

MARITIME
MINING RECORD
*A Dr. R. Bell
 Geol. survey dept.*
COAL AND METAL TRADES JOURNAL

*Cumberland. * Pictou. * Cape Breton. * Inverness*
 New Series Vol. 9 No. 14 January 23rd, 1907 STELLARTON, N. S.

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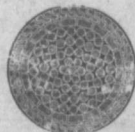
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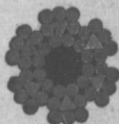
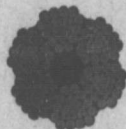
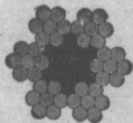
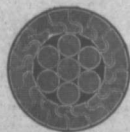
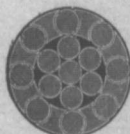
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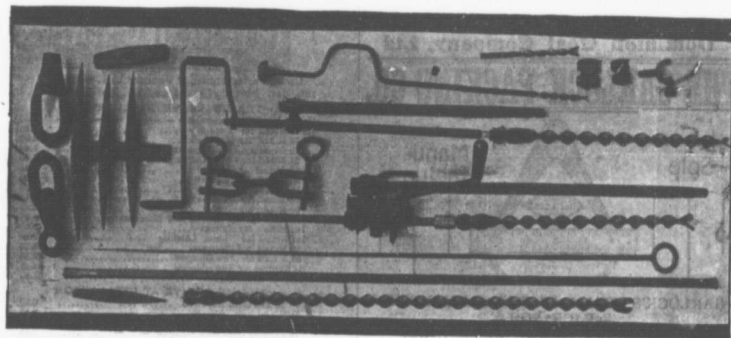
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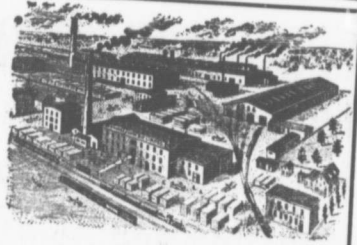
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62 Mixed for Pictou	7.45
18 Mixed for Mulgrave	8.30
19 Express for Sydney	8.30
28 Mixed for Pictou	11.10
26 Mixed for Truro	11.15
30 Express for Halifax and Montreal	12.15
140 Mixed for Pictou	12.45
140 Mixed for Pictou Landing	12.50
101 Mixed for Hopewell	12.50
22 Mixed for New Glasgow	12.50
17 Express for New Glasgow	12.50
66 Express for Pictou	12.50

—TRAINS ARRIVE AT STELLARTON

79 Mixed from Hopewell	8.30
78 Mixed from Trenton	8.55
18 Express from Pictou	7.30
18 Express from New Glasgow	7.35
21 Mixed from Hopewell	7.35
62 Mixed from Truro	7.35
28 Mixed from New Glasgow	8.00
19 Express from Pictou	10.55
19 Express from Sydney	10.55
19 Express from Halifax and St. John	12.35
100 Mixed from Pictou	11.00
22 Mixed from Sydney	12.35
22 Mixed from Pictou Landing	12.45
17 Mixed from Hopewell	12.45
62 Express from Pictou	12.45
62 Express from New Glasgow	12.45
17 Express from St. John and Halifax	12.45

All trains are run by Atlantic Standard time. Twenty five O'clock is mid-night, Moncton, N. B. JAN. 15th 1907
NOTE: A special train (with Buffet Sleeping Car attached) will leave Truro every Saturday for Sydney and Sydney nine after arrival of No. 34 (Maritime Express) from Montreal.

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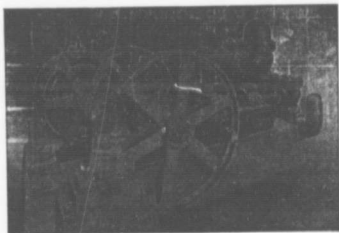
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The Gold District covers over three thousand square miles, and the deposits of coal iron ore, etc., are practically unlimited.

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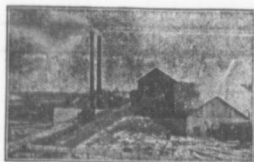
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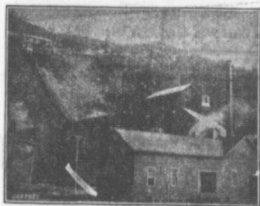
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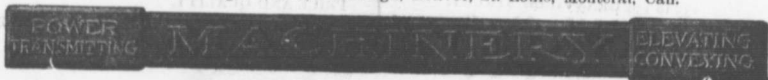
Conveying Coal from Upper Tipple to Cars.

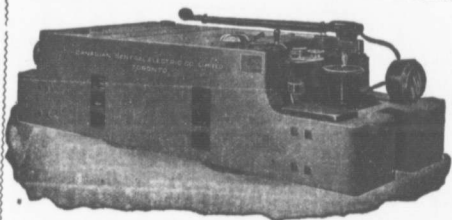
Elevating, Conveying, Catalogue No. 80, Free, with others on Mining, Screening, Drilling and Coal Handling Machinery.

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Electric Locomotives for Mines, Electrically Driven Hoists.

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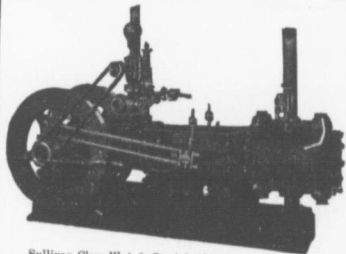
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MARITIME MINING RECORD

Vol. 9, No. 14. Stellarton, N. S., January 23 1907. New Series

PROVINCIAL EXAMINATIONS, 1906.

As stated some months ago, the Record made application to the Board of Examiners for the answers returned to the questions, at the examination, by a certain unsuccessful candidate. The papers, very curiously, could not be found. We have waited in hope that they might turn up, but as they are likely lost for good, we must be content to give the answers of one of the successful Candidates. There were many who failed; perhaps these answers will be of service in showing where they came short. Can any reader suggest improvements in the answers.

MANAGERS.—SURVEYING.

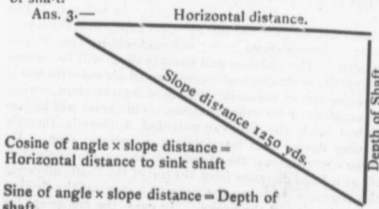
Ques. 1.—The following survey, which was surveyed by an instrument whose needle had 24 degrees of West variation, North 30 degrees West 6 chains; North 70 degrees East 10 chains, North 30 degrees East 5 chains; North 25 degrees West 8 chains, under what bearings must the survey be plotted on a plan whose delineated meridian has 15 Degrees of West variation?

Ans. 1.—Reduce bearing with a meridian of 24 deg. of West variation. bearing with a meridian of 15 deg. of West variation.
 N. 30 deg. W. 6 chains N. 39 deg. W. 6 chains.
 N. 70 deg. E. 10 chains. N. 61 deg. E. 10 chains.
 N. 30 deg. E. 5 chains. N. 21 deg. E. 5 chains.
 N. 25 deg. W. 8 chains. N. 34 deg. W. 8 chains.

Ques. 2.—How is the direction of a new road set out from an existing road, if a magnetic bearing cannot be obtained,

Ans. 2.—The angle which the new road will make with the existing road is first ascertained by the protractor from the plan. The dial is then fixed at the point where the new road is to commence underground and the angle set out by the Vernier on the dial, a sight having been taken along the existing road and the new road set out at the angle obtained from the plan.

Ques. 3.—A slope dip 17 degrees is 1250 yards in length. Explain how and where you would sink a shaft to strike the face of slope; and also tell how to find depth of shaft.



Ques. 4.—Why is the East marked to the left of the North, and West to the right of North in the miner's compass?

