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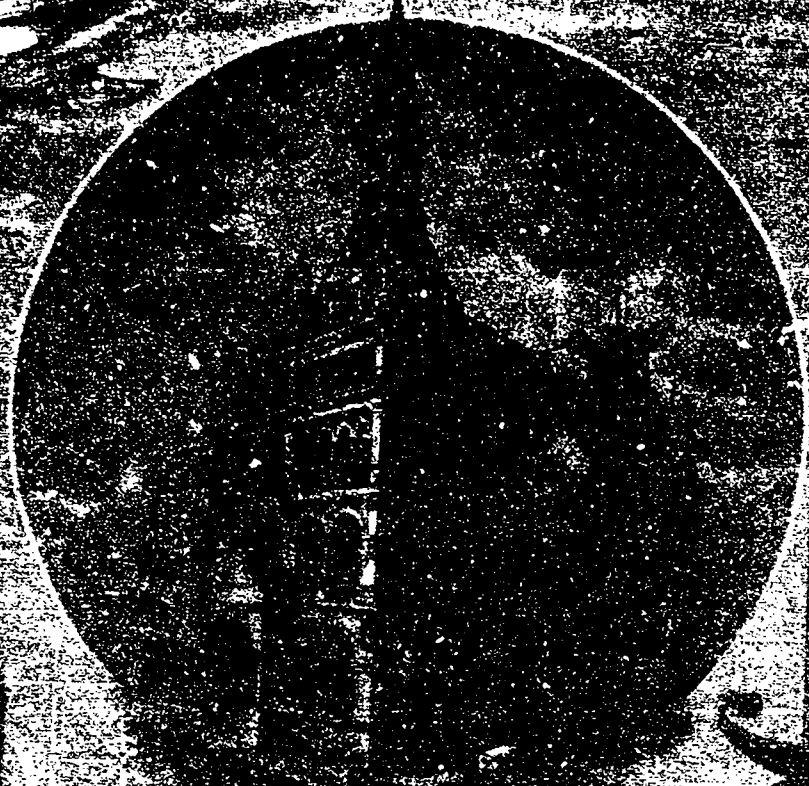
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VOL. II. No. 7

JULY, 1887.

Review
TORONTO, - ONTARIO.

WESTERN Assurance Co



MARINE

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CASH ASSETS	\$1,188,200 46
ANNUAL INCOME <i>over</i>	\$1,300,000 00
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AGENCIES IN ALL PRINCIPAL CITIES AND TOWNS IN CANADA AND UNITED STATES



Vol. II.]

TORONTO, ONT., JULY, 1887.

[No. 7.

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IMPORTANT.

COMPLAINTS have reached us from some subscribers to whom accounts have been sent, that their subscriptions have already been paid. There are a number of subscription receipts of which no record has so far reached this office from the agents who received the funds. Our friends are invited to assist us in rectifying these errors. If you receive an account for a subscription already paid, inform us promptly of the fact, and send the receipt you hold or give other evidence of the money having been paid. If you do not receive your paper regularly or if your friends do not, please give us an opportunity to set the matter right by informing us of the facts.

The Public Works Department has let three contracts to Toronto firms for works in connection with the examining warehouse, the total amount involved being about \$15,000. The successful tenderers, all of whom were the lowest, are: John Fensom, for elevators; Inghs & Hunter, engine and boiler; John Fletcher, for alterations and additions.

THE Iberville, Dunham & Clarenceville organized in the last week of June by electing the following directors and officers: E. J. Chamberlin, F. S. Stranahan and George A. Mowat, of Ottawa; E. C. Smith and Geo. A. Ayer, of St. Albans, Vt.; George Nelson Clark, of Clarenceville, and Stephen H. Jones, of Sabrevois. E. J. Chamberlin was elected president; George A. Ayer, vice president; F. S. Stranahan, treasurer, and L. A. Trudeau, secretary.

AS A RESULT of the anti Inter-State Commerce Law. The United States Government desiring to send a party of astronomers with a large quantity of instruments to Japan found that our transcontinental roads could not make a rate nearly as low as that offered by the Canadian Pacific Railway to Victoria and thence by steamer to Yokohama, and so has actually made a contract with the foreign road to take the party out and back.—*Railway Age.*

THE Canadian Anthracite Coal Company, owners of a mine near Knoll Springs, have secured favorable terms from the government for the lease of lands in the National Park reservation for sites for miners' cottages and the men now at work in the vein will bring their families on from Pennsylvania. The company will shortly forward trial shipments of coal to Victoria and San Francisco. The annual meeting of the company will be held in Winnipeg on August 10th.

THE construction of the locomotive shops of the Grand Trunk at Stratford is proceeding satisfactorily. The contracts involved amount to about \$60,000, the Grand Trunk furnishing a great part of the material. This will give an idea of the grand results aimed at in the

consolidation at Stratford of the locomotive and car shops for the portion of the system west of Toronto. Mr. Ballantyne, M.P.P., of Stratford, is quoted as stating that this move on the part of the Grand Trunk is expected to double the population of the city, bringing it up to about twenty thousand people. The construction of the car shops has not yet been entered upon, but the people of Stratford have no doubt that they will soon be erected.

HON. MR. MERCIER, on behalf of the local government, has taken out a writ of injunction in the hands of the Waterloo and Magog Railway Company to prevent them from changing their railway line, for which they had obtained a subsidy from the provincial government. It is alleged, according to the hon. prime minister, that the Waterloo & Magog Railway Company is petitioning the Federal Government for leave to make the necessary alterations and then sell out their line to the Canadian Pacific Railway Company. The Hon. Mr. Mercier, by his writ, wants to check the Federal Government in the matter, as he pretends that, should they grant the necessary permission to the Waterloo & Magog Railway Company, they will overstep their powers.

TALKING about the big celebration in London last month the *Advertiser* drops into poetry in a friendly way and warbles thus:

The leafy month of merry June
Inspires the poet's song
But we shall strike another tune
To help the month along.
For once let nature stand aside
We've cause for exultation;
This is the month we point with pride
To our railway celebration.

To this the *News* of Kingston, which city is the prospective iron smelting, mining and shipping centre of Ontario, responds

Oh that we, too, might sing
And make the welkin ring
With shouts of exultation
O'er our railway celebration,
Or furnace elevation;
And point with pride, and joy, beside,
To a dry dock's consummation.

Personal.

MR. S. R. CALLAWAY, manager of the Union Pacific, and Mr. W. R. Callaway, district agent of the Canadian Pacific, are spending a couple of months in Europe.

MR. C. E. McPHERSON, city passenger agent of the Canadian Pacific, takes the place of Mr. W. R. Callaway, district passenger agent of the road in this city, during the absence of the latter in England.

MR. JAS. HAMILTON KELLY, formerly stenographer to Mr. Spicer, superintendent of the G. T. R., has been appointed to the position of assistant general freight and passenger agent on the Mason City and Port Dodge Railway, Iowa.

DR. SINCLAIR, of Paris, has received the official appointment of medical officer for the Grand Trunk for the district extending from Bright to Brantford, on the Buffalo and Goderich Line, and from Pimceeton to Harrisburg on the Great Western.

G. T. R. driver Harry Mayo, of this city, has been presented with a gold medal for running his engine on the esplanade at a rate no faster than is prescribed in the statute book. The presentation was made by Esplanade Constable Williams. Mr. Mayo has been engine-driver in England and Canada since 1839.

THE *Guelph Herald* says: The Grand Trunk Railway Co., lost one of its oldest and most faithful employees on Thursday of last week, when Mr. George Cottrell, station agent at Breslau, passed away. The deceased gentlemen had occupied this position for the long period of thirty-two years, having been appointed thereto upon the opening of the line in 1855.

NOTWITHSTANDING the report of a committee of the House of Commons in his favor, the Dominion Government has not paid Mr. F. B. McNamée's claim for plant taken from him when the government took over the work on the Esplanade Floating Dock, nor has the government even accounted for the \$10,000 which Mr. McNamée put up on taking the work. So says the *Irish Canadian*.

MR. MOWBRAY SAUL, the enterprising and successful manager of the *New York Travel Co.*, has started for Europe by the steamship "Alaska." He will stop at Liverpool and London to complete some important arrangements which will considerably increase the facilities of his company for American tourists going to Europe. From England he will go to the continent and visit the principal cities on business connected with the organization of a regular system by which European travelers intending to visit the United States, Canada, Mexico, etc., can do so with the greatest possible comfort under the auspices of the *New York Travel Co.* Rumor has it that there are also negotiations pending to utilize the large net of European correspondents in favor of one or two trunk lines.

MR. J. W. BASTEDO, who was for seven years chief clerk in the office of Mr. Barlow Cumberland, of this city, has been appointed travelling agent of the Atchison, Topeka & Santa Fe Railroad, with headquarters at Buffalo. Mr. Bastedo will add one more to the ranks of young Canadians in the United States, whose sterling business qualities have made the name of Canada a passport to preferment among our neighbors.

MR. SMITH, general eastern passenger agent of the Chicago and Grand Trunk, was found dead in his office on Monday morning, 27th ult. Mr. Smith was last seen alive by a railroad official who met him at 1 p. m. Sunday, June 26th, at the New York post office. Deceased then appeared to be in the best of health and spirits. Both gentlemen walked up Broadway together as far as the Chicago & Grand Trunk headquarters and there parted for the last time. Mr. Smith's death will be much regretted in the railroad circles of this and other cities, and in the many organizations with which he has been prominently identified.

THE *Ottawa Journal* says:—A case of remarkable perseverance and industry is cited in connection with the recent session of our federal parliament. Captain Labelle, manager of the Richelieu & Ontario Navigation Company, is also an M. P., resolved that he could "navigate" daily to Ottawa and back and thus keep his seat warm in the Commons, and also attend to his duties as commodore of the Richelieu fleet; he began by taking the C. A. R. 4.30 p. m. train at Montreal, arriving in Ottawa at eight o'clock, the hour at which the evening session began. The captain then took his seat which he held with fortitude until the adjournment of the House, which was often in the wee sma' hours of morning. He then, it is presumed, retired for a snooze, being around in good time for the 4.30 early morning C. P. R. train for Montreal, arriving there at eight o'clock and in good time for his daily routine of duty. Thus, during the length of the session, the gallant captain performed the double duty of legislator and navigator, founding a title to being the most active member of Parliament. If there is another such record the world should know it.

