



TELEGRAMS "ECONOMIC"
TWICKENHAM.
TELEPHONE 316, P.O.
RICHMOND.

ILLUSTRATED
CATALOGUE AND PRICE LIST OF
ELECTRICAL APPARATUS
THE
ECONOMIC
ELECTRIC CO.
TWICKENHAM,
LONDON, S.W.



THIS LIST CANCELS ALL PREVIOUS PRICES
TENTH EDITION - ENTERED AT STATIONERS HALL

E.W. TWIRING

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TERMS

CASH WITH ORDER.—The Company has always and will continue to do business on this system, which, if you consider, is directly to your advantage. We make no Bad Debts. NO costly upkeep of Books, consequently we can supply you goods which show remarkably low in comparison with our competitors.

REMITTANCE.—If by actual cash it must be registered. Amounts under 2/ can be remitted in 3d. stamps. The most general way is by POSTAL OR MONEY ORDER obtainable at any Post Office in the United Kingdom. Cheques should be crossed and made payable to "THE ECONOMIC ELECTRIC CO."

HOW TO ORDER.—It is not necessary to cut Catalogue. Give LIST No. or full particulars of goods required. We draw on large stocks, and usually despatch ALL ORDERS same day as received; we therefore cannot accept cancellation of orders owing to pressure of business. If goods ordered are heavy or bulky it is advisable to send name of nearest railway station. Orders of 10s. and over will be acknowledged by return of post. If acknowledgment is required for a less sum enclose 3d. stamped post-card with order.

PACKING.—All goods are packed by experienced men, carefully checked and inspected before despatch. No claim can therefore be entertained by us for damage to goods in transit but should be made direct to carriers or railway company.

POSTAGE.—Sufficient money must in all cases accompany an order to cover postage. Any money sent in excess will be immediately returned to sender. With our system of posting we obtain receipt for each parcel. Should same be lost in post the value can be immediately recovered from the POST OFFICE.

IMPORTANT.—When goods arrive, if you require any alteration or exchange it is *most essential* that you quote number on top right-hand corner of Invoice when writing us. We despatch on an average over 100 parcels per day, and it is difficult to trace an invoice unless No. is given. Invoice, together with further order form, will be found in with goods.

QUERIES.—We take pleasure in carefully replying to all customers' queries, which average 20 to 30 per day. We must, however, ask those who seek advice to enclose 1d. stamp for reply.

POSTAL INFORMATION.

POSTAL ORDERS	MONEY ORDERS.	LETTER POST.
are issued as follows:—	Not exceeding Commission.	4 oz. 1d.; for each additional 2 ozs. 3d.
Order. Commission.	£1 ... 2d.	Remember letters cannot be tucked in an envelope and sent for 3d.
6d., 1/-, 1/6, 2/-, 2/6 ... 3d.	£3 ... 3d.	
3/-, rising by 6d. to 15/- 1d.	£10 ... 4d.	
15/6 " " 21/- 1 1/2d.	£20 ... 6d.	
	£30 ... 8d.	

PARCEL POST.—(Inland) Up to 1 lb. 3d., 2 lbs. 4d., 3 lbs. 5d., 5 lbs. 6d., 7 lbs. 7d., 8 lbs. 8d., 9 lbs. 9d., 10 lbs. 10d., 11 lbs. 11d. Maximum weight must not exceed 11 lbs. N.B.—If parcels weigh over 11 lbs, we divide and send separate parcels.

BUSINESS HOURS.

CALL IF POSSIBLE We invite and recommend all Customers where possible to call and personally inspect Stock. The different apparatus can be examined and thoroughly tested before despatch.

OPEN 9 A.M. TO 9 P.M. SATURDAYS, 9 A.M. TO 10 P.M.

Telephone:—316 P.O. RICHMOND. Telegrams: "ECONOMIC," TWICKENHAM.

TESTIMONIALS THE WORLD OVER.

Dear Sirs,
Received 15 amp. hr. Accumulator and Terminals and am quite satisfied. Thanking you for your prompt attention.

Manchester.
GERALD B. FOX.
Shoreham.

Dear Sirs,
Dynamo received safely, and works very well. I think you have made a very good job.

L. McCONNELL.
Oxford.

Dear Sirs,
"O.T." Dynamo works well, and am thoroughly satisfied.

E. ROBERTSON.
Oxford.

Dear Sirs,
Received both Meters yesterday. I need hardly say they are the best for the money I have ever seen.

Angmering.
G. CHALLEN.
Originals can be seen.

Dear Sirs,
Received goods New Year's Day. It seemed as if I sent the order one week and received it by next mail. Thanking you for your smartness.

Kenilworth, South Africa.
F. TOWNSEND.
Sydney, Australia.

Dear Sirs,
Armature Stampings give every satisfaction. I was surprised the prompt attention this small order received. I hope to pass you an order of a larger nature in the near future.

N. DENHAM.
Chatham.

Dear Sirs,
Enclose balance; am very pleased with Telephones.

Capt. A. G. GILL.
Taynuilt, N.B.

Dear Sirs,
Phones fitted and working well. I think they are wonderful at the price.

JAACK McDONALD.
Portsmouth.

Dear Sirs,
Ammeter received; very satisfactory.

A. W. I.

COLONIAL & CONTINENTAL ORDERS.

Our increasing Export Trade with the Colonies and Continent is sufficient guarantee that our manufactures are giving entire satisfaction to customers across the seas. We thank them for their orders, repetition orders and testimonials that we are constantly receiving, each bearing ample testimony to the quality and reliability of our goods.

TERMS.—As for Home, with few exceptions.

