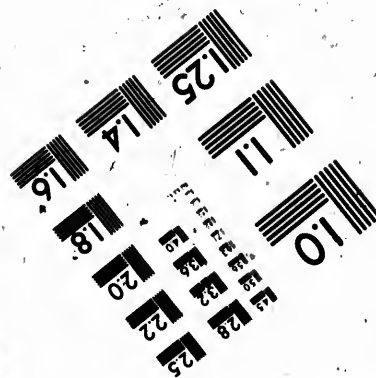
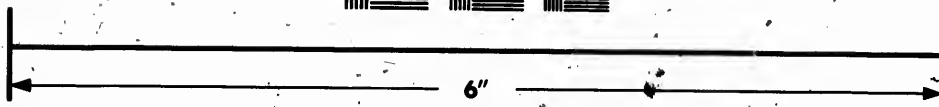
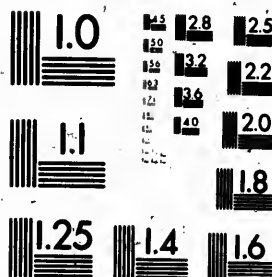


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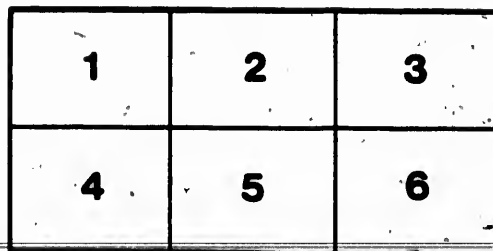
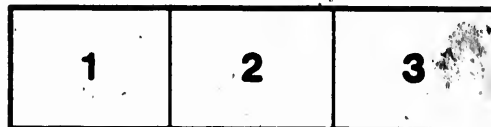
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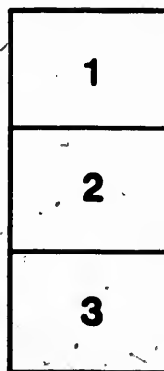
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ILLUSTRATED

Catalogue and Price List

- OF -

THE BALL

Electric Light

APPARATUS

- FOR -

All Purposes of Illumination



- ALSO PRICE LIST OF -

Motors and General Electric Light

Supplies

The Ball Electric Light Co. (Limited)

OF CANADA

67 Adelaide Street West, Toronto

MAIL JOB PRINT, TORONTO





PATENTS

The following are a few of the

CANADIAN PATENTS

Under which we manufacture

Infringers or users of infringing apparatus will be prosecuted.

C. E. BALL,	No. 43164,	JULY 25, 1881
	EXTENDED,	JULY 1886
"	No. 18020,	NOV. 3, 1883
EXTENSION,	No. 1254,	OCT. 19, 1888
C. E. BALL,	No. 17127,	JULY 2, 1883
EXTENSION,	No. 1169,	JUNE 1888
R. E. BALL,	No. 26146,	MAR. 7, 1887
"	No. 26147,	MAR. 7, 1887
"	No. 26156,	MAR. 7, 1887
"	No. 26148,	MAR. 7, 1887
W. A. JOHNSON,	No. 27258,	JULY 25, 1887
"	No. 28085,	NOV. 26, 1887
"	No. 28975,	APR. 19, 1888
"	No. 29003,	APR. 25, 1888

And Patents applied for on Arc Lamps,
Storage Batteries, Motors, Switches,
Cut-outs, Indicators, etc.

THE BALL ELECTRIC LIGHT CO.

(LIMITED)

: : 67 Adelaide Street West : :
Toronto, Ont.

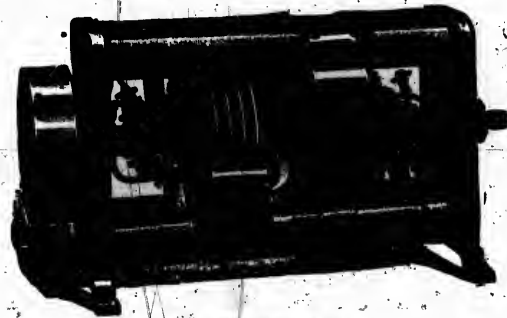
Vol. 38, cat. 3 b.

THE BALL ELECTRIC LIGHT CO.

(LIMITED)

OF CANADA

PHELPS JOHNSON, C.E. - ✓ President
 E.O. JONES - Vice-President
 W. A. JOHNSON - Gen. Manager and Secretary
 J. NORMAN SMITH - Superintendent



MANUFACTURERS OF THE

Ball Electric Light System

-- FOR --

ALL PURPOSES OF ILLUMINATION

-- FOR --

Street, Mercantile and Manufacturing, Domestic,
Mine, Marine and Coast Lighting by Arc or
Incandescent Systems, or both combined

-- ALSO --

Electric Motors and Electric Light Supplies

We offer to the public THE BEST SYSTEM OF ELECTRIC
LIGHTING in the world - The most economical in operation.
The most easily cared for, The most durable, The cheapest
in cost - and invite inquiries and correspondence from
parties interested.

67 Adelaide Street West, TORONTO, ONTARIO

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All Accounts are payable, on the 10th of the month following the purchase of goods.

Bills and Accounts not promptly paid as above are subject to sight draft. No charges for cartage, boxes or packing, except as specified in special instances.

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: : : ELECTRIC LIGHT CO.
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67 Adelaide St. West, Toronto.

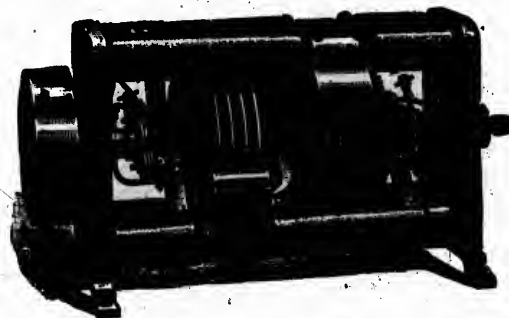
All prices quoted in this Price List are subject to change without notice according to changes in market value.

THE BALL DYNAMO

HAS been condemned by theoretical electricians in the years gone by as an electrical absurdity, and contrary to the laws of electro-dynamic generation; but it has been spoken of by parties using it, and others familiar with it, as the best arc dynamo ever constructed. In later years its opponents have admitted "It is a good dynamo, but wrong in principle. Its merits are in superior material, workmanship and skill." You may have heard of its reputation, its durability and freedom from repairs, and may doubt whether it has the merits claimed for it, or is intrinsically wrong; and may question if its existence for the past six years with a business each year more than doubling that of the year previous, is due alone to superior workmanship and material. To remove such doubt, if it exists, the Ball Electric Light Company submit for your consideration the following practical, electrical and mechanical reasons why the Ball Dynamo has a greater economy, greater durability, greater reliability, and greater freedom from break-downs than any other dynamo made.

1. **Economy.**—It is made of wrought iron, end frames, bars and poles (a feature of the Ball Dynamo alone, and covered by patents), and admitted by all electricians to be the proper construction to obtain the most economical field.

2. The poles are widely separated, and there is no leakage of lines of force from wing to wing of poles as there is in all other dynamos.



3. A bar of iron of a field magnet is nearly saturated as it approaches its poles. The lines of force have a tendency to escape and close through air. In the Ball Dynamo, as can be seen from above design, each armature

takes any loss of magnetic force that was intended for the other armature.

4. The mechanical parts for holding the commutator and driving armature, are constructed of gun metal, and afford no passage-way for the magnetic lines of force other than through the cores of the armature.

5. These mechanical details are so constructed as to form no closed loops or large masses of metal for generation of waste or Foucault currents—a feature peculiar to the Ball machine, and covered by patents.

6. By taking a given weight of wire and spreading it over two cores, as in the Ball Dynamo, instead of over one core, as in all other dynamos, the iron of each armature is brought much nearer the pole pieces than is possible with single armature machines, and the average distance of the copper wire from the poles is much less; hence, a greater output from the Ball than from any single armature machine.

7. When a given amount of copper wire is wound on two cores instead of one, the average distance of wire to core is less, and the wire is wound with greater economy. A given length of wire will give two cores 15% more convolutions than it will on one; hence, an additional output of 15%.

8. **Very Small Loss from Waste or Foucault Currents.**—With a given field exciting two armatures, it is evident that each armature cuts the lines of force of but one-half of this field, and that the local E. M. F. tending to produce waste or Foucault currents in each small cross section of its core revolving before this field, is but half of what it would be were this core revolving before the whole power of the field. This being so, the waste or Foucault current generated therein must be but one-half, and the heat or lost energy resulting therefrom ($C^2 R$) must be but one-quarter; and as we have two armatures, the heat and energy lost in both from Foucault currents will be but half that of a similar core revolving before both poles or full field.

9. **Economy from Mechanical Reasons.**—No work of friction. The Ball machine is so constructed that the force of pull of belt, magnetic pull of armatures by pole, and the force of gravity, balance and neutralize each other. This can be seen by reference to the cut of the machine. The pull-up of the belt being balanced by the weight of armature, and on the other end of the machine the weight of the armature is balanced by the attraction of the top pole.

10. **Reasons for the Great Durability.**—As explained in Section 6, we have in our armature double the radiating surface for the same amount of heat given off, and but one-half as much insulated wire around the core, affording a quick passage for the heat from core to surface.

Also, the heat in core from Foucault currents is but one-quarter that in the same core before bi-polar field. *We know from our experience during the past six years, that absolutely no deterioration takes place from long and continuous use.* This is a point on which our competitors are dumb; and when their armatures give out after from two to five thousand hours of hard usage, they explain matters by saying that the Dynamo has been over-speeded or that the circuit has some time, probably been struck by lightning, but Jupiter in his wrath, overlooks the Ball Dynamo.

11. **Reasons for its Reliability and Freedom from Break-downs.**—The Ball system is the only one using the pure and simple Gramme armature. An endless iron ring entirely surrounded and covered by an endless coil of insulated copper wire—the best high-tension armature made. It is impossible with this armature to be troubled by its striking through or burning to the core, as the core is electrically connected with nothing, and protected for all time by its continuous and solid surrounding of insulated copper wire from having its insulation affected by dust or moisture.

12. The Ball machine has two armatures. Each armature raises the tension half of the full machine. Therefore there exists on our armature but one-half the tension of that on armatures of any other dynamo of corresponding power, and it is subjected to but one-half of the electrical strain.

13. Our dynamo is coupled with the armatures as terminals, and the field circuit between them. By this method it is impossible for the field or any part of the dynamo to be subjected to more than one-half of the tension of the machine, and, as from Section 11 it is impossible for the core to become electrically connected with frame of machine, our field is practically subjected to the tension of its own resistance only. On other dynamos the field is subjected to full tension of the machine.



**Showing what Ball Dynamos
can and are doing under
difficult circum-
stances.**

Croton Aqueduct, New York City.—Circuits underground in wet shafts or tunnels in process of construction—dynamos run to their full capacity day and night, continual daily shifting of lines and lamps to permit blasting, and frequent grounding and short circuiting of wires.

At Shaft 12, McLaughlin, Reilly & Co., Contractors, we have two 10-light dynamos. Dynamo No. 1 has been in operation since May, 1885, to date; has run 23,700 hours, has always been over-speeded, and operates from two to six lights in excess of its rated capacity. In one case this dynamo operated 24 lights continuously for 120 hours. Dynamo No. 2 has been in operation from May, 1886, to date; has a record of 15,200 hours, over-speeded, and operates from two to six lights in excess of its rating.

At Shaft No. 16, operated by Denton, Breuchaud & Co., we have a 10-light dynamo in operation since May, 1885; has run 26,200 hours; runs on an average 14 to 15 lamps; has a record of 34 continuous days and nights without a drop of current.

At Shafts Nos. 18 and 19, Paige, Carey & Co., we have two 10-light dynamos. No. 1 has been in operation since June, 1885, with 25,100 hours to its credit. No. 2 has been in operation since September, 1885, and has 22,900 hours to its credit. Both dynamos run from 12 to 15 lamps each.

So free from heat is the BALL DYNAMO, that the speed of the machine can be increased to furnish current for 50 per cent. more lamps than its nominal capacity, without danger of charring the insulation of the wires, while the speed of single armature dynamos cannot be materially increased without great danger of immediate destruction. The single armature dynamos in the market are rated at the full capacity to which they can be run, while the BALL DYNAMOS, as rated, have a very large margin for safety against injurious heat.

—6—

DON'T forget that rival manufacturers never publish or offer any challenges open to our acceptance, for thorough competitive scientific tests; they all make great claims, but DARE NOT place their systems along-side the BALL in tests involving EFFICIENCY, ECONOMY, DURABILITY AND SIMPLICITY.

