

The machines are interesting to watch as they stand in their long lines at work, each with its watchful directing controlling attendant. Powerful elephants one might say, like those in the Burmese timber yards, each with his "Mahout" beside him. These are not as the machines of old, slow as well as steady. On the contrary they show the last thing in pace without diminishing the old fashioned steadiness. There is notably a turret lathe from the workshops of Herbert of Coventry, hollow spindled, with 16 reversible speeds, the very latest thing in turret lathes whether in Europe or America, working when necessary up to speeds inconceivable to the non-expert mind. There is a circular saw which cuts thick iron with the smoothness and rapidity one sees in the case of wood that is dealt with by similar tools. There are emery grinders and Sundale grinders, drills radial and drills fixed, the former really wonderful machines reaching out in a circle when called upon, liberated or fixed at will by the turn of a nut, driving great

whereby a great saving in time and energy is effected.

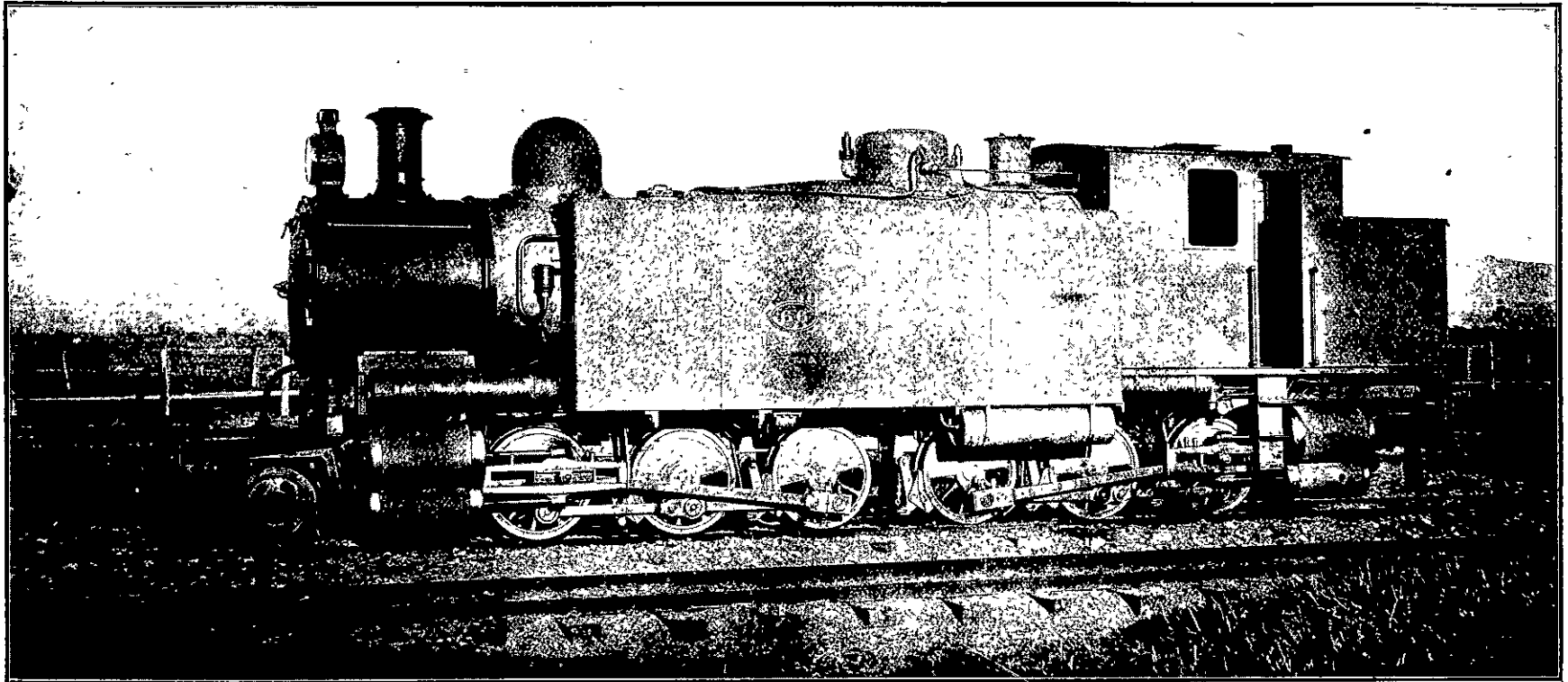
A small shunting engine of the C type is kept constantly employed in and around the Workshops. There is also a 7-ton steam self-propelling crane in Workshops yard, built at Railway Workshops, Hill-side.

