ANNUAL REPORTS ON MACHINERY.

The CHIEF INSPECTOR of MACHINERY to the SECRETARY, Marine Department.

SIR,— Office of Chief Inspector of Machinery, Wellington, 24th May, 1884.

I have the honour to submit my tenth annual report on the working of the Inspection of Machinery Acts for the year ended the 31st March, 1884.

The number of boilers inspected during the year has been 1,497, being an increase of 88 over the previous year. Of this number, 20 have been found dangerous, and 88 more or less defective. Each report of the Inspectors will more fully explain the nature and extent of such defects.

As in previous years, several accidents have taken place to men working about machinery, especially in saw-mills, with, I am sorry to say, four fatal results. Seven accidents happened in the Otago District, none of which were fatal; four in the Auckland District, one only proving fatal; one in the Hawke's Bay District, causing one death; one, not serious, in the Taranaki District; and one, fatal, in the Canterbury District. This accident happened in February, to a man named John Campbell, in R. Buchanan's City Foundry. He was employed in dressing castings at an emery-wheel, when, from some unexplained cause, the wheel burst, and part of it struck him so violently on the chest that death was instantaneous. None of these accidents could have been prevented by inspection, as in no case was it shown that they were caused by the machinery not being properly fenced around.

Special attention continues to be given to see that all machinery is properly fenced in where danger exists, and owners readily comply with the Inspectors' suggestions, so that as yet arbitration under the 21st section of the Act has not been found necessary.

As anticipated, the new system of collecting fees has given satisfaction, since it is a great saving of time to the Inspectors, and it also relieves them of the responsibility of being receivers of revenue.

The Inspectors continue to give valuable assistance to boiler-owners, as to the proper setting of boilers, &c. This is greatly appreciated in isolated districts, where such information is not easily obtained, and where owners have not much experience of the working of machinery.

I have much pleasure in stating that, although there are so many different kinds of boilers at work in the colony, only one explosion has taken place during the past year. This occurred in a wood yard in Tory Street, Wellington, and is fully explained in Mr. McGregor's report, attached.

The Inspection of Machinery Extension Act of last session gives additional powers to the Inspectors, especially with regard to *lifts* and *hoists*. In future each lift must be fitted with a catch, so constructed with wheels and springs sufficient to grip the guide-piece as to prevent the cage from falling should the chain or rope give way. The catch is so fitted that it is always in action, and can be constructed so as not to get out of order.

Attached is the annual report of each Inspector, which will give full and further information as to the details of the working of the Act, with tables showing the number of boilers and machinery inspected in each district, and the nature and extent of the various kinds of machinery, with the purpose for which they are used; also particulars of the special kind of defects found in boilers.

The number of boilers in the colony is increasing so considerably that the Inspectors experience great difficulty in getting through their allotted work by the end of the year.

Steam-gauges both for steamers and land boilers continue to be tested with satisfactory results.

I have, &c.,
J. NANCARROW,
Chief Inspector of Machinery.

The Secretary, Marine Department, Wellington.

The INSPECTOR of MACHINERY, Wellington, to the CHIEF INSPECTOR of MACHINERY.

SIR,— Office of Inspector of Machinery, Wellington, 15th May, 1884.

In presenting the annual report on boilers and machinery inspected in my districts during the year ended the 31st March, 1884, I regret having to record one boiler explosion, which happily was unattended with accident to life or limb; also two accidents with machinery, one of which was fatal.

The parts of the exploded boiler show it to have been in very good order at the time of the accident, the edges of the ruptured plates being almost the original thickness ($\frac{3}{8}$in.), which, coupled with the fact that the *safety-valve* was found in its seat after the explosion, leaves no doubt in my mind that *it* had stuck fast, and allowed the pressure to increase until the strength of the boiler was exceeded.

The accidents with machinery were not preventible by fencing. All the defects found in boilers have been rectified, 8 new ones started, and 3 old ones discarded, leaving a total of 420, 395 of which have been inspected, and 35 were still to inspect at the end of the year, showing an increase of 9 during the twelve months.

Appended are returns showing the number and horse-power of boilers inspected, fees payable for inspection of boilers and machinery, machinery inspected, defects in boilers, repairs to boilers, dangerous machinery fenced, accidents to boilers, and accidents to life and limb, in each of my districts.

I have, &c.,
H. A. MCGREGOR.

The Chief Inspector of Machinery, Wellington.