DON'T forget that we manufacture and sell in Canada more ARC ELECTRIC LIGHTING MACHINERY than all other companies combined, and that when we are asked to enter competitive tests, we do not decline with trivial excuses such as being "too busy," etc., etc., etc.

THE BALL ELECTRIC LIGHT COMPANY

(LIMITED)

67 ADELAIDE STREET WEST

TORONTO, ONT.

**The Ball Arc System Preferred by the Stoughton
Lighting Company.**

[From Boston Daily Advertiser.]

During the past 12 months certain leading citizens of Stoughton have been making a thorough and exhaustive investigation into the various systems of electric lighting for street and commercial purposes. These gentlemen have just been incorporated as the Stoughton Light, Heat and Power Co., and have contracted with The Ball Electric Light Co., of 63 Equitable Building, Boston, for one of its 70-light dynamos four ampere and 1,000 candle power light plants. These lights will be largely distributed through the streets of the town. It is the purpose of the incorporators to make this a model plant, which will vividly illustrate the advantage which the Ball 1,000-candle power light has over the 2,000 candle power light for street purposes. A greater diffusion of light has long been demanded by the interested public, and the fact is fast becoming established that this object can be accomplished only by the use of the four ampere, 1,000 candle power lamps as furnished by the Ball System.

—7—

THE BALL SYSTEM

OF ELECTRIC LIGHTING

A Few Mechanical and Electrical Facts Regarding It

The important factor in all systems of electric lighting is the DYNAMO, or *Current Generating Machine*. These machines are all based upon the same general principle; all generate currents in the same manner, and with the single exception of the BALL DYNAMO, all machines bear a striking resemblance to each other in the essential elements of their construction, the current being generated in *one* armature, which is rotated within the inductive influence of both the poles of a powerful electro-magnet.



BALL ARMATURE (Patented).

The BALL DYNAMO has *two* armatures, each being rotated within the influence of the separate poles of an electro-magnet.

This construction has been proved to possess great merit, and the BALL DYNAMO is constructed with *less material*, has *less internal resistance*, has *greater efficiency*, generates *less heat*, and to give *equal* results requires *less power* than any other dynamo in the world.

The greatest difficulty with which electricians have to contend in the construction and operation of electric current generators, is the electrical heat developed by the current within the coils and armatures of the machines, which chars the material with which the wires are covered, and destroys the insulation. The BALL DYNAMO *does not heat*.



END VIEW BALL ARMATURE.

A is a brass mounting hub, with grease-catcher on end, which prevents grease getting into interior of armature from the centre bearing.

B Expanding bolt, fitting into metal shoe D, between which and interior surface of armatures is placed the insulating pad E.

The armature is trued up under heat by means of the expanding bolts, after which the jam nuts C are tightened down.

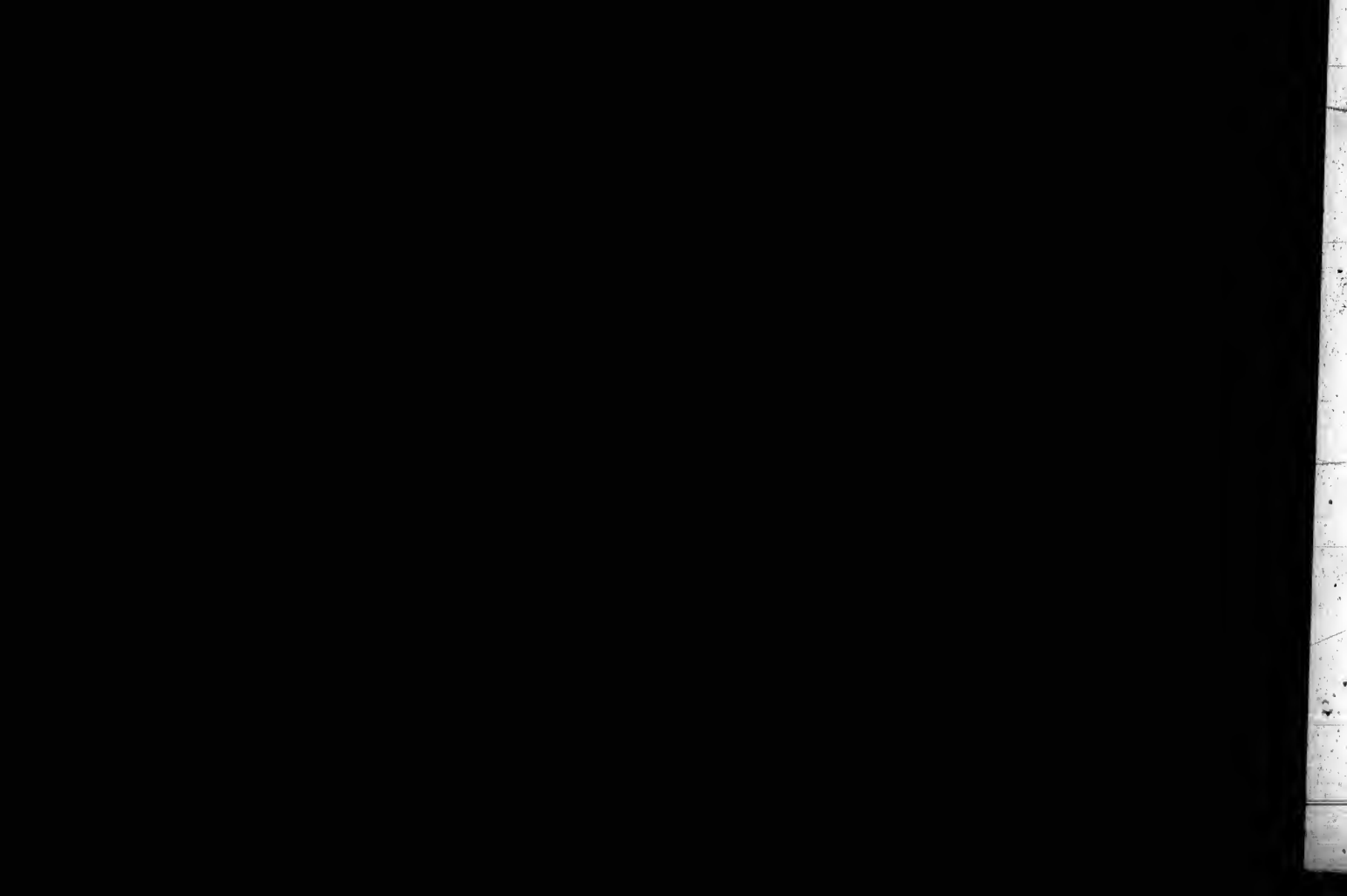
It will be readily seen that there can be no loosening or shifting of the mounting device, and consequently no injury to the insulation of the wires of the armature, either from vibration (and consequent breaking of connections), or scraping or crushing the wires out of position as would ensue from any other mounting device, such as a cone with wedges, which would be tightened by the pull of belt on shaft and as readily loosened if the rotation of dynamo should be reversed, as frequently happens where dynamos are run in couples.

Such a mounting device as this last we used on an experimental dynamo, but abandoned it as it was without merit. We notice that an opposition company have resurrected it. BALL COMMUTATOR.



(Construction Patented)

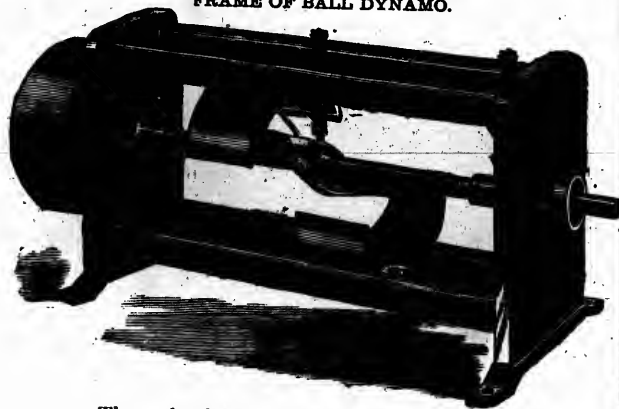
The Ball Commutator is composed of a number of pure copper sections, separated and insulated one from the other by *thick strips of mica*.



The pins or arms connecting segments to armature are thoroughly insulated, the interstices being filled with the best insulating webbing or filling.

Every alternate pin is offset. This admits of making both armature and commutator of a much larger number of sections, and this number is doubled by using two armatures, and, therefore, the current generated by the Ball dynamo is as *steady and constant* as can be produced from a dynamo electric machine. Our 40-light dynamo has 308 sections in both armatures, and this number multiplied by 1,200, the number of revolutions of shaft per minute, gives 369,600 increments of the current into the circuit per minute, or 6,160 per second.

FRAME OF BALL DYNAMO.



The only dynamo frame constructed of wrought iron throughout.

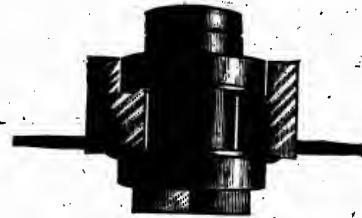
End plates, pole blocks and magnet bars are made from softest, special wrought iron, forged to shape, surface ground and highly finished.

All joints of frame have *scraped and polished* bearing surfaces, and therefore there is no loss of magnetism at these points.

Why do we use an expensive wrought iron frame, while most other makers use a cheap cast frame more easily constructed and fitted? Simply because the magnetic conducting power of best wrought iron is 18, as compared with the magnetic conducting power of cast iron, which is only 10; *i. e.*, a dynamo constructed of wrought iron is 80 per cent. more effective than a dynamo constructed from any equal mass of cast iron.

RESULTS: Our dynamos are lighter and stronger; will run with less power because we require 50 to 80 per cent. less copper wire on our machine than other systems require to do equal work. Will also run with *less heat*.

COMMUTATOR HUB.



(Patented)

ARMATURE HUB.



(Patented)

THE BALL ARC LAMPS

Are of neat appearance and substantial construction. There are no springs, frictions, 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 under any rough treatment to which they may be exposed. 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*.

BALL INCANDESCENT SYSTEM

AUTOMATIC

Although, from an economical view of the various methods of lighting, we have always, and do still recommend the Arc system as preferable to the Incandescent system for lighting all large areas, such as stores, halls, streets, and factories with large work rooms; yet there are many places where Incandescent lights would be preferable, on account of securing a greater subdivision of the electric current, which makes the Incandescent system desirable for lighting public buildings, hotels, flour and cotton mills, residences, mines, steamboats, etc.

To supply the demand for Incandescent lights, we have recently perfected apparatus for Incandescent lighting, which we can confidently recommend to the public as being more simple, economical, safe and reliable than any other Incandescent system.

Our dynamos for Incandescent lighting are self-regulating, without the aid of any mechanical device or attachment. Any desired number of lamps can be run from one up to the capacity of the dynamo. When lamps are turned off there is a corresponding reduction of power.

We guarantee 10 to 16 candle power lamps to the horse power, and with the new economy lamp, 14 to the horse power.

For design and mechanical perfection of construction, our dynamos are not excelled. They take up less floor space than any other make, and they run cool and noiseless.

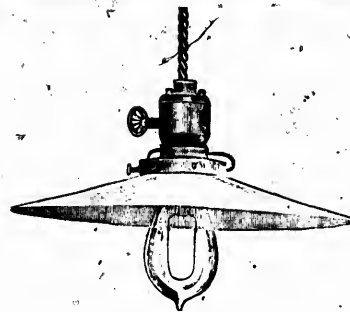
Our lamps, sockets and wiring appliances, are perfect in construction, design and insulation, thus ensuring safety from fire.

We have a skilled erection force, competent to install any sized plant, either Arc or Incandescent, and guarantee first-class work.

Estimates of complete Incandescent plants, including erection, furnished upon receiving plan of building, showing location and number of lamps required

Our Incandescent dynamo has the same advantages over other Incandescent dynamos that our Arc has over other Arc dynamos.

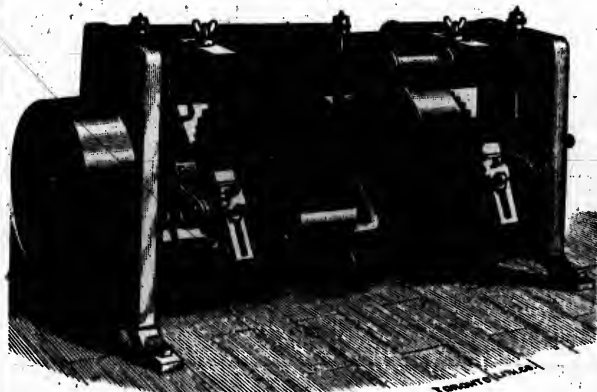
It has, like the Arc, two armatures, is self-regulating, and will carry from one up to its rated capacity without attention, and therefore we offer with it none of the mechanical devices and attachments necessary with the dynamos of other systems.