IN the jubilee issue of the *Canadian American* appears the following appreciative notice of one of the most prominent Canadians, now resident in the United States:—J. Francis Lee, agent of the Canadian Pacific Railway at Chicago, is a son of Dr. Lee, an eminent London physician. He studied at Cambridge, and at an early age entered the general office of the London & North-Western Railway. He underwent rapid promotion until he moved to Montreal some twelve years ago to join the staff of the G. T. R. R. After passing through the various departments at Montreal Mr. Lee was appointed by Mr. Wainwright, the present assistant general manager G. T. R. R., to act as his assistant, and was so engaged for a period of eight years. Mr. Lee's talents attracted the attention of Mr. St. John, of the C. & N. W. R. R., who gave him

his Canadian agency, which position he resigned for the service of the Canadian Pacific. Mr. Lee wields a ready pen as an expositor of railroad problems, and probably the only standard work in America or in England on the practical science of railway passenger traffic is that by Mr. Lee, which has been the text-book for some ten years past, and is now in its second edition. Since Mr. Lee came to Chicago, a year ago, the Canadian Pacific has made wonderful strides in the matter of freight and passenger business.

Construction.

MR. JAS. ISBESTER, who has a contract on the Sault Ste. Marie Railway, is reported as saying that the rails will be laid from the Sault to Algoma Mills by the end of October. Of the bridge two abutments and two piers are completed.

A despatch from Detroit says:—The Grand Trunk Railway Company have obtained control of the Detroit Transit Railway, which will be extended to meet the Grand Trunk at the junction. This will give the latter road much better access to Detroit, the new connection passing through an important part of the city.

ON 22nd June last, in the House of Commons, Hon. Mr. White, Minister of the Interior, replying to Mr. McDowall, stated that the objective point of the North-west Central Railway was the Rocky Mountains via Battleford, fifty miles were to be built this year and the road completed January, 1891. The government's grounds for supposing the railway would be completed were that the companies are bound to raise a loan and profess to have means of doing so. Fifty miles of the Manitoba & North-western will also be built this year.

THE arrangement between the Canadian Pacific and the Grand Trunk, under which both are to reach the Sault with a minimum of difficulty arising out of disputes as to location, is working most satisfactorily. So far the arbitrator, Mr. Walter Shanly, C. E., M. P., who was given power absolutely to decide points of difference arising in carrying out the arrangement, has not been called upon to decide a single question. The work on the Canadian Pacific is proceeding rapidly, and a junction will be made with the American lines this year.

THE *Toronto Mail* says, in a recent editorial:—The railroad question is also becoming a burning issue in British Columbia. The province thinks she was slighted at the wholesale distribution of public money which took place at Ottawa last session. The *Victoria Colonist* of June 30 points out that while Ontario received \$570,000 in railroad subsidies, New Brunswick \$270,000, Nova Scotia \$200,000 and Quebec \$1,150,000, not a dollar was given for the construction of the Shuswap and Okanagan Branch, the one ewe lamb of the Pacific province.

The contract for the second section of the Cape Breton Railway has been awarded by the Department of Railways and Canals to Messrs. James Isbester, of Ottawa, A. Reid, of Montreal, who were the lowest tenderers. The price is understood to be in the neighborhood of \$1,250,000. The length of the road is 46 miles, and it runs from the Strait of Canso to the Grand Narrows. The contract is to be completed by November, 1888. The first section now under contract to Messrs. Slater and Sims, of Ottawa, is progressing favorably.

A recent issue of the *Toronto World* says: A *World* reporter yesterday asked Mr. James Wilson, superintendent of the Ontario Division, C. P. R., if it were true that this road had arranged for running powers over certain American lines so that C. P. R. trains would pull up within the city limits of Chicago. Such an announcement has been made in several papers. "I know nothing of any such dicker," said Mr. Wilson. "If it were true, the new arrangement would require such an augmentation of our working force that I think I should have had intimation of it."

A RETURN brought down in the Legislature of Manitoba shows that the aggregate railway mileage of the Province is 999 miles, divided as follows: Canadian Pacific Railway from Winnipeg east to the boundary, 104; Canadian Pacific Railway from Winnipeg west to the boundary, 211; Stonewall branch, 20; branch to West Selkirk, 22; line to Emerson 66; Branch to Deloraine, 202.8; branch from Rosenfelt to Greta, 14.7; branch to Glenboro, 108.2; Elm Creek branch, 5.8; Manitoba and North-Western main line from Portage la Prairie to Dangenburg, 180.5; Shell River branch from Binscarth to Russell, 11.31; Saskatchewan and Western Railway, 15.4; Hudson's Bay Railway, 40.3.

The sub contractors on the Red River Valley Railway, now under construction by the contractor, Mr. Hugh Ryan, are given as follows, in a despatch from Winnipeg. The successful tenderers were: Messrs. Strelvel, Egan Bros. and Bryson and Irvine. It is stated that Mr. Strelvel has secured twenty six miles of work, commencing at Morris and extending north. Egan Bros., it is understood, secured the portion between the first soil and the point where the Strelvel contract ends. Bryson & Irvine, it is stated, have the balance of the work. Mr. Strelvel, on being spoken to, said he had a very large outfit, which he would start to work immediately. Egan Bros. started work at once. The other contractors will begin forthwith.

PROBABLY the great Lachine bridge, by which the Canadian Pacific will cross the St. Lawrence, will be open for traffic by the time this issue of RAILWAY LIFE is printed, as, at last advices, only two panels remained to be finished. When this has been done, the South-Eastern trains will leave Montreal from the Quebec Gate Station, running over the Atlantic and North-Western to Ilerville; from Ilerville to Farnham over the Central Vermont, until the Atlantic and North-Western is completed to that point, which will be in about six weeks. From Farnham the

trains will run, as at present, over the An Line to Boston. The Canadian Pacific has put its own sleepers on the South Eastern Road, six new ones being now in use.

MAYOR GWAN and Deputy Reeve Walker, representing the town council of Dundas, and Messrs. John Bertram, William Buckett, R. T. Wilson and Henry Bickford, the manufacturers in that town, had an interview with Mr. Van Horne, of the Canadian Pacific, on the 6th inst., respecting the connection of Dundas with the South Ontario Line. After hearing the suggestions and the remarks of the delegates, Mr. Van Horne said it was always the intention of the road to make a connection with Dundas, provided there was no insurmountable engineering difficulties. In the event of such existing, the C. P. R. were determined to connect in some way with Dundas by means of a spur line.

THE American Canal and Waterway Convention, to be held in Sault Ste. Marie this month, is likely to wield great influence in favor of the propositions which will be decided upon by it. The principal one will be the enlargement of the St. Mary's Canal and the improvement of the Hay Lake Channel, thereby shortening the distance about fifteen miles, and rendering the St. Mary's River navigable at night. This proposition is to be urged with all the force possible upon Congress. A secondary proposition is the purchase by the general government of the Portage Lake Ship Canal, and the Portage River improvements. This measure is urged as a necessity for the copper region and also as facilitating the inter-state traffic, shortening the distance many miles and avoiding the dangers that lurk around the Keeweenaw Peninsula.

THE contractors whose tenders have been accepted for the portion of double track on the Grand Trunk between Montreal and Toronto, so far awarded, are: Lansdowne to Gananoque, 9½ miles, Messrs. Drew, Lewis & Company, of Niagara Falls; Scarborough to York, 11 miles, Messrs. T. R. Raphael & Company, Ottawa; Between Vandreuil and Coiteau, 10 miles, Messrs. Ross & McRae, Lancaster, Ont. The work is to be completed in all cases in three months time. The company proposes to double track the line between St. Henri and Lachine, a distance of about 7 miles, with its own staff. They have yet to let the contract for the loop line between Lachine and Valois, connecting there with the main line, thus saving the Lachine bank and throwing all the express trains, as well as the local trains, via Lachine. This work will probably be let in a short time and completed during the summer.

ON the 11th inst. a deputation representing the St. Catharines, Niagara and Central Railway Company, consisting of Dr. Oille and Mr. John Carroll, St. Catharines, Mr. John Leys, M. P. P., and others, waited upon the attorney-general and Hon. A. S. Hardy, to ask permission to lay their track on Burlington Beach. The request was strenuously opposed by a Hamilton Deputation, including Mayor McKay, Lieut. Colonel Gibson, M. P. P., and

Ald. Mackelenn, and by Mr. B. B. Osler, Q. C., A. MacMurphy, and Mr. W. T. Jennings, in the interest of the South Ontario Pacific Railway, whose road will run from Woodstock through Beauford and Hamilton to Suspension Bridge, with a branch to Toronto. The deputation spoke for two hours, the chief points of the opponents being that the beach is narrow and has already one railway track, that of the Northern and Northwest ern, and that another would spoil it as a pleasure resort. The attorney general, as usual, said he would give the matter his most serious consideration.

THE industrial progress of the south is one of the wonders of this century. After lying dormant with undeveloped resources, stagnant trade and apparently unambitious people, for a quarter of a century since the war the south suddenly awakes and puts forth its strength. Iron mines and coal beds hitherto unknown to the outside world are found close together, vast forests are opened, waterpowers that have leaped idly down the mountain side since the world began are turned to use, and these, with the industry and intelligence of man are the substratum of wealth on which rise great cities and important productive centres. The only bad thing in the prospect is the presence of the boomster. He is there in full force discounting the future for more than even this far future is worth and retailing to those who make the wealth prospective sources of further gain. The South is great, but it will have to stand a crash or two if the boomster is not run out of the place.

THIS is the kind of monopolists they have in British Columbia. Mr. Dunsmuir is chief proprietor of the Esquimalt & Nanaimo Railway, which is now the only railway on Vancouver Island. Esquimalt is a small place near Victoria, the metropolis of the province, and the residents of that city are most anxious to have the road extended into the city. The *Victoria Standard* of June 24th says:

At 10.30 a.m. yesterday the mayor and council waited upon Mr. R. Dunsmuir, M. P. P., president of the E. & N. Railway, at his office. Their mission was to discover what arrangements he was prepared to make in order to bring the terminus of the E. & N. Railway into the city. The result of a long consultation was that Mr. Dunsmuir informed the deputation that plans for an iron swing bridge, suitable for general traffic as well as railway purposes, would be forwarded to the minister of railways as soon as complete. This bridge would connect the west end of Cormorant Street with the Indian reserve which had been secured for a sum of \$60,000, although the deed was not yet in the possession of the company. They had also purchased a piece of property at the foot of Cormorant Street, large enough to erect a station house upon. It was not the intention of the company to ask the city for anything, unless it was that the sum of \$20,000 should be taken and divided among the hospitals of the city in the name of the company. A vote of thanks to Mr. Dunsmuir was proposed by Coun. Pearce, seconded by Coun. Higgins and passed unanimously.



PUBLISHERS' NOTICE

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Post office boxes or street and number should be added to address to secure a safe delivery.

Correspondence invited. Write on one side of paper only, and be specially careful with names and dates.

Our readers are requested to send us court decisions and newspaper clippings relating to railway interests.

It is desirable that communications, new advertisements and changes in old advertisements be handed in before the 10th of the month.

