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Vol. 47.

TORONTO, DECEMBER 18, 1903.

No. 12.

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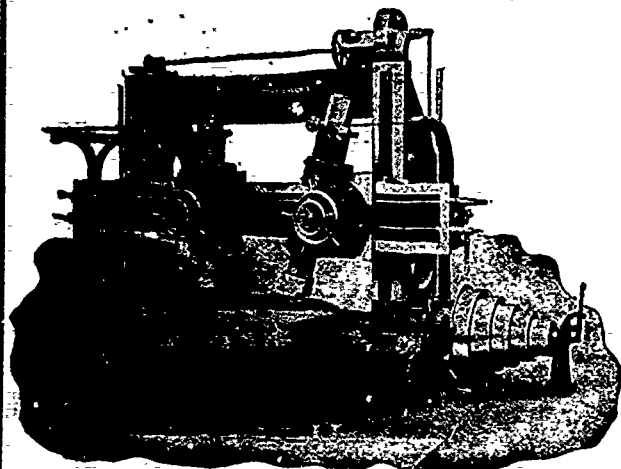
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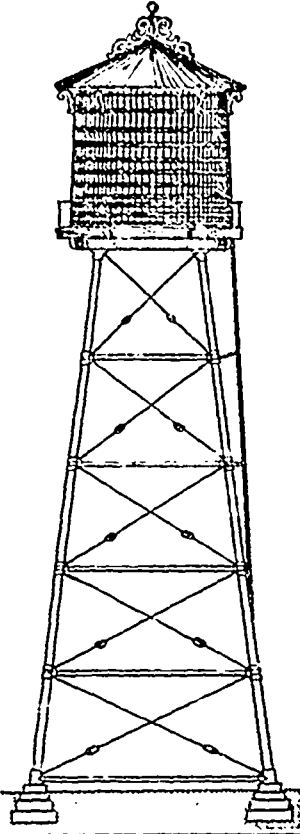
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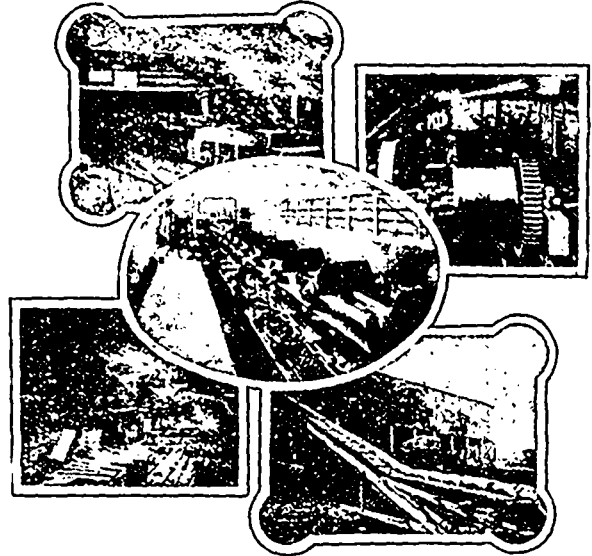
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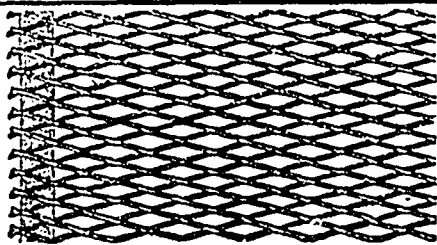
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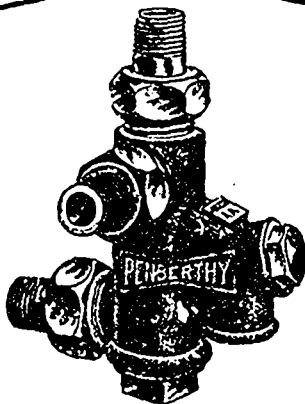
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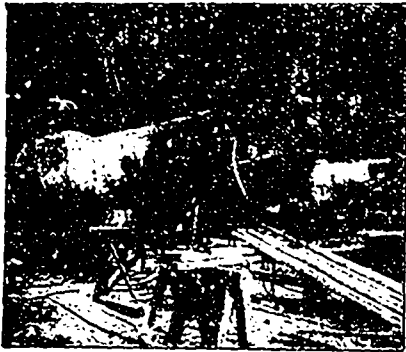
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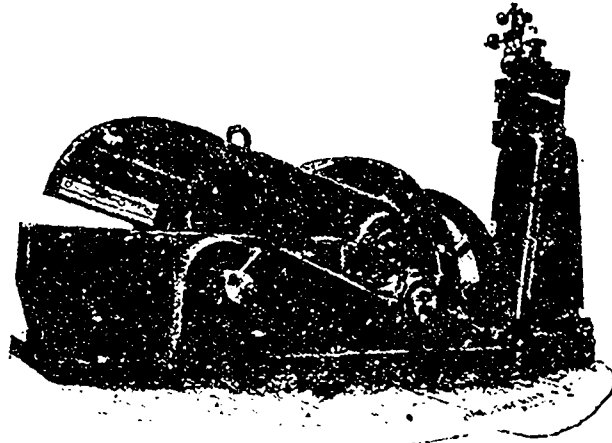
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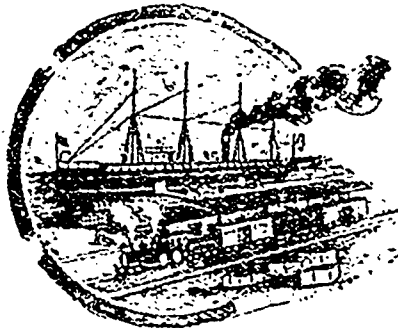
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Manufacturers of Pitch (Roofing and Target); Creosote (Dead Oil); Carbolic, Naptha, Disinfectants, Refined Tar.

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ABSOLUTELY PURE

Also for Mineral Water Manufacturers.

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The Day of Judgment is Come After All

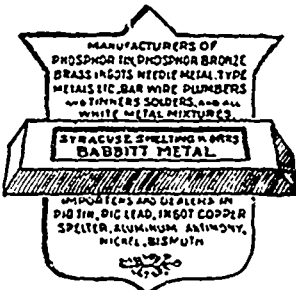
And the jury have unanimously agreed that all the manufacturers in Canada who are looking out for their interests, are duty bound to protect themselves by using SYRACUSE BABBITT METAL only, the manufacturers to decide what grade of Babbitt they want to purchase.

For high speed and heavy pressure machinery they may choose such as Aluminum Genuine, Government Genuine, Hard Genuine and Dynamo; for medium speed Special, Manganese, Car Box and Extra; for slow speed Nos. 1, 2, 3 and 4.

THE SYRACUSE SMELTING WORKS shall have their name on every bar as a guarantee for the quality. Price is to be the lowest in Canada. Also every plumber or manufacturer who has any use whatever for any kind of solder must use the SYRACUSE SMELTING WORKS' for their own protection.

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Everybody who is not using "SYRACUSE" BABBITT METAL or SOLDER, in fact any metals they manufacture, is working against their own interests. A word to the wise is sufficient.



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Packard

The Lamp Question Is an Important One: We can solve it for you

That Packard Lamps are becoming better known as the most economical incandescent lamp to use is shown in the recent heavy orders we have received.

In fact, so certain are we of their superiority, that we are only too willing at all times to make shipments for test and comparison.

Packard Lamps are of long life—evenly rated—but what is the use of our telling you about them?

Send for a barrel of them to-day and become fully convinced of their merit by actual use.

THE PACKARD ELECTRIC CO., Limited,

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MONTREAL, QUE.

When you are in the market for Transformers we have a very interesting story to communicate concerning our Type "R."

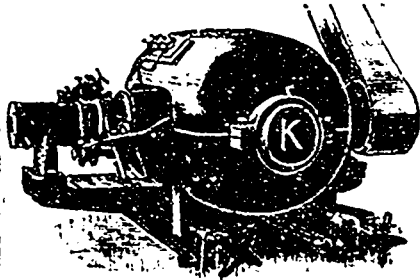
THE EUGENE F. PHILLIPS ELECTRICAL WORKS

MONTREAL, - CANADA

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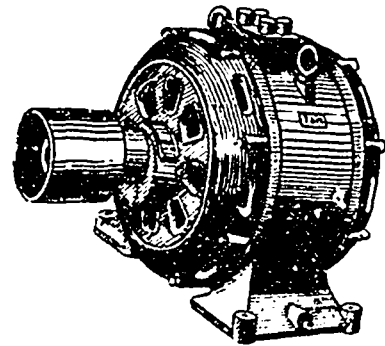


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MULTI-POLAR MOTORS.
BI-POLE MOTORS
ALTERNATING CURRENT MOTORS.
INDUCTION MOTORS.
DYNAMOS for Incandescent and Arc Lighting.
DYNAMOS for Electro-plating and Electrotyping.
ELECTRIC CONTROLLERS for Elevators.
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of one, two and three phases.

HIGH POWER FACTOR and EFFICIENCY

— ALSO —

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IN ALL SIZES.

TORONTO & HAMILTON ELECTRIC CO.

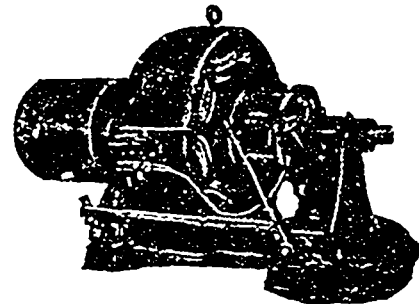
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SUITABLE FOR ALL DUTIES
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We manufacture Direct Current Machinery in all sizes and for any purpose.

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Hot Blast Heating Systems

— FOR —

Factories, Mills, Schools,
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PERFECT VENTILATION AT AN EVEN TEMPERATURE.

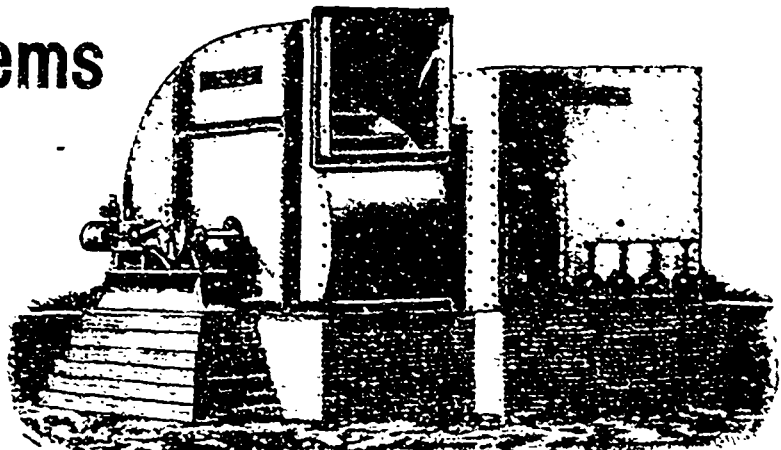
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SHELDON & SHELDON

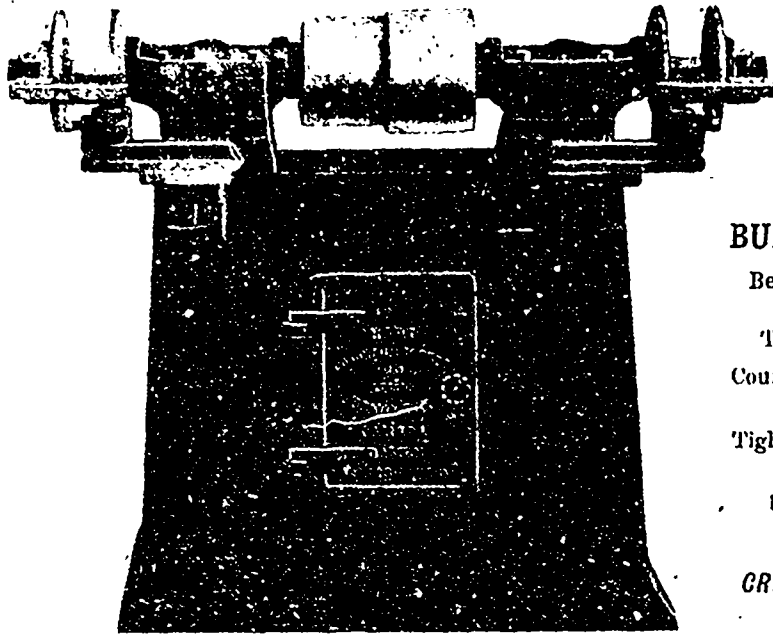
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No. 18.

BUILT ON SCIENTIFIC PRINCIPLES

Bearings absolutely **DUST PROOF**, automatic oilers, no vibration.

To carry wheels 16 to 20 in. dia., 3 in. thick. Countershaft has cone pulleys 17 x 18 x 5½ inches face.

Tight and loose pulleys, 8 in. dia., 6 in. face, and should run about 550 revs. per minute.

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Our Specialty :

CRAIG MINE CRYSTAL CORUNDUM WHEELS FOR ALL PURPOSES.

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HAMILTON - - - CANADA. LIMITED

"Say Friend"

Your aim should be to start up for yourself.

Why Work from morn till night for somebody else instead of pushing a business for yourself, and thus reap the full profit of your labor.

We Will... start men of ability and good character in every county in the Dominion.

WRITE FOR PARTICULARS TO

THE EMPIRE MACHINE & METAL STAMPING CO.

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LIMITED



Reflectors, Shades, Lamps

We Stock a Large Variety of **SHADES** and **REFLECTORS** in

ALUMINUM, MIRROR, CELLULOID, PAPER, PORCELAIN,
FOR FACTORY AND OFFICE.

Imperial Lamps and Helios Upton Enclosed Arcs Give BEST LIGHT with LEAST CURRENT

ELBRIDGE Sparking Dynamos, SAMSON Batteries and IMPERIAL Salts, for Gas or Oil Engines.

Write us about Lighting
your Factory or Office.

JOHN FORMAN, 708 and 710 Craig St., MONTREAL

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ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

The Canadian Manufacturer Publishing Co., Limited.

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J. J. CASSIDY, Editor and Manager

Classified IndexPage 39
Index to AdvertisersPage 46

THE CANADIAN MANUFACTURER

Reaches all the Blast Furnaces, Iron and Steel Works, Rolling Mills, Manufacturers of Iron and Wood-Working Machinery, Steam Engines and Bolders, Pumping and Mining Machinery, Electric Machinery, Textile, Pulp and Paper Mill Machinery, Water Power Plants, Cement, Sewer Pipe and Terra Cotta Works, Dealers in Steam Fitters' and Plumbers' Supplies, and all Hardware Merchants in Canada.

CANADIAN COMMERCE—1903.

The total value of all merchandise imported into Canada for consumption during the fiscal year ending June 30, 1903, was \$233,790,516, of which \$136,796,065 was dutiable, and \$96,994,451 was non-dutiable, the dutiable goods paying \$37,110,854, or at the rate of 27.1 per cent.

The value of all goods imported for consumption from Great Britain in 1903 was as follows:

Dutiable.	Value.	Duty Paid.
Under General Tariff.....	\$7,046,411	\$3,334,380
Under Preferential Tariff.....	35,163,754	6,507,246
Total	\$42,210,165	\$9,841,646
Free Goods.....	16,686,736	
Total dutiable and free	\$58,896,901	

The average rate of duty paid upon these imports under the general tariff was 47.3 per cent. and under the preferential tariff 18.5 per cent. Articles imported from Great Britain under the general tariff, not the products of other countries, were spirits, wines, tobaccos, etc., to which no tariff preference is shown.

The value of all goods imported for consumption from the United States in 1903 was as follows:

Dutiable	\$68,538,823
Free	69,066,872
Total	\$137,605,195

The amount of duty collected upon the dutiable goods was \$17,069,881, or at the rate of 25.— per cent.

The value of all imported merchandise, dutiable and free, entered for consumption in Canada in 1903, was as under:

	Great Britain.	United States.	All Other Countries.	Total.
Dutiable	\$42,210,165	\$68,538,823	\$26,047,577	\$136,796,065
Proportion	30.8 per cent.	50.0 per cent.	19.2 per cent.	100.0 per cent.
Free.....	\$16,686,736	\$69,066,872	\$11,240,843	\$96,994,451
Proportion	17.2 per cent.	71.2 per cent.	11.6 per cent.	100.0 per cent.
Dutiable and Free	\$58,896,901	\$137,605,195	\$37,288,420	\$233,790,516
Proportion	25.1 per cent.	58.8 per cent.	16.1 per cent.	100.0 per cent.

Under an amendment to the Customs Act passed in 1903, provision was made for the collection of a surtax on the goods of any foreign country which treats imports from Canada less favorably than those from other countries. This surtax has been applied to goods of German origin, but only to a limited extent as yet, as goods imported from that country during the fiscal year 1903 have been exempt from the surtax when purchased prior to April 17, 1903. The surtax does not apply to the products of other countries imported from Germany, but only to those which are the produce or manufacture of that country.

IMPORTS OF MANUFACTURES.

SELECTED LIST—DUTIABLE—1903.

Following is a tabulated statement showing in detail the values of a selected list of 200 different manufactures of dutiable goods imported into Canada during the fiscal year ending June 30, 1903, and the rates of duties imposed thereon under the general tariff, a discount of 33½ per cent. being allowed upon certain imports manufactured in Great Britain, admitted under the tariff preference in favor of that country.

The statement also shows in like detail the values of 80 different non-dutiable manufactures and products of similar character, which indicate the sources of origin of what is, to Canadian manufacturers, their raw material.

The large preponderance of imports of dutiable goods from the United States over similar goods from Great Britain and all other countries is due to several causes; and it should be observed that in the list of 200 dutiable articles enumerated in our statement, every one of them is capable of being produced in Canada and in Great Britain also, the chief one being, without doubt, the greater adaptability of American goods to Canadian wants.