INCANDESCENT PLANTS

- R. Dunlap & Co. Brooklyn, N. Y.
 Iron Silver Mining Co. (Arc and Incandescent) Leadville, Col.
 Jno. A. Roebling's Sons Co. Trenton, N. J.
 N. C. Foster. Fairchild, Wis.
 R. L. Berglund. Minneapolis, Minn.
 Galaxy Mills. Minneapolis, Minn.
 Steamboat "Carmona" C.P.R. Line, Lake Huron
 St. Clair Tunnel Co., on Grand Trunk Railway Sarnia, Ont.
 Steam Yacht "Vivid." Polson & Co. Toronto, Ont.
 Island Casino, Hanlan's Point. Toronto, Ont.
 A. McDougall & Son, Distillery. Halifax, N.S.
 Gooderham & Worts, Distillery. Toronto, Ont.
 Ontario Government, Asylum for Insane Branch Cottages,
 Mimico, near Toronto, Ont.

And Others.



TESTIMONIALS

RELATING TO OUR INCANDESCENT SYSTEM

BROOKLYN, July 14th, 1888.

DEAR SIRS,

We are more than pleased with your system of Incandescent Electric Lighting. It has worked perfectly from the start—no alterations nor repairs whatever. Our engineer handles the entire plant as easily as though he were an electrician. Gas is not to be considered with it. We not only get very much better illumination at less cost, but the sanitary condition of our rooms is so much improved that our help can work with as much comfort by night as by day. We hesitated for some time about putting in the electric light from fear of our inability to handle it, but considering the simplicity of your system it was comfort and money lost.

Yours respectfully,

R. DUNLAP & CO.

FAIRCHILD, Wis., July 12th, 1888.

GENTLEMEN,

The Ball Electric Light bought off you over one year ago works to a charm, carrying 100 incandescent 16 c. p. lights or its equivalent; giving a splendid, white light. The dynamo runs with very little power, using only a light 3-inch belt, has been no expense to speak of, and runs steadily when needed. I would heartily recommend it to any one needing a good light for saw mill or factory use.

Yours truly,

N. C. FOSTER.

LEADVILLE, Col., July 24th, 1888.

GENTLEMEN,

We have one of your electric plants—one 10 arc light dynamo and one 120-light incandescent dynamo—installed last November and running constantly since. Our lights have been steady and good, and the performance of the plant generally very satisfactory.

Respectfully yours,

S. S. ROBINSON,

GEN'L MGR IRON SILVER MINING CO.

OWEN SOUND AND TORONTO, 6th April, 1889.

MESSRS. BALL ELECTRIC LIGHT CO. (Limited), Toronto.

DEAR SIRS,—We are pleased to state that the Automatic Ball Double Armature Dynamo you placed on the steamboat "Carmona," chartered by the C. P. R. Steamship Line, has given good satisfaction. The lights are brilliant and very steady, and the dynamo regulates very closely no matter how many lamps are in use, and is economical of power. During last season we ran about 80 lamps an average of 1,200 hours each, and only 12 lamps gave out, most of these being broken by accident with baggage, etc.

SMITH & KEIGHLEY, Owners.

—14—

- THE NEW ECONOMY -

Ball Arc Light

LONG ARC—1,000 Nominal Candle Power.
800 Actual Candle Power.
4 Ampere Current.
E. M. F. 49½ 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.

We call your special attention to a new departure in Electric Lighting made by this Company. We have perfected a new dynamo of this system for operating Arc lights of 1,000 nominal c. p.

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 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 in a 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 somewhat unsatisfactory.

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 superiority of finish, that has in the past secured for them a national reputation.

—15—

- WE GUARANTEE -

**Three Arc Lights of Nominal 1,000 Candle
Power each can be operated per every
HORSE-POWER of energy
expended**

**For Stores, Factories and Municipal Lighting,
Effective for Street Illumination placed
500 to 1,000 feet apart.**

**We hereby challenge any other Electric Light
Company now extant to produce a suc-
cessful working and economical
4 Ampere Dynamo for above
Arc Lamps.**

The Ball Electric Light Company
(LIMITED)

67 Adelaide St. West, Toronto

**Partial List of places using 1,000 Nominal C. P.
Lamps of the New Ball System**

Riverside and Oswego Mills, Providence, R.I.,	70 lamps
W. A. Knapp, Beloit, Wis.,	70 lamps
West Coast Electric Light and Construction Co., San Francisco,	50 lamps
Globe Iron Works Co., Cleveland, Ohio,	25 lamps
H. A. Kimball, Manton, R.I.,	70 lamps
St. Louis Electric Power Co., St. Louis, Mo.,	50 lamps
James F. Carrilo, Maracaybo, Venezuela, S.A.,	95 lamps
Willworth Steam Power Co., Boston, Mass.,	70 lamps
Willmington City Electric Co., Willmington, Delaware,	25 lamps
Toluca, Mexico, E. L. Co.,	150 lamps
Novelty Electric Co., Philadelphia, Pa.,	25 lamps
Clarksburg E. L. Co., Clarksburg, W. V.,	70 lamps
Quezaltenango E. L. Co., Guatemala, C.A.,	210 lamps
British American Starch Co., Brantford, Ont.,	20 lamps
Illuminating Co., Victoria, B.C.,	50 lamps
Dresden E. L. Co., Dresden, Ont.,	50 lamps
Arnprior E. L. Co., Arnprior, Ont.,	50 lamps
Lindsay E. L. Co., Lindsay, Ont.,	50 lamps

-16-

- 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.**

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 will pleased with the system, and any increase in my plant will mean more Ball 800 c. p. arcs.

Yours truly,

W. A. KNAPP.

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 30 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,

West Coast Electric Light and Construction Co.,

JOHN LLOYD, Sec.

-17-

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 AND OSWEGO MILLS,

Per E. F. CHAPIN, Pres.

CLEVELAND, Ohio, August 16th, 1888.

Ball Electric Light Co.

GENTLEMEN,

We are using one of your 25-light, 800 c. p. dynamos belted to the main shaft of our principal shipyard 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 CO.,

LUTHER ALLEN, Sec.

-18-

- TESTIMONIALS -

OF RECENT DATE
FROM PARTIES USING BALL ELECTRIC LIGHT
APPARATUS



BOWMANVILLE ELECTRIC LIGHT CO.,
Bowmanville, Ont., Feb. 9, 1888.

We are well pleased with your dynamos and lamps.
We know it is the best system now in use in Canada.

W. J. JONES, *Secretary.*

THE HAMILTON BRIDGE AND TOOL CO.,
Hamilton, Ont., Feb. 9, 1888.

Our works are fitted up with the Ball system of electric lighting, and we have pleasure in stating that the same has given us *every satisfaction*. The *power required* to drive dynamos is *very moderate*, and we have *no trouble* in keeping the apparatus in perfect working order *without* employing *expert* help. Our shop engine has been a good many years in use and is of the ordinary slide valve type, and we drive the dynamo from it, and can testify to the *uniform* and *steady* burning of the lights. We consider your system *specially adapted for manufacturing purposes*.

C. TEIPER, *Manager.*

AYLMER ELECTRIC LIGHT CO.,
Aylmer, Ont., Feb. 15, 1888.

The 35-light plant purchased from you has now been running about fourteen months, and has given us *entire satisfaction*. We consider it the best system of Arc lighting we have yet seen.

MT. FOREST ELECTRIC LIGHT CO.,
Mt. Forest, Ont., Feb. 13, 1888.

We are very much pleased indeed with the 25-light Ball plant bought from you. Strangers say that we have the best light in the country. We have been running about fifteen months.

WM. KINGSTON, *President.*

-19-

See What Our 75-Light Dynamo is Doing

THE WILMINGTON CITY ELECTRIC CO.,

Wilmington, Del., Jan. 29th, 1889.

DEAR SIRS,

We have refrained from saying anything of the "Ball" dynamos and lights until we should be fully satisfied of the truth of our conclusions.

Our first 75-light 2,000 c. p. Ball dynamo we have had in constant use since October, 1887, and the second do., was started December 20th, 1888, and was put in upon the recommendation of the first. These dynamos have had little or no attention, and did not seem to require any. They have run continuously every night—the first in commercial lights, the second in street lamps—without one serious interruption. The lights are brilliant and without a waver; in fact, for steadiness we have never seen their equal.

Our conclusions are, that in our experience and knowledge, we know of no Arc light system that for general utility, minimum of cost for repairs, lack of care and attention required, and for brilliancy and steadiness of light, can compare with the Ball system.

Truly yours,

(Signed) F. L. GILPIN, Sec'y.

Our Dynamos require no foundation, but can be placed without bolting down on the floor of any building.

CINCINNATI, O., July 18th, 1888.

GENTLEMEN,

We have been operating a Ball plant of 80 Arc lamps and three dynamos for the past eight months. We have never had a minute's trouble with the Ball system. Our customers are more than satisfied with their lights. I am now running forty 8 Arc lamps with a 25 h. p. Westinghouse Engine. Some of these lights are eight miles from the station. I have owned and been forced to abandon as bad property three other well-known systems, whose lamps and dynamos were continually burning up, and whose consumption of horse power was more than double that of the Ball, and I was in trouble with them from morning until night and from night until morning. I will say to you that for economical operation, steadiness, purity and whiteness of light, the Ball system is far ahead of all others. We shall within the next thirty days enlarge our station to more than double its present capacity, using Ball apparatus and no other.

Respectfully yours,

BALL ELECT. LIGHT CO. OF CINCINNATI,

FRANK WHITNEY, Gen. Manager.

-20-

NORTHUMBERLAND PAPER CO.,

Campbellford, Ont., Feb. 16th, 1888.

We have been running your system of *Electric Light* for about two years and it has given us entire satisfaction. It has been *no trouble or expense* to us, and you must remember that *we run it constantly from twilight till broad day again* every working day in the year. We do not see how we managed without it before, and would not be without it now for twice what it cost us.

EDMUND G. BURK, Prop.

RENFREW ELECTRIC LIGHT CO.;

Renfrew, Ont., Feb. 9, 1888.

We have the honor to state that we have been using your system of Arc lighting for over two years, and everything about it has given us perfect satisfaction. So far we have seen no system for which we would for a moment think of exchanging.

A. A. WRIGHT & CO.

UXBRIDGE ELECTRIC LIGHT CO.,

Uxbridge, Ont., Feb. 10, 1888.

We have used the Ball system of electric lighting for ten months, and consider that we purchased the *best, simplest, most reliable and economical* system in the market, after a careful examination of the various makes.

I. J. GOULD, M.P.P.

TOWN OF ORILLIA,

Orillia, Ont., Feb. 13, 1888.

I take great pleasure in stating that the three dynamos I have had in charge since last fall are giving perfect satisfaction. The whole plant is giving general satisfaction to all parties using the light. I have no trouble in running the dynamos. They run perfectly cool, and I never need to shift any of the brushes during the night's run.

A. KERR.

-21-

PHILADELPHIA, July 25th, 1888.

MR. CHAS. E. BALL, ESQ.,
Sec'y Ball Electric Light Co., New York.

DEAR SIR,

On April 9th, 1886, we placed in operation one of your Arc light dynamos. The same has been in constant service up to the present time. For reliability we think it has no equal, as in that space it has never failed us once. In the same space of time we have not expended five dollars (\$5) on repairs, including new brushes, of which we have used but three sets, including the initial set furnished with dynamo. As to steadiness and whiteness of light, we think it equal to any, and far superior to many. From our experience, we find we can get more Arc lights per horse power than any other system that has come under our special notice.

Hoping you may receive many reports as favorable as we think this one is, and also tendering our hearty congratulations to the Ball Company for such a perfect system of lighting, we subscribe ourselves,

Very respectfully yours,

S. C. WEBSTER & SON.

CHICAGO, August 13th, 1888.

GENTLEMEN,

We purchased a Ball plant in May, 1886, consisting of a Ball 20-light, 10 ampere dynamo, 12 Arc lamps and 21 16 c. p. Incandescent lamps, operated on the same circuit by a "Sun" distributing box.

During the past two years we have expended about \$40, of which less than \$5 were for repairs strictly, the balance having been expended in overhauling, cleaning and doing work which, while not absolutely necessary, was such as any practical firm would give their machinery.