Ans. 4.—When taking a sight with the compass the North and South of the dial are always placed in the line of sight, the direction of the needle is the magnetic meridian and is either to the right or left, and as in sketch the line of sight is 20° to the right, that is to the East as the East is to the right hand of the North and South line, therefore the bearing of the line is 20° N. E. but if the letters E. W. were put in their proper position it would read N. W. which would be inaccurate.

Ques. 5.—The main entry from the bottom of the shaft runs due North 3600 feet. A cross entry is started due East at a distance of 200 feet from the face, and driven 2,465 feet. What length of roadway started 250 feet from the shaft will be required to connect with face of the cross entry, and what will be the bearing of this connecting roadway?

Ans. 5.—

3150	24650	(-7854)
	22050	
	26000	
	23200	
	8000	
	6300	
	17000	
	15750	
	12500	
	12600	

Ques. 6.—Plot and traverse the following courses of a survey to a scale of 100 feet to the inch:

Courses.	Distances.	Sines.	Cosines.
N. 10 Deg. E.	200 feet	.173648	.984808
N. 5 Deg. W.	100 "	.087156	.996195
N. 85 Deg. E.	250 "	.996195	.087156
S. 5 Deg. W.	100 "	.087156	.996195
S. 85 Deg. E.	200 "	.996195	.087156
S.	125 "		
S. 80 Deg. W.	110 "	.984808	.173648
N. 45 Deg. W.	75 "	.707107	.707107
S. 10 Deg. W.	110 "	.173648	.984808
S. 5 Deg. 30' W.	51 1/2 "	.095846	.995396
N. 80 Deg. W.	284 1/2 "	.984808	.173648

Ans. 6.

	Northing	Southing	Easting	Westing
N. 10 Deg. E. 200 feet.	196.96			
N. 5 Deg. W. 100 "	99.62			8.72
N. 85 Deg. E. 250 "	21.80		249.05	
S. 5 Deg. W. 100 "		99.62		8.72
S. 85 Deg. E. 200 "		17.44	199.24	
S.		125.00		
S. 80 Deg. W. 110 "		19.10		108.33
N. 45 Deg. W. 75 "	53.03			53.08
S. 10 Deg. W. 110 "		108.33		19.10
S. 5 Deg. 30' W. 51 1/2 "		51.32		4.94
N. 80 Deg. W. 284 1/2 "	49.40			280.17
	420.81	420.81	483.01	488.1

Ques. 7.—Describe the process of levelling and fill up the columns for rise and fall and reduced levels, and also work out the average inclination per yard and datum line 30 feet above horizontal line :

	B. S.	T. S.	Length
1	1.85	10.85	100
2	8.45	1.17	100
3	3.65	11.02	100
4	8.52	.67	100
5	3.34	9.94	100
6	.89	8.03	100
7	10.72	3.50	100
8	2.55	8.55	100
9	1.35	8.43	100

Ans. 7.—Levelling is the finding of a line parallel to the horizon in order to determine the height or depth of one place in relation to another, there are two methods of levelling, the trigonometrical and the geometrical. The latter is the most accurate and consists of constructing a horizontal line with a spirit level fitted to a telescope and making vertical measurements to the points required from the horizontal line.

Sight	Level datum				Hor.	
	B. S.	T. S.	Rise	Fall		
1	1.85	10.85		9	21	100
2	8.45	1.17	7.28		28 28	100
3	3.65	11.02		7.37	20 91	100
4	8.52	.67	7.85		28.76	100
5	3.34	9.94		6.6	22.16	100
6	0.89	8.03		7.14	15.02	100
7	10.72	3.50	7.22		22.24	100
8	2.55	8.55		6	16.24	100
9	1.35	8.43		7.8	9.16	100
			22.35	43.19	9.16	900
			22.35			

Total fall 20.84

20.84 feet x 12 ins. = 25008 inches.

$900 \div 3 = 300$ yds. 300 yards =

.8336 inches per yard.

MANAGERS.—GEOLOGY.

Ques. 1.—What is Geology?

Ans. 1.—The science of Geology in its widest sense comprises all that is known concerning the constitution and history of our globe. It is that department of science which treats of the structure of the earths crust in its relation to its mineral products.

Ques. 2.—In what way is Geology of use in the art of mining?

Ans. 2.—The science of Geology treats on the disposition, formation and occurrence of coal or any other mineral. The shape and character of the coal or mineral and their accompanying strata, and the nature and the history of the adjacent formations. It is of great use in the art of mining.

Ques. 3.—What means have we of arriving at a knowledge of the structure of the earth?

Ans. 3.—By a thorough knowledge of Geology we can arrive at the structure of the earth. The earths history is divided into geological eras, ages, periods and epochs, and nature has recorded these in separate rock systems, rock series, rock groups and rock formation.

Ques. 4.—How do you proceed in your investigation in search of coal, when it cannot be shown definitely whether there is coal or not under an estate.

Ans. 4.—Searching for coal in an unprospected region should first be done in a general way and secondly in a

more particular manner, I would first go over the ground carefully, noting all prominent features and get all the information possible regarding exposed rocks, and if I found evidence of coal bearing periods, either on the estate or the adjoining estate, I would then decide on the best location of points from which a general approximate survey of the tract may be triangulated.

Ques. 5.—What is meant by the terms roll, lype, stratified, unconformable, anticlinal and synclinal?

Ans. 5.—Roll means that the roof comes down and takes the place of the coal or the floor comes up and does the same thing or in some cases both phenomena occur together.

Lype means a slippery parting in the coal sometimes going right up into the strata.

Stratified means when strata has the appearance of having been deposited in layers one above the other by aqueous action.

Unconformable means when strata inclines upon one another at a different angle.

Anticlinal means when strata dip in opposite directions from a ridge or line of elevation.

Synclinal means when strata dips toward a common line of depression.

Ques. 6.—What are faults? How would you proceed to prove a fault? Describe any one you know.

Ans. 6.—Faults is the term used where the coal is cut off or thrown up or down. If I struck a fault and it layed from me on the top I would expect to find it up in the roof, if it layed to me in the head I suppose I would dig down to get it. If my seam was pitching it would favour me because I would drive against the pitch and get my seam either way or I could bore a hole and locate the seam by that means without going to the expense of driving through until the hole was bored. I have seen a good many faults in different mines. Taking one as an ex-ample. I seen us run up against a stone face cutting the coal out altogether except about one foot on high side, we turned up the hill to get the coal and got good coal for about 6 or 7 feet, when the coal was cut out again and raising right up into the roof so we levelled in the bottom and got good coal.

The Hancock Cons, Copper Co., Hancock, Mich. has recently ordered from the Sullivan Machinery Co'y, a hoisting engine to be used for sinking the principal shaft and for permanent service, after the shaft is completed to its final depth of 4000 feet. This hoist will be of the first motion, heavy duty, Corliss type, with engines 24" diameter by 48" stroke, and two loose drums, 8 feet in diameter by 9 feet long, driven by band friction clutches, and designed for hoisting in balance. The drums will be grooved for 1 1/2" steel rope, and the maximum hoisting speed under full load will be 3500 ft. per minute. The clutches and band brakes will be steam operated, with automatic compressed air substitution in case the steam pressure falls below a given point, owing to accident or for other reasons. This hoist will be furnished with the Sullivan patented automatic throttle clinking device and interlocking automatic stop. By these contrivances, the steam will be automatically shut off at a fixed distance from the top of the shaft, allowing the engineer to bring the cage to a stop at the desired point, by use of the brake. In case the engineer, for any reason, fails to set the brakes, they will be set automatically at the proper point, to prevent an overwind.

MARITIME MINING RECORD.

STATIONARY ENGINEERS.

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R. DRUMMOND, PUBLISHER.

STELLARSON N. S.

