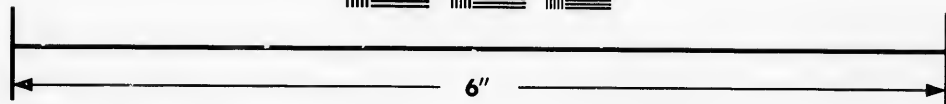
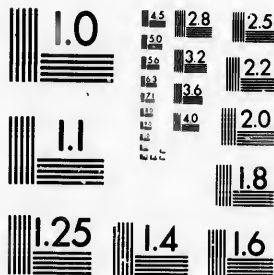
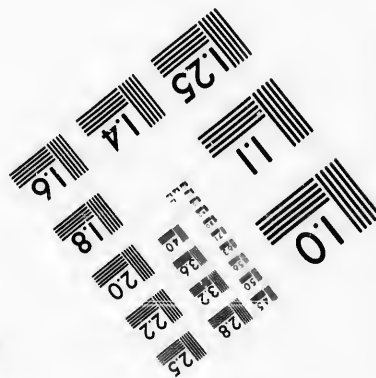


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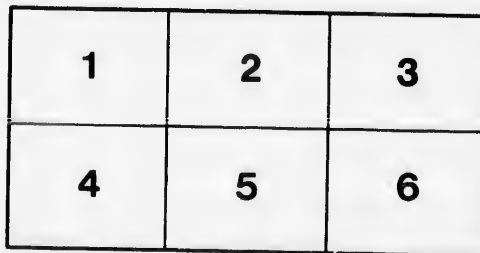
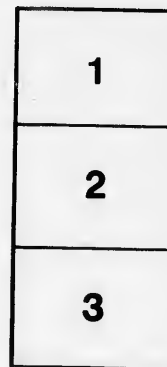
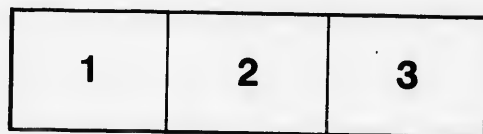
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DESCRIPTIVE  
PAMPHLET



4 Ampere, 100 C.P. Arc

ELECTRIC

Lighting Apparatus



for City, Town and  
Rural Illumination.

**The Ball Electric Light Co.**

(LIMITED,) OF CANADA.

Established 1882.

70 PEARL ST.

# INCANDESCENT LAMPS

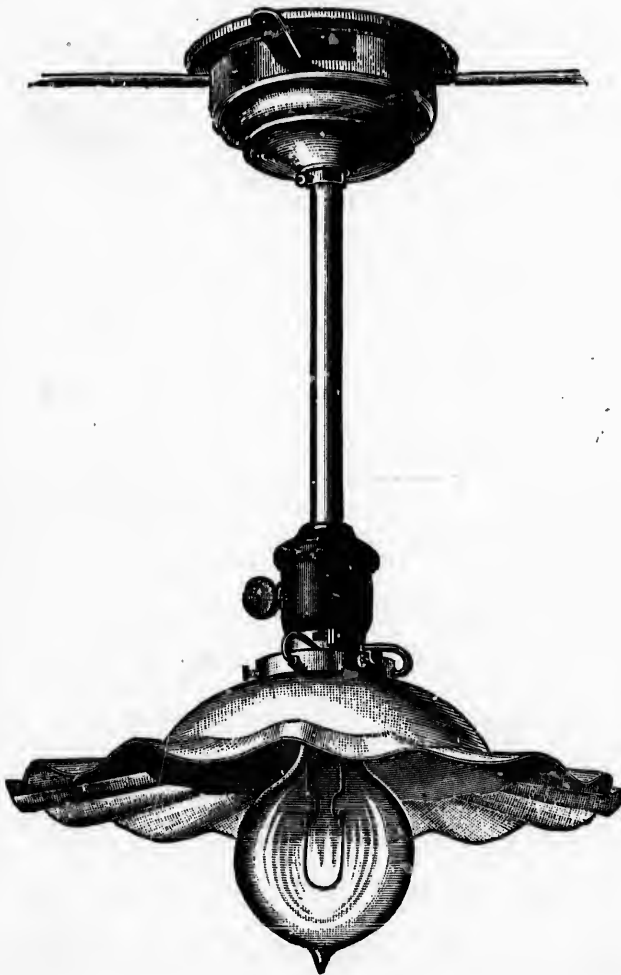
ON

Ball 4 Ampere,

1,000 C.P. Arc Circuits

GIVE COMPLETE SATISFACTION.

Lamps are Perfectly Steady, Brilliant and  
of Long Life.



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Our Dynamo will give much greater efficiency than any other for given metal, power and kind of work.



## The Ball Dynamo

and

HAS now been in general use throughout Canada, the United States, Great Britain, South and Central America and the Republic of Mexico for the last eight years, and its many advantages are so universally conceded that we do not propose to go extensively into its electrical and mechanical points of superiority.

We wish, however, to impress the public with the fact that our double armature dynamos have the same advantage over single armature dynamos, that the double cylinder or compound steam engine has over single cylinder engines. This advantage is of course most noticeable in power saved, but it also makes a showing in the steadiness of the Ball Arc Lamps, to which the Ball Dynamo supplies a perfectly steady and constant current, and the mechanism of the lamps is such as to feed the carbons positively, and regularly, and thus constantly maintain an Arc of defined length between the carbon points, thus doing away with all hissing and flickering, which is so common in all other systems and especially noticeable in them when carbons are feeding.

The durability of the Ball Dynamo is principally due to the double armature feature on account of small amount of wire necessary to produce the required force and therefore less heating from resistance of said wire. The splendid workmanship and quality of material used in the construction of our dynamo frames are acknowledged by the best known machine and engine builders in Canada. We have been manufacturing Electric lighting apparatus in Canada nine years, or since 1882, and are therefore the oldest manufacturers of Electric lighting apparatus in Canada. We have built our present improved dynamo for eight years past, which fact gives us ground for making such broad claims regarding our system.

# Phenomenal Success

HAS ATTENDED THE INTRODUCTION

OF

## Ball Economy

## Arc Light System.

March 1st, 1889, we shipped our first **4 Ampere Dynamo** to operate Arc Lamps of **1,000 Nominal Candle-Power**; since the above date we have installed thirty-six plants, operating about 2,000 Arc lamps of this class for street, commercial and factory lighting. This indicates the novelty and merit of this system of Arc Lighting, as nine out of ten recent purchasers have adopted it after investigating the 2,000 candle-power apparatus of our own and other Company's manufacture.

Previous to the above date we had manufactured the 2,000 c. p. apparatus for about seven years, but to-day the 1,000 c. p. is the leading light. The U. S. Ball Electric Light Co. have sold this 4 amp. system for four years past, so purchasers can be assured that it is no experiment, but at the same time no other Company has been able to produce this class of light, nor is it possible to with any other machine than the Ball **Double Armature** Dynamo.



# The New ECONOMY BALL Arc Light.

LONG ARC—1,000 Nominal Candle-Power. 800 Actual  
Candle-Power. 4 Ampere Current. E. M. F. 49  
Volts. 3½ Lamps to Horse-Power.



The Arc is not subdivided horizontally (by using low voltage which would produce a poor light), but quantity of current passing is divided, and higher electro-motive force used, thus maintaining a long Arc.

This is the most economical noiseless and steady arc light known.

