

MARITIME MINING RECORD AND COAL AND METAL TRADES JOURNAL

Dr. R. Bell
Geol. survey dept.

Cumberland. * Pictou. * Cape Breton. * Inverness

New Series Vol. 7 No. 15

February 8th. 1905

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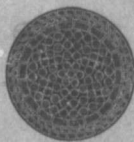
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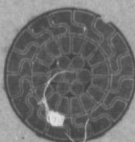
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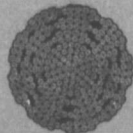
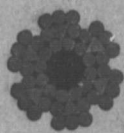
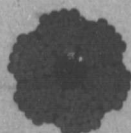
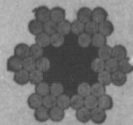
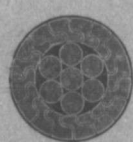
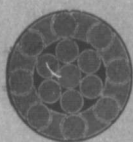
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56 Mixed from Mulgrave	12.10
27 Mixed from Pictou	10.55
19 Express from Halifax and St. John	11.00
120 Mixed from Pictou	14.55
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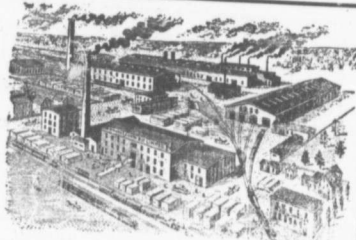
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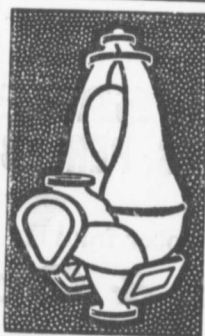
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To Be....

MARITIME MINING RECORD

Vol. 7, No. 15. Stellarton, N. S., FEB. 8th, 1905

New Series

Selected Questions and Answers.

VENTILATION.

Q.—How would you remove gas in a cavity in the roof? How would you reverse the air current in a fiery mine?

A.—The gas spoken about is CH_4 , or fire-damp. It is of a very light specific gravity, being slightly over half the weight of air. Therefore, we can at once see that it is more likely to be prevalent in high places in the mine and in cavities in the roof.

The best means for its removal is to erect a sealing cloth to cause the wind to rise up into the hole, and thus clear away the gas.

The mode of procedure depends somewhat upon the amount of wind passing along the road in which the cavity has been located. In erecting the sealing cloth it must not be in such a way as to impede the wind too much. For instance, if a good current of wind was passing a cloth would not be required to reach the floor, one half way would send enough wind into the hole to keep it clear.

However, it is not often in these kind of roads that the gas is found. It is generally in roadways where the passage of the wind is rather slow, therefore we will assume that this is the kind of road we have to deal with.

I should commence operations by fixing up a bar to hold the cloth under the cavity; not directly under it, but slightly towards the direction the wind was coming. By this means it would blow up into the hole better. When the bar was put up I would commence to nail brattice cloth on to it to hang to the floor, and thus block the lower part of the roadway and cause the wind to rise over the cloth so as to resume its passage. Sometimes some difficulty is experienced in securely blocking the road, the rugged sides allowing the wind to escape.

This can be remedied by setting props near to the side under the cloth bar, and the space between the prop and the side filled with old cloth or bricks well built and mortared. Sometimes if the hole is high and difficult to get at two cloths are required. When this is so a bar is fastened up into the hole by being wedged at the sides, and cloth hung from it so as to overlap the cloth which was first erected. This will cause the wind to scale higher into the hole, and the hole will now be cleared, the wind sweeping the gas out in its passage over the cloth.

When it is desired to change the direction of the ventilation of a mine there are many things which need to be made ready, especially so when

a mine is fiery.

A careful plan of the desired course of the wind should be made, and also all doors and cloths should be put in the desired places. The cloths would, of course, be made ready for dropping, and the doors propped open ready to close at the desired moment. When all these things are made ready a suitable time is chosen to complete the operation.

First of all the men in the mine must be all got out, only persons employed in the operation allowed in. These men, officials preferably with a reliable man or two each, would be given instructions what to do, and they must understand thoroughly what is required so as to make no mistakes. Each man should be supplied with a good safety-lamp, and in certain places a few spare ones might be taken because of the inability of re-lighting lamps. A certain time must be arranged, and each one must set to work exactly at the moment arranged, and do the work as quickly as possible.

Each man would know what doors to open and which to close, also what cloths to break and which to drop across the roadways to come into use.

This, if the previous arrangements have been carefully made, can be done very expeditiously, and the ventilation is quickly restored.

When this has been done the mine must be thoroughly examined to see that all the doors, cloths, and other brattices are in the proper place and fulfilling the duty they are required to do. They may probably be leaking a little; this must be made right, and if extra doors or cloths are required they must be put up. Also the pressure of any gas must be determined, and this cleared away by putting up sealing cloths.

By this time a proper examination of the workings may take place, because the wind will by this time be going at the proper speed. It will have attained its proper velocity, and the success of the operation can be ascertained.

When the examination has been made a report of the conditions prevailing in the mine must be made by the person making the examination. The success greatly depends upon the care of the previous arrangements.

If this has been done well the ventilation is quickly restored; if not, it entails a great amount of trouble and time, because when the mine is fiery the atmosphere quickly becomes dangerous, and in this case all the men would have to withdraw and carry the wind in by stages from the shaft. This is sometimes a difficult operation, whilst if carefully planned and carried out in the

manner described, it will be found to work satisfactorily, and not much expense is entailed.

TRANSMISSION OF POWER.

Q.—What are the respective advantages of using compressed air and electricity for transmission of power for colliery purposes?

A.—The transmission of power to a greater or less distance is frequently a subject for the serious consideration of a mining engineer, and thanks to the advances in scientific and mechanical knowledge made during recent years the choice of method is varied and the possible efficiency is considerable.

One of the most useful methods of transmitting power to a distance, and one of the best adopted to the requirements of mining, consists in the employment of compressed air as the medium of transmission. But this agent, like many other things connected with mining, has in certain directions serious competitors, in favour of which there has frequently been urged greater economy in first cost, in working cost, in efficiency, and in applicability. These claims have, however, been keenly contested by the advocates of compressed air, who, on the other hand, contend that it supplies a means of power transmission at once safe, economical, and efficient for general mining work. The force of this contention has been much increased by the improvements effected during the last 25 years in the methods of generating compressed air and of using it.

Compressed air is well adapted for driving all the various classes of machines used in mining, such as rock-drills, underground haulage and hoisting engines, pumps, ventilating fans, Kortings air-injectors, and coal-cutting machines.

In coal mines which are liable to the dangers arising from explosive gas and dust, compressed air is specially prized as a means of driving coal-cutting machines, &c. Its absolute safety constitutes one great recommendation. Another advantage, which attends to mines of all classes, is that the low temperature of the exhaust helps to cool the mine and assists the ventilation.

The disadvantages attending the use of compressed air are the cost of providing and maintaining the compressing plant, and the low efficiency, probably not exceeding 25 per cent, of the steam pressure applied to the piston, this being due to cooling at the compressor and the friction set up in the pipe range.

Another and very serious objection to the use of compressed air is the liability to ignition and explosion within the receiver adjoining the compressor.

We now come to the most modern, as well as the most important method of power transmission, viz., electricity.

As a competitor with compressed air, electricity occupies the first place. Its use as a means of transmitting power has of recent years been widely extended, and in mines we have it now applied to pumping, haulage for medium of locomotives, and fixed rope haulage engines actuated by electricity, winding below and above ground, to rotary and percussive drilling, and most successfully to coal-cutting machinery.