ARTICLES.	General Tariff.	Great Britain Under Preferential Tariff.	United States Under General Tariff.	All Countries.
Pig iron.....	\$2.50 per ton	\$772,425	\$548,659	\$1,338,574
Cast iron pipe.....	\$8 per ton	36,842	73,062	112,790
Pipe fittings.....	30 p.c.	1,123	342,609	343,970
Malleable iron and steel castings, n.e.s.....	25 p.c.	None	72,988	72,988
Rolls, chilled.....	30 p.c.	None	9,429	9,429
Rolled iron or steel angles, etc., n.e.s.....	10 p.c.	226,182	274,141	947,588
“ “ “ hoops, etc., n.e.s.....	\$7 per ton	27,707	53,289	88,959
“ “ “ n.e.s.....	5 p.c.	34,553	34,928	87,232
Bar iron and steel.....	\$7 per ton	520,030	704,815	1,327,897
Chrome steel.....	15 p.c.	None	22,563	22,563
Iron and steel castings, rough.....	25 p.c.	8,241	233,864	242,131
“ “ “ forgings, n.o.p.....	30 p.c.	5,759	112,148	119,144
“ “ “ bridges and parts, n.e.s.....	30 p.c.	2,593	8,703	11,524
“ “ “ safes, vaults and doors.....	30 p.c.	138	58,548	58,716
“ “ “ switches, frogs, etc.....	30 p.c.	None	34,189	34,189
“ “ “ nuts, washers, etc., n.e.s.....	25 p.c.	3,211	94,358	100,913
“ “ “ springs, axles, etc., n.e.s.....	35 p.c.	26,481	35,114	96,493
“ “ “ mould boards cut to shape.....	5 p.c.	933	212,784	225,705
“ “ “ spades, shovels and blanks.....	35 p.c.	16,653	22,696	39,536
“ pumps, n.e.s.....	25 p.c.	166	227,458	227,910
“ chain-coil, 5-16 dia.....	5 p.c.	73,612	102,730	177,181
“ chain sprocket.....	20 p.c.	None	25,081	25,081
“ “ n.e.s.....	30 p.c.	17,314	78,918	103,101
Nails and spikes, wrought, n.e.s.....	½c. per lb.	761	20,686	21,517
“ “ “ cut.....	35 p.c.	4	7,492	7,496
Tacks, etc., cut, n.o.p.....	35 p.c.	3,791	60,795	64,586
Locomotive engines, n.e.s.....	35 p.c.	None	1,104,328	1,220,328
Steam engines and boilers.....	25 p.c.	101,941	367,447	470,780
Ships boilers and machinery.....	25 p.c.	3,796	145,745	149,541
Printing presses.....	10 p.c.	6,028	297,064	313,590
Fire extinguishers.....	35 p.c.	None	20,584	20,584
Gasoline engines.....	25 p.c.	145	136,869	137,014
Ore crushers, etc.....	25 p.c.	1,266	60,006	61,290
Horse powers, portable.....	25 p.c.	None	6,197	6,197
Engines, portable.....	25 p.c.	None	542,315	542,315
Saw mills, portable.....	25 p.c.	None	3,602	3,602
All other portable machines and parts, n.e.s.....	25 p.c.	725	118,809	119,940
Wind mills.....	25 p.c.	None	38,146	38,146
Sewing machines and parts.....	30 p.c.	6,092	327,447	333,986
Typewriting machines.....	25 p.c.	None	174,975	174,975
Slot machines.....	25 p.c.	None	14,150	14,150
All other machines n.e.s. of wood and iron.....	25 p.c.	267,537	3,921,384	4,247,682
Tubes, boiler.....	5 p.c.	79,766	263,665	361,604
“ not more than 1½ in. dia.....	10 p.c.	None	8,059	8,059
“ for bicycles.....	10 p.c.	694	13,619	14,313
“ over 2 in. dia.....	15 p.c.	57,187	226,968	297,782
“ 2 in. dia. or less, n.e.s.....	35 p.c.	54,970	69,447	129,965
“ all other, n.o.p.....	30 p.c.	1,153	36,326	37,479
Hardware, builders', etc., n.e.s.....	30 p.c.	65,318	703,940	773,311
“ anvils and vises.....	30 p.c.	14,907	26,132	43,853
“ locks, all kinds.....	30 p.c.	6,440	186,200	195,091
“ horse and mule shoes.....	30 p.c.	195	5,687	5,882
“ butts and hinges.....	30 p.c.	569	39,822	40,391
“ smoothing irons.....	25 p.c.	137	10,330	10,471
“ screws, wood.....	35 p.c.	346	18,128	18,573
“ scales, balances, etc.....	30 p.c.	2,340	115,882	118,997

ARTICLES.	General Tariff.	Great Britain Under Preferential Tariff.	United States Under General Tariff.	All Countries.
Hardware, stoves and parts	25 p.c.	\$605	\$266,765	\$270,783
“ hollowware, galvanized	25 p.c.	4,766	10,970	15,932
“ “ enameled	30 p.c.	10,118	129,475	141,565
“ “ agate	30 p.c.	3,506	20,566	62,642
“ tinware, n.e.s.	25 p.c.	10,533	103,575	123,877
“ guns, rifles, etc.	30 p.c.	30,399	223,893	346,614
“ adze, hatchets, etc.	30 p.c.	5,503	42,572	50,062
“ axes	25 p.c.	None	42,261	42,261
“ saws	30 p.c.	2,177	160,041	170,859
“ files and rasps, n.e.s.	30 p.c.	10,194	65,557	84,188
“ all other tools, n.o.p.	30 p.c.	47,713	699,610	793,763
“ “ “ n.e.s.	30 p.c.	77,338	1,736,693	1,893,777
“ carpet sweepers	30 p.c.	None	11,504	11,504
“ cash registers	30 p.c.	None	122,114	122,114
“ emery and mfrs. of	25 p.c.	324	21,799	22,177
“ sand paper and emery cloth	25 p.c.	2,733	70,253	73,086
“ nickel plated ware, n.e.s.	30 p.c.	2,633	52,932	58,993
“ bells and gongs	30 p.c.	399	27,389	28,510
“ buttons, metal	25 p.c.	544	18,363	26,530
“ “ all other, n.o.p.	35 p.c.	27,385	91,723	299,521
“ wire fencing, n.e.s.	15 p.c.	2,889	16,719	19,608
“ “ covered, n.e.s.	30 n.c.	19,850	252,472	274,683
“ “ all kinds, n.o.p.	30 p.c.	19,648	140,858	232,054
“ “ rope, n.e.s.	25 p.c.	94,335	51,690	152,371
“ “ all kinds, n.o.p.	20 p.c.	18	10,039	12,390
“ brass nails, rivets, etc.	30 p.c.	530	5,616	7,645
“ “ pumps	30 p.c.	95	11,196	11,694
“ “ ware, plain	10 p.c.	2,262	16,512	18,774
“ “ screws	35 p.c.	55	7,166	7,224
“ “ n.o.p.	30 p.c.	46,750	499,438	581,184
“ copper nails, rivets, etc.	30 p.c.	551	7,169	7,771
“ “ wire	15 p.c.	15	74,448	74,560
“ “ all other mfrs. of, n.o.p.	30 p.c.	7,679	51,694	60,970
“ electro plated ware, n.e.s.	30 p.c.	42,708	217,921	275,276
“ silverware	30 p.c.	27,821	58,159	94,936
Electric motors	25 p.c.	5,913	417,864	424,159
“ apparatus	25 p.c.	37,849	1,105,168	1,149,763
“ light fixtures and parts	30 p.c.	2,972	191,285	200,310
“ “ carbons, n.e.s.	35 p.c.	530	36,744	42,313
“ “ “ over 6 in. dia.	15 p.c.	None	22,030	32,766
“ “ bulbs	10 p.c.	None	46,410	47,930
Glass, carboys, etc.	30 p.c.	17,464	111,381	323,125
“ tableware	30 p.c.	11,012	220,267	292,906
“ large chimneys	30 p.c.	518	94,388	116,165
“ ornamental	30 p.c.	14,961	2,697	21,351
“ bent plate, etc.	20 p.c.	20,230	70,591	138,652
Lamps and lanterns	30 p.c.	3,425	323,571	356,107
Aluminum, n.o.p.	25 p.c.	285	8,940	14,201
Babbitt metal	10 p.c.	2,144	59,862	62,032
Britannia, not plated	25 p.c.	6,221	21,155	28,563
German silver	25 p.c.	4,242	31,087	36,168
Nickel anodes	10 p.c.	None	12,856	12,856
Belts, n.o.p.	35 p.c.	10,819	39,400	57,321
Belting, cotton	20 p.c.	32,329	46,559	80,250
“ leather	20 p.c.	25,199	32,343	58,599
“ gutta percha and India rubber	25 p.c.	103	60,382	60,485
Paints and colors, dry, n.e.s.	20 p.c.	15,197	67,162	91,532
“ “ “ in oil	25 p.c.	29,719	134,744	168,721
“ white and red lead	5 p.c.	117,464	385,271	758,371
“ varnishes, etc., n.e.s.	20c. per gal.	34,275	103,544	143,676
Gutta percha and rubber, mfrs. of boots and shoes	25 p.c.	516	140,621	141,191
“ “ hose and packing	35 p.c.	1,364	88,322	89,852
“ “ all other, n.o.p.	25 p.c.	30,309	227,976	236,932
Leather and mfrs. of sole leather	15 p.c.	41,708	3,246	79,207
“ belting leather	15 p.c.	58,912	1,877	62,836
“ calf, kid, etc.	15 p.c.	57,366	136,265	216,650
“ glove leathers	10 p.c.	340	233,367	240,983
“ boots and shoes	25 p.c.	27,282	710,889	742,773
“ harness, saddlery, etc.	30 p.c.	12,731	69,630	83,493
“ all other, n.o.p.	25 p.c.	18,010	141,294	163,629
Oils, lubricating, less than 25c per gal	5c. per gal.	653	195,633	196,336
“ “ all other, n.e.s.	25 p.c.	3,631	90,406	94,424
“ illuminating	5c. per gal.	214	1,241,512	1,241,726
“ fuel oil	2½c. per gal.	None	136,092	136,092
Cement, Portland	12½c. per 100 lbs.	163,685	305,775	868,131
“ mfrs. of, n.o.p.	20 p.c.	3,971	12,108	16,281

ARTICLES.	General Tariff.	Great Britain Under Pro- portional Tariff.	United States Under General Tariff.	All Countries.
Brick, fire.....	20 p.c.	\$4,863	\$29,100	\$34,522
" building.....	20 p.c.	3,808	24,200	28,493
Sewer pipe.....	35 p.c.	643	47,295	57,100
" " n.o.p.....	20 p.c.	1,556	15,252	17,574
Agricultural implements, cultivators.....	20 p.c.	None	24,948	24,948
" drills, seed.....	20 p.c.	22	78,044	78,066
" farm rollers.....	25 p.c.	None	3,087	3,087
" fanning mills.....	25 p.c.	None	1,850	1,850
" forks.....	25 p.c.	61	7,334	7,395
" harrows.....	20 p.c.	None	49,070	49,070
" harvesters.....	20 p.c.	None	1,065,275	1,065,275
" hay tedders.....	25 p.c.	None	12,519	12,519
" hoes.....	25 p.c.	840	1,221	1,561
" horse rakes.....	20 p.c.	None	247,905	247,905
" lawn mowers.....	35 p.c.	None	8,598	8,598
" manure spreaders.....	20 p.c.	None	8,802	8,802
" mowing machines.....	20 p.c.	None	610,026	610,026
" plows.....	20 p.c.	58	302,319	302,432
" potato diggers.....	25 p.c.	51	1,302	1,353
" rakes, n.e.s.....	25 p.c.	None	1,529	1,529
" reapers.....	20 p.c.	None	33,244	33,244
" scythes.....	25 p.c.	3,514	9,995	13,559
" threshers and separators.....	25 p.c.	None	312,971	312,971
" parts of, paying 20 p.c.....	20 p.c.	71	609,029	609,111
" all other, n.e.s.....	25 p.c.	2,108	49,818	52,833
Carriages and vehicles, buggies and pleasure carts, n.e.s.....	35 p.c.	3,893	64,411	70,011
" cart and wagon skeins.....	30 p.c.	722	2,995	3,717
" farm wagons.....	25 p.c.	51	21,825	21,876
" parts of, n.e.s.....	35 p.c.	618	84,761	85,466
" sleighs.....	25 p.c.	None	11,866	11,866
" bicycles and parts.....	30 p.c.	5,849	174,939	182,038
" children's carriages.....	35 p.c.	32	22,059	22,182
" etc., wheelbarrows and trucks.....	30 p.c.	71	64,208	64,500
Cars, railway passenger.....	30 p.c.	None	26,179	26,179
" " tram or horse.....	30 p.c.	None	30,472	30,472
" " box and flat.....	30 p.c.	None	51,834	51,834
" " parts of.....	30 p.c.	5,799	312,625	403,199
" " road scrapers.....	30 p.c.	None	48,356	48,356
Musical instruments, brass band.....	25 p.c.	4,243	9,426	29,168
" " cabinet organs.....	30 p.c.	96	18,227	18,533
" " " parts of.....	25 p.c.	542	16,590	17,132
" " pianos.....	30 p.c.	233	124,635	126,931
" " " parts of.....	25 p.c.	8	126,643	140,187
" " all other, n.e.s.....	30 p.c.	579	46,434	131,698
Clocks and movements.....	25 p.c.	5,741	212,749	270,116
Watches.....	25 p.c.	408	22,641	63,609
Watch cases.....	30 p.c.	217	115,971	127,066
" movements.....	10 p.c.	3,360	557,163	672,063
Books, n.e.s.....	10 p.c.	152,461	543,287	767,817
" unbound.....	20 p.c.	14,470	81,416	98,692
" posters.....	15c. lb.	1,494	23,944	25,811
" labels.....	35 p.c.	8,101	84,055	112,571
" show cards.....	15 p.c.	28,136	79,067	87,901
" music.....	10 p.c.	16,186	55,453	76,177
Printing ink.....	20 p.c.	7,449	90,557	98,400
Paper and mfrs. of albumenized.....	30 p.c.	5,534	91,997	98,553
" card board.....	35 p.c.	2,657	34,576	40,594
" envelopes.....	35 p.c.	7,996	26,595	35,592
" straw board.....	25 p.c.	283	85,565	86,025
" wall paper.....	35 p.c.	15,649	181,221	207,233
" leather board.....	25 p.c.	None	17,976	18,287
" mill board.....	10 p.c.	1,930	25,356	28,745
" pads, not printed, n.e.s.....	35 p.c.	77,749	347,438	479,105
" printing, costing not over 2½c per lb.....	15 p.c.	None	4,380	4,380
" " n.e.s.....	25 p.c.	99,457	245,999	349,028
" wrapping.....	25 p.c.	1,437	23,409	30,934
" all kinds, n.e.s.....	25 p.c.	132,132	329,017	517,943
Furniture, house, etc.....	30 p.c.	51,097	515,652	589,982
Woodenware, pails, tubs, etc.....	20 p.c.	109	37,667	37,895
Mfrs. of wood, n.o.p.....	25 p.c.	17,322	618,528	656,641
Brushes, machine, etc.....	25 p.c.	15,489	112,280	244,544
Cane and rattan, split, n.o.p.....	15 p.c.	57	45,455	54,819
Coal, bituminous.....	53c. p.t.	211,103	7,458,718	7,776,717
" " dust, n.e.s.....	20 p.c.	9,776	408,415	420,317
		\$4,702,490	\$42,526,606	\$50,812,770

The values of these 200 different lines of dutiable goods imported into Canada in 1903, from Great Britain under the preferential tariff, from the United States under the general tariff, and from all other countries, including Great Britain also, under the general tariff, was as follows:

	Great Britain Preferential Tariff.	United States General Tariff.	All other Countries General Tariff.	Total.
Proportion.....	\$4,702,490 9.3 per cent.	\$42,526,608 83.5 per cent.	\$3,582,674 7.2 per cent.	\$50,812,770 100.00 per cent.

SELECTED LIST, FREE IMPORTS, 1903.

ARTICLES.	Great Britain.	United States.	All Countries.
Manufactures.—Asphalt.....	None	\$89,928	\$89,928
“ bells for churches.....	\$3,879	24,862	28,741
“ binder twine.....	96	1,809,865	1,810,238
Binder twine, articles for mfr of.....	58,391	244,620	347,685
Bolting cloth.....	389	13,962	14,377
Books for libraries, etc.....	52,346	140,020	212,768
“ scientific and industrial.....	4,426	74,191	84,835
Brick, fire, for use in factories.....	130,522	295,753	482,794
“ “ ganister.....	2,112	821	2,933
Coke.....	70,469	1,152,287	1,222,756
Cotton wool.....	23,788	5,936,725	5,968,333
“ waste.....	26,216	253,060	290,275
Crucibles.....	6,366	28,132	34,624
Diamond drills for prospecting.....	None	21,858	21,858
Dyes, anilins.....	24,838	174,491	368,483
“ n.e.s.....	5,957	22,379	28,938
“ logwood.....	58,735	367,460	453,204
“ gums.....	16,953	266,304	287,737
“ indigo.....	669	21,944	29,731
Sulphate of copper.....	16,034	73,302	89,349
Gum chicle.....	None	590,320	590,320
Duck for belting and hose.....	1,797	272,137	273,934
Glove fasteners.....	10,048	108,809	124,074
Gutta percha, crude.....	None	4,361	4,375
Ivory for piano keys.....	8,803	49,076	71,424
Metals.—Aluminum, ingots, etc.....	2,373	10,976	13,930
“ Anchors.....	11,667	8,678	20,345
“ Brass, scrap and in blocks.....	2,408	98,678	109,389
“ “ bolts, bars, etc.....	2,889	87,662	90,551
“ “ sheets, not polished.....	4,705	159,576	164,297
“ “ tubing.....	16,483	85,624	102,107
“ Britannia.....	190	8,969	9,159
“ Copper, pigs and ingots.....	3,349	240,626	248,975
“ “ bolts and bars.....	2,552	810,742	813,294
“ “ sheets and plates.....	25,395	244,559	269,954
“ “ tubing.....	1,199	53,022	54,221
“ Cream separators.....	174,275	404,916	587,308
“ Iron and steel wire rods.....	104,142	1,189,439	1,415,447
“ Machinery for sugar factories.....	80	603,142	605,041
“ “ “ mining and smelting.....	26,064	955,017	985,847
“ “ “ charcoal making.....	None	34,070	34,070
“ Platinum wire, bars, etc.....	40	21,205	21,251
“ Sewing machine attachments.....	None	48,265	48,265
“ Silver, German, etc.....	None	17,111	17,111
“ Steel rails.....	1,861,780	1,470,787	4,256,064
“ Steel for saws and straw cutters.....	14,904	118,819	133,723
“ “ files, augers, etc.....	32,957	182,860	211,033
“ “ “ springs, axles, etc.....	30,916	120,123	152,745
“ Tin in blocks, pigs and bars.....	229,878	428,153	728,904
“ “ plates and sheets.....	1,697,069	107,820	1,806,643
“ “ foil.....	1,711	36,290	46,103
“ Wire, barbed, fencing.....	42,031	620,851	702,809
“ “ galvanized.....	22,269	597,200	667,257
Resin.....	83	194,039	194,292
Rubber, crude, recovered and waste.....	7,110	1,807,670	1,815,679
Surgical and dental instruments.....	13,466	127,327	154,825
Models of invention.....	163	13,662	13,825
The Mine.—Fire clay.....	10,605	55,953	94,509
Coal, anthracite and dust.....	345,015	6,683,649	7,028,664
Emery, in bulk.....	2,830	15,228	18,058
Pumice stone.....	522	5,582	6,152
Alumina.....	None	36,599	36,599
Nickel.....	None	13,154	13,154
Cobalt ore.....	173	589,921	1,070,232

ARTICLES.	Great Britain.	United States.	All Countries.
Phosphate rock.....	None	\$19,058	\$19,058
The Fisheries.—Pearl, mother of.....	\$1,673	27,573	29,258
The Forest.—Bark, cork wood.....	None	15,399	19,562
Shovel handles.....	4	27,185	27,189
Felloes, staves, bolts, billets and spokes rough.....	None	190,759	190,759
Hubs for wheels, rough.....	18	12,667	12,685
Fence posts and railroad ties.....	None	132,679	132,679
Logs.....	233	389,034	389,267
Cherry, mahogany, oak, pine, walnut and ash.....	1,402	2,284,234	2,286,041
Timber and plank creosoted.....	543	1,581,541	1,583,311
Staves, rough.....	None	111,317	111,317
Animal products.—Bones and bone dust.....	15,864	87,939	109,120
Grease, for soap.....	202	415,841	416,793
Hides and skins.....	1,301,762	2,612,333	5,661,313
Agricultural Products.—Broom corn.....	None	165,231	165,231
Tobacco, unmanufactured.....	69,950	2,241,297	2,362,537
	\$5,610,733	\$40,658,727	\$51,221,768

There are 80 different articles included in the selected list of non-dutiable merchandise the sources of which were as follows:

	Great Britain.	United States.	All other Countries.	Total.
Proportion.....	\$5,610,733 10.9 per cent.	\$40,658,727 79.5 per cent.	\$4,952,308 9.6 per cent.	\$51,221,768 100.00 per cent.

In 1903 the declared value of free imports of settlers' effects into Canada was from:

Great Britain.....	\$1,117,843
United States.....	5,287,883
All other countries.....	38,998
Total.....	\$6,444,724

The value of gold and silver coin, and gold and silver bullion, imported into Canada in 1903 was from:

Great Britain.....	\$103,863
United States.....	8,814,958
All other countries.....	57,976
Total.....	\$8,976,797

CRYING IN THE DARK.