The light has given us perfect satisfaction; burns with steadiness and without noise, and is always ready and requires very little attention. We are running our lights with a "Straight Line" engine, put in by Mr. Raymond, and belt from engine to dynamo with a 2 1/2 cotton leather belt. We have used only the one belt in two years. The belt runs very slack and causes much comment.

In conclusion we would say, we consider the Ball light, after our experience of two years, in use from 8 a. m. to 6 p. m. daily (Sundays excepted), as near perfection as it is possible. It has certainly no superior for white, steady, noiseless and sure light.

Yours faithfully,

GROMMES & ULLRICH.

-22-

GANANOQUE ELECTRIC LIGHT CO.,

Gananoque, Ont., Feb. 14, 1888.

We have much pleasure in bearing testimony to the efficiency of your system of electric lighting. Before we purchased the Ball plant we investigated it and two or three others, and came to the conclusion that we preferred your system on account of a *uniform* and *steady* light. After a year's use of the system we are more than pleased with it, and those of our customers who have compared with lights elsewhere claim that they are being furnished with a light *superior* to any they have seen. With the exception of an accident, which was no fault of the machine, we have had *no repairs* to put upon it.

TAYLOR & WALTON, Props.

THE AMERICAN INSTITUTE OF THE CITY OF NEW YORK, Chas. Wager, Gen. Supt.:—I take great pleasure in certifying to the fact that the forty-two arc lights furnished by you in the machinery department of this exhibition have proven entirely satisfactory. So far as I am able to judge, the light is certainly better, in that it is steadier, softer, and at the same time more brilliant, than any light ever furnished on these premises.

N. Y. & SEA BEACH RAILWAY CO., Alrick H. Man,
Managing Director and Treasurer:—..... The Ball lights give the utmost satisfaction.

OAKLAND HOTEL, St. Clair Mineral Springs, Mich.,
Wm. S. Hopkins (Telegram):—Plant in operation last night. It is the most beautiful and satisfactory arc light in the world. I congratulate myself for adopting it."

GOLDIE & McCULLOUGH, Galt, Ontario, Can.:
Has given us entire satisfaction.... We repeatedly run the lights from dark to daylight..... Before using the "Ball" we had the _____ Incandescent System, but found it too much trouble and cost to continue its use.

ONTARIO BOLT CO., Toronto, Ontario, Can.: Satisfactory. We consider it the best light obtainable for our purpose, and much cheaper than any other.

DOMINION BRIDGE CO., Toronto, Ontario, Can.:
Perfectly satisfactory. No repairs have been needed... But little attention given to dynamo and the cost of lighting is practically only the cost of carbon and fuel.

GRIMSBY CAMP GROUND CO., Grimsby, Ontario, Can.: Your promise to illuminate our grounds in a superior manner has been carried out by you in a way exceeding our most sanguine expectations. Our committee carefully investigated the various systems at Toronto, Buffalo, Chatauqua and Cleveland, and now unhesitatingly endorse your statements regarding the superiority of the Ball system of Electric Lighting.

-23-

PORT HOPE ELECTRIC LIGHT CO., Port Hope, Ontario, Can.: Have not found any reason for complaint. The plant has worked with a brilliancy and steadiness that causes almost universal comment from strangers coming to our town from places where other systems are in use.

JOHN DOTY ENGINE CO., Toronto, Ontario, Can.: Dynamo and lamps have given us entire satisfaction. . . . The dynamo simply needs to be started and stopped. . . . Our output has increased considerably since adopting the Electric Light to replace gas.

JERSEY CITY ELECTRIC LIGHT CO., Jersey City, N. J. (Lewis F. Lyne, Supt.): I consider your system the most economical of any I have ever used or seen. . . . While our other machines and lamps have given us an endless amount of trouble, yours have taken care of themselves. . . . Our machines during the past year have only required the turning up of the commutators, and the lamps only occasional oiling. Thus our repairs have cost practically nothing.

The above Company have now some 350 Ball Arc Lights in circuit. An armature of a "Fuller" dynamo in their station was recently burned through the wires of outside circuit being brought into contact by men engaged in moving a building. Our competitors are reporting it to have been a "Ball" dynamo. No armature of a "Ball" dynamo has ever yet been burned.

WATERLOO WOOLLEN MANUF'G CO., Waterloo, N. Y. (A. M. Patterson, President) says: . . . Our opinion in regard to the thirty-light dynamo, purchased after examination and observation of a number of different systems, is that we have seen no reason to regret our selection. Of all the systems we have seen this is the simplest in operation. The attendants have no knowledge of electricity, nor have they had any previous experience, yet we never had one moment's trouble.

CLYDE BLEACHING AND PRINTING WORKS (S. H. Greene & Sons), Riverport, R. I.: The thirty-light dynamo we purchased from you last fall has given entire satisfaction, and the care required has been very little to keep both the dynamo and lamps in good order. We drive it from the main shaft through a 2½ inch cotton leather belt, running rather less than 5,000 feet per minute, and the belt has been laced only once since the machine was started. The light is extremely pleasing, especially to our machine printers, who require for their work only the very best of light.

NATIONAL WORSTED CO., Olneyville, R. I.: Has proved entirely satisfactory. . . . One great point in our light is, they are steady and do not flicker, as many other kinds of lights do.

FACTS

OUR DYNAMOS are about one-half the weight of dynamos of other systems carrying the same number of lights.

OUR DYNAMOS require no foundation, but can be placed without bolting down on the floor of any building.

OUR DYNAMOS will outlast the dynamos of any other system.

OUR DYNAMOS require the least amount of attention of any in the world.

OUR DAMPS are purely mechanical and do not depend upon springs and dash pots for their proper working.

OUR LAMPS do not burn out, neither do they require constant cleaning.

OUR LAMPS are not affected by thunder storms, nor extinguished by blasting or like causes.

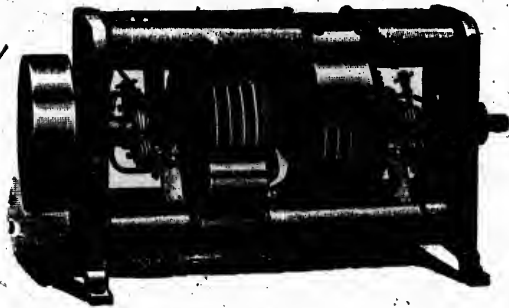
No other system possesses these advantages.

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

WE GUARANTEE

- 1.—Our 4 ampere of 1,000 c. p. Dynamos to give the most perfect results for MANUFACTURING ESTABLISHMENTS and for Street Lighting. Power required less than ⅓ of a horse-power per light.
- 2.—Our 6-ampere Dynamos do not require over ½ H. P. per light.
- 3.—Our 8-ampere Dynamos do not require over ⅔ H. P. per light.
- 4.—Our 10-ampere Dynamos do not require over ¾ H. P. per light.
- 5.—To renew any "Ball" Armature should it ever "burn out" from any inherent cause.
- 6.—To insure any Armature or Commutator that may fail from inherent defects, during three years, for the sum of \$25.
- 7.—To substitute successfully our Dynamos to maintain lamps of other systems now in use.

THE BALL DYNAMO.



PRICE LIST OF ARC DYNAMOS.

Designation of Machine.	A	B	C	D	E	F	G	H	K	No. Lights			No. Lights 1,000 c. p., 1 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.			PRICE.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
										10 amp.	2,000 c. p., 2 1/2 amp.	1,200 c. p., 1 1/2 amp.							Length.	Width.	Height.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	8	10	14	26	32	45	50	70	100	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138	140	142	144	146	148	150	152	154	156	158	160	162	164	166	168	170	172	174	176	178	180	182	184	186	188	190	192	194	196	198	200	202	204	206	208	210	212	214	216	218	220	222	224	226	228	230	232	234	236	238	240	242	244	246	248	250	252	254	256	258	260	262	264	266	268	270	272	274	276	278	280	282	284	286	288	290	292	294	296	298	300	302	304	306	308	310	312	314	316	318	320	322	324	326	328	330	332	334	336	338	340	342	344	346	348	350	352	354	356	358	360	362	364	366	368	370	372	374	376	378	380	382	384	386	388	390	392	394	396	398	400	402	404	406	408	410	412	414	416	418	420	422	424	426	428	430	432	434	436	438	440	442	444	446	448	450	452	454	456	458	460	462	464	466	468	470	472	474	476	478	480	482	484	486	488	490	492	494	496	498	500	502	504	506	508	510	512	514	516	518	520	522	524	526	528	530	532	534	536	538	540	542	544	546	548	550	552	554	556	558	560	562	564	566	568	570	572	574	576	578	580	582	584	586	588	590	592	594	596	598	600	602	604	606	608	610	612	614	616	618	620	622	624	626	628	630	632	634	636	638	640	642	644	646	648	650	652	654	656	658	660	662	664	666	668	670	672	674	676	678	680	682	684	686	688	690	692	694	696	698	700	702	704	706	708	710	712	714	716	718	720	722	724	726	728	730	732	734	736	738	740	742	744	746	748	750	752	754	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784	786	788	790	792	794	796	798	800	802	804	806	808	810	812	814	816	818	820	822	824	826	828	830	832	834	836	838	840	842	844	846	848	850	852	854	856	858	860	862	864	866	868	870	872	874	876	878	880	882	884	886	888	890	892	894	896	898	900	902	904	906	908	910	912	914	916	918	920	922	924	926	928	930	932	934	936	938	940	942	944	946	948	950	952	954	956	958	960	962	964	966	968	970	972	974	976	978	980	982	984	986	988	990	992	994	996	998	1000	1002	1004	1006	1008	1010	1012	1014	1016	1018	1020	1022	1024	1026	1028	1030	1032	1034	1036	1038	1040	1042	1044	1046	1048	1050	1052	1054	1056	1058	1060	1062	1064	1066	1068	1070	1072	1074	1076	1078	1080	1082	1084	1086	1088	1090	1092	1094	1096	1098	1100	1102	1104	1106	1108	1110	1112	1114	1116	1118	1120	1122	1124	1126	1128	1130	1132	1134	1136	1138	1140	1142	1144	1146	1148	1150	1152	1154	1156	1158	1160	1162	1164	1166	1168	1170	1172	1174	1176	1178	1180	1182	1184	1186	1188	1190	1192	1194	1196	1198	1200	1202	1204	1206	1208	1210	1212	1214	1216	1218	1220	1222	1224	1226	1228	1230	1232	1234	1236	1238	1240	1242	1244	1246	1248	1250	1252	1254	1256	1258	1260	1262	1264	1266	1268	1270	1272	1274	1276	1278	1280	1282	1284	1286	1288	1290	1292	1294	1296	1298	1300	1302	1304	1306	1308	1310	1312	1314	1316	1318	1320	1322	1324	1326	1328	1330	1332	1334	1336	1338	1340	1342	1344	1346	1348	1350	1352	1354	1356	1358	1360	1362	1364	1366	1368	1370	1372	1374	1376	1378	1380	1382	1384	1386	1388	1390	1392	1394	1396	1398	1400	1402	1404	1406	1408	1410	1412	1414	1416	1418	1420	1422	1424	1426	1428	1430	1432	1434	1436	1438	1440	1442	1444	1446	1448	1450	1452	1454	1456	1458	1460	1462	1464	1466	1468	1470	1472	1474	1476	1478	1480	1482	1484	1486	1488	1490	1492	1494	1496	1498	1500	1502	1504	1506	1508	1510	1512	1514	1516	1518	1520	1522	1524	1526	1528	1530	1532	1534	1536	1538	1540	1542	1544	1546	1548	1550	1552	1554	1556	1558	1560	1562	1564	1566	1568	1570	1572	1574	1576	1578	1580	1582	1584	1586	1588	1590	1592	1594	1596	1598	1600	1602	1604	1606	1608	1610	1612	1614	1616	1618	1620	1622	1624	1626	1628	1630	1632	1634	1636	1638	1640	1642	1644	1646	1648	1650	1652	1654	1656	1658	1660	1662	1664	1666	1668	1670	1672	1674	1676	1678	1680	1682	1684	1686	1688	1690	1692	1694	1696	1698	1700	1702	1704	1706	1708	1710	1712	1714	1716	1718	1720	1722	1724	1726	1728	1730	1732	1734	1736	1738	1740	1742	1744	1746	1748	1750	1752	1754	1756	1758	1760	1762	1764	1766	1768	1770	1772	1774	1776	1778	1780	1782	1784	1786	1788	1790	1792	1794	1796	1798	1800	1802	1804	1806	1808	1810	1812	1814	1816	1818	1820	1822	1824	1826	1828	1830	1832	1834	1836	1838	1840	1842	1844	1846	1848	1850	1852	1854	1856	1858	1860	1862	1864	1866	1868	1870	1872	1874	1876	1878	1880	1882	1884	1886	1888	1890	1892	1894	1896	1898	1900	1902	1904	1906	1908	1910	1912	1914	1916	1918	1920	1922	1924	1926	1928	1930	1932	1934	1936	1938	1940	1942	1944	1946	1948	1950	1952	1954	1956	1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040	2042	2044	2046	2048	2050	2052	2054	2056	2058	2060	2062	2064	2066	2068	2070	2072	2074	2076	2078	2080	2082	2084	2086	2088	2090	2092	2094	2096	2098	2100	2102	2104	2106	2108	2110	2112	2114	2116	2118	2120	2122	2124	2126	2128	2130	2132	2134	2136	2138	2140	2142	2144	2146	2148	2150	2152	2154	2156	2158	2160	2162	2164	2166	2168	2170	2172	2174	2176	2178	2180	2182	2184	2186	2188	2190	2192	2194	2196	2198	2200	2202	2204	2206	2208	2210	2212	2214	2216	2218	2220	2222	2224	2226	2228	2230	2232	2234	2236	2238	2240	2242	2244	2246	2248	2250	2252	2254	2256	2258	2260	2262	2264	2266	2268	2270	2272	2274	2276	2278	2280	2282	2284	2286	2288	2290	2292	2294	2296	2298	2300	2302	2304	2306	2308	2310	2312	2314	2316	2318	2320	2322	2324	2326	2328	2330	2332	2334	2336	2338	2340	2342	2344	2346	2348	2350	2352	2354	2356	2358	2360	2362	2364	2366	2368	2370	2372	2374	2376	2378	2380	2382	2384	2386	2388	2390	2392	2394	2396	2398	2400	2402	2404	2406	2408	2410	2412	2414	2416	2418	2420	2422	2424	2426	2428	2430	2432	2434	2436	2438	2440	2442	2444	2446	2448	2450	2452	2454	2456	2458	2460	2462	2464	2466</