It is more especially in its application to the driving of underground pumps that the conspicuous advantages in electricity appear. The work is generally continuous for many hours, and there are no sudden variations of load. The apparatus can often be placed in a part of the mine where it can receive proper supervision and attention. Again, economy of power is of great importance in pumping, at least in cases where the quantity of water is considerable.

With electricity energy could be generated at an exceptionally low cost; all boilers, piping, steam engines, &c., now met with so freely in a mine would disappear, all the power needed being provided for by electric motors occupying much less space, wanting no supervision and very efficient.

Therefore, in making a general summary of the advantages of electricity as a motive power applicable to general underground work in mines, we find that in it we have a force that is easily conducted to any point or points required, will do any class of work that it is possible for any other power to do, and gives off an efficiency of from 40 to 60 per cent. of the power transmitted to the dynamo while the first cost and general maintenance would be less than a compressed air installation. Against this we have the risk of sparking (which is a serious objection in a fiery mine) and the liability to persons receiving shocks.

THE END OF THE SPRINGHILL RELIEF FUND.

After a lapse of fourteen years, the last money was paid lately of the big Relief fund, and its administration closed with credit to those having its oversight. During all these years Mr. A. H. McLeod of the Cumb. Ry. & Coal Co's staff was the Sec'y, and to his prudent management is due much of the economical way in which the fund was administered. His work was not light, as the beneficiaries had wandered in the interval to many lands, to Great Britain and Ireland, the United States, Newfoundland, and France, and of course to Pictou, Cape Breton and other counties within the Province. And though cheques were sent to all these places, at intervals, not a penny went missing.

The terrible explosion occurred in Jan. of 1891. By the accident 57 were made Widows; the orphans and fatherless numbered 142, and dependents on those killed 19. During the administration of the fund twenty-nine of the widows found husbands, three died, and twenty-five remained. Nineteen of the orphans died, and all the children except six are now over the age limit, laid down by the committee, which entitles them to assistance, viz., 14 years for boys and 15 for girls.

When the accident occurred appeals were immediately sent out for aid, and it was truly gratifying the way in which contributions flowed in. And what a blessing the fund has been. It kept families on their feet until through efflux of time their members were able to provide for them. All the money received was expended strictly according to rules laid down. The very best possible was done in the just and economical distribution

ELECTRICAL COAL CUTTERS IN SCOTLAND.

of the fund. Appended will be found a statement of disbursements &c. The item special grants covers a good deal of ground. Some participated for a long time. Take an instance.—One of those who came under this item was permanently injured in the back. Being young he was sent to learn the tailoring, and the committee paid his board for two or three years. There was a committee of five to specially look after this class of beneficiaries. In the item "Special grants to widows" is included charges for nursing &c. as a dozen children were born after the fathers had been killed in the accident. A word as to the item "Coal to widows" There was an old custom in vogue at the time of the explosion, brought probably to Springhill from Pitcon by Manager Hall by which widows obtained coal free. At the time of the accident a score or more of widows were receiving free coal, and of course the 57 widows of the explosion would be entitled to the same privilege. The system was open to objection as in some cases the privilege was being abused. The Genl Manager doubled his subscription to the Relief Fund paying three-fifths instead of three-tenths as the law directs; and asked that the difference—three-tenths be placed to the credit of the Relief Fund for coal. After that each widow received \$1.50 per month, for which the company sold them one ton of coal delivered at the houses. The cost of management amounts to only \$1500 odd dollars, from which it may be gathered that some ones performed many and big "labors of love."

Public Contributions,	\$106,462 75	
Int. on Dep. Bk. of Montreal	16,128 96	
Int. on Dep. Hx. Banking Co.	2,581 82	
Contributed by Cumb. Ry. & Coal Co. in lieu of free coal to Widows.	13,737 70	\$138,911.23
Payments to Widows and Orphans.	99,004 13	
Payments to Parents deprived of support.	19,521 31	
Special grants to disabled paid on recommendation of sick Committee.	2,619 70	
Medical attendance and nursing injured.	413 07	
Special grants to Widows including nursing in case of illness etc.	384 05	
Incidental expenses principally at time of disaster/	773 42	
Medical attend ince to families of deceased by Colliery Doctors at 50 cts. per families monthly	1625 29	
Funeral benefits to survivors of deceased, beneficiaries 1 adults, 9 children.	305 00	
Cost of management	1,575 00	
Coal supplied to Widows all classes, contributed as above	12,690 26	\$138,911.23

A scarcity of cars, owing to storms etc., accounts for the decreased output at the Marsh as compared with January of 1904.

Few of the individual Scottish collieries are comparable in size with the larger collieries in England and Wales, and the proper equipments required are therefore on a relatively smaller scale; but there has been steady progress in the application of electrical methods to mechanical operations in coal mining. During 1904 many entirely new equipments have been erected, and substantial additions made to existing ones.

The field of application of electricity in collieries is also broadening. The modern screening apparatus, washeries, coking, and by-product-recovery plants now being so generally installed call for a considerable amount of power for various auxiliary purposes, and in separate units on the surface. In convenience and economy electric driving under these conditions has no rival. But it is underground that the advantages of electricity are chiefly realised owing to the ease with which power may be transmitted to the point of its application. For hauling, dip pumping, and for coal cutting especially electricity is rapidly supplanting earlier methods.

The greatest relative progress has undoubtedly been in the department of coal-cutting. The thicker and more easily worked coal seams in Lanarkshire, as elsewhere in this country, are becoming exhausted, and recourse is being had to the thinner seams, which are more expensive to work. An "undercut" is made which allows the coal to fall, and when this undercut is made by hand in thin seams a large proportion of the coal is broken up into "small," and the selling price of the output is reduced. A coal cutter, when undercutting in the coal, effects a large saving in this respect. But underlying a coal seam there is generally a band of "fire clay," and this, while often too hard to be cut by hand, can be freely cut by machine, and the proportion of "small" is still further reduced. The tendency of the coal cutter is not to reduce the number of men employed, but to relieve the men of the most arduous and dangerous part of their work, and by increasing the output to add to the number employed at the various stages until the coal is loaded in railway trucks for delivery. The number of coal-cutters in this district, as all over the country, is largely and rapidly on the increase, and it is satisfactory to know that there are at least two local manufacturers who have energetically and successfully taken up this branch of work, and are not only holding their own in Scotland but placing many machines in England and Wales, and exporting to the Continent, South Africa, and Australia.

A very interesting development in the working of thin seams is being brought in the wake of the coal-cutter. This is an electrically driven hand conveyor, on to which the coal is placed after being undercut. The conveyor carries the coal from the "face" and automatically fills the small trucks in which it is taken to the surface. One such conveyor is now at work in Wales in connection with a Glasgow-made coal cutter; at least one other conveyor is in use in the North of England, and one of our local coal masters who has been a leader in the matter of coal cutting will have a similar arrangement at work early in 1905.—Glasgow Herald.

We publish the following from the Coal Trade Journal. On the subject we have an open mind. To the RECORD, from one or two sentences, the article seems to be 'inspired'. The Coal Trade Journal is probably in error in asserting that "the Nova Scotia producers are in favor of the removal of the duty". The RECORD believes that some are indifferent, a majority opposed to it, and only one or two in favor of removal of duty.