W. B. CAMPBELL, Publishers
A. C. CAMPBELL, I

Offices 64 Bay Street, Toronto.

TORONTO, JULY, 1887.

THE MANITOBA SITUATION.

THE present state of affairs in Manitoba in relation to the railway to the boundary, now under construction, must inspire all true Canadians with a feeling of deep regret. Upon the details of the matter we do not propose to touch, for, after all, in that aspect it is mainly a matter of politics and not a railway question at all. Still, as affecting the railway interests of the Province of Manitoba and of the whole Dominion, the importance of the situation cannot be exaggerated.

The first question involved is the right of the Governor-General to disallow railway charters granted by the Provinces. That the reserve power of disallowance exists in all cases in which the privileges of the Dominion Parliament is infringed upon, or the interest of the Dominion adversely affected, we believe, is not questioned. But the right of the Dominion authorities to be the sole judges of what Provincial Acts come within these lines, seems to be disputed by some.

Unfortunately the bulk of opinion seems to be in favor of the absolute power of disallowance. While we admit that such power exists, we deem it most unfortunate that there should be divided authority in the matter. The authority to charter railways should be single, all-powerful and final. Nothing can be so injurious to a great interest like the railways of half a continent, as to have questions arising about the authority under which they are to come into existence and carry on their functions.

The Manitoba Government held back the Act under which it was intended to construct the railway, intending to get the road completed before the Dominion authorities should have any chance to use their veto power. But the Federal power has secured an approved copy of the Act, and has disallowed the Act as it there appears. But this has only affected Manitoba's power to borrow money for the purpose of the construction, but, up to this time, has not blocked the work, the Government having either secured the necessary money in some other way or making promises which are satisfactory to the contractors. This is a state of affairs which, call it by what euphemistic name we please, is nothing more or less than war. The forces have not yet been called out and no blood has been spilt, but it is a conflict between two authorities, each claiming to be supreme, and no arbitrament or compromise suggested on either side. If this sort of thing is possible as between the Dominion Government and Manitoba, it is possible as between the Dominion and any other Province or all of them. If the Dominion has authority and intends to assert it, let it do so in a decisive way. If it does not intend to assert its authority, let it yield the point so that people may understand what the constitution really is. The latest assertion made by friends of the Dominion authority is that when the new line is built no customs facilities will be granted it, and, as a connection of the Northern Pacific, it will be useless. To this the reply is made by the Manitobans that they will pay the American taxes and will import into Canada free, ignoring the custom house altogether. Threats and counter threats of this kind are little short of nauseating to a reasonable self-governing people. The Manitoba Government asserts its right and declares its willingness to maintain it with arms if

necessary. The Dominion Government apparently seeks to kill the road by depriving it of its financial backing, or denying it necessary facilities when built, et cetera. Yet the fact remains that if this road is built in defiance of the Dominion, a precedent will have been set, the consequences of which no man can foresee. The Dominion Government should make clear its position, either one way or the other, and either crush or legalize what is now nothing more or less than a rebellion.

SUNDAY RAILWAY TRAFFIC.

IN another column we publish the circular of the St. Thomas Ministerial Association on the subject of Sunday railway traffic. This question, for some reason, does not attract the attention here that it does in the United States, though one would suppose that, with the great force of Sabbatarian sentiment especially in this province, it would be the burning question of the day. We are glad to notice that the trend of sentiment among railway men in the United States, as set forth in the journals devoted to this great interest, is in favor of reducing Sunday work to a minimum. It is undoubtedly true that some railway trains should be run on Sunday, for more injury would be done by stopping them than is involved in the keeping of the crews at work during the Sabbath. Still that is not a reason, in the opinion of many leading railway men in the United States, for Sunday traffic in its present proportions. In the agitation on this subject we would deprecate any legal interference with the railways, because only the letter of the law will be carried out, and no law can be framed which will meet public approval under the strict letter of which an immense railway traffic cannot be carried on on Sunday. The employees on the roads are not such fools that they will not gladly avail themselves of the invaluable blessing of a quiet Sabbath at home if they can get it. Nor are the railway managers so unmindful of the best interests of the men under them that they will not grant that boon if in granting it they are backed by an educated public sentiment.

One of the latest literary effects of the late Henry Ward Beecher was on this subject of Sabbath keeping, and never did the clear brain and loving heart of the great preacher speak more directly

to the people than in this little weekday sermon. He showed the beauty and advantages of the Christian Sabbath and urged the people to treat this treasure as they would any other treasure they owned. A man who prizes his carefully kept and beautiful parlor does not need a law to prevent him from destroying its beauty. The difficulty has been and is that men are not educated up to the beauty and sanctity of this parlor of life—the Sabbath. And if they are not so educated, neither the ministerial association nor any other need hope to secure observance by law of that of which the people do not understand the true meaning. Nor have they a right to expect it in a democratic country like this. In fact, it all comes to this: A bare, bald law with no weight of genuine public sentiment in it will not stop Sunday railway traffic, and a genuine love of the Sabbath, for its beauty and advantages, will have greater effect in its direct action upon the management of railways than through the medium of law. The railway employees need this boon, and we sincerely trust that the ministerial association and all who enjoy the Sabbath as a day of rest, will unite in securing it for them.

INJURIES TO TRAINMEN.

No subject of greater interest or importance was dealt with at the recent Master Car Builders' Convention than that of the injuries to trainmen. It is to be regretted, therefore, that the gentleman presenting the report—decidedly one well able to deal with so momentous a question, Mr. M. W. Forney—should be obliged to say as a preface to his statements, as he did, the following:

Within a few weeks of the date of the meeting of this annual convention, the third member of the committee had not heard from either of the two other members of the committee. As it seemed to him it would, or should, be a cause of regret if no report whatever was made on so important a subject, he determined to prepare a paper on his own responsibility in the very limited time which the duties of his official position left at his disposal. This paper or report is, therefore, the work of a minority of one. After it was written it was submitted to another member of the committee, so that it has the sanction of a majority of the committee.

The committee showed that, assuming the loss of life by accidents to be equal in the other States to that which goes

on in the Massachusetts, New York and Michigan, of which statistics are given, the dreadful total of 1,426 killed and 6,458 injured is reached. While coupling and uncoupling cars gives rise to more accidents than any other single cause, only one in sixteen of such cases are fatal. On the other hand, falling off the roofs of cars causes about one-half as many accidents as the other, but of these about one in three is fatal. Of the accidents arising from various other causes, more than one in three is fatal. The committee noted briefly the arguments in favor of acknowledging the link and pin coupler, and making a standard for it so as to have uniformity of some kind, and in favor of the other course of taking the best means of finding a better appliance and securing for it as general adoption as possible, but ventured the opinion that the conflicting interests involved would seem to render the success of the latter course impossible. The committee struck one prolific cause of accident in referring to the defective running boards, ladders and grab irons on many cars. Whatever may be said in the way of excuse for the many accidents in coupling—and that much may be said we readily admit—nothing can palliate the fault of those responsible for defects in these most important respects. Were the work of the brakeman in running on the tops of cars and climbing up and down to be done on a stationary structure, every precaution should be taken that that upon which he stands or to which he clings should be strong. But when his work is performed on a moving train, a fall from which means almost certain death or horrible mutilation, any defects in these appliances is nothing short of manslaughter. Mr. McIlwain, of the Southern Division, G. T. R., moved that the committee be instructed to report to the next annual convention definitely what appliances they would recommend for use. This was carried after an interesting and able discussion, taken part in by some of the most prominent members of the association. In the course of this discussion it was pointed out that close coupling would prevent jerks which knock men off the roofs of cars, and it was suggested that even without improved couplers, greater care on the part of engineers would avoid many disasters.

We trust that the committee will be able to give this matter the attention it

deserves before the next convention, and that their mature judgment may lead to such action as will materially reduce the slaughter of young men which now goes on year after year.

FREIGHT TRAIN BRAKES.

THE exhaustive, practical tests of freight train brakes made under the direction of a committee of great experts appointed by the Master Car Builders' Association, were completed in time to allow of a report being presented at the last meeting of the association, which opened just too late to allow of any report of the proceedings being given in the last issue of RAILWAY LIFE. The fact that no final decision was arrived at, taken together with the elaborate, expensive and painstaking tests made, is proof that the committee understands fully what is required of a perfect brake, and that it has hope that in a short time one which will meet all requirements will be forthcoming. This must be most satisfactory to all engaged in railway work, for not only will the accident record be lowered and many valuable lives saved, but there will be a great reduction in the expense of transporting freight.

We have not space in this issue for an analysis of the results. The tests were conducted absolutely without bias, every brake being given an opportunity to be judged on its merits. The best appliances were used to record results in every respect, and, altogether, it is not too much to say that never since railways were constructed was any mechanical problem connected with their operation examined under such careful, elaborate and expensive tests. Pending the preparation of an elaborate report, which will be incorporated as part of the account of the proceedings of the association, a summary report was presented by the committee, which concludes as follows:

While we are not prepared to make any definite recommendation at this writing as to what freight train brake should be generally adopted, our present information, derived from the recent tests, points to two conclusions:

First—That the best type of brake for long freight trains is one operated by air and in which the valves are actuated by electricity.

Second—That this type of brake possesses four distinct advantages: It stops the train in the shortest possible distance; it abolishes shocks and its attending damage to equipment; it releases instantaneously; it can be gradu-

ed perfectly. The further question as to whether electricity is a sufficiently reliable element to use in freight train service is one that can only be determined by experiment, but we think the benefits derived from electricity are so manifest that the experiment is well worth trying.

In view of the foregoing and of the improvements the buffer and atmosphere brakes are making, your committee recommends that the subject of automatic freight train brakes be continued for further investigation.

Judging from the report, the chief competitors for first place will be the Westinghouse and the Carpenter brakes, which are respectively thus criticized by the *Railway Age* in a recent issue:

The Carpenter brake, which seemed to show the most perfect adaptation of electric force, has on each car a double valve operated by electricity, one applying and the other releasing the brakes. Thus in a train of fifty cars 100 electrical valves would be required, and would offer that number of possible opportunities for failure of the electrical working. The Westinghouse device uses only three valves operated by electricity, one on the engine and two at different points on the train; but more than this, the working of the air brake does not depend at all upon the working of the electrical apparatus. The same brake valve handle operates both the air and the electrical machinery, and in order to apply the latter the engineer simply presses the valve handle a little harder to form the electrical contact. That is, with the Westinghouse brake electricity is used merely to supplement the efficiency of the air brake, while with the Carpenter as at present operated the use of electricity is an essential feature. The employment of an electrical adjunct is of so recent date that in either of these cases it perhaps should be considered only experimental and open to improvements; but at present it may be pronounced an open question whether electricity is needed for the perfect working of a power brake for freight trains. That it is not needed on passenger trains, daily and long continued experience has demonstrated.

