## WILLIS CHIPMAN

Hon. Grad. McGill University.
M. Can. Soc. C.F., M. Am. Soc. C.E.,
Mem Am. W.W. Ass'n. WATERWORKS, SEWERAGE WORKS, GAS WORKS, ELECTRIC LIGHT AND POWER PLANTS Reports, Surveys, Construction, Valuations

103 BAY STREET - TORONTO

## JOHN T. FARMER

MECHANICAL and HYDRAULIC ENGINEER

418 Coristine Bldg. - MONTREAL

## C. J. FENSOM, B. A. Sc.

Aberdeen Chambers - Toronto Machinery designed, supervised, inspected and contracted for. TESTS

Electric Light Plants, Power Plants, Pumping Plants.

## GANADIAN ENGINEERS, LIMITED GIVIL AND GONSULTING ENGINEERS

Electric, Hydraulic Plants, Waterworks, Sewerage, Bridges. 33 Bank St. Chambers, OTTAWA.

E. H. KEATING, M.Inst. C.E., M. Can. Soc. C.E., M. Am. Soc. C.E. WM. H. BREITHAUPT, C.E., M. Can. Soc. C.E. M. Am. Soc. C.E.

## Keating & Breithaupt Consulting and Constructing Engineers.

Waterworks, Sewerage, Power Develop-ments, Bridges, Raliway Work; Examinations, Estimates and Reports. Cable Address: Keating, Toronto.
Telephone: Main 6718.

#### Andrew F. Macallum Consulting and Constructing Engineer

Steam and Electric Railways, Hydraulic, Industrial and Mining Plants.

Rooms 612-14.
Continental Life Building - TORONTO
Telephone Main 4652.

#### WILLIAM FRY SCOTT STRUCTURAL ENGINEER

Consultation or Design: Buildings, Building Construction, Foundations, Walls, Roofs Bridges, Masonry, Pireproof, Reinforced Con-crete, Reinforced Brick, Steel, Timber, Specifi-cations, Examinations, Valuations, and Reports for Investment.

Aberdeen Chambera Cor. Adelaide and Victoria Streets, TORONTO, ONT. North 4260

## CALT & SMITH

CONSULTING CIVIL AND

SANITARY ENGINEERS

SPECIALTIES

WATERWORKS, SEWERACE AND ELECTRIC LICHTING

JOHN GALT, C. E., OWEN W. SMITH, Mem. Can. Soc. C.E. Assoc, Mem. Can. Soc. C.E.

23 Jordan Street TORONTO

## John H. Jackson

CIVIL ENCINEER

WATER POWER, ELECTRIC RAIL-WAYS, STRUCTURAL STEEL. Niagara Falls, Canada

Associated with Charles H. Mitchell, C. E., Hydraulic Engineer.

A.M. Amer. Inst. E.E.

## K. L. AITKEN

Consulting Engineer

Electric Lighting and Power Stations Distribution, Railways, Electrolysis, Water Works, Pumping Equipments, Reports, Valuations, Etc.

Municipal Work a Specialty
Telephone: Main 1484—No.th 3119—North 1933
1008 Traders Bank Building - TORONTO, CAN.

# DAVIS & JOHNSTON

WATER WORKS, SEWERACE AND SEWACE DISPOSAL

Wm. Mahlon Davis, Herbert Johnston. C. E. M. Can. Soc. C. E. Offices: BERLIN and GALT

### LEA & COFFIN and H. S. FERGUSON

ENGINEERS

Waterworks, Sewerage, Water Powers Pulp and Paper Milis Reinforced Concrete Structures of Every Description. Coristine Building - MONTREAL

"THE NIAGARA BAR"

# ENGINEERS

411 MANNING CHAMBERS TORONTO CANADA Offices also at Niagara Falls, Canada

### A. LEOFRED ( Graduate of McGill)

Consulting Engineer WATERWORKS A SPECIALTY.

so St. John Street QUEBEC Metropolitan Ins. Bldg. Phone 545.

## J. LEWIS THOMAS

CIVIL ENGINEER

Consulting Engineer for Municipal and County Work. Riectric Railways, Bridges, Water-works, Sewerage, Wharves, Docks, etc. Ser Special attention to Valuations and Arbi-trations.

### Smith, Kerry & Chace CONSULTING AND CONSTRUCTING **ENCINEERS**

Hydraulic, Electric, Railway, Municipal, Industrial.

Rooms 124-127 Confederation Life Building, TORONTO. W.U. Code used. Cable Address "Smithco" Cecil B. Smith J. G. G. Kerry W. G. Chace

#### THE PRIMING OF RAW WOOD.

In answer to a correspondent of that journal who inquired as to the best material for priming raw wood on the exterior of some dwelling houses in process of erection, a recent issue of "The Painters' Magazine" presents the following: Our unbiased opioion on the question of priming exterior wooden surfaces is invariably in favor of pure white lead, the hydrated carbonate of lead, ground in pure raw linseed oil as fine as possible, and reduced with at least six gallons of well settled pure raw linseed oil to the one hundred pounds of keg lead, with not over one quart of pure oil and turpentine japan in addition. This is recommended for soft wood, such as hemlock, white or red pine, etc. For southern pine, the raw oil might be reduced to about five and one-half gallons, the deficiency being replaced by turpentine.

If the primer is to be followed by green or other dark colors, it should be tinted lead color with lampblack; if for yellow tints it may be stained with finest French yellow ochre. When ochre is used only to give a buff tint to a priming of white lead and therefore not in excess, it is perfeetly safe to employ it, but we should not advise equal parts of white lead and ochre, unless the lumber be very soft and spongy. Under no condition, however, would we put ourselves on record as advising the use of ochre for priming, because we have any number of proofs that the material is too brittle and, in fact, as a rule too coarse to enter the pores of the wood along with the oil and when the oil is finally absorbed by the wood, the ochre is left without sufficient binder and is very apt to cleave off, taking the top coats along with it. If this does not happen during the life of the first painting, it almost invariably happens after repainting. The worst suggestion made to you by the painter, however, is that of using the socalled white ochre for priming. In the first place, this name is given to the most inferior grade of white paint that can be designed, as it does not contain, as a rule, anything barytes and zinc white, both of which are unfit for foundation work, which priming really is in painting.