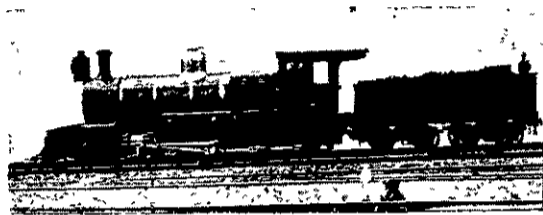


...New Zealand... Government Railways.

Locomotive Department.—No. 2.

THE locomotives of the true "goods" type of the present day evolved from the "O" and "T" classes, of American make, and the British "P" class. The two former engines had 15" x 18" cylinders, and eight coupled, 3ft. wheels and pony truck, while the latter class presented different features with 15" x 20" cylinders, and eight coupled, 3ft. 5in. wheels. The engine, known in America as the "Mastodon," is now doing most of the heavy goods traffic in the colony. Class "B," as it is called, has eight coupled wheels and a four-wheel leading bogie, the diameter of the driving wheels is 3ft. 6½in., and cylinders 16" x 22". The eight at present in use have been built by the New Zealand Government.



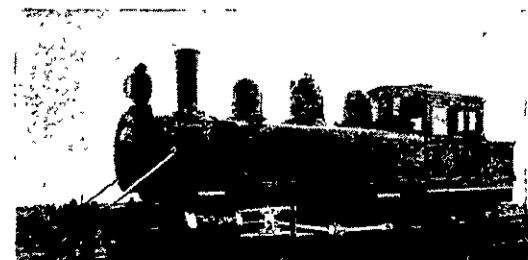
"MASTODON" LOCOMOTIVE, CLASS "B," BUILT IN THE NEW ZEALAND RAILWAY WORKSHOPS. CYLINDERS, 16"; STROKE, 22"; DIAMETER OF DRIVING WHEELS, 3' 6½"; TRACTIVE POWER, 17,495 LBS.; TOTAL WEIGHT IN WORKING ORDER, 65 TONS.

We now come to consider several curious classes of "tanks" which were designed to fulfil the requirements of a particular and expanding service.

The earliest built in the colony were the "Wa's," having cylinders 14" x 20" and 3ft. 3¼in. coupled wheels. Then came "Wb," offering but slight change from its prototype; and not until the advent of "Wd," and "Wf" did any marked differences take effect. "Wb" and "Wd" were built in America from a New Zealand design, "Wf" by the New Zealand Government and A. & G. Price. "Wf" has not only a trailing four-wheel bogie, but a piston stroke of 22", while the boiler pressure is brought up to 200lbs. Class "We" must be associated with class "H," an engine built for the Rimutaka incline of 1 in 15. The Neilson "Fell" engine, shown in this article, has four coupled wheels, 2ft. 8in. in diameter,



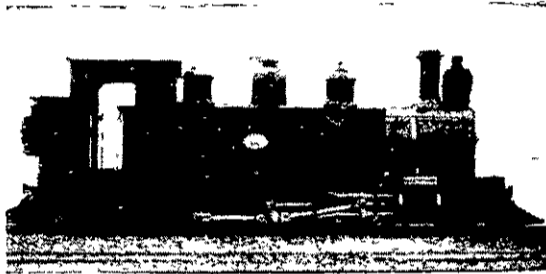
SUBURBAN TANK LOCOMOTIVE CLASS "Wf," TEN BUILT BY A. & G. PRICE, THAMES, AND TEN BUILT IN NEW ZEALAND RAILWAY WORKSHOPS. CYLINDERS 14"; STROKE 22"; DIAMETER OF DRIVING WHEELS 3' 9". DIAMETER OF BOGIE WHEELS 2' 6"; STEAM PRESSURE 200 LBS. PER SQUARE INCH, TRACTIVE POWER 14,370 LBS.; WEIGHT IN WORKING ORDER 43½ TONS.



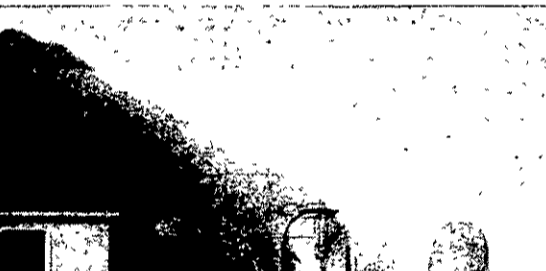
GOODS TANK LOCOMOTIVE FOR HEAVY GRADIENTS, CLASS "Wd," BUILT AT BALDWIN LOCOMOTIVE WORKS, PHILADELPHIA, U.S.A. CYLINDERS, 14"; STROKE, 20"; DIAMETER OF DRIVING WHEELS, 3' 3¾"; TRACTIVE POWER, 14,790 LBS.; TOTAL WEIGHT IN WORKING ORDER, 43¾ TONS.

driven by outside cylinders. In addition, there are two pairs of horizontal coupled drivers which are operated on by inside cylinders and pressed by strong springs against the raised middle rail, the tractive power being thus considerably augmented.