CUSTOM DUTIES.—Payable on arrival of goods.

REMITTANCE.—Postal or Money Order made payable G.P.O., LONDON, or by cheque drawn on London or English Bank.

SHIPPING.—Free On Board London. When remitting extra 10 per cent. on cost of goods should be enclosed to cover Shipping, Dock Dues, Special Packing, &c. Any money received in excess will be credited to customers' a/c or returned if preferred.

FREIGHT RATES (Approx.)

Boxes or Parcels by Steamer.		NEW ZEALAND.		Boxes or Parcels by Steamer.		CEYLON & INDIA.		Boxes or Parcels by Steamer.	
TASMANIA & AUSTRALIA.	per lb. charge.	per lb. charge.	Minimum	per lb. charge.	Minimum	per lb. charge.	Minimum	per lb. charge.	Minimum
Adelaide ...	-/3	1/-	Auckland ...			Bombay ...			
Brisbane ...	-/3	1/-	Christchurch ...	-/3	1/-	Colombo ...			
Fremantle ...	-/6	2/6	Dunedin ...			Calcutta ...	-/3	1/-	
Melbourne ...	-/3	1/-	Lyttleton ...			Madras ...			
Perth ...	-/6	2/6	Nelson ...	-/6	2/6	Rangoon ...	-/4	1/-	
Sydney ...	-/3	1/-	Wellington ...	-/3	1/-	Other Coast Ports			
Hobart ...	-/4	2/-	Other Coast Ports			or Railway Stn.	-/6	2/-	
Launceston ...	-/4	2/-	or Railway Stn.	-/8	5/-				
Other Coast Ports									
or Railway Stn.	-/6	5/-							
SOUTH AFRICA.			WEST INDIES.			VARIOUS.			
Capetown ...	-/3	1/-	Antigua ...	-/6	1/-	Alexandria ...	-/3	1/6	
Durban ...	-/3	1/-	Barbadoes ...	-/6	1/-	Cairo ...	1/-	2/-	
East London ...	-/3	1/-	Bermuda ...	1/-	2/-	Constantinople ...	2/-	2/6	
Port Elizabeth ...	-/3	1/-	Dominica ...	1/-	2/-	Gibraltar ...			
Pretoria ...	-/9	2/6	Jamaica ...	1/-	2/-	Malta ...	1/-	2/-	
Bloemfontein ...	-/9	4/6	St. Kitts ...			Port Said ...			
Delagoa Bay ...	-/9	10/-	St. Lucia ...	1/-	2/-	Hong Kong			
Johannesburg ...	-/9	2/6	St. Vincent ...			Penang ...			
Kimberley ...	-/9	2/6	Trinidad ...			Shanghai ...	-/3	1/-	
Mafeking ...	-/9	2/6	All other Islands			Singapore			
Natal ...	-/8	2/-	approx. ...	1/-	2/-	Yokohama			
Orange R. Colony	-/10	2/6				China, Japan & other Ports	-/8	2/6	
Rhodesia ...	2/-	7/6	VARIOUS.			Lagos ...	-/4	6/-	
Any Railway Stn.			Buenos Ayres	-/6	2/6	Sierra Leone ...	-/4	6/-	
in Cape Colony	-/8	2/-	Montevideo			Zanzibar ...	-/9	10/-	
			Rio de Janeiro						
			Valparaiso ...	1/-	15/-				

N.B.—Above is exclusive of Landing and Custom Clearance Charges.

PARCEL POST (Recommended.)

Hong Kong & Straits Settlements	Up to 3 lbs.,	Canada, 1lb., /8, each additnl. lb., /6
Treaty Ports	1/.	Australia, 1lb., 1/
Tasmania		Cape Colony and Natal, /9 per lb.
New Zealand	Up to 7 lbs.	Transvaal
India	2/.	Orange River Colony } 1/
China		3lbs. 7lbs. 11lbs. 3lbs. 7lbs. 11lbs.
British East Africa	Up to 11lbs.	France 1/4 1/9 2/2 Spain 1/6 2/ 2/6
Gold Coast	(maximum)	Germany 1/ 1/6 2/ Italy 1/6 2/ 2/6
West Indies	3/.	Holland 1/ 1/6 2/ Russia 2/ 2/6 3/
		Belgium 1/ 1/6 2/

SPECIAL DEPT. FOR FOREIGN DESPATCH.

ELECTRIC BRASS PUSHES.



MASSIVE BRIGHT PUSH.

Flat Ebonite Back, Slotted White Plunger.
Dia. 1 1 1/2 2 2 1/2 in.
Each 1/ 1/2 1/4 1/10
List No. 0 1 2 3
Postage 2d.



LONG BARREL PUSH.
In Bright Polished Brass, Lacquered with Plunger Engraved "Press."
Dia. 1 1/4 2 2 1/2 3 3 1/2 4 5 6 in.
Each 1/4 1/6 1/8 1/9 2/4 2/8 3/10 5/
List No. 10 11 12 13 14 15 16 17
Postage 2d., 3d. and 4d. extra.



SHORT BARREL PUSH.
In Bright Brass with Plunger Engraved "Press."
Dia. 3/4 1 1 1/2 2 2 1/2 3 4 in.
Each 1/2 1/3 1/4 2/ 2/6
List No. 18 19 20 21 22
Postage 2d.



CAST BRONZE PUSH.
Flat Ebonite Back. The letters "Press" are raised from face.
Dia. 2 2 1/2 3 3 1/2 4 in.
Each /8 /9 /11 1/2 1/4
List No. 4 5 6 7 8
Postage 2d. extra.