January 23 1907

A week or two ago a Cape Breton paper contained a despatch from Louisburg to the effect that the contract between the Dominion Coal Co. and the New England Gas and Coke Co. had been renewed for a period of two years. If at times the 'headlong activity' of the C. B. papers is responsible for over fertile imaginings, the Record is happy to be able to say that while the statement is not absolutely correct in detail, in this instance there has been no exaggeration of the main fact, namely, a renewal of the contract. Indeed, it is the other way. It may not be said that a formal renewal of the contract for two or any number of years has been entered into, but the Record is in a position to say that the Everett people have accepted the Coal Company's offer to supply coal for a period of three, or possibly four years at a rate named. The Record attaches great importance to this new arrangement as it removes any probability of slack coal being a drag on the market, and a cause of anxiety to the operators. Holders of Dominion stock must also deem it of importance, as it means an advanced price for about an eighth of the total product of the company.

The Montreal Star is probably not far astray in the suggestion that three directors of 'Steel' are chiefly responsible for the unbending attitude of the Steel company in the now famous Steel-Coal dispute. The Record has it, from one who had rare opportunities, within the past ten days, of getting the views of individuals interested in one or other of the companies, or both, that the disposition is towards an amicable arrangement. While a speedy peace is hoped for there have, in reality, been no 'approaches' within the past fourteen days. If the lawyers on the Steel side are as confident, of being wholly in the right, as are all the lawyers on the Coal side, it should not be wondered at if two or three of the Steel directors 'keep a stiff upper lip.' Reports and rumors aside the general belief—though perhaps unexpressed, must be that the dispute will never come to a 'head', that is, be carried through the courts. How else can the support that both stocks are receiving be accounted for? They are not, surely, being supported in the belief that a favorable verdict in a law court, to either side, will hasten dividends. The Record's opinion is that if people generally believed there would be a big long law suit the stock of both companies would take a big tumble.

The cold weather of last week may have had a good effect on coal sales, while the effect on outputs was the opposite. The boxes were stiff to move, and the men were slow to turn out.

The Commission appointed to enquire into legislation as affecting stationary engineers, began its second meeting in Halifax yesterday. There were delegates present from many parts of the province to give evidence. The following are some of the changes which the Commission, so far, will likely suggest. The sections are from the Regulation of Mines Act. Printed copies of proposed changes have been distributed:

"76 No person shall be eligible for examination for third class certificate unless:

- (a) He is at least eighteen years of age; and
- (b) He must be the holder of a fireman's license, and shall have served 12 months at mechanical work in a machine shop, or has served for 12 months as engineer, pumpman, fireman, oiler or locomotive engineer.

77. No person shall be eligible for examination for a second-class certificate of competency, unless:

- (a) He be at least 21 years of years of age;
- (b) And is the holder of a third-class certificate of competency, and has been employed as a third-class engineer for not less than two years.

78. No person shall be eligible for examination for a first-class certificate of competency, unless:

- (a) He is at least 24 years of age;
- (b) Is a holder of a second class certificate of competency or service, has served one year at repair work on mining machinery, and has for 12 months been in charge of an engine of not less than 250 horse power.

IV. EMPLOYMENT OF ENGINEERS.

79. Every engineer in charge of a steam plant of not less than twenty five and not more than five hundred horse power, shall be the holder of at least a third-class certificate of competency, or a certificate of service equivalent thereto."

In (b) section 76 the word 'and' after license, should to make sense read 'or', for certainly the statute should not give preference to a fireman without a certificate over one having a license. In (b), sec. 78, the word 'machines' should be machinery. The chairman of the Commission objects strongly to a 'twenty five' horse power plant calling for a man in charge. He maintains that at a small colliery a man in charge of the plant—as chief engineer—is wholly unnecessary. The manager who has a certificate is quite competent to discharge the duties. A manager's technical knowledge is put to a severe test, in the 'Mechanics' questions, required to be answered before a certificate is granted.

Coal is in fairly good demand at the present time. The Nova Scotia Steel & Coal Co. are sending a cargo of 5,000 tons to Portland, Maine. This is not for a railway, but for customers along the River. The supply at St. Lawrence out-ports is short this season. Indeed it is said that,—with the exception of one company which has a bigger stock than usual—stocks were seldom so light at this season in Montreal. The Intercolonial Coal Co. is sending coal all rail to Montreal. The N. S. S. & Coal Co. sent a thousand tons of coal to Italy last week, the first cargo that this Company ever sent to a continental port. The coal was not sent as a venture but was bought and paid for by the shipper. The steamer taking the coal also carried pitch as part cargo. Some of those closely connected with the coal trade are of opinion that shipments for 1907 will be phenomenal, while others do not look for a greater than the natural increase, 10 per cent.

- Rubs by Rambler.

Some people may be under the impression that the only reason the Halifax Herald has for printing its big headlines in red ink is to make the pages more striking and show that it has appliances, at command, for printing in two colors at once. Not at all. The adoption of red headlines by the Herald marked its conversion to socialism. Red, whether in a flag or neck-tie, or a newspaper, is a symbol of socialism. They tell us that perverts are the biggest zealots, and the Herald is no exception to the rule. In its socialist ideas it is going daily from strength to strength, which in vulgar phase means, going one better. Since the day it swallowed the pill it has kept on spruiging. Though the other conservative papers don't display the red symbol it is evident, to many observers, that the conservative party is to put forth every exertion to win the labor vote at the next general election. Under the belief that a majority of the workingmen are socialists, a socialistic programme may be theirs. Wittingly or unwittingly the Herald has been, during the past months, doing its utmost to sow the seeds of discontent. Where grievances were unknown it has vigorously attempted to show that they are in existence. My own opinion is that the Herald's headlines, at least, if not its writings, have not been in the best interests of the country. We have been told that workmen of Nova Scotia are not reaping the fruits of their toil as are the workmen of New Zealand and, yet, when it comes to the proof, it is found that during recent years the wages of New Zealand workmen have not increased more than ten per cent., against the, at least, twenty per cent in Nova Scotia. It is a remarkable thing that at a time when trade is very brisk, and wages higher than ever, certain papers should try to make it appear that the workmen never had more cause for complaint. The burden of the cry is that the workingman is entitled to all he produces, but those who utter that cry are very careful not to tell us what the phrase really means. And it is hinted that the reason why the workingman does not get all he produces is due to the fact that capitalists, trusts, and combines rob him of it. Further would they lead us to believe that where no combines are there are the workmen contented, happy and getting, presumably, all they produce, and there are no combines in New Zealand. And yet, strange isn't it, the workmen don't get all they would like to get, in that workmen's paradise. The phrase "Labor is entitled to all it produces," is becoming too modest a cry. Soon it will be changed to "Labor is entitled to all that is produced," whether by farmer fisher or founder. In New Zealand an attempt was made last fall to induce the government of that country to go into the provision business, and sell milk, butter, poultry and its products. For why? Oh, because the farmers had increased the price of milk, and eggs are dearer than in former years. If anyone is entitled to be called a workingman he is the farm-

er. Therefore being a workingman he is entitled to all he produces by whatever instruments. He produces eggs through the instrumentality of his hens. The eggs are his, and what does he go and do? Puts up the price. He by this action at once, according to the Herald's logic, becomes a combinester and his business must be taken from him and run by the state. For the good of whom? For the good of non producers of eggs. Follow this plan of nationalizing everything a bit further, and where do we land. I don't know. Somebody might tell us. And then the state is asked to milk cows. Why? Because the price of milk has gone up. That must not be tolerated. Advances in price of any article, always excepting wages of course, must be put a stop to. The government must take over all businesses. 'Laundry' prices have gone up, therefore the sooner if the people are not to be imposed upon by payments double for a day's washing the sooner government become washerwomen the better. And coal barons were not in a combine coal would not have increased so much in price! The farm-land around North Sydney, for there the price of milk has advanced of late years from twenty to thirty two cents a gallon. Sly dogs farmers who would have suspected that they had formed a combine. But the proof is there in the advance in milk. The coal barons, it is said, have increased the price of coal fifty per cent, and some how! farm-milk sixty per cent, and the Herald is mute. The proposer that the governments should run the newspapers in the public interests. By George, have socialism but anarchy. In Russia the government takes a large hand in running the newspapers, and yet the people are not happy. Its so awfully hard to please some folks.

