

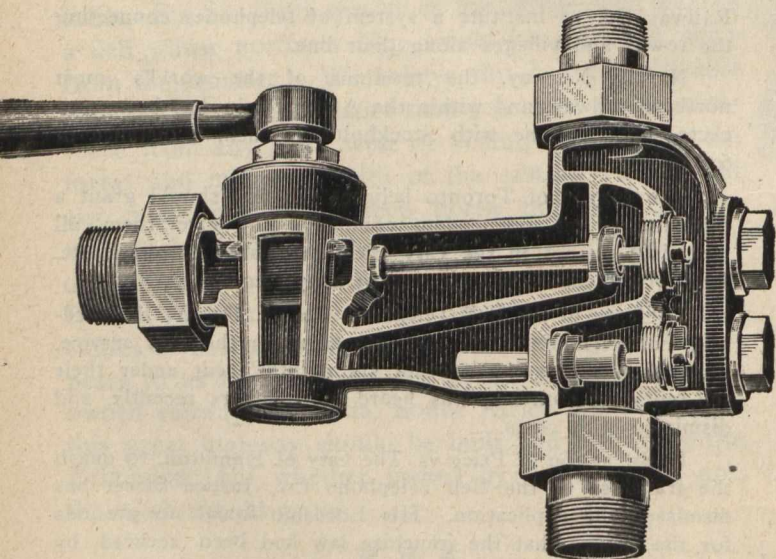
The report of the Bell Telephone Co., of Canada, for 1903 shows: Subscribers added during the year, 8,691. Total instruments earning rental, 57,172. 421 exchanges and 672 agencies. 4,121 miles of wire were added to the Long Distance system in 1903; 1,738 in the Ontario department, 1,260 in the Eastern department, and 1,123 in the North-Western department. The long distance lines now comprise 30,969 miles of wire on 7,685 miles of poles. Total receipts, \$2,522,275. Expenditure, \$1,940,123. Net revenue, \$582,152. After paying a dividend of 8 per cent., a balance, including surplus for 1902 of \$138,078, remained, out of which the following appropriations were made: Insurance reserve, \$24,563; accident reserve, \$22,979; contingent fund (i.e., depreciation), \$50,000. The capital issued is \$6,000,000. Bonded indebtedness, \$2,000,000.

### THE "EASY" DOUBLE TUBE INJECTOR.

This injector is a double tube, positive working machine. Two sets of jets are shown, one being the lifter, and the other the forcer. A positive working cock communicates with all nozzles, and through a simple turning with a handle, opens or closes all connections with the atmosphere and boiler.

Steam is admitted simultaneously to the lifting and forcing steam jets, direct from the boiler. The velocity of the steam passing through the tubes of the lifter and out to the atmosphere, creates a partial vacuum in the water chamber of the lifter, in consequence of which the pressure of the outside atmosphere will force the water into the lifting water chamber. Any excess of steam which cannot find its outlet through the small sectional area of the delivery tube, finds an outlet to the atmosphere, whereby instant relief throughout the length of the tube will be obtained. The velocity of the steam entering the forcing steam jet results in the formation of a partial vacuum; also in the water chamber of the forcer. Therefore, the forcer serves also as a lifter during starting operation.

On account of the lifting power of the forcer, the water discharged by the lifter is simultaneously and automatically taken up by the forcer, even by an entirely open overflow, without necessitating any special construction to secure the entrance of the water into the forcer. The high velocity of steam by higher pressure does not prevent prompt lifting



and starting, because there is instant relief. The result is an instantaneous formation of a current of water and steam to enter into the boiler by the simultaneous and direct admission of steam to both lifter and forcer since no back pressure can exist to prevent the establishment of a working jet. The full or sudden opening of the steam valve cannot have a detrimental effect to the starting of the injector, for the same reason. The sub-dividing of the reliefs for the lifter and forcer makes a sudden closing of the outlet to the atmosphere possible, after the jet is established, without danger of breaking the latter, and, finally, the instant relief and free outlet of the steam from all the tubes makes it possible

to start the injector immediately at a full head of steam, on a lift, or under a head of water against any pressure, equal or less than the actuating steam. The whole operation consists in opening the steam valve and turning the handle of the overflow cock in line with the boiler outlet.

This injector will work from 10 to 375 pounds pressure, and higher, without any adjustment of steam or water. The construction of the machine is such that small particles of dirt, etc., are not liable to interfere with its working, and as all tubes are in a straight line, they can readily be cleaned by removing the front nozzles, without disconnecting the injector from its piping.

The inventor of this injector is Francis Sticker, 69 Beekman street, New York. It is now manufactured in Canada by the Canada Foundry Company, Toronto.

### MINING MATTERS.

Japan's output of coal in 1901 was 7,428,000 tons, or nearly three times that of 1890.

The White Bear mine, Rossland, B.C., is installing a 20-drill compressor and 350-h.p. motor.

The nitrate mines of Chili last year yielded 1,250,000 tons, on which the Government tax amounted to \$21,000,000.

The Dominion Coal Co. contemplate opening new mines in Cape Breton, possibly at Big Glace Bay and Victoria.

The Canadian Commission on electric steel smelting will also investigate the operation of peat plants when in Europe.

A Hendrix electric-cyanide plant for treating ores is being installed at the Mountain Lion mine, near Rossland, B.C.

The large mill of the Canada Corundum Co., at Craigmont, Ont., is completed. Its initial capacity is 300 tons per day.

The Dominion Iron and Steel Co., Sydney, C.B., are erecting a washing plant, with a capacity of 2,000 tons a day, costing \$150,000.

What is claimed to be the richest radium bearing earth in the world has been discovered in the Llano gold and coal fields, 115 miles north of Austin, Texas.

The Montreal and Boston Copper Co.'s smelter, at Boundary Falls, B.C., has installed a third furnace and made other preparations for enlarging their capacity.

The Atlin Mining Company, of Ontario, Limited, the British Gold Mining Company, of Ontario, Limited, and the North American Ore Company are to be wound up.

It is announced that Dr. Ludwig Mond's nickel mine, at Victoria, Northern Ontario, has been leased to the International Nickel Company for a year. The mine will be closed, and the smelter used to refine the ore of the iron mine at Massey.

The Rossland Power Co. are erecting a mill for the treatment of ores from the War Eagle and Centre Star mines, Rossland, B.C. The work includes the mill building, 360 by 105 feet, a stone building, 100 by 26 feet, and 700 feet of trestling to carry the railway track over the ore bins, 32 feet high.

J. Obalski, inspector of mines for Quebec, has sent to Prof. Rutherford, of McGill University, a mineral containing radium. Professor Rutherford says the sample contains radium in workable quantity, and compares with the best pitch-blende used for that purpose in Europe. The mineral comes from an old mica mine back of Murray Bay, in Charlevoix County.

The Bridgeport, N.S., colliery of the Dominion Coal Co., which produces coking coal and has an output of 1,000 tons per day, is temporarily closed, owing partly to depression in the United States' trade and the reduction of demand in the Canadian market in the winter season. The 600 hands employed will be provided with work elsewhere, as far as possible. A water purifying plant is to be installed at this mine, the first of its kind in the province.