

The Canadian Engineer

VOL. III.—No. 5.

TORONTO, SEPTEMBER 1895.

PRICE, 10 CENTS
\$1.00 PER YEAR.

The Canadian Engineer.

ISSUED MONTHLY IN THE INTERESTS OF THE

CIVIL, MECHANICAL, ELECTRICAL, LOCOMOTIVE, STATIONARY,
MARINE AND SANITARY ENGINEER; THE MANUFACTURER;
THE CONTRACTOR AND THE MERCHANT IN THE
METAL TRADES.

SUBSCRIPTION—Canada and the United States, \$1.00 per year, Great Britain, 6s. Advertising rates on application.

OFFICES—64 Church Street, Toronto, and Fraser Building, Montreal.

BIGGAR, SAMUEL & CO., Publishers

E. B. BIGGAR
K. R. SAMUEL
Address—Fraser Building,
MONTREAL, QUE.
Toronto Telephone, 1892. Montreal Telephone, 2589.

CONTENTS OF THIS NUMBER :

PAGE	PAGE		
American Patents	135	Metal Trade Review	127
Boilers, Facts about	119	Metal Trade with Great Britain...	125
Car Association of Stationary En-		Mining Matters	131
gines	122	Montreal, Ottawa and Georgian	
Canada's Railway System	123	Bay Canal	109
Canadian Electrical Association...	123	Nova Scotia Steel Co.....	125
Cast Iron, The first	123	Nova Scotia Tornado	122
Concrete Superstructures.....	114	Ottawa Canal.....	109
Car Fender	125	Packard Lamp Works.....	126
Delaware Breakwater.....	114	Patents, Canadian	135
Electric Flashes	133	Personal	134
Hayhurst, T. H.	114	Pipes, weight per foot.....	127
Indicator, and its use	127	Railway and Marine	130
Industrial Notes	127	Shepherd, R. W.	125
Kerosene Motors	113	Tidal Motor	124
Lake Erie Water Power Scheme.	122	Tornado in N.S.	122
Literary Notes	127	Waterous Engine Works	123
Map of Ottawa Canal.....	111	Wright's Reducer for Indicator use	123

For THE CANADIAN ENGINEER.

THE MONTREAL, OTTAWA AND GEORGIAN BAY CANAL.

BY MACLEOD STEWART, OTTAWA.

It is now a good many years since the project of connecting Lake Huron with the lower St. Lawrence by a line of navigation *via* the French River, Lake Nipissing and the Ottawa was first mooted; and, although circumstances have led to the neglect of this route hitherto, its merits are such as should have long ago received greater recognition. The enterprise is one involving no unreasonable expenditures, and in the carrying on of which no unusual engineering difficulties are to be met with; and those difficulties which do exist are within certain defined limits, and already known with a fair degree of accuracy from surveys made at different times. The benefits to be derived from its completion are both great in degree and manifest as to character.

Since the subject of canal building first excited interest in this country, Canada has grown from a paltry colony with a slight fringe of sparsely populated settlement along her southern border, and back of that a vast stretch of unbroken wilderness, known only to the hunter and the Indian, to a great Dominion embracing half a continent, and developing with marvellous rapidity resources of great variety and untold richness. When the first surveys of the Ottawa were made, Renfrew was the last post of civilization. Our "Great North-West" had no existence. The whole country about Lakes Superior and Nipissing, and the Upper Ottawa, now known to abound in mineral wealth, and to contain many valleys of extreme fertility and

excellent climate, was supposed to be utterly worthless, except for the timber which covered it. Now we have a great North-Western domain clamoring for the best and cheapest means of carriage of its surplus products to European markets, a domain whose future is in no doubt largely dependent on the satisfactory solution of that very problem of transportation. And we have also, in North-Eastern Ontario and North-Western Quebec, a vast extent of country of recognized value only awaiting the development which cheap transportation will bring about, to become capable of sustaining a large population and adding immensely to our national wealth.

Although as early as 1801 there was a small settlement at Hull, opposite the present capital of the Dominion, composed chiefly of Americans from Massachusetts, among whom Philemon Wright was most prominent, it was not until the construction of the Rideau Canal that Bytown was founded where Ottawa now stands. The beneficent effects of the opening of the Rideau route were so apparent, that there was soon a strong feeling in favor of continuing the navigation of the Ottawa beyond the Chaudiere Falls, which opposed an obstacle to progress farther westward. As the country about Lakes Michigan and Huron was then being settled, the more daring minds soon conceived the possibility of making the Ottawa the grand highway for the traffic from the new empires bordering upon those lakes. Many of the arguments then used are as applicable now in favor of the route, as will be seen by perusal of the following quotations from a series of resolutions moved by Mr. Wm. Stewart, of Bytown, in the Canadian Assembly in July, 1847:

Resolved,—That the distance from Lake Huron to the city of Montreal by the Ottawa River is less than half the distance by the route of the lakes and River St. Lawrence; that a water communication such as can be attained would avoid all the risk, exposure and expense inseparable from lake navigation, and would be a short, safe, and natural outlet for the minerals, fish, and immense agricultural produce of the extensive country bordering on Lakes Superior, Michigan and Huron.

Resolved,—That it is incontrovertible that no other line of communication, capable of embracing so much of the north-western trade of this portion of America, can ever be made so completely within the heart of the province, and which would perpetually secure such trade to the cities of Montreal and Quebec, besides the immense trade it would create and immediately embrace in facilitating the lumber trade through an extensive region of country, more abundant in lumber (the great export staple of this province) than any other portion of Canada.

Resolved,—That such a communication considered as a means of defence (literally encircling the most valuable portion of Canada) and as a military highway to place troops and munitions of war at the highest settled points in the province, in a short space of time, and entirely unexposed to any invading army, is of itself a matter worthy of grave and serious consideration.

In pursuance of the object set forth in these and accompanying resolutions, an appropriation of £50,000 was obtained for the construction of one link in the chain of navigation, viz., a canal of 2.83 miles in length between the Deschenes and Chats Lakes, designed to create a stretch of fifty miles of navigable water. Nearly \$500,000 were expended, in rock excavation, etc., on this work until 1858, when a discussion arising