

In conclusion, I will say that I think this system of sinking shafts well fills the gap in deep shaft sinking, between the solid ground systems and the true drop shaft system. For instance, here at Ladd, the first failed in two hard-pushed attempts, the second also failed after a shorter trial, but the boulders and hard ground met deeper, fully showed how impracticable it would have been. Of other known systems, the pneumatic is out of the question for over 70 or 85 feet of water pressure, and while the Poetsch freezing system alone seems applicable to nearly all circumstances, its present great cost makes it prohibitive except in extraordinary cases. On this account, leaving the freezing system out of consideration, where there is a ground filled with water and over 80 feet in thickness to be pierced, too soft for solid ground systems and yet containing boulders, cemented material, or some hard ground which would prevent any kind of a drop shaft, the method described in this paper is singularly well adapted.

### Dominion Railway Subsidies

To Canadian Coal Companies, 1893.

**Boston and Nova Scotia Coal Company.**—By the Dominion Subsidy Act, 57-58 Vic., ch. 4, 1894, a subsidy to this company limited to \$113,600 (in lieu of one previously granted in 1892) was authorized for the construction of 35½ miles of railway from a point on the Cape Breton Railway at or near Orangedale to Broad Cove, on the western side of the Island, and under date the 16th of November, 1894, a contract was entered into with the company for the work subsidized, the date for completion being fixed as the 1st August, 1896.

No payments have been made up to the 31st December, 1894.

**Dominion Coal Company.**—By the Subsidy Act, 55-56 Vic., ch. 5 (1892), a subsidy, limited to \$89,600, was authorized for 28 miles of a railway to complete connection between Sydney and Louisburg, Cape Breton.

On the 26th of January, 1894, a contract was entered into with the above company for the work from Bridgeport to Louisburg Harbor. The first 10 miles section from Bridgeport has been completed, but no payment on subsidy account has been made up to the 31st of December, 1894.

**Nova Scotia Steel Company, Ltd.** By the Subsidy Act, 55-56 Vic., ch. 5, the grant of assistance to the above company for 12½ miles of railway from Eureka Junction on the Intercolonial Railway to a point at or near Sunnybrae, including a branch line to the charcoal iron furnace at Bridgeville, was authorized, the limit of aid being \$40,000.

Under date of the 23rd of November, 1892, the company were admitted to contract for this work.

During the fiscal year there was paid \$5,454.16, making the total payments up to the 31st of December, 1894, \$38,400. For the previous year, \$38,400 was paid.

**Medicine Hat Railway and Coal Company.**—By the Act 50-51 Vic., ch. 23 (1887), authority was given for the grant to the above company of Dominion lands to the extent of 6,400 acres per mile, for a railway from a point at or near Medicine Hat, on the line of the Canadian Pacific Railway, to the coal fields in or near Townships Nos. 12 and 13, Range 6, west of the 4th Principal Meridian, a distance of about 8 miles.

By an Order in Council of the 6th July, 1887, the grant was made to the company accordingly, it being provided that the road should be completed and in operation by the 31st of December, 1888.

By an Order in Council of the 24th of January, 1889, approval was given to a draft of a formal contract with the company, and an extension of time to the 2nd of June, 1890, was granted for completion of the road. A contract was signed on the 14th of February, 1890, for this work.

By the special Act 53-55 Vic., ch. 79 (1891), the charter of the company was revived and its powers were extended, and by the special Act 57-58 Vic., ch. 80, the time limit for completion was further extended to the 1st of January, 1898.

**Alberta Railway and Coal Co., Ltd.** (property purchased from the North-western Coal and Navigation Co., Ltd.)—Dominion lands to an extent not exceeding 3,800 acres for each mile of the company's railway, from Medicine Hat to the coal banks on the Belly River, about 110 miles; also lands to an extent not exceeding 3,840 acres for each mile of the company's railway from Lethbridge to the Crow's Nest Pass, a distance of about 100 miles. A grant not exceeding 2,600 acres for each mile of the company's railway from Dunmore station, on the C.P.R., to Lethbridge, a distance of 109½ miles, on condition of a standard gauge; and also 6,400 acres for each mile from Lethbridge to the International Boundary, a distance of 50 miles.

**Red Deer Valley Railway and Coal Co.**—\$6,400 for each mile from Cheadle Station on the C.P.R., to the terminus of the proposed railway at a point in or near Township 29, Range 23, west of the 4th meridian.

**Dominion Lime Co.**—For seven miles of their railway from a point on the Quebec Central Railway, in the Township of Duxwell, to the Duxwell lime quarries, a subsidy not exceeding \$3,200 per mile, or \$22,400.

**Cumberland Railway and Coal Co.**—For fourteen miles of their railway from a point on the Springhill and Parrsboro' railway, near Springhill, to a point on the railway between Oxford and New Glasgow, near Oxford Village, a subsidy not exceeding \$3,200 per mile, not exceeding in the whole \$44,800.

**Londonderry Iron Co. Ltd.**—(Grant to Steel Co. of Canada)—A grant as subsidy (road to be first laid with new steel 56 lb. rails and after an Order-in-Council has been passed authorizing their transfer to the company) of 597 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for \$11,964.66.

