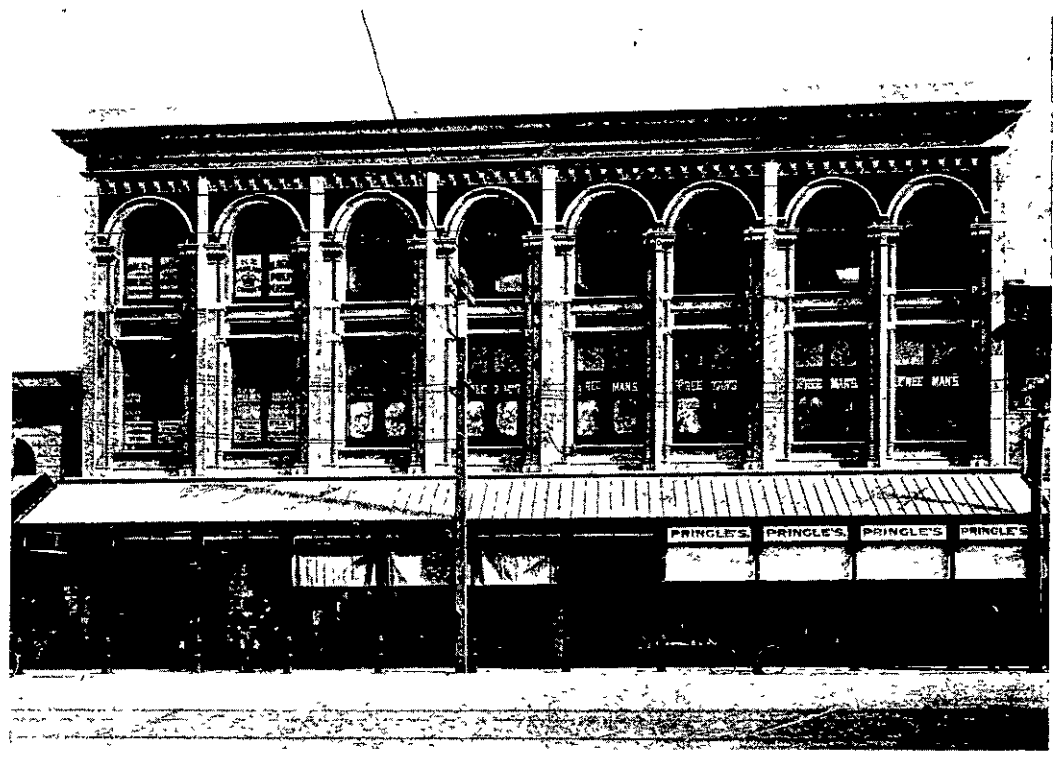
contract for the new baths at the Government sanatorium, Rotorua, has been let for £26,000. It is to be built in wood and concrete. The new building will be about 320 ft. long, with a tower 100 ft high, and it is to be of a very elaborate design. Contractor, W. E. Hutchinson The new city abattoirs at Otahuhu are in course of completion. The building is to be of brick and stone, and is to cost £26,000. The Terminus hotel, Helensville, is to be built of brick at a cost of £2 800. The architects for these contracts are Goldsbro' & Wade, who won a competition with their design for a large brick building to serve as Bishopscourt, Parnell.

A New Iron Process.