Outside of the professional politicians and ultra political newspapers, there are thousands of thoughtful men in Canada who comprehend that this country is now facing a condition that calls for the most careful and serious consideration; and although the many and exceedingly divergent views that are taken of it, no one should doubt the honesty and sincerity of any of them, we find clubs and debating societies springing up in all directions giving young orators, and old ones also, opportunity to express their opinions, and these remind us of children crying in the dark, wishing for light. Some of these believe that Imperial unity of the Mother Country and all her colonies and dependencies would be the panacea for the real or supposed ills of the British people wheresoever dispersed. Others suggest a zolverein of which free trade should be the distinguishing feature within the Empire. Others propose that each British self-governing country should adopt its fiscal system to meet the requirements of its own wants, including, perhaps, a preferential tariff instead of a zolverein. Others there are who propose political independence for Canada. There are yet others who believe that it would be to the advantage of Canada were reciprocal arrangements made with the United States by which there would be a free interchange of natural products between the two countries; and there are those who wish to have reciprocity of tariffs with that country. The question is, what course shall Canada adopt?

Of course we are all delighted with the really phenomenal growth that Canada has made in the past few years, but we

should not become bumptious over it. While some other countries have suffered reverses and seasons of depression, we have not had to mourn such occasions here; and our hearts should be filled with thankfulness that the sunshine of prosperity has blessed us. And while we rejoice in our national growth, we should not lose our heads because of it. No nation can ever be prosperous or happy that desires to avoid contact with or competition with the rest of the world; and the desire of some Canadians, after we have had due regard to our different interests, to shut out and obstruct other countries from marketing their products here, should not be encouraged. The fact that our own manufacturers are not able to supply all the wants of our own people should not encourage them, dog in the manger like, to prevent or restrict the use of similar goods from other countries. There are some countries which can produce certain lines of goods to much better advantage than some other countries, or even than ourselves, and the wants of the people for such goods should not be denied them. It is not in the interest of the people to deny them. If Great Britain can supply us with certain classes of goods on more favorable terms than other countries, our trade in such goods would naturally gravitate in that direction; but if she cannot, why should we be prevented from trading elsewhere?

These remarks are induced by the anomalous conditions emphasized in the tabulated statement elsewhere presented in this journal wherein it is shown that in a selected list of two hundred manufactured articles in strong demand for use and consumption by the people, Great Britain

supplied us with less than 10 per cent. and the United States with more than 83 per cent., all the rest of the world, including all British possessions, sending us the small balance of 7 per cent. Loyalty to the Old Flag is a good thing, but if the Mother Country does not, because she cannot, supply a larger proportion of our requirements, it is not to be supposed that we are to be deprived of them, or that we are to be forced to pay unnecessarily exaggerated duties to obtain them.

Another remarkable feature of the anomaly is that in the list of 200 enumerated dutiable articles imported into Canada in 1903, there are 41 opposite the names of which is printed the suggestive word "none," indicating that Great Britain had failed to supply us with one dollar's worth, while the United States sent us, of the identical goods to the value of \$4,897,660; and it will also be observed that in addition to the failure alluded to, there are 51 other items, of not one of which our imports from Great Britain amounted in value to as much as one thousand dollars. The aggregate value of these 51 articles amounted to only \$15,763, while our imports of the identical goods from the United States amounted to \$5,276,734.

These are startling facts which should command attention.

NE SUTOR ULTRA CREPIDAM.

The Monetary Times seems to forget that "that which waxeth old is ready to vanish away." If it keeps on its present editorial line much longer, like Carroll's Cheshire cat, it will soon perform the vanishing act, leaving nothing remaining but the grin. If it would stick to financial questions, it would merely be amusing; but when it attempts chemistry and mechanics it becomes ridiculous. The December 4 issue contains an article on acetylene which a school-boy in 1897 might be excused for writing, but appearing in 1903 it may be taken as evidence of the discovery of Darwin's hypothetical pithecanthropos, for none but one of the long-sought missing link could possibly be the author of such an effusion. Without examining into the string of absurdities and mis-statements contained in the article, suffice it to state that carbide of calcium coming in contact with water does not necessarily produce "much heat." An acetylene gas machine lighting Pickering College has been under the careful observation of the principal, Mr. Firth, M.A., M.S., one of the most competent, careful, conscientious chemists and laboratory experts in Canada, and who has the additional advantage of also being an exceptionally skilful mechanic; and he certifies that after months of careful observation, using the best thermometers obtainable, he fails to find any material rise in the temperature of the machine, no matter how much carbide of calcium has been allowed to fall into the water.

The article goes on to quote, per an Insurance back-number, some antiquated ideas of the British Home Office. Allow us to inform these fossils that this action was revised long since, and carbide of calcium and acetylene placed on the non-explosive list. The idea that any quantity whatever of carbide of calcium, packed as it comes from the manufacturer, is dangerous when stored on premises where it is to be used, is supremely ridiculous. In 1902, a hundred-pound drum of carbide, with the screw cap off, was dropped from the wharf into Lake Rosseau and subsequently fished out, when the package was found to be in perfect condition, the action of the water having instantaneously plugged the five inch aperture, the loss of gas being about eight cubic feet. This is in line with the fact that in the burning of the Knox storage warehouse, while everything else was a total loss,

some twelve tons of carbide came through practically uninjured. As a matter of scientific fact, one ton of coal in the cellar of a dwelling-house, is a far more dangerous commodity than ten tons of carbide; and a can of coal-oil, or of gasoline is infinitely more menacing. There is not on record any where a single instance of accident arising to person or property from the storage of any quantity of carbide. Some 15 or 20 tons of it lay exposed to the weather at the foot of York street, Toronto, during all the past summer, without the slightest deterioration. The editorial in question speaks of the danger of the pressure of the atmospheres. Perhaps the Monetary Times will get out of town when it learns that the Canadian Pacific Railway has a vast quantity of acetylene stored within a stone's throw of the Union Station under a pressure of 20 atmospheres, and that the best passenger rolling stock of that Railway is now in process of equipment with storage tanks operated under a pressure of 10 atmospheres. Would the Canadian Pacific Railway Company, under the direction of such a well-known engineer as Mr. Max Toltz (of Vienna) and such a thoroughly practical gas-expert as Mr. Stewart, late of the Pintsch Gas Co., risk the lives of its patrons in the manner it must be doing, were the statements of the Monetary Times true? Such ignorance as that displayed by the article is hardly credible, and one is almost tempted to suppose that the paper is speaking under "the influence," or that it has established relationships with the fire insurance monopolies, which render its right to the title "Monetary" indefeasible, though we would suggest that the interests of truth would be better served were it to style itself in future "The Monetary Behind the Times."

Probably the most ridiculous remark in the article is that about maid servants "watering carbide." To anyone knowing anything at all about acetylene the expression affords positive proof of the hazy ideas of our would-be expert. That anyone should suppose that a maid-servant is required to periodically "water carbide" to keep up the supply of gas, is really rich. In a properly constructed apparatus, water is never, under any circumstances, allowed to be sprinkled on, or flow into contact with the carbide.

As to the suggested inspection, a practical difficulty would occur, seeing that except Mr. Toltz, Mr. Stewart, Mr. Robb, Mr. Chipman, Mr. Chewett, Mr. Firth and the manager of the Siche Gas Co., there is probably no one to be found in Canada whose knowledge of the chemistry and mechanics of carbide-lighting is considered valuable. One of the most painful features of the Ridgetown inquest was the giving of alleged expert testimony by an ignorant person who actually has the nerve to pose as an authority, while he has been known to claim that "a three inch head of water gives a pressure of three pounds to the square inch!" How is it that machines approved by the underwriters are the ones that cause trouble in the few cases where trouble occurs? There are more than a score of such machines in use in Canada at this time which the experts, whose names are given above, would not dream of passing. The conclusion of the whole matter is, as it always is, in regard to any new process or system, that the public must be left to work out its own salvation, and in regard to the different makes of acetylene machines prove all things and hold fast that which is good.

We think too that no reasonable man will deny the right of the managers of the leading carbide lighting companies, and the manufacturers of carbide, who ought to know most about the business, to be heard before rash conclusions are reached upon false premises. The Ridgetown incident is no ground for panic in view of the fact that last year's statistics show that in the United States millions upon millions of dollars worth of property and thousands of lives were lost through other methods of lighting, and only \$4,000 of property and less than a score of lives through acetylene, in spite of the fact that over two million people in that country now use the article.

CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser in those pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

If a new manufacturing enterprise of any kind is being started, or an electric lighting plant instituted, or an electric railroad, or a telephone, or a telegraph line is being constructed; or a saw mill, a woolen, cotton, or knitting mill; or if any industrial establishment has been destroyed by fire with a probability of its being rebuilt, our friends should understand that possibly there may be something in the event for them. Do you catch on to the idea?

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, belt ing, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, alkalies, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The Bank of Hamilton will erect a three-story addition to their office in Hamilton, Ont., and will add six stories to the building occupied by the Canadian Pacific Railway Telegraph Co., that city.

The Structural Steel Bridge Co. have submitted a proposition to the town council of Galt, Ont., to establish bridge works there.

A syndicate have decided to erect a large planing mill, woodworking establishment and furniture factory in North Bay, Ont. Dr. Warren, Toronto, is interested.

The town of Berlin, Ont., will have new sewerage filtration beds constructed and other improvements made at a cost of about \$60,000.

A Jewish synagogue will be erected at Ottawa, Ont., at a cost of about \$15,000.

The waterworks and electric light system at Newmarket, Ont., will be improved at a cost of \$4,000.

A firm of Detroit, Mich., architects, have prepared plans for the erection of a new Catholic church costing \$50,000, to be built in Windsor, Ont.

The Prince Edward Island Railway Co.'s rolling stock will be equipped with the Westinghouse air brake, funds for that purpose having been voted at last session of the Dominion Parliament. It is intended to put the equipment on 18 locomotives, 33 passenger cars and 117 freight cars.

The Michigan Central Railway have recently added the following shop equipment at St. Thomas, Ont., shops: six inch radial drill, 200 pound upright helve hammer, air compressor, variable self-feed rip saw, bulldozer, and an automatic saw plug machine.

The Robert Simpson Co., Toronto, will enlarge their departmental store building next spring.

The Simcoe Glove & Mitt Co., Simcoe, Ont., will enlarge their factory.

The Preston & Berlin Electric Railway are considering the extension of their line to Wellesley and Listowel, Ont.

A government building 50x40 feet, three stories high, will be erected at Bridgeport, Ont.

The Michigan Central Railway have under construction for their Canadian lines at their St. Thomas, Ont., shops

four consolidation locomotives. They have recently completed at the same shops 24 box cars, 35 ft., 80,000 lbs. capacity; one coal car, 40 ft., 40,000 lbs. capacity; one flat car, 40 ft., 40,000 lbs. capacity.

The Canadian Northern Railway added to their equipment recently five freight locomotives built by the Canadian Locomotive Co., Kingston, Ont.; 61 box cars, 60,000 lbs. capacity, built by Rhodes, Curry & Co., Amherst, N.S.; and 90 box cars, 60,000 lbs. capacity.

The Humber Power Lighting Co. have entered into a contract with the Toronto Junction, Ont., town council, to place in operation a telephone service in that town. The contracts are to be yearly, the price to be \$6 a year and one cent a call until \$20 a year for private house instruments and \$40 a year for business houses, has been reached. The company promises to have the system in operation within a year.

Messrs. C. G. Elrick & Co's comb factory, Toronto, was damaged by fire December 10. Loss about \$1,500.

Messrs. A. Davis & Son's tannery at Kingston, Ont., was damaged by fire December 9. Loss about \$1,000.

Some Toronto manufacturers are considering the possibility of importing Welsh coal to be used for manufacturing purposes. The matter was brought up last week at a meeting of the executive of the Canadian Manufacturers' Association. There was a letter before the meeting from Mr. P. B. Ball, Canadian Commercial Agent at Birmingham, England, in which he stated that he had called upon the colliery owners of Cardiff and Chesterfield and made arrangements to have sample lots of coal shipped out in 200-pound bags. The Canadian Pacific will carry these free of charge across the ocean, and manufacturers can then examine the coal as to its steam qualities in comparison with American or Sydney coal. The question of freight charges seems to be the main difficulty in the way, but it was thought that vessels of light enough draft to come through the canals to Toronto might be procured to bring out the coal.

In the N. Playfair sawmill, at Midland, Ont., on November 19, was made the fastest lath cut on record, when one thousand lath were cut in three minutes

twelve seconds, under the management of A. Laidlaw, Jr., who also broke the world's record in 1901, cutting eight y-four thousand lath in 10½ hours, at another mill at Midland here.

The total receipts of grain at Port Arthur, Ont., for the crop season were 6,715,046 bushels; at Fort William, 9,972,590 bushels. Shipments from Port Arthur were 6,410,478 bushels, and from Fort William 10,023,863 bushels. Grain this season has been principally shipped via Canadian vessels and Canadian ports, only about 1,000,000 bushels going via American boats to Buffalo. This is the smallest amount ever taken from the Canadian head of the lakes by American vessels, and is in consequence of the large number of new Canadian boats now being operated on the Great Lakes.

The output of the metalliferous mines and works of Ontario for the first nine months of 1903, as reported to the Bureau of Mines, was as follows: Gold, 7,093 ozs., worth \$139,210; silver, 19,549 ozs., worth \$10,124; iron ore, 262,409 tons, worth \$376,103; pig iron, 59,783 tons, worth \$1,051,940; nickel, 5,393 tons, worth \$2,115,957; copper, 3,911 tons, worth \$330,263; zinc ore, 950 tons, worth \$7,600. Total value, \$4,030,197.

The Erie and Ontario Development Co., Welland, Ont., have been incorporated with a capital of \$96,000, to develop hydraulic and electrical power, etc. The provisional directors include E. A. C. Pew, Toronto, D'Arcy Scott, Ottawa, Ont., and J. H. Teare, Macleannan, Ont.

The Ontario Power Co., which is constructing development works at Niagara Falls, Ont., expect to be able to deliver power in St. Catharines, Ont., by December 31, 1904. They are making a proposition to that city for permission to use the streets for stringing wires, and for exemption from taxation, in consideration of supplying 1,000 h.p. at \$12 per h.p. per annum.

The Grand Trunk Railway station and freight sheds at Beachville, Ont., were destroyed by fire December 4. Loss about \$20,000. They will be rebuilt at once.

A syndicate composed of J. J. McFadden, Sault Ste. Marie, Ont., L. Hale and F. J. Bell, Pembroke, Ont., J. Ferguson, Renfrow, Ont., W. H. Lewis, Toronto, William Anderson, Ottawa, have purchased the mills and limits of the Edmund Hall estate. The mills are at Sarnia, Ont., and the limits are in Algoma, Ont., covering 180 square miles. The price paid was \$850,000.

The Baptist Church building at Wallaceburg, Ont., was destroyed by fire December 8.

The City Storage, Limited, Toronto, have been incorporated with a capital of \$150,000, to acquire the business of the Frazee Storage & Cartage Co. The provisional directors include R. J. Coveland, H. B. Robinson, and J. H. Stewart, Toronto.

The George A. McGowan Cigar Mfg. Co., Kingston, Ont., have been incorporated with a capital of \$75,000, to manufacture tobacco and cigars. The provisional directors include G. A. McGowan,

S. K. McGowan and W. J. B. White, Kingston.

The Grimsthorpe Mining Co., Toronto, have been incorporated with a capital of \$150,000, to carry on a mining, milling and reduction business. The provisional directors include G. G. S. Lindsey, W. R. Wadsworth, Toronto, and W. B. Northrup, Belleville, Ont.

The Elgin Milling & Produce Co., West Lorne, Ont., have been incorporated with a capital of \$25,000, to carry on a general flour milling business. The provisional directors include A. McKillop, M. McKillop and D. McKillop, West Lorne.

The Ontario Traction Co., Walkerville, Ont., have been incorporated with a capital of \$40,000, to construct and operate a street railway in Walkerville. The provisional directors include C. M. Walker, E. F. Ladore and J. H. Coburn, Walkerville.

The Eclipse Whitewear Co., Limited, Toronto, have been incorporated with a capital of \$150,000, to acquire the business of the Eclipse Whitewear Co., and to manufacture apparel, piece goods and machinery, etc. The provisional directors include J. B. McCarter, J. B. Hutchins and G. F. Beer, Toronto.

The alterations and improvements at the factory of the Woodstock Automobile Co., Woodstock, Ont., have been completed and the plant is now in running order. The initial operations will consist in the manufacturing of tools required for the making of automobile machinery. These are made entirely of iron and their manufacture will take about a month, after which the manufacture of the Marble-Swift automobile will be commenced.

Rainy River, Ont. is becoming quite a lumber milling centre. In addition to the large saw mill of the Rat Portage Lumber Co., the Shevlin Clark Co. are erecting a mill with a capacity of half a million feet daily and employing 500 hands. It is stated that another large American firm, the Backus Brooks Co., contemplate building a mill in the same lines as the Shevlin Clark Co.

The Preston Bell Furniture Co. are making arrangements to enter the furniture manufacturing business at Fort Francis, Ont. A sawmill and sash and door factory will be established.

The Hoffman-Corr Mfg. Co., of Fitchburg, Mass., will erect mills in Toronto for the manufacture of cotton batting, at a cost of about \$250,000, and will give employment to 100 hands.

The Chapman Double Ball Bearing Co., Toronto, have installed six lathes manufactured by Fletcher & Co., Nashua, N.H.

County Commissioner Talbot, of London, Ont., has recommended to the Council that seventeen new bridges be erected in Middlesex County. Steel and concrete will replace wood.

The Grand Trunk Railway have offered \$4,000 and a site at corner of Gerrard and Main Streets, East Toronto, for a new Y.M.C.A. hall.

Mr. O. G. Anderson, managing director of Messrs. Wm. Angus & Co., of Lon-

don, England, will visit Canada for the purpose of establishing a furniture factory here for British and Colonial trade.

The Odorless Oil Stove & Burner Co., with head offices in Toronto, have been formed with a capital of \$50,000, to manufacture odorless coal oil stoves, lamp burners, wick attachments, lanterns, etc., under patents granted to Mr. J. H. Stone, who is a practical man in this line of work and will be general manager of the company. The lamp burners are novel in construction and have a number of superior points, the chief advantage being that they will give from 50 to 100 per cent. increase in candle power, and render the use of coal oil lamps perfectly safe, the oil being made non-explosive by means of a copper and zinc battery attachment generating hydrogen gas which is consumed. The public is also given the comfort hitherto denied it of using a coal oil lamp without any disagreeable odor being present, which is the result also of the battery attachment. These burners and attachments are introduced into the stove, which itself is built upon entirely new lines, a maximum of heat being obtained both for cooking and heating purposes. The stove requires no pipe and can thus be placed anywhere in the room and is specially adapted for light housekeeping or camping purposes.

Westinghouse gas engines are to be adopted in a new central station now under erection at Berlin, Ont. The initial installation will aggregate 460 h.p., comprising three 13x14, three-cylinder, 125 h.p., and one 11x12, three-cylinder, 85 h.p., vertical engines. These engines will operate on city illuminating gas of 650 B. T. U. calorific value, and drive direct-current generators for furnishing municipal lighting.

Fully 6,000 men are at work this season on the timber limits in the Rainy River district. Rainy River has been created into a new town by the lumber industry. It is situated on the Canadian Northern Railway, where it crosses Rainy River. Within sixteen months the town has secured a population of 1,100. One mill, which is nearing completion, at the new town will have an output of 85,000,000 feet.

The Department of Railways and Canals at Ottawa will invite tenders for electrical equipment for lighting the Welland canal, including arc lamps, transformers, and transmission line materials, also for the construction of the line and the terminal station at Thorold, Ont.

A by-law will be submitted to the ratepayers of Perth, Ont., to raise 12,000 for purchase of existing electric light plant and improvements to same.

The ratepayers of North Bay, Ont., will vote on a by-law to raise \$80,000 for the construction of a sewerage system.

The Ottawa City Council will submit a by-law to the ratepayers in January, to raise the sum of \$50,000, to assist in the rebuilding of the Ottawa University recently destroyed by fire.

The Nepigon Pulp & Paper Co. expect to have their mills running in the spring of 1905. They will be situated at a point

in the Nepigon country, twelve miles inland from Nepigon Bay, on Lake Superior. At present the company have men at work cutting timber for their mills. A line of railway is also being built from Lake Superior to the mill site. John R. Barber, Toronto, is interested in this company, and he will probably have a paper mill built in connection with the pulp mill.