"Revision of the tariff on coal is earnestly desired by the manufacturers in Massachusetts and the other New England States. Nova Scotia produces quantities of Bituminous coal, and would like to ship it free of duty to New England, where manufacturers wish to buy cheaply in order to compete with their more favored rivals in the South and West. We exact 67 cents a gross ton on Bituminous coal, and Canada imposes the same tariff, but the coal operators of Ohio and Pennsylvania wish to export their Bituminous product free to the central manufacturing districts of Canada. Each country shoulders a needless burden on the other, which does both harm. The proximity of the New England center of population to Nova Scotia mines, and the cheapness of water carriage makes this locality a natural outlet for Nova Scotia coal. The same holds true of central Canada with respect to the coal of Ohio. Nova Scotia coal could be had in New England at \$2 per ton, "f. o. b.," for the coal, and 60 cents freight, last year. This is less than even the cheap coals from Virginia sold for.

Some months ago a movement took place in Ontario looking towards the abolition of the duty on coal. It was taken up by a number of boards of trade, until finally between 30 and 40 boards passed resolutions recommending the total abolition of the duty in Canada. The ground on which they asked that this duty be abolished was this: They contended that Montreal was the dividing line between the markets served by the Nova Scotia mines on the one side and the United States on the other—that the whole territory west of Montreal, between Winnipeg and Montreal, belonged to the latter, and, irrespective of the duty, that district of country was supplied from Pennsylvania, Ohio and West Virginia, whereas from Montreal to the seaboard the territory was supplied from Nova Scotia.

Nova Scotia producers are in favor of the removal of the duty. A strong argument for their side is that their production has overtaken the demands of the domestic market. The population of the country supplied by Nova Scotia coal mines is about 2,000,000 of people. Therefore they must look to other markets; they look to New England. Manufacturers there want coal at as low a cost as possible, and by reciprocity this could be had. At the same time, the advantages to Ohio and other mining States in sending coal to central Canada would greatly advantage the industry in those districts.

The account stands thus: Entire production in all parts of Canada, from Nova Scotia to British Columbia, was 7,140,000 gross tons in 1903; the exports from the two provinces named, to places on our Atlantic and Pacific coasts, were 1,768,000 tons. In the same year the imports were put at 4,928,000 tons of coal of all kinds. By reciprocity,

therefore, the mines in the United States would be the gainers, for the tonnage to central Canada would increase and New England consumers would get such coal as they import from Nova Scotia at a less rate."

SAFETY LAMPS.

The velocity at which the lamps named below explode or pass the flame according to accepted measurements are as follows:—

Davy, 6 feet per second.

Stephenson, 13 feet per second.

Clanny, 8 feet per second.

Muesseler, (Naked), 21 feet per second.

Muesseler, (Bonnetted), 40 feet per second.

Marsaut, 40 feet per second.

Davy, (In a can), 40 feet per second.

The Muesseler lamp is a Clanny with two additions, namely, with a diaphragm and a conical screen that the diaphragm supports the funnel, and three-eighths of an inch at the base, to feed the flame of this lamp first passes through the lower portion of the gauze cylinder, then through the diaphragm to the flame. When the gauze cylinder of this lamp is covered with a bonnet it is much safer than without it. The Marsaut lamp is also an improved Clanny lamp with ordinary lamps is here double, the gauze cylinder as in inserted within the other, and in addition the gauze cylinder is covered with a bonnet.

The Boston Herald may have had some of our N. S. colliery operators, managers and superintendents in view when it inserted the following:—

"The merchant or manufacturer, the industrial or professional, the manager or operator, who assumes to 'get on' without the trade journals directly or collaterally bearing on his particular speciality, is seriously handicapped in the stress of competitive strife.—Wilfully, though perhaps not wittingly, he deprives himself of sources of information and material for progress and profit, lack of which must inevitably leave him in the lurch. The managing head of every 'house' no matter how large the 'concern' should above all things see to it that each department head, and so many of the working force as by their intelligent interest show that they would profit by technical and professional information—that all these men are provided with the trade journals—best fitted to promote the advancement of each in efficiency. This at the expense of the firm of course, since the firm, in turn, cannot fail largely to profit by such policy.

A Dom. No. 4 correspondent says the jury at the inquest on young McDonald, killed in No. 3, to properly trier. The other matters referred to the "organ" of the workmen ought first to speak.

The Vale worked only about half time in January.

Maritime Mining Record

The MARITIME MINING RECORD is published the second and fourth Wednesday in each month.

The RECORD is devoted to the Mining—particularly Coal Mining—Industries of the Maritime Provinces.

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R. DRUMMOND, PUBLISHER.

STELLARTON N. S.

February 8th 1906

Rubs by Rambler.

Will the Halifax Herald please take notice that since Mr. Chamberlain began his propaganda there have been no fewer than forty-two bye elections in Britain. In no case did the Anti Chamberlains suffer defeat, in every instance, except perhaps one, the former conservative majority was largely decreased and in no fewer than sixteen out of the forty two elections the liberals wrested seats from their opponents, and withal the Herald is optimistic as to its friend Mr. Chamberlain's success. The conservative majority of 135, four years ago, has been reduced to say 85, for besides the seats lost at elections, equal to 32 votes on a division, they have lost ten or eleven votes, equal to twenty or say twenty-two on a division, by the defection of former supporters. It seems as if Mr. Balfour is determined to hang on to office, in the hope of something turning up, for he must know by this time that if he appealed to the country on any retaliation, or other half way protection policy, his party would not only be defeated but overwhelmed.

Than the possible saving of life and the alleviation of pain there is no subject of more importance in the department of mine management. The numerous clauses of the Mine Act referring to timbering of the mine, the spragging of places during the operation of undercutting, the restrictions as to the quantity of powder to be taken into the mine, the conditions under which shots shall be fired, the use of safety lamps, the removal of noxious gases &c. &c. have for their object primarily the safety and comfort of the workman, and only secondarily the preservation of property. It is probably well, it was wisely enacted, that the prevention of accidents should come first and before all. The fact that prevention is better than cure and should therefore first be sought after is no reason, seeing accidents will occur, why cures should be wholly or partially ignored. Our colliery underground managers are well versed in the means for the prevention of accidents. How many of them could take intelligent charge, and apply first restoratives or palliatives to the injured until the arrival of a qualified medical attendant? I may be wholly mistaken in the opinion that the number is limited, very much limited. If I am right then there is something wrong which ought to be at once remedied. We have arrived at the time when one of the qualifications for a certificated overman or underground manager must be that he is familiar with the subject.—First aids to the injured. It may be asked "Would I have the Mining Instructors impart the necessary information to the candidates; and would I

have them examined on this subject by the Board of Examiners? My answer is no. Neither the Instructors nor the Examiners may be competent or have themselves the qualification. At present a candidate must furnish to the Board certain certificates as to age, time employed in a mine &c. before being accepted as a candidate. Extend the system a little and ordain that he must have a certificate from a medical man or Board that he has a satisfactory knowledge of first aids to the injured. How would the candidates qualify and how would such certificates be obtained? That should not be a hard matter. This way, for instance, I am sure Dr. Kendall, my queer but kindly friend, were he living in a mining village, would gladly devote an hour for a stated number of evenings in giving lessons on the subject. Dr. McKay of Reserve would I am sure willingly do the same. At the end of the short and easy course Dr Morrison of Dom. No. 1 or Dr. McKeen of Glace Bay both of whom would gladly cooperate could examine Dr. McKays pupils, and give them certificates, if they displayed sufficient knowledge, and Dr. McKay could reciprocate in the case of Dr. McKeen or Dr. Morrison's pupils. The chief merit of this idea is that it is very easy, and very economical. Of course if Dr. Kendall can arrange with the government that the medical instructors and examiners should receive a small honorarium, I for one would be delighted. It is possible however, that both Dr. McKay and Dr. McKeen would passively resist any attempt of a grit government to thrust remuneration upon them, therefore a purely voluntary system might be the best to adopt at the inauguration of the movement. If no body makes a move soon to bring the subject to the notice of the government, I may do it myself even at the risk of being styled a nuisance and a busy body.