NOTE.
Our Pushes are guaranteed London manufacture throughout. Each is carefully Turned, Polished, Lacquered and Tested before despatch from our Twickenham Works.
NOTE REDUCED PRICES.



ONE PART PUSH.
Bronzed, Bright Brass or Relieved, Well made push.
Dia. 1 1/2 2 2 1/2 3 3 1/2 4 in.
Each /8 /9 /10 /11 1/6 2/
List No. 27 28 29 30 31 32
Postage 2d.



FLAT OBLONG PUSH.
(As illustration.)
Size 3 by 1 1/2 in. List No. 36.
Each 1/., Postage 1d. extra.



FRONT DOOR BARREL PUSH.
Size 1 1/2 by 3 1/2 in.
Each 1/4
List No. 9
Postage 2d.



MASSIVE BRASS PUSH.
Flat Ebonite Back, Slotted Plunger Engraved "Press."
Dia. 2 1/2 3 3 1/2 4 in.
Each /10 1/ 1/6 2/
List No. 23 24 25 26
Postage 3d.



FANCY BRASS FRONT GATE PULLS.
Very neatly finished. Watertight.
List No. 37, 4 1/2 in. 4/3; 38, 5 in. 5/6 each.
Postage 4d. each.



List No. 900.
Can be supplied in three Patterns.
Oxidized Silver, Copper or Gilt.
Size over all, 2in. by 2in.
Short Barrel Push and Metal
Plunger, Each 11d. Postage 1d.

List No. 901.
Brass Cover, Polished Wood Base,
Bone Plunger. 2 1/2 in. diam. 1 in. high.
Each 8d. Postage 1d.

List No. 902.
Solid Make.
3 1/2 in. by 1 1/2 in.
Each 1/6.
Post. 2d. extra.

List No. 903.
Size, 2 1/2 in. by 1 1/2 in.
Plain Brass, Short
Barrel, Metal Plunger.
Each 1/. Postage 1 1/2 d.



List No. 906.

BELL PULL CONVERTERS.

To convert ordinary
wire pull into
electric contact.

Each 1/6. Postage 1 1/2 d.

Size over all, 4 1/2 in.
by 1 in.

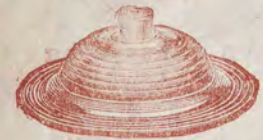
LONG & SHORT BARREL CONTACTS.
List No. 904. Long ... Each 10d.
" " 905. Short ... " 7d.



List No. 907.
Stamped Brass and
Polished Flat Back, White
China Plunger.
Size, 3 in. by 1 1/2 in.
Each 10d. Postage 1 1/2 d.



List No. 908.
Bright or Bronzed Silver-
Pointed Contacts,
Ebonite Backs.
2 inch ... Each 1/
2 1/2 " ... " 1/2
3 " ... " 1/4



List No. 909.
Bright Brass Silver Contacts,
China or Brass Plungers, Ebonite
Backs, Flat.

List No. Each.
909 ... 1 1/2 inch ... 10d.
910 ... 2 " ... 11d.
911 ... 2 1/2 " ... 1/
912 ... 3 " ... 1/1
913 ... 3 1/2 " ... 1/6
914 ... 4 " ... 2/
Post. 1d. and
2d. extra.



List No. 44.

PEAR PUSH AND ROSETTE.

The complete Set ready
for fixing, with 6ft. of
Best Bell Silk Flexible Wire,
any colour (as illustration.)

List No. 44.

Each 10d. Postage 2d.
extra.

Extra 6ft. of Wire, 2d. extra.

List No. **ROSETTES.** Each. Doz.
R 40a. Miniature Real Oak or
Walnut ... 2 1/2 d. 2/3
R 40. Medium Quality, in Imitation
Walnut, Oak, &c. ... 8 1/2 d. 8/6
R 41. Best Quality, Real Woods,
Ebony, Cocas, &c. ... 5d. 4/9

PEAR PUSHES.
R 42a. Miniature Real Oak or
Walnut ... 8 1/2 d. 8/4
R 42. Medm. Qual., in Imitation
Mahogany Oak, &c. ... 8 1/2 d. 8/4
R 43. Best Quality, in Real
Woods, Mahogany, Co-
cas, Ebony, &c. ... 6 1/2 d. 6/
Postage, 1d. and 2d. extra.



List No. 40.



List No. 42.

E.E.C. PUSHES WILL GIVE SATISFACTION.

DOOR CONTACTS AND BURGLAR ALARMS.

Our Contacts and Alarms are Genuine London made, on which you can place every reliance. They are substantially made and have Silver Contacts.



List No. 45.
DOOR CONTACT.
To attach over doors, &c. Rings when
door opens and shuts. Each 8d.
Postage 1d.



List No. 49.
KNEE FORM ALARM.
Rings on door opening and shutting.
Each 10d. Postage 1d.



List No. 46.
SPECIAL ALARM.
Easy to fit. Rings on door
opening only. Each 1s.
Postage 1d.



List No. 48.
SECRET ALARM.
To fit into jamb of door, window, &c. Keeps
ringing all time window or door is open.
Each 9d. Postage 1d.



List No. 51.
WINDOW BALL CONTACT.
Rings immediately window opens. Each 10d.
Postage 1d.

WE CAN QUOTE YOU FOR SPECIAL ALARMS.



List No. 50.
PEG CONTACT.
Rings immediately door is opened, and
continues until closed.
Each 9d. Postage 1d.



List No. 52.
WHEEL CONTACTS.
Each 1/8. Postage 1d. extra.

List No. 915.
LETTER BOX ALARM
on Ebonite Base,
Each 3/.
Postage 4d. extra



List No. 916.
ALARM FOR CURTAINS OR BLINDS.
Each 1/8. Postage 2d.

