

The glass water-gauge for registering water-levels in boilers has now to be protected in case of fracture.

If an owner makes any alteration in the diameter of a steam-cylinder of an engine, he must notify the local Inspector within a month.

The class of engine-driver who has to be in charge of a steam turbine engine, having no cylinder, is defined. An engine-driver must be in effective charge of the engine and boiler at all times, and if while in charge of such an engine and boiler he absents himself from his charge he commits an offence. If an engine and a boiler are too far apart to be in effective charge of one man, then an Inspector may report in such a case to the Chief Inspector, who may require the owner to have the engine and boiler in charge of separate persons: if the owner fails to comply, he commits an offence. No person who has suffered the loss of a hand or a foot shall act as a driver of a locomotive or winding engine. The driver for so acting, and the employer for employing such a driver, are liable to a fine of £5 for every day during which such employment continues. An engine-driver holding a service certificate is now entitled to the same wage as a driver holding a competency certificate of the same class.

Provision is made for the appointment of a Chairman and of a Secretary to the Board of Examiners under this Act.

Every applicant for an engine-driver's certificate must be a British subject. Provision is made for a statutory declaration being accepted where an applicant is unable to produce written proof of service by reason of the destruction or loss of his papers, certificates, and discharges. An applicant must produce a medical certificate that he is not wholly or partially deaf, nor has defective eyesight, nor is subject to any other infirmity likely to interfere with the efficient discharge of his duties, before he can be examined for a locomotive and traction or a winding engine driver's certificate. Any locomotive-engine driver employed on the New Zealand Government and Manawatu Railways, or on any railway the property of His Majesty in any British possession, or on any railway in the United Kingdom, can now receive a certificate under this Act without passing an examination, provided he has the prescribed length of service and holds the necessary credentials.

A "motor" is defined as a vehicle propelled by its own mechanical power, and so constructed as not to emit smoke, steam, or visible vapour except from any temporary or accidental cause. Motors are now subject to inspection under certain conditions. The owners have to report within one month that they are possessed of a motor if the weight unladen exceeds 3 tons. The weight of any motor whose weight unladen exceeds 2 tons shall at all times be painted in legible letters on the right-hand side. The minimum age of drivers who may be in charge of certain motors is defined.

#### BOILERS INSPECTED.

A considerable increase has been made in the number of boilers this year. At the end of the financial year there were still a number of boilers the inspection of which could not be overtaken for various reasons. This branch of the Department's work has gone on very smoothly, and no friction whatever has arisen with any boiler-owner during the year, which speaks well for the tact displayed by the Department's officers when dealing with the public.

The number of boilers inspected totals 6,073. There is thus an increase of 105 over the number inspected last year. All the machinery attached to these boilers was also carefully examined at the time of boiler-inspection, and quite a number of visits were made to see the boilers under steam and the machinery running under working-conditions.

All the different districts throughout the Dominion, so far as practicable, have been visited during the year.

#### GOVERNMENT BOILERS AND MACHINERY.

The boilers and machinery attached to the various Government institutions that have been inspected total 114, and include 72 boilers, 10 lifts, 1 water-turbine, 1 hydraulic hoist, 3 gas-engines, 19 oil-engines, and 8 electric motors. A number of repairs were made to these installations throughout the year, and certificates issued.

#### DEFECTS OF BOILERS AND FITTINGS.

A great many defects in boilers and their fittings were discovered during the year. Amongst the principal repairs to boilers may be mentioned the renewal of several fireboxes in boilers of the locomotive and traction type, the renewal of several shell-plates in boilers of the multitubular externally fired type, new uptakes and repairs to furnaces of boilers of the vertical type, and the retubing of nearly a hundred boilers of various types.

With respect to boiler-fittings, some of the most important defects were thirty defective steam-pressure gauges, thirty water-gauge mountings, nineteen test-cocks, ten spring balances for safety-valves, six safety-valves, twenty-one blow-off cocks, sixteen blow-off pipes, and sixteen fusible plugs, which were condemned.

The defects discovered on the inspection of boilers and digesters total 1,399; 62 of these were very dangerous.

Return No. 2 sets out these defects in detail.

#### NEW BOILERS.

Four hundred and eleven new boilers have been added to our books this year. Their total horse-power amounts to 6,447. Two hundred and thirty-six of these, of 2,859½-horse power, were made in the Dominion, and 175, of 3,587½-horse power, were imported.