Talking of the qualifications of candidates reminds me that there is a kindred subject that worries me a little. I had something to do with the first suggestions as to the composition of the Board of Examiners but, thank goodness, I had nothing to do with the way they should carry out their work or the manner of their examination of papers, and the mode at arriving at conclusions. The fact is I never was in favor of the system, which has been in vogue from the first, under which a candidates papers are passed upon. My idea is and always has been that those who pass final judgement as to the qualifications of a candidate should not know, from the papers, upon whom their judgement is being passed. Each examiner should be in a position conscientiously to declare: "There is the number of marks that paper is entitled to, be the writer townsman or stranger, and here is the number that this paper is entitled to, be the writer from the Mainland or the Island." That's the way it should be, and that's the way it isn't. I am not for an instant going to hint even remotely that the members of the Board have ever followed a procedure said to be popular with some members of the House of Assembly, which consists in one member going to another and saying "You help me to scratch my back,"—that is pass some little bill—"and I'll help you to scratch yours," but I do say that the temptation to do so is present at every examination. I am not going to say, I am not in a position to say so, that any member of any Board, ever succumbed to the solicitation of a candidate or a candidate's friends, to put the marks on papers higher than their merit mayhap, but I do say that members at some past examinations have been urged to do so. The most honest of men have prejudices. They may not be sensible of the fact, indeed many of our prejudices are subconscious, but they are with us all the same, and it is

perhaps only natural that an examiner may give higher marks to a friend candidate—than to an utter stranger—consciously or unconsciously. The Board should be re-constructed in some way. As the number of examining districts has increased it may not be advisable to reduce the number of members presently on the Board. But the Board should be divided into two parts, one part to consist of the examiners who give the papers to the candidates, and who see that no "tricks" are played. Those constituting this part of the Board might be called the preliminary examiners; the other part to consist of those who examine the papers after being answered, and who might be called final examiners. This part need not consist of more than two members and the Sec'y of the Board Dr. Gilpin. After a candidate has handed in all his papers, these should be placed in an envelope with the name of the candidate plainly written on the outside, sealed and forwarded promptly to Dr. Gilpin. On the receipt of the papers from all the districts, the Sec'y should open an envelope, after first having numbered it. Then the paper should be closely scanned for the purpose of detecting distinguishing private marks, and thereafter should be numbered to correspond with the number on the envelope, and all the names and numbers entered in a book. The papers would then all be given to the final examiners for their awards. The two examiners would not know who had been the successful candidates or unsuccessful until the name opposite the number had been found on the roll book. If a scheme something like this was put in operation it would tend to stop the frequent insinuations of candidates that the decisions of the Board were not at all times impartial. Some of the members of the Board may object to any rearrangement; let them not forget that the chief object of the Board, is not honor and emolument for them but, the reward of the meritorious.

Anything else that interferes with my digestion, or makes another buzzing sound in my ears? Oh, yes. There are the Miners Examining Boards, big farces in too many cases. The fee of fifty cents for a certificate, is responsible for many frauds and wilful impositions. The law was asked for by the P. W. A. for the benefit of the members, and if that body is too cowardly, --or I better say soft hearted in the interests of my head, --to deal drastically with delinquents--examiners--I dont think it will be prudent to interfere. That as second thought-- And this as an afterthought--Expel petty speculators abolish the fee, or abolish the Boards. Better no Boards than Boards that are farcical.

The Provincial Workman has an article on Relief Funds which agreeably surprises me. The article is laudatory of the work done by these societies. Though the societies are separate concerns, doing business each on its own account, our contemporary uses the singular and sums up their character in the happy short phrase "quiet, unpretentious but very useful society." What surprises me is that the Workman, unlike some others, who profess to be very solicitous for the welfare of colliery workers, is not clamorous for more government aid as the one thing first needed to make the societies still more beneficial. It holds that the workmen, the participants, if the words 'beneficiaries of,' conveys the idea of charity, in the fund should be the first to increase their contribution, in order to secure increased death indemnity to their relatives, or increased indemnity in cases of permanent disability from accident or old age. That is situated. I had always a horror of asking the government or the companies to do anything to pauperize the workmen. The worst friends of the workingmen are those who do things, in the way of conferring supposed

favors, which have a tendency to lessen the workmen's self respect, for favors must lessen self respect whether the recipients are conscious of it or not. We have it on the best authority that: "A gift blindeth the eye", and what does that mean other than that it tends to a lessening of self respect. Of course there are some beneficiaries as cocky fuller of conceit than their benefactors. That does not however say much for them; peacockism is not self respect by a long way. The "Workman's" idea of what should be done is contained in the following extract from its article:—"With the addition of ten cents per month to the present fee, an equal amount from the government and companies, the insurance feature of the society could be greatly enlarged, the aged and infirm could be helped along beyond the period of six months or a year, and the permanently disabled receive compensation almost equal to that paid by the insurance companies. We are of opinion that if this weakness of the society was strengthened in this or some such other way it would prove far more beneficial to all parties interested than any act passed, whether it be compensation, liability, or old age pension fund."

To the latter sentence, as loud as I can shout, I cry hear, hear, and I also loudly applaud this further sentiment:—

"To have one's own fund, to be a contributor to it, to foster and care for it, is far more ennobling and helpful than to receive from others something which favors of charity or favor." Yes, indeed, but, alas, many more than workingmen these days accept charity, and thereby lose in independence, self respect, manliness.

I have been rather alone in my views as to the proper way to build up and administer the funds, and I am therefore the more pleased to have the Workman express views in harmony with my own. But there is one point not touched upon in the Workman's article. What part will the funds play in the case of an accident involving the loss of six or more lives. An individual society might not be able to meet all the claims upon it in such an event. Would it be preferable in such an event to call for public subscriptions--charity--or to ask help from the other branches of the society? Or, as suggested previously in the RECORD, should the government instead of making increased grants to the ordinary funds, set apart so much yearly for an emergency fund. The proposal to increase the fee by ten cents a month is reasonable. It would mean an additional grant of say \$4000 from the government, and the only company that would be called upon to pay a thousand dollars, or over, would be the Dom. Coal Co.; all the others would be from, say, \$800 downwards. With very little effort and at very little additional cost our Relief Funds could be placed in such position that the system would be the envy of other industrial communities, and would indeed be preferable to any and all of your liability acts, your compensation for injuries acts, or old age pension acts.