The Herald in introducing the speech of Mr. Barclay, of New Zealand, on his motion favoring nationalization of utilities says—"It will be seen that the mover, Mr. Barclay, deals in a most instructive way with New Zealand labor conditions and the "Menace of the trusts." From this I thought on reading on I would find where the trusts had been soundly flayed. Instead I find they were commended and that Mr. Barclay based his plea for state operation on the ground that trusts had been a success:—

"It was sometimes argued that the government could not control a business or undertake an industry and do it as effectively as private enterprise or private companies or individuals. But that argument had received its death-blow from the history of the American Trust. The American Trust, generally speaking, was a combination of persons who entered into a combine and undertook to supply and control a particular article of use or of necessity for living. The trust system has been carried on with great success in America, and there could be no question that it was a most up-to-date, efficient, and in many senses the most economical system of doing business yet proposed in the commercial world. Now, if a trust or combination of private persons could

enter into a world-wide business and control an article of commerce to their own great profit, and very often to the benefit of the consumer, what was there to prevent a State such as New Zealand taking up the same position? Only it would have a stronger position than the trust, it would have greater sources behind it, and, what was more, it would have a purer and better objective—namely, the supplying of the people with the necessaries of life at a price within their means, and so conducing to the increased happiness and comfort of all. If a trust was able to carry out beneficially a commercial operation of this nature, and to make a large profit out of the transaction, why should not the State take in hand the supplying of its people with such articles as the trusts dealt with at a fair price? If they adopted the principle with regard to the various commodities dealt with by trusts—and there was no doubt the principle would be adopted—why should the line be drawn there? Why should they not go further and say that the rents were excessive? That was one cause why many people were engaged in a perpetual struggle against poverty, misery, and unhappiness, and they should say they would do their best to remove that state of affairs."

That is what Mr. Barclay said of trusts and I cannot see how the Herald can possibly say he looked upon them as a "menace." In his plea for nationalization it is most remarkable that Mr. Barclay made no allusion to the coal mines, which, we have been often told of late, are being run by the New Zealand government. If they are being run successfully what need to go to the U. S. and select the trusts there as an argument for state ownership. Instead why not point to the cheap coal the people are now procuring as a result of the government having gone into the coal mining business. There being no allusion whatever to coal mining, one is forced to conclude that it has not resulted as its projectors anticipated. The Herald will please take note that while it hates combines especially coal combines,—like sin—the author it quotes with approval has rather an affection for them.

It has been recently asserted by a cheap coal agitator that 'Murder will out.' He might have enlarged on the subject and said there is nothing hid that will not be revealed and that the truth, like murder will out. All the chief actors in the cheap coal agitation are fond of dangling New Zealand before our eyes. There they have state owned coal mines and consequently everybody is happy. So persistently has that country been held up that some actually began to believe that in it there was nought for workmen but peace and plenty. Mr. Barclay, quoted previously, may not have intended to lift the curtain, and let us have a peep behind the scenes, but he did it nevertheless. Notice what he says towards the conclusion of his quoted remarks. He asks the government, parliament rather, to declare that rents are excessive, and that these are responsible for the perpetual struggle against 'poverty, misery, and unhappiness,' *Fie, Mr. Barclay.* How can you say so, seeing we have so often been told that in New Zealand there is neither poverty or riches, but that all have food and clothing conven-

ient for them. I make bold that in Nova Scotia, to-day, we have no misery as a consequence of poverty, honest poverty. There may be misery from poverty, but that poverty is not partly a consequence of high rents, or dear food, but is the fruit of ill doing. There are no great cities in New Zealand—in great cities centres of poverty may be looked for—therefore there should be no great poverty, no great misery. And so after all is said it seems there is still room for reform in that country which boasts of having the most progressive legislation in the world.

"Hundreds of thousands of tons of coal are being lost in this province periodically through ignorance. Coal is costing too much to mine in Nova Scotia, frequently through ignorance; coal is costing the people too much, partly through ignorance."

"There is only one thing that menaces our future, that is ignorance; there is only one possible remedy; there is only one possible way to meet the natural prejudice of the old fashioned miner who scorns the idea of improved methods, based on scientific investigation."

The author of these, my two texts must, have been seized with a fine frenzy in penning them. The two texts bear on the same thing viz: the ignorance of our coal operators and their prejudice against improvements and scientific investigation. In view of recent history it is surprising that any Nova Scotian can be pointed to who is persistent in the declaration that our operators and miners are ignorant, and, what is more reprehensible, are unwilling to learn and be taught. It is not true that our operators and miners are ignorant; it is not true that they scorn improvements and investigation. The history of coal mining in Nova Scotia during the past 12 years is a history of progress in improved methods of mining and in improved appliances. The latest forms of motive power, the latest and best designs in mining machines have been sought for and obtained. The assertion can be made emphatically that we have in Nova Scotia as modern, as scientific, and as, on the whole, thoroughly equipped mines as in any part of the world. And further, we say, no section of country in any part of the world has spent so much money in an effort to get the best of what is going in mining appliances as has Nova Scotia. Men have been brought from Europe and from the United States and not one of them could point out any radical defects in our system of mining and preparing the coal for market. Nova Scotia has not suffered, except in her self esteem, pride, from the lack of men with technical training, for she was able to procure by aid of money the best brains the other countries could supply. As the charge of ignorance and prejudice is a serious one I propose to meet it by showing that no effort has been spared to place our mining methods above reproach. I will confine myself to what one company—the Dominion Coal Co.—has done in this respect. First of all, to assist the then General Manager, there was brought from Britain a man with high credentials. The benefit of all his experience was at the company's command. If he showed gifts greater than the native miners, I will not say, I ought first to have mentioned that

there came with the Dominion Coal Co. as chief and consulting engineer, a college bred man, and one who had attained a high position in the United States. After the man from Britain one was brought from the United States to look over the collieries. This was Mr. Job, who had equipped the most modern and 'scientific' colliery in the United States. 'Jobs' mines in the Ohio Valley were far and away the most elaborately equipped mines in the U. S., perhaps in the world, Mr. Job came, saw and went back again, because he could not see wherein he could much improve on the systems in vogue. Then came Mr. Lud, who would be the last to say that he was handicapped either as to output or the reduction of costs by failure of the company to act on his suggestions. Next came Mr. Connors who had been an Inspector of mines in the United States. He could not improve on the method. After him came Mr. King. Be it noted that Mr. King was recommended to the Dominion Coal Coy. by the Frick people, the greatest coal producers in the world, and be it further particularly noted that all these men with one exception came from the land that is held up as that in which coal is produced most cheaply. All these men were called because they were highly recommended, and yet with all their knowledge of modern methods, coal in the U. S. they were not able to show how it could be produced a cent a ton cheaper than our own Nova Scotians were producing it. These men were all either technically advanced or rich in experience. If then, these men could not give our natives big pointers, one of two things must follow namely either education is not essential to successful coal mining or that our men are not open to the charge of ignorance. But the above named do not complete the list of those year or so ago one of the most reputable engineers in Britain was called upon to criticise the company's operations and make suggestions. What did these amount to? To little. There was a suggestion as to adopting longwall in a section of one mine, that was about all, and the suggestion when acted upon was found unsuitable. I am not indifferent to the benefits of technical education. It holds for our native mining men great possibilities. If without high technical training they are as fit as men trained in technical schools in Britain or the United States, what might be expected of them if to their natural fitness were added the benefits of a first class technical education.