List No. 47.
MAT ALARM.
To place under door-
mat, stair-carpet, &c.
Rings immediately
person stands on mat.
Removable plunger.
Each 1/6. Postage 2d.

BEST QUALITY TIN FUSE WIRES (HIGHLY REFINED).

Size.	Fusing Point.	For id.	per oz. reel.	per 1lb. reel.	Size.	Fusing Point.	For id.	per oz. reel.	per 1lb. reel.
14 SWG	48 amps.	1 foot	4	2/	26 SWG	57 amps.	3 yds.	16 1/2	3/
16 "	34 "	1 1/2 "	4	2/	28 "	4'5 "	4 "	17	3/6
18 "	23 "	1 1/2 "	4 1/2	2/	30 "	3'8 "	5 "	17	4/
20 "	15 "	4 feet	5	2/2	32 "	3'0 "	5 "	17 1/2	4/6
22 "	10'5 "	5 "	6	2/6	34 "	2'2 "	6 "	18	5/
24 "	8'6 "	8 "	6 1/2	2/8	36 "	1'5 "	6 "	19	6/

POSTAGE EXTRA, according to quantity.

BARE OVERHEAD HARD-DRAWN COPPER WIRES.
A Special Low Resistance Wire suitable for Telephones.

Size, S.W.G.	Weight, Per mile.	Yards, Per lb.	Resistance, Per mile.	Price, Per lb.
14	110 lbs.	10	9 ohms	1/5
16	65 "	27	14'5 "	1/6
18	45 "	48	25 "	1/7
20	25 "	80	40 "	1/8

NOTICE.—The prices of all Copper Wires are governed by the Copper Market fluctuations. We therefore do not guarantee these prices at the time order is received. However, we work on moderate prices and you can rely on getting the wire from us direct at rock bottom.

ORDERS for over 56 lbs. we can give very low quotations.
WE CAN SUPPLY BARE WIRES ANY GAUGE.

YOU KNOW AN E.E.C. ARTICLE—IT'S ALWAYS SOUND. 5



53.—Round.



List No. 53.



List No. 56.

ELECTRIC BELL SWITCHES.
Mounted on Selected Polished Wood Bases and Nickel Plated. Substantially made and well finished.

List No.	each doz.
53 Oblong 1 way ...	7 3/4 ... 4/6
54 " 2 " " ...	7 ... 6/6
55 " 3 " " ...	10 ... 9/6
55A " 4 " " ...	1/1 ... 1/
55B " 5 " " ...	1/6 ... 1/5

Round, 1d. extra on above prices.
56 Plug Switches Round 1 way /6 ... 5/9
58 " " Oblong 1 " /9 ... 8/9
58A " " " 2 " 1/2 ... 13/
58B " " " 3 " 1/6 ... 16/6

Postage 1d. & 2d. extra on all switches.



List No. 55.



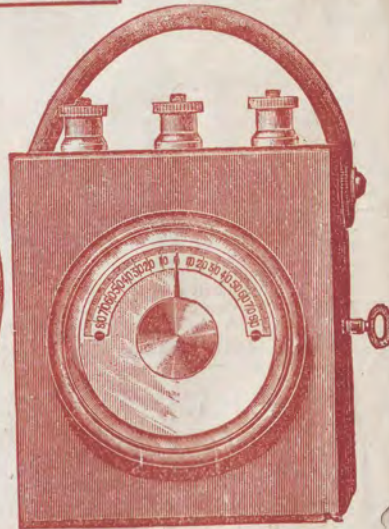
List No. 59.



List No. 61A.



List No. 60.



List No. 63.

We make Galvanometers to any size or capacity. Being **ACTUAL MANUFACTURERS** we can guarantee your perfect workmanship at low prices.

List No. 59.	Pocket Galvo, recommended...	each	1/8
" " 60.	Large Horizontal Pattern ...	"	3/4
Postage 1d. & 3d. extra.			
" " 61A.	Resistance Coils, any resistance up to 9 OHMS each	3/4	
" " 100	" " " "	5/6	

LINESMAN'S DETECTORS.

High Class Instruments, Splendid Finish.

List No. 62.	Wound for intensity	Each	15/6
" " 63.	" " " "	"	18/6

ALL OUR GALVOS ARE GUARANTEED ACCURATE.

THE "STUDENTS" GALVO.
Handsome Instrument with 2 1/2 Sil vered Metal Dial, Accuracy guaranteed. List No. 61 (as illustration) 14/6. Postage 1/4 extra.

ELECTRIC WOOD PUSHES.

Made from Carefully Selected Woods, with Superior Polish, White Plungers, and German Silver Contact Springs. Supplied in numerous patterns (as Illustration).



Pattern A.



Pattern B.



Pattern C.



List No. 64.
CHEAP QUALITY.
3in. Wood, Special.
Each 2d. Postage 1d. extra.

Quality.	2 ins.	2 1/2 ins.	3 ins.
Medium ...	3d.	3 1/2 d.	4 1/2 d.
Best ...	4d.	4 1/2 d.	5d.
Real Woods (Selected)	6d.	8d.	8 1/2 d.

Postage 1d. extra.

Real Cocos Miniature Push, 1 in. diam., 4d. each.

NOTE. We deal largely in Electric Pushes and can give very close quotations for quantities



List No. 65.
Handsome Carved Walnut Pushes, Best Quality German Silver Spring Contacts.
List No. 65, 2 1/2 ins., each 9d.
" 66, 3 ins., " 10d.

ELECTRIC CHINA PUSHES.



List No. 68.