The retiring President of the Montreal Board of Trade at a late meeting of that body took Mr. John Morley to task for having told his constituents in Forfarshire that the question of preferences was no more a live question in the Canadian elections than their great Canadian Railway scheme would be in the next election in Forfarshire. The retiring president says Mr Morley should have told them the real facts of the case, "that the reason that it was not what he terms a live question or in other words a party question in our last elections here in Canada was simply that the people in Canada, without respect to party, are practically a unit in favor of a mutual pro-

ferential arrangement." The retiring president is not in a position to say where the Canadian people as a whole stand on the question unless by people he means the upper provinces manufacturers. The fact is, and it cannot successfully be denied that the people as a whole, judged by what has been said in the lower provinces, have practically taken not the slightest interest in the subject. Few of the papers deem it of sufficient interest, to their readers, to treat of the subject. The Halifax Herald at times shows a preference for Mr. Chamberlain but it stands almost alone. The Boards of Trade of the Cities of Quebec and Ontario may be red hot in favor of a preference and the reason of that is because they are red hot protectionists. They fear more the competition from the United States than from Britain, and favor a preference with Britain in the belief that no agreement can be arrived at in regard to a preference without an increase of duties on articles coming from the United States. It has been said time and again, and said truly, that the manufacturers want only that kind of preference with Britain which will not interfere with their business. The wall against America is to be made higher, but the present wall against Britain is not to be lowered. Was there not an outcry against the preference which allowed British woolsens to compete and displace Canadian. And as with woolsens so with other articles, such as sugar, iron etc. Let there, say the manufacturers, be a preference, but not such a preference as will lessen Canadian production. Mr. Morley was quite correct in saying preference was not a live question. I'll be bound to say if there was a subject less referred to in the lower provinces the last two years than another that subject was the preference which has caused such a furore in Britain.

All of Canada sent to the United States in '04 1,211,000 odd tons of bituminous coal, and imported from the United States 4,384,000 odd tons. The bulk of this went into Ontario. The figures show that there is a fair sized market in Ontario if it could only be captured. In addition to the bituminous 2,193,000 of Anthracite were imported in 1904, or a total of say 6,750,000 bituminous and anthracite. For every ton of Canadian coal consumed in Canada there are probably three tons of the United States article. This should not be satisfactory. The United States sent last year to the West Indies and Bermuda 347,000 tons of coal. Nova Scotia has been asked to cater to the West Indies market, but there is not enough in it. To obtain a market in Mexico is more desirable, as more coal goes that way than to Cuba and the West Indies. Mexico is a fairly large and growing market and it is to be hoped that the efforts being put forth, as it is said, to secure a portion of that market may be successful.

It is said that the provincial government intends to inaugurate a vigorous immigration policy. I hear that Pictou County is not to be overlooked in the disposal of the immigrants. I am not acquainted with the needs of other counties but I wager the remark that Pictou is not a good field for immigration. Where will the number allotted to Pictou County be placed? Not at the mines, nor the steel works, nor the lumber woods. All these at the present time are full handed. At this season the Tram Co. could give occasional employment to laborers shovelling snow, but no one surely would think

of bringing in immigrants because there may be a scarcity of laborers succeeding a blizzard. The only places open to immigrants are the vacant farms. Well, it might be nice if all the vacant farms were occupied, but I for one would not like to be a party in inducing immigrants to settle on them. Why should immigrants be asked to settle on Pictou farms yielding a third of the crop that a farm in Manitoba yields? Why should we seduce immigrants to fill these farms when those who have tried them have fled from them? It is possible there are many spots in Nova Scotia where immigrants could be settled with advantage to themselves and the province, but Pictou and Cape Breton counties, I fear, must be counted out. A vigorous policy is wanted in these counties but it is not an immigration one. What is more needed is a vigorous iron ore, and other minerals prospecting, aiding, and development policy.

I read of an easy solution of the kissing dirty bible in court question, the other day. The Bibles in court rooms on which witnesses are sworn, and which have to be kissed to make, as is supposed, the oath effective, are declared, from frequent handling, to be so dirty and so foul, that there is danger of disease being conveyed by their use. The question has been up for a long time, and no way out of the difficulty presented itself except that kissing should not be made compulsory. A man summoned to the Old Bailey has solved the question in the simplest kind of ways. He brought his own Bible. Everybody has or ought to have a Bible, so let anyone when called to testify slip a bible in his pocket, and produce it to be sworn on in court. What a big fuss a question of so easy a solution has made.

The managing heads of the Scottish Railways are not at all in favor of Sunday work. A chief director of one of them says he would not favor Sunday work even if thereby it were possible to declare a ten per cent dividend, and give double wages to the employees. He maintains that the chief effect of Sunday work is to demoralize the employees. And these views are held in common with those of the managing directors of other lines. From whatever point viewed "Six days shalt thou labor" is a blessed injunction. I am wondering at the present moment how it happens that the fourth and the fifth commandments are the only ones in the affirmative, 'Six days shalt and 'Honor thy father, etc.' while all the least are in the negative, 'Thou shalt not.' If the fourth command were "Thou shalt not work more than six days" many people might draw the inference that they could work as many less days than six as they choose. If I were expounding the passage I might attempt to show that it should be read literally, that is, that when six days work was mentioned, six days work was meant. The over zealous are to be restrained from working themselves to death—they are to rest one day in seven; and the ever indisposed—the lazy fellows—are to be stimulated to work six day a week as a rule, lest they die of ennui. I don't think short timers can take any more comfort out of the command than the overtimers.

Mr. T. J. Brown, though elected, has declined the honor of Chairman of the N. Sydney Board of Trade on the ground that the Board's and his Company's interests might clash. He might have taken other ground and said that the Superintendent who, these days of competition and tension, would keep his collieries up to the notch, has no time to devote to extraneous subjects. Perhaps this should not be so, but it's a fact.

AROUND THE COLLIERIES.

Mr. P. Christianson had to succumb to la-grippe for a week or so. He is again on duty at Glace Bay.

It is said that Sydney No 2 may start up again in the spring. That will depend largely on the sales outlook.

The No. 3 slope men Springhill, are beginning to envy the No. 2 slope men, as the lion's share of the work falls to the latter.

The output of the Albion has been curtailed of late and will be affected for some time by the loss of one of the balances.

The answer to the cap pieces question in last issue of the RECORD is 301. Mr. L. G. Hargreaves of Springhill, sent first correct answer.

As expected January coal trade does not make a good showing. The stormy weather interfered to some extent with operations.

A large number of people in Springhill are suffering from La. grippe; a thousand or more according to the M. D's being laid up at the one time.

On the 31st. Jany. the No. 2 Allan shaft was down 636 ft. and the No. 1 about 575. The No. 1 only went 36 ft. in Jany. which is certainly not rapid sinking.

The talk of a coal famine on the railways last week must have been an exaggeration as the railway people had given some of the operators a short time previously to understand that the sheds were well stocked.

The new lodgement of No. 2 slope, Springhill is about completed. A new pump will be installed at once which will pump to the 2400 ft. lift. Sinking will be continued below the 3200 ft. lift. another lift of 700 feet reached.

The General Manager of the Springhill collieries has now another assistant. He began duty on the 28th ult. True, he is a very little chap, but spunky, and not likely to keep quiet if things dont go to his liking. He will be known on the staff as Cowans, Junior.

The spare drums of the haulage plant of No. 2 slope Springhill, will be utilized to clean up the formerly submerged but now dry workings west of the 3200 ft. lift. Coal will also be hoisted by this means, and landed at the 2400 ft. lift until the main slope is put in position to hoist from this lower lift. This will greatly facilitate the work of cleaning up west section of pumped out district.

Mr. Alexander McEachern was waited upon last Thursday evening by committees representing the officials and the employees of the Harbor seam of Dom. No. 2 colliery, who presented him with a substantial purse of gold. The presentation was accompanied by an illuminated framed address on which were embellished photographs of Mr. and Mrs. McEachern, and views showing the bankhead of the Dom. No. 2 colliery when Mr. McEachern took charge, and another showing it as it is to-day. There was another presentation a day after.