During the time that Joseph Chamberlain was most active in his preferential tariff, or protection propaganda, and was in season and out of season declaring that Britain was losing her supremacy, and her German export trade dwindling, and her trade generally going to the dogs, the facts, the returns of the Board of Trade, were against him. The exports to Germany instead of falling off were increasing and the export trade as a whole was in a healthier condition than ever. With the facts of increasing prosperity glaring him in the face, nothing daunted, Mr. Chamberlain continued to preach and prophecy ruin. And so with those certain few who never tire of tell-

ing us that the industries of Nova Scotia are being paralyzed owing to the high price of fuel. Never in her previous history, never in the days when coal was cheapest, have the industries of Nova Scotia been so prosperous as at the present time. Not only are established industries extending their plants; new industries are being started at many places. A peculiar thing about this concerned, those directly engaged in manufactures are taking no part in it. In the mainland there may be said to be four industrial centres, Amherst, New Glasgow, Halifax, and Truro. In each of these there is a press cry for cheaper coal for manufacturers, and assertion made that unfairly dealt with. No complaint is made by the Halifax Sugar Refinery, or by the Light and Heat Coy. as to prices. And the fact that the capital for a large new industry was speedily subscribed affords proof that the present price of coal is no deterrent to the establishment of new industries. The Rhodes Curry Co., the Robbs, and the other industries of Amherst, are not languishing on account of dear fuel. On the contrary the business of these firms, and of other firms, is rapidly extending. In New Glasgow the several industries are busier than at any prior period, and there is talk of important new industries starting, if not in the town, in the immediate vicinity. In Pictou town there never was and never will be industries until its people realize that outside investment is not the best use their money can be put to or that the chief benefit of wealth to the owner is that he may sit upon it. Will the papers in either of the towns mentioned name a single industry that has been paralyzed or a single contemplated industry hindered in its establishment owing to the high price of coal. If they cannot do this, perhaps one or other may tell us why it should not hold its peace—on the subject of coal versus crippled manufactures.

On a former occasion I asked what might the price of coal at the present time be were it not that the companies, by selling coal cheaply in large quantities, in the St. Lawrence and other markets, were enabled actively to carry on operations. Some may have thought the question a foolish one but there was a good deal of meaning in it. The Dominion Coal Co. is held largely responsible for the increased price of coal. It is all the other way; had there been no Dom. Coal Co. the chances are that the price of coal would be very much higher than it is at the present time. Fiction. No I am stating what I believe to be true. A friend is far more emphatic on the point than possibly I would care to be. He has no hesitation in saying that but for the Whitney legislation coal would be twice as high as it is at present. And the following are his reasons:—The collieries constituting the Dom. Coal Co. have increased their output from about 800,000 tons to some 3,500,000 tons. The Cumberladd and Pictou County collieries which are not within the scope of the Whitney legislation, but are under the old form of lease have not materially increased their output. It will be admitted that if more coal was produced, and sold on the market 'up to a point in excess of the demand that coal would

be cheaper. Ergo, the coal company that produces the most coal is doing the most to keep prices from increasing. Suppose the Dom. Coal Coy. had, as in the case of the Springhill and Pictou companies, not increased its output—above the 800,000 tons of ten years ago, what would be the price of coal in Nova Scotia to-day? If the old collieries purchased by the Dom. Coal Co. had continued under separate management they could not to any extent, have increased their output. They had neither the capital nor the areas. They were all mining on limited areas which, under the law, were surrounded by "barriers" which should not be removed. A former operator whose mine was secured by the big company has stated that the old companies could not have come through the trying period between 1893 and 1898, under the old arrangement. They would in a majority of cases have become insolvent. Resourceful as Mr. Whitney was, and with big capital at command he only escaped by a hair. Let those who denounce the 'Whitney legislation' and complain of a combine, study out a little what might have been but for it. In asking them to do this I have the suspicion that the question is superfluous. They have no desire to get at the bottom facts. They think more 'capital' can be made by going it wholly blind.

The Free Lance neatly and fairly caught the Suburban. The Suburban has been discussing the coal question for perhaps eighteen months. Time and again has it stated that it was well versed on the question, and that it knew whereof it wrote. Everyone was impressed with the display of wisdom on the part of the Suburban. Some actually believed that it had taken some pains to arrive at the facts. Those people must have rubbed their eyes when they read the following in the Suburban of recent date: "We know why some companies do not pay dividends, and it is not because they do not charge enough to earn necessary profits. We need to know the facts, we intend to know them, and then to deal fairly with the coal companies as well as by the people." To this the Free Lance retorts, "that in order to discuss the question intelligently the Suburban should first learn the facts." And who dare say that the request of the Free Lance is unreasonable. What foundation has the Suburban for all its denunciations of the 'combine' and the companies. Not even a foundation of straw. The frankness of the statement of the Suburban is charming in its innocence. Once it knows the facts it intends to deal fairly by the companies. The reason it is dealing unfairly with the companies at the present time is due to the lack of possession of the facts. This is certainly deplorable. Had some of us only known that it was ignorance of the facts that was leading the Suburban to kick such high jinks we certainly might have given him one or two to make his position look less inexcusable. The Suburban tells us that it knows why the companies do not pay dividends. Why should the Suburban be so selfish as to keep this knowledge to itself. True it has told us that in the case of the Dom. Coal Co. 'no profits' are chargeable to the large amount of watered stock. When did the Dominion Coal Co. water its stock. At its inception common stock was sold cheap, but over capitalization is not synonymous with

watered stock. The properties of the Dom. Coal Co. to-day could not be had for the outstanding bonds and stock of the Company. If the Dom. Iron & Steel Co. thinks it might need the half of twenty million dollars of bonds to develop coal areas, to produce say a million tons of coal yearly, should not a property capable of producing at the very least, five times that quantity, be rated as worth five times ten million dollars, being back to the alleged watered stock of the Dominion Coal Co.: What does it matter if, instead of there being fifteen million of common, call it watered, stock, there were fifty millions. When did the common stock receive a dividend from the Coal Co.'s? Never once in the dozen years of its existence—though, from the Steel Co.'s, when in possession, it received one dividend. If coal is high in price 'watered stock' cannot be held responsible.

"As a matter of fact, Nova Scotia coal can be bought as cheaply in Montreal as here in Amherst. More than that, Cape Breton coal can be bought at the same rate as coal that is mined at our own door.

Another question to the Editor of the Free Lance. What is the actual cost of the production of a ton of coal, and where does the difference between the cost and what the consumer pays for coal, go to? We want an itemized bill. For instance, we are paying \$4.60 a ton for Cumberland coal. The cost of production is less than \$1.50, the freight is about forty cents, the truckage is about the same. This makes a total of \$2.30. Where does the balance of \$2.30 go to?"

The foregoing is from the Amherst News which forms one of the little coterie who are engaged in the task of trying to inflame the minds of their readers against the coal operators. The demands for further information are as audacious as the mis-statements, as to the cost of a ton of coal. People are asked to accept the bare statement of certain papers that coal in Cumberland, Pictou and Halifax counties costs as much as it does in Montreal, while these same papers will not accept the statement that quantity for quantity, with quality, coal in Nova Scotia costs less than in Montreal. The Amherst paper calls for an itemized bill. That is cheeky; is asking more than a shareholder of a company would ask of its directorate. If these papers are told coal costs to produce in Cumberland two to three dollars a ton, they say we will not believe that; give us an itemized bill. If they, on the other hand, say coal is produced for \$1.50, it is not in order for us to demand the process by which these figures are arrived at. These papers, as it were, have set themselves in array against the coal operators, and demand that the operators furnish the proof necessary to their own, the operators, conviction. This is certainly a novel mode of procedure, and affords proof of the flimsiness of their proceedings. The News asserts that coal can be produced in Cumberland County for less than \$1.50. That is explicit enough. I will be as explicit and say that of the five hundred thousand odd tons credited to Cumberland last year, three hundred and eighty thousand tons were not produced at a less cost than \$2.75 for domestic coal; a hundred thousand tons at not less than \$2.50, and twenty thousand tons at not less than \$2.00. Further I will say that if there is a man in Cumberland County who can produce from a mine a hundred thousand tons of coal at a cost of \$1.50 a ton, that man certainly is losing his fragrance in the desert air. If he can produce coal in Cumberland for \$1.50 he should be able to produce it in Cape Breton county for \$1.00, and any

man that can do that can command \$30,000 yearly of James Ross's money. Indeed, I am justified in going further and saying that any man who will guarantee to produce coal for the Dominion Coal Co. at that price will be assured of a yearly salary of not less than \$40,000, and after paying that fair wage the company would be the gainer by about a million dollars a year. There is no wind or bluff of any kind in this statement. Jas. Ross has been looking for years for just such a man and has failed to find him at any price.

