

**John E. Hardman, S.B.**

MINING ENGINEER,  
Oldham, Nova Scotia.

Can be consulted on all matters pertaining to the profession.  
The development and management of Gold Properties a specialty.

**TO USERS OF THE DIAMOND DRILL.**

Diamond Drill Bits set Promptly by an Efficient Man All Work Guaranteed.

Bort and Carbon Diamonds for sale. Same terms as New York. Prospecting with American Diamond Drill at per foot or by the day.

**McRae & Co.,**  
OTTAWA.

**CROSBY  
STEAM . ENGINE . INDICATORS**

Catalogues supplied which comprise other trustworthy instruments for the Control, Regulation and Economy of Steam.

AGENCY: 751 CRAIG STREET, MONTREAL, QUE.  
**J. & H. TAYLOR.**

**SPECIALISTS IN MICA,**  
MINERS' AGENTS,  
**RICHARD BAKER SON & CO.**  
6 & 7 CROSS LANE, LONDON, ENG.

**R. C. CAMPBELL-JOHNSTON**

(of Swansea, India, and the United States.)

**METALLURGIST, ASSAYER,  
AND MINING ENGINEER.**

Properties reported on. All assays undertaken. Furnaces and concentrating plants planned and erected. Treatment for ores given. Ores bought and sold. Box 40, Vancouver, B.C.

**T. D. LEDYARD,  
DEALER IN MINES, &c.**

57 COLBORNE STREET, TORONTO.

**Specialties:**

BESSEMER IRON ORES PARTICULARLY LOW IN PHOSPHORUS  
**ASBESTOS.**

**F. CIRKEL,  
MINING : ENGINEER.**

(Graduate, Academy of Mines, Aachen, Germany.)

Reports on Mica Deposits, Asbestos, Phosphate

**78 QUEEN STREET,  
OTTAWA.**

**E. E. BURLINGAME'S  
ASSAY OFFICE & CHEMICAL  
LABORATORY**

Established in Colorado, 1866. Samples by mail or express will receive prompt and careful attention.  
Gold & Silver Bullion Refined, Melted and Assayed, or Purchased.  
Address, 1736 & 1738 Lawrence St., Denver, Colo.

**J. LAINSON WILLS, F. C. S.**

MEMBER INSTITUTION MINING AND METALLURGY  
LONDON, ENGLAND.

12 Old Slip, New York.

INVESTIGATION OF MINING PROPERTIES  
ANALYSES, ASSAYS, &c.

**C. V. M. TEMPLE**

(Formerly President Megantic Mining Co., P.Q.)

**MINES AND MINING LOCATIONS FOR SALE.**  
CORRESPONDENCE SOLICITED.

Office and Residence:

**47 ST. GEORGE ST., TORONTO, ONT.**

CANADIAN REPRESENTATIVE:

HENRY DE Q. SEWELL, Dominion and Ontario Land Surveyor,  
Mining Engineer, etc., Port Arthur, Ont., A. M. Inst. C.E.

LONDON REPRESENTATIVES:

LANE GAGGE & ANDREWS, Solicitors, Arundel St. Strand, London.  
R. C. CAMPBELL-JOHNSTON, (of Swansea, India and the States), Metallurgist, Mining Engineer, Vancouver, B.C.

**Crabb's Patent Clip**

FOR

**Endless Rope Haulage**

The latest and most efficient Clip in the market; does not damage the rope; cheap, simple and substantial in construction, and certain in action on rising and falling gradients; automatically attaching and detaching itself at Crosses, Junctions, and Terminals; drags the tub or wagon on the centre line; requires no adjusting, it being always in position to receive the rope; can be adapted either to the top, bottom or side of the tub. A sample one forwarded for one month's trial, purchase or return, to any Colliery in the United Kingdom, carriage paid. Further particulars and testimonials may be had on application to

**G. H. CRABB,**

Bunker Hill, Fence Houses,

DURHAM, ENG.