Construction work is still proceeding at Dom. No. 2 but gradually it is nearing completion. By the first of May the colliery should be in a good shape for large outputs.

Mr. J. T. Burchell of the Gowrie & Blockhouse Company, has left for Britain, presumably for Newcastle—on Tyne, where Mr. C. Ochiltree MacDonald, of Halifax, went also the other day.

The snow storm of last week interfered greatly with the working of the mainland collieries. Consumers in the near bye towns complain that they cannot get Acadia Coal as quickly as they would like.

The managers of the several collieries of the Dominion Coal Co. have formed themselves into a Salvage Brigade with the object of getting better acquainted with each others underground workings, devising best means of action in cases of accidents, and using their knowledge combined in cases of emergencies.

Mr. King, superintendent of the Dominion Coal Co's mines, is devoting considerable time to a thorough examination of the several collieries. He visits every part. This is just what the superintendents want, as there is nothing like a heart to heart talk on the premises.

Mr. Hewett of the Public Works Department, Ottawa, was in Glace Bay lately in connection with a site for the new public building to be erected. Of course no hint was given as to any likely location. Several of the landed people would like to sell to so generous and sure pay a customer.

John T. McDonald, aged 20, driver in No. 10 East Level, Dom. No. 3, was killed on Friday 27th. Jan., by a fall of stone. He was one of the colliery's best boys. Ralph and Richard Bramwell, two English lads, were hurt at the same time, the latter's arm being broken. The box jumped the track, and knocked out some props.

There must have been some big surprises in the mining circles in Cape Breton of late if the reports in the papers are to be relied upon. It is said Mr. Rob. Anderson, formerly of the Dom. Coal Coy's staff, lately with the Bithulthic people, is to take charge at Broughton; that Mr. Thos. Bown has resigned Dom. No. 6. and is to be succeeded by Robert Robertson formerly of Sydney Mines. James Ross is in Mexico, sure.

The members of the Society of Civil Engineers to the number of 150, visited the new works of Allis-Chalmers Bullock Limited, Montreal, on Jan. 25th. They expressed surprise at the progress of electrical work under construction. They were given an interesting demonstration on the construction and operation of drills, coal cutters and compressors. On leaving each member was presented with a handsome leather card-case as souvenir of the visit.

AROUND THE COLLIERIES.

Coal Shipments January 1905.

INVERNESS RY. & COAL CO.

Shipments January 1905	6,728 tons
" " 1904	8,627 "
Decrease " 1905	1,901 "

INTERCOLONIAL COAL CO.

Shipments January 1905	15,328 tons
" " 1904	19,168 "
Decrease " 1905	3,840 "

GOWRIE & BLOCKHOUSE, LTD.

Shipments January 1905	1,269 tons
" " 1904	1,368 "
Decrease " 1905	99 "

CUMB. RY. & COAL CO.

Shipments January 1905	24,676 tons
" " 1904	32,793 "
Decrease " 1905	8,123 "

ACADIA COAL CO.

Shipments January 1905	17,011 tons
" " 1904	18,789 "
Decrease " 1904	1,778 "

NOVA SCOTIA STEEL & COAL CO.

MARSH MINE

Shipments January 1905	3,636 tons
" " 1904	5,656 "
Decrease " 1905	2,020 "

SYDNEY MINES.

Shipments January 1905	22,709 tons
" " 1904	19,570 "
Increase " 1904	3,139 "
Total shipments " 1905	26,345 "
" " 1904	25,226 "
Net Increase 1905	1,119 "

DOMINION COAL COMPANY, LTD.

—Output and Shipments for January 1905—

—Output—	—Shipments—
Dominion No 1 33,190	
" " 2 23,104	
" " 3 16,001	
" " 4 36,767	
" " 5 33,826	130,649
" " 7 4,171	
" " 8 1,890	
" " 9 11,669	
Total 160,618	130,649
	Jan'y '04 147,489
	Decrease " '05 16,840

In the estimates one finds the following:—

Antigonish public building \$15,000; Glace Bay public building \$15,000; Halifax "new" public building \$112,000; Inverness public building \$15,000; Shelburne public building \$15,000; Sydney public building \$2,500; Sydney Mines public building \$15,000 and not a word about poor old Stellarton. And the I. C. R. is to spend \$218,000 at Halifax; \$81,000 at Sydney; \$50,000 each at Truro and Sydney Mines, and \$30,000 at Stellarton

There are now nine air locomotives installed in Dom. No. 2 colliery. The pit bottom, roads, and landings are nearly completed. By the time shipping begins this colliery will be in a position to show its friends what really it can do. It is confidently expected that it will be able to do better than any other colliery in the continent, and this it will do if the output, as expected, comes up to between four and five thousand tons in a single shift.

During the past three years no manager of a mine in Nova Scotia has done so much and good work under trying situations as Mr. Alex. McEachern of Dom. No. 1. Probably the pressure of work, and anxiety, is responsible for Mr. McEacherns present unsatisfactory state of health. At first the complaint with which he was beset was Bronchitis; it has now developed to Bronchus Asthma. With so much work underground Mr. McEachern came to the conclusion that there could be no improvement of health so long as he remained at No. 2. He therefore asked the Supt. of Mines to find him a lighter job, or hinted that he would have to seek such. The company we are glad to say has agreed that Mr. McEachern go to the International until he recovers health. This is one to the credit of the company as the RECORD believes there will be no reduction of salary with decrease of responsibility. The RECORD fervently hopes the change will prove highly beneficial. The change will be effected as soon as Mr. Debison gets the hang of things at No. 1 and Mr. McKenzie at No. 2.

BIG INGOTS.

THE FLUID COMPRESSED TREFFILAGE PROCESS.

The latest addition to the plant at Parkhead Works, Glasgow, and perhaps not the least interesting, is the Treffilage process of steel making. In this process, unlike that of the Whitworths, the pressure is applied from below, the metal being forced up into the conical-shaped cast iron mould. By this means the pressure is applied in the most effective manner, and the solidification of the molten steel taking place under conditions favourable to the formation of the best structure, segregation is reduced to a minimum; and, as was proved by cutting one of over 20 tons through its longitudinal axis, an ingot is obtained from which piping has been entirely eliminated. Tests taken from this ingot were equal in tensile strength and ductility to the best forgings. Besides getting rid of "piping," other defects common to ingots cast in the ordinary way are greatly minimised. The plant at Parkhead is the largest in the world, and the only one capable of dealing with heavy ingots in this country. Ingots up to 40 tons in weight can be treated by this Treffilage process. The War Office and Admiralty are greatly interested in the new process, which offers an effective means of overcoming many of the difficulties attendant on the manufacture of heavy shafts and other forgings, and reduces to a minimum the possibility of failure under working conditions. The process is being applied to ingots for forgings of all kinds, including shafting, straight and crank axles, and also to heavy marine boiler plates. Its introduction may fairly be said to mark a new era in steel manufacture.

MECHANICAL STOKING.

Mechanical stokers are now chiefly used for the purpose of enabling inferior fuel to be burnt with advantage. They show no economic advantage against hand-firing with good coal, and, as repairs are expensive, steam users frequently find that when the price of slack and other fine coal increases, the pecuniary advantage of mechanical stokers disappears. Mechanical stokers are often of great advantage in reducing the smoke nuisance in the case of overworked boilers. The economic importance of smoke is, however, very trifling, as will be seen from the following results obtained during a recent boiler test. When the smoke was absolutely black—as black as it could be made—the heat loss was 0.97 per cent; when the smoke was black, but daylight seemed to show through it, the loss was 0.22 per cent, and when the smoke was very light the loss was 0.043

THE DIGNITY OF LABOR.