The Canada Paper Co. are installing another boiler in their works at the Springvale, Ont., mill.

The Savanne Lumber Co., Savanne, Ont., will erect a new sawmill at Steep Rock Lake, Ont.

The ratepayers of Wingham, Ont., will vote on a by-law to expend \$35,000 for construction of waterworks and sewerage system.

The Wilcox Mfg. Co., London, Ont., have been incorporated with a capital of \$40,000, to manufacture hardware, etc. The provisional directors include De Witt Simpson, W. S. Ferris, Aurora, Ill., and C. E. Santo, London.

The Gilmour Door Co., Trenton, Ont., have been incorporated with a capital of \$100,000, to manufacture pulp, paper, doors, furniture, etc. The provisional directors include D. Gilmour, R. Weddell, Trenton, and E. W. McNeill, Toronto.

The Dominion Table Mfg. Co., Berlin, Ont., have been incorporated with a capital of \$30,000, to manufacture furniture, etc. The provisional directors include H. S. Boehmer, S. E. Moyer and S. Merner, Berlin.

The Peterborough Cold Storage & Provision Co., Peterborough, Ont., have been incorporated with a capital of \$300,000 to carry on a warehousing and cold storage business, etc. The provisional directors include M. Carton, Jas. Middleton and J. W. Miller, Peterborough.

The Standard Paint & Varnish Co., Windsor, Ont., will increase their capital from \$12,000 to \$100,000.

A new by-law will likely be submitted to the ratepayers of St. Thomas, Ont., to raise \$7,000 for extending the waterworks system.

E. A. Depew has been awarded the contract for building 100 modern dwelling houses in Hamilton, Ont., at a cost of about \$100,000.

The Dominion Salt Co., Sarnia, Ont., have been incorporated with a capital of \$200,000, to manufacture salt, etc. The provisional directors include J. M. Diver, M. Moore and F. F. Pardee, Sarnia.

The Wolverine Fish Co. have been licensed to do business in Ontario with a capital of \$30,000, to carry on a cold storage business. G. H. D. Lee, Toronto, is interested.

The Crown Lumber Co., Woodstock, Ont., have been incorporated with a capital of \$40,000, to manufacture lumber, etc. The provisional directors include B. W. Yates, W. C. Duffus, Detroit, Mich., and A. J. Wilkes, Brantford, Ont.

The Perth Flax & Cordage Co's factory at Stratford, Ont., was damaged by fire December 13. Loss about \$2,000.

The Slated Relief Map Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture slated relief maps, office supplies, etc. The provisional directors include Wm. Scott, R. W. Doan and A. B. Shantz, Toronto.

Wm. Blackley, Limited, Toronto, have been incorporated with a capital of \$40,000, to acquire the business of Wm. Blackley Co., and to manufacture dry goods, etc. The provisional directors include Wm. Blackley, F. B. Allan and A. G. Blackley, Toronto.

The Ripley Acetylene Gas Co., Ripley, Ont., have been incorporated with a capital of \$2,000, to produce acetylene gas. The provisional directors include R. J. Graham, W. J. Crawford and W. H. Goodhue, Ripley.

The Keenan Bros. Co., Owen Sound, Ont., manufacturers of hardwood flooring, etc., have changed their name to Keenan Bros., Limited.

The Port Huron Iron Works have opened a branch at London, Ont.

F. H. Dickenson, of Hamilton, is in charge of the work of enlarging the power house of the Hamilton Electric Light & Cataract Power Co. at De Cew Falls.

A by-law will be voted on by the rate-payers of Galt, Ont., on January 4, to loan \$20,000 to the Galt Iron Bridge & Structural Steel Co., which is now being organized.

A new patent truss whiffletree which has stood the test of a seven thousand pound draw and is for all practical purposes unbreakable, will be manufactured as a specialty by the Corbet Foundry & Machine Co., of Owen Sound, Ont. New machinery has been installed for the purpose and the firm will devote considerable attention to this branch of manufacture.

By-laws will be submitted to the rate-payers of Owen Sound, Ont., on January 4, 1904, with a view to raising \$15,000 for extensions to the gas lighting plant, and \$10,000 for the electric light plant.

G. W. Chance, consulting engineer of Philadelphia, says that he has discovered the long sought for deposit Bessemer old range ore in the Lake Superior region. In a letter to the Cleveland Leader Mr. Chance says that a diamond drill, operated by a company in which he is interested, has found a large deposit, amounting to 200,000,000 tons, a short distance southwest of Fort William, which brings it close to the valuable deposits of lower grade ore which lie around and especially north and northeast of Duluth. The letter of Mr. Chance goes on to say that the vein which has been found is 24 feet thick and lies near the surface. It is of the best grade of hard red hematite ore of the best Bessemer quality.

A comparison between the heating properties of acetylene and coal gas shows that the heat units developed per cubic foot are 1,350 and 630 respectively, the temperature of the acetylene flame being about 2,600 degrees Fahrenheit. With an acetylene burner consuming two cubic feet of gas per hour a quart of water was brought from a temperature of

about 50 degrees to the boiling point in about 8½ minutes. Under similar conditions it required 10½ minutes for the illuminating gas to accomplish the same results, though the burner used six cubic feet of gas per hour.

Rapid progress is being made on the new Canadian plant of the B. F. Sturtevant Co., at Farnham, Que. Aluminum wire to be furnished by the Pittsburg Reduction Co's plant at Shawinigan Falls, Que., will be substituted for copper on the 33-mile transmission line.

A syndicate of American and Canadian capitalists, headed by J. W. Drake, Chicago, Ill., are reported to have practically completed arrangements for the construction of a large hotel in Quebec City.

The Dominion Bridge Co., Montreal, will construct a new steel bridge across the Lachine Canal at Cote St. Paul, Que.

Plans have been completed for an electric railway which will run from Montreal to Ottawa. The road will run through the counties of Argenteuil, Two Mountains, Terrebonne, Laval and Jacques Cartier, in the Province of Quebec, and will place the people within easy access of Montreal. It is estimated that the line can be constructed at an average of from \$10,000 to \$13,000 a mile. The president of the company is Colonel McMullen, New York, who represents a company of American capitalists. The directorate is composed of Mr. F. D. Monk, M.P., T. W. Raphael, Thomas Christie, M.P., J. A. Ethier, M.P., J. E. Leonard, M.P., Thomas Gauthier and Mr. Wells, New York. A large terminal station will be erected in Montreal.

Mr. G. A. Savage, Montreal, the liquidator of the estate of the James Cooper Mfg. Co., of that city, informs us that the buildings, plant, mining, quarrying and other machinery and supplies of that concern at Rockfield, near Montreal, are to be sold by tenders, which will be received by the liquidator up to Monday, December 28 instant. This plant, and the machinery, etc., also is modern and up-to-date in every particular.

La Compagnie de Publication Le Soleil, Limited, Quebec city, have been incorporated with a capital of \$125,000, to do a printing, lithographing and engraving business. The provisional directors include R. La Rue, L. P. Sirois and Hon. C. A. P. Pelletier, Quebec city.

The Canada Handle Co., Hull, Que., have been incorporated with a capital of \$40,000 to manufacture wooden handles, etc. The provisional directors include C. Jones, Brockville, Ont., S. C. Thompson, Toronto, and R. E. Webster, Ottawa, Ont.

The Montreal and South Shore Auto Car Co., Montreal, have been incorporated with a capital of \$30,000, to operate automobiles between Montreal and points along the south shore of the St. Lawrence river. The provisional directors include Wm. B. Powell, R. C. Smith, Montreal, and S. T. Willett, Chambly, Que.

The Chicoutimi Pulp Mills, at Chicoutimi, Que., have been completed and officially inaugurated. The mills were blessed, and the Mayor and town coun-

cillors tended a banquet to the president and directors of the company. The capitalization of the company is one and a half million dollars, and the output sold on guarantee to an English concern for the next five years on contract. The mills, in portion, have 30 grinders, and manufacture 190 tons of wet pulp per day. Six hundred hands are employed at the day and night shift. The mill has been erected at a cost of \$600,000, and is one of the most solid and best-fitted industries of the kind. The directors of the company are: Hon. N. Garneau, president; J. E. A. Dubuc, managing director; Hon. V. W. La Rue, Gaspard Lemoine, Dr. J. A. Couture, J. D. Guay, and F. X. Gosselin.

The Canadian Transit Co., have published a prospectus in London, England, inviting stock subscriptions to the extent of £300,000. The company have made a contract with the new Canadian Co., Ltd., for the supply of a fleet of twelve new especially designed vessels for the grain-carrying trade between the Great Lakes and Montreal, at a price of £275,000, also for working capital up to £25,000. The directors are John Torrance, Robert Bickerdike, Alphonse Racine, all of Montreal; Charles Carpenter, director of the new Canadian Co., and Joseph Mellows of London.

The Grand Trunk Railway have purchased material for 25 compound Richmond locomotives, 900 class, to be built at their Point St. Charles shops, Que.

In connection with the appropriation by the Grand Trunk Railway Co. of \$4,500,000 for general improvements of terminals, etc., it is reported that a very considerable amount will be spent upon the terminals at Windsor street station, Montreal.

The Quebec Railway Light & Power Co. are in the market for six box and ten flat cars, the purchase of which was recommended at the recent annual meeting of the company.

The foundry and machine shops of F. E. Come, manufacturer of railway specialties, in Montreal, were destroyed by fire December 10. Loss about \$25,000.

The council of Ste. Cunegonde, Que., will build a city hall.

The Canadian Pacific Railway received the following equipment recently: Four passenger and five freight locomotives from Scotland; three freight locomotives from the Saxon Engine Works, Chemnitz, Germany; one freight locomotive from the American Locomotive Co's Schenectady shops; two first-class cars from the Canadian Pacific Railway Hochelaga shops; one first-class car and 43 stock cars from Rhodes, Curry & Co., Ashurst, N.S.; 94 box cars and 83 flat cars from the Canadian Pacific Railway, Perth, Ont. shops; and six vans from their Farnham, Que. shops.

The suggestion having been made that Canadian manufacturers of locomotives should be asked to tender for locomotives required by the Indian Government and the various British Colonial government railways, an objection was made that the governments had no representative in Canada who could inspect the locomotives. This objection has been overcome, the

Department of Railways having consented to either allow a member of their staff to make the inspections, or to select some one to do so. The arrangement was made at the instance of the Locomotive and Machine Co., Montreal.

The Canada Handle Co., Gananoque, Ont., are considering the establishment of a factory at Hull, Que., at a cost of about \$20,000.

The Bank of Montreal will erect a bank building near the new Canadian Pacific shops at Hochelaga, Que., at a cost of about \$100,000.

The Royal Bank of Canada will erect a building for a branch at Westmount, Que.

An estimate made recently by the Crown Lands Department of Quebec gives the forest area of that province as two hundred million acres. On this, it is estimated there is sixty thousand million feet of standing timber, exclusive of pulp wood and undersized trees.

Peter Lyall, of Montreal, has purchased the Scotstown mill property in Compton County, Que. Eighty-seven square miles is the extent of the limits.

The Sherbrooke Light, Heat & Power Co., Sherbrooke, Que., are considering the question of installing a steam plant in their power house.

Messrs. J. J. Browne & Son have prepared plans for a new apartment house, to be built on Bishop street, Montreal. The building will be 130 x 60 feet and three stories high.

The building inspector of Montreal, has prepared a report for the eleven months of the current year, showing that no less than \$4,500,000 has been spent on new buildings. This is a great increase over last year, when less than \$3,000,000 was spent. For the month of November the value of the buildings put up was \$100,000. The new structures consisted of forty-four houses, seventy-seven tenements, one store, one storage warehouse, two factories and six sheds.

The Imperial Coal & Coke Co., Montreal, have been incorporated with a capital of \$4,500,000, to carry on a mining, milling and reduction business, and will erect a large number of coke ovens in British Columbia. The provisional directors include F. Thompson, R. T. Heneker and Wm. J. Henderson, Montreal.

The King Edward Oil Co., St. John, N.B., will apply for incorporation with a capital of \$40,000, to manufacture oils, soaps, varnishes, etc. The provisional directors include W. T. Clark, J. McNeil and J. C. Wilgar, St. John.

The Imperial Dry Dock Co., St. John, N.B., are inviting tenders for the construction of a dry dock and other works.

The Royal Bank of Canada, will erect a bank building in Antigonish, N.S.

The New Brunswick government are negotiating with the Quebec government for the erection of a passenger bridge over the Metapedia river at Metapedia, Que.

At a recent meeting in Hillsborough, N.B., it was decided to take immediate

steps to further the extension of the Albert Railway to Moncton, N.B.

The Maritime Engineering Co., Moncton, N.B., have been incorporated with a capital of \$30,000, to manufacture steam engines, prime movers, boilers, etc. The provisional directors include J. P. Weir, P. S. Archibald and G. Baiter, Moncton.

The Sackville Hay & Feed Co., Limited, Sackville, N.B., have been incorporated with a capital of \$10,000, to acquire the business of the Sackville Hay & Feed Co., and to manufacture acetylene gas machines, farm utensils and implements, etc. The provisional directors include F. A. Dixon, J. L. Dixon and F. E. Dixon, Sackville.

The Van Buren Lumber Co., Edmundston, N.B., have been incorporated with a capital of \$24,000, to carry on a lumber and milling business. The provisional directors include T. J. Cochran, J. M. Stevens, Edmundston and A. E. Hammond, Van Buren, Maine.

The Standard Mfg. Co., Sackville, N.B., will increase their capital from \$40,000 to \$100,000.

The New Brunswick Government have advanced the stumpage tax to \$1.25 per thousand feet, an increase of 25 cents, and have also doubled the charge for the renewal of leases, which will be \$8 per square mile. The change in stumpage dues applies to this winter's cut, and that in renewals will become effective on and after July 31 next.

E. W. Rell's, buckwheat and sawmill at Bristol, N.B., was destroyed by fire a few days ago. Loss about \$1,500.

W. J. O'Leary & Co., Montreal, have completed the installation of a municipal lighting plant at Richibucto, N.B.

Rich specimens of gold quartz have been discovered in northern Cape Breton.

A large lumber deal was completed in Halifax, N.S., a few days ago. The United Lumber Co. have sold 80,000 acres, known as the Sherbrooke property on St. Mary's River, to Alfred Dickie, Stewiacke, N.S., for \$150,000. The property is heavily timbered and one of the most valuable in the province.

For the eleven months ending November 30, 1903, the total shipments of the Dominion Coal Co., Sydney, N.S., amounted to 2,603,391 tons as compared with 2,704,360 tons for the corresponding period in 1902, a decrease of 100,969 tons.

The Nova Scotia Steel & Coal Co., New Glasgow, N.S., for these eleven months in 1903 shipped 429,939 tons as compared with 237,929 tons for 1902, an increase of 192,060 tons, and making it the second largest producer in the province. It is apparent that the Nova Scotia Steel & Coal collieries will mine half a million tons by the close of the year, which is 50,000 tons in excess of the estimates of two months ago. Dominion No. 2, in its output, has broken the highest record in the history of any of the collieries of the Dominion Coal Co. Heretofore Reserve held the lead for single output of 4,219 tons, which was accomplished at that mine on June 24,

1902. Dominion No. 2 wrested the championship from its sister colliery, having placed to its credit an output of 4,795 tons. It is expected that as soon as all the machinery is installed and the mine fully equipped the average daily output will be considerably in advance of these figures.

The ratepayers of Glace Bay, N.S., have voted favorably on a by-law granting \$100,000, for an extension of the Bitulithic paving system, other improvements on the streets, and extension of sewers.

The new plant of the Dominion Antimony Co. at West Gore, N.S., is being equipped with Babcock & Wilcox boilers, and the James Cooper Mfg. Co. of Montreal are supplying a hoisting engine.

The Maritime Contracting & Mining Co., have been awarded the contract to construct a gravitation waterworks system in Springfield, N.S., at a cost of \$10,000.

The Dominion Coal Co's general offices at Glace Bay, N.S., will be remodelled and enlarged.

The Crown Grain Co., Winnipeg, Man., have the foundation in for a large cleaning and storage elevator at St. Boniface, Man. The elevator will be 72x56 feet in dimension, 150 feet high, with 10 foot basement. It will be covered with corrugated, galvanized steel, and fitted with five cleaners, two clippers, smutters and a flax machine. There will be four working legs. The power house will be 85 feet away from the elevator and will contain a 400 h.p., engine. The location of the elevator is at the intersection of the Canadian Northern and Canadian Pacific lines in St. Boniface. It will have storage capacity for 250,000 bushels, and in addition to this there will be erected a tank elevator with space for 2,000,000 bushels of grain. W. S. Cleveland, of Minneapolis, is the contractor. M. H. Bennett is the manager of the elevator company.

Thos. Holland's hotel at Pilot Mound, N.W.T., was destroyed by fire a few days ago.

Messrs. Stewart & Bird, Winnipeg, Man., will have their trunk factory which was destroyed by fire recently, reconstructed at once.

The Roman Catholics of St. Boniface, Man., will enlarge the hospital, convent, and the Boys College and will erect a cathedral, making a total expenditure of about \$2,000,000.

Messrs. McLennan & Rae, Minnedosa, Man., are the promoters for the erection of a hotel at Portage la Prairie, Man., at a cost of \$25,000.

The Brandon, Man., Binder Twine Co., will apply for supplementary letters patent increasing their capital from \$100,000 to \$200,000. And will also make application to change the name of the company to The Consumers' Co-operative Co., Limited.

The Roche Perce Coal Mining Co., Winnipeg, Man., have been incorporated with a capital of \$100,000, to carry on a coal mining business. The provisional directors include Hugh Sutherland, Thos. R. Billett and J. G. Mitchell, Winnipeg.

The A. R. Williams Machinery Co., Winnipeg, Man., have been incorporated with a capital of \$60,000, to manufacture machinery, machinery accessories and supplies, brass goods, elevators, etc. The provisional directors include A. R. Williams, T. A. Hollinrake, Toronto, and T. G. Mathers, Winnipeg.

The Collin Co., St. Boniface, Man., have been incorporated with a capital of \$40,000, to manufacture boots, shoes, furniture, ironmongery, etc. The provisional directors include H. Collin, L. J. Collin and G. Couture, St. Boniface.

The Crescentwood Improvement Co., Winnipeg, Man., have been incorporated with a capital of \$300,000, to carry on the business of contractors, and to operate mills, etc. The provisional directors include C. H. Euderton, C. D. Shepard and F. S. Andrews, Winnipeg.

The aggregate value of buildings for which the city of Winnipeg, Man., has granted permits this year, is now about \$5,800,000. The building inspector, E. H. Rodgers, reported to the civic committee that to date this year 1,185 permits had been issued for 1,340 buildings of an aggregate cost of \$5,717,800. The figures to November 9 last year were 825 permits, 971 buildings and an aggregate value of \$2,367,550.

The Manitoba Iron Works, Winnipeg, Man., have recently turned out two of the largest boilers ever built west of Toronto. They were made for the new Fort Rouge brewery now being erected in Winnipeg by the Milwaukee Brewing & Malting Co.

The Winnipeg Electric Street Railway Co., will offer to make a reduction in the cost of gas for light and fuel in consideration of the city council withdrawing the by-law which it proposes to submit to the ratepayers at the forthcoming municipal election, providing for the establishment of a municipal plant.

Messrs. Leeson & Lineham, will erect a stone banking building in Calgary, N. W. T., to be occupied by the Bank of Nova Scotia.

The Gunn Stone & Sand Co., Winnipeg, Man., have been incorporated with a capital of \$25,000, to manufacture building materials composed of stone, gravel, cement, etc. The provisional directors include John Gunn, James Gunn, Stonewall, Man., and H. Sutherland, Winnipeg.

The T. J. Leary Co., Limited, Winnipeg, Man., have been incorporated with a capital of \$20,000, to manufacture wools, furs, etc. The provisional directors include T. J. Leary, R. J. Mattico and E. L. Howell, Winnipeg.