Around the Collieries.

Mr. Floyd of the Intercolonial Coal Coy., who had a few days illness in December, was greatly benefited by a trip to New York.

When Fred, of the Acadia Coal Co's staff is rigged out in full curling costume, the girls get sweet on him, and declare he is the dead image of "Wee McGregor."

Messrs Duggan and Fergie the two new directors of the Dominion Coal Co., returned from Montreal—where they had gone for installation—last Saturday. Both gentlemen are to be congratulated on their elevation. Mr. Ross's hand is visible in the selection.

Night schools are being started at some of the mines this winter. So far the following are going:—Dominion—J. C. Nicholson, Teacher; Hub D. L. McKay, Teacher; Reserve, Jas. Connors, Teacher; McKays Corner, J. A. McDonald; Teacher; Morien, Simon Lott, Teacher.

A friend naively puts it:—"I am opposed to any inquiry into the price of butter or eggs because I belong to an agricultural county. A Record reader says "I am in favor of increased duty on pipes and metal fittings, because I represent a county where these are made," and the opinion of a third is: "I am in favor of cheap coal, because it is not produced in the county in which I do business," and thus it goes, all for self.

Considerable work is still being done overground at the Allan shaft. Some work was done on the new bank head last week notwithstanding the zero weather. A new 300 h. p. Sterling boiler is being put in position. No effort is being made to increase the output of coal at the present time, the chief energies being directed toward development work, in readiness for summer shipments.

There is great rivalry among some of the staff of the Dom. Coal Co. in the out offices. Up till recently Dom. No. 3 under supervision of the general Michael held the sceptre. Dom No. 2 has stepped in with two at a stroke. The hope of No. 3 is that No. 2 can't keep up that clip.

The Dominion Mining and Smelting Company, has issued its prospectus. The smelter of the company is located at Pictou, N. S., and was built at an original cost of \$300,000. The stock of this Company is listed on the Boston curb and is now being offered for sale to the public. The capacity of the Pictou smelter is 75 tons of ore daily, and the Company estimates that it can produce pig copper from concentrates at a little over two cents a pound. With the present market price of copper this would leave a very large profit. It is intended to secure the ore supply at present from Newfoundland. The capital stock of the new company is \$1,000,000 in one dollar shares.—Morning Chronicle.

There is a possibility that the old McBain seam may be tapped from the present workings at the Vale. It is claimed that the McBain seam instead of being nearly worked out contains a large area of coal which was not thought to be nearly so extensive when the pit was abandoned.

Mr. J. W. Marshall, lately Instructor in mining for Dalhousie schools, has removed from Springhill to Sydney Mines. Mr. Marshall is at present managing the McKay mine recently opened. The mine is situated half way between North Sydney and Sydney Mines. There is much work to be done before the mine will be in good shape. By and bye Mr. Marshall will, if we mistake not, make a nice little mine of it.

The Dom. Coal Co's stores are having great sacrifice sales these days. There never was anything like it in C. B. The Jews are knocked out to pieces as to prices. Many wonder whether the company intend to continue the stores chiefly on a cash basis or give them up entirely. If these cheap sales continue long the other storekeepers will require to take holidays until present stocks are disposed of.

Grand Sec'y. Moffatt was down having a look at the workings in the Reserve-Emery the other day. The Emery reminded him of the old country long wall mines, one of which he had not seen since he left Scotland. The faces are not yet in full shape; part of the workings has been stopped until other parts get into line. When this is done the pressure on the face will be more regular, and this will make the working easier. The stone from the roof makes good material for building the packs. The average height of the stone taken down on the main ways is four feet.

There is considerable dissatisfaction, it is said, among the miners of Dom. No. 3 and 4 (Caledonia) over the shearing question. Taking their cue from the Coal-Steel dispute the lodges at these two collieries are talking of throwing off the three years contract on the 1st of May next. Their plea is that the company time and again has broken the contract during the winter. The men claim that the Company has not fulfilled certain of its promises. For instance: When shearing was introduced it was given out that the men were to get more places. The men claim this has not been done.

The Vale colliery is doing good work these days, better than for a long time back. On Thursday some 425 tons were hoisted, and development work in the mine is advanced far enough to permit of a daily output of over 400 tons for an indefinite period. Many improvements have been under way for some time. New landings have been established and also new roadways. The system of haulage underground will undergo important changes. The coal from many places will come up the main 'slant' some three thousand feet long. An engine driven by compressed air will perform this service. This engine will be placed at a new landing which has been lately established. A very large body of coal has been opened out and there are places for one hundred additional men. The difficulty will be in handling the coal on the surface as the capacity of the present belts is not over 400 tons.

AROUND THE COLLIERIES.

The new electric motor has been installed in Dom. No. 3.

Gd. Sec'y. Moffatt visited the Fundy mine last week to enquire into the trouble existing there.

John Nicholson, Overman, Dom. No. 3 has been transferred to No. 1. He is succeeded by Allan McDonald.

D. M. Burrell and John C. Douglas are candidates for the Mayoralty of the biggest town in Canada.

Neil A. McKenzie, ex-checkweighman, New Aberdeen, has taken a position with the Equitable Life Assurance Co.

Owing to the heavy rains the latter part of December water has been a source of great trouble to the Dom. Coal Co.

Dom. No. 3 was put on double shift on the 8th. and Caledonia on the 15th. This looks as if the demand for coal was, or is to be, active.

Messrs Duggan and Fergie, of the Dom. Coal Co. were in Montreal last week assisting in the mapping out of a plan of campaign for 1907.

The Emery shaft, at Reserve, will take some time yet to finish, as part of the necessary material was delayed in getting to its destination.

The Gowrie & Blockhouse Colliery at Port Morien was idle the early part of the month owing to water in the mine. The pumping machinery was not equal to the duty of keeping the mine free.

Alex. S. McNeil, U. M. at Dom. No. 4, received severe injuries on the 10th. inst. by a fall of coal.

The new pump house in Dom. No. 1 is a structure that will be proof against all fires as it is built of concrete. The building is 100 feet long and is 10 ft. high.

Manager McKenzie of Dom. No. 2 is so engrossed in his work that he declines civic honors. He was asked by the people of New Aberdeen to stand as councillor but declined.

The Dom. Coal Co. could have made no better selection than Dr. Jakeman as colliery veterinary. He has a love for dumb animals and thus has a double incentive in the performance of his duties.

The Sullivan Machinery Co.'s Diamond Core Drill Bulletin just out and to be had on application is copiously and beautifully illustrated and gives all necessary information as to the character of the numerous drills made by this Company.

The opinion among well informed people in Glace Bay is that the Coal-Steel dispute will never be ventilated in the courts. People are with Ross in his efforts to have the old price for coal set aside and a new price set which will allow a little profit.

There are those who think that matters are not so smooth at Sydney Mines as they appear on the surface. Some think that the old country miners will make it interesting for the management before very long, while others say that the longer these men are in the country the wiser they become.