We guarantee to produce these lights on less than one-third of a horse-power each, and the economy in the introduction of this dynamo as compared with incandescent lighting can readily be seen. In producing a light of this power and cheapness we believe that we fully overcome any objections heretofore raised to the use of the arc light in machine shops, stores and factories, as the lesser cost per light and the economy in running will enable the purchaser, by putting a slightly larger number of the 1,000 c. p. arcs to thoroughly distribute the light, thus overcoming the shadows from the more powerful arc lights, and thoroughly light the premises at much less expense than by any incandescent system. The 1,000 c. p. arc will also, in our opinion, supersede 2,000 c. p. lights for city and town lighting where shade trees have made economical lighting by lights of large candle-power placed at great distances an impossibility.

We continue to make as before, our 6, 8½ and 10 Ampere Dynamos and Lamps, with the same attention to mechanical and electrical detail, good work and a superiority of finish, that has in the past secured for them a national reputation.

# TESTIMONIALS

RELATING TO OUR

## **NEW ECONOMY ARC LIGHT.**

We guarantee our 4 Ampere or 800 c. p. Dynamos to give the most perfect results for *Manufacturing Establishments* and for *Street* Lighting. Power required less than  $\frac{1}{3}$  of a horse per light.

NOTE.—These lights are classified in U. S. as 800 c. p., and in Canada as 1,000 nominal candle power.

ARNPRIOR, May 10th, 1890.

THE BALL ELECTRIC LIGHT CO., Toronto, Ont.

GENTLEMEN,—In reference to your 4 ampere 1,000 nominal candle power Arc lighting system we consider it a better investment than 8 ampere 2,000 c. p., as we find that we can get a subscriber to take a 1,000 c. p. lamp for a small shop when we could not get them to take a 2,000 c. p. lamp, and in a large shop 2-1,000 c. p. lamps are far superior to one 2,000 c. p. lamp at about the same cost.

This plant started the 30th of last November, and we are now running 59 Arc lamps and 43 Incandescent in a village of 3,000 population. We are thoroughly satisfied with the 1,000 c. p. system, and would not exchange for 2,000 c. p. system.

The merchants of our village are very well pleased with the light, also the Corporation with the street lights, they started with nine amps last fall, and are going to put in three more shortly.

Yours respectfully,

ARNPRIOR ELECTRIC LIGHT CO.

A. MENZIES, Manager.

NOTE.—Above plant increased Dec. 1890, to 100 Arc capacity.

SAN FRANCISCO, July 24th, 1888.

BALL ELECTRIC LIGHT CO.

GENTLEMEN,—We have been running two of your 25-light, 1,000 nominal c. p. (or 800 actual c. p.) Dynamos at Napa City, Cal., since the commencement of the year. About thirty of the lights are used for street illumination, the balance for private use. During this time the expense incurred for repairs has not been one cent. The light is pure white, does not hiss, and is fully the equal in steadiness of the very best systems of arc lighting upon this coast. We believe that the volume of light given from our 800 c. p. lamps is in excess of that c. p.; and we have the opinion of several of the most prominent electricians in the state that the Ball 800 c. p. lamp equals in illuminating power the so-called 1,600 and 2,000 c. p. lamps of other systems. Our customers and ourselves are much pleased with the light.

Respectfully yours,

JOHN LLOYD, Sec'y.

West Coast Electric Light and Construction Co.

LINDSAY, May 15th, 1890.

THE BALL ELECTRIC LIGHT Co., Toronto, Ont.

GENTLEMEN,—Regarding the success of the 4 ampere system, we would say we are very much pleased with it, and for either street or shop lighting we think it preferable and more economical than 8 ampere (or 2,000 c. p.) system, a plant of which we are also operating,

As to economy of operating 4 ampere system we are not in a position to speak, as we hire our power at present, but we certainly do not require as much carbon as for 8 ampere system.

We would recommend Corporations or Companies requiring Electric Light to try the "Ball" 4 ampere system.

Yours truly,

Newmarket and Lindsay E. L. Co.

B. F. REESOR.

NOTE.—Since above was written, Mr. Reesor has changed his Newmarket plant to 4 ampere.

BELOIT, Wis., July 11th, 1888.

BALL ELECTRIC LIGHT Co.

DEAR SIRS,—When I first purchased the 25-light, 800 c. p. Ball Machine, I was operating about 275 16 c. p. incandescent lights, taking 30 to 35 h. p. I have gradually displaced both gas and incandescent lighting with the 800 c. p. arc, with less cost to consumer and more profit to myself. Am now running about seventy 800 c. p. arc lamps with an expenditure not to exceed 24 h. p., including countershaft and two miles circuit. The lights are steady and brilliant, being pure white, noiseless and in every respect a model light. Have been under no expense for repairs on either lamps or Dynamo since purchased. In fact lamps have run since placed without cleaning. I am in every respect well pleased with the system, and any increase in my plant will mean more Ball 800 c. p. arc<sup>s</sup>

Yours truly,

W. A. KNAPP.

PROVIDENCE, R. I., July 25th 1888.

BALL ELECTRIC LIGHT Co.

GENTLEMEN,—We have in use one 35-light machine which you furnished us in the spring of 1885, and one 70-light machine which you furnished us in the fall of 1887. The 35-light machine is 1,200 c. p., and the 70-light machine is 800 c. p.

In regard to the running of these machines, it is fair to state that the repairs on them since we have owned them have been practically nothing. We consider that we make a large saving in the expense of running, on account of their taking less power than some other makes, and on the whole we think that the lamps give the steadiest light that we have. Forty-one of the lights on the 70-light machine took the place of what were originally 2,000 c. p. lights, and we did not in placing them increase the number of lights at all, so that we are now lighting the same space with forty-one 800 c. p. lights as we formerly did with forty-one 2,000 c. p. We have no hesitation whatever in recommending your system, and consider it first-class in every respect, and should we need any further machinery in this line, we should certainly correspond with you. The machines give us entire satisfaction in every respect.

Yours truly,

RIVERSIDE & OSWEGO MILLS,

Per E. P. CHAPIN, Pres.

**REMEMBER we are the only parties manufacturing  
a 4 ampere or 1,000 c. p. Dynamo—3 Arc  
Lights to the h. p.**

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PETERSBURG, ILLS., May 26th, 1889.

GENTLEMEN:—Some time since I purchased of you an outfit of your 4 ampere 800 c. p. Electric Light Plant. I am using this for central station lighting. I started with 24 lights on a 25-light machine; the quality of the light was such that I was very soon compelled to put in a second order for another 24-lighter. This was also soon filled, and I ordered a 70-lighter. Now I have this about full, and will be compelled to order another 25-lighter in addition. The quality of the light is all that could be desired: they equal in brilliancy many of the "so-called" 2,000 c. p. I have had considerable experience in the Electric light business, and can say I don't think the "Ball" 800 has an equal for steadiness and economy.

Respectfully yours,  
CHAS. D. WRIGHT.

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**WE guarantee our 4 ampere or 1,000 c. p. Dynamos to give the most perfect results for Manufacturing Establishments and for Street Lighting. Power required less than 1-3 of a h. p. per light.**

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CLEVELAND, OHIO.

GENTLEMEN:—Regarding the electric light plant erected by your Company in our ship-yard, we beg to say that it has met our requirements admirably. We are using one of your 25-light, 800 c. p. dynamos belted to the main shaft of our principle ship-yard shop, and operate with it 10 arc lights and 48 incandescent lamps, all in the same circuit. The lights are white and steady, the entire plant economical in operation, and the repairs since its installment last November have been nominal in amount.