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 centers.

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 form which it is to be operated. If arc, the current in amperes; if the circuit be 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. *The cut below is from an experimental machine, and is not as well proportioned as present manufacture.*



ELECTRIC MOTORS

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	1	\$ 32.00	15	1 1/2		2,200	Wound for 50 to 110 volt constant potential (incandescent). for 4, 6.5, 8.5 and 10 amp. const. current (Arc).
2	1	80.00	54	3	2	2,000	Wound for 50 to 110 volt constant potential. for 4, 6.5, 8.5 and 10 amp. const. current.
3	1	130.00	64	3	2	1,900	Wound for 50 to 110 volt constant potential. for 4, 6.5, 8.5 and 10 amp. const. current.
5	1	160.00	105	3 1/2	2	1,750	Wound for 50 to 220 volt constant potential. for 4, 6.5, 8.5 and 10 amp. const. current.
7	2	250.00	275	4	2 1/2	2,400	Wound for 110, 220, 400 volt constant potential. for 4, 6.5, 8.5 and 10 amp. const. current.
8	3	350.00	400	5	3	2,000	Wound for 110, 220, 400 volt constant potential. for 4, 6.5, 8.5 and 10 amp. const. current.
10	4	425.00	525	5	3	1,900	Wound for 110, 220, 400 volt constant potential. for 4, 6.5, 8.5 and 10 amp. const. current.
12	5	500.00	650	6	4	1,800	Wound for 110, 220, 400 volt constant potential. for 4, 6.5, 8.5 and 10 amp. const. current.
16	7	600.00	800	8	4 1/2	1,700	Wound for 110, 220, 400 volt constant potential.
18	8	700.00	1,025	8	5	1,600	Wound for 110, 220, 400 volt constant potential.
20	10	800.00	1,450	9	6	1,400	Wound for 110, 220, 400 volt constant potential.
30	15	1,100.00	1,900	10	7	1,250	Wound for 110, 220, 400 volt constant potential.
40	20	1,300.00					
50	25	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 sizes from 1 H. P. upwards. Larger sizes built at short notice. State whether for Arc or Incandescent Circuit.

THE BALL DYNAMO

HAS THE FOLLOWING ADVANTAGES OVER ALL OTHERS

It produces a more constant and uniform current, and far more *clear, steady* and *noiseless lights*. It requires no cooling, regulating or safety devices whatever.

It will *outlast* any other Dynamo, as the normal heat generated within it is much less, and more readily radiated.

It does not require to be run at an exact speed, and any power of ordinary uniformity will produce good results.

It is the only Dynamo that will not overheat when subjected to the variable speed of engines used in mills, factories, etc. Over-speeding does not affect it.

It does not require the attendance of an expert, but any intelligent man can quickly be taught to operate it with success.

It has made the longest continuous runs of any Dynamo yet constructed without heating.

It has been in practical operation for six years, and has been subjected to more severe tests than any other machine in the market.

It has extraordinary efficiency, and leaves but little, if any, room for improvement in electrical generation by induction.

Its mechanical construction is of the best. The shaft is hammered steel, ground to standard size, the bearings gun metal, the frame forged iron, surface ground and finished bright. The workmanship will bear the closest inspection. The wear of commutators and consumption of brush copper is very slight.

It requires but two-thirds of one horse-power to produce each full arc light of 2,000 nominal candle-power.

It requires but two-thirds of the power required by all other Dynamos made in Canada or United States to produce an equal amount of light.

It is equivalent to two Dynamos of any other make, for the reason that if one armature is disabled by accident, the other armature will maintain nearly three-fourths of the full number of lights.

It will give more perfect results with less skilled attendance than any other Dynamo.

It can operate arc or incandescent lights separately, or both in combination, in one circuit, or in two separate circuits, at the same time.

PRICE LIST OF AUTOMATIC INCANDESCENT DYNAMOS



Number of Machine.	Volts.	Amperes.	No. Lights 16 c. p.	Horse Power at Pulley of Dynamo.	Width of Single Belt in inches.	Belt Speed Required.	Weight of Dynamo.	SIZE IN INCHES.			PRICE.
								Length.	Width.	Height.	
1	100	22	40	3	1 1/2	5,000 FT. PER MIN.	320	2' 9"	1' 2"	1' 6"	\$ 500.00
2	63	81	66	6 1/2	2		580	3' 3"	1' 3"	1' 9"	750.00
3	100	43	86	6 1/2	2		530	3' 3"	1' 3"	1' 9"	900.00
4	95	83	121	12 1/2	3		780	3' 10"	1' 4"	1' 10"	1,100.00
5	100.	107	214	15 1/2	3 1/2		990	4' 2"	1' 7"	1' 11"	1,500.00
6	50	200	164	15 1/2	3 1/2		990	"	"	"	1,900.00
7	75	200	250	23	5		1,360	4' 5"	1' 8"	2' 0"	1,600.00

SAWYER, MANN AND EDISON INCANDESCENT
LAMPS AND SOCKETS.



Keyless Socket	\$0.85
Key Socket.....	1.00

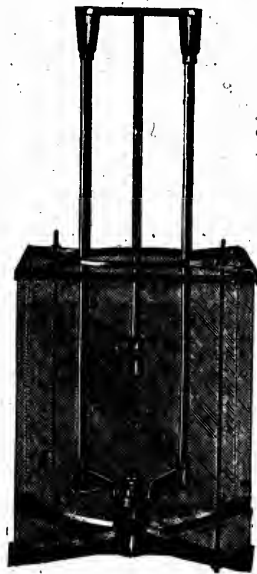
LAMPS.

50, 90, 95, 100, 105, 110 Volts.

10, 12, 16 and 20 Candle Power, each.....	\$1.00
24 Candle Power	1.25
32 "	1.30
50 "	1.60
100 "	2.75
Discount	

Above lamps in stock. Other makes or sizes
delivered at short notice.

WINDOW GLASS FRAMES FOR STREET LAMPS.



(PATENTED.)

Lamps can be carboned without removing frame. Flies and dust fall through. Cheaper than buying globes. We recommend the use of Storm Covers in connection with them in winter season.

Price of Frames, including connecting rods and nuts, complete, \$1.50.

CARBONS.



FIRST QUALITY, PLAIN OR COATED.

$\frac{7}{8}$ x 12	per 1,000	\$14.00
$\frac{1}{2}$ x 12	" "	15.50
$\frac{7}{8}$ x 8	" "	7.00
$\frac{5}{8}$ x 12	" "	20.00

(INDICATORS
 AMMETERS, VOLTMETERS.



(PATENTED.)

We make either Ammeters or Voltmeters in this style for
 Arc or Incandescent Circuits. Price, each, \$25.00.



STANDARD CURRENT INDICA-
 TOR FOR ALL ARC CIRCUITS,
 CONSTANT AND
 RELIABLE.

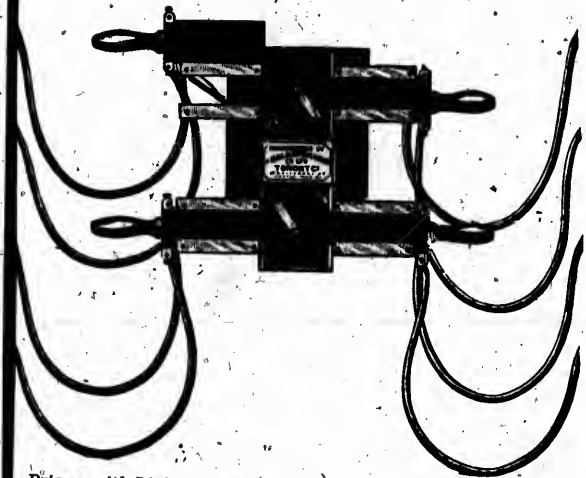
Price, each, \$15.00.

(PATENTED.)

-34-

STATION SWITCHES.

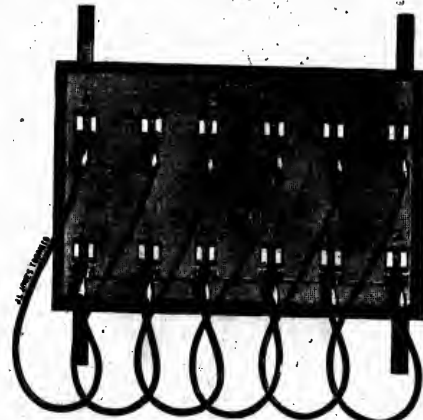
No. 1.



Prices, with Lightning Arrestor:

2 Circuit,	\$ 50.00
3 "	75.00
4 "	100.00

No. 2.



2 Circuit,	\$40.00
3 "	60.00
4 "	80.00

With Lightning Arrestor.

-35-



Price, each, - - \$30.00

SWITCHES AND CUT-OFFS.

CUT-OFF FOR STORE-FRONT.

For Arc Circuits. Sure and Safe.

Makes contact before breaking same.

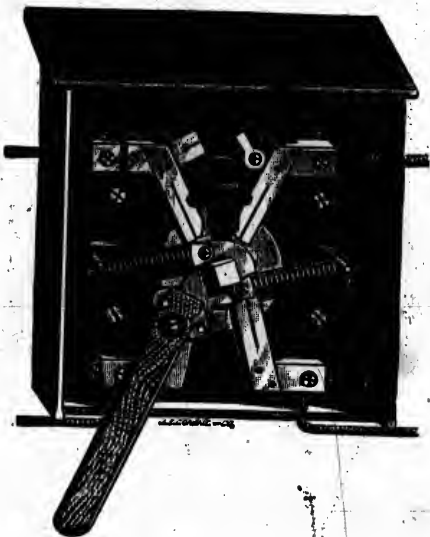


(Patented.)

Price, each, - - \$1.75

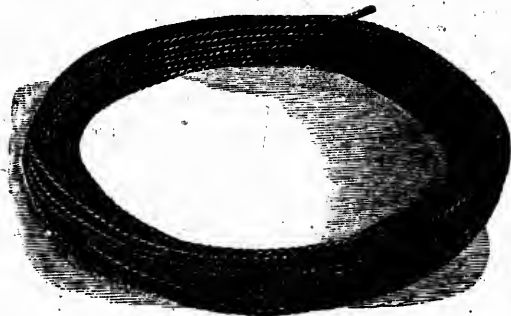
1 to 10-light, single pole.....	\$ 1.50
1 " 15 " double "	3.30
1 " 20 " " "	4.85
1 " 60 " " "	7.25
1 " 120 " " "	12.25
1 " 175 " " "	19.25

CUT-OFF SWITCH, ARC CIRCUIT.