The Hudson's Bay Co. are arranging for the construction of a sternwheel steamer, equipped for freight and passenger service, for the Peace River trade. The steamer will be constructed under the charge of Capt Johnson, who has had the superintendence of the building of the company's river steamers for some years.

The White Pass & Yukon Railway are building two passenger cars at their Skagway shops. They are 40 feet long over

end sills, 47 feet 10 inches over couplers, and 8 feet 6 inches wide over sills. They will have a seating capacity of 50.

The brick block occupied by The Western Hotel and others at Griswold, Man., was destroyed by fire December 9. Loss about \$30,000.

The Edmonton Tent & Mattress Co., Edmonton, N.W.T., will erect a new building in the spring.

The Canadian Pacific Railway have prepared plans for the construction of stock yards at Medicine Hat, Dunmoore and Suffield, N.W.T.

The Threshers' Supply Co., Winnipeg, Man., have been incorporated with a capital of \$90,000, to manufacture machinery tools, implements, boilers, etc. The provisional directors include J. R. Norris, George Green and Thos. R. Ferguson, Winnipeg.

It is understood that the initial equipment of the International Coal & Coke Co's colliery at Coleman, N.W.T., providing for a production of 2,000 tons of coal daily will cost about \$150,000. This will also include the erection of the initial battery of 104 coke ovens. The contract for the supply of the entire electrical equipment, including motors, generators, and electrical locomotives, has been awarded to the Westinghouse Electrical Co., of Pittsburg. The orders for the remainder of the plant were placed with other firms as follows: The chain car haul for conveying the coal from the mine to the tippie, the Link Belt Machinery Co., Chicago; crossover dump, the Mill & Mine Supply Co., Pittsburg; engines, the Phoenix Iron Works Co., Meadville, Pa.; pumps, the Stillwell-Bierce & Smith-Vails Co., Dayton, Ohio; fan for ventilating purposes, the Clifford Co., Jeannette, Pa.; bin slide fixtures, the Connellsville Mfg., & Mines Supply Co., Connellsville, Pa.; and the boilers and some structural steel will be purchased in Canada, but the contracts have not yet been awarded.

The Boundary Iron Works, Grand Forks, B.C., will double their capacity at once.

The ratepayers of F'slo, B.C., are petitioning the council of that place to grant a bonus of \$50,000 to the Canadian Smelting Co., to erect a lead smelter there.

The Water Committee, Vancouver, B.C., will invite tenders for the supply of pipe and waterworks fittings.

The Western Fuel Co., Nanaimo, B.C., have placed an order with the Fairbanks Co., Vancouver, B.C., for a 400 h.p. Rand air compressor of modern design. The plant will be completed and installed by January 15, 1904. The closing of this contract, together with an order for a compressor plant of smaller size for the Imperial Gold Mining Co., of Okanagan, and a stamp mill for Skookumchuck River, is a source of gratification to the local firm, which only recently extended operations to the mining machinery business.

The Granby Consolidated Mining Co. have applied to the British Columbia Legislature for permission to construct

tunnels in the mountains where their mines are. They desire to tunnel under the Phoenix Mountain on a level with the Granby smelter, and to drop the ore down chutes or shafts into railway cars standing in the tunnel, which would save the cost of hauling empty cars from the smelter up the mountain to the mines.

R. Hammond has opened an electrical supply house at Fernie, B.C.

Electricity for power and lighting is to be used at the Province mine, Greenwood, B.C., operating hoist and the machine drills and lighting the mine workings and buildings. The electrical apparatus has been installed at the mine by Mr. E. G. Warren, manager of the Greenwood Electric Co.

Mr. Jos. Brault will erect a two-story addition, 72x52 feet, to the Canadian Hotel at Cranbrook, B.C.

The Rat Portage Lumber Co., Rat Portage, Ont., are making arrangements for the erection of a new sawmill at Harrison River, B.C.

The city of Vancouver, B.C., will have new sewers constructed at a cost of \$130,000.

The Oriental Power & Pulp Co., Vancouver, B.C., have commenced operations for the construction of pulp and paper mills at Swanson Bay; a sawmill will also be erected.

The Wm. Hamilton Mfg. Co., Peterboro', Ont., are building a large gold dredge for the Iowa Lillooet Gold Mining Co., at Lillooet, B.C., at a cost of \$30,000.

The Urquhart Mills, Limited, Vancouver, B.C., have made application to change their name to The Vancouver Lumber Co., Limited.

The Palace Clothing House Co., Vancouver, B.C., have made application to change their name to The Kitroy Morgan Co., Limited.

The Pacific Pile Preserving Co., have been incorporated at Victoria, B.C., with a capital of \$20,000, to manufacture boring machinery for immuring piles, etc.

The Light Traffics Co. have been incorporated at Victoria, B.C., with a capital of \$150,000, to carry on the business of shipbuilders, lumbermen, etc.

The ratepayers of Vancouver, B.C., will provide \$50,000 towards the erection of the general hospital, which will cost \$80,000.

The Nelson Brewing & Ice Co., Nelson, B.C., have been incorporated with a capital of \$60,000, to acquire the business of The Nelson Brewing Co., and to carry on the business of brewers and malsters.

The Macaulay Liquor Co. have been incorporated at Victoria, B.C., with a capital of \$10,000, to carry on the business of brewers and malsters.

In no branch of government service has the matter of ventilation been given such serious consideration as in the navy. The construction of the modern vessel renders it extremely difficult to secure proper ventilation in some portions below the water line. Noticeable for its novelty, among the various methods used to properly ventilate such places is the portable ventilating set, consisting of a small ex-

hauster of the Monogram type directly connected to an enclosed electric motor. It is very light, moves a large body of air, and is provided with handles for carrying from place to place, enabling the crew to work in any portion of the vessel with comfort, and is but one of the many types of blowers manufactured by the B. F. Sturtevant Co., Boston, Mass.

A very rich copper mine has been discovered in the Garwhal district of the Himalayas, in India. A company with a capital of 1,500,000 rupees, is being formed in Calcutta to develop the mine. Seventeen American mining engineers are prospecting the Himalayas.

Superintendent Constantine, of the Edmonton, N.W.T., Mounted Police district, reports to the Government of the conditions which he found to exist at the mouth of the Mackenzie River, where he went last summer and established a police post. Accompanied by Sergeant Fitzgerald and four constables the superintendent left Athabaska Landing on June 1 and arrived at Fort McPherson on July 14. The journey of 1,854 miles was accomplished partly by canoe and partly by steamer. Fort McPherson is on the right bank of the Peel River, thirty miles from its junction with the Mackenzie River and seventy miles from the Arctic Ocean. The general character of the country from Athabaska Landing to McPherson is swampy, with alternate rocky ridges with muskegs between. The timber is spruce, poplar, black and white birch, willow and alder. The country is full of small lakes, and in a few places there is arable land. North of the Athabaska River there is no agricultural land. The fisheries in Great Slave Lake are valuable, the most abundant being whitefish, lake trout and pike. The trout grow to a large size and often reach a weight of fifty pounds. At Vermillion, on the Peace River, the Hudson's Bay Co. have a flour and saw mill. Superintendent Constantine was informed that about 10,000 bushels of wheat would be raised along the Peace River that season, and the company hoped to be able to supply the northern posts with flour ground from wheat raised in that district.

The new addition to the Dominion Atlantic fisheries fleet will be constructed in England. Although not intended to be very large, it will be swift, and will be equipped with modern rapid-fire guns.

Shareholders of the Nicola, Kamloops & Similkameen Coal & Railway Co., B.C., held a meeting in Toronto last week, when a permanent Board of Directors was elected and the organization of the company perfected. The projected road is from a point on the main line of the Canadian Pacific Railway, at Spence's Bridge, B.C., to Nicola, and then south-east to the American boundary, a distance of about 190 miles. The Dominion Parliament last session granted them a bonus of \$6,400 a mile for the first 45 miles, and application is also being made to the British Columbia Government for aid. The charter was an old one, and was revived by the present company at the last session of the British Columbia Legisla-

ture. Large coal areas are said to exist through the territory which it is expected will be opened up by the railroad, which will connect with the Canadian Pacific Railway at Midway, the Coast and Kootenay Railroad and the Midway and Vernon Railroad. At the Toronto meeting the following were appointed directors: E. A. Jukes, Toronto, president; George A. Pegy, St. Catharines, vice-president; Welland D. Woodruff, St. Catharines; W. E. Sherlock, Canton, Ohio; C. H. Keefer, C.E., Ottawa; W. Dorsett Birchall, Montreal; George Dawson, St. Catharines; W. S. McNamara, St. Catharines, secretary and treasurer; H. H. Coilier, St. Catharines, solicitor; and George H. Cowan, Vancouver, solicitor for the company in British Columbia.

During the past year the David Bell Engineering Works, Buffalo, N.Y., have shipped 48 Bell steam hammers representing a total pulling weight of 34,350 pounds and a shipping net weight of 558,400 pounds.

CALIFORNIA-OREGON EXCURSIONS.

Every day in the year single and round trip excursions via the Chicago, Union Pacific and North Western Lines. Through first-class Pullman and tourist sleeping cars daily, to points in California and Oregon. Personally conducted excursions from Chicago to San Francisco, Los Angeles and other Pacific Coast points, leaving Chicago on Tuesdays, Wednesdays, Thursdays and Fridays. Lowest rates, shortest time on the road. Finest scenery. For maps, illustrated folders and rates, write B. H. Bennett, 2 East King street, Toronto.

THE POINT EDWARD ELEVATOR.

The Point Edward Elevator Co's. new elevator is situated on the St. Clair river and adjoining the Grand Trunk Railway at Point Edward, Ont. The foundations consist of 62 stone piers resting on heavy oak piles cut off at the water level and capped with oak timbers. The working house is 48 feet square and 142 feet in height. There is storage room here for 80,000 bushels in small bins. The basement is 6 feet 6 inches high, and has a concrete floor on which the elevator boots and legs rest, the legs themselves being 140 feet long. The bins in this part of the elevator are 52 feet high and are made of 8 x 2 and 6 x 2 pine and hemlock planks, in what is known as a laminated structure, being spiked one to the other, and the planks of each sectional wall of the bins crossing alternately that of the other. The marine leg is entirely of steel. It is 65 feet long and has a capacity of 12,000 to 15,000 bushels of wheat per hour. The elevator legs discharge into the scale hoppers, the grain being weighed on scales with capacity of 72,000 pounds each. After the grain is weighed it is dropped upon belts and conveyed to the storage bins in the main building, the belts running at a speed of about 900 feet per minute. The main storage section of the elevator is 126 x 66 feet and 75 feet deep, containing 36 bins with capacities of 10,000 and 15,000 bushels each. These discharge upon conveyer belts, which run through tunnels into the working house

to the receiving legs, and grain goes through the same operation of weighing before being loaded. After being weighed in carload lots it is spouted direct from the scales to the cars; and it is possible to load 1,000 bushels of wheat in about 3½ minutes. Two special tracks have been put in by the Grand Trunk Railway for the use of the elevator. Two sets of power unloading shovels are used for unloading the grain from the boats. The elevator is also equipped with its own electric light service, comprising 15 incandescent and 6 arc lights, also a fire pump with a capacity of 750 gallons of water per minute and at suitable distances there are stands of rubber fire hose ready for use. In the power building is a 350 h.p. engine, together with condenser, feed pump and all usual connections. Steam is furnished by two return tubular boilers 16 feet long and 6 feet in diameter, rigged to be run independently or together. The transmission of power through the elevator is by rope transmission.

THE DEVELOPMENT OF WATER POWER AT FORT FRANCIS, ONT.

A syndicate of capitalists represented by D. W. Backus, W. F. Brooks and T. H. Schevling, Minneapolis, Minn., and others were James Connee, M.L.A., J. H. Moss, representing the Town of Fort Francis; N. W. Rowell, K.C., representing the township of McIrwin; W. A. Preston, representing the Rainy River Pulp & Power Co.; George A. Graham, president of the Rainy River Navigation Co., and Senator McMullen, waited on the Ontario Government a few days ago in connection with the development of water power at Fort Francis. The company intend to spend \$480,000 in erecting a reservoir and dam to enable them to supply water all the year round, and the works to develop 10,000 h.p., of which 5,000 will be for use on the Canadian side. It is also stipulated that the syndicate provide for the cost of erecting a 1,000-barrel flour mill on the Canadian side. In lieu of the flour mill, a 30-ton pulp mill may be erected.

Mr. Ross insisted that half the horse power reserved for Canadian use shall not be exported to the American side if at any time it should become idle. This stipulation was the main thing standing in the way of an agreement, but the government was firm and it will be in the agreement. The government also reserved the right of forfeiture in case the syndicate failed to carry out their agreement. To make this worth something it is stipulated that the power house shall be situated on the Canadian side of the international boundary. The maximum price of power supplied to the town will be \$12 per h.p. off the wheel or \$14 per electric h.p. The syndicate are required to pay \$5,000 to the government for the concession.

The conference was finished, and a perfect understanding was arrived at. The papers have been drawn up and will be executed when the syndicate are ready to put up their guarantee.

AUCTION SALE OF ONTARIO TIMBER.

As heretofore announced in this journal, on December 9 instant, Hon. E. J. Davis, Commissioner of Crown Lands, sold at auction in Toronto the standing red and white pine timber in several districts of Ontario. The sale included 826 square miles of standing timber, for which was realized the sum of \$8,687,337.00. The names of the purchasers and the amount of their purchases were as follows:

Chas. Beck, Penetanguishene	\$545,925 00
Thomas Mackie, M.P., Pembroke	438,225 00
Wm. Power, Montreal	337,650 00
F. H. Shevlin, Minneapolis	337,350 00
W. J. Sheppard, Waubushene	289,500 00
W. A. Tilley, Toronto	245,312 00
Ferguson & McFadden, "The Soo"	223,775 00
C. L. Dancey, Goderich	171,750 00
D. Graham, Renfrew	125,950 00
A. McPherson, Longford	81,275 00
D. J. Grant, Orillia	79,575 00
Hector McDonald	75,600 00
W. F. Munro, Pembroke	65,625 00
J. B. Fraser, Ottawa	60,000 00
D. J. Ransom	45,900 00
J. M. Savage, Rat Portage	42,450 00
George Chew	39,600 00
A. T. Mackie, Pembroke	38,250 00
Echo Bay Lumber Co.	36,750 00
Dr. Spohn, Orillia	35,575 00
J. D. McArthur, Winnipeg	33,600 00
Arthur Hill, Saginaw	30,812 50
D. C. Cameron, Rat Portage	27,425 00
John McKay, Renfrew	27,000 00
P. McDermott, South River	25,375 00
T. G. Bugliam, Ottawa	24,400 00
Mason, Gordon & Co., Montreal	24,375 00
J. C. Browne, Montreal	23,562 50
Burton Bros., Barrie	22,400 00
James Playfair, Midland	21,000 00
D. E. Sprague, Winnipeg	19,200 00
T. H. Sheppard, Waubushene	16,800 00
J. McCreary, Arnprior	16,500 00
E. S. Brennan, Hamilton	14,400 00
R. Bunyan, North Bay	14,375 00
W. F. Brooks, Minneapolis	14,000 00
John Munn	11,250 00
W. P. Bull, Toronto	2,925 00
Geo. McEwen, Hensall	1,800 00

It was the most successful sale ever conducted by any government in the province. The receipts were far in excess of any previous sale, though the number of square miles put on the block was little more than half the number sold at the sale of 1881. This was due to the keen interest evinced by lumbermen in Ontario, as well as Quebec and Manitoba, and several states of the Union, and the fact that pine timber is getting to be a scarce commodity and the price is soaring high. As much as \$31,500 was realized for a square mile of timber. Thomas Mackie, the stalwart member for North Renfrew in the House of Commons, secured the block after several others had stayed with him in the bidding. Charles Beck, of Penetang, was the largest buyer. Those who bought largely of the timber

wealth of Ontario were Thomas Mackie, M.P., of Pembroke; William Duncan Graham, Ingles Grant, the Georgian Bay Lumber Co., and F. H. Shevlin, a Minneapolis capitalist, who is interesting himself in water power development at Fort Frances on the Rainy River.

The average per mile for the sale was \$4,450. One property went as low as \$350, and as before stated, one brought the record price of \$31,500. The best price ever paid for standing timber in the province, at government sale, was \$17,500.

The purchasers of berths in the Nipissing and Algoma districts are entitled to the red and white pine timber only, except what other timber they may require for making roads. Except in a few sections the purchasers of berths in the Rainy River Districts are entitled to all kinds of pine and the spruce, cedar, tamarac and poplar. The timber is required to be manufactured in Canada. All timber standing on the limits after the expiration of ten years from April 30 next will revert to the Crown.

Following are the terms of payment: Purchasers of \$1,000 or under, cash on day of sale; over \$1,000 and up \$5,000, one-half to be paid down, the remainder in three months; over \$5,000 and up to \$10,000, one-third down, the remainder in six months; over \$10,000, one-fourth down, the remainder in nine months.

The berths are also subject to the payment of an annual ground rent of \$5 a square mile and dues.

Previous timber sales were as follows:

Sq. miles sold.	Price realized.
1868— 38	\$14,446 50
1869— 98	25,564 50
1870— 12	7,680 00
1871— 487	117,672 00
1872— 5031	592,601 50
1877— 375	75,739 00
1881— 1379	733,675 00
1885— 1012	318,645 00
1887— 459	1,312,312 50
1890— 396	346,253 25
1892— 633	2,315,000 00
1897— 159½	265,162 50
1899— 360	723,550 00
1901— 399½	732,787 50

OPPORTUNITIES.

The following enquiries have been received at the office of the High Commissioner for Canada in London, and at the Canadian Section of the Imperial Institute, London, England.

NOTE.—Those who may wish to correspond with any of these enquirers can obtain the names and addresses by applying to the CANADIAN MANUFACTURER, Toronto. No charge for giving information. When writing refer to the numerals opposite the enquiries, and enclose 2c. postage stamp for reply.

1136. A London, England, firm desire to open up business relations with manufacturers of the following classes of goods, either as sole consignees or sole agents: picture frame moulding, pastry boards,

knife and scrubbing boards, broom handles, clothes pegs, enamelled ware.

1137. Enquiry is made respecting the market in Canada for imported salt by a gentleman who is interested in the West Indian product.

1138. A North of England firm of iron and steel merchants and shipbreakers ask to be furnished with names of some good Canadian houses who import old iron and steel in the shape of rails, ship plates, angles, etc.

1139. Enquiry is made by a London, England, exporter in the soft goods trade respecting the opportunities for making business connections with Canada.

1140. Application is made by a city engineer for samples of different Canadian woods, size 9x5x3 inch.

1141. Enquiry has been made as to the chances of success of a small wool-combing plant in Canada, and as to a suitable location for the same.

1142. A person proposing to establish himself in Canada next year as a hardware merchant and agent is endeavoring to obtain some British agencies in addition to those already secured.

INDUSTRIAL PUBLICATIONS.

The Penberthy Injector Co., Windsor, Ont., have issued a new price list of Penberthy injectors which will be sent upon application.

The Buffalo Forge Co., Buffalo, N.Y., are distributing a new booklet devoted to Buffalo improved ventilators. Another booklet by the same company calls attention to Buffalo disk wheels.

The United Electric Co., Toronto, have issued a folder describing the line of high grade telephones for offices, houses and factories which they have placed on the market.

The Jeffrey Mfg. Co., Columbus, Ohio, have issued Catalogue No. 52, "Jeffrey Coal Washing Machinery." The book is handsomely illustrated with numerous cuts, showing the application of their coal washing machinery at various plants, besides containing other interesting information relative to the manufactures of the company that will attract coal operators. The introductory says, in part. It is an acknowledged fact and one recognized by coal operators in general, that the washing of coal for the elimination of refuse and impurities, such as shale, slate, rock, sulphur and clay, is a subject which, while only taken up by comparatively few up to the present time, will, in the near future, be generally considered by coal operators. The fact that it increases the value of small coal, by freeing it from impurities, is one great feature in favor of its adoption. Then, again, the saving of the small coal, especially in thin veins, which is now going to the culm pile, will add many dollars to the operator's profit. The Jeffrey system of washing is, they say, a practical as well as a commercial success, and they will be pleased to correspond with interested parties. Figures and designs of complete washing plants

to suit the various requirements will be supplied upon request. Catalogue No. 52, and other publications of the company, will be furnished upon application to the company or any of their branch houses.