Very truly yours,  
THE GLOBE IRON WORKS.

LUTHEK ALLEN, Sec'y.

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WIARTON, ONT., July 24th, 1890.

R. W. ROLSTON, Esq., Chesley, Ont.,

DEAR SIR,—In reply to your letter, I think we are very well pleased with the Electric Light here, they are very good, and for the cost I am fully satisfied that we would not be without them. There are at present fully more lights than there should be according to the capacity of dynamo; we will have to have more dynamo power, as more people are taking the lights. I am very well pleased with the Ball Light and Ball Co.

Yours very truly,  
B. B. MILLER, Reeve.

**Action of the Council of Hagersville, Ont., after a trial test of the Ball Economy 4 ampere Arc Light.**

Moved by Mr. Wm. Stewart, seconded by Geo. Smith.

That whereas the test given by the Ball Electric Light Co. of Toronto of lighting the public streets has proved satisfactory that we enter into a contract with the said Company for lighting the public streets for a period of three years from the 24th of November, 1890, as prepared by the Clerk, and that the Reeve and Clerk be and are hereby authorized to sign said contract on behalf of the Village of Hagersville.

Carried. (Signed), JOSEPH SEYMOUR, Reeve.  
SEAL. HAGERSVILLE, 28th November, 1890.

DRESDEN, June 21st, 1889.

TO AGENT BALL ELECTRIC LIGHT CO.

We, the undersigned, as a Committee appointed by the stockholders of the Mt. Clemens Electric Light were detailed to visit the different towns using Electric Light. We have seen several systems, and we are unanimous in the belief that the Ball 4 amp. system in Dresden is the best system we have seen yet. The Arcs give a very steady light, and the incandescents are superior to any we have ever seen.

(Signed), I. R. EASTMAN, JOHN ROSSOP,  
C. S. CROSSBECK, ROBERT POSNER.

TO THE BALL ELECTRIC LIGHT CO.,

70 Pearl St., Toronto, Ont.

DEAR SIRS,—I have sold my Ball 4 ampere 1,000 c. p. plan to the Village Corporation, and can say I prefer your system before any other, the lights both Arc and Incandescent are steadier and brighter than any others I have seen, and can say for the time I had the plant it did not need one cent for repairs, and I believe the machine runs better now than when it was new.

Yours very truly,

F. J. BARKEY, Markham, Ont.

ST. MARY'S, ONT., July 23rd, 1890.

R. W. ROLSTON, Esq., Chesley, Ont.

DEAR SIR,—Replying to yours of yesterday "Re-Electric Light" in this Town, I beg to say that I cannot speak too highly of the satisfaction the 4 amp. Ball system is giving here. The light is certainly good, and we have found the Company straightforward men to deal with.

I send you by this mail one of our local papers of last week's issue which gives you not only their own opinion but that of London men likewise.

Will be happy to give you any further information in my power.

Respectfully yours, etc.,

T. D. STANLEY, Mayor.

DURHAM, ONT., July 23rd, 1890.

R. W. ROLSTON, Esq., Chesley, Ont.

DEAR SIR,—Yours of the 22nd to hand, in reply we beg to say that the Ball lights here are giving the best of satisfaction. We are more than pleased with it. The shops that would not have it at first are all getting them in now and I expect before fall to see every shop and office using the ball lights. Three of the churches have them in, and all are well pleased.

Yours very truly,

WM. LAIDLAW, Mayor.

LONDON, ONT., July 25th, 1890.

R. W. ROLSTON, Esq., Chesley, Ont.

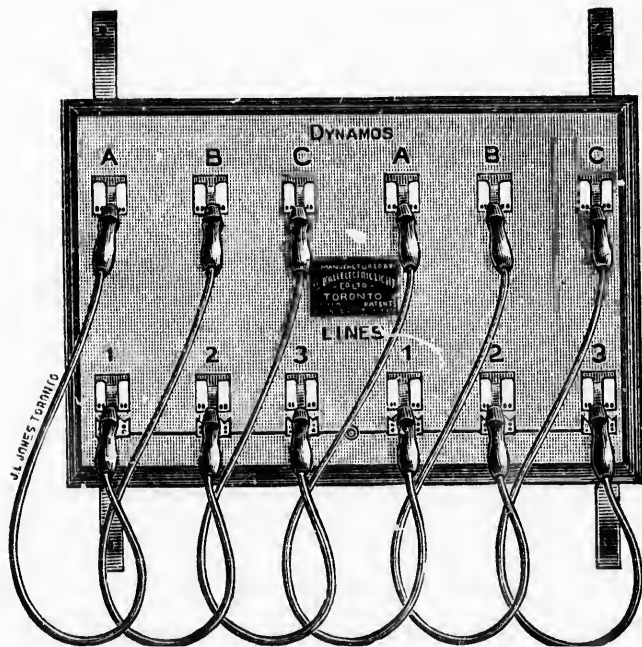
DEAR SIR,—Yours of the 22nd, "Re-Electric Lights," received. I think you need not be afraid of the competition of any Company running 2,000 c. p. lights. For all practical purposes the Ball 1,000 c. p. lights are just as good. Our people were much pleased with those they saw at St. Mary's, and quite a number of the Council who composed the deputation are in favor of using all 1,000 c. p. lights for the City.

The working of the lights was most satisfactory. I think for general use the 1,000 c. p. lights will supersede the 2,000 c. p. As to Incandescent lighting, they appear to be much better on the 4 ampere circuit than on the 8 or 10 ampere, I think you have the best system that is at present in the market, and I have seen most of them

Yours respectfully,

THOS. H. TRACY, City Engineer

## SWITCH BOARD.



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# GUARANTEES



**WE GUARANTEE** our 4 ampere or 1,000 c. p. Dynamo to give the most perfect results for **MANUFACTURING ESTABLISHMENTS,** and for Street Lighting. Power required less than 1-3 of a horse-power per light.

**WE GUARANTEE** our 6 amp. or 1,200 c.p. Dynamo does not require over 1-2 h. p. per light.

**WE GUARANTEE** our 8 ampere or 2,000 nominal c.p. Dynamo does not require over 65-100 h. p. per light.

**WE GUARANTEE** our 10 amp. or full 2,000 c.p. Dynamo does not require over 8-10 h. p. per light.

**WE GUARANTEE** our Dynamo will give much greater efficiency than any other for given metal, power and kind of work.



# FACTS



**OUR DYNAMO** is about one-half the weight of Dynamos of other systems carrying the same number of lights.

**OUR DYNAMO** requires no foundation, but can be placed without bolting down on the floor of any building.

**OUR DYNAMO** will outlast the Dynamos of any other system.

**OUR DYNAMO** requires the least amount of attention and repairs of any in the world.

**OUR LAMP** is purely mechanical, and does not depend upon springs and dash-pots for its proper working.

**OUR LAMP** does not burn out, neither does it require constant cleaning.

**OUR LAMP** is not affected by thunder-storms, nor extinguished by blasting or like causes.

*No other system possesses these advantages.*

Any mechanic can install and successfully operate the "Ball System" without the aid of an expert or electrician.  
Correspondence Solicited.

Estimates furnished for ARC OR INCANDESCENT PLANTS.