The Committee on Brake Tests having been continued, doubtless other tests will be made of improved appliances. Not only the two prominent brakes named, but others which were less successful, are, it is said, to be improved by their inventors in the light thrown upon defects by the brake tests, and the tests will be continued under the present committee. It is announced that the Westinghouse people have already discovered a means of overcoming the only serious objection to their brake—the shocks in emergency stops with long trains. The fact that the Westinghouse brake, even without this improvement, is in use on about 15,000 freight cars, goes far to prove that the appliance is

all that is really necessary, and that when it is improved it will become the imperative duty of railway managers throughout America to adopt it, unless they know of a better.

THE TRANS PACIFIC SERVICE.

THE British Government has temporarily decided not to grant a subsidy to the Canadian Pacific line of steamers to China, and in this decision it has been upheld by the Imperial Parliament in approving the contract with the Peninsular & Oriental line. The result of the debate is not by any means due to the warm friends of Canada and of the Canadian Pacific idea, for they did all they could in presenting the arguments in favor of the grant fully and fairly to the government and to both Houses of Parliament. The result is simply another proof of the fact that with the government of Great Britain the necessity of consolidating the Empire is not regarded as such a practically urgent matter as it is here, compared with the consideration of a few thousand paltry pounds. Canadians know that one of the chief arguments in favor of building the Canadian Pacific line, one quite strong enough to have turned the scale in its favor, was the belief that it would give Britain a route over her own soil to the east, an invaluable aid in time of war, and a most important link of communication in time of peace. That idea was steadily kept in view in constructing the line.

We are glad to notice that Sir Donald Smith and others are still urging this matter upon the attention of the British Government, and that there is still a prospect of success.

ASSISTANT SUPERINTENDENT LARMOUR

THE dreadful accident on the Grand Trunk at St. Thomas, caused by an excursion train pitching into a train of oil cars on the Michigan Central, has caused the customary panic-stricken cry from the press, and blame is freely bestowed upon everybody who could by any possibility be supposed to be blameable. We are glad to note, however, that the most powerful journal in the country, the *Toronto Globe*, has the fairness to criticize vigorously some ill-considered re-

marks of local papers about Assistant Superintendent Larmour's action in the matter. Here is what the *Globe* says:

Assistant Superintendent Larmour, of the Grand Trunk Railway, is being very severely criticised on account of the delay in having the second trainload of excursionists taken from Port Stanley on the occasion of the recent terrible accident at St. Thomas. The facts do not seem to justify the censure. It is stated that the railway track at St. Thomas was all ablaze, there was doubtless much burning wreckage at the scene of the accident, and it can readily be understood that terrible distress and confusion prevailed. Many of those on the ground suffered injury by horse-reels, crowding, and burning oil and brands, and it surely would have been unwise to bring hundreds of other excited friends and relatives to the scene of the calamity until the peril was past and order in a measure restored. Doubtless many of those detained at the port suffered great inconvenience and were consumed by terrible anxiety as to the fate of their friends, and on the other hand, the friends at home would be equally anxious to know if those whom they sought were safe at the port or buried in the ruin. Under these distressing circumstances the delay in bringing forward the second load of excursionists would naturally cause irritation and prompt to harsh and unreasonable criticism, but on soberer judgment it will probably be admitted that Mr. Larmour acted wisely and prudently, and does not deserve the unfavorable and unjust comments which have been passed upon him.

Editorial Notes.

It is satisfactory to notice that notwithstanding the agitation now going on in Manitoba and the contest of authority in relation to the boundary railway, people continue to seek the Northwest as a home. The number of immigrants this year is very satisfactory.

It is with great satisfaction that we republish from the despatches in the daily press the statement that the contract for the Cape Breton Railway has been awarded to Messrs. Isbester and Reid. Both are men of experience and their record on other important works is guarantee that the new railway will be put through in good time and in good shape.

HERE is a true word, from the source of many such, the *Railway Register*.

It remains to be said that the men who direct the affairs of the railways are engaged in the most arduous kind of labor, and no class of officials more urgently need relaxation from toil than they do. They have taught that travel and change of air is better than physic, and they can prove their sincerity in no better way than by leaving their offices and enjoying a rest which they have so thoroughly earned.

SPECIAL attention is being directed to the projected Nipissing and James Bay Road by reason of the fact that the reports of the members of the Dominion geological survey, show that iron and coal exist in the region to be traversed by the road. With the present heavy duty on iron there is every reason to expect great things of those localities in which iron smelting is possible.

THE Maverick National Bank Manual is a compact compilation of financial and industrial statistics, copyrighted and issued by the Maverick National Bank of Boston. The remarkable features about this book are the clear, intelligible way in which the tables are arranged and the good judgment shown by the compiler in his choice of subjects. No better hand-book of statistics for ready reference by business men has been issued.

THE crop reports from the North-West, we are thankful to say, are still favorable and there is, as yet, nothing to shake the belief formed early in the season that this would be the most profitable year that great region has had as a whole since the collapse of the boom. In Ontario the prospect is not so favorable, especially in the eastern counties, but Ontario produces so many things that a failure of any one crop is almost sure to be compensated for by the abundance of another.

WE have received the first issue of the *Canadian Traveller*, a journal published in the interests of the commercial travellers of the Dominion. We are glad to see that this most important body of business men is to be represented in the field of journalism. The new paper is a sixteen-page monthly, neatly printed and well edited. Under the charge of Mr. John Goss, well known to the majority of the merchant travellers of the country, the new journal will, we are sure, deserve the support of the class it represents.

THE *Ottawa Journal*, a wide-awake newspaper, advises the street railway company of that city to keep its eye on the experiments in harnessing electricity to street railway cars. We happen to know that prominent electricians in this city have given the same sound advice to the Toronto Street Railway Com-

pany. The difficulties yet to be overcome in giving an electrical railway service that will stand the complication and exigencies of city passenger traffic are very perplexing but there is no saying at what moment some discovery may be made which will solve them all.

THE extraordinary energy shown by the Canadian Pacific Railway in pressing for the transcontinental and oriental business is making a very decided impression in the United States and has caused our neighbors to take several important steps, with a view to retaining the trade. The *American Merchant*, a very important journal, in a recent article describes the advantages possessed by the Canadian route to Australia and notes with satisfaction the new fast service between New York and San Francisco, and urges Americans to encourage their own lines.

THE double-tracking of the Grand Trunk is now proceeding, and about one sixth of the whole distance between Toronto and Montreal will be completed this year. As the parts on which work has been begun are specially chosen with a view to facilitating present traffic, the rails laid this year will be of far more advantage than is represented by the mere proportion of the work to the whole length of line. The business this year at Toronto is heavier than it has ever been before and it is believed that the same is true of the line at large. The management is to be congratulated, therefore, on taking this step, the results of which will be felt almost immediately.

THERE is an immense traffic for railways in the region west of Port Arthur, and that district is yet destined to be one of the most important centres of Canadian trade. Great discoveries of silver have lately been made in addition to the important mines already working. The existence of these important mineral deposits was known before the railway was built through from Port Arthur, but little could be done to develop the mines because it was practically impossible to get in the heavy machinery necessary to carry on operations. Even yet the greatest difficulty attends the miner because branch lines from the Canadian Pacific are still lacking. The richness of the deposits, how-

ever, has already induced the investment of immense capital notwithstanding the difficulties to be encountered in working. With the opening of branch lines, several of which are projected, the Port Arthur mining region may be expected to boom.

IN another column we reproduce in full the report on the best form and construction of car roofs, presented to the Master Car Builders' Convention by a committee, of which Mr. J. D. McIlwain is chairman. The report is a valuable one, and we are glad to see that the same committee has been continued and instructed to present another statement at the next meeting. This is in accordance with the desire of the committee themselves, for a subject such as this involving question of actual experience extending over years must necessarily require for its proper elucidation time to collect and fully consider facts from every part of the country. To Mr. McIlwain's energy is largely due the success of the investigation so far carried on, and we doubt not that at the next meeting the committee, of which he is the head, will present a report at the next meeting which, in fullness of information and soundness of opinion, will be worthy of the subject and of the important body for whose benefit it is prepared.

THE *Montreal Herald* and the *Winnipeg Sun* have been for some time engaged in a lively controversy about the proposed taking over by a syndicate of the Intercolonial Railway. The *Herald* opposes this policy very vigorously and the *Sun* accuses it of inconsistency in championing the government's course in handing the Canadian Pacific over to a company while condemning the proposal to treat the Intercolonial in the same way. So far, however, the contest reminds one of those two brothers in the Arabian Nights who quarrelled about the details of a marriage contract of a boy and girl who they supposed might be born if they (the brothers) should both marry. The press does not seem to give any more definite information about this alleged proposal to take over the Intercolonial than was given by the government during last session of parliament, and then the most that was said was a statement by the leader of the government that a proposal had been

made to the government but not in a sufficiently formal way to be considered. When the matter really comes up it will be time enough to discuss it.

THE Inter-State Commerce Commission has revoked all the suspensions of the law which had been granted, and has declared in effect that it will not enforce the letter of the law against the roads under certain circumstances. The possible exceptions to the long and short haul clause are to be made in the following cases: 1st. Water competition. 2nd. Foreign roads. 3rd. Where enforcement would end competition. 4th. Where the expense of the short haul can be found to be very heavy and for the long haul relatively very cheap. The Commission reserves the right to decide each case as it comes up, and evidently looks forward cheerfully to the mass of litigation which it expects will arise. This general pronouncement virtually destroys cause for any fear of a revolution as the result of the Inter-State Commerce Law, and makes it a very ordinary act of congress, the good or ill of which will depend almost wholly upon the judgment with which it is administered.

THE new short line of the Canadian Pacific and the new bridge across the St. Lawrence will be ready for traffic about the same time. The importance of either work to the business men of Canada would justify a grand celebration in honor of the commencement of traffic upon it. The energy of the Canadian Pacific has never been better shown than in the way these two great works have been put through. The new short line will be all in all, probably the finest piece of railway in Canada and will be fit in every way to bear the heavy traffic which it is certain to secure. The new bridge has been put through in a much shorter time than even the most hopeful experts would admit was possible, and in this respect alone, to say nothing of the stupendous character of the work, is one of the engineering marvels of the century. The work on the second short line, which will give easy access to the sea-boards, is being pushed through with the vigor which characterizes the company, as is also the Sault extension, and in a very short time the system, which will practically give an entirely

new line from sea to sea, will be completed.

