structed, comfortable and convenient, and presents a very neat and attractive appearance.

The new electric light plant consists of a Robb-Armstrong, tandem compound, condensing, side crank engine, cylinders 12 inches and 20 inches in diameter by 16-inch stroke, running at 210 r.p.m., which is connected to a Northy jet condenser. It is giving splendid satisfaction, making an actual saving of 1300 lbs. of coal per 12 hours run over the high speed simple engine formerly used, and this when the engine is running under most disadvantageous conditions of light load, while the former engine was run under fairly good conditions, being for the greater part of the time well loaded. The saving will be more noticeable as the load is increased. This engine was manufactured and supplied by the Robb Engineering Company, of Amherst, N.S. It is belted to a Canadian General Electric standard 120 k.w. composite wound single phase alternator having a frequency of 125 cycles, 1000 volts, at a speed of 1070 r.p.m, and gives very close regulation.

The switchboard is of blue Vermont marble, finely pollisned and fitted with quick break switches, detachable fuse blocks, and Weston instruments in black oxide finish, the whole presenting a very handsome appearance. The lightning arresters, rheostats, transformers, etc., are mounted on the back of the board. The old board is temporarily set on one side. At the present time there are about 3,000 16 c.p lamps wired on the circuits, not including the street lights, but as current is supplied to the consumers by meter, the average load does not reach the capacity of the plant.

The streets are lighted with series incandescent lamps, mounted on neat goose-neck brackets (supplied by Munderloh & Co., Montreal), placed at a height of 16 feet from the ground, and visitors say Kamloops streets are very well lighted. The lamps are placed 250 feet apart and are wired on two circuits of 26 in series, 6 amperes across the primaries. There is also another circuit of 14 32 c.p. lamps in series, and in the outlying districts several 16 c.p. lamps are temporarily connected to the commercial secondaries. The old plant is installed on the other side of the engine room and forms a duplicate or reserve.

This department is under the charge of City Electrician Fred J. Marshall, who has been in the employ of the city in that capacity for nearly eight years. T. A. Shackleton is second engineer.

The waterworks, which are under the control of C. L. Wain, who has been with the city for seven years, has also a reserve plant. The new high duty pumping engine was manufactured and supplied by the Smart Turner Machine Company, of Hamilton, Ont., and is a vertical cross-compound condensing Corliss pumping engine, the first of this type to be manufactured in Canada, and has a capacity of 1000 imperial gallons per minute against a head of 140 lbs. pressure per square inch. The pumps are placed immediately below the engine in the well, the concrete walls of which serve as foundations. The pumps are placed as near the water as practicable on account of the great difference between high and low water levels on the South Thompson River, from which the water is taken, about 600 feet distant from the power house.

The water flows into the well through a syphon, 12 inches in diameter, there being a rise in level between the river and the well of two feet; after entering the well it has a drop of 18 feet to the bottom of the well, giving at extreme low water a working head of nearly six feet; this was done to avoid expensive ditching across the flat. This syphon was designed by Mr. Willis Chipman and is giving good satisfaction.

The pumping engine is run surface condensing, the discharge water from the pump being delivered through the condenser to the main, thus providing ample cooling medium without cost. This, of course, adds greatly to the efficiency. The condenser, air pump, hot well and boiler feed pump are placed in the basement in close proximity to the engine. The contract for this engine is not as yet completed, as the manufacturers desire to make another test to reach the guaranteed duty of one hundred and fifteen million foot pounds, which was very nearly attained on the previous trial.

The water is delivered by the pump into the mains and thence to the reservoir, the mains being connected at the intersecting streets by special crosses, tees, and gate valves, thus giving complete control of the supply to any part of the town. The reservoir is on the hill immediately south of the town at an elevation of 280 feet, and gives a static pressure on the mains of 125 lbs. per square inch. It is excavated in the ground, the soil being a conglomeration of "hard pan" and gravel. The excavating was extremely difficult on account of the nature of the soil, digging being impossible, and the material could only be removed by blasting.

The sides of the reservoir are built of Portland cement concrete sloping to the top, 48 inches thick at the bottom and 24 inches at top. The floor or bottom of reservoir is dished and about 18 inches thick. This all received a coating of one inch of cement plaster, and was then repeatedly washed with cement wash to render it impervious. The capacity of the reservoir is 150,000 imperial gallons. It is covered with a strong shingled cottage roof and has a very attractive appearance.

The boilers were also manufactured by the Robb Engineering Company and are the "Mumford standard boiler," a type which possesses a great many important points in their favour, and which so far have fully carried out the claims made for them by the manufacturers. They each have a guaranteed evaporation of 5,250 lbs. of water per hour from and at an initial temperature of 212 degrees Fahrenheit, and have a working pressure of 125 lbs. per square inch. They are self contained, having no brick setting, being cased in a sheet steel case covered with two inches of asbestos plaster to prevent radiation.

The smoke stack was supplied with the boilers and is constructed of steel plates. It is 88 feet high and 45 inches in diameter, the first 40 ft. being of ¼-inch plate and the remainder of 3-16 plate. It is erected outside the building on a solid granite and cement foundation 12 feet high, making the total height from ground level to top of the stack 100 feet.

The cost of the new building and plant, reservoir, mains, etc., was $50,000. The increased economy of operating the new plant compared with the old has resulted in a reduction of 5 per cent. on both water and light rates to the consumer.—*Canadian Electrical News.*

PATENTS TO BRITISH COLUMBIA INVENTORS.

Mr. Rowland Brittain, patent attorney, of Vancouver, sends us the following monthly report:

V. D. Sibley, of Port Hammond, U. S., and Canadian patents on a wire snap hook.

Hugh Condren, Vancouver, a British patent on his body indicating buoy.

G. Cassidy, Vancouver, a U. S. patent on a sash-lifting device.

Messrs. Smith Bros., the mattress manufacturers of Vancouver, have registered as a trade mark the word "Jumbo" to protect the mattress known by this name.

C. B. Mansell, Vancouver, a U. S. patent on a hitching device.

Two Canadian patents were issued this week to citizens of Vancouver, one to B. P. Vance *et al*, and the other to W. J. Cummings *et al*, both for the same purpose, viz., the salving of wrecks sunk in water too deep for the operation of divers, yet each seeking to attain the desired result by entirely different means.

Vance and his associates provide a drag, the particular construction of which permits it to encircle the vessel from stern to stem, and so designed that any hauling effort exercised on it tightens its hold on the hull and enables a lifting effort to be exercised on it without fear of the tackle being drawn off. The inventors are men practically acquainted with wrecking work and they expect to be able at an early date to prove the efficiency of their tackle in actual work.

The invention of Cummings and his colleagues seeks to obtain a more positive lifting effort by passing slings under