**We manufacture Incandescent as  
well as Arc Dynamos.**

---

## **THE BALL ARC LAMPS**

ARE of neat appearance and substantial construction. There are no springs, friction clutches or glycerine dash-pots in them to lose adjustment, but every movement is positive and mechanical. They do not wear or get out of order, and will run for years without repairs and with but slight attention. Their operation is unaffected by vibrations caused by storms, or jarring from machinery or other causes, and will be found reliable at all times. They do not "burn out," neither do they require constant cleaning and watching, as do those of other systems. The light given is white, powerful, *steady* and *noiseless*.

---

*(Practical Electricity, August, 1889).*

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SOME weeks ago the gas company at South Norwalk, Conn., purchased a fifty horse-power Otto gas engine, two 70-light 4-ampere Ball Dynamos and 140 Ball Arc Lamps, each of 800 candle-power. These were duly installed on a six mile circuit. We are now reliably informed that in the operation of these lights only 7,000 cubic feet of gas are consumed in every four and one-half hours' run. Computing gas at fifty cents per thousand feet, it will seem that sixty-five cents per hour will cover the cost, for fuel, of the stated number of lights. That the Ball Company's new system is making a profound impression wherever used, is evidenced also by data which come to us from the Province Worsted Mills; in 1885 ninety-five Ball lamps were put into these mills; in 1887 one hundred more, and in 1888 thirty-five more were added. During the present month three hundred more (most of them 800 candle-power each) are being installed. This means a grand total of 760 lights, a fine tribute, surely, to the worth of the system.



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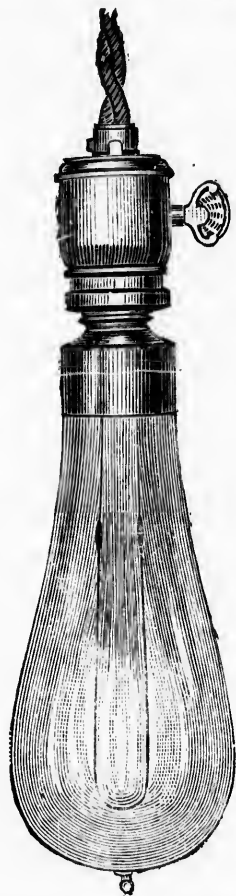
## LIST OF ARC DYNAMOS.

Designation of Machine.	No. Light. X <sub>10</sub> amp.	No. Lights. Y <sub>2,000 c.p., 8½ amp.</sub>	No. Lights Z <sub>1,200 c.p., 6 amp.</sub>	No. Lights 1,000 c.p., 4 amp.	Horse Power at Pulley of Dynamo.	Width of Single Belt in inches.	Size of Pulley.	Belt Speed Required.	Weight of Dynamo.	SIZE IN INCHES.		
										Length.	Width.	Height.
									ft. in.	ft. in.	ft. in.	
A	.....	3	.....	.....	2.0	1	.....	.....	160	.....	.....	.....
B	.....	5	.....	.....	3.5	1	.....	.....	300	2 9	1 2	1 5
B	.....	5	.....	10	3.5	1	.....	.....	300	2 9	1 2	1 5
C	} 8	.....	.....	.....	6.5	1½	12	.....	530	3 3	1 3	1 9
		.....	10	.....	.....	6.3	1	12	530	3 3	1 3	1 9
C	} 14	.....	.....	.....	7.0	2	12	.....	530	3 3	1 3	1 9
		.....	.....	25	.....	8.0	2	12	530	3 3	1 3	1 9
E	} 16	.....	.....	.....	12.0	2½	12	.....	780	3 10	1 4	1 10
		.....	20	.....	.....	12.5	2	12	780	3 10	1 4	1 10
E	} 26	.....	.....	.....	13.0	2	12	.....	780	3 10	1 4	1 10
		.....	.....	35	.....	12.0	3	12	780	3 10	1 4	1 10
F	} 20	.....	.....	.....	15.0	3½	12	.....	990	4 2	1 7	1 11
		.....	25	.....	.....	15.6	3	14	990	4 2	1 7	1 11
F	} 32	.....	.....	.....	15.0	3½	14	.....	990	4 2	1 7	1 11
		.....	.....	50	.....	15.0	3½	14	990	4 2	1 7	1 11
G	} 28	.....	.....	.....	21.0	4	14	.....	1,360	4 5	1 8	2 00
		.....	35	.....	.....	21.0	4½	15	1,360	4 5	1 8	2 00
G	} 45	.....	.....	.....	21.0	4	15	.....	1,360	4 5	1 8	2 00
		.....	.....	70	.....	21.0	4½	15	1,360	4 5	1 8	2 00
G	} 40	.....	.....	.....	24.7	5	15	.....	1,440	4 7	1 8	2 00
		.....	50	.....	.....	29.7	5	15	1,750	5 3	1 11	2 5
H	} 50	.....	.....	.....	30.0	6	15	.....	1,750	5 3	1 11	2 5
		.....	.....	64	.....	29.5	6	15	1,750	5 3	1 11	2 5
I	} 52	.....	.....	.....	38.0	8	.....	.....	2,290	5 8	2 1	2 8
		.....	65	.....	.....	38.6	8	.....	.....	2,290	5 8	2 1
I	} 83	.....	.....	.....	38.0	8	.....	.....	2,290	5 8	2 1	2 8
		.....	.....	.....	.....	46.5	10	.....	.....	2,770	6 0	2 2
J	} 64	.....	.....	.....	47.1	10	.....	.....	2,770	6 0	2 2	2 9
		.....	80	.....	.....	52.5	12	.....	.....	3,200	6 2	2 2
K	} 75	.....	.....	.....	52.5	12	.....	.....	3,200	6 2	2 2	2 10
		.....	100	.....	.....	56.5	12	.....	.....	3,200	6 2	2 2

5,000 FEET PER MINUTE.

**WRITE FOR PRICES FOR ANYTHING  
in the ELECTRIC LIGHT or  
POWER LINE.**

**Positive Guarantees of Durability  
with all our Apparatus.**



**Plants Installed on 30 Days Approval  
for all Bona Fide Purchasers.**

---

**SEND FOR CATALOGUE AND PRICES.**



- No. 11.—Ball Incandescent System.  
In Press { " 12.—Ball Electric Light Supplies.  
" 13.—Ball Alternating System.  
" 14.—Ball Electric Railway System.

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**The Ball Electric Light Co. (Ltd.), Toronto.**

# LIST OF INCANDESCENT DYNAMOS *AUTOMATIC REGULATION.*

Number of Dynamo.	No. Lamps 16 c. p.	Voltage.	Amperes.	Power at Dynamo Pulley.	Speed.	Price.
1	25	110	15	2½	.....	.....
2	40	110	22	3½	.....	.....
3	60	110	30	5	.....	.....
4	86	110	43	7	.....	.....
5	100	110	50	7½	.....	.....
6	150	110	75	12	.....	.....
7	214	110	107	16	.....	.....
8	320	110	160	25	.....	.....
9	500	110	250	40	.....	.....
10	750	110	375	58	.....	.....

*Special Dynamos for Power or Plating made to order.*

## LAMPS, HOLDERS, WIRING, ETC.

ON THE MOST FAVORABLE TERMS.

Our Incandescent Dynamo has the same advantages over other Incandescent Dynamos that our Arc has over other Arc Dynamos.