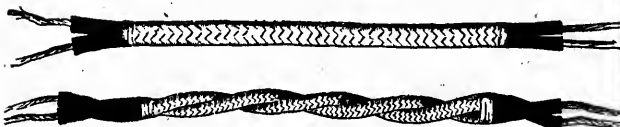
Price, \$5.50

INCANDESCENT LAMP CORD, FLEXIBLE DOUBLE
CONDUCTORS.



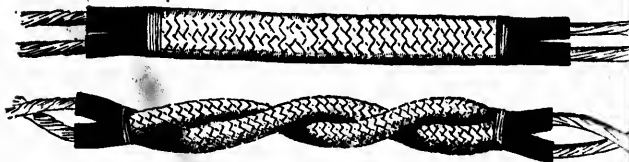
Silk braided outside, Rubber insulation inside, composed
of Stranded Wires.

PARALLEL CONDUCTOR.



TWISTED CONDUCTOR.

PARALLEL CONDUCTOR.



TWISTED CONDUCTOR.

EQUAL IN CONDUCTIVITY TO	NO. OF STRANDS.	PRICE PER FOOT.
No. 10, B and S	42	\$0.24
" 12, "	28	0.15
" 14, "	28	0.12 1-2
" 16, "	18	0.10
" 18, "	11	0.07
" 20, "	10	0.05
" 22, "	7	0.04 1-2

SUBMARINE CABLES FOR ELECTRIC LIGHT.



Armored or Lead Covered.

Prices on application.

UNDERGROUND AND HOUSE WIRES.



Solid or Stranded. Plain Rubber and Braided insulation,
or Lead Covered.

Prices on application.



Okonite, per Roll	\$1.00
White Rubber Tape, per Roll	0.85
Black (Paragon) " "	0.85
Black Manson " "	0.90

LINE WIRE

BLACK FIRE AND WEATHER PROOF WIRE.

Nos. 0000 to 8 B. & S. gauge.....	per lb.	\$0.37½
9 to 10 " "	"	0.40
11 to 12 " "	"	0.42
13 to 14 " "	"	0.45
15 to 16 " "	"	0.48
17 to 18 " "	"	0.50
19 to 20 " "	"	0.56

"SIMPLEX" (T. Z. R.) INSULATED WEATHER-PROOF
COPPER WIRES.
Pure Lake Copper.

B. & S. Gauge.	Price per ft.	Price per lb.	Carrying Capacity Amperes.	Diameter Mils.	Circular Mills (d ²) 1 mil-.001 in.
No. 0000	.30	.33½	325	460.000	211600.00
" 000	.25	.33½	258	409.640	167805.00
" 00	.22	.33½	204	364.800	133079.40
" 0	.18	.33½	161	324.950	105592.50
" 1	.15	.33½	127	289.300	83694.20
" 2	.12½	.33½	101	257.630	66373.00
" 3	.10	.33½	80	229.420	52634.00
" 4	.08	.33½	63	204.310	41742.00
" 5	.05	.33½	50	181.940	33102.00
" 6	.04½	.33½	40	162.020	26250.50
" 7	.04	.35	32	144.280	20816.00
" 8	.03½	.36	25	128.490	16509.00
" 9	.03½	.36	20	114.430	13094.00
" 10	.03	.40	15.7	101.890	10381.00
" 12	.02½	.40	9.9	80.808	6529.90
" 14	.02	.45	6.2	64.084	4106.80
" 16	.01½	.45	3.9	50.820	2582.9
" 18	.01½	.50	2.5	40.303	1624.3
" 20	.01½	.50	1.6	31.961	1021.5

UNDERWRITERS' LINE WIRE.—REGULAR FIRE PROOF.
Pure Lake Copper.

B. & S. Gauge.—Numbers.	Pounds per 1,000 feet.	Price per pound
0000.....		30 cents
000.....		30 "
00.....	450	30 "
0.....	350	30 "
1.....	290	32 "
2.....	240	32 "
3.....	195	32 "
4.....	155	32 "
5.....	125	32 "
6.....	105	32 "
7.....	81	34 "
8.....	73	35 "
9.....	55	35 "
10.....	50	35 "
11.....	40	36 "
12.....	28½	36 "
13.....	24	36 "
14.....	21	36 "
15.....	17	39 "
16.....	13	39 "
17.....	12	40 "
18.....	10	40 "
19.....	9	42 "
20.....	8½	42 "

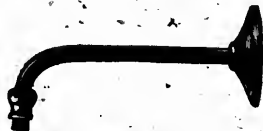
BARE WIRE. Pure Lake Copper Wire.

All numbers to 8 B. & S. gauge.....	per lb.	\$0.30
Nos. 9 to 12 B. & S. gauge.....	"	0.31
13 to 14 " "	"	0.32
15 to 16 " "	"	0.33
17 to 18 " "	"	0.34
19 to 20 " "	"	0.35
21 to 22 " "	"	0.36
23 to 24 " "	"	0.42
25 to 26 " "	"	0.50
27 to 28 " "	"	0.65
29 to 30 " "	"	0.80
31 to 32 " "	"	1.25
33 to 34 " "	"	1.70
35 to 36 " "	"	3.25
37 " "	"	5.75
38 " "	"	10.00

BRASS LAMP BRACKETS.



No. 1, each, \$1.00.



No. 2, each, \$0.90.

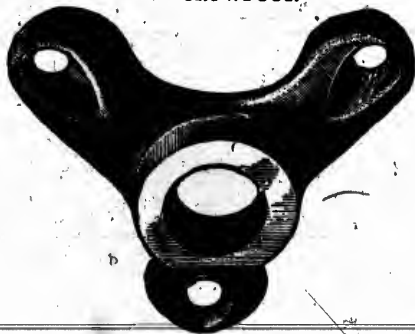


No. 3, each, \$1.50.
(Bracket only.)



No. 4, each, \$1.50.
(Bracket only.)

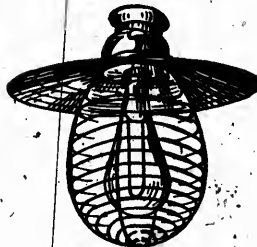
IRON CROWFOOT.



Tapped for 1-in. Gas Pipe.
Price, each, \$0.20.

-42-

WIRE GUARD.



(Without Reflector)

Each ----- \$0.45

CORRUGATED REFLECTOR.



Each ----- \$0.55

PRINTERS' SHADE.



Each ----- \$1.00

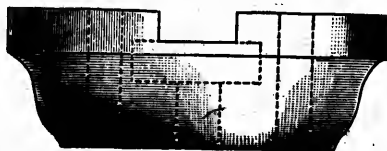
SHADE HOLDER.



2 1-4 inches, ----- Price, each, \$0.20
3 1-4 " " ----- " " 0.25

-43-

PORCELAIN CEILING BLOCKS FOR PENDANTS.



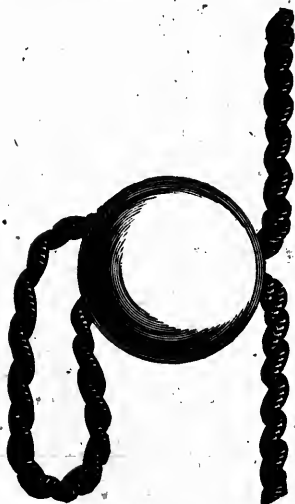
Price, each, \$0.25.

PORCELAIN CEILING CUT OUT WITH FUSIBLE LEAD.



Price, each, \$0.60.

ADJUSTABLE BALL FOR PENDANTS.



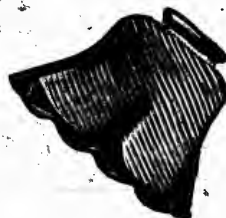
Price, each, \$0.10.

GLOBES AND SHADES.



Opal, 10 inches,

Price, each, \$0.50



Opalescent,

Price, each, \$0.65

Ruby,

" " 1.00

Blue,

" " 0.75

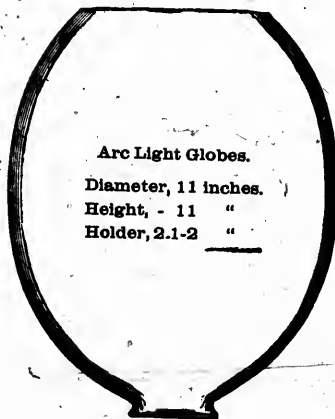
Amber,

" " 0.75



Opal, 6 and 8 inches,

Price, each, \$0.40



Arc Light Globes.

Diameter, 11 inches.

Height, - 11 "

Holder, 2.1-2 "

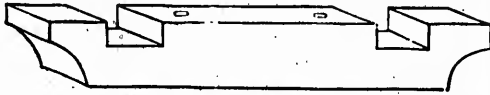
Opal,

Price, each, \$1.00

Clear Flint,

" " 0.90

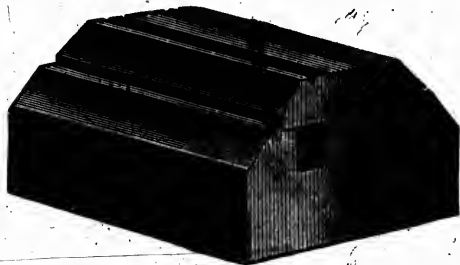
MAPLE CLEATS.



Give size of wire in ordering, as each size of wire requires different width of groove

Price 2 cents each for cleats for Nos. 16, 14, 12, 10, 8, 6 and 4 Insulated Wires, and 3 cents each for cleats for Nos. 3, 2, 1, 0 and 00 wires.

WOODEN MOULDING FOR CONCEALED WIRING.



WHITE WOOD.

No. 1	takes 10 to 14 wire	- - -	Price per ft., \$0.05
No. 2	" 6 to 10 "	- - -	" " ft., 0.05½
No. 3	" 0 to 6 "	- - -	" " ft. 0.16½
No. 4	" 00 "	- - -	" " ft. 0.12½

RUBBER TUBING.



5-18 inches inside, 1-8 inch walls, - - per foot, \$0.18

BERNSTEIN
SERIES INCANDESCENT LAMPS FOR ALL ARC
CIRCUITS.

4, 6, 8½ and 9.6 amperes.



25 C. P. Lamp, efficiency 75 Watts	.....	\$1.80
50 " " " 145 "	.....	2.40
100 " " " 285 "	.....	3.20



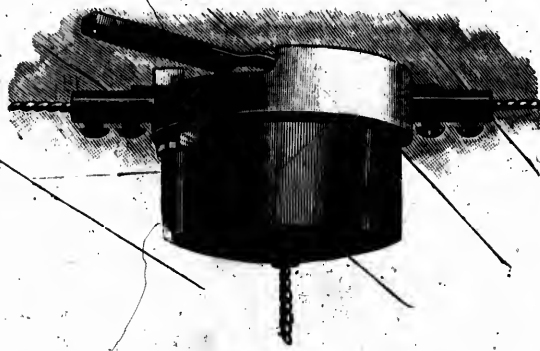
Combination Key Socket..... each, \$4.25

Prevents circuit from being opened under any conditions.

New Key Contacts..... each, \$0.32

Charge for refilling contacts " 0.05

FIXTURES FOR SERIES LAMPS.



(Patented.)

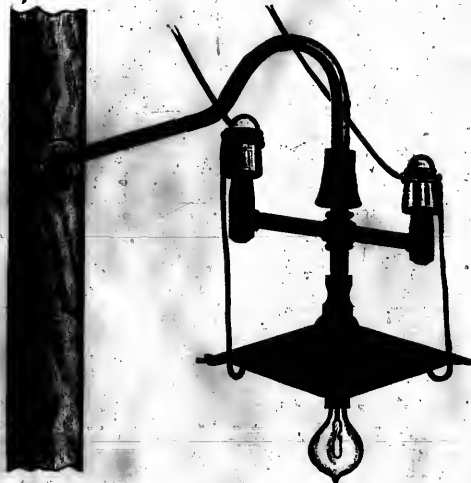
Combined Porcelain Ceiling Block, Paper cut out and switch, used with flexible cord for suspending lamp, each.....\$1.50

Same as above with attachment to use brass or iron tubes for lamps.....each, \$1.75

NOTE.—We recommend the use of tubes in all cases.

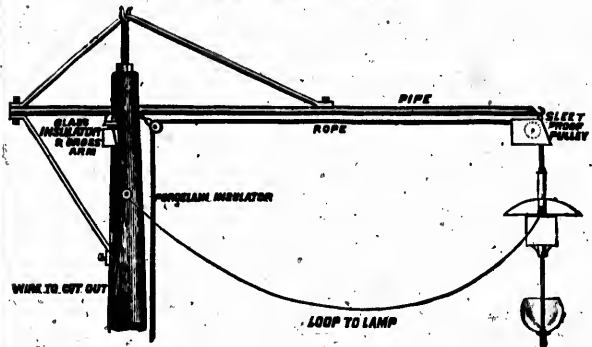
IRON, BRONZED AND BRASS TUBES.