Labor organizations are missing their great opportunity, are delaying the consummation of the highest hopes of mankind, perhaps for centuries, by their mistaken policy of antagonism not merely against free labor, but against work itself. They have failed to realize the truth that there is nothing so splendid in this world as labor. They have not sought to throw around work the glamour, the romance, the beauty that should be its by right. The attitude of labor organization is not cultivating in the workman the spirit that in labor he is doing the finest thing possible to a human being. It is denying to its members the high inspiration that comes to men who feel that their powers are being developed along lines of natural growth, and that they are free agents contributing largely to the growth of the world in civilization.

It is absolutely necessary to abolish that idea that labor for wages is slavery, that it is degrading, that it is a curse. How many realize that if they were not obliged to labor as a means of livelihood, they would have to labor for the mere pleasure of work. Strange it is that we call labor for wages work, and labor without wages, play. There are many men in this country whose wealth relieves them of the necessity of labor, but who nevertheless continue to labor hard, for in work they find their greatest pleasure. They work not for the mere gain, but for the very fun of working. It is an inspiration to see some one who has reached the usual allotted age of man—the three score and ten—but who nevertheless refuses to be put on the retired list, but goes daily to work, preferring to die in the harness of life, in the performance of those duties which during all his years have been his greatest pride and delight. As soon as a man ceases to work he begins to die.

What the world wants is not less work but more, not necessarily more hours of work, but more earnestness and efficiency and love of work during the hours of labor. The demand is for free labor, for labor inspired with the faith that it is not carrying a burden but is endowed with wings of aspiration to lift the laborer above sordidness and degradation.

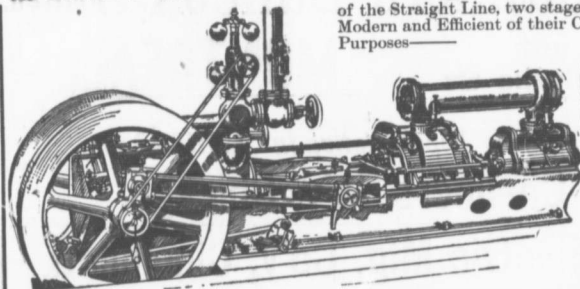
The new electric lighting system which is owned and controlled by the city of Moose Jaw, Assiniboia, is now in effective operation. The electric apparatus including the generator, switchboard, pole line and wiring system, was supplied by Allis-Chalmers-Bullock, Limited, Montreal. The generating field type. The power house is equipped with a tandem compounding condensing engine of 160 H. P. When the pumps are installed the cost of the building and machinery will be in the neighborhood of thirty-eight thousand dollars. The whole equipment is thoroughly efficient and modern.

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ROPE**

**HIGH GRADE WIRE ROPES FOR
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Sullivan Air Compressors,

of the Straight Line, two stage type, are the most Modern and Efficient of their Class for Coal Mining Purposes



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Over 2,000,000 Horse Power,

of these Boilers in use in the United States and Foreign Countries. Made entirely of wrought steel. Employ no tube-caps or gaskets. Four man-holes give access to the entire interior, exposing every rivet, tube and joint in the boilers. Can be cleaned in ONE-FOURTH the time required by other types.

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SPRINGS,
FRIGS,
CROSSINGS,

We make a Speciality of cast Steel WHEELS

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LIDGEWOOD MAN'F. CO'Y, - NEW YORK.

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Designers, Manufacturers and Builders of
Complete Coal Mining Equipment,

INCLUDING

**TEEL HEAD FRAMES, STEEL TIPPLES,
CAR HAULS,**

**Conveying & Elevating Machinery
Coal Washing Machinery.**



Synopsis of Regulations for disposal of Minerals on Dominion Lands in Manitoba, the Northwest Territories and the Yukon Territory.

Coal—Coal lands may be purchased at \$10 per acre for soft coal and \$20 for anthracite. Not more than 320 acres can be acquired by one individual or company. Royalty at the rate of ten cents per ton of 2000 pounds shall be collected on the gross output.

Quartz.—Persons of eighteen years and over and joint stock companies holding free miner's certificates may obtain entry for a mining location. A free miner's certificate is granted for one or more years, not exceeding five, upon payment in advance of \$7.50 per annum for an individual, and from \$50 to \$100 per annum for a company, according to capital.

A free miner, having discovered mineral in a place, may locate a claim 1500 x 1500 feet by marking out the same by two legal posts, bearing locations notices, one at each end on the line of the lode or vein. The claim shall be recorded within fifteen days if located within ten miles of a mining recorder's office, one additional day allowed for every additional ten miles or fraction. 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 \$500 has been expended or paid, the locator may, upon having a survey made, and upon complying with other requirements, purchase the land at \$1 an acre.

Permission may be granted by the Minister of the Interior to locate claims containing iron and mica, also copper in the Yukon Territory, of an area not exceeding 160 acres.

The patent for a mining location shall provide for the payment of Royalty of 2 1/2 per cent of the sales of the products of the location. Placer Mining—Manitoba and the N. W. T., excepting the Yukon Territory;—Placer mining claims generally are 100 feet square; entry fee, \$5, renewable yearly. On the North Saskatchewan River claims are either bar or bench, the former being 100 feet long and extending between high and low water mark. The latter includes bar diggings, but extends back to the base of the hill or bank, but not exceeding 1000 feet. Where steam power is used, claims 200 feet wide may be obtained.

Dredging in the rivers of Manitoba and the N. W. T., excepting the Yukon Territory—A free miner may obtain only two of five leases of five miles each for a term of twenty years, renewable in 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, but where a person or company has obtained more than one lease one dredge for each fifteen miles or fraction is sufficient. Rental, \$10 per annum for each mile of river leased. Royalty at the rate of two and a half per cent collected on the output after it exceeds \$10,000.

Dredging in the Yukon Territory.—Six leases of five miles each may be granted to a free miner for a term of twenty years, also renewable.

The lessee's right is confined to the schoonered bed or bars in the river below low water mark, that boundary to be fixed by its position on the lat day of August in the year of the date of the lease.

The lessee shall have one dredge in operation within two years from the date of the lease, and one dredge for each five miles within six years from date. Rental, \$10 per mile for first year and \$10 per mile for each subsequent year. Royalty same as placer mining.

Placer Mining in the Yukon—Creek, gulch, river and hill claims should not exceed 500 feet in length, measured on the base line or general direction of the creek or gulch, the width being from 1000 to 3000 feet. All other placer claims shall be 350 square feet.

Claims are marked by two legal posts, one at each end, bearing notices. Entries must be obtained within ten days, if the claim is within ten miles of mining recorder's office. One extra day allowed for each additional ten miles or fraction.

The person or company staking a claim must hold a free miner's certificate. The discoverer of a new mine is entitled to a claim of 1,000 feet in length, and if the party consists of two, 1,500 feet altogether, on the output of which no royalty shall be charged, the rest of the party's ordinary claims only.

Entry fee \$10. Royalty at the rate of two and one half per cent on the value of the gold shipped from the Yukon Territory to be paid to the Comptroller.

No free miner shall receive a grant of more than one mining claim on each separate river, creek or gulch, but the same miner may hold any number of claims by purchase, and free miners may work their claims in partnership by filing notice and paying fee of \$2. A claim may be abandoned and another obtained on the same creek, gulch or river, by giving notice and paying a fee.