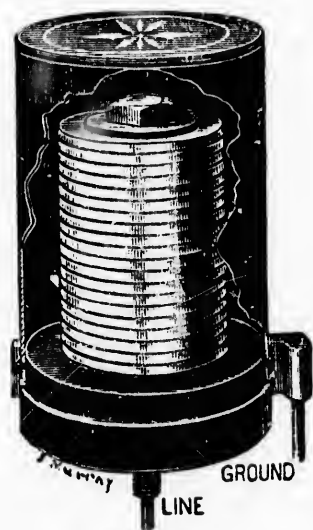
It is, like the Arc, self-regulating, and will carry from one up to its rated capacity without attention, and therefore we offer with it none of the mechanical devices and attachments necessary with the Dynamos of other systems.

## WE GUARANTEE

That our Incandescent lamps can be produced 13 to the H.P.

That our dynamos produce steady lights when reasonably good power is supplied.

That lamps retain their brilliancy and last longer than on any other system. Reason for above—Perfection in regulation.



**Lightning Arrester.**

---

*The Ball Electric Light Co. (Ltd.), Toronto.*

# Electric Motors.

---

OUR Motors are designed after the most approved forms ; the mechanical construction is the best, and with proper care they will last an indefinite length of time. They have no dead centres.

The Motors vary in their construction to meet the requirements of the different electric circuits. It is necessary to know the character of the electric circuit from which the motor is to be operated. If arc, the current in amperes ; if the circuit is incandescent, its rated number of volts must be stated. With this information a Motor can be provided of the size and with the attachments which the work to be done requires.

The regulation of our Motors is practically perfect. In the Incandescent Motors, owing to the careful proportioning of the resistance of field magnets and armature, scarcely any variation in speed is noticeable between full and light load, and this regulation improves in the larger sizes. The Arc Motors are the best governed and most economical on the market.

In writing, state nature of work required of the Motor and probable amount of power needed, also character of the electric light circuit.

We build several different designs, some with one and some with two armatures.

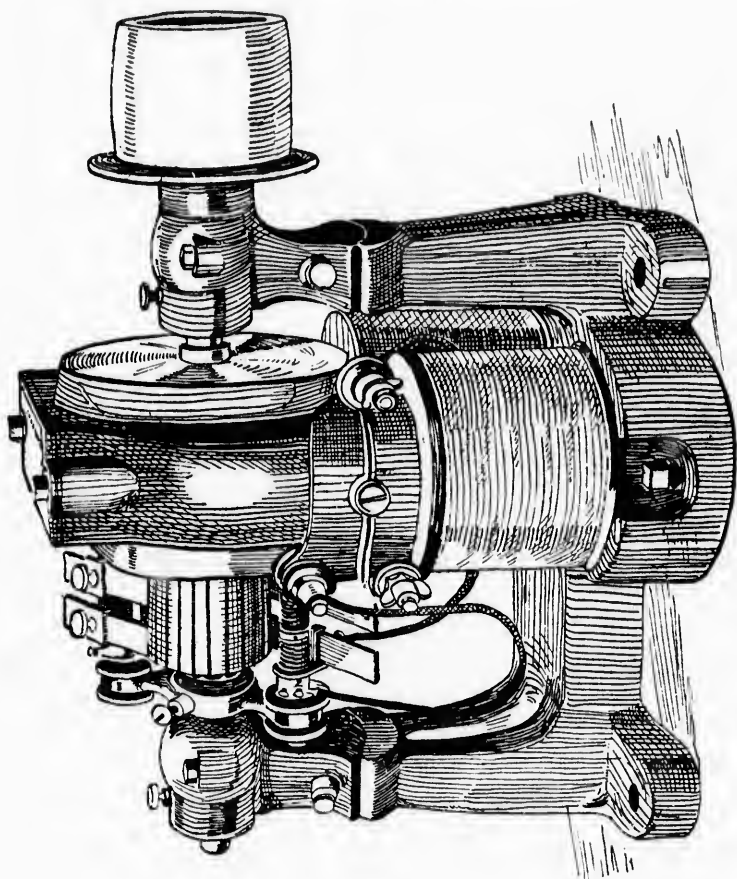
# POWER GENERATORS,

Any Size.

Motors for Arc Circuits.

Motors for Incandescent Circuits.

ELECTRIC RAILWAY MOTORS AND CAR  
TRUCKS, RAILWAY SUPPLIES.



## MOTOR.

Built in all sizes, for 110, 220 and 500 Volt, Constant  
Potential Circuits.

---

*The Ball Electric Light Co. (Ltd.), Toronto.*

S,

AR



Constant

pronto.

## PRICE LIST OF ELECTRIC MOTORS.

Type No.	Horse Power.	Price.	Weight.	Diameter of Pulley in inches.	Face of Pulley in inches.	Approximate Revolutions per Minute.	CIRCUITS.
1	$\frac{1}{2}$	\$32 00	15	1 $\frac{1}{2}$	.....	2,200	Wound for 110, 220, 500 volt constant potential circuits. Wound for 4, 6.5, 8.5 and 10 amp. constant current circuits.
2	$\frac{3}{4}$	90 00	54	3	2	2,000	
3	1	130 00	64	3	2	1,900	
5	1	160 00	105	3 $\frac{3}{4}$	2	1,750	
7	2	250 00	275	4	2 $\frac{1}{2}$	2,400	
8	3	350 00	400	5	3	2,000	
10	4	425 00	525	5	3	1,900	
12	5	500 00	650	6	4	1,800	
16	7 $\frac{1}{2}$	600 00	900	8	4 $\frac{1}{2}$	1,700	
18	8	700 00	1,025	8	5	1,600	
20	10	800 00	1,450	9	6	1,400	Wound for 110, 220, 500 volt constant potential circuits.
25	15	1,000 00	1,900	10	7	1,250	
30	20	1,100 00	.....	.....	.....	.....	
40	25	1,300 00	.....	.....	.....	.....	
50	30	1,500 00	.....	.....	.....	.....	

NOTICE.—The above prices are for Motors complete in every detail and ready to attach to line wires and run. If Motors suitable to any other current strength are required, we can make them at short notice. Automatic in Regulation, in size from 1 H.P. upwards. Larger sizes built at short notice. State whether for Arc or Incandescent circuit.

: : : : : : : : : : . : :