List No. 70.



List No. 69.



List No. 71.

List No.	Size.	Each.	Doz.	Post.
67	3in. Plain, White, or Black ...	1/6	7/	1/2
68	3in. { Blue or Brown Flowers on White Ground ...	1/6	17/	1/2
69	3in. { Gilt Ivy Leaves on White Ground ...	1/6	17/	1/2
70	3in. { Grecian Key Design in Gold, on White or Cream Ground ...	1/2	12/	1/2
71	3in. Imitation Marble ...	10	9/6	1/2
72	3in. Gilt Swallows on Pink Ground	1/4	14/	1/2

LECLANCHE CELLS

IN BOXES.

Substantially Made Boxes, Stained, with Brass Fasteners For Quart Size Only.

List No.	Complete Box and Cells.
917	Two Cells ... 3/6
918	Three Cells ... 5/
919	Four Cells ... 6/6
920	Five Cells ... 8/
921	Six Cells ... 9/
922	Eight Cells ... 12/

Carriage Forward.

No Dust !! No Breakage !!

The Cells last Double the Time.

DRY BATTERIES.

All Types and Sizes.

Being **ACTUAL MANUFACTURERS** we can make you very **LOW PRICES** for **QUANTITIES.**

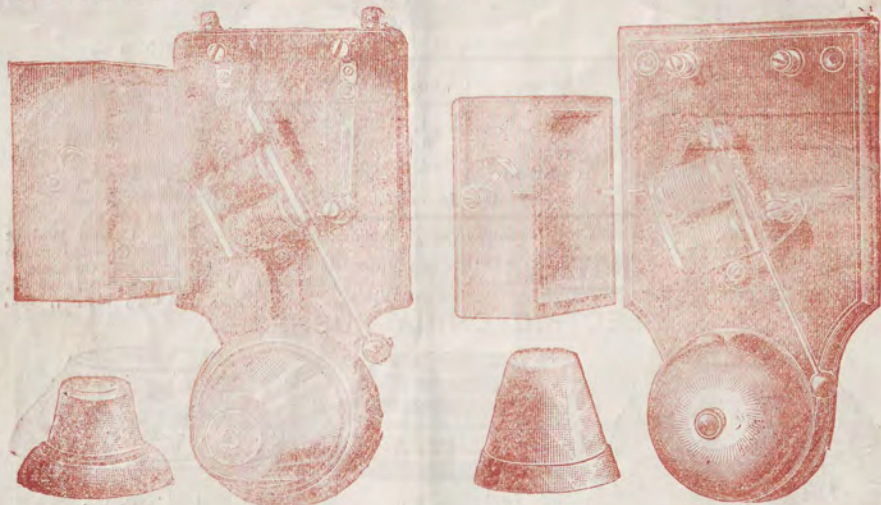
We shall be pleased to quote for any Special Shape or Size Battery Materials at the Right Prices.

ELECTRIC BELLS.

THIS Company has for a number of years maintained a high reputation in the Electric Bell Trade for very Moderate Prices. Unquestionably our endeavour to supply a **GOOD ARTICLE** and yet compete at a low price has been entirely successful. We guarantee that nothing but absolutely the best tested materials are embodied in the manufacture of these Bells.

All our Electric Bells are mounted on Selected Seasoned Polished Wood Bases, Coil Bobbins are wound with Best Quality High Conductivity Silk Covered Copper Wires, Terminals and all Metal parts heavily Nickel-plated. We fit Cast Metal Nickel-plated Gongs to all our Bells, therefore it is **IMPOSSIBLE** for them to lose their rich tone or **RUST**.

The Company's Electric Bell Gongs are far famed and "streets ahead" of any other make for their Remarkably Clear Note and Rich Tone. It must not be forgotten that we have a lead with over **TWELVE YEARS'** experience.



Church Gong.

List No. 75.

Sheep Gong.

List No. 79.

MEDIUM QUALITY.

BEST QUALITY.

List No.	Size of Gong.	Approx. Weight.	Round Gong.	Sheep or Church Gong.	List No.	Size of Gong.	Approx. Weight.	Round Gong.	Sheep or Church Gong.
73	2½ in.	12 oz.	1/2	1/6	78	2½ in.	1 lb. 3 oz.	2/	2/3
74	2¾ "	13 "	1/3	1/8	79	2¾ "	1 " 4 "	2/2	2/5
75	3 "	15 "	1 6	1/11	80	3 "	1 " 5 "	2/4	2/7
76	3½ "	1 lb. 10 oz.	2/3	2/10	81	3½ "	1 " 10 "	3/3	3/8
77	4 "	1 " 14 "	2/9	3/10	82	4 "	2 " 0 "	4/4	5/
					83	5 "	2 " 8 "	5/6	6/
					84	6 "	3 " 0 "	7/6	8/6

POSTAGE, 4d. and 8d. according to weight. Lowest 4d. per Bell.

Specially Light but Substantially Made 2½ in. Bells for Export, weight 9¼ oz., price, each, 1/3; per doz. 14/.

To **ELECTRICIANS**.—Should the sample you have purchased prove what is wanted for your work, remember we can quote you very special nett prices for doz. lots, and supply promptly.

SPECIFICATION FOR BEST QUALITY BELLS.

Real Selected Teak Polished Wood Bases and Covers, Cast Iron Frame Enamelled Black with Polished Edges, Real Bell Metal Gongs (impossible to rust), Deep Rich Tone and Clear. Bobbins wound with Best Quality H.C. Green Silk Wires, well insulated. All connections grooved in base and insulated by Paraffin Wax. Bushed Brass Eyelets for fixing to wall. The prices we quote for these Bells, considering the quality, is very **CLOSE**, and is only maintained by our large annual output.