GOVERNOR HILL, of New York State, has signed a bill "to provide for the safety of travellers." The new law prohibits the use of stoves either inside, or suspended from, a passenger car in the State of New York after May 1, 1888. Stoves now in use may be retained in the cars, but their use is to be permitted only when the cars are standing still, or temporarily in the case of accident or emergency. This is merely another instance of panic legislation. The car stove has been the cause of some lamentable accidents (the loss of life by which, however, is not to be compared with the loss through couplers) and the legislators virtually declare that the present system must not be continued, no matter what takes its place. There is a lesson in these things for railway men also. The legislator is the most human animal in the world. He is in fact the puppet of a crowd, and a crowd is proverbially easily moved. Managers should take account of this fact and always try to meet the crowd half way where at all possible. After all, the people rule and they will not stand upon ceremony as to interfering with existing rights where some sentimental consideration is to be gained. This always has been and always will be the case and it might as well be recognized. Let the managers do more than the law compels them to, let them keep always in advance of the people. By so doing they control the situation. By the other course they virtually leave themselves at the mercy of the mob.

The Apple Trade.

Ontario prides herself as the great fruit growing Province of the Dominion, as well she may, for the long water line of the great lakes and River St. Lawrence is, mile for mile, better adapted for fruit culture than the land on the south. Besides, the western peninsula is better adapted for growth in the different fruits it will produce than almost any other country of equal size in the world. This is a matter of immense consequence to railways, and anything which will stimulate the growth of fruit will almost directly benefit the roads.

But Ontario is not the only fruit growing territory in Canada by any means. The Annapolis Valley in Nova Scotia is probably *par excellence* the apple orchard of the world. An idea of the importance of fruit culture systematically engaged in as affecting railway interests, may be gathered from the following extracts from an interview with Justice Weatherbe, published in the *Canadian Gazette*:

"There seems," said Mr. Justice Weatherbe, "some misapprehension among English people in regard to the apple industry of Nova Scotia. The Province, as you know, consists of as many as eighteen counties, and yet the inhabitants of only small parts of three counties—Hants, King's and Annapolis—can be said to be seriously engaged in apple culture. Nearly 21,000 square miles the Province contains, but the area of the apple industry may be said to average only two to two and a half miles on each side of the track of the Windsor & Annapolis Railway, eighty miles in length, in what we call the Western Valleys, or, again taking the average which is confirmed by men with a knowledge of surveying, a total area of less than 400 square miles. And, mind you, of this 400 square miles only one-thirtieth is planted, and only one sixtieth is as yet bearing, though the whole of the one-thirtieth is rapidly coming into bearing also."

"All the more credit, then, Mr. Justice Weatherbe, to the few."

"Just so; and of course the conditions are exceptionally favorable. Last year it is estimated by the manager of the Windsor and Annapolis Railway and others well qualified to speak, that 300,000 barrels were produced, yielding about \$600,000 (say £120,000). The outlay for maintaining a bearing orchard as compared with the producing power is merely nominal, so that the net cash yield of an acre, taking the price of apples at \$2, would be at least \$150 (£30). Many local growers would deem this too low an estimate, but it is well to be on the safe side. One characteristic of this apple-growing belt is the enormous average yield. Though one cannot rely on exceptional cases, some striking instances may be mentioned. The maximum crops from one tree exceed anything I have ever heard of other countries. Why, the warden of King's County, Mr. Barclay Webster, a most trustworthy man, found on inquiry that a tree produced as many as twenty-six barrels last year. The season was of course a prolific one, and I myself occasionally heard of from eighteen to twenty barrels to the tree. The average quantity produced is about seventy-five to one hundred barrels of marketable fruit to the acre. Though I made inquiries when in each country, I could not hear of anything like that yield in Italy, France, United States, or Great Britain itself. In the United States, indeed, to judge from the agricultural papers, the experience would seem to be about half that yield. It is, too, a characteristic of the apple growth of these Western Valleys that the trees attain great size and bear fruit to a very great age. While in other places and in some of the fruit growing districts of the United States, as I find from American agricultural journals, a tree attains its maturity at from twenty-five to thirty years, we have in the Western Valleys French trees which must have been planted 300 years ago, and yet they are bearing now, and I believe an ordinary tree does not attain its maturity with us until it is seventy years old. This of itself, it is said with reason, should give our apple growers an advantage over the producers of other countries. And whatever the price may be, they are likely always to obtain a profit."

Construction of Car Roofs.

MR. J. D. McILWAIN, of the Southern Division G. T. R., is chairman of the Master Car Builders' Association Committee on the important subject of the best form and construction of car roofs. The following is the report presented:

In offering their report on this subject for your consideration at this convention, your committee would take occasion to express their regret that they are not able to present any very decisive conclusion in the matter they were appointed to report upon. They feel assured, however, that no weakness of purpose or remissness of action will be attributed to them if members will recall for a moment the nature of the subject under inquiry. In a large majority of cases we, as a body are called on to deal with, and discuss points strictly within the limits of ascertained mechanical law; thus having some positive data to go upon and if necessary a "court of final appeal." But is it so in this case? They think not. The conclusion to be arrived at being necessarily dependent upon the wear and tear of years, they have had to abandon for the time their dry rules of logic and mathematical formula, to collect and condense the fruits of past experience.

Your committee are glad to be able to report that they have received valuable assistance in their inquiries from most quarters, and in particular they would like to make special mention of the hearty co-operation extended to them by Mr. G. W. Rhodes, who very kindly furnished full copies of a report on this subject by a committee of master mechanics connected with the Chicago, Burlington & Quincy system. The replies received give information of eleven forms of roofs as follows: In metal, the Winslow, Chicago, National, Empire, Anchor, Grand Trunk sheet iron and tin. In composite, the Winslow, Asphalt and the Hutchins composition, and, bringing up the rear the old time double board and single board and battens, the latter especially for stock cars.

The first three, Winslow, Chicago and National may be classed as under roof, i. e., the metal sheets are exposed to the inside of car and the top is covered with a single course of boards.

The others may be classed top roofs. A course of boards is laid on the carlines or purlins, and the metal sheets laid on top. A good type of the top sheet principle is the roof in use on the Grand Trunk system. It can be laid on top of first course of an old double board roof; or, when put on new, purlins need not be used, as the roof boards may be laid on the carlines, which stiffens the car very materially, and is less expensive. The iron is in sheets reaching across the car, and nailed to the fascia. The joints are covered with rolled iron U ribs, gathering the edges of the sheet within the U, making a perfectly water-tight surface.

There is only one form of tin roof reported, and it is applied in the usual way. The use of plate tin for roofs is gradually becoming obsolete.

In order to bring the question most effectually before this convention for discussion, your committee have thought best to mention some of the objections that have been made to the different forms of roofs.

From localities where baled hay and cotton, machinery, furniture, and similar bulky freight is handled, the metal roofs that are not protected on the under side very often become broken or punctured. Some of the lines running from very cold into very warm latitudes complain that the iron under roof sheets become coated with frost, and when cars pass into warm climate the frost melts and causes damage to freight. For the reasons above given, a metal roof with under protection, or the double board, would seem to be preferable. Then, again, objection is taken to the top metal roofs that they rust and corrode too fast, owing to exposure to the weather; also, that they are liable to wear and breakage by being run over, and punctured by the too generous use of the "bull punchers" of stockmen. The Winslow asphalt and Hutchins composition can scarcely yet be considered of age, but they have many good points; at any rate they are succeeding in making themselves known. But when the top course of boards begins to warp up under a hot southern sun, or, in turn, is subjected to a western water spout, the effects on them by this time (say ten years) hardened asphalt and other "compounds" may not be at all desirable. The double board roof which so many of us have stood by for so long, and which yet has so many friends, is at last beginning to lose ground, as a master car-builder in the southwest very pointedly says, "cut nails" wouldn't hold it, then "wrought nails" were tried with the same result, and now we are trying to keep them down with screws and "barbed wire nails," "but all in vain." Another says, "the paint we have put on in ten years, to keep it from leaking, is as thick as the original roof itself." This, of course, is a mild exaggeration, but still it conveys a moral.

Your committee think that in the foregoing will be found ample material for discussion, but they also believe they would only partly be fulfilling their duty did they not lay before the convention a brief statement of what appears to them the requisites for a good car roof. It is, then, their opinion that what is needed is a durable and substantial roof, that will last the life-time of the car, without continual repairs, and be free from leakage when the car is sent to the "bone yard;" a roof that will increase the life of a car, because it will be a protection to it, preventing decay; a roof that will fully meet the requirements of both extremes of climate, a southern sun or a Canadian frost. To attain these ends, and at the same time meet the variations and exigencies of traffic, the coming roof must be protected on the under side as well as on the top, while such protection should do service as a part of the car frame to stiffen and strengthen it.

While confessing their inability to offer anything better than what is at present in use, your committee have made free to pick

holes in the more prominent types of car roofs now in favor, for only in that manner can we discover how to stop them up again. Yet if any one should think this is rather a lame and halting conclusion to arrive at, he would recall to his mind their opening remarks, that the determination of the best car roof must necessarily be a slow process, since in that determining they have to compete with the influences of nature. This fact, taken in connection with the wide divergency of opinion and practice at present observable in the matter, together with the comparatively small amount of experience obtained so far of any other kind of roof than the old "board roof," makes it evident that for your committee to recommend any one roof to the association at this present time would be to lay themselves open to the objectionable charge of undue favoritism.

They, therefore, beg to recommend that the subject be carried over another year, and in view of the fact that the Chicago, Burlington & Quincy system are making valuable inquiries and experiments on the car roof question, that they be represented on the new committee.

Through the kindness of parties interested, there will be found for your examination, blue prints and models of quite a number of the roofs referred to in this report.

Attached is a tabulation of the reports received, giving name of road, roof used, and remarks thereon.

J. D. McILWAIN, Chairman, /
L. PACKARD, / Committee
S. IRWIN, /

[The Synopsis will be found on page 109. Ed.]

Sunday Railway Traffic.