WIRE ROPES.

R. S. NEWALL & SON, LIMITED,

LINACRE, LIVERPOOL,

and at 19 Royal Exchange Square,

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MANUFACTURERS OF ALL DESCRIPTIONS OF

WIRE ROPES FOR MINING

AND OTHER PURPOSES.

Intercolonial Railway.**TENDER FOR BUILDINGS AT HALIFAX.**

Sealed Tenders, addressed to the undersigned, and marked on the outside "Tender for buildings at Halifax" will be received up to and including **THURSDAY, JANUARY 31st, 1907.**, for the construction of a Freight Car Repair Shop and Planing Mill at Halifax, N. S.

Plans and specifications may be seen at the office of the Terminal Agent at Halifax, N. S., at the office of the Secretary of the Department of Railways and Canals, Ottawa, Ont., and at the Chief Engineer's office, Moncton, N. B., at which places forms of tender may be obtained.

All the conditions of the specification must be complied with.
 Railway Office, D. POTTINGER,
 Moncton, N. B., Jan. 11, 1907. General Manager

Miners Wanted.

Steady Employment, Good Wages,
 and Free Land for Homes for Coal Miners,
 at MINTO, NEW BRUNSWICK.

The New Brunswick Provincial Government will give 10 Acres of Land FREE to Coal Miners who will settle at Minto, N. B. The conditions being the erection of a house and the occupation of the land for three years, and working in any of the Mines. For further information apply to **W. C. HUNTER, Manager,** New Brunswick Coal and Railway, (operated for the province of New Brunswick by a Government Commission.) Norton, N. B.

Intercolonial Railway.**-TENDER FOR STATION.-**

Sealed Tenders, addressed to the undersigned, and marked on the outside "Tender for Station at Sackville" will be received up to and including **MONDAY, FEBRUARY 4th, 1907,** for the construction of a station building at Sackville, N. B.

Plans and specifications may be seen at the Station Master's office at Sackville, N. B., and the Chief Engineer's office, Moncton, N. B., where forms of tender may be obtained.

All conditions of the specification must be complied with.
 Railway Office, D. POTTINGER,
 Moncton, N. B., 14th, Jan'y, 1907. General Manager

Coal Miners Wanted

-at-

Minto Mines. Minto, N. B.

G. H. KING, APPLY TO
 CHIPMAN, N. B.

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Gelignite, Gelatine Dynamite and Blasting Gelatine.

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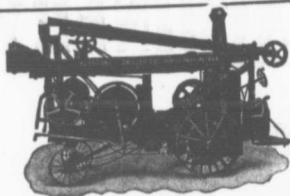
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AUSTEN BROS. HALIFAX.



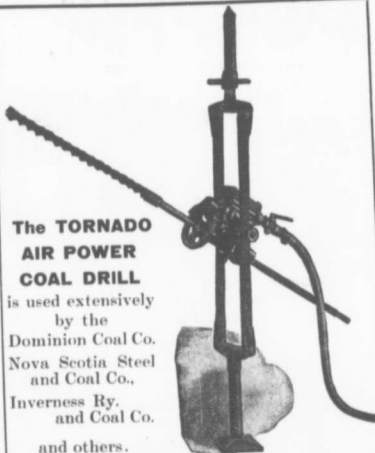
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 is an economical appliance for
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It can be used in connection with any good "churn" drill, but operates best on the long stroke. KEYSTONE, thus making the cheapest and quickest method of boring to be found.
 In operation a hole is sunk to the coal with the ordinary Rock Bit. The Bit and Stop are then removed and the Coring Attachment put on in their place. It takes a 4 ft. core out of the Softest as well as the Hardest part of the vein. Avoids all delay and expense of "robs" water wash, diamonds, shot, and heavy operating mechanism.

Price of Complete Attachment
\$200.00

Catalog No. 2 B. is a book on the subject.
 We make Water, Oil & Test Well Drillers
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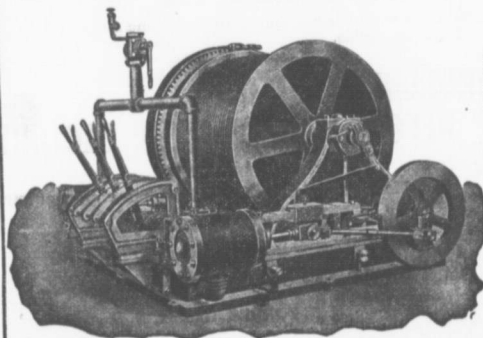


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This is a view of our combined friction driven and brake and reversible link motion hoisting engine. The most economical for mining purposes ever built.

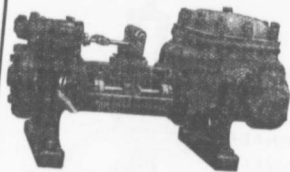
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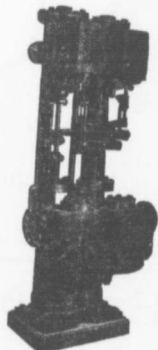
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**We make pumps for all purposes,
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Patterns.**

Our aim is to Build a High Grade
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**The Material and Workmanship en-
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**EVERY PUMP IS THOROUGHLY TESTED
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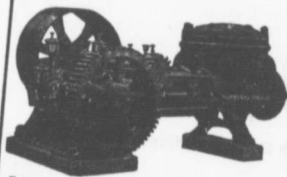
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Fairbanks Morse Horizontal Duplex Power Pump

The Canadian Fairbanks Company, Limited.
Montreal, Toronto, Winnipeg, Vancouver.



Synopsis of Canadian North-West.
Homestead Regulations.

ANY even numbered section of Dominion Lands in Manitoba or the North-West Provinces, excepting 8 and 26, not reserved, may be homesteaded by any person the sole head of a family, or male over 18 years of age, to the extent of one quarter section, of 160 acres, more or less.

Application for homestead entry or inspection must be made in person by the applicant at the office of the local Agent or Sub-Agent.
An application for entry or inspection is made personally at any Sub-agent's office may be wired to the local Agent by the Sub-agent, at the expense of the applicant, and if the land applied for is vacant on receipt of the telegram such application is to have priority and the land will be held until the necessary papers to complete the transaction are received by mail.
In case of "pre-emption" the entry will be summarily cancelled and the applicant will forfeit all priority of claim.
An applicant for inspection must be eligible for homestead entry, and only one application for inspection will be received from an individual until that application has been disposed of.

A homesteader whose entry is in good standing and not liable to cancellation, may, subject to approval of Department, relinquish it in favor of father, mother, son, daughter, brother or sister, if eligible, but to no one else, on filing declaration of abandonment.

Where an entry is summarily cancelled, or voluntarily abandoned, subsequent to institution of cancellation proceedings, the applicant for inspection will be entitled to prior right of entry.

Applicants for inspection must state in what particulars the homesteader is in default, and if subsequently the statement is found to be incorrect in its material particulars, the applicant will lose any prior right of re-entry, should the land become vacant, or if entry has been granted it may be summarily cancelled.

NOTICES.—A settler is required to perform the conditions under one of the following plans:—

(1) At least six months' residence upon and cultivation of the land in each year during the term of the years.

(2) If the father or mother, or if the father is deceased, of a homesteader resides upon a farm in the vicinity of the land entered for by such homesteader, the requirement as to residence may be satisfied by such person residing with the father or mother.

(3) If the settler has his permanent residence upon farming land owned by him in the vicinity of his homestead, the requirement may be satisfied by residence upon such land.

Before making application for patent the settler must give six months' notice in writing to the Commissioner of Dominion Lands at Ottawa, of his intention to do so.

SYNOPSIS OF CANADIAN NORTH-WEST MINING REGULATIONS.