Iron, plain.....	per ft.,	\$0.18
Iron, bronzed.....	"	0.20
Brass.....	"	0.40



Street Lamp Fixtures (exclusive of wire, socket and lamp).....\$6.00

STREET LAMP BRACKET.

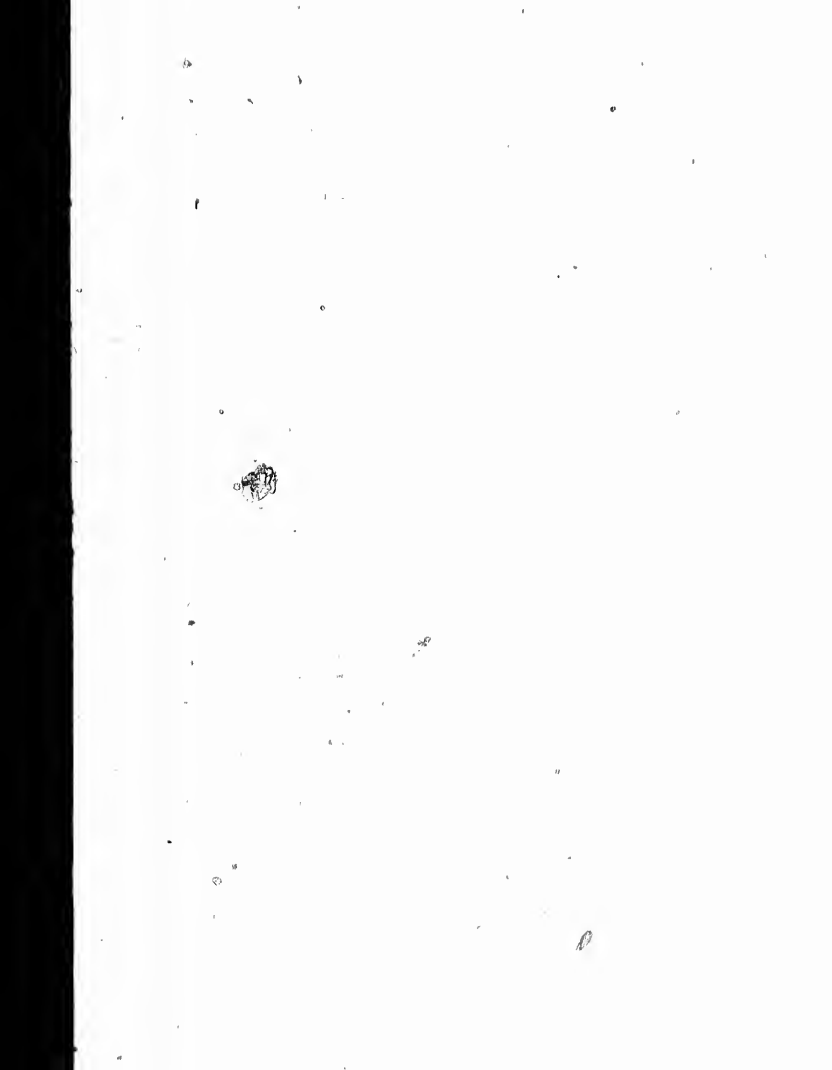


Price of Bracket, - - - \$5.00

Cut-out, with Switch, for street lamp. Porcelain base. Protects circuit should line break between insulator and lamp.



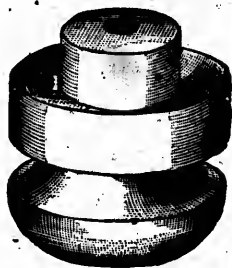
Price, - - - \$2.00



GLASS INSULATORS.



Deep Groove.
Price, each, \$0.07



No. 496.
For damp places, carries
off drip before water
can come in contact
with wires.
Price, each, \$0.10.

BRASS COUPLING.



Price, each, \$0.10.



1 1-2 inch, Oak Pin. Price, each, \$0.03.



Oak Brackets. Price, each, \$0.05.

CROSS ARM.



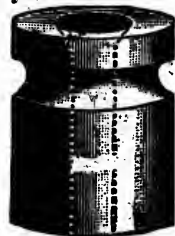
3 feet long, with holes for 2 Pins	each, \$0.32
5 " " " " " 4 "	" 0.38
6 " " " " " 6 "	" 0.46

Size 3 1/4 x 4 1/4 1-1/2 inch holes.

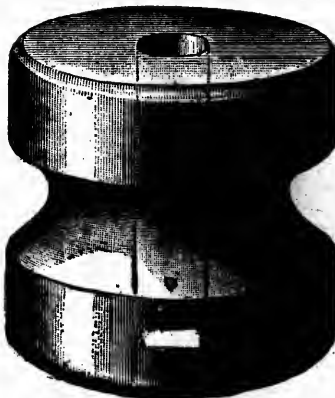
PORCELAIN INSULATORS.



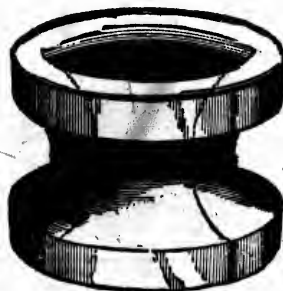
No. 8.....\$0.02.



No. 5.....\$0.03.

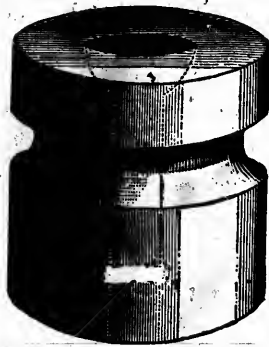


No. 3. Price, each, \$0.05.



No. 36. Line Breaker, \$0.06.

PORCELAIN INSULATORS.



No. 4.....\$0.04.

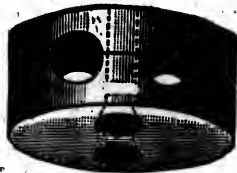
PORCELAIN BLEATS.



No. 19.....\$0.03.



No. 20\$0.03.



No. 23.....\$0.04.

SUPPLIES FOR DYNAMOS AND CIRCUITS.

Brush copper.....per lb., \$0.60

Brushes for Ball Arc Dynamo.

1½ inches and 2 inches wide.....per set (4), \$0.90

Safety Brushes....." (4), 1.00

Special Brushes for Ball Incandescent Dynamos.

1½ inches and 2 inches.....per set (4), \$1.50

Crocus Cloth.....per quire, 1.40

French Chalk.....per lb., 0.25

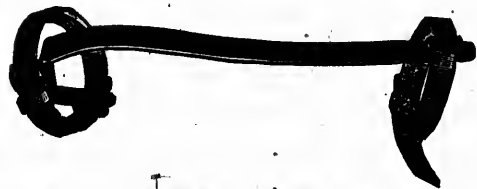
DYNAMO LUBRICATING COMPOUND.

Superior to all oils and greases, many of which contain acid and destroy the insulation of wires, etc., and the only brand we recommend for Dynamos.

Put up in 10 lb. pails.

X for winter use.....} per lb., \$0.30
 XX harder, for summer use.....}

Magneto Bell, for testing dynamos and circuits for leaks or grounds, each.....\$7.50



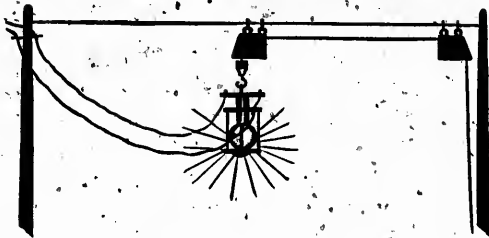
Climbers, per set, with straps, \$5.00.



Wire Stretcher, complete, \$3.50.

SLEET-PROOF PULLEYS.

SHOWING METHOD OF USING SINGLE PULLEY.

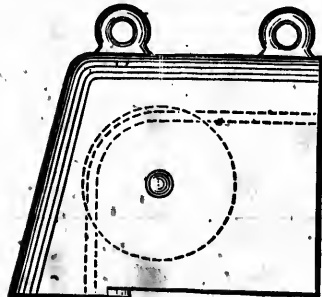


INSULATING LAMP-HANGER.



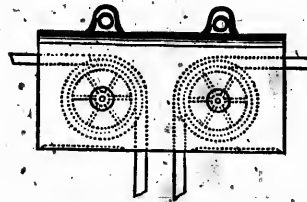
Price, each, \$0.50.

SINGLE SLEET-PROOF PULLEY.



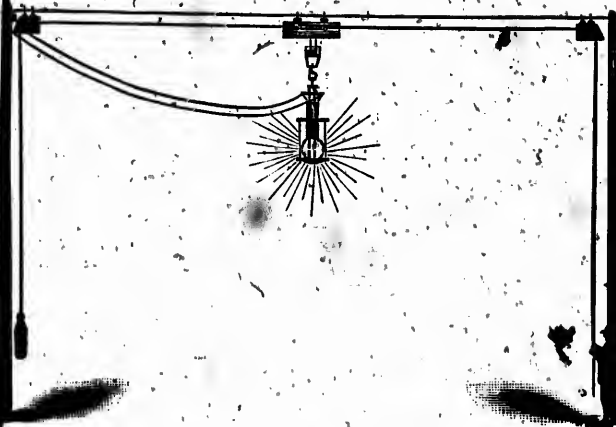
Price, each, \$0.75.

DOUBLE SLEET-PROOF PULLEY.

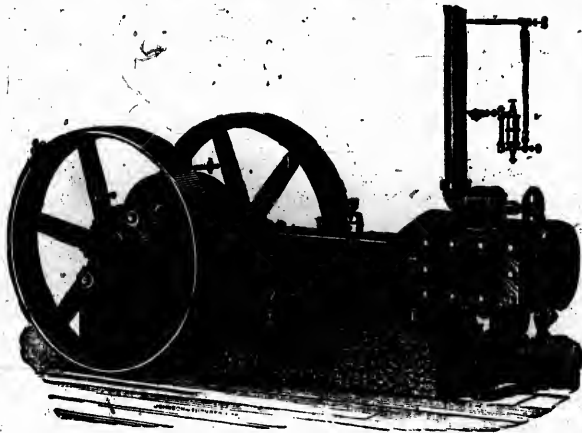


Price, \$1.50.

Showing method of using Double Pulley.



ENGINES AND BOILERS



Armington & Sim's Engine, Automatic High Speed.

Cylinders.	Diameter.	Length of Stroke.	Revolutions of Crank per minute.	Speed.	In-dicated Horse Power.	Driving Belts.		Fly-Wheels.	Price.	Size of quad-range within which engine will operate, including fly-wheel.	
						Without Condensation.	With Condensation.			Length.	Width.
	6.5	8	350	400	19	3.120	5 and 5	34	.....	7	0
	8.5	10	300	500	35	3.120	8 and 6	40	.....	7	6
	9.5	12	275	550	48	3.370	10 and 8	47	.....	9	3
	11.	14	250	683	65	3.533	12 and 12	54	.....	10	0
											5
											0

We will also contract to supply slow-speed engines, such as the Wheellock and Corliss, and can quote low prices.

Prices of engines, boilers and fittings, etc., on application.

LEATHER BELTING.—Best Oak Tanned.

SINGLE.		SINGLE.		LIGHT DOUBLE.	
	Per ft.		Per ft.		Per ft.
1 in.....	\$0.08	13 in.....	\$1.32	2 in.....	\$0.20
1½ ".....	0.12	14 ".....	1.44	2½ ".....	0.27
2 ".....	0.16	15 ".....	1.56	3 ".....	0.34
2½ ".....	0.20	16 ".....	1.70	3½ ".....	0.40
3 ".....	0.25	17 ".....	1.82	4 ".....	0.46
3½ ".....	0.30	18 ".....	1.95	4½ ".....	0.53
4 ".....	0.35	19 ".....	2.07	5 ".....	0.60
4½ ".....	0.40	20 ".....	2.20	6 ".....	0.74
5 ".....	0.45	21 ".....	2.32	7 ".....	1.00
6 ".....	0.55	22 ".....	2.45	8 ".....	1.15
7 ".....	0.65	23 ".....	2.60	9 ".....	1.30
8 ".....	0.75	24 ".....	2.75	10 ".....	1.50
9 ".....	0.85	25 ".....	2.89	12 ".....	1.90
10 ".....	0.95	26 ".....	3.00	14 ".....	2.30
11 ".....	1.07	27 ".....	3.13	16 ".....	2.70
12 ".....	1.20	28 ".....	3.25		

Heavy Double Belt, twice the price of Single.