8 COMPARE THESE PRICES WITH RIVAL COMPETITORS.

ELECTRIC BELLS—continued.

THE "HOUSE ALARM" BELL.

One of the cheapest lines in this List. One that is at all times reliable and ready. Noted for its loud and clear tone. The whole movement is mounted on Glossy Black Enamel Iron Base, with a very neat little adjusting device. Can be thoroughly recommended.

LIST No.	SIZE OF GONG.	EACH.	POSTAGE EXTRA.
85	1¾ inches	1/	2d.
86	2" "	1/3	3d.
87	2½ " "	1/4	3d.
88	3 " "	1/6	4d.



List No. 85.

THE "OFFICE" ROUND BELL.

Mounted on Round Japaned Iron Base, the Gong completely protecting the movement from damage.

List No. 89 ... 1/6 each
Postage 3d. extra.

Get our Book on "ELECTRIC BELLS," 7d. post free. EXPLAINS EVERYTHING.



List No. 89.

CONTINUOUS ACTION BELLS.

Bell continues to ring when once started, and can only be silenced by pulling cord (see illustration). Should be used for Fire or Burglar Alarm. This we make in an improved pattern from last year's bell.

LIST No.	SIZE OF GONG.	ROUND GONG.	SHEEP OR CHURCH GONG.	POSTAGE EXTRA.
90	3 inches	4/10	5/10	4d.
91	4 "	6/10	7/10	5d.
92	5 "	10/	12/6	6d.
93	6 "	14/6	16/	7d.

For detailed explanation of this Bell's working, see our Book, "ELECTRIC BELLS," 7d. post free.

The "MIDGET" Bells.

Noted for their remarkably clear and rich tone.

List No. 95.

Weight 1½ ozs.

The smallest bell made. Can be put out of sight by closing one's hand.

Size, 3½ in. long by 1½ in. wide.

1/ each.

Postage 1d. extra.



List No. 95.

The "MIDGET" Bells.

Noted for their remarkably clear and rich tone.

List No. 94.

Handsomely enamelled stock in all colours. 1/ each.

Postage, 2d. extra.



List No. 94.



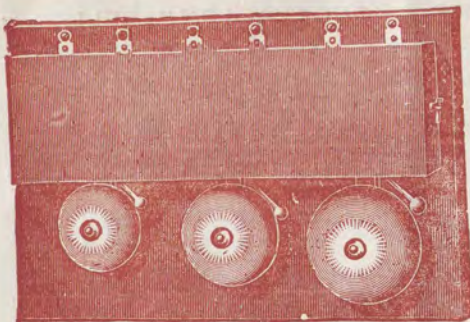
List No. 95.

ALL BELLS CAREFULLY TESTED BEFORE DESPATCH.

ELECTRIC BELLS—continued.

CHIMING BELLS.

These Bells have each a distinct and different tone. They are of various sizes and shapes—Church, Sheep, &c.—and so arranged that the sound is easily distinguishable.



List No. 96.

List No.	SETS OF	PER SET.	POSTAGE.
96	2 Bells	4/6	/7
97	3 "	6/6	/8
98	4 "	9/6	/10
99	5 "	12/	1/
100	6 "	14/	Car. Forward

ELECTRIC BUZZERS.

These instruments make a soft buzzing sound and so take the place of Electric Bells, where less noise is required, for Offices, Sick Rooms, Telephones, &c.



List No. 101.

List No. 101. Best Quality, ready for fixing.

Each 3/9.

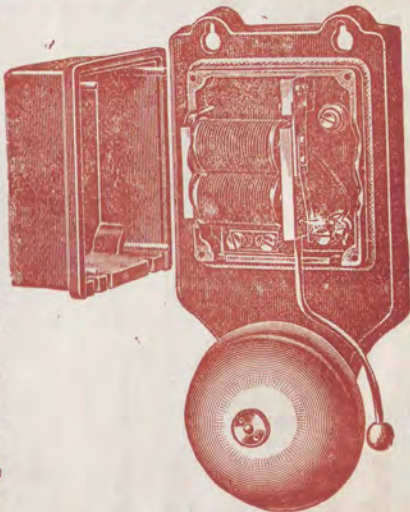
ELECTRIC RELAYS.

These Relays are specially designed for Bell and Telephone Circuits where long stretches of line are worked.



List No. 102.
Five Ohms
Coils,
mounted on
Polished
Wood Base,
5/ each.
Post 1/4 extra.

List No. 102.



List No. 103.

OUTDOOR WATERPROOF BELLS.

Specially recommended for use where Bells are mounted out of doors in exposed positions. Heavy Cast Iron Cover and Base. Reliable Movement. Bell—Metal Gong (therefore impossible for it to rust) and Well Insulated.

List No.	SIZE OF GONG.	EACH.	} Carriage Forward.
103	4 inches	11/6	
104	5 "	12/6	
105	6 "	14/6	
106	8 "	33/	
107	10 "	44/	
108	12 "	58/6	

10 NOTE.—LARGE STOCK OF BELLS ALWAYS IN HAND. PROMPT DELIVERIES.
"E.E.C." BELLS WILL NOT RUST.

COMPLETE ELECTRIC BELL SETS.

THE "RIVAL" BELL SET.

One of our cheapest lines. Consists of one Reliable Electric Bell, one E.E.C. Dry Battery (Large size), 12 yards 22 D.C.C. Wire (any colour), one Polished Wood Push, German Silver Springs, Staples, and Complete Diagram of Connections.

List No. 923.