COAL. Coal lands may be purchased at \$10 per acre for soft coal and \$25 for anthracite. Not more than 250 acres can be acquired by one individual or company. Royalty at the rate of ten cents per ton of 2 1/2 pounds shall be collected on the gross output.

QUARTZ. A free miner's certificate is granted upon payment in advance of \$5 per annum for an individual, and from \$20 to \$100 per annum for a company according to capital.

A free mine, having discovered mineral in place, may locate a claim 1500 x 1500 feet.

The fee for recording a claim is \$5.
At least \$100 must be expended on the claim each year or paid to the mining recorder in lieu thereof. When \$200 has been expended or paid, the locator may, upon having a survey made, and upon complying with other requirements, purchase the land at \$1 per acre.

The patent provides for the payment of a royalty of 2 1/2 per cent on the sales.

Placer mining claims generally are 100 feet square; entry fee \$5 renewable yearly.

A free miner may obtain two leases to dredge for gold of five miles each for a term of twenty years, renewable at the discretion of the Minister of the Interior.

The leases shall have a dredge in operation within one season from the date of the lease for each five miles. Rental \$10 per annum for each mile of river of the lease for each five miles. Rental \$10 per annum for each mile of river if leased. Royalty at the rate of 2 1/2 per cent collected on the output after it exceeds \$1000.

W. W. CORY,
Deputy of the Minister of the Interior.

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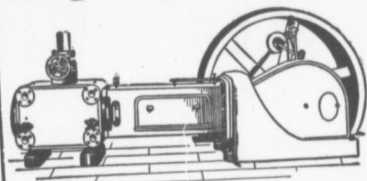
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They are built on the interchangeable system and duplicate parts exact in fit can be supplied on short notice.

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The Nova Scotia Steel & Coal Co., Ltd., who use our Ropes largely, write that one of our Haulage Ropes at Wabana Mines has been in service for over 5 years, drawing over 1,750,000 tons in that time and is still good for further considerable service.

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Read Down	No. 52 No. 54 p. m.		Read Up	No. 55 p. m.
L 11 10	L 3 55	P. TUPPER JUNCTION	A 11 00A	3 35
S 11 10	S 4 00	PORT HAWKESBURY	S 10 55B	3 27
A 11 55	A 4 15	PORT HASTINGS	L 10 42L	3 10
L 4 18	L 4 18	TROY	A 10 37	
F 4 20	F 4 20	CRIGINSIH	F 10 37	
S 4 43	S 4 43	JUDIQUE	S 10 15	
F 4 55	F 4 55	CRAGMOORE	P 10 64	
S 5 10	S 5 10	CATHERINES FOND	S 9 42	
F 5 23	F 5 23	PORT HOOD	F 9 29	
A 5 28	A 5 28	GLENCOE	L 9 15	
L 5 42	L 5 42	MABOU	S 8 55	
S 5 58	S 5 58	GLENDYRE	S 8 25	
S 6 21	S 6 21	BLACK RIVER	S 8 15	
S 6 33	S 6 33	STRATHLORE	F 8 05	
S 6 55	S 6 55	INVERNESS	S 7 47	
S 7 07	S 7 07		L 7 30	
A 7 20	A 7 20		A 7 0	
p. m.	p. m.			

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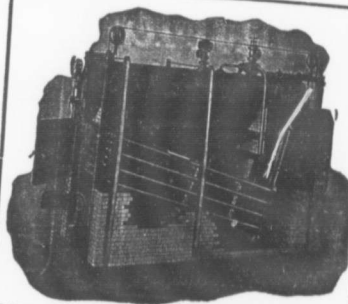
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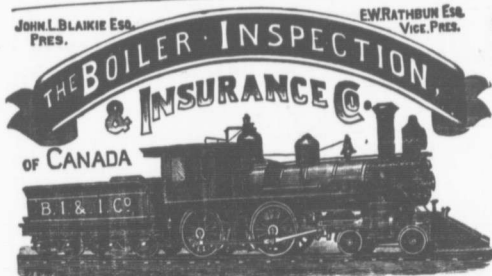
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OFFICES:—Canada, Port Morien, Cape Breton, Nova Scotia. England, Newcastle on Tyne.

The JOHN McDOUGALL Caledonian Iron Works Co., Ltd. Montreal Que.

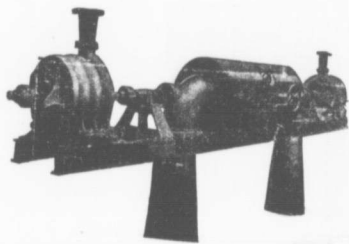
BOILERS: All Sizes and all Pressures.

PUMPS

Worthington Pumps for
Water Works and Mines.

Water Wheels

- Double Water Wheels, for high heads.



Two Worthington 3 stage Turbines and McCormick Water Wheels, built for Port Arthur, Ontario, Water Works. Combined capacity 1440 gallons per minute against 350 head.

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Dominion Coal Company, Ltd.

Miners of
 Bituminous Coals, the celebrated "Reserve" coal for household use, "International" Gas coal, and the best Steam coal from its collieries on the Phalen seam.

— Yearly output 3,500,000 tons. —

ANALYSES.

ANALYSES OF GAS AND STEAM COAL MADE BY J. & H. S. PATTINSON, CHEMISTS,
 —NEWCASTLE, ENGLAND.—

	STEAM COAL.	GAS COAL
CARBON.....	80 18 per. cent.	77 51 per. cent]
HYDROGEN.....	5 11 " "	5 22 " "
OXYGEN.....	7 34 " "	6 72 " "
NITROGEN.....	1 16 " "	1 27 " "
SULPHUR.....	0 56 " "	3 07 " "
ASH.....	2 30 " "	4 10 " "
WATER.....	3 35 " "	2 11 " "
	100 00	100 00

Calorific Power of Steam Coal:—Pounds of Water evaporated from 212 per cent Fah, by one pound of the coal as determined in Thompson's Calorimeter,—14.8 lbs.

Shipping facilities at Sydney, and Louisburg, G. B., of most modern type. Steamers carrying
 —6000 tons loaded in 24 hours.—

Special attention given to quick loading of sailing vessels. Small vessels loaded with
 ↗ quickest despatch. ↘

:: BUNKER COAL ::

The Dominion Coal Co. has provided unsurpassed facilities for Bunkering Ocean going Steamers with Dispatch. Special attention given to Prompt loading Steamers of any Size are bunkered without detention.

By Improved screening appliances lump coal for Domestic trade is supplied of superior quality.

Prices. Terms, etc. may be obtained at the Offices of the Company.

ALEXANDER DICK Genl. Sales Agent, Glace Bay, N. S., Can.

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112 St. James St., Montreal, Que.
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R. P. and W. F. Starr, St. John, N. B.
 Harvey & Co., St. John's, Newfoundland.
 Hull Blyth & Co., 4 Fenchurch Avenue, London, E. C.

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CUMBERLAND

RAILWAY AND

COAL COMPANY.

OPERATING THREE
THICK SEAMS
NOS 1, 2 AND 3.

—Miners and Shippers of the Well Known—

FRESH MINED SPRINGHILL COAL

... ANALYSIS ...

	NO 1	NO 2	NO 3
Moisture.....	2.02 %	1.41 %	2.71 %
Volatile combustible matter	18.94 %	27.93 %	23.41 %
Fixed Carbon.....	75.29 %	67.47 %	64.69 %
Ash.....	3.75 %	3.19 %	4.19 %
	100.00	100.00	100.00
Sulphur.....	1.15 %	58 %	.79 %

BEST COAL FOR
LOCOMOTIVE USE.

Delivered By Rail or Water

BEST COAL FOR
GENERAL STEAM PURPOSES.

The year Round

IN Lots To Suit Purchasers.

BEST COAL FOR
DOMESTIC CONSUMPTION.

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