We understand that a company is in course of formation with a view to the working of a new iron process in England. The process is the invention of a German engineer named Bosshardt, and its object is the conversion of scrap wrought iron into malleable cast iron or steel at one operation. It involves the employment of a special patented electric furnace, and the introduction of various compositions and chemical products in to the metallic molten substance during the smelting process. Castings made by this process are said to possess all the qualities of the highest class malleable iron, and having great tensile strength and ductility to form a substitute for various articles and parts of machinery which hitherto have had to be forged at a great cost. By the same process and by one melting alone, it is claimed that the finest tool steel is produced. Castings so made do not require to be annealed, and although they can be made in three to three-and-a-half hours, they are ready for delivery immediately they have cooled down. The above claims for the Bosshardt process are substantiated by the results of tests conducted at Owens College, Manchester, and at the works of Messrs. Kirkcaldy and Son, London, S.E. A considerable number of furnaces are at work on the process in Germany, Holland, and France, while in Hungary the purchasers include the Austrian Government Railway Department in Budapest. Generally speaking, tensile tests have given results over twenty tons to the inch, ranging between twenty-one and thirty-five tons, depending upon the amount of carbon added to the crucible when the metal is in a molten state. One of the great advantages arising from the use of this process is the immediate delivery, instead of waiting seven to twenty-one days, the time required for converting cast-iron articles to malleable iron. Costs, no doubt, vary considerably, but at a Dutch foundry, visited by an expert employed by the gentlemen who are financing the English company, in one case the cost, moulded and cast, was 2½d. per pound, and the selling price 5d., showing 2¾d. per pound profit, as compared with about 1d. per pound on ordinary methods As the process also renders possible the casting in steel or wrought iron of articles which would have to be otherwise forged it has several strong claims to recognition, and we understand that the company courts the fullest investigation.

Oil, Gas, and Incandescent Lighting.

The form of gas production by oil or water is still popular. The plant required for the bracket and hanging lamp consists of three distinct parts—the lamp, the tank, and the tubing The tank, which is made in four sizes, is fitted with a glass gauge to show the quantity of oil in the tank, a pressure gauge; a check valve; and an oil and air pump are supplied. The lamp is fitted with vaporising tube, single burner glass globe, and needling arrangement. The tubing is made of drawn bronze connected to the lamp and tank by means of brass couplings. The tank, having been placed in any convenient position, is filled one-third full of special incandescent petroleum by means of the pump supplied. Air is then forced into it by the same means until the gauge shows a pressure of 60 lb. to the square inch. This pressure is controlled by a valve placed immediately below the pressure gauge, which, when opened allows the oil to flow into the tubing attached to it, by which it is conveyed into the vaporising tube in the lamp. The vertical vaporising tube having been previously heated by means of an ordinary gas Bunsen, electric arrangement, or ordinary blow lamp (any of which can be supplied with the lamp), the oil, in passing through it, is vaporised, and the vapour is ejected through a small aperture at the end of tube with sufficient force to draw in the amount of air required to support combustion. It then passes through the burner to the mantle, where the gas is ignited by the flame heating the vapour tube, The burner is so constructed that part of the oil gas is deflected downwards, and, burning around the vapour tube end, keeps the latter hot, so that the original means of heating can be shut off as soon as the flame appears in the mantle. An incandescent mantle placed over a Bunsen burner supplied with ordinary coal or water gas will produce a light from 60 c.p. to 75 c.p., varying according to the quality and pressure of gas, while the same mantle, placed on the U.K. lamp, yields, by actual test, a light of from 400 c p. to 500 c.p. This lamp gives a light equal to any electric arc, is much softer and more diffusive, and does not produce that flickering so objectionable in the latter. Under the light produced by the U.K. lamp, colours are as easily distinguished as by daylight; in fact, it more closely resembles sunlight than does any other artificial illuminant—so closely, in fact, that photographs have been taken by its rays with complete success.



NEW SHOPS, 145, 147 AND 149 LAMBTON QUAY WELLINGTON. [*John S Swan Architect.*

RESIDENCE OF MR. ROBERT HANNAH, WELLINGTON. [*Thos. Turnbull & Son, Architects.*

Time-Recording Camera.

A time-recording camera which will prove of great utility in timing automobile races, where exactitude is such a great requisite, has been devised by two English inventors. The feature of the apparatus is that a photograph of the car is obtained when passing a given spot at a given time, recording the actual time to the fraction of a second. The shutter speeds give a range of exposures from 1-25 of a second to 1-1000 of a second, while at the same time and with the same movement a photograph is taken of a watch, thus giving the exact time. A special case is provided for the watch, and in an opening above the latter a card is inserted giving the date, which can be signed by the officer responible for the time test. Underneath the dial is a numbering apparatus. The case is so made that after the official has placed the watch in the case it can be sealed up, and it is impossible to tamper with the watch without breaking and destroying the seal. The record thus procured can be referred to at any future time.