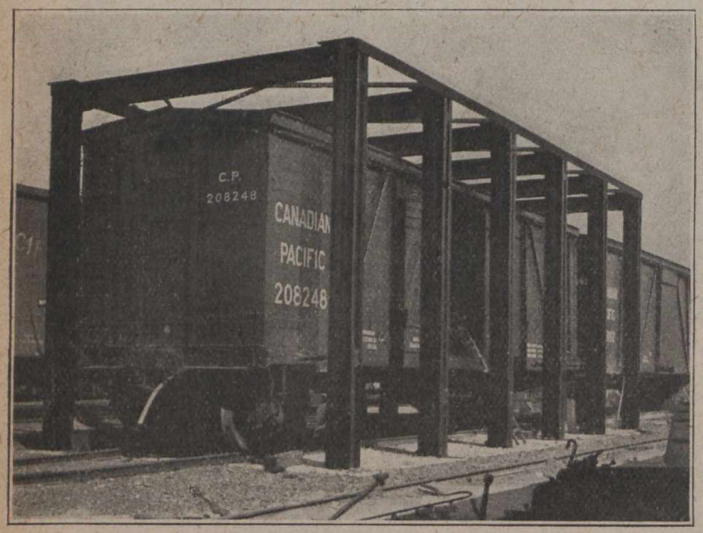
Railway Mechanical Methods and Devices.

Steel Car Straightener at Canadian Pacific Railway West Toronto Shops.

The advent of all steel, and steel frame cars, into modern railway practice has involved a readjustment of the means of handling repairs on such equipment. Whereas, in wooden equipment, when a car became partly wrecked, the members were either left more or less intact, or else completely destroyed, with steel construction, the ability of the members to be distorted without serious injury to the material, other than the necessity of bending back into shape, has made possible the continued use of the same members, the necessary repairs being made thereto without renewal.



Frame for Straightening Bent Steel Cars.

One of the most frequently encountered difficulties with steel equipment in a wreck is that either the sills or frame become sprung, either from a too heavy end blow, or from a side swipe. In wooden equipment, this would require the replacing of the damaged member, but with the steel, if the proper facilities be at hand, the member may be bent back into shape and is then, to all practical purposes, provided it was not cracked in the accident, as good as new.

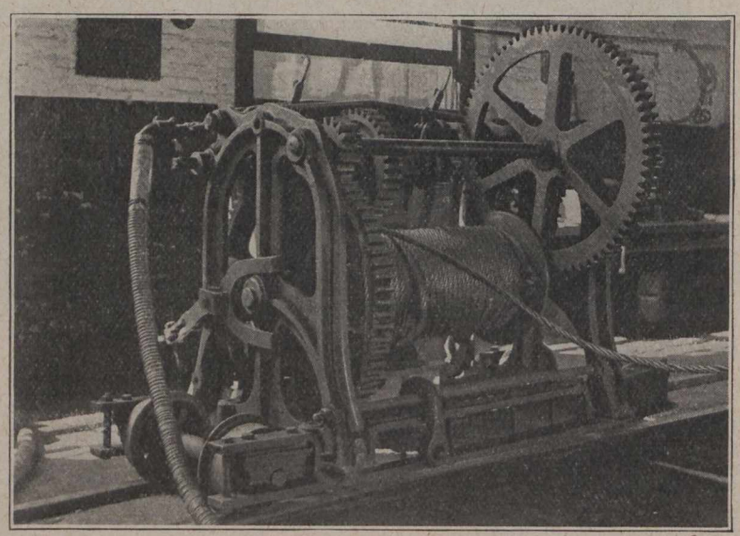
The C.P.R. has a great many steel frame cars of the outside Z bar frame construction. Many of these are damaged in the course of service, and to facilitate repairs to them, the bending frame shown in the accompanying illustration, is used. The frame shown is in use in the West Toronto shops, and is similar in design, but somewhat larger, than the original one of this type built at the company's Hochelaga, Montreal, shops.