Circular No. 1066 of the Westinghouse Electric & Mfg. Co., Pittsburg, Pa., treats on Type H Induction Motors.

The James Smart Mfg. Co., Brockville, Ont., have issued a handsome annual catalogue and price list of 130 pages dealing with the extensive hardware lines manufactured by them.

The Dow Portable Electric Co., Braintree, Mass., represented in Canada by Fogarty Bros., Montreal, are sending out a descriptive catalogue of their coil vibrators and other electrical supplies.

Messrs. Speight & Brady, Georgetown, Ont., manufacturers of gas engines, water motors, etc., have issued a catalogue dealing with these lines.

The DeLano-Oshorn Engineering Co., Manning Chambers, Toronto, have issued a new folder calling attention to the lines of work which they do.

The David Bell Engineering Works, Buffalo, N. Y., whose Canadian representatives are the A. R. Williams Machinery Co., Toronto, have issued a new illustrated catalogue of Bell Steam Hammers which have a large sale in Canada. The catalogue will be found of much value to manufacturers. It can be obtained from either of the companies mentioned above.

The Ontario Municipal Power Commission, having been completed by the addition of Mr. Ross, the electrical expert, will at once set to work on a report of cost. This report, Mr. P. W. Ellis states,

will be of the most comprehensive character. Subsidiary reports will be obtained from hydraulic engineers on cost of development, from electrical engineers on cost of electrical construction of all kinds, from civil engineers as to right of way, and from expert accountants to enable the municipalities to finance the proposition. That will show not only what the cost of development and transmission is to each municipality, but at what figure electricity may be sold by that municipality, whatever its circumstances, at a sufficient figure to meet all questions of sinking fund, maintenance, wear and tear, etc. The services of the accountant will be of particular advantage in placing the municipality in a sound financial position. The whole report, at the same time, will be so concise and clear that any councillor or ratepayer will understand it at a glance. Mr. Ellis is quite sanguine of the success of the undertaking, and points out how much Toronto would benefit thereby. The lowest cost of electric power, even to large consumers, is \$60 per h.p., whereas Hamilton is offering it for \$20 per h.p., Bracebridge for \$14 per h.p., Peterboro' for \$12 per h.p., and so all round, showing how much more advantageous such places are for manufacturers. Properly developed, municipal power could be sold at \$15 per h.p. in Toronto. He points to the great success of the waterworks in Toronto, notwithstanding the wants of continuity of management. This defect is remedied in the power commission, for the act makes the commission permanent. The commissioners have no thought of spoliation of vested interests, but do not see why municipalities should continue to

pay for watered stock and stock speculation. The report of the commission will probably take four or five months to prepare.

A new line of air compressors is described in Bulletin 1. 509, recently issued by the Laidlaw-Dunn-Gordon Co., of 114 Liberty street, New York city. These compressors are fitted with Meyer steam-valve gears, permitting of an adjustable cut-off. The air ends are arranged both with poppet inlet and outlet valves and with mechanically operated inlet and poppet outlet valves, the valves in either case being placed in the head of the cylinder, permitting the body to be effectively water-jacketed.

PERSONAL.

The Ontario Collection Association, Ltd., a new concern which have just been organized, and whose head offices are at 96 Confederation Life Building, Toronto, will be found of much value to manufacturers and others requiring services along the lines indicated by their title. Jonathan Ellis is president of the new company; H. C. Sparling, vice-president; and E. A. Ducau, secretary and treasurer. Messrs. Biggs and Petrie are solicitors.

The Boiler Inspection Co. of Canada, carried the insurance on the boilers in the power plant of Wm. Cane & Sons factory at Newmarket, one of which recently exploded. The claims of the engineer and fireman were paid the day following the accident and the insurance on the plant was adjusted two days later, the entire amount \$7,100 being paid within

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PRICES QUOTED FOR ALL SIZES OF BOILERS.

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MANUFACTURERS OF THE NEVERFAIL GASOLINE ENGINE

three days which is certainly creditable to the Boiler Insurance Co.

Some of the best experts in consulting, civil, mechanical, electrical and mining engineering have combined their services and facilities in incorporated companies, and are prepared to undertake contracts of any extent from the largest to the smallest. One such company, one of the most successful, is the De Lano-Osborn Engineering Co. Their expert services have been retained by some of the largest and most exacting railroads and manufacturing industries throughout the United States. Main offices in Manning Chambers, Toronto, Ont.

The executive committee of the Canadian Electrical Association at their last meeting appointed Messrs. J. A. Kammerer, A. B. Smith and R. G. Black as a committee to secure papers for the next convention.

Mr. H. F. J. Porter, who has been associated with Westinghouse interests since the first of the year, and has held the position of assistant manager of the publishing department with offices in East Pittsburg and 10 Bridge street, New

York, has been made second vice-president of the Nornet Lamp Co., of which enterprise Mr. George Westinghouse is president, with the duties of general manager and headquarters at Pittsburg. He assumed charge on December 1. This appointment does not affect Mr. Porter's relations with the publishing department at the present time.

Mr. J. B. Miller, a son-in-law of Thomas A. Edison, the inventor, was a visitor at the Ontario Bureau of Mines last week. The discoveries of nickel in Temiskaming have greatly interested Mr. Edison, and Mr. Miller states that, if possible under the governments new regulations, Mr. Edison's representatives will do some prospecting in Temiskaming next spring.

Mr. Charles W. Hagar, general manager of the Dominion Guarantee Co. of Montreal, was in Toronto a few days ago, to make arrangements for installing their electric and burglar alarm systems in this city. A branch of the Dominion Guarantee Co. is to be established here as soon as suitable premises can be secured.

Dr. C. K. Leith, professor of geology at Madison University, Wisconsin, and Mr. J. C. Spry at Chicago, who are interested in various Canadian iron properties, called at the Bureau of Mines last week. Dr. Leith is much interested in the Temiskaming nickel discoveries and hopes to have some of the metal for experimental work at his university.

Mr. Walter R. Darby, representing the Pittsburg Reduction Co., 99 John street, New York City, manufacturers of aluminum, paid this office a flying visit last week. This company own and operate works for the manufacture of aluminum at East St. Louis, Ill., New Kensington, Pa., Masina, N.Y., two at Niagara Falls, N.Y., and are owners of the Northern Aluminum Co., at Shawinigan Falls, Que. The head office of the company is at New Kensington, Pa.

A meeting of the executive committee of the Canadian Mining Institute was held in Toronto last week, at which it was decided that the next annual meeting of the institute should be held in this city in March next. The institute usually meets in Montreal, but the importance of



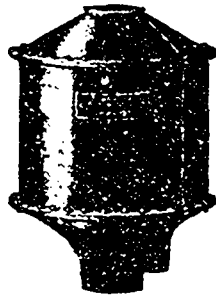
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"Is the 'Acme of perfection,'" says the Zeeland Milling Co., Zeeland, Mich., "and if we had one hundred more steam pipes we certainly should not be satisfied until we had them all equipped with BURT EXHAUST HEADS."

You will say the same after placing a BURT EXHAUST HEAD in use at your plant.

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Largest Mfrs. of Oil Filters in the World.

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A complete stock carried by the
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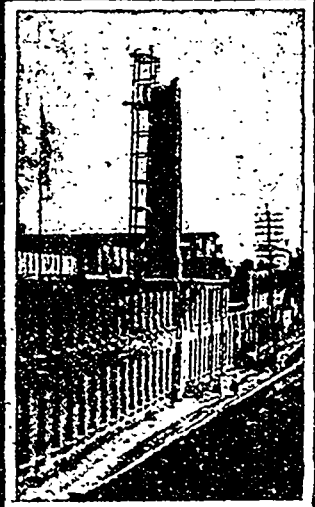
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IT COSTS FAR LESS

Is independent of weather. The fan is positive in action. Responds instantly to sudden demands for more steam. Burns cheap fuel. Costs practically nothing for operation when exhaust steam is utilized.

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the mineral resources of Ontario is the reason for bringing the meeting to Toronto. Among those present were Eugene Coste, president; B. T. Bell, secretary; Major Leckie, of Sudbury; J. N. McEvoy, manager of the Crow's Nest Coal Co.; Prof. Mickle, of the School of Practical Science; T. W. Gibson, director of the Ontario Bureau of Mines; D. D. O'Connor, Sudbury; W. E. H. Carter, Ontario Inspector of Mines, and W. G. Miller, Provincial Geologist. The meeting will be in session three days, and will end with a banquet, at which a number of prominent men will speak. A number of valuable and interesting papers have been promised, and there will be an exhibition of some of the products of the mines of Ontario.

General Francis Vinton Greene, the present Police Commissioner of New York city, who shortly retires, has accepted a position with the Albright-

Hayes Power Co., which is building a power plant on the Canadian side at Niagara Falls, Ont.

John Watson, sr., president of the John Watson Mfg. Co. of Ayr, Ont., died suddenly at his residence, December 14. Mr. Watson was probably the oldest agricultural implement maker in Canada. He was born in Scotland in 1820, came to Canada in 1845, and commenced business in Ayr in 1847.

The Fairbanks Co. of St. Johnsbury, Vt., whose Canadian headquarters are in Montreal, have opened offices and sales rooms at 65 Front street West, Toronto, in charge of Mr. Chas. J. Brittain, who for some time has been travelling representative for the Fairbanks Co. in this district. All the business of the company west of Kingston and south of the main line of the Canadian Pacific Railway will be handled from the Toronto office.

Mr. Walter H. Whiteside, Pittsburg, Pa., the manager of the detail and supply department of the Westinghouse Electric & Mfg. Co., has also been made the general manager of the Sawyer-Man Electric Co., and has added the duties of this new office to his former ones. Few men are better known than Mr. Whiteside in the electrical business. He has been connected with electrical trade interests for nearly twenty years, and during that time has extended his acquaintanceship to every part of the country and cemented friendships wherever he went.

The general sales department of the Canadian Westinghouse Co., Limited, have been opened in Toronto in charge of Mr. T. C. Frenyear, who will have charge of the sales for the Dominion. The offices are located on the second floor of the Lawler Building, corner of Yonge and King streets.

SEE HERE

You will surely admit that the best is none too good; therefore if you want a really first-class **AIR COMPRESSOR** you will install a **RAND**. Want our catalogue?

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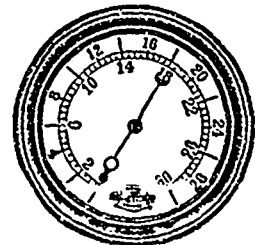
TRADE-MARK

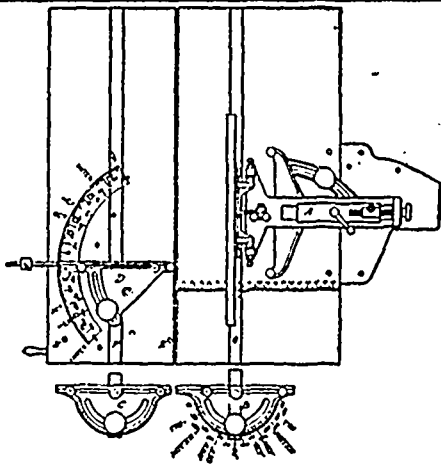


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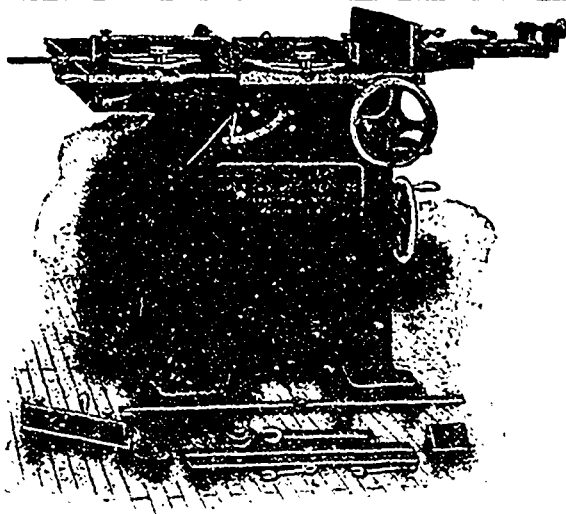
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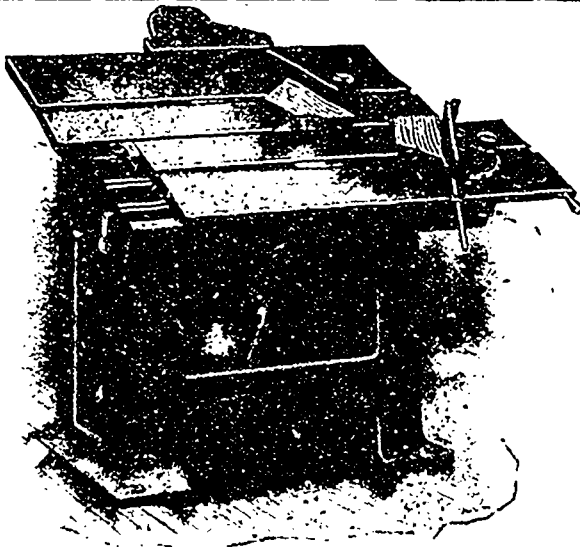




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We show here a few views of the OLIVER SAW BENCH, which is the greatest economizer ever put into a pattern shop, and of equal value to the cabinet shop, or in shops manufacturing interior finish, in fact in any place where perfect work is desired and the saving of expensive hand labor an object.

It is built with all the care and accuracy of the best machine tools and not on the line of ordinary wood-working machinery.

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OF BOILERS**

We have in stock material for the following sizes and styles of boilers:—

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Return Tubular	- -	12 to 150 "
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As we have a large shop, thoroughly equipped with the latest appliances, we can deliver any of the above boilers on short notice.

Competent persons tell us that the quality of our boiler work cannot be surpassed.

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UNDER THE WINDING-UP ACT.

IMPORTANT SALE BY TENDER

— OF —

Buildings, Plant, Mining,
Tunnelling, Quarrying, Hoisting

MACHINERY and SUPPLIES

— OF THE —

James Copper Manufacturing Co., Limited At **ROCKFIELD,**
(IN LIQUIDATION) Near **MONTREAL**

Under authority granted by the Court, the liquidator of above estate asks for tenders at a rate on the dollar of the inventory value of the following properties:

MACHINE SHOP 100 x 400 feet, containing 20 ton electric crane, boring mills, lathes, planers, milling machines, turret lathes, radial drills, etc., etc.

FOUNDRY 100 x 200 feet, containing 20 ton electric crane with 5 ton auxiliary, also pneumatic elevator, blower, generators, etc., etc.
Everything in the above shops operated by electricity.

PATTERN SHOP 80 x 160 feet, equipped with modern wood-working machinery.

FORGES 100 x 100 feet, containing two steam hammers of 800 and 2,500 lbs. respectively, and five forges.

POWER HOUSE 80 x 160 feet, containing air compressor and a direct-connected generator.
Buildings all new and up-to-date.

PLANT All plant, tools and machinery of the newest and most approved designs.

STOCK A large assortment of air compressors, air and steam drills, coal cutters, crushers, hoisting engines, boilers, air receivers, ore cars, ore buckets, etc., etc., (complete and in course of construction). Duplicate parts and general supplies.

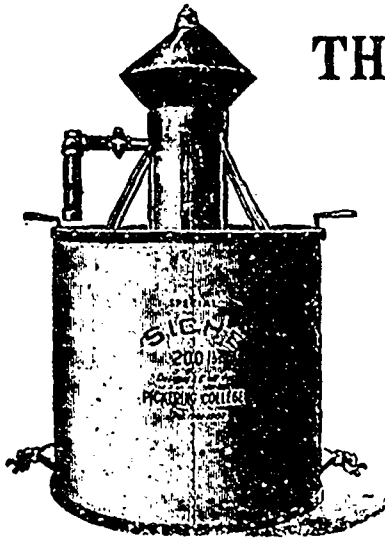
The above properties comprise a superficial area of about 600,000 square feet, having a frontage of about 1,000 feet on the Lachine Canal. There is a complete system of standard gauge tracks on the property, connecting with main lines of Grand Trunk and Canadian Pacific Railways. Also a 24-inch gauge track serving the various departments.

Plans of the property, together with inventories, and all other information required can be seen at the office of the Company, or of the liquidator.

Tenders will be received up to Monday, December 28, 1903, addressed to the liquidator, and marked "Tenders James Cooper Manufacturing Company, Limited."

The highest or any tender not necessarily accepted.

Office of **SAVAGE & FISK,** **G. A. SAVAGE,**
Chartered Accountants, Liquidator.
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SICHE GAS MACHINE

Of which THE MONTREAL GAZETTE says:—

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“A noticeable feature of the fire, caused by coal stove in the Orsali factory, is the fact that the SICHE GAS GENERATOR, which furnished light for the works, remains intact, except for a little discoloration of the tank where it was attacked by the flames.”

SICHE GAS NEVER KILLS ANYONE. IT CANNOT.

COAL OIL AND ELECTRICITY KILLED 158 PEOPLE between August 2nd and Sept. 28th last.

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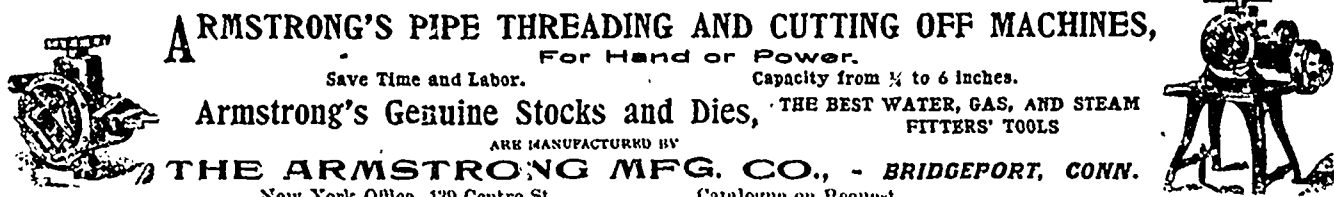
No Storage—No Danger—No Dirt—No Waste.

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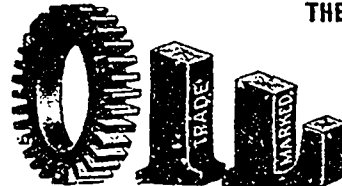
ARMSTRONG'S PIPE THREADING AND CUTTING OFF MACHINES,
 For Hand or Power.
 Save Time and Labor. Capacity from 1/4 to 6 inches.
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 RELIABLE WELL-KNOWN BRAND ALL ORDERS PROMPTLY FILLED



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 We manufacture all grades of oils, greases, soap stocks, candles, wool stocks, leather and tanners' oils, fuel gas, machinery, cylinder oils, &c. And solicit opportunity to compete against any oil on the market. Write for prices and samples.
Refineries at SARNIA and PETROLIA, CANADA. Merchandising Branches at:
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 1/4 3/16 1/8 7/16 1/2 5/8 3/4 7/8 1"
 WITH ONE No. 9 AND ONE No. 11 TAP WRENCH

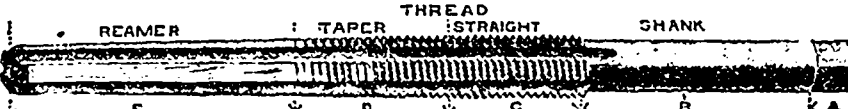


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 Regular and Full Mounted Reece and Derby Plates, Bicycle
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This expert service is

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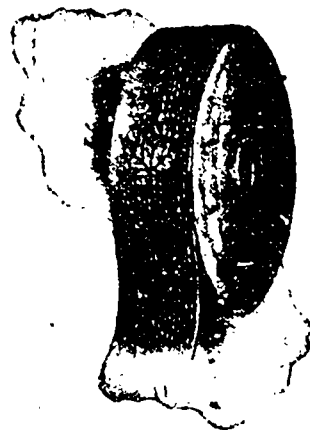
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A Steam Boiler Policy in the Canadian Casualty and Boiler Insurance Company insures your Boilers, Buildings, surrounding buildings, goods stored therein. Fire Insurance on lives of Engineers and Firemen; Public Liability Protection; Defense of Suit; Consultation of our expert Engineers FREE. Competent Inspection.