THE St. Thomas Ministerial Association has sent to all the clergymen in Canada circulars accompanied by petitions to be signed by voters and presented to the Dominion parliament next session. A letter, signed A. H. Monroe, accompanying the letter, says: We are preparing to send to the next session of the Dominion Parliament from eight to ten thousand petitions signed by a large majority of the voters and adults of the entire country, and furnishing convincing evidence to every member of the House of Commons that he must sustain the prayer of the petitions, or lose the favor of his constituents. Two objections may be anticipated: First, that the Dominion Legislature has not jurisdiction in the matter. This is a fallacy. Whatever a parliament has power to create it has power also to control. Our railways have all been legislated into existence by either the provincial or federal parliaments, and now all power in relation to them is vested in the latter body, which is as absolute in Canada as the Imperial Parliament is in Great Britain. Further, all Sunday railway traffic in Ontario, and the Maritime Provinces, if not in Quebec, is in violation of statute law, and surely the legislature has a right to insist upon the government's enforcing a law already on the statute book. The second objection is, that the senate probably will show more deference, in connection with this matter, to the wishes of railway magnates, than it will to public

opinion. It is not certain, however, that the great capitalists who control the chief rail ways on this continent would object to a general and simultaneous cessation of Sunday traffic. But, if so, it would be very unwise for the Senate to disregard on that account such an expression of public opinion as we intend to elicit. There is already a public sentiment in opposition to the continued existence of the Senate. As yet that sentiment is entertained chiefly by a class of politicians and some prohibitionists. It would be a serious matter to add to it the conviction of the religious public of all denominations, that the senate was the one obstacle that prevented the removal from our land of the curse and shame of the habitual and defiant violation of Divine and human laws in the desecration of the Sabbath by railway traffic. What we hope is that the large number of petitions that will be presented to the Dominion Parliament at its next session, will induce the legislature to pass an act authorizing the governor-general to issue a proclamation prohibiting all Sunday railway and steamboat traffic throughout the entire Dominion, at such a date as a similar act shall come into operation in the United States. As yet no such act has been passed by congress; nor has any effort been made to obtain the passage of such an act. But in the United States there are to-day 20,000,000 of church members and 40,000,000 of church goers. When these know that Canada has passed an act against Sunday railway traffic, which must remain inoperative until their own congress passes a similar act, which, in connection with the Canadian one, would stop all desecration of the Sabbath by railway and steamboat traffic over the entire continent, and when they are appealed to, as they will be, by pulpit and press, they will say: This thing must be done. And it will be done. Meanwhile our duty is clear: to educate public opinion on the subject by conversing, preaching and writing upon it; to get our petitions signed and duly presented, and to look to God for success.

Accidents to Trainmen.

THE committee of the Master Car Builders' Association, appointed to consider and report upon the subject of accidents to trainmen, submitted a careful report on the subject from which the following is taken:

Regarding accidents caused by trainmen falling from trains, the following remarks of a highly esteemed member of this association, Mr. J. W. Marden, may be quoted. In a letter dated June 11, he says:

"I would urge upon all the members the importance of having proper appliances on all our cars for the protection of trainmen, and having them kept in good condition. We were receiving so many cars with running boards defective, ladder rounds, grab-irons, steps, etc., gone, that I sent out a circular letter to different roads asking them if they would approve bills for repairs to such appliances; not that it was according to the rules, but that it was what I considered a proper charge to be made.

"We have repaired running boards, grab-irons, handles, etc., to as high as 300 foreign cars a month at North Adams, which shows that these appliances are not watched and repaired as they should be. I am free to admit that our own cars are not up to the standard that they should be, and yet we are making every effort to bring them up, and would be glad to approve any bills for repairs of the safety appliances for trainmen."

Mr. Marden's remarks indicate that what is needed is more rigid inspection of cars. The author of this paper is not prepared to recommend any improvement in the appliances for the protection of trainmen from this class of accidents, referred to, but he has no doubt that the experience of the members of this association would enable them to point out the defects and suggest improvements in the steps, handles, railings, etc., of the cars now in use. There seems to be no good reason why a standard should not be adopted for the construction, location and proportion of such parts of cars. If uniformity could be secured there certainly would be less danger to trainmen than there is now, when nearly every car in a train is different from every other car.

The aim of this paper is to present the subject in such a way as will call out discussion, and which, as mentioned before, will indicate the direction that the enquiries of the committee should take for a future report to guide the action of the association.

M. N. FORNEY,
JOHN KIRBY.

The report was accepted, and the committee continued.

The Manitoba Situation.

SPEAKING of the state of affairs in relation to the proposed road from Winnipeg, the *Railroad Gazette*, one of the most important railway journals on the American, has the following. It is given here to show Canadians how "others see us."—The situation in Manitoba becomes daily more interesting. From the latest dispatches it appears that the Manitoban premier, Norquay, refuses to transmit to Ottawa the bill authorizing the road to the boundary until the work shall have actually begun. That is, he means to postpone till the last moment the disapproval which is sure to come; and it is said that the Dominion Government can only prevent the building of the road by force. Naturally, contractors hesitate to undertake the work under the circumstances, and the story now is that the Manitoban authorities have been in St. Paul trying to make arrangements with the Northern Pacific people to take the bonds of the province and furnish the money to build the road. That Manitoba should protest against the effort to secure to the Canadian Pacific absolute control of her trade is quite natural. The people of that province have always been in somewhat intimate trade relations with the United States, and, indeed, many of them are "Americans." Until very lately their only railroad communication was through the states. They are yet nearer to the trade

centres of our North-west than to those of Canada, and it is to the United States that they look for that commerce which is to make them a great and rich state. They see immediately to the south a rich country, fast filling up, and certain before many years pass to be the seat of a vigorous population; and only 470 miles away are large cities, already centres of commerce and seats of a high civilization. To the east they see for a thousand miles a wilderness, and in that direction the nearest city which can compare with St. Paul and Minneapolis is 1,400 miles from Winnipeg. It is not astonishing that the people of Manitoba should feel outraged by the determination of the Dominion Government to put upon them this tremendous handicap for the benefit of a corporation which bullies them, and in the interest of a people with whom they have only moderately warm sympathy. On the other hand, it was the deliberate intention of the Dominion Government to give the Canadian Pacific the monopoly of the trade of Manitoba and the Canadian North-west. One of the very heavy conditions imposed upon that road was that it should build the long, unproductive line from Winnipeg, north of Lake Superior, through the Province of Ontario—a wilderness region which can yield no paying traffic for years to come—and it was part of the compact that no other company should build a railroad within 25 miles of the United States frontier. This was not an unreasonable requirement on the part of the company. The financial venture was a hazardous one, and with all the government aid the money was raised only with much difficulty. The people of Manitoba knew the situation when they went there, and the present view is rather unseemly on their part. It is a little like kicking over the ladder by which one has climbed up. But the talk of violence or armed resistance is foolishness. The Dominion Government may see some ground for changing its policy, but if it does not the people of Manitoba are helpless. A revolt because they are not allowed to build a railroad would be a new kind of revolution. It would have some claim, too, for consideration, as a patriotic movement, but it would be wildly preposterous. There is a railroad now from the seat of power right through the heart of the discontented region. That fact alone should be enough to end all lawless talk. Canada has a fine militia, and her light batteries are even celebrated. It is a pity, both for Manitoba and for our own North-western railroads and cities, that the Northern Pacific or any other company cannot build lines anywhere it chooses in the provinces, but the action of the Dominion Government is not wanton tyranny. It is the carrying out of a contract.

A recent issue of the *St. Thomas Journal* says: Passenger traffic on the Michigan Central Railroad is booming at present, and nearly all the express trains are so crowded and consist of so many cars that they have to be run with double headers. To-day Nos. 6, 5 and 1 were pulled by two engines, there being 172 passengers on No. 6 and 100 on No. 5.

A German Opinion of the C. P. R.

THE well-known German economist, Professor Lorenz von Stein, has recently given a decided expression of opinion in the columns of the *Vossische Zeitung*, the general organ of the railway and shipping interests of Germany, in regard to the imperial importance of the Canadian Pacific Railway. In the course of his article Professor Stein says:

England has quietly organized a great trade route (*Walt-line*) for herself, and has taken a significant step towards the development of the English Colonial Empire, which thus enters upon a new period of far-reaching commercial influence and power. The railway is simply the initial portion of the scheme. It cannot be self-supporting alone, neither is it expected to be. But if, starting with the railway as the basis or fundamental factor of the project, we add to it a steamship service on the Pacific Ocean from Vancouver, the result is that the distance from England to Japan, China, and partly also to the West Indies, is shorter than by any other route. According to reliable calculations, a saving of time of from 10 to 12 days will be effected by the above route in going to the east coast of Asia, to Hong Kong, Shanghai, Yokohama, thereby completely shutting out any competition via San Francisco, and, above all, via Panama.

The whole route, let it be observed, is from end to end in English hands, and England is no longer dependent upon the uncertain fate of the Suez Canal. She holds her connection with India in her own power in spite of France and the United States. Up to now we have had only one trade route, the Suez Canal. The uncertainty attached to its position from a political point of view has called into existence three further great enterprises, of which the first two, the great Siberian Railway in Russia, and the Panama Canal, at present in French hands, are not completed, while the third, the Canadian Pacific Railway of England, thanks to the energy of that colony, is now in operation. It is unnecessary, continues Professor Lorenz von Stein, to examine further what must follow. Unquestionably a corresponding improvement in the fortification of Hong-Kong will take place. Who knows whether Port Hamilton will not again appear to have strategic value? Russia has in Vladivostock a good port, but it is closed by ice four months in the year. The Spanish Philippine Isles will no doubt again become a subject of investigation, and Cardinal Manning will hardly be able to get the Pope appointed as arbitrator in the matter. It will be considerably further to Williamsland from Berlin than from Vancouver, and there is very little prospect of Tonquin remaining for long a French military position, while it is not at all conceivable that France will at all seriously attempt to retain the New Hebrides in the face of the hatred of Australia. The routes via Suez Canal, Cape Horn, and the future Panama Canal, must give way and take a back seat. The Canadian Pacific Railway was opened on June 20, 1886. Starting at Montreal, it ends at Vancouver, on the Pacific Ocean. By the completion of a further

line of rails via Newfoundland from St. John to St. George's Bay we get a point of arrival and departure for the transatlantic shipping 1,600 kilometres nearer Europe than New York.

The Presentation Abuse.

REFERING to the statement made in the papers by an employee of a western road, that it costs the men a average of \$5 a month to keep up with the subscriptions asked for presentations to officers of the company, the *Railway Service Gazette* says: That blackmail is sometimes levied in the railway service in the form of subscriptions for officers is undoubtedly true, and that the practice of giving presents to those in authority, not only in the railway service, but elsewhere, is much too prevalent, we believe is very generally admitted. That influences other than those arising from good will, too often prompt the giving of presents, we believe is pretty conclusively proven by the fact that in almost every instance where presents are given, they are from subordinates to superiors and not from superiors to subordinates. Now we should say that if the subscriptions for presents were always due to those "spontaneous ebullitions of good will" which we read about, we would nearly as often find the superintendent and the general manager getting up "presentations" for the brakemen and firemen as we find the brakemen and the firemen getting up presentations for the superintendent and the general manager. We fear these "spontaneous ebullitions of good will" are very much inclined to reverse the natural order and flow from the lower to the higher grades of the service, but to say the abuse has attained the scandalous proportions of a levy of five dollars a month upon the salaries of all employees on any line is probably a slander, since it indicates a degree of demoralization that would hardly be borne for any great length of time.

Montreal Harbor Commission.