The frame comprises a double row of steel columns at 14 ft. centres, there being 6 pairs, 7 ft. apart. The columns are built up of two 12 by 3 in. channels, 3½ ins. apart, back to back. Rivetted to each channel web, there is 6 by 3 in. I beam, stiffening the column in both directions. These columns are mounted in a concrete base, 17 ft. wide, and the columns are tied together and diagonally braced at the top. In each column, between the channel backs, there is a cast iron block, 8 ins. deep, on each side, the pair being tied together by two ¾ in. bolts. Passing through the pair of blocks is a 2½ in. square thread screw, 24 ins. long, with a pitch of two threads per inch. The inner end of the screws have bearing plates for bearing up against any part of the car, and the outer end is squared for a wrench. By means of the ¾ in. tying bolts, the jack screws may be located in position on the column, so that the sills or any part of the frame may be pressed back into position. In cases where the screws are not sufficiently powerful to press the frame back into shape, the practice is to use a jack between the frame column and the member of the car that is to be straightened.

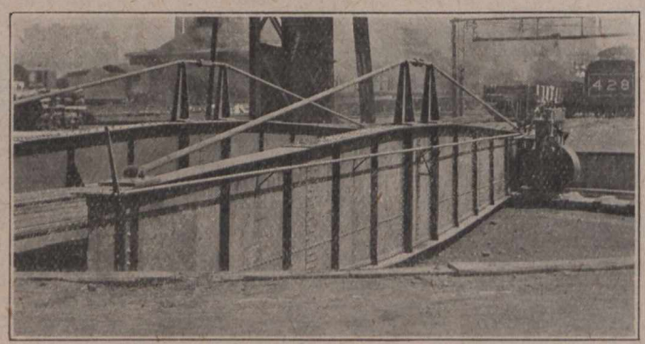
Not only are the members of steel cars twisted side ways, but it frequently happens that, from an end thrust, the sills are sprung upwards in the centre. To meet this difficulty, provision is made in this straightening frame. Between the end pair of columns, bedded in the concrete base, there are at each end four 1¼ in. eye bolts, spaced 1 ft. each side of the rails. In each eye bolt there is a 10 in. ring. To straighten a sill, it is the practice to tie the car down to these rings by passing a chain from the rings over the body bolster or the middle section of the sills. Then, by placing a jack under the ends of the car and jacking up, it is usually possible to bend the sills back.

Locomotive Tractor in Grand Trunk Railway Shops.

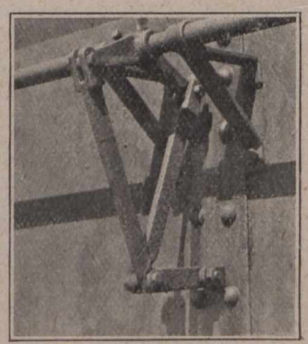
In the G.T.R. Toronto Shops, E. Logan, General Foreman, the old Northern Ry. locomotive house is used for light locomotive repair work principally, the size of the old stalls precluding its use as a locomotive house for the general run of modern motive power. It is large enough to take in a large locomotive without tender, and it is generally in this unattached condition that the locomotives are brought in. As it is only used for repair work, the locomotives are seldom under steam, and cannot come in under their own power, requiring some other agency. Formerly, it was the custom to bring the locomotive in from the turntable by block and tackle, with a locomotive attached to the rope out in the yard. This was a slow process, and required the assistance of the yard crew. A tractor of the design shown in the accompanying illustration is now employed.



Locomotive Tractor for Drawing in Locomotives.



Turntable, with Tractor Control Rod Jointed.



Motion Reversal Links.

The tractor consists of a cast iron frame mounted on wheels, and carrying a steel wire drum, driven from a small air engine on the back of the frame through a train of gears, the air engine being supplied with air through an air hose from the nearest connection. Around the inside of the outer wall of the locomotive house there is a narrow gauge track on which the tractor operates. In the wall at the head of each of the tracks there is an eye bolt to which the tractor is secured at the head of the desired track, by a clamp on each side of

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At the recent annual meeting of the Great North Western Telegraph Co., at Toronto, the board of directors was elected as follows for the current year:—Z. A. Lash, K.C., President; Adam Brown, Vice President; Jas. Hedley, Hon. J. K. Kerr, Æmilius Jarvis, F. B. Hayes, N. Carlton and J. B. Van Every.