# LIST OF

## Ball 4 Ampere Arc Installations

**1,000 NOMINAL C. P.**



Arnprior Electric Light Co.	- - - - -	Arnprior, Ont.
Arthur Electric Light Co.	- - - - -	Arthur, Ont.
British American Starch Co.	- - - - -	Brantford, Ont.
Brussels Electric Light Co.	- - - - -	Brussels, Ont.
Cannington Electric Light Co.	- - - - -	Cannington, Ont.
Corporation of Seaforth.	- - - - -	Seaforth, Ont.
Corporation of Picton.	- - - - -	Picton, Ont.
Colborne Electric Light Co.	- - - - -	Colborne, Ont.
Chesley Electric Light Co.	- - - - -	Chesley, Ont.
Durham Electric Light Co.	- - - - -	Durham, Ont.
Dresden Electric Light Co.	- - - - -	Dresden, Ont.
Exeter Electric Light Co.	- - - - -	Exeter, Ont.
Hanover Electric Light Co.	- - - - -	Hanover, Ont.
Hagersville Electric Light Co.	- - - - -	Hagersville, Ont.
John Abell	- - - - -	Toronto, Ont.
Kincardine Electric Light Co.	- - - - -	Kincardine, Ont.
Knechtel Furniture Co.	- - - - -	Hanover, Ont.
Lindsay Electric Light Co.	- - - - -	Lindsay, Ont.
Lucknow Electric Light Co.	- - - - -	Lucknow, Ont.
Midland Electric Light Co.	- - - - -	Midland, Ont.
Mimico Asylum, Ontario Government.	- - - - -	Mimico, Ont.
Markham Electric Light Co.	- - - - -	Markham, Ont.
Newmarket Electric Light Co. (changed from 2,000 C.P.)	- - - - -	Newmarket, Ont.
Oakville Electric Light Co.	- - - - -	Oakville, Ont.
Oshawa Electric Light Co. (changed from 2,000 C.P.)	- - - - -	Oshawa, Ont.
Paisley Electric Light Co.	- - - - -	Paisley, Ont.
Palmerston Electric Light Co.	- - - - -	Palmerston, Ont.
Port Elgin Electric Light Co.	- - - - -	Port Elgin, Ont.
St. Mary's Electric Light Co.	- - - - -	St. Mary's, Ont.
Whitby Electric Light Co.	- - - - -	Whitby, Ont.
Warton Electric Light Co.	- - - - -	Warton, Ont.
Victoria Illuminating Co.	- - - - -	Victoria, B.C.



## INCANDESCENT.

Cliff & Forster, Furniture Mfgs. . . . .	Lucknow, Ont.
Gooderham & Worts, Distillers. . . . .	Toronto, Ont.
Insane Asylum (Ontario Government). . . . .	Minico, Ont.
McDougall & Son A., Distillers. . . . .	Halifax, N.S.
Penitentiary (Dominion Government). . . . .	Kingston, Ont.
Robert's Storage Battery Co. . . . .	Toronto, Ont.
Steamboat City of Midland. . . . .	N.S. Navigation Co.
Steamboat Carmonia. . . . .	C.P.R. Line.
Steamboat Seguin. . . . .	Owen Sound, Ont.
Steam Yacht Vivid. . . . .	
St. Clair Tunnel Co. . . . .	Sarnia, Ont.

## - FOREIGN -

### 4 AMPERE.

Aguirre, I. & Sons... . . . .	Mexico, Mex.
Alumbrada Electric de Quezaltenange. . . . .	Quezaltenange, Guat.
American Electric Light Co. . . . .	Kansas City, Mo.
American Amusement Syndicate Co. . . . .	Paris, France.
Carillio, I. . . . .	Maracaibo, C.A.
Clarksburg Electric Light Co. . . . .	Clarksburg, W. Va.
Duquesne Electric Co. . . . .	Pittsburg, Pa.
Fecheimer Bros. & Co. . . . .	Cincinnati, Ohio.
Globe Iron Works. . . . .	Cleveland, Ohio.
Jersey City Electric Light Co. . . . .	Jersey City, N.J.
Kirksville Electric Light, Heat and Power Co. . . . .	Kirksville, Mo.
Knapp, W. A. (increased). . . . .	Beloit, Wis.
New Haven Copper Co. . . . .	Seymour, Conn.
Norwalk Electric Light Co. . . . .	Norwalk, Conn.
Parkhill Manufacturing Co. . . . .	Fitchburg, Mass.
Providence Worsted Mills (700 lamps). . . . .	Providence, R. I.
Riverside and Oswego Mills (increased). . . . .	Providence, R. I.
Stetson & Post Milling Co. . . . .	Seattle, W. T.
Stoughton Lighting Co. . . . .	Stoughton, Mass.
Spencer, Town of . . . . .	Spencer, Mass.
St. Louis Electric Light and Power Co. . . . .	St. Louis, Mo.
Swam, James. . . . .	Seymour, Mass.
Toluca Electric Light Co. . . . .	Toluca, Mexico.
Virginia Electric Light Co. . . . .	Virginia, Ill.
Wamsutta Mills. . . . .	New Bedford Mass.
Wilmington Electric Light Co. . . . .	Wilmington, Del.
Walworth Steam and Power Co. . . . .	Boston, Mass.
Western Warehousing Co. . . . .	Chicago, Ill.
West Coast Elec. Light and Construction Co., San Francisco, Cal. . . . .	
Wright, C. D. . . . .	Petersburg, Ill.

## List of Ball 8 Ampere Arc Installations 2,000 Nominal C. P.



Aylmer Electric Light Co., Aylmer, Ont.  
 Almonte Electric Light Co., Almonte, Ont.  
 A. Gagnon & Co., Quebec Que.  
 Brantford Electric Light Co., Brantford, Ont.  
 Belleville Gas Co., Belleville, Ont.  
 Brockville Gas Co., Brockville, Ont.  
 Berlin Gas Co., Berlin, Ont.  
 Bowmanville Electric Light Co., Bowmanville, Ont.  
 Barrie Electric Light Co., Barrie, Ont.  
 Carleton Place Electric Light Co., Carleton Place, Ont.  
 Central Bridge Works, Peterborough, Ont.  
 Chatham Gas Co., Chatham, Ont.  
 Crowe Iron Works, Guelph, Ont.  
 Dominion Bridge Co., Montreal, Que.  
 Dominion Barb Wire Co., Montreal, Que.  
 Doty Engine Co., Toronto, Ont.  
 Central Press Agency., Toronto, Ont.  
 Canadian Photo Engraving Co., Toronto, Ont.  
 Fredricton Gas Co., Fredricton, N.B.  
 Guelph Gas Co., Guelph, Ont.  
 Gananoque Electric Light Co., Gananoque, Ont.  
 Grimsby Park Co., Grimsby, Ont.  
 Goldie & McCulloch, Galt, Ont.  
 Hamilton Bridge and Tool Co., Hamilton, Ont.  
 Hanlan's Point Ferry Co., Toronto, Ont.  
 Island Park, City of Toronto.  
 Joseph E. Seagram, Waterloo, Ont.  
 Kingston & Pembroke Railway Co., Kingston, Ont.  
 Leamington Electric Light Co., Leamington, Ont.  
 London Electric Light Co., London, Ont.  
 Lakefield Electric Light Co., Lakefield, Ont.  
 Long Branch Park Co., near Toronto, Ont.  
 Mt. Forest Electric Light Co., Mt. Forest, Ont.  
 C. A. Munson, Steam Dredge, Belleville, Ont.  
 Moss Park Skating Rink Co., Toronto, Ont.  
 Massey Mfg. Co., Toronto, Ont.  
 Montreal Rolling Mills, Montreal, Que.  
 Napanee Paper Co., Napanee, Ont.  
 Northumberland Paper Co., Campbellford, Ont.  
 O'Mullen P. & J. Brewery, Halifax, N.S.  
 Ontario Bolt Works Co., Toronto, Ont.  
 Perth Electric Light Co., Perth, Ont.  
 Port Hope Electric Light Co., Port Hope, Ont.  
 Polson Iron Works Co., (Limited), Owen Sound, Ont.  
 Penisular Park Hotel Co., Barrie, Ont.  
 Paris Electric Light Co., Paris, Ont.  
 Perry Printing Co., Toronto, Ont.  
 Renfrew Electric Light Co., Renfrew, Ont.  
 Sherbrooke Gas Co., Sherbrooke, Que.  
 Stratford Gas Co., Stratford, Ont.  
 Simcoe Electric Light Co., Simcoe, Ont.  
 Tilsonburg Electric Light Co., Tilsonburg, Ont.  
 Town of Orillia, Orillia, Ont.  
 City of Victoria, Victoria, B.C.  
 Town of Thorold, Thorold, Ont.  
 Town of Mitchell, Mitchell, Ont.  
 Uxbridge Electric Light Co., Uxbridge, Ont.  
 Walkerton Electric Light Co., Walkerton, Ont