Car Shop.

On the way in one sees many things lying about; ventilators of cars ready for fixing, cylinders for bending timber, by steam: templates for the shapes of the bending, such for instance as the roofs of cars, water tanks for the lavatories—these hold 118 gallons we learn; cushions, seats, panels of doors, and windows, car bodies and these arrest the attention as they stand over the pits. They are in all the stages of growth up to the last in which the finishing touch of the painters is being added. There is a pleasant odour of turpentine and resin and not a sign of the usual litter, of shavings and things pertaining to

answer is before us here. Take the ordinary "bird-cage" the object of such keen competition on the part of long distance travellers. Imagine the two seats facing one another in each compartment. Realise that the back of each seat is so fashioned as to act as a bunk, provided with the means for detaching it for lifting it into position above the ordinary seat of which it forms, when off berth duty, the back, and for keeping it in position when detached. A couple of straps adjustable at the side to prevent the tenant from falling out, and there you have your upper berth. The lower seat of corresponding methods becomes the bottom berth, and the compartment becomes a sleeping room with four berths. In every new fifty foot sleeping carriage there are four four-berth compartments and two with two berths. For the latter there is much competition among the knowing ones.

In the constructing division of the car shop there are fixed the usual wood working machines and beside them all the



EIGHT-CYLINDER COMPOUND ARTICULATED TANK LOCOMOTIVE, CLASS E, FOR SERVICE ON STEEP GRADIENTS.

Built in New Zealand Government Railway Workshops

Cylinders, 9½ in. and 16 in. in diameter; stroke 18 in.; diameter of coupled wheels, 3 ft.; tractive power (at 80 per cent boiler-pressure), 28,500 lb.; boiler-pressure, 200 lb.; total weight in working-trim, 66 tons, Gauge, 3 ft 6 in. (N.Z. Railway Dept. Print)

cutters through the toughest metal with rare pace. There are screwing machines and lathes, of all kinds, up to the great fellows required for dealing with locomotive driving wheels, and we recognise the work of Beyer, Peacock and Co., of Manchester—none better anywhere. Among the drillers is a fine Canadian machine (Esquith, of Halifax) very rapid and reliable, and it is among the up-to-date machines of the establishment. There are milling machines too; one catches the attention quickly with its knives arranged exactly like those of a lawn mower; the shavings thrown off are small and wiry, just like grass cut by the blades of its prototype; and the analogy is complete, as you read the name of Kendall and Gent, of Manchester. For all these the work is brought and taken away by hydraulic hoist and travelling gantry easily handled.

In various parts of the Shops are erected pneumatic air hoists and air-lifts in lieu of the old style of chain blocks,

the disorder of the ordinary workshop. Not a single machine is besmirched. Neither are there as elsewhere small armies of sweepers getting rid of plentiful litter. The bell mouths of shoots gape here and there close to the floor, shavings and litter of wood are brought close up, there is an inhaling of a mighty breath and the litter disappears on its way to the furnace, leaving behind clean floors and immaculate machines. There used to be perpetual dust fog and many men were down always with dust asthma. Now there is not a single case.

Each machine in this shop is equipped with a dust collector, an exhaust fan is situated near the engine house and exhausts the sawdust, shavings, etc., through large galvanised pipes to the boiler house where it is utilised for fuel.

Of course the fifty foot new car building for the Northern Trunk does not escape us. "What are these sleepers like?" is the constant query of an interested public. The

timbers that belong to the car industry, about to fulfil their destiny in one part or another of the anatomy of the cars. Here there is the same note of British superiority, with also a good American machine in the front with the best.

That is a chain morticer by the New Britain Company of America. It is like a bicycle chain with knives on the links, simple to look at and easy to go. It does not appear to cut the mortices, so much as just to blow them out. There is only one better in the world and in that one the cutter follows the work instead of as here the work following the cutter.

A great English machine is the sand-papering machine of Robinson of Rochdale a machine with three rollers of sand-paper of three qualities, rough, medium, and fine, with a revolving brush. Doors, frames, all things requiring a polish pass in rough and come out smooth in an incredibly short time. Where it took a door half-a-day of old to get through the hand process