many different ingenious methods have had to be improvised to handle the work to the best advantage. Among these is the matter of drilling passenger car wheel centre and retaining ring bolt holes.

The jig used is shown in the accompanying illustration. On a heavy piece of plate, there is secured at a central point in the width a vertical pin. At four points equidistant from this centre, and radial thereto, are rollers, set into the surface of the plate to form a bearing for a wheel centre mounted on the plate. The left end of the plate is clamped to the drill table.

The wheel centre to be drilled is mounted on the plate over the central pin, resting on the four rollers. Over the pin to centre the wheel centre, there is slipped a tapered wooden plug, which bears out on the sides of the axle bore. On top of the wheel centre rim is placed a drilling jig. The table is swung around so that the drill spindle is over the left edge of the wheel centre, in which position the holes are drilled.



Jig for Drilling Retaining Rings on the Vertical Drill Press.

The same attachment is used for drilling the retaining rings. On the same pin centre, there is mounted a wooden ring frame, which centralizes the retaining ring, when the holes can be drilled to mate the wheel centre by the use of the drilling jig.

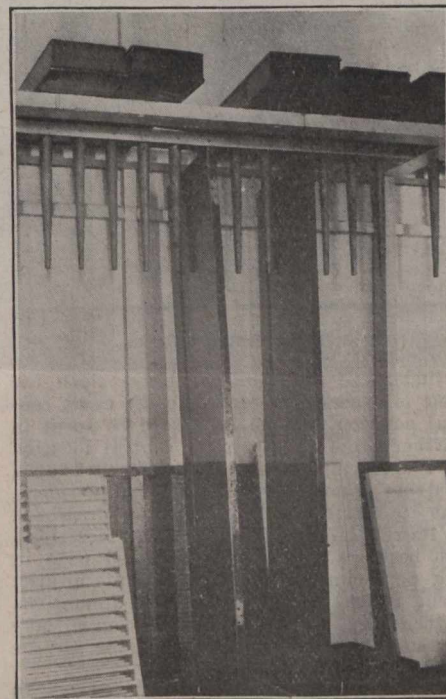
Using the vertical drill in this manner, it is claimed that equally rapid work can be performed as with a radial drill on the same kind of work. With a radial,

the swinging arm must be changed in position each time, while with this attachment, the operator merely has to swing the centre or ring around on the roller bearings.

Varnished Door Drying Rack at Grand Trunk Railway Port Huron Shops.

In the G.T.R. shops at Port Huron, Mich., there is in use a rack for drying freshly varnished car doors in the varnishing room, that would appear to be a material improvement on existing practice.

Projecting downward from a scantling



Rack for Drying Freshly Varnished Doors.

located about a foot out from the wall, and at a spacing of about 4 ins., are tapered hardwood pins, the larger end in the scantling and the smaller end at the bottom. The object in such a construction is at once apparent. The freshly varnished doors, when placed in between these projecting tapered pins, can only have point contact

with the pins at the top edge of the door, from the fact that each side of a pin presents a sloping surface, contact along which is impossible unless the bottom of the door be set over at a large angle. If stood upright, marring of the surface would be impossible. The door storage space in these varnish shops is quite considerable, two sides of the room being provided with racks of this type.