THE following condensation of the facts set forth in the report of the Montreal Harbor Commission is from an exchange: The tonnage of the port of Montreal is classified as inland and seagoing. The inland tonnage, which amounted to 1,044,380 in 1880, declined to 724,975 in 1885, and recovered to 809,819 tons in 1886. The seagoing tonnage, which was 628,271 tons in 1880 and declined to 531,929 in 1881, reached 809,639 tons last year, or in 1880 the inland tonnage amounted to about 62½ per cent. of the total, and last year the two were about equal. The increase in inland tonnage for the past year is probably due to a decrease in tolls on the canals.

The shipments have been
Lumber, 126,823 M increase, 37,225 M.
Phosphate, 19,030 tons and 2,078 bags, a decrease.
Wheat, 5,964,238 bushels.
Corn, 3,966,707 bushels.
Peas, 2,256,719 bushels.
Oats, 1,864,125 bushels.
Barley and rye, 21,523 bushels.

Cattle, 65,824 head.

Sheep, 96,648 head.

The receipts of coal and coke were, from Great Britain, 31,786 tons; from the United States, 223,295, and from the Maritime Provinces, 312,801; total, 567,882 tons.

The deepening of the St. Lawrence to a depth of 27½ ft. is expected to be completed by the close of this year. The present work is cutting a 2½ ft. slice 300 ft. wide from all shoals less than 27½ feet in depth, much of this is shale rock in place, some is bowlder clay and some clay. The average cost of dredging over 1½ million cubic yards under these conditions was 11-6 10 cents per yard. Rock in place, i.e. shale, seems to have cost 33½ cents per yard; bowlders, 65 cents, and one clay cut of 882,710 cubic yards was taken out for \$25,723, or 2-9 10 cents per yard, which Mr. John Kennedy, the engineer, says is "so low as to be almost without precedent."

The plant consists of seven elevator dredges with cast steel buckets, four spoon dredges and two stone-lifting barges, with tugs, scows, etc. The actual working time of the dredges was on an average 7-4 10 hours per day.

A New Transcontinental Line.

A NEW transcontinental road is being quietly but rapidly built from the Pacific coast eastward to meet some line stretching from the Missouri westward. A New York syndicate took all the unissued bonds of the new road a couple of weeks ago, which insures the constructors enough money to lay its tracks to Boise City, Idaho, by the close of next season. There are 10,000 tons of English steel rails at San Francisco awaiting transportation to the front; 2,000 tons more on the sea; three grading parties are on the surveyed line of the new road making the way for the rails, and bridge builders are at work preparing a passage over the rivers and streams. It is estimated that \$10,000,000 will be spent before the close of next season, when it is expected the line will be completed to Boise City. The organization that is carrying on the work is the Oregon Pacific Railway Company. Its route is from San Francisco by a steamship line 450 miles northward to Yaquina Bay, on the Oregon coast, thence by rail across the coast range to Willamette valley, running through Corvallis and Albany; thence over the next range of mountains into the empire of Eastern Oregon, and then on to Boise City, Idaho Territory. A portion of the line is already in operation. It was begun as far back as 1861, and struggled along in the face of much opposition from the Northern Pacific until it succeeded in putting on a steamship line to and from San Francisco and an operated line of road from Yaquina bay to Albany, Ore. After having accomplished this much over many difficulties it now finds itself amply backed by capital and no more financial trouble in sight. The New York syndicate settles the future of the road and makes its immediate construction to Boise City a certainty.—*Chicago Times*.

Mr. C. R. HOSKIN, manager of the C. P. R. Telegraph, has gone to British Columbia and San Francisco on the company's business.

The Railway Service.

THE Michigan Central Railway employees have finally decided to hold their annual picnic at St. Clair, between the 13th and 20th of August.

The Lake Shore & Michigan Southern Railway Company now carries upon its pay roll a class of employees who are termed "foresters." The duties of these men consist in the planting of trees and flowers along the line of the road and in beautifying the grounds.

THE deal whereby Canadian Pacific trains were to run into Chicago over the Wabash and Baltimore and Ohio lines is off, and the former will go into Chicago over the Canada Southern, Wabash, and Chicago and Atlantic lines. Only freight will be carried by this route.

THE Canadian Pacific has issued a handsome pamphlet descriptive of the line from Montreal to the Pacific Ocean. The illustrations are entirely new, the literary work is evidently from the pen of an able writer, and the mechanical work on the book is all that could be desired.

AT Vancouver, B. C., on 1st July, the people celebrated the Queen's jubilee, Dominion day and the anniversary of the Canadian Pacific all in one. Among the decorations was a fine arch hung with hunting and mottoes from the first engine that went through to the coast.

SPECIAL attention is drawn to the announcement in our advertising columns of the new rail chair and tie, the invention of Mr. P. De Guerre, of this city, an old-timer in the railway service. This invention saves time and expense. The model can be seen at Mr. De Guerre's residence, 6 Baldwin Street, or at the office of RAILWAY LIFE, 64 Bay Street.

THE traffic reaching the Canadian Pacific at Owen Sound by vessel from Chicago is said to be something phenomenal. Mr. J. Francis Lee, the able commercial representative of the Canadian Pacific at Chicago, is to be credited with the greater part of the increase. Mr. Lee is a thorough traffic man and every move he makes proves it.

DURING one of the recent extremely hot days the rails on the Grand Trunk about a mile east of Winona expanded with the heat until they diverged nearly a foot and a half wider than the regular gauge. Luckily it was discovered by a section man in time to flag the east bound morning express, otherwise a serious accident might have taken place.

THOUSANDS of copies of a neat little handbook are being distributed, giving in the briefest possible way information respecting the fishing and hunting resorts on the line of the Grand Trunk. Hotel, livery rates, character of sport, etc., are tersely stated. The book shows that the Grand Trunk offers magnificent opportunities to the sportsman, and this little

pamphlet shows the sportsman how best to take advantage of them.

THE *Northwestern Railroader*, the new weekly journal published at Minneapolis, did a very enterprising and creditable thing in issuing a daily number during the sessions of the master car builders' and master mechanics' conventions, giving the important committee reports in full and thus enabling the attendants on the conventions to have these documents in their hands for debate and reference. —*Railway Age*.

A despatch from Winnipeg, dated 12th July, says: New freight and passenger rates have been put into force on the Pacific Division of the Canadian Pacific Railway, making reductions of from fifty to ninety per cent. Vice President Van Horne in a letter accompanying the new rates says that it has been, and will continue to be the policy of the company to make special concessions from regular tariff rates for the purpose of encouraging manufactures or any special industries on special business.

THE *St. Thomas Journal* says:—The Inter State Commerce Bill severely effects the G. T. R. trainmen in this city. Grain that was heretofore loaded at Milwaukee and shipped via Air Line, is now carried by boat to Point Edward and Sarnia, and goes east on the G. T. R. main line, instead of by the Air Line. This makes business on the west division rather dull, though brisker on the Sarnia Branch and east division. It is probable that some engines and crews from this city will be sent to these divisions.

THE *Railway Service Gazette* says: It is a misfortune that some of the associations of railway employees are represented by officers who for the most selfish and unworthy purposes, are at all times seeking to excite the prejudices of their members against other associations. It is a truth so generally recognized that it needs no demonstration, that if railway employees have an interest distinct from the interests of the general public, that interest is common to all classes of employees. That which serves to advance the interests of one class must advance the interests of the whole.

A correspondent of the *Weekly Telegrapher* says, speaking of a western road:—The agent at L——, one day called up the dispatcher and asked him for a three weeks' lay off; naturally enough the dispatcher asked him why he wanted to lay off three weeks. The answer that came back was, "I want to buy a suit of clothes." Which he could easily do at that season of the year in the harvest field, but which he had been unable to do while agent at a station. On that same road an engineer showed us his pay-check for one month, \$158.00, at the same time pointing to a B. L. E. badge, as much as to say "there is the power." I predict that we can do the same act in the near future.

MR. CHARLES LATIMER, writing in the *Railway Section Foreman*, says:—The section foreman above all should be a God-fearing

man, a humane man. He holds a position of very great responsibility, as great as that of the engineer who directs the locomotive, or of the conductor who runs the train of the railroad; he requires not only good physique, great endurance and industry, but executive power, a fair education, a correct eye, quick appreciation and a good memory. The section foreman has also a great many responsibilities. He has to employ and discharge; to give checks on the company for considerable sums, and if unfaithful to his trust he may cost the company large amounts yearly. It requires the greatest care to select the proper man to fill such a position.

THE *Railway World* has this appreciative notice of the fast service from the Oriental via the Canadian Pacific—A notable achievement in the way of rapid transit from Yokohama to north Atlantic ports of Canada and the United States has recently been reported. A party of eighteen passengers direct from Yokohama, Japan, in twenty days, arrived at an early hour, on the morning of June 21st, in the Grand Central depot, of New York. This time is unprecedented. Leaving Yokohama May 31st on the *Abyssinia*, the party reached Vancouver June 14th, and Montreal, via the Canadian Pacific Railroad, June 20th, and New York city, via Grand Trunk and New York Central, June 21st. The voyage across the Pacific was made in one of three steamers belonging to the Canadian Pacific Railway, which were formerly in the Cunard service, and are now plying between Vancouver, British Columbia, Yokohama, and Hong Kong. It is considered probable that during the summer months this new line will prove a formidable rival to the steamers belonging to the Pacific Mail Steamship Company.

Quick Time Across the Oceans.

THE Canadian Pacific Railway Company furnish the following dates and facts about their route from Japan to England: The *Abyssinia* left Yokohama on May 30, and reached Vancouver on June 13. Her passengers reached Montreal on June 20. They were detained a day and a half in New York waiting for the departure of the *City of Rome*, which is due in Liverpool on Thursday next, June 30, or less than thirty-two days from Yokohama. A few chests of tea, as evidence of what can be done, are coming by the *City of Rome*. Were the Canadian Pacific Railway Company's steamers on the Pacific a day and a half at least would be saved on that ocean. At least one day can be saved over the time at present allowed for the transcontinental run; and the new Canadian Atlantic service will, it is hoped, work in with the Pacific service so as to avoid delays. On the whole we can calculate on making the time between Japan and England less than thirty days for mails, passengers and light freight. Under the new Peninsular and Oriental contract, which provides for accelerated speed, the mail time from Japan, via Brindisi, will be forty-four days. For passengers and freight via Gibraltar the time will be fifty-three days.

Mechanical.

MR. R. J. MATCHETT, of Lindsay, Ont., has obtained a Canadian patent for improvements in ticket cases, which consist chiefly in having the sides of the case provided with inclined grooves, in which the runners of the slides move. The slides are made of tin or other suitable metal. The divisions and sides are bent at the bottom and top to keep the tickets in place. They are also bent on the face part one way and part the other, and narrow openings are provided through which only one ticket may pass at a time. These divisions are held together by means of strips, flat on the top and V shaped underneath. The runners are provided with hooks at the end,

which engage stop-plates in front, and permit of the slide being drawn out of the case and filled from the back. The faces of the tickets in the different divisions can be seen without taking them out.