The heavy traffic on the mountain has, however, been found to be more than the original stock of "Fells" can adequately manage, so class "We" has come into the running. This engine successfully negotiates the 1 in 15 grade without any assistance from such a device as used on the "Fell" or "H" class. But even it is to be overshadowed



GOODS TANK LOCOMOTIVE FOR HEAVY GRADIENTS, CLASS "W," BUILT IN NEW ZEALAND RAILWAY WORKSHOPS. CYLINDERS, 14"; STROKE, 20"; DIAMETER OF DRIVING WHEELS, 3' 3¾"; TRACTIVE POWER, 11,833 LBS.; TOTAL WEIGHT IN WORKING ORDER, 37¼ TONS.

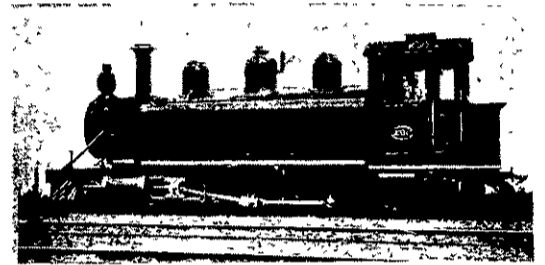


TANK ENGINE, CLASS "We," FOR THE RIMUTAKA INCLINE. LENGTH OF INCLINE, 3 MILES; GRADE 1 IN 15; CURVES, 5 CHAINS RADIUS. CYLINDERS, 16"; STROKE 22", DIAMETER OF DRIVING WHEELS, 3' 6½"; TRACTIVE POWER, 18,000 LBS.; TOTAL WEIGHT IN WORKING ORDER, 54½ TONS.

by the new "E," which will be available for either incline or foot-hill work. This locomotive, of which we show an elevation has been adapted in a measure from the parts of the Vauclean compounds imported some years ago. It is doubtful whether we can ever place a more powerful engine on our 3ft. 6in. gauge, as a glance at its capabilities will bear out.

A curious relic of an earlier failing to grasp the real needs of the service is demonstrated in the double Fairlie engine. These machines were originally eight in number, and they have all been written off, although some of them still continue on ballast work and shunting. They were conspicuous for extravagance in fuel consumption and big repair bills. The single Fairlies have worked our suburban sections for many years, but they comprise a class not likely to be added to, owing to their complicated mechanism.

To marshall the characteristics of our locomotives, it may be stated that they all have steam domes and outside cylinders, the latter being rendered necessary on account of the narrowness of the gauge. It has long been the endeavour of the mechanical staff to design and build locomotives that would bring the best results under

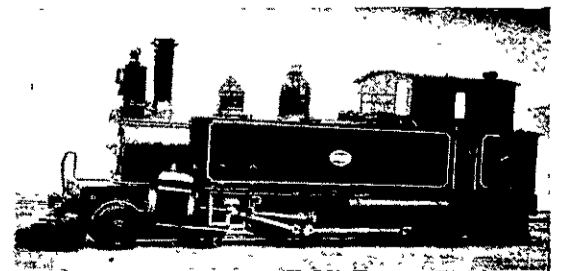


GOODS TANK LOCOMOTIVE FOR HEAVY GRADIENTS, CLASS "Wb," BUILT AT BALDWIN LOCOMOTIVE WORKS, PHILADELPHIA, U.S.A. CYLINDERS, 14"; STROKE, 20"; DIAMETER OF DRIVING WHEELS, 3' 3¾"; TRACTIVE POWER, 12,573 LBS.; TOTAL WEIGHT IN WORKING ORDER, 41 TONS.

extraordinarily trying running conditions; and with our almost entire freedom from accidents, and regularity in adhering to time-table, it can well be said that those responsible for the locomotives on our railways have faithfully responded to the task imposed.

Our thanks are due to the New Zealand Railway authorities for the particulars which have formed the groundwork of this article.

The contractors for the main building of the New Zealand International Exhibition are evidently losing no time in getting to work on their contract. The contract for the elevations, as well as all internal ornamental work, has been let to the Carrara Ceiling Company, Ltd., of Wellington. The whole of the work will be executed in Stucco, the company's new patent material, which will give the building the appearance of being constructed in marble.



TANK LOCOMOTIVE, CLASS "L," BUILT IN NEW ZEALAND RAILWAY WORKSHOPS. CYLINDERS, 12"; STROKE, 18"; DIAMETER OF DRIVING WHEELS, 3' 6¼"; DIAMETER OF BOGIE WHEELS, 2' 2½"; TRACTIVE POWER, 7,361 LBS.; TOTAL WEIGHT IN WORKING ORDER, 31½ TONS.