Price (the Complete Set) 2/6; postage, 6d. extra.
Extra 12 yards of Wire, 3d. extra; Extra Battery, 1/ each.
N.B.—Usual price at other Electricians, 3/6. Annual sale over 1,000 Complete Sets.

THE "ECCON" BELL SET.

The value of the "Econ" Set is renowned. Consists of one of our Special Nickel Plated 2 1/2 in. Electric Bells, 25 yards of 22 D.C.C. Wire, one Best Quality Wood Push, packet of Staples, one 2-pint Leclanche (or, if preferred, one Reliable E.E.C. Dry Battery), full Printed Diagram of Connections in with each Set. List No. 924.

Price (the Complete Set) 3/-; postage, if with Dry Battery, 6d. extra; if with Leclanche Battery, 11d. extra.
Extra Coil of Wire, 6d. Extra Battery, 1/.

VALUE FOR MONEY: THE "ECCON" BELL SET

THE "EMPIRE" BELL SET.

Consists of one 2 1/2 in. No. 79 Best Quality Bell, two E.E.C. Dry Batteries (or, if preferred, two Leclanche), one 3 in. Hard Wood Polished Push, 55 yards 22 D.C.C. Insulated Wire packet of Staples, and Full Diagram of Connections.

List No. 925.

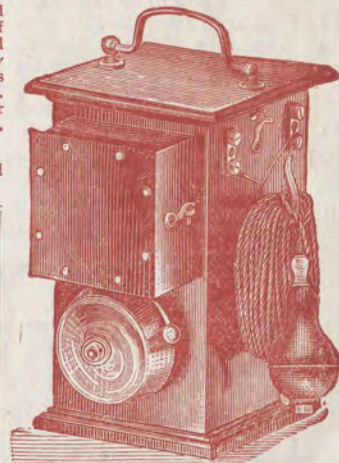
Price (the Complete Set) 6/-, carriage forward.

THE "E.E.C." PORTABLE SET.

Mounted on Selected Polished Wood Cabinet, consisting of one 2 1/2 in. Soft Clear-Toned Bell, one Reliable E.E.C. Dry Battery, Silk Flexible Cords (12 yards), and one Pear Push. ALL READY CONNECTED FOR immediate use. List No. 928.

Price 10/6.

A very suitable Set for Invalid at a reasonable price.



THE "RELI" BELL SET.

Total height, 12 inches. Comprises a Smart, Clear-Toned Electric Bell, one Round or Square "E.E.C." Dry Cell, six yards Bell Flex. (any colour), Pear Push or Bell Push. Mounted on Polished Wood Stand. ALL READY CONNECTED ready for use. List No. 927

Price 3/6; postage 8d.
(as Illustration).

Same can be supplied with Two Batteries, 1/6 extra.
Extra Wire, 1d. per yard.



THERE'S NOBODY

can supply you a Cheaper and more Reliable Bell Set than the "Economic" ACTUAL MANUFACTURERS OF AMATEURS' REQUISITES.

NO NEED TO QUESTION — "ECONOMIC" PRICES ALWAYS RIGHT! 11

ELECTRIC ALARM CLOCK SETS.

Fitted with our Improved and Reliable Electric Contacts—one of the most efficient on the Market. Both the Electric and Alarm Bells ring immediately and continue until the current is switched off. Nothing could be louder and more certain.



- | | | | |
|-------------------|--|------|-------------------|
| Reduced
Prices | Note | Note | Reduced
Prices |
| LIST No. | LIST No. III. | | EACH. |
| 109 | Electric Alarm Clock, Fitted with our latest improved Electric Contacts, Nickel Plated, Regulator, etc., | | 3/6 |
| | Postage 4d. extra. | | |
| 110 | Similar to above in fitting but Best Quality Clock | | 6/6 |
| | Postage 4d. extra. | | |
| 111 | Complete Electric Alarm Clock Set (as illustration), comprising one Electric Alarm Clock No. 109, one 2½ in. Electric Bell, 6 yards Twin Silk Flexible Wire, one One-Way Nickel Plated Switch, one quart Leclanche or one improved "E.E.C." Dry Cell | | 6/6 |
| | Extra (if required) Coil of Wire, 6d. "E.E.C." Dry Battery, 10d. | | |
| 112 | Similar to above Set but with No. 110 Clock | | 9/6 |
| 113 | Handsome Electric Alarm Clock Set, mounted on and comprising one Selected Wood Polished Cabinet containing one quart Leclanche or one "E.E.C." Dry Battery, one Loud Toned Electric Bell, one Polished Switch. The whole most compact and ready connected for using | | 12/ |
| 114 | Similar to 113 but fitted with Best Quality Clock | | 15/ |

NOTICE.—Should customers require their own Alarm Clocks converted into Electric Alarm and fitted with Terminals, we do this at 1/6 each. Customer paying Carriage both ways.

All our Electric Alarm Clocks are fitted in such a manner that by removing a Terminal the Electric Contact is removed and the ordinary alarm can be used in its place.

WOOD AND BRASS LAMP STANDS.