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Agricultural Machinery, Cement Mills, Cotton and Woolen Mills, Paper Mills, Pulp Mills, Electric Towers, Flour Mills, and all other classes of Machinery. Superior in Tensile, Strength, Pliability, Weight, Freedom from Stretching.

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MANUFACTURERS OF

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Patent Waterproof Cement Splice
AND I X L Dove Tail Splice.

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Lifting that carriage to inspect the writing
Actual tests made show the daily average to be 200
times. Think of it! Why not try an Underwood?
The cost is only a trifle more.

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For WOOD-WORKING,
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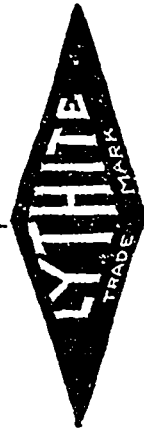
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Machine Tools,

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Prices and descriptions of NEW and SECOND-HAND MACHINES on application.

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 — AT —
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"We notice in your issue of Saturday, September 27, 1903, a statement by Mr. ——— at the meeting of the Peterborough Board of Trade, that we were induced to locate here through the influence of one man.

"Please permit us to state that Mr. ——— is incorrect in making a statement of this kind, privately or publicly, and evidently speaks without full knowledge, or, in fact, without any knowledge whatever on the matter, and in correcting this mis-statement permit us to assure you and the public that our Company came here on account of the natural advantages of Peterborough, which are the geographical location, railways, the water power, and the Trent Canal, which, we were assured, would be shortly completed, and which, when finished and in operation, will, in our opinion, secure to Peterborough all the industries that your city can comfortably take care of."

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For Electric Power at Lowest Rentals

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Manufacturers of **Oilcloths** of Every Description.

Floor Oil-Cloth, Table Oil-Cloth,
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In every variety and style. **BOCCASINA.**

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A vast Deposit of Pyrites of Iron in Ontario for sale or exploitation.

Of great richness and practically inexhaustible quantity.

Within easy reach of railway and water transportation.

Cheap electric and water power available.

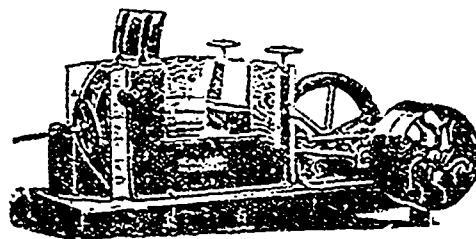
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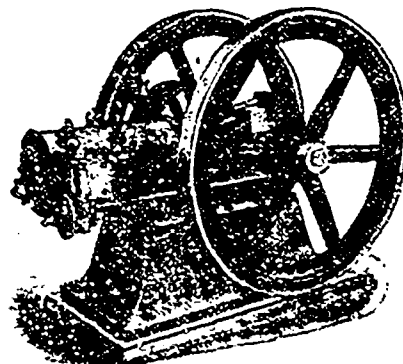
Rotary Fulling Mills, Kicker Fulling Mills, Soaping Machines,
Cloth Washers, Wool and Waste Dusters, Rag Dusters, Drum Spool Winders
Reels, Spooling and Doubling Machines, Ring Twisters, Card Creels
Dead Spindle Spooler for Warp or Dresser Spools,
Patent Double-Acting Gig Dyeing Machines.

GASOLINE ENGINES

3 to 21 Horse Power.

Write for prices and descriptive matter.

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50 Esplanade St. East,
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MAIN FACTORY—BRADFORD, ENG.

CANADIAN FACTORY—MONTREAL

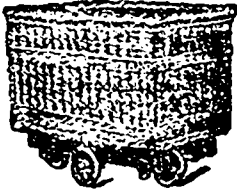
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TRUCKS

That sustain our Reputation.

THE LARGEST TRUCK ESTABLISHMENT IN THE WORLD.

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Sp'ns Like a Top.

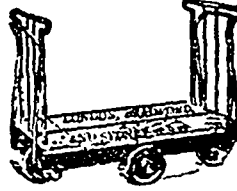
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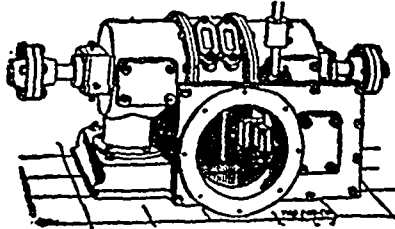
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H. C. Slingsby for Canada

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Runs either way



Horizontal Type.

"LITTLE GIANT" TURBINE

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BUILT IN 44 SIZES.

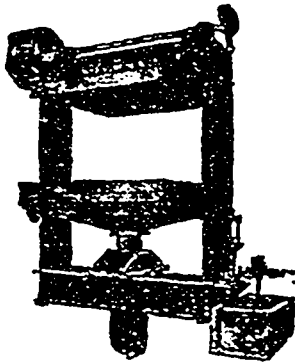
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Hydraulic Screw

and

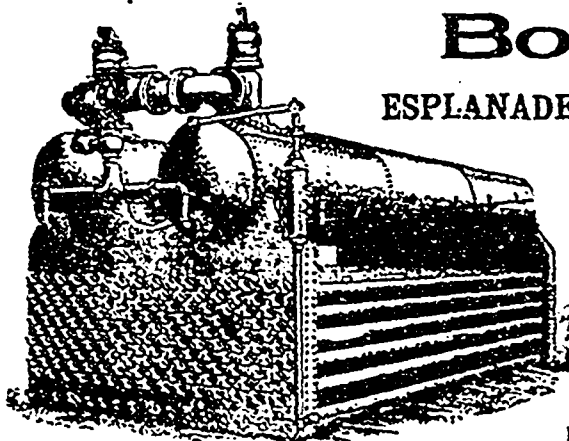
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When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CLASSIFIED INDEX.

(CONTINUED).

Brass Founders

Hamilton Brass Mfg. Co., Hamilton, Ont.
Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
McDougall, R. Co., Galt, Ont.
McKinnon Dash & Metal Works Co., St. Catharines, Ont.
Penberthy Injector Co., Detroit, Mich.

Bridges.

Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Building Iron and Steel.

Canada Foundry Co., Toronto.
Expanded Metal & Fireproofing Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Builders' Materials

Albert Mfg. Co., Hillsboro, Ont.
Canada Foundry Co., Toronto.
Canadian Oils Elevator Co., Toronto.
Canadian Portland Cement Co., Deseronto, Ont.
Expanded Metal & Fireproofing Co., Toronto.
Gartshore, John J., Toronto.
Metallic Roofing Co., Toronto.
Owen Sound Portland Cement Co., Owen Sound Ont.
Rice Lewis & Son, Toronto.
Sheldon & Sheldon, Galt, Ont.

Canada Plates

Leslie, A. C. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.

Canoes

Peterborough Canoe Co., Peterborough, Ont.

Caps.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Cast Iron Pipe

Canada Foundry Co., Toronto.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Rice Lewis & Son, Toronto.
Montreal Pipe Foundry Co., Montreal.

Castings (Iron and Brass.)

Toronto Iron & Brass Bedstead Co., Toronto.

Cement

Canadian Portland Cement Co., Deseronto, Ont.
Owen Sound Portland Cement Co., Owen Sound, Ont.

Cement Machinery.

Wentz, R. F. Engineering Co., Toronto.

Chain Making Machinery

Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio.

Channels

Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Charcoal Pig Iron

Canada Iron Furnace Co., Montreal.

Chemicals and Dye Stuffs

Bellhouse, Dillon & Co., Montreal.
Benson, W. T. & Co., Montreal.
Brunner, Mond & Co., Northwich, England.
Cassella Color Co., New York City.
Gelgy Aniline & Extract Co., New York City.
Klipstein, A. & Co., New York City.
McArthur, Cornelio & Co., Montreal.
Winn & Holland, Montreal.

Chemists

Archbold, Dr. Geo., Prescott, Ont.
Hays, Thos. & Son, Toronto.
Wentz, R. F. Engineering Co., Toronto.

Clay Working Machinery.

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Coal and Coke

Milnes, James H. & Co., Toronto.
Pittsburgh Coal Co., Pittsburg, Pa.
Coal Cutting Machines
Jeffrey Mfg. Co., Columbus, Ohio.

Coal Tipples.

Jeffrey Mfg. Co., Columbus, Ohio.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Coil Chains.

Greening, B. Wiro Co., Hamilton, Ont.
Leslie, A. C. & Co., Montreal.

Collection Agency

Ontario Collection Association, Toronto.

Continuous Rolling Mills

Morgan Construction Co., Worcester, Mass.

Contractors' Machinery

Carlin's, Thomas Sons Co., Allegheny Pa.

CLASSIFIED INDEX.

(CONTINUED).

Conveying Machinery

Dodge Mfg. Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Perrin, William L. & Co., Toronto.
 Stebens, Alfred J., Toronto.

Copper Materials

Greening, V. Wire Company, Hamilton, Ont.
 Samuel, M. & L. Benjamin & Co., Toronto.
 Syracuse Smelting Works, Montreal.
 Wire & Cable Co., Montreal.

Corrugated Iron and Steel.

Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Corundum.

Canada Corundum Co., Toronto.

Corundum Wheels.

Canadian Corundum Wheel Co., Hamilton, Ont.
 Hart Corundum Wheel Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.

Covers.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Crayons

Lowell Crayon Co., Lowell, Mass.

Crucibles

Dixon, Joseph, Crucible Co., Jersey City, N.J.
 McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Samuel, M. & L. Benjamin & Co., Toronto.
 Syracuse Smelting Works, Montreal.

Crucible Caps and Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Crucible Covers and Stoppers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Dies

Hamilton Stamp & Stencil Works, Hamilton, Ont.

Dies (Socket, Sewer Pipe and Tile-Clay.)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Directories

Kelly's Directories, Limited, Toronto.

Draw Benches (Wire.)

Morgan Construction Co., Worcester, Mass.
 Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Drills

Bertram, John, & Sons Co., Dundas, Ont.
 Canadian Hand Drill Co., Sherbrooke, Que.
 Cooper, James, Mfg. Co., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.
 London Machine Tool Co., London, Ont.

Dry Kilns.

Sheldon & Sheldon, Galt, Ont.
 Stevens, Alfred J., Toronto.
 Sturtevant, B. F. Co., Boston, Mass.

Dust and Shavings Separators

Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Electric Mine Locomotives

Jeffrey Mfg. Co., Columbus, Ohio.

Electrical Supplies

Canadian General Electric Co., Toronto.
 Electrical Construction Co., London, Ont.
 Forman, John, Montreal.
 Jones & Moore Electric Co., Toronto.
 Kay Electric Dynamo & Motor Co., Toronto.
 Packard Electric Co., St. Catharines, Ont.
 Phillips, Eugene F., Electrical Works, Montreal.
 Toronto & Hamilton Electric Co., Hamilton, Ont.
 United Electric Co., Toronto.
 Worth & Martin, Toronto.

Electro-Plating

Brantford Plating Co., Brantford, Ont.

Elevators

Canadian Oils Elevator Co., Toronto.
 Darling Bros., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.

Emery and Emery Wheels.

Canadian Corundum Wheel Co., Hamilton, Ont.
 Forman, John, Montreal.
 Hart Corundum Wheel Co., Hamilton, Ont.

Employers' Liability Insurance

Maryland Casualty Co., Toronto.

Engineers (Cement).

Wentz, R. F. Engineering Co., Toronto.

Engineers (Chemical.)

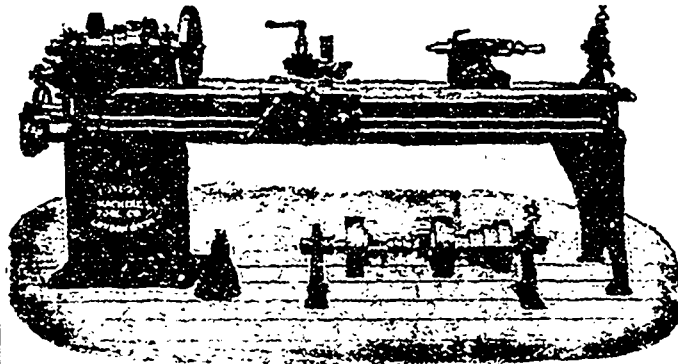
Heys, Thos. & Son, Toronto.

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Envelope and Lithographic Papers, etc.

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WRITE FOR PRICES

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(CONTINUED).

Engineers (Civil)

DeLano-Osborn Engineering Co., Toronto.
Kolsch, R. S., Montreal.
Parke, R. J., Toronto.
Vogel, C. H., Ottawa.

Engineers (Consulting)

DeLano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Kolsch, R. S., Montreal.
Morgan Construction Co., Worcester, Mass.
Parke, R. J., Toronto.
Perrin, Wm. R. & Co., Toronto.
Simpson, T. T., Deschenes, Que.
Vogel, C. H., Ottawa.
Wentz, R. F. Engineering Co., Toronto.

Engineers (Contracting)

Darling Bros., Montreal.
Electrical Construction Co., London, Ont.

Engineers (Electrical)

Canadian General Electric Co., Toronto.
DeLano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Electric Engineering & Supply Co., Montreal.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Worth & Martin, Toronto.

Engineers (Mechanical)

Carrier, Laine & Co., Levis, Quebec.
Darling Bros., Montreal.
DeLano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Kolsch, R. S., Montreal.
Kerr Engine Co., Walkerville, Ont.
Morgan Construction Co., Worcester, Mass.
Robb Engineering Co., Amherst, N.S.
Sheldon & Sheldon, Galt, Ont.
Wentz, R. F. Engineering Co., Toronto.

Engineers (Mill and Hydraulic)

Vogel, C. H., Ottawa.

Engineers (Mining)

Heys, Thos. & Son, Toronto.
Mills, S. D., Toronto.

Engineers and Contractors.

Jeffrey Mfg. Co., Columbus, Ohio.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Engines and Boilers

Habcock & Wilcox, Limited, Montreal.
Canadian Hoine Safety Boiler Co., Toronto.
Cowan & Co., Galt, Ont.
Goldie & McCulloch Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Hyde Bros. & Co., Pittsburg, Pa.
Leonard, E. & Sons, London, Ont.
McDougall, R. Co., Galt, Ont.
Robb Engineering Co., Amherst, N.S.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.
Stratford Mill Building Co., Stratford, Ont.
Williams, A. R., Machinery Co., Toronto.

Engravers

Canadian Manufacturer, Toronto.
Jones, J. L., Engraving Co., Toronto.

Exhaust Hoods

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.

Exporters

Canadian Export Co., Toronto.

Factory Sites

Central Ontario Power Co., Peterboro, Ont.

Films

Spence, R. & Co., Hamilton, Ont.

Financial

Bradstreet's, New York City.
Dun, R. G. & Co., Toronto.
Neff & Postlethwaite, Toronto.
Ontario Collection Association, Toronto.

Filters

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.
Perrin, Wm. R. & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Fire Brick

Hamilton Facing Mill Co., Hamilton, Ont.
Pennsylvania Fire Brick Co., Lock Haven, Pa.
Scioto Fire Brick Co., Sciotoville, Ohio.

Founders

Canada Foundry Co., Toronto.
Cowan & Co., Galt, Ont.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Karch, H. W., Hespeler, Ont.
McDougall, The R. Co., Galt, Ont.

Foundry Facing

Hamilton Facing Mill Co., Hamilton, Ont.

Galvanized Iron and Steel.

Leslie, A. C. & Co., Montreal.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Galvanizing

Brantford Plating Co., Brantford, Ont.
Ontario Wind Engine & Pump Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Galvanizing and Tinning Machinery and Furnaces (Clay.)

Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls
Ohio.

Gas and Gasoline Engines

Dominion Motor & Machine Co., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Morrison, T. A. & Co., Montreal.
Stratford Mill Building Co., Stratford, Ont.

Gas Plants

Sicho Gas Co., Toronto.

Gas Producers.

Morgan Construction Co., Worcester, Mass.

Generators

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.

Government Notices

Factory Inspectors.
Minister of Agriculture.

Grease Cups

Penberthy Injector Co., Detroit, Mich.

Grinding Machinery

Canadian Corundum Wheel Co., Hamilton, Ont.
Hart Corundum Wheel Co., Hamilton, Ont.

Grinding Pans

Carlin's, Thomas Sons Co., Allegheny, Pa.

Hand Traveling Cranes

Morgan Construction Co., Worcester, Mass.

Hardware

Butterfield & Co., Rock Island, Que.
Cooper, James, Montreal.
Empire Machine & Metal Stamping Co., Toronto.
Gartshore, John J., Toronto.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.

Heating and Ventilating

Darling Bros., Montreal.
Leonard, E. & Sons, London, Ont.
Sheldon & Sheldon, Galt, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.

Hydraulic Accumulators

Morgan Construction Co., Worcester, Mass.

Hydraulic Cranes

Morgan Construction Co., Worcester, Mass.

Hydraulic Machinery

Darling Bros., Montreal.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jenckes Machine Co., Sherbrooke, Que.
Morgan Construction Co., Worcester, Mass.
Perrin, Wm. R. & Co., Toronto.
Wilson, J. C. & Co., Glenora, Ont.

Iron and Steel Specialties

Abbott, William, Montreal.
Armstrong Mfg. Co., Bridgeport, Conn.
Bourne-Fuller Co., Cleveland, Ohio.
Brown & Co., Paris, Ont.
Dodgson Mfg. Co., Toronto.
Karch, H. W., Hespeler, Ont.
Leslie, A. C. & Co., Montreal.
Mendows, Geo. B. Wire, Iron & Brass Works Co.
Toronto.

McDougall, R. Co., Galt, Ont.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rice Lewis & Son, Toronto.

Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Lamps—Electric

Forman, John, Montreal.
Packard Electric Co., St. Catharines, Ont.

Lathes

Bertram, John, & Sons Co., Dundas, Ont.
London Machine Tool Co., London, Ont.
McDougall, R. Co., Galt, Ont.
Williams, A. R., & Co., Toronto.

Leather Belting

Canadian Oak Belting Co., Brockville, Ont.
Fleming, W. A. & Co., Montreal.
McLaren, D. K., Montreal.
Rice Lewis & Son, Toronto.

Williams, A. R. Machinery Co., Toronto.

Lubricators

Penberthy Injector Co., Detroit, Mich.

CLASSIFIED INDEX.

(CONTINUED).

Machinists.

Worth & Martin, Toronto.

Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Cooper, James, Montreal.
Goldie & McCulloch Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Worth & Martin, Toronto.

Machine Tools

Abbott, William, Montreal.
Bertram, John, & Sons Co., Dundas, Ont.
Darling Bros., Montreal.

Malleable Iron Castings

McKinnon Dash & Metal Works Co., St. Catharines, Ont.
Ontario Malleable Iron Co., Oshawa, Ont.
Smith's Falls Malleable Castings Co., Smith's Falls, Ont.
Walkerville Malleable Iron Co., Ltd., Walkerville, Ont.

Metal Shears

Morgan Construction Co., Worcester, Mass.

Metal Specialties

Brantford Plating Co., Brantford, Ont.

Metal Stamping

Empire Machine & Metal Stamping Co., Toronto.

Metalurgists.

Mills, S. D., Toronto.
Wentz, R. F., Engineering Co., Toronto.

Mill Machinery and Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Cooper, James, Montreal.
Cooper, James Mfg. Co., Montreal.
Cowan & Co., Galt, Ont.
Darling Bros., Montreal.
Fleming, W. A., & Co., Montreal.
Gartshore, John J., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Hay, Peter Knife Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Karch, H. W., Hespler, Ont.
Leonard, E. & Sons, London, Ont.
London Machine Tool Co., London, Ont.
McDougall, R. Co., Galt, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Penberthy Injector Co., Detroit, Mich.
Rice Lewis & Son, Toronto.
Robb Engineering Co., Amherst, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Spence, H. & Co., Hamilton, Ont.
Stratford Mill Building Co., Stratford, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Mining Machinery

Canadian Rand Drill Co., Sherbrooke, Que.
Cooper, James, Montreal.
Cooper, James Mfg. Co., Montreal.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Perrin, Wm. R. & Co., Toronto.
Williams, A. R. Machinery Co., Toronto.