## 8 AMPERE.



Buffalo Bill's Wild West Show.	- - - -	Paris, France.
Chicago Arc Light and Power Co.	- - - -	Chicago, Ill.
Pennsylvania Co. Depot, shops and tracks.	- - - -	Ft. Wayne, Ind.
Pullman Palace Car Co. (increased).	- - - -	Pullman, Ill.
Hartford Electric Light Co. (increased).	- - - -	Hartford, Conn.
Jersey City Electric Light Co. (increased).	- - - -	Jersey City, N. J.
Ingersoll Rock Drill Co. (increased).	- - - -	New York, N. Y.
Bali Illuminating Co.	- - - -	New York, N. Y.
Erie Basin Dry Docks.	- - - -	Brooklyn, N. Y.
Reading Iron Works.	- - - -	Reading, Pa.
Cottage City E. L. & Gas Co. (increased), Martha's Vineyard, Mass.	- - - -	Lansdale, Pa.
Lansdale Electric Light Co.	- - - -	Lansdale, Pa.
Plymouth Electric Light Co.	- - - -	Plymouth, Mass.
Rochester Electric Light Co. (increased)	- - - -	Rochester, N. H.
Scranton Electric Light Co.	- - - -	Scranton, Pa.
Spencer Gas Co. (increased).	- - - -	Spencer, Mass.
National Worsted Mills (increased).	- - - -	Olneyville, R. I.
Phoenix Woolen Mills.	- - - -	Greenwich, R. I.
Riverside and Oswego Mills (increased)	- - - -	Providence, R. I.
Clyde Bleach and Print Works (increased).	- - - -	Riverpoint, R. I.
Waterloo Woolen Mfg. Co. (increased)	- - - -	Waterloo, N. Y.
Scatchard Woolen Mills.	- - - -	Germantown, Pa.
Seyferth Rolling Mills.	- - - -	Seyferth, Pa.
Plymouth Rolling Mills.	- - - -	Conshohocken, Pa.
Iron Bay Manufacturing Co. (two plants).	- - - -	Marquette, Mich.
Tracton Car Co.	- - - -	Philadelphia Pa.
Brill, J. G. & Co.	- - - -	Philadelphia, Pa.
Boies Car Wheel Works.	- - - -	Scranton, Pa.
Hotel Madison (increased).	- - - -	New York City.
Oakland Hotel.	- - - -	St Clair, Mich.
Lake Hapatcong Hotel Co. (increased).	- - - -	New Jersey.
Duryea Starch Works (increased).	- - - -	Glen Cove, N. Y.
American Optical Co.	- - - -	Southbridge, Mass.
Pfannkuche Electric Light Co.	- - - -	Rochester, N. H.
Godfrey Pocket Co.	- - - -	Plymouth, Mass.
Clark Insulated Wire Co.	- - - -	Bristol, Pa.
Campbell & Hitt.	- - - -	Bristol, Pa.
Beaver Head Hydraulic Mining Co	- - - -	Idaho.
Tamarack Copper Mngf. Co. (increased).	- - - -	Houghton, Mich.
Saguache Tunnel, Wm. A Douglas & Co. (increased)	- - - -	Leadville, Colo.
Orman, Crook & Co.	- - - -	Leadville, Colo.
Cascade Tunnel, Nelson Bennett (two plants)	- - - -	Washington, Ter.
Lien Brewery.	- - - -	Philadelphia, Pa.
Centennial Brewery.	- - - -	Philadelphia, Pa.
Jorden, Marsh & Co. (increased).	- - - -	Boston, Mass.
MacCuller, Parker & Co. (increased)	- - - -	Boston, Mass.

# Series Incandescent Lamp

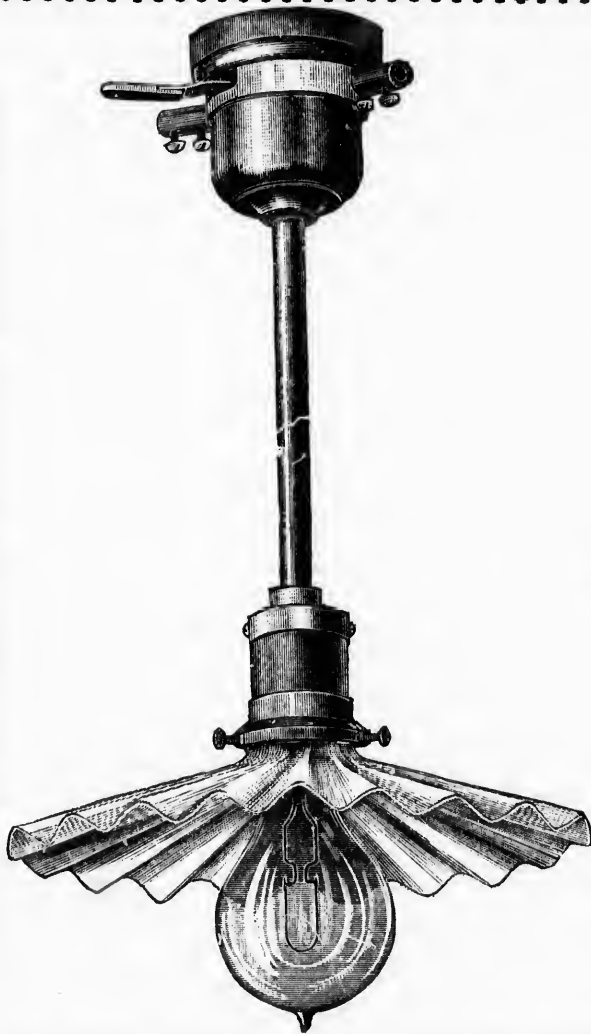
USED ON

**BALL 4 AMPERE ARC CIRCUIT.**

Guaranteed steady and brilliant, if motive power supplied  
is steady.

---

*Over 3,000 of these lamps now in use on Ball Circuits in Canada.*



*We supply these fixtures fitted with either 16, 20, 25, 30 or 50 candle  
power lamps.*

---

**The Ball Electric Light Co. (Ltd.), Toronto.**

mp

plied



We supply these fixtures fitted with either 16, 20, 25, 30 or 50 candle power lamps.

nto.

**Extract from power test made at Seaforth, Ontario, by the expert employed by the Corporation.**

*To the Chairman of the Electric Light Committee of the Town of Seaforth.*

“At your request I have made examination of your Electric Plant with the following results, giving the power delivered by the engine as follows:—

Engine running without dynamos .....	horse power
Power required by 50 4-ampere 1000 nominal C.P. commercial arc lights including circuit. ....	16 “ “
Power required by 20 8-ampere 2,000 nominal C.P. street arc lamps including about three miles of Circuit. ....	13 “ “
Total including friction of engine shafting.	35 “ “

(Signed) J. J. WRIGHT.

December 4th, 1890.

