

Grinding in Dry Steam Pipe End at Grand Trunk Railway Stratford Shops.

In the G.T.R. shops at Stratford, Ont., there is a machine for grinding in the ends of locomotive dry pipes to the seat in the T head connection to the cylinders, which is the same in construction as one in use at the company's Battle Creek shops, from which it was copied.

The dry pipe to be ground in has a loop connection secured over the throttle end, as at the top of the illustration in fig. 1, by which the prone pipe is raised by block and tackle and suspended from the roof girder. From two vertical posts the pipe is held in position vertically by two bands near the lower end, the lower one of which is shown at the top of fig. 2. The grinding in machine is located directly below the suspended pipe, the details of the machine being as shown in fig. 2.

On a concrete foundation in the floor there is mounted a cylinder, with a vertical plunger displacement. The T head, into which the dry pipe is to be ground, is

On the near post, in the foreground of fig. 2, there is mounted an air valve of special design. On the forward end of this casting a combined ratchet wheel and cam wheel are mounted vertically in bearings. A short lever, with a dog playing on this ratchet wheel, oscillates on the same centre, actuated from a connecting rod driven from near the lower end of the ball and socket rod at the rear of the cylinder. Being near the stationary point of the rod, the motion is very greatly reduced.

The cam is the lower portion of the combined ratchet and cam, and in the side secured to the post there is a small plunger, part of an air valve. As the cam travels around from the motion imparted to it from the ratchet, the plunger is forced inward, and at a certain point on the circumference of the cam there is a drop, the plunger springing out by the aid of a spring in the base. This releases the air from the cylinder, allowing the plunger and head to drop into the position shown in fig. 2. The rise in the cam following this opens the air valve, permitting air to again enter the cylinder, raising plunger

Pipe Bending Stand at Grand Trunk Railway Port Huron Shops.

In a car repair shop there is required considerable bent pipe, formed to the required shape. Some shops have pipe bending machines, but these are the exceptions. In other cases the pipe is bent to shape around pins located conveniently for the purpose, but such a practice has decided objections from the fact that if the bend is anyway abrupt a ruffled inner surface is the result. Applications of the method to be here outlined are to be found elsewhere, but rarely in so complete a form.

The method under consideration is used in the passenger car department of the G.T.R. shops at Port Huron, Mich., J. L. Hodgson, Master Car Builder. A 12 in. square oak post has been bedded vertically in a concrete foundation as shown in the illustration. To opposite sides of this post have been attached rolls of two different sizes, each of which will accommodate approximately different ranges of sizes, in the semi circular annular groove around



Fig. 1.—Dry Pipe Mounted for Grinding in.

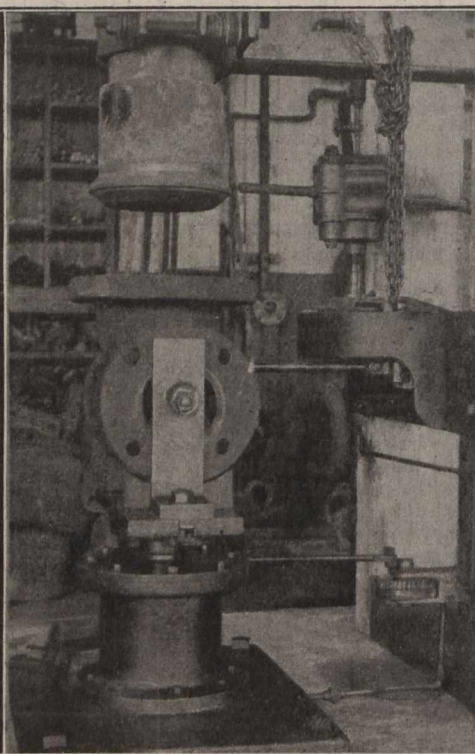
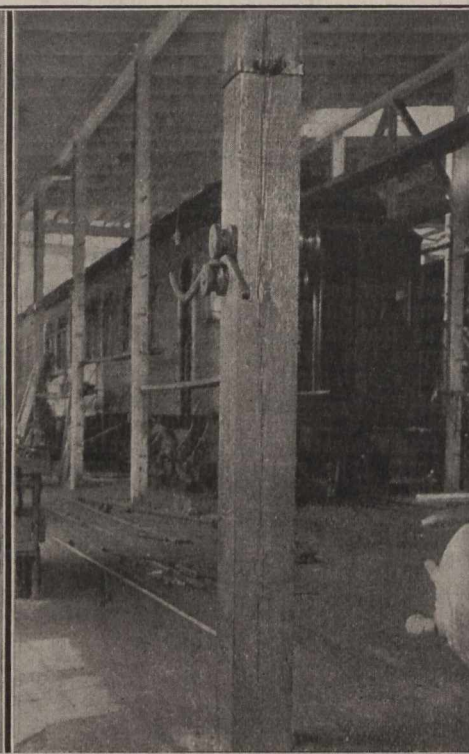


Fig. 2.—Mechanism for Grinding in the Dry Pipe.



Pipe Bending Stand.

mounted on a carriage on the upper end of the plunger, concentric with the dry pipe suspended from above. The upper end of the plunger rod has a flat surface, with groove for the securing thereto of two angle plates, one on each side to which the head is bolted.

To the right, mounted on a casting, between the two posts, there is an air motor. The casting carrying a train of gears from this motor, reducing the motion at the crank which connects to the connecting rod leading to the left. Behind the cylinder and head in fig. 2 there is a vertical rod, with ball and socket connection both at top and bottom, the bottom connection being secured to the machine bed, and the top connection to the left end of the connecting rod leading from the crank on the end of the train of gears. A forked end on the far side of the table on which the head is mounted engages with this vertical ball joint rod. As the crank revolves an oscillating motion is given to the head and plunger in the cylinder.

and head into contact with the dry pipe end, where it remains for a short interval, the oscillating motion, which continues concurrently, grinding the two together, oil and emery having been previously sprinkled on the mating surfaces in the usual manner. This action continues automatically without any attention on the part of the operator, the head rising into contact for a short interval, releasing for another short interval for the oil and emery to redistribute themselves, then into contact, continuing in this manner as long as the air motor is in operation.

The machine operates automatically, only requiring the occasional presence of an operator to feed in oil and emery.

The Board of Railway Commissioners will, on April 15, hear the application of the Montreal, Toronto, Winnipeg, and other boards of trade for reciprocal demurrage.

L. C. Fritch, Chicago, Great Western Rd., Chicago, read a paper on railway terminals before the Canadian Railway Club in Montreal, Jan. 14.

the roll circumference.

The pipe to be bent is placed between the correct rolls, and bent to the required curvature. A sample of a piece of pipe bent to shape is to be seen in the pair of rolls on the nearer side.

In the background in this illustration there is shown a permanent scaffold, of a very convenient form. The scaffold posts carry projecting pins on each side, spaced about a foot apart. On one of these the scaffold plank rests, a bracket structure on the lower surface pressing back against the rung below. The scaffold can be raised or lowered on any pair of rungs for the work in hand.

The contracting firm of James Stewart and Co., New York, has been incorporated with a capital stock of \$3,750,000. The firm of James Stewart and Co. was established in 1845 in Ottawa, Ont., by James Stewart, of Aberdeenshire, Scotland. In 1865 its headquarters were moved to St. Louis. The general office was changed in 1900 to New York.