**Canada Coal and Railway Co.**—(Grant to Joggins Railway)—For one and a quarter miles of their railway ending from the southern end of the portion subsidized by the Act 49 Vic., chap. 10, to the wharfs, not exceeding \$3,200 per mile, not exceeding \$4,000.

### Railway Earnings 1893-4.

(Fiscal Year ended 30th June.)

Company.	Gross Earnings.	Net Earnings.	Mileage.	Earn. per train Mile.
Alberta Railway and Coal Co. . .	\$127,348 53	\$49,688 35	64.62	\$107 38
Cumberland Railway and Coal Co.	123,413 31	64,794 95	32.00	19 62
Canada Coals and Rail Co. . . . .	20,350 90	6,400 77	12.00	203 50
New Glasgow Iron Coal & Ry. Co	28,638 80	14,663 78	12.50	177 33



**Ontario Iron and Steel Co. Ltd.**—This company is seeking incorporation under Ontario statutes, to manufacture pig iron, refined iron, steel and manganese, and nickel steel or other alloy of steel by any process; and the casting and manufacturing of such products into ingots, billets, structural forms, rails, plates and bars, rolling stock castings and forgings, corrugated and galvanized plate; to manufacture wire and wire cables; to construct iron and steel ships and vessels, bridges and buildings; and to manufacture coke or any form of prepared fuel; to buy or sell all necessary materials and patent rights for any of the said manufactures, etc. Authorized capital \$600,000, in shares of \$100. Directors, Grant E. Hamilton, New York; G. W. Caulfield, Youngstown, Ohio; and H. G. Hamilton, Youngstown, Ohio. The chief place of business is to be at Kingston, Ont. The daily capacity of the blast furnace is to be 285,000 pounds of pig iron, that of the steel plant 80,000 pounds of steel blooms, that of the blooming or billet mill 80,000 pounds of steel billet, and that of the rolling mill 80,000 pounds of steel or iron bars. This amount of product is expected to require the labour of from 300 to 500 hands at the works. Kingston is to provide funds to the extent of \$250,000, secured by a first mortgage on plant and stock, and none of the money is to be paid until all the material is on the ground for the erection of the furnace, and then only one-fifth. Until its loan is repaid the municipality is to take all government bounties earned on pig iron, steel billets, and bars, which are expected to amount to \$100,000 a year. A joint committee of the Kingston City Council and Board of Trade made a report in favor of the proposal, and recommended that the company be required to furnish information satisfactory to engineering and financial experts appointed by the city, a report which the City Council adopted.

**Finch Mining Co., Ltd.**, has been registered under the British Columbia (foreign) Companies Act, with an authorized capital of \$6,000, in shares of \$50 each. Head office, Pittsburg, Pa.

**Belmont Bessemer Ore Co.**—The annual general meeting of shareholders was held at Toronto on 23rd instant.

**Cariboo Hydraulic Mining Co. Ltd.**—Advices from Cariboo, B.C., up to May 10th, state that the Cariboo Hydraulic Mining Co. has now everything in readiness to start hydraulic operations, working continuously with three shifts of men. Cold weather since the 4th instant had reduced the supply of water and caused some interruption in operations, but since the mail left the weather has been warmer and the supply of water should be ample.

**B. C. Terra Cotta Company, Ltd.**—Notice is given that by an order made by the Supreme Court of British Columbia, dated the 9th day of April, 1895, it was ordered that this company should be wound up, under the provisions of the "Winding Up Act," and by a further order of the said court, dated the 10th day of April, 1895, it was ordered that A. F. Barham be provisional liquidator of the affairs of the said company. A meeting of creditors will be held with a view to carrying on the works of the company.

**Tilbury Peninsular Oil and Gas Company** is seeking incorporation under Ontario Statutes to search for oil, natural gas, etc. The operations of the company are to be carried on in the counties of Kent and Essex, in Ontario, and the chief place of business is to be at the village of Tilbury Centre, in the county of Kent. Authorized capital, \$20,000, in shares of \$50.00. The directors are: W. C. Crawford, C. C. Kippen, F. M. Scarff, P. E. Gurd, and Nathaniel Mills, all of the village of Tilbury Centre, Ont.

**Le Roi Mining and Smelting Company.**—This company has ordered a new hoisting plant of a capacity of 100 tons, and the boilers will be 100 h.p. The present hoist was put in before the Le Roi had developed its large ore bodies and has become inadequate to the demands of the mine. The company has now more than 1,000 tons of ore on the dump, says the Spokane Review. Superintendent George Kent says the present ore accumulations, together with the ore shipped during the winter and spring, were taken out in development work on the 350-ft. level on the east and west drifts, one of which is in about 110 ft. and the other 120 ft. The company is also equipping its property with electric lights.

**The Lillooet, Fraser River and Cariboo Gold Fields, Ltd.**—The following report has been issued from the London office of this company: "The following cable has been received from Mr. Frank S. Barnard, M.P., chairman of the Lillooet, Fraser River and Cariboo Gold Fields, Ltd.:—Hughes reports greatly impressed with what