- | | |
|----------|--|
| LIST No. | EACH. |
| 210 | Handsome Polished Real Teak Standard for Loop Lamps, Connected ready for use /9 |
| 211 | Similar to above but fitted with Brass Bayonet Holder for Capped Lamps 1/2 |
| 212 | Very Handsome Solid Brass Lamp Holder, Lacquered and Polished, Fitted with Best Quality Brass Holder (as illustration) 1/ |
| | Without Lamp. |
| | Postage on Stands 1d. extra. |

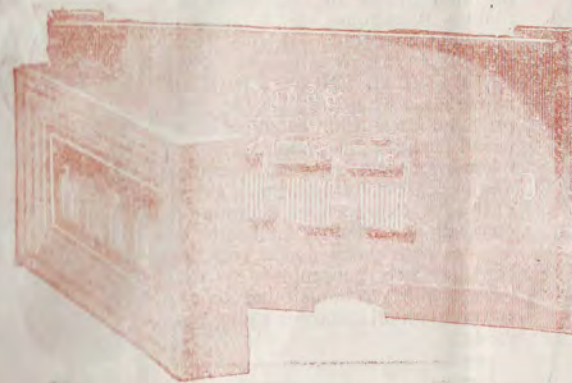


No. 212.

ECONOMIC ELECTRIC ALARM CLOCKS ARE RELIABLE.

ELECTRIC INDICATORS.

THOROUGHLY reliable Cases and Movements, in Imitation Teak Cases, with Real Selected Teak Front, and fitted with our Standard Best Quality Movements.



COMPLETE INDICATORS

Wired and Fitted with
PENDULUM MOVEMENTS.
2 and 3 Holes... .. 1/4 per hole.
4 Holes and upwards 1/3
MECHANICAL MOVEMENTS.
2, 3 and 4 Holes 2/7 per hole
5 Holes and upwards 2/4
ELECTRICAL REPLACEMENT.
Up to 4 Holes... .. 4/6 per hole.
5 Holes and upwards 3/6

Fittes Electric Bell to Indicator 2/9
Fitter's Name and Address in Gold on Glass 1/
Number or Name of Room in Gold on Glass per number, 3
Customers' Name Free on all Indicators.
Save Indicator Front Glasses up to 3 holes, 9 each.
Each additional hole 1/4 extra.

INDICATOR MOVEMENTS ONLY.

To save expense of complete Indicator many customers buy movements only, and mount on ordinary stained boards.

- | | |
|----------|--|
| LIST No. | EACH. |
| 112 | Pendulum Movements /5 |
| 113 | Mechanical " " /9 |
| 114 | Electrical " " 1/7 |
| | Postage on single Movements 1/4 extra. |



Pendulum Movement.



Mechanical Movement.

BEST STEEL STAPLES.

Best Quality Steel Coppered Staples. Will not bend over, with sharp pointed ends.



BELL BOBBINS.

Manufactured from Hard Woods, polished ends, and carefully wound Best High Conductivity Green Silk Copper Wire, ½ Flanges.

Diam. of Size of		Hole. Empty. Wound	
Long. Flange.	Hole.	Empty.	Wound
1 in.	½ in.	1	3
1½ "	¾ "	1	3
1¾ "	1 "	1	4
2 "	1 ¼ "	1	6
2 ½ "	1 ½ "	2	10

POSTAGE 1/4 EXTRA.
Any Special Bobbin Turned.

BELL GONGS.

Best Metal Gongs, Nickel Plated, Remarkably clear in tone.

LIST No.	Size.	Round.	Sheep or Chiu.h.
929	2½	3	9
930	2½	4	11
	3	6	1/
931	4	1/	2/

POSTAGE EXTRA.

FIBRE INSULATED STAPLES.

Avoid cutting the insulation on your wires, make doubly sure of getting a good test, use these staples and do away with earth leakage.

- | | | | | |
|----------|-------|----------|----------|-----------|
| LIST No. | SIZE. | PER DOZ. | PER 100. | PER 1000. |
| 115 | ½ | /2 | /11 | 8/ |
| 116 | ¾ | /2 | 1/ | 9/ |
| 117 | 1 | /3 | 1/2 | 10/ |
| 118 | 1 ¼ | /3 | 1/9 | 15/ |

Postage 1 and 2 extra.

¾ and 1 in., /0½ doz., /3 grs.
Not less than 1 lb., /9.

¾ and 1 in., /0½ doz., /4 grs.
Not less than 1 lb., /9.

POSTAGE EXTRA:—¾ and 1 in., /1 grs.; ¾ and 1 in., /1½ grs.; 1 lb. lots, /4.

CONTRACTORS TO H.M. GOVERNMENT AND PRINCIPAL RAILWAYS.

THE "PREMIER" DOMESTIC TELEPHONES.

These 'Phones are specially suitable for domestic use or from Shop to Stables, Warehouse, etc. They can be fitted to ordinary house Bell Circuits in a few minutes. NO ELECTRICAL KNOWLEDGE is necessary. They are portable, and provided each room is fitted with round push (as illustrations), can be taken from room to room at pleasure. With each Set of Instruments we enclose a clear printed diagram of connections. Don't confuse these 'phones with cheap models, remember they are guaranteed by the "Economic" reliable and clear speaking on all distances up to 150 yards.



Illustrations of two Instruments, No. 119.

Diagram of Connections, No. 119.

List No. 119 comprises Two Improved "PREMIER" Hand Combination Transmitters and Receivers, Ringing Pushes, Automatic Switch Hook, Two-Pin Plug, 25 yds. 22 D.C.C. Telephone Wire, Two Reliable E.E.C. Dry Batteries (extra 25 yards, 6d.), and one 2 1/4 Loud Electric Bell. For ringing one-way Connections as above.

Instruments, single, 6/6; per pair, 12/6. Complete Set as above, 16/6. postage, 4d. postage, 6d. postage, 10d. extra. No. 120.

List No. 120, Similar Set to No. 119, but fitted with four terminals to ring both ways. The Complete Set comprises same as No 119 with the exception of different instruments and an extra 2 1/4 in. Bell.

Instruments, single, 8/6; per pair, 16/6. Complete Set, 20/6. Postage, 4d. Postage, 