Motors and Dynamos

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Foran, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo and Motor Co., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.

Novelty Manufacturers.

Worth & Martin, Toronto.

Nozzles.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Office Furniture and Supplies

Canadian Office & School Furniture Co., Preston, Ont.

Oils and Lubricants

Dixon, Jos., Crucible Co., Jersey City, N.J.
Fleming, W. A., & Co., Montreal.
Imperial Oil Co., Petrolca, Ont.
Queen City Oil Co., Toronto.

Oil Cups

Penberthy Injector Co., Detroit, Mich.

Oil Filters

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.

Paints and Colors

Bollhouse, Dillon & Co., Montreal.
Fleming, W. A., & Co., Montreal.
Golgy Anilino & Extract Co., New York City.
Klipstein, A., & Co., New York City.
McArthur, Cornelio & Co., Montreal.

Paper Manufacturers

Barber, Wm., & Bros., Georgetown, Ont.
Toronto Paper Mfg. Co., Cornwall, Ont.

Patents

Budden, Hanbury A., Montreal.
Case, Egerton R., Toronto.
Fetherstonhaugh & Co., Toronto.
Patent Exchange & Investment Co., Toronto, Ont.

Pattern Shop Equipments

American Machinery Co., Grand Rapids, Mich.

Perforated Metals

Greening, B. Wire Co., Hamilton, Ont.

Phosphorizers.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Pig Iron

Bourne-Fuller Co., Cleveland, Ohio.
Canada Iron Furnace Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.
Rice Lewis & Son, Toronto.

Pipe (Rivoted Iron and Steel.)

Scallo, Wm. B. & Sons Co., Pittsburg, Pa.

Pipes and Tubes

Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Montreal Pipe Foundry Co., Montreal.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.

Plaster

Albert Mfg. Co., Hillsborough, N.B.

Plates

Bourne-Fuller Co., Cleveland, Ohio.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.
Scallo, Wm. B. & Sons Co., Pittsburg, Pa.

Plating

Brantford Plating Co., Brantford, Ont.

Plumbago

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Pneumatic Tools

Chicago Pneumatic Tool Co., Chicago, Ill.
Cooper, James, Mfg. Co., Montreal.
Jenckes Machine Co., Sherbrooke, Que.

Painters (For Roads and Wire.)

Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Portland Cement

Canadian Portland Cement Co., Deseronto, Ont.
Owen Sound Portland Cement Co., Owen Sound, Ont.
Rathbun Co., Toronto.

St. Lawrence Portland Cement Co., Montreal.

Power-Electric and Water

Central Ontario Power Co., Peterboro, Ont.

Power Plants-Equipments

Canadian General Electric Co., Toronto.
Cooper, James, Mfg. Co., Montreal.
Darling Bros., Montreal.
DeLano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Goldie & McCulloch, Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Leonard, E. & Sons, London, Ont.
Perrin, Wm. R. & Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Robb Engineering Co., Amherst, N.S.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Wilson, J. C. & Co., Glenora, Ont.

Presses (Tilt, Sower Pipe, Nozzles and Sloaves.)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Pulleys

Darling Bros., Montreal.
Dodge Mfg. Co., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Wilson, J. C. & Co., Glenora, Ont.

Purifiers

Cowan & Co., Galt, Ont.
Goldie & McCulloch Co., Galt, Ont.
Scallo, Wm. B. & Sons Co., Pittsburg, Pa.

Purifying System (Water.)

Darling Bros., Montreal.
Scallo, Wm. B. & Sons Co., Pittsburg, Pa.



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(CONTINUED).

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Quebec Central Railway, Sherbrooke, Que.**Railway Supplies**Algoma Steel Co., Sault Ste. Marie, Ont.
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Bourne-Fuller Co., Cleveland, Ohio.
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Morgan Construction Co., Worcester, Mass.

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Dodge Mfg. Co., Toronto.
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Cantilo, James A., Montreal.
Dominion Oil Cloth Co., Montreal.
Hamilton Cotton Co., Hamilton, Ont.
Morrica, D., Sons & Co., Montreal.
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Storoy, W. H., & Sons, Acton, Ont.**Tin**Leslie, A. C. & Co., Montreal.
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Leslie, A. C. & Co., Montreal.**Trucks**Morgan Construction Co., Worcester, Mass.
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Ohio.**Turbines**Hamilton, Wm. Mfg. Co., Peterborough, Ont.
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Wilson, J. C., & Co., Glenora, Ont.**Typewriters and Supplies**

United Typewriter Co., Toronto

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Kerr Engine Co., Walkerville, Ont.
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Water Tanks

Caldwell, W. E. Co., Louisville, Ky.

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Karch, H. W., Hespeler, Ont.

Wire and Wire RopeDominion Wire Rope Co., Montreal.
Greening, B. Wire Co., Hamilton, Ont.
Leslie, A. C. & Co., Montreal.
Samuel, M. & L. Benjamin & Co., Toronto.
Wire & Cable Co., Montreal.**Wire Cloth**

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Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio.**Wire Rod Reels**

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CLASSIFIED INDEX.

(CONTINUED).

Wood-Working Machinery

American Machinery Co., Grand Rapids, Mich.
Carrlor, Laine & Co., Lewis, Que.
Cowan & Co., Galt, Ont.
Karch, H. W., Hespeler, Ont.
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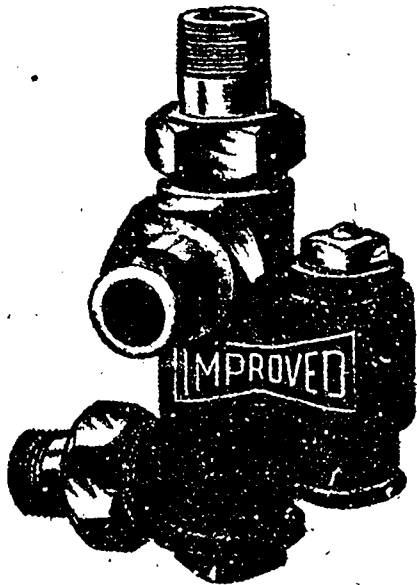
INDEX TO ADVERTISEMENTS.

Where the follo is not given the Advertisement appears at intervals.

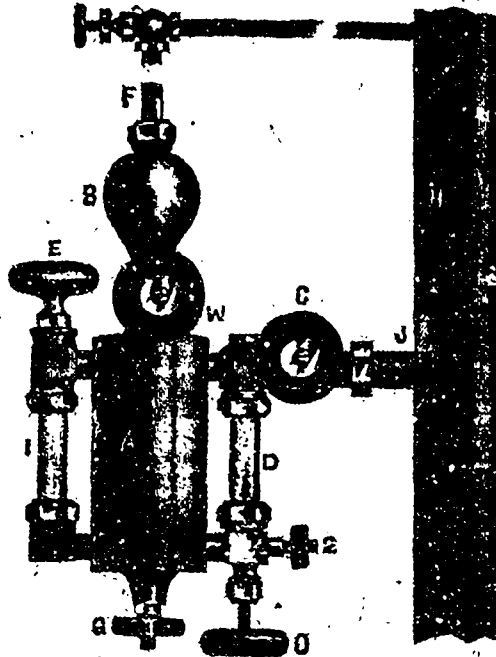
See Classified Index Beginning on Page 39

ofo outside front cover.	obo.....outside back cover.
Abbott, William, Montreal..... 41	Edwards, E. J., Toronto..... 37
Agriculture, Ontario Minister of, Toronto..... 45	Electrical Construction Co., London, Ont. obo
Albert Mfg. Co., Hillsborough, N.B..... 7	Electrio Engineering & Supply Co., Montreal. 41
Algoma Steel Co., Sault Ste. Marie, Ont..... 4	Empiro Machine and Metal Stamping Co., Toronto..... 14
American Machinery Co., Grand Rapids, Mich. 32	Expanded Metal & Fireproofing Co., Toronto.. 7
American Steam Pump Co., Battle Creek, Mich. 13	Fetherstonhaugh & Co., Toronto..... ofc
Archbold, Dr. Geo., Prescott, Ont..... 9	Firstbrook Box Co., Toronto..... 45
Armstrong Mfg. Co., Bridgeport, Conn..... 35	Floming, W. A. & Co; Montreal..... 37
Babcock & Wilcox, Limited, Montreal..... ofc	Forman John, Montreal..... 14
Bank of Hamilton, Hamilton, Ont..... 44	Gartshore, John J., Toronto..... 45
Barber, Wm. & Bro., Georgetown, Ont..... 42	Gartshore-Thomas Pipe & Foundry Co., Hamilton, Ont..... 2
Bellhouse, Dillon & Co., Montreal..... 11	Gelgy Aniline & Extract Co., New York, N.Y. 11
Benson, W. T. & Co., Montreal..... 11	Goldis & McCulloch Co., Galt, Ont..... 3
Bertram, John & Sons Co., Dundas, Ont..... 3	Greening B. Wire Co., Hamilton, Ont..... 12
Blagden, Waugh & Co., London, E.C., England 10	Gutta Percha & Rubber Mfg. Co., Toronto... ofc
Bourne-Fuller Co., Cleveland, Ohio..... 5	Hamilton Brass Mfg. Co. Hamilton Ont..... 47
Bradstreets, Toronto and New York..... 44	Hamilton Cotton Co., Hamilton Ont..... 10
Brantford Plating Co., Brantford, Ont..... 45	Hamilton Facing Mills Co., Hamilton, Ont.... obo
Bristol Co., Waterbury Conn..... obo	Hamilton, Wm. Mfg. Co., Peterborough, Ont. 6
Brown & Co., Paris, Ont..... 41	Hamilton Stamp & Stencil Works, Hamilton, Ont..... 39
Brunner, Mond & Co., Northwich, England... 11	Hart Corundum Wheel Co., Hamilton, Ont... 14
Budden, Hanbury A., Montreal..... 9	Hay, Peter Knife Co..... 36
Burt Mfg. Co., Akron, Ohio..... 30	Heys, Thomas & Son, Toronto..... 9
Butterfield & Co., Rock Island, Que..... 35	Holden, Arthur P., Toronto..... 39
Caldwell, W. E. Co., Louisville, Ky..... 6	Hore, F. W. & Son, Hamilton, Ont..... 42
Canada Corundum Co., Toronto..... 2	Hyde Bros. & Co., Pittsburg, Pa..... 35
Canada Foundry Co., Toronto..... 5	Imperial Oil Co., Petrolca, Ont..... 45
Canada Iron Furnace Co., Montreal..... 5	Industrial Publication Co., New York, N.Y.... 45
Canadian Casualty & Boiler Assurance Co., Toronto..... 30	Industries, Youngstown, Ohio..... 45
Canadian Colored Cotton Mills Co., Montreal. 9	International Safety Solvent Co., Providence, R. I..... 45
Canadian Corundum Wheel Co., Hamilton, Ont..... 29	Jeffrey Mfg. Co., Columbus, Ohio..... 47
Canadian Export Co., Toronto..... 10	Jenckes Machine Co., Sherbrooke, Que..... 13
Canadian General Electric Co., Toronto..... 2	Jones & Moore Electric Co., Toronto..... 44
Canadian Helme Safety Boiler Co., Toronto.. 40	Jones, J. L., Engraving Co., Toronto..... 39
Canadian Manufacturer Pub. Co., Toronto..... 45	Karch, H. W., Hespeler, Ont..... 13
Canadian Oak Bolting Co., Brockville, Ont... 36	Kay Electric Dynamo & Motor Co., Toronto. 13
Canadian Office & School Furniture Co., Pres- ton, Ont..... 45	Kelly's Directorics, Toronto and London, England..... 9
Canadian Otis Elevator Co., Hamilton, Ont... ofc	Kolsch, R. S., Montreal..... 43
Canadian Portland Cement Co., Deseronto Ont..... 7	Kerr Engine Co., Walkerville, Ont..... 11
Canadian Rand Drill Co., Sherbrooke, Que... 31	Klipstein, A. & Co., New York, N.Y..... 3
Cantile, James A., Montreal..... 41	Leonard, E. & Sons, London, Ont..... 4
Carlin's, Thomas Sons Co., Allegheny, Pa..... 10	Leslie, A. C. & Co., Montreal..... 35
Carrier, Laine & Co., Levis, Que..... obo	Lewis, Rice & Son, Toronto..... 41
Case, Egerton R., Toronto..... ofc	London Machine Tool Co., London, Ont..... 44
Cassella Color Co., New York and Montreal.. 11	Lowell Crayon Co., Lowell, Mass..... 35
Central Ontario Power Co., Peterborough, Ont. 38	Maryland Casualty Co., Toronto..... 6
Chicago & North-Western Railway, B. H. Bennett, General Agent, Toronto..... 10	Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto..... 43
Chicago Pneumatic Tool Co., Toronto and Chicago, Ill..... 10	Metallco Roofing Co., Toronto..... 9
Coal Trade Journal, New York, N.Y..... 45	Mills, S. D., Toronto..... 5
Cooper, James, Montreal..... 33	Milnes, J. H. & Co., Toronto..... 4
Cooper, James Mfg. Co., Montreal..... 33	Montreal Pipe Foundry Co., Montreal..... 41
Cowan & Co., Galt, Ont..... 31	Morgan Construction Co., Worcester, Mass... 3
Crosby Steam Gauge & Valve Co., Boston, Mass..... 31	Morrison, T. A. & Co., Montreal..... 36
Darling Bros., Montreal..... 9	Morrow, John, Machine Screw Co., Ingersoll, Ont..... 41
DeLano-Osborn Engineering Co., Toronto... 41	McArthur, Cornelle & Co., Montreal..... obo
Dixon, Joe., Crucible Co., Jersey City, N.J.... 8	McCullough-Dalzell Crucible Co., Pittsburg, Pa..... 30
Dodge Mfg. Co., Toronto..... 41	McDougall, R. Co., Galt, Ont..... 31
Dominion Belting Co., Hamilton, Ont..... 36	McKinnon Dash & Metal Works Co., St. Catharines, Ont..... ofo
Dominion Motor & Machine Co., Toronto..... 39	McLaren, D. K., Montreal and Toronto..... 36
Dominion Oil Cloth Co., Montreal..... 4	Neff & Postlethwaite, Toronto..... 9
Dominion Wire Rope Co., Montreal..... 4	Nova Scotia Steel & Coal Co., Now Glasgow, N.S..... 4
Drummond, McCall & Co., Montreal, Que.... 4	Oakey, John & Sons, London, England..... 3
Dun R. G. & Co. Toronto..... 44	Ontario Collection Association, Toronto..... 9
	Ontario Malleable Iron Co., Oshawa, Ont.... obo
	Ontario Wind Engine & Pump Co., Toronto.. 43
	Owen Sound Portland Cement Co., Owen Sound Ont..... 7
	Packard Electric Co., St. Catharines, Ont.... 12
	Parke, Roderick J., Toronto..... 9
	Patent Exchange & Investment Co., Toronto. 9
	Penberthy Injector Co., Windsor, Ont..... 8
	Pennsylvania Fire Brick Co., Lock Haven, Pa. 7
	Perrin, Wm. R. & Co., Toronto & Chicago, Ill. 40
	Peterborough Canoe Co., Peterborough, Ont. 45
	Petrie, H. W., Toronto..... 37
	Phillips, Eugene F., Electrical Works, Mont- real..... 13
	Pittsburgh Coal Co., Pittsburgh, Pa..... 5
	Quebec Central Railway, Sherbrooke, Que... obo
	Queen City Oil Co., Toronto..... ofc 35
	Reiche & Co., Bradford, England..... 41
	Rice Lewis & Son, Toronto..... 35
	Robb Engineering Co., Amherst, N.S..... 33
	Rossendale Belting Co., Toronto..... ofo
	Rountree Publishing Co., Birmingham, Ala... 45
	Samuel, M. & L. Benjamin & Co., Toronto... 5
	Scalts, Wm. B. & Sons Co., Pittsburg, Pa... 5
	Scoto Fire Brick Co., Scototville, Ohio..... 7
	Sheldon & Sheldon, Galt, Ont..... 13
	Siche Gas Co., Toronto..... 34
	Simpson, T. T., Deschones, Que..... 9
	Slingsby, H. C. for Canada, Montreal..... 40
	Smith Woolstock Co., Toronto..... 42
	Smith's Falls Malleable Castings Co., Smith's Falls, Ont..... obo
	Spence, R. & Co., Hamilton, Ont..... 45
	Steel Age, Pittsburg, Pa..... 45
	Stevens, Alfred J., Toronto..... 9
	Storey, W. H. & Son, Acton Ont..... 38
	Stratford Mill Building Co., Stratford, Ont... 39
	Sturtevant, B. F. Co., Boston, Mass..... 30
	Syracuse Smelting Co., Montreal and New York..... 12
	Toronto & Hamilton Electric Co., Hamilton, Ont..... 13
	Toronto Iron & Brass Bedstead Co., Toronto.. 42
	Toronto Paper Mfg. Co., Cornwall, Ont..... 42
	Turner, Vaughan & Taylor, Cuyahoga Falls, Ohio..... 33
	United Electric Co., Toronto..... obo
	United Typewriter Co., Toronto..... 38
	Vogel, C. H., Ottawa..... 9
	Walkerville Malleable Iron Co., Walkerville, Ont..... ofc
	Wardlaw T. D., Toronto..... 11
	Wents, R. F. Engineering Co., Toronto..... 9
	Williams, A. R. Machinery Co. Toronto..... 13
	Winn & Holland, Montreal..... 11
	Wilson Bros. Bobbin Co., Todmorden England 40
	Wilson J. C. & Co., Glenora, Ont..... ofo
	Wire & Cable Co., Montreal..... ofo
	Worth & Martin, Toronto.....

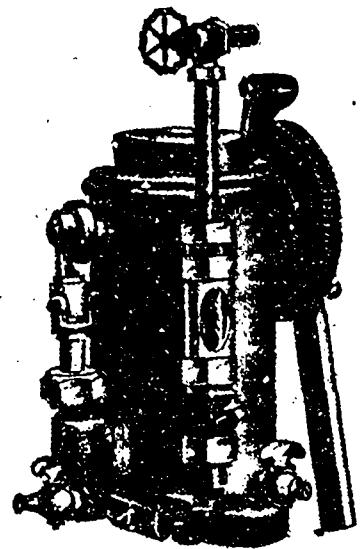
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INDEX

Beginning on page 39 of this issue of THE CANADIAN MANUFACTURER will save our readers money, and should be consulted by them before purchasing.

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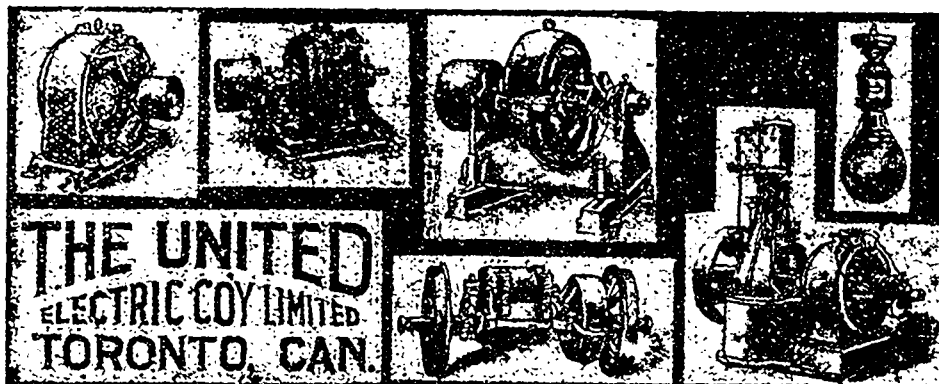
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