The *Master Mechanic*, in connection with a description of an electric headlight used on Lake Shore & Michigan Southern engine No. 411, and a view, reproduced from a photograph taken at night, showing its effect, says: It will be seen that twenty three telegraph poles are visible, but under more favorable conditions forty-five poles have been counted, which is equal to a distance of about one and a half miles. A newspaper has been read by the light four miles away, and the time of night has been seen on a watch face nine miles distant. The reflection of the light in the clouds has been noticed twelve miles away.

The headlight is the invention of Mr. Howard L. Pyle, and has been in operation between Cleveland and Erie nearly a year, giving entire satisfaction. In snow storms it is noticed that the snow and sleet melt the instant they touch the glass, which is kept warm by the light. The locomotive runners say that targets, switch lights and semaphores can be distinctly seen, and the colors are as readily distinguishable as by day light. A man can be seen three-fourths of a mile away. The illumination on the track for a mile ahead is so noticeable that it gives good warning to wayfarers of the approach of the train, thus in a measure obviating the necessity of using the bell or whistle. Mr. Pyle is said to have overcome the various obstacles heretofore encountered in experiments of this kind. He uses for motive power a Bailey rotary engine.

SYNOPSIS OF REPORTS ON CAR ROOFS. (For report see page 107.)

NAME OF ROAD.	ROOFS USED.	REMARKS.
Missouri Pacific.	Galvanized iron on top of roof boards during past 5 years "Anchor" iron roof.	Top iron roof gives increased strength to car body. Iron especially good in South and West, where lumber swells and shrinks and turns up at edges and becomes loose on account of continued rain or sunshine.
Michigan Central, Can. South. Div. Michigan Central.	Also ventilated galvanized iron for fruits, etc. Winslow under roof. Winslow iron roof. Hutchins' composition.	Can be repaired easily. Throws water and cinders off easily; good roof; better than under iron roof. Not in favor. Boards twist and get loose very quickly. Good for 15 years. Cost \$38 for 30-foot car. Double board with Hutchins' composition between. Good satisfaction; 2,500 cars have it; 550 more this summer. Cost for 34-foot car, \$35.
Lake Shore	Winslow roof of galvanized iron, No. 23 wire gauge. Winslow asphalt.	Good for 10 years. Cost \$43.50.
Grand Trunk. Baltimore & Ohio. Northern Pacific.	Sheet iron, with roof ribs & saddles. I. C. Lorne, charcoal tin. 8,000 cars ordinary double board roof.	Superior to Winslow iron roof, as it adds to stiffness of car and prevents perforating from inside. Intermediate purlins not necessary. Cost \$40. Good satisfaction. Cost \$18.45. Cost \$13 per car. Average life 15 years.
Burlington & Northwestern. Chicago, Burlington & Quincy. Report of Master Mechanics.	Winslow asphalt. Double board. "Eaton" roof. "Empire" roof of Chicago; corrugated galvanized iron.	Objection to iron roof, because so much cold weather, and iron gets coated with frost on inside, but when car gets into warmer country frost melts and damages freight. Gives satisfaction. All cars. No particulars. In use 11 years. one of the cheapest and best; cost \$38 for 34-foot car; if roofing boards used cost less than \$30 per M., roof will be correspondingly cheap.
	Winslow asphalt. Hutchins' composition. Double board roof not favored. Should be superseded.	Good and cheap as the rest; in use 6 years; believed to last as long as body of car; cost from \$32 to \$34 for 34-foot car. Good and cheap as the rest; believed to last as long as body of car; cost from \$32 to \$34 for 34-foot car.
New York, Lake Erie & Western.	Winslow asphalt.	Winslow asphalt roof has an advantage over all others, in that the undercourse of boards running lengthwise of the car stiffens the roof. Asphalt roof favored as against corrugated iron, because cheaper; iron liable to rust and have holes punched through it. Cost for 34-foot car \$27. Recently applied; not prepared to give it preference; thinks iron under roof best, similar to Winslow metallic roof.
Atchison, Topeka & Santa Fe.	Winslow roof, galvanized iron. Double board.	Box cars. Stock cars.
St. Joseph & Grand Island.	Winslow roof, galvanized iron. Double board.	Box cars. Stock cars.
Chicago, St. Paul, Minn. & Omaha. Chicago & Alton.	Double board. Winslow iron. Double board.	Not satisfied with it; in favor of some sort of metallic roof. Box cars. Stock cars.
Union Pacific.	Winslow iron.	Stock cars. Last a number of year; never knew one to be worn out; double board not suitable to the climate.
Minneapolis & St. Louis	Double board roof. Hutchins' composition.	Stock cars. Tried it for 3 years; found perfect on examination.
Central Iowa.	Double board roof. Corrugated galvanized iron.	Stock cars. On 100 cars; think double board roof preferred for all purposes; cheapest in maintenance.
Chicago, Rock Island & Pacific	Double board. Chicago car roof, corrugated iron. Winslow asphalt.	Standard for all cars. Not sufficient experience of either to speak positively.
Chicago & Illinois.	Double board. Winslow asphalt.	Give satisfaction.
Chicago & Northwestern.	Double board.	All cars. Made no experiments so far with others, as lumber is cheap in this district; think of making experiments.

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Manufacturers of all kinds of Machine Tools and Wood Working Machinery. Our Tools are all made from new and improved patterns and with the latest improvements. A large stock always kept on hand, and those not in stock made at shortest notice. In our list will be found the following:

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Machines,

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Machines,

Shafting

Lathes,

Pulley-Turn-

ing Lathes,

Wood Planing

and Matching

Machines,

Surface

Planers,

Moulding

Machines,

Mortising

Machines,

Tenoning

Machines,

Band Saws,

Scroll Saws,

Wood-Turning

Lathes,

Timber

Dressers,

&c., &c., &c.

Complete Sets

of Machinery

for

Locomotive

Works,

Car Works,

Implement

Works,

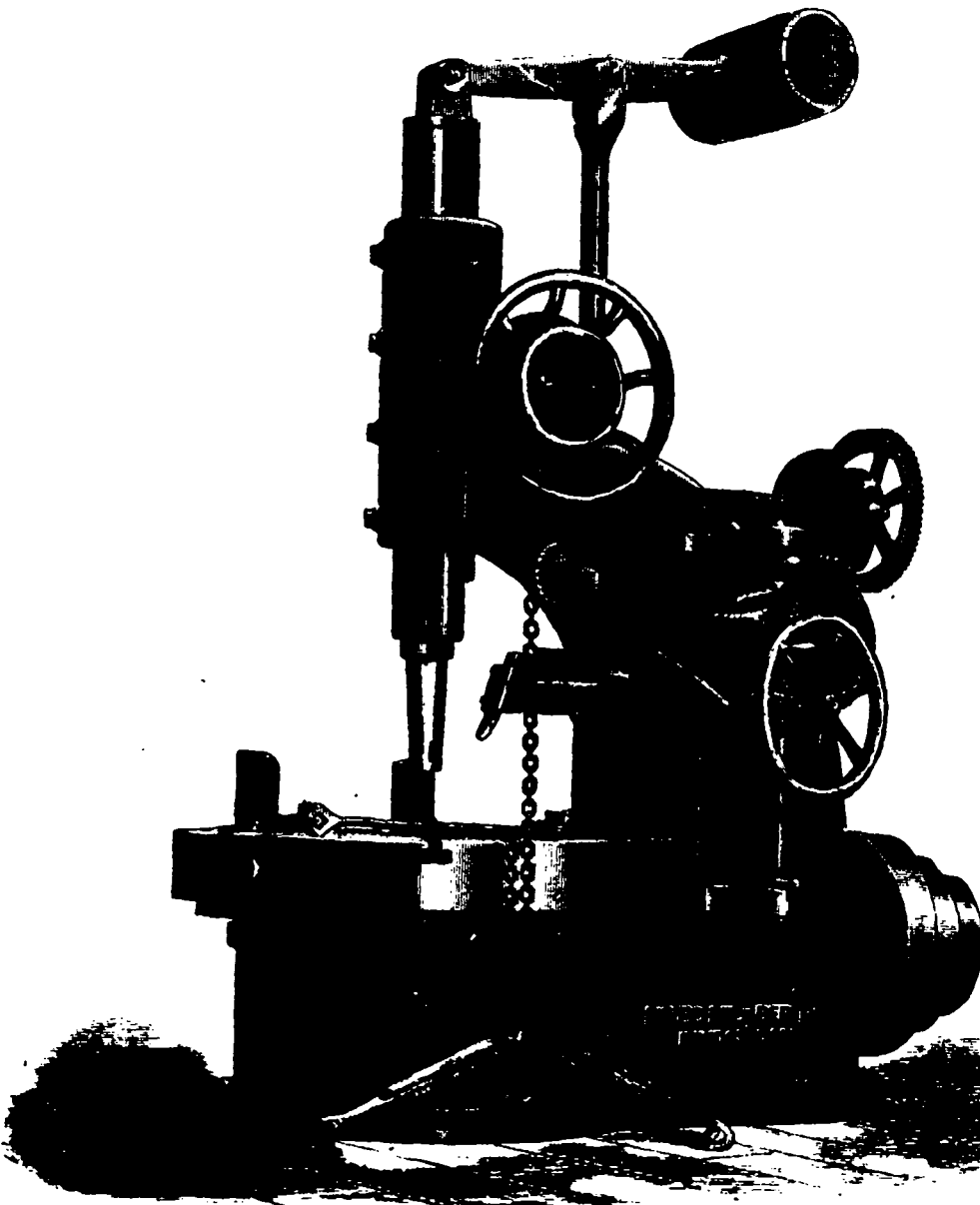
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Deputy of the Supt. Genl. of Indian Affairs, Department of Indian Affairs, Ottawa, 2nd June, 1887.

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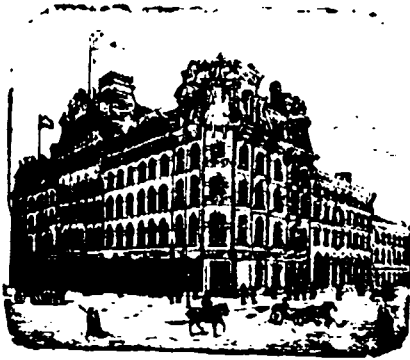
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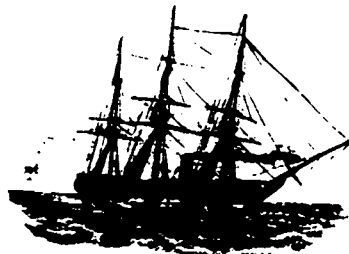
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