Work must be done on a claim each year to the value of at least \$50. A certificate that work has been done must be obtained each year, if not the claim shall be deemed to be abandoned, and open to occupation and entry as a free miner.

The boundaries of a claim may be defined absolutely by having a survey and publishing notices in the Yukon Office. Gazette.

Petroleum.—All unappropriated lands in Manitoba, the Northwest Territories and within the Yukon Territory, are open to prospecting for petroleum, and the Minister may reserve for an individual or company having machinery on the land to be prospecting an area of 1200 acres for each period as he may decide, the length of which shall not exceed three times the breadth. Should the prospector find oil in paying quantities and satisfactorily establish each discovery, an area not exceeding 640 acres, including the oil well, will be sold to the prospector at the rate of \$1 an acre, and the remainder of the tract reserved, namely, 1200 acres, will be sold at the rate of \$2 an acre, subject to royalty at such rate as may be specified by Order in Council.

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

Dept. Interior,

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BARRISTER, SOLICITOR, ETC.
NEW GLASGOW, N. S.
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PRODUCER GAS.

A direct saving to fuel may possibly be effected by the more general introduction of producer gas; at any rate, it seems to be an established fact that less fuel is required to produce a certain amount of steam if it is first converted into gas than if it is burnt direct in the boiler. This corroborates the conclusion, drawn from a large number of boiler trials, that the average waste of fuel in a boiler is very high, say 30 to 50 per cent. The cause of this waste is excessive air admission at the furnaces, which is necessary, partly on account of the smoke nuisance, partly on account of the wear and tear of the boiler. The maximum heat loss due to smoke is about 1 per cent. Most inventions for the removal of this smoke consist in arrangements for admitting air, resulting in further reductions of efficiency amounting to from 20 to 30 per cent. When smokeless coals are used, and as the conditions of firing are as perfect as can be, furnace temperatures approaching 5,000 Fahr. could be attained. Such excessive temperatures must produce very severe stresses, both in furnace plates and in water tubes, and such intense heats must increase the wear and tear of a boiler, and are, therefore, not desirable. A solution to the difficulty seems accidentally to have been hit upon, when, for totally different reasons, the Admiralty sub-divided their Belleville boiler by adding a so-called economiser. The essential point of the alteration is, however, not the economiser, but the addition of a second combustion chamber, yet in spite of the principle of double combustion being but imperfectly carried out, in that case the economic results are said to be exceedingly good.

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Read down		Atlantic Standard (local time) Trains run daily		Read up.	
No 52	No 54	No 52	No 54	No 51	No 53
A 10 07	L 3 55	9	Pt Tupper Jct	A 9 55	A 3 35
L 10 13	A 4 00	1 3	P Hawkebury	L 9 49	L 3 27
A 10 32	L 4 16	4 7	Port Hasting	A 9 27	L 3 10
P 4 27	L 4 15	8 8	Troy	P 9 17	
P 4 40	L 4 27	12 7	Oreignish	P 9 06	
P 4 52	L 4 39	16 9	Craigmore	L 8 51	
P 5 07	L 4 52	20 1	Judique	L 8 34	
P 5 20	L 5 05	27 6	Cabernies Pass	P 8 22	
A 5 35	L 5 18	32 5	Port Hood	L 8 08	
L 5 45	L 5 30	37 3	Glencoe	A 8 00	
A 6 01	L 5 45	44 5	Malou	P 7 45	
L 6 22	L 6 00	51 4	Glendyre	P 7 35	
P 6 35	L 6 15	58 3	Black River	P 6 50	
P 7 10	L 6 35	65 6	Bushhouses	L 6 37	
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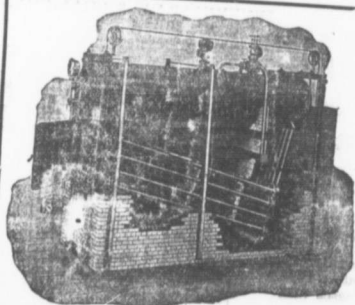
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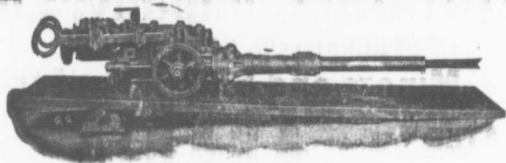
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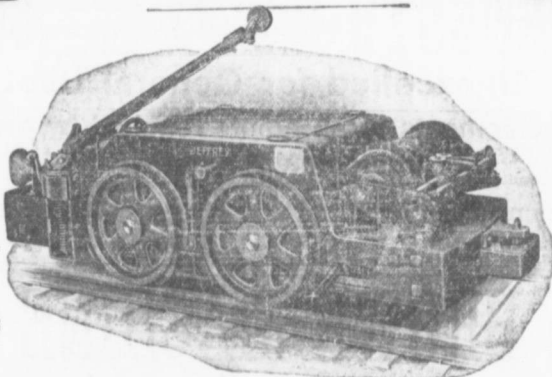
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Coal and Gold Mining Machinery a specialty

Endless Haulage Engines, Revolving Tipples, Picking Tables and Complete Screening Plants for the Cleaning and Picking of Coal. Rope Wheels, Pumps, Valves, Shafting, Belting Etc.

Complete equipments furnished for Coal or Gold mines.

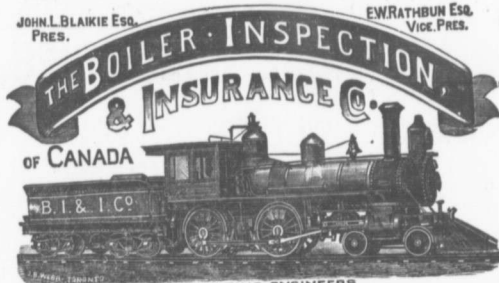
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Wire Screens for every class of Material.
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Equal in quality to Scotch Clay. Sold in bulk or in bags
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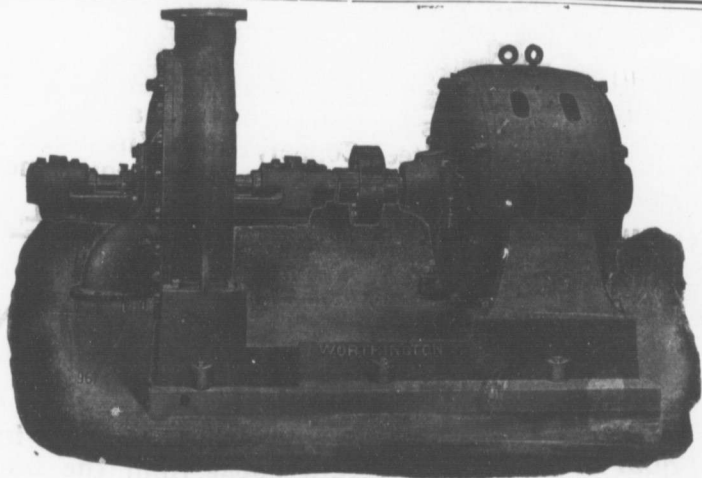
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The Reputation of this Coal has Steadily Advanced during the past 40 years and the Output of the new Mine is fully up to the old Standard of Excellence.

Especially designed Piers for the rapid delivery of coal
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EIGHT INCH SINGLE-STAGE **Worthington** **TURBINE Pump**

Driven by an induction motor. Capacity 1,800 Gallons per min. against 70 feet head.

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Builders for Canada

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Send for Catalogue.

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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

Caloric 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
—5000 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.

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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%	28.41%
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

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The year Round

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