

# The Canadian Engineer

VOL. X.—No. 1.

TORONTO AND MONTREAL, JANUARY, 1903.

PRICE 10 CENTS  
\$1.00 PER YEAR.

## The Canadian Engineer.

ISSUED MONTHLY IN THE INTERESTS OF THE

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

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

OFFICES—Cor. Church and Court Sts. Toronto; and Fraser Building, Montreal.  
Toronto Telephone, Main 4310. Montreal Telephone, Main 2689.

BIGGAR-SAMUEL, LIMITED, Publishers,

TRAVELING REPRESENTATIVE: A. W. SMITH.

All business correspondence should be addressed to our Montreal  
office. Editorial matter, cuts, electros and drawings should be  
addressed to the Toronto Office, and should be sent whenever  
possible, by mail, not by express. The publishers do not undertake to  
pay duty on cuts from abroad. Changes of advertisements should  
be in our hands not later than the 15th of the preceding month  
or 15 proof is desired, 4 days earlier.

### CONTENTS OF THIS NUMBER :

| PAGE  | PAGE  |
|---|---|
| Advantages of Smooth-on Gaskets..... 29     | Marine Engines, Use of Various              |
| Back Geared Crank Shaper..... 3             | Vapors in..... 10                           |
| Bench Drill, Manufacturers'..... 3          | Municipal Works, etc..... 22                |
| Calcium Carbide, Production of..... adv 4   | Mining Matters..... 26                      |
| Central Station v. Private Powers..... 12   | Marine News..... 28                         |
| Carbons for Diamond Drills..... 12          | Machinery, English v. American, in          |
| Clay, An Unrecorded Property of..... 14     | China..... 30                               |
| Co-Operative Telephony..... 22              | New companies..... 30, adv 41               |
| Canadian Society of Civil Engineers..... 29 | Oiling Devices..... 29                      |
| Calendars Received..... 30                  | Patent Decision, Important..... 30          |
| Detachable Chain Link..... adv 44           | Persons..... 28                             |
| Electric Apparatus in English Coal          | Polytechnic School, New, Montreal,          |
| Mines..... 11                               | Building for..... 13                        |
| Electric Flashes..... 25                    | Port Arthur and Port William Tele-          |
| Elevators, Evolution of..... 20             | phone Systems..... 4                        |
| Engineers' Club of Toronto..... 29          | Railway Train Brakes, Power of..... adv 4   |
| Electric and Gas Lighting in Canada..... 29 | Railway Matters..... 27                     |
| Grand Trunk New Offices..... 7              | Sault Ste. Marie and its Industries..... 15 |
| Hamilton Branch Stationary Engi-            | Single Beam Travelling Crane..... 13        |
| neers..... 22                               | Steam Boiler, Novel..... adv 4              |
| Industrial Notes..... 23                    | Telephone Hook Switch, A New..... 6         |
| Large Power Distribution Scheme             | Telephony, Independent, in Canada..... 1    |
| in Scotland..... 9                          | Track Sanding Machine..... 26               |
| Literary Notes..... 29                      | Waterproofing Blueprints..... 10            |

The articles now running in the Canadian Engineer on the  
Electrical Power Developments of Canada, will be reprinted in book  
form, with diagrams and folding plates. Price \$5.00 per copy  
Advance orders received.

### INDEPENDENT TELEPHONY IN CANADA.

Up to very recently, practically all the telephone  
business in the Dominion was controlled by the Cana-  
dian Bell Telephone Company, a licensee of the Ameri-  
can Bell Telephone Company, of Boston, Mass. The  
latter company for many years held exclusive patents  
on the telephone and had a complete monopoly in  
almost every country, excepting Germany, France,  
Norway and Sweden. The Boston company was not  
an operating company in itself, but held the patents  
and furnished the instruments to sub-companies, organ-  
ized for the purpose of operating exchanges in certain  
territory assigned to them. The telephone instruments  
were not sold to the sub-companies, but were leased  
at an annual rental of from two to ten times their  
cost, and upon a condition that no other make of in-  
strument or appliance should ever be used in connec-

tion therewith. The sub-companies were required to  
purchase the switch-board and central office equip-  
ment from a manufacturing company controlled by the  
members of the Boston company. Besides paying a  
high price for their switchboard apparatus originally,  
they were usually required to pay a large annual  
royalty on each line equipment. The parent company,  
having practically a perpetual contract with the sub-  
companies, that all future apparatus must be secured  
from their allied companies, are in a position to  
demand almost any price and terms for their later appli-  
ances and prevent the adoption of other makes of  
apparatus, even if it should be more modern, more  
convenient and efficient.

In view of these conditions in the past, it plainly  
can be seen why it was necessary for the Bell operating  
companies to charge exorbitant rentals, especially  
when taking into consideration the large amount of  
watered stock in their own organizations, in addition,  
on which they aimed to pay dividends. Under their  
present capitalization and their arrangements with the  
parent and manufacturing companies, to which they are  
tied by contract, it is scarcely possible to bring their  
rates down to a legitimate basis and give first-class  
service.

Since the expiration of the fundamental patents  
early in 1894, and the opening of the Independent tele-  
phone business in the States, there has been a greater  
development in this line there than in any other coun-  
try. There have been more independent exchanges  
established in the States and more telephones put into  
use during the past five years, than were used for the  
twenty years previous. Competition among the vari-  
ous independent manufacturers has also been a remark-  
able influence to develop the highest class of equipment  
and the simplest and most convenient and efficient  
systems possible in the art.

It is true that the Bell Company have made pro-  
gress and are gradually modernizing their antiquated  
apparatus, but the cost of remodeling is heavy. The  
makers of independent telephone equipment on the  
other hand, are able to supply the most perfect instru-  
ment at the start, and their equipment will therefore  
pay a dividend on a lower annual rental of instruments.  
By starting an independent telephone system in a  
centre from which a group of towns in a radius of  
about 50 miles can be covered, most of the practical  
benefits of a long distance service can be secured. As  
companies can then be started in neighboring centres,  
the area of independent systems can thus be widened  
and the extortions of the present monopoly can thus  
be neutralized. The remarkable growth of independent  
systems in the States is just beginning to be under-  
stood in Canada, but there is still a craven fear of the  
Bell Company in many quarters. As more light dawns