All sizes up to 16 in. wide, in stock, in Single, Heavy and Light Double.

RUBBER BELTING, made from Best Cotton Duck.

THREE PLY.		FOUR PLY.	
2 inches.....	per foot, \$0.17	2 inches.....	per foot, \$0.21
2½ ".....	0.22	2½ ".....	0.26
3 ".....	0.26	3 ".....	0.31
3½ ".....	0.30	3½ ".....	0.37
4 ".....	0.34	4 ".....	0.42
4½ ".....	0.39	4½ ".....	0.47
5 ".....	0.43	5 ".....	0.52
6 ".....	0.52	6 ".....	0.62
7 ".....	0.60	7 ".....	0.73
8 ".....	0.70	8 ".....	0.84
9 ".....	0.80	9 ".....	0.95
10 ".....	0.90	10 ".....	1.07
11 ".....	1.00	11 ".....	1.18
12 ".....	1.08	12 ".....	1.30
13 ".....	1.18	13 ".....	1.42
14 ".....	1.28	14 ".....	1.54
15 ".....	1.38	15 ".....	1.66
16 ".....	1.50	16 ".....	1.78
18 ".....	1.70	18 ".....	2.02
20 ".....	1.90	20 ".....	2.26
22 ".....	2.12	22 ".....	2.52
24 ".....	2.36	24 ".....	2.80
26 ".....	2.60	26 ".....	3.08
28 ".....	2.84	28 ".....	3.36
		30 ".....	3.64

- - POINTS - -

.. or ..

EXCELLENCE AND SUPERIORITY

**THAT WE STAND READY TO MAINTAIN
AGAINST ALL COMPETITORS.**

1. To produce a Steadier Light, no Hissing or Flickering.
2. To produce lights of equal Candle Power with Far Less Power (less coal) than any other system.
3. Armatures will not "burn out" from any practical use, nor except through violence or the acts of malice.
4. Repairs average less than one per. cent. per annum—far less than those of any other system.
5. Dynamo will give much greater efficiency than any other for given metal, power, and kind of work.
6. Our (double armature) Dynamo is virtually equivalent to two of other systems, for the reason that in case of accident to one armature the other will maintain nearly three-fourths of the full number of lights.
7. Will give incandescent lights from arc circuits in number and location required.
8. Length of circuits from Ball Dynamos unsurpassed by any system.
9. Patents have never been challenged, and are guaranteed unassailable.
10. Our Lamps require no cleaning of carbon rods and necessary renewal of same.
11. Our Improved Double Lamp excels in its action that of any other system.

**WE CHALLENGE COMPETITION, in a public
or private test, if any one disputes
these claims.**

**Partial List of Ball Plants in service in Canada
and United States for Public and
Private Illumination**

NOTE THE LARGE NUMBER OF INCREASED PLANTS

Aylmer Electric Light Co.	Aylmer, Ont.
Almonte Electric Light Co. (increased)	Almonte, Ont.
Brantford Electric Light Co. (increased)	Brantford, Ont.
British American Starch Co.	Brantford, Ont.
Belleville Gas Co. (increased)	Belleville, Ont.
Brockville Gas Co.	Brockville, Ont.
Berlin Gas Co. (increased)	Berlin, Ont.
Bowmanville Electric Light Co. (increased)	Bowmanville, Ont.
Barrie Electric Light Co.	Barrie, Ont.
Carleton Place Electric Light Co.	Carleton Place, Ont.
Central Bridge Works	Peterborough, Ont.
Clarry Wool and Mfg. Co. (increased)	Markham, Ont.
Chatham Gas Co.	Chatham, Ont.
Crowe Iron Works	Guelph, Ont.
Dominion Bridge Co. (increased)	Montreal, Que.
Dominion Barb Wire Co. (increased)	Montreal, Que.
Doty Engine Co. (increased)	Toronto, Ont.
Fredericton Gas Co.	Fredericton, N.B.
Guelph Gas Co. (increased)	Guelph, Ont.
Gananoque Electric Light Co. (increased)	Gananoque, Ont.
Grimsby Park Co. (increased)	Grimsby, Ont.
Goldie & McCulloch (increased)	Galt, Ont.
Hamilton Tool and Bridge Co.	Hamilton, Ont.
Hanlan's Point Ferry Co. (increased)	Toronto, Ont.
Joseph E. Seagram, Distiller	Waterloo, Ont.
Kingston & Pembroke Railway Co.	Kingston, Ont.
Leamington Electric Light Co.	Leamington, Ont.
London Electric Light Co. (increased)	London, Ont.
Lakefield Lumber and Mfg. Co.	Lakefield, Ont.
Long Branch Park Co.	near Toronto, Ont.
Mt. Forest Electric Light Co. (increased)	Mt. Forest, Ont.
Munson, C. A., Steam Dredge	Belleville, Ont.
Moss Park Skating Rink Co.	Toronto, Ont.
Massey Mfg. Co.	Toronto, Ont.
Montreal Rolling Mills Co.	Montreal, Que.
McDougall, A. & Son, Distillers	Halifax, N.S.
Newmarket Electric Light Co. (increased)	Newmarket, Ont.
Napanee Paper Co.	Napanee, Ont.
Northumberland Paper Co. (increased)	Campbellford, Ont.
O'Mullen, P. & J., Brewery	Halifax, N.S.
Ontario Bolt Works Co. (increased)	Toronto, Ont.
Oshawa Electric Light Co. (increased)	Oshawa, Ont.
Perth Electric Light Co. (increased)	Perth, Ont.
Port Hope Electric Light Co. (increased)	Port Hope, Ont.
Polson Iron Works Co., Limited	Owen Sound, Ont.
Peninsular Park Hotel Co.	Barrie, Ont.
Paris Electric Light Co. (increased)	Paris, Ont.
Renfrew Electric Light Co. (increased)	Renfrew, Ont.

Sherbrooke Gas Co. Sherbrooke, Que.
 Stratford Gas Co. (increased three times) Stratford, Ont.
 Simcoe Electric Light Co. (increased) Simcoe, Ont.
 Town of Orillia (increased) Orillia, Ont.
 City of Victoria Victoria, B.C.
 Town of Thorold Thorold, Ont.
 Town of Mitchell Mitchell, Ont.
 Uxbridge Electric Light Co. (increased) Uxbridge, Ont.
 Victoria Electric Illuminating Co. Victoria, B.C.
 Walkerton Electric Light Co. (increased) Walkerton, Ont.
 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.
 Ball 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 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 Woollen Mills Greenwich, R.I.
 Riverside and Oswego Mills (increased) Providence, R.I.
 Clyde Bleach and Print Works (increased) Riverpoint, R.I.
 Waterloo Woollen Mfg. Co. (increased) Waterloo, N.Y.
 Seatchard Woollen Mills Germantown, Pa.
 Seyfert Rolling Mills Seyfert, Pa.
 Plymouth Rolling Mills Conshohocken, Pa.
 Iron Bay Manufacturing Co. (two plants) Marquette, Mich.
 Traction 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 Mfg. Co. (increased) Houghton, Mich.
 Saguache Tunnel, Wm. A. Douglass & Co. (increased),
 Leadville, Colo.
 Orman, Crook & Co. Leadville, Colo.
 Cascade Tunnel, Nelson Bennett (two plants) Washington Ter.
 Lion Brewery. Philadelphia, Pa.
 Centennial Brewery Philadelphia, Pa.
 Jorden, Marsh & Co. (increased) Boston, Mass.
 MacCuller, Parker & Co. (increased) Boston, Mass.

Grommes & Ullrich Chicago, Ill.
 Wm. M. Bent & Co. (increased) Chicago, Ill.
 Webster & Sons Philadelphia, Pa.
 Manton Mills Manton, R.I.
 The "Cyclorama" Brooklyn, N.Y.
 The "Cyclorama" (increased) Philadelphia, Pa.
 The "Cyclorama" Boston, Mass.
 The "Cyclorama" New York.
 Ball Illuminating Co. Cincinnati, O.
 Clarksburg Electric Light Co. Clarksburg, W. Va.
 Smith & Brown, Contractors (increased) N. Y. Aqueduct Works.
 Jones, Denton & Co. N. Y. Aqueduct Works.
 Paige, Carey & Co. N. Y. Aqueduct Works.
 McLaughlin, Reilly & Co. (increased) N. Y. Aqueduct Works.
 Brown, Howard & Co. (three plants) N. Y. Aqueduct Works.
 Isaac McHose & Sons Norristown, Pa.
 Combination Iron and Steel Co. Chester, Pa.
 Manz & Co. Chicago, Ill.
 Order of Cincinnati. Cincinnati, O.
 W. A. Knapp Beloit, Wis.
 C. M. Groff Reading, Pa.
 Weybossett Mills (increased) Providence, R.I.
 Glen Cove Mfg. Co. (increased) Glen Cove, N.Y.
 McDonald & Bros. La Crosse, Wis.
 Steam and Power Co. Boston, Mass.
 South Pennsylvania Railway Co. Ray's Hill, Pa.
 Baker Electric Co. Chicago, Ill.
 Clark's Cove Guano Co. New Bedford, Mass.
 Tamarack Copper Mfg. Co. (second plant) Opechee, Mich.
 Granite Mills Pascoag, R.I.
 McIlvain & Sons' Boiler Plate Works Reading, Pa.
 Parkhill Manufacturing Co. Fitchburg, Mass.
 Cleghorn Mills Fitchburg, Mass.

And Others.



THE BALL ELECTRIC LIGHT CO.

(LIMITED)

OF CANADA

67 Adelaide Street West, Toronto, Ont.

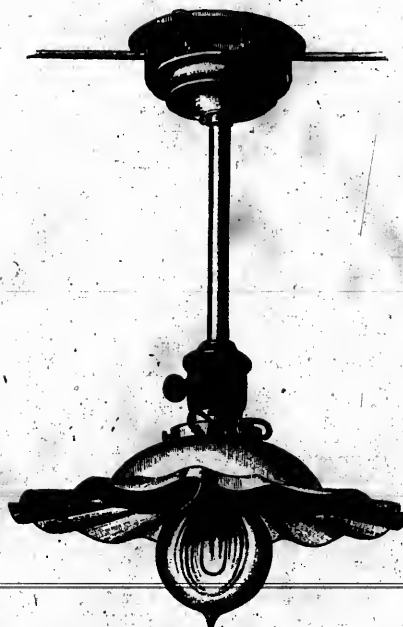
GENERAL INDEX

	PAGE
Ammeters.....	31
Arc Dynamos.....	26
Arc Lamps.....	27
Ball Plants.....	50, 60, 61
Ball Dynamos.....	26, 31
Ball-Lamps.....	27
Bare Wire.....	41
Belting.....	57
Boilers.....	56
Brackets (Lamp).....	42
Brackets (Oak).....	50
Cables.....	39
Carbons.....	33
Ceiling Blocks.....	44
Cleats.....	46, 52
Climbers.....	53
Couplings.....	50
Cross Arms.....	50
Crowfoot.....	42
Cut-outs.....	44, 48, 49
Demagnetizer.....	36
Dynamos (Incandescent).....	31
Dynamos (Arc).....	26
Engines.....	56
Fixtures (Street).....	48, 49
Flexible Cord.....	38
Frames for Glass, for Street Lamp.....	33
Glass Insulators.....	50
Globes.....	45
Holders.....	43
Incandescent Dynamos.....	31
Indicator.....	34
Installations.....	59, 60, 61
Insulation.....	50, 51, 52
Lamps (Arc).....	27
Lamps (Incandescent).....	32
Lamp Sockets.....	32, 47
Line Wire.....	40, 47
Manson Tape.....	39
Motors.....	28, 29
Moulding.....	46
Multiple Lamps.....	32
Okonite Wires and Tapes.....	39
Paragon Tape.....	39
Pins (Oak).....	50
Plants.....	59, 60, 10
Porcelain Insulators.....	51, 52
Pulleys (Sleet-proof).....	54, 55
Reflectors.....	43
Rubber Tape.....	39
Series Lamps.....	47
Shades.....	45
Shade Holders.....	43
Side Blocks.....	50
Simplex Wires.....	40
Sockets.....	32, 47
Street Lamp Brackets.....	49
Switches.....	35, 37, 48, 49
Tape.....	39
Tubing.....	46
Underground Wires and Cables.....	39
Underwriters' Wire.....	41
Voltmeters.....	34
Weather-proof Wire.....	40
Wires.....	40, 41
Wire Guard.....	43
Wire Stretchers.....	53

INCANDESCENT STREET LAMP.



LAMP FOR INTERIORS.





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(LIMITED)

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- AND -

LAMPS

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