**LEDOUX & COMPANY,**

9 Cliff St., New York.

**Engineers, Metallurgists &  
Assayers.**

**Public Ore Sampling and Storage Works**

All the principal buyers of furnace materials in the world purchase and pay cash against our certificates of assay, through New York banks.

By special permission of the Secretary of the Treasury of the United States, cars of ore or Copper matte passing through in bond can be opened and sampled at our works.

Consignments received and sold to highest bidder. Send for circular giving full particulars

**Mines examined and sampled. Assays  
and Analyses of all kinds.**

**WYATT & SAARBACH,**

Consulting, Analytical and Technical Chemists

**12 OLD SLIP, NEW YORK.**

(Near Hanover Square.)

**W. de L. BENEDICT, E.M.,**

Mem. Am. Inst. Min. Eng.

**Mining Engineer and Metallurgist,**

REPORTS ON MINES AND MINERAL LANDS.

**PHOSPHATE A SPECIALTY.**

**No. 18 Broadway, Rooms 617 & 618,  
New York.**

**EBENEZ. OLCOTT,**

Consulting Mining Engineer & Metallurgist.

18 Broadway, New York City.

Cable Address: - - - "Kramolena."

Mines examined and reported on. Will act as permanent or special advising engineer of mining companies.  
Special facilities for making working tests on ores

**WM. HAMILTON MERRITT, F.C.S.**

Associate Royal School of Mines, &c.,

**MINING ENGINEER and METALLURGIST,**

Will report on Mines and Mineral Properties.

ADDRESS:

**15 Toronto St., Toronto, Ont.**

**F. H. MASON, F.C.S.**

First-class Certificates in Chemistry and Metallurgy from the Royal School of Mines, London—Late Chemist and Assayer to the Newbery-Vautin (Patents) Gold Extraction Company, Limited.

**Assays & Complete Analyses of all Minerals**

**THE ASSAY OFFICE,**

**ARLINGTON PLACE, - TRURO, N.S.**

**Irwin, Hopper & Co.,**

**MINERS AND SHIPPERS OF  
MINERALS.**

**BOARD OF TRADE BUILDING,**

**MONTREAL, CAN.**

Asbestos, crude and manufactured. Phosphate, Mica, Plumbago, Soapstone, &c.

**MICHIGAN MINING SCHOOL**

A State School of Mining Engineering, located in the heart of the Lake Superior mining region, giving practical instruction in Drawing, Blue-printing, Mechanics, Mechanism, Properties of Materials, Graphical Statics, Mechanical and Electrical Engineering, Shop-practice, Analytical and Technical Chemistry, Assaying, Ore Dressing, Metallurgy, Plane, Railroad and Mine Surveying, Hydraulics, Mining, Mineralogy, Petrography, General, Economic, and Field Geology, etc. Has Summer Schools in Surveying, Shop-practice, and Field Geology. Laboratories, Shops and Stamp Mill well equipped. Tuition free. For Catalogues apply to the Director Houghton, Mich.

**ROBIN & SADLER**  
MANUFACTURERS OF  
*Leather Belting*  
SPECIALTIES  
DYNAMO BELTS  
WATERPROOF BELTING  
MONTREAL TORONTO  
2518 & 2520 NOTRE DAME ST 129 BAY ST.

**BOOKS OF INTEREST**

TO

**Engineers, Mechanics, Etc.**

Mathematical Instruments,  
Squares, Scales, Compasses,  
and a full line of  
Engineers' Drawing Supplies.

**W. DRYSDALE & CO.,**

**BOOKSELLERS AND STATIONERS.**

**237 St. James St., Montreal.**

**ORFORD COPPER CO.,  
Copper Smelters**

Works at Constable's Hook, N.J., opposite New Brighton, Staten Island. Copper Ore, Mattes, or Bullion purchased. Advances made on consignments for refining and sale. Specialty made of Silver-bearing Ores and Mattes.

—SELL—

**INGOT AND CAKE COPPER.**

President, **ROBERT M. THOMPSON,**

Treasurer **G. A. LAND.**

Office 37 to 39 Wall Street, New York.