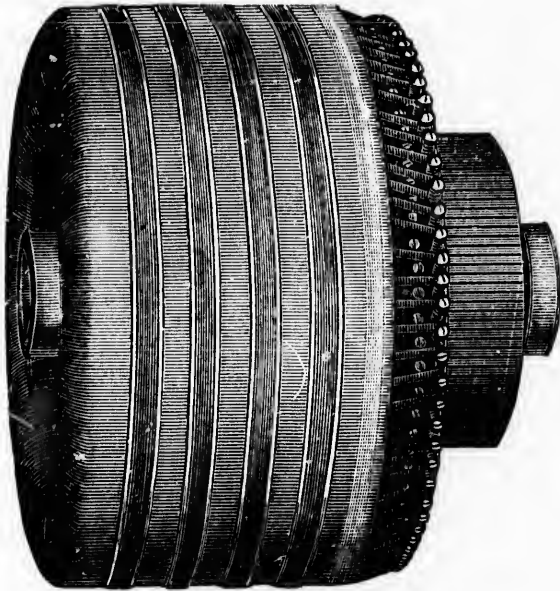
**ST. MARY'S ELECTRIC PLANT.**

Test made by R. Turnbull, Esq., of Messrs. Goldie & McCulloch of Galt, to find out power required to operate “Ball” 4-ampere dynamos in St. Mary's Electric Lighting Station.

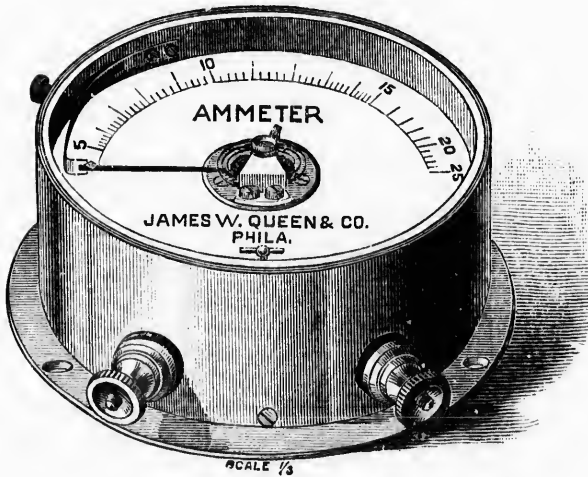
Power required to operate the Arc and Incandescent lamps on three Ball 4-ampere dynamos was as follows:

The dynamos were delivering current for the equivalent of 140 arc lamps over circuits of about thirteen miles, and the power required after deducting the friction of engine and shafting was 45.76 horse power.

(Signed) GOLDIE & McCULLOCH.



**BALL ARMATUUE.**



- THE -

# BALL DYNAMO

IS THE ONLY ONE MANUFACTURED IN  
LARGE SIZES, AND FOR ALL  
CURRENTS.

We build, as standard machines, four different currents, viz. ;

ARC.	{	4 Amp. in, 10, 20, 25, 35, 50 and 70 light sizes.
		6    "    14, 26, 32, 45, 62 and 80    "    "
		8    "    3, 5, 10, 12, 20, 25, 30, 35, 40, 50, 65, 80 and 100 light sizes.
		10   "    8, 16, 20, 30, 40, 52, 64 and 80 light sizes.

Also Incandescent Dynamos, for low tension or short distance lighting, from 25 to 1,000 light capacity.

Long distance Incandescent Dynamos, from 100 lights upwards. All of the above Arc and Incandescent Dynamos are **automatic in regulation**, that is, when lamps are shut off, there will be a saving of power in proportion.

Although we are the oldest manufacturing Electric Light Company in the Dominion, we are always up to the times, and can offer for sale apparatus second to none, and accompanied by positive guarantees as to durability and efficiency.

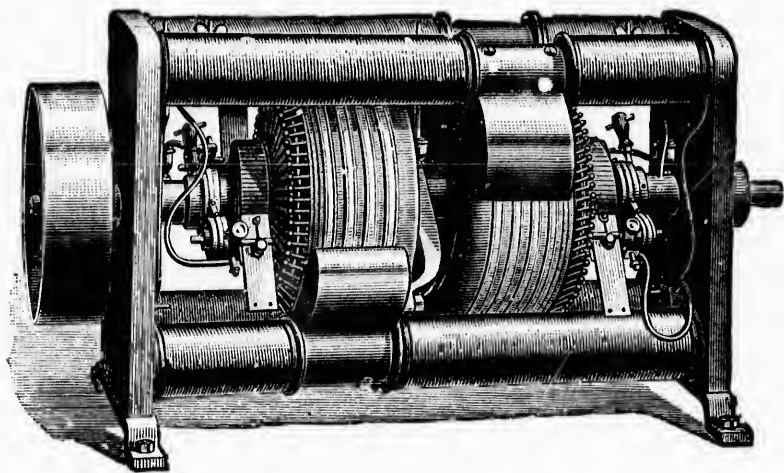
We ask intending purchasers to write for quotations before purchasing elsewhere.

Yours very truly,

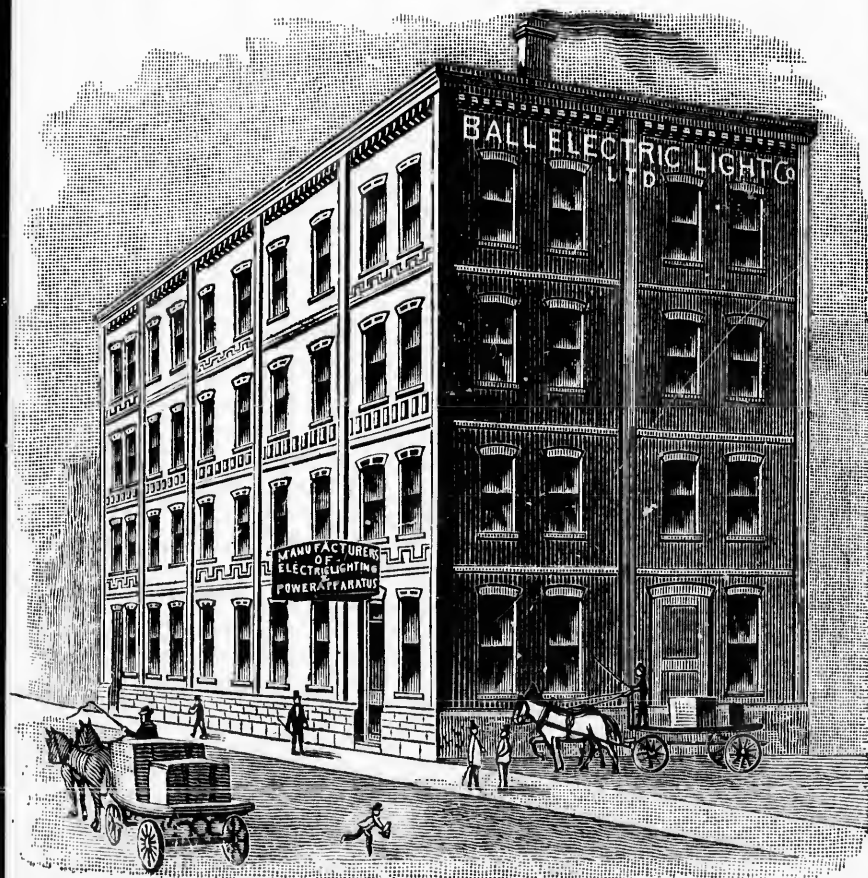
**The BALL ELECTRIC LIGHT CO.**

TORONTO, ONT.

(Limited), OF CANADA.



THE BALL DYNAMO.



70 PEARL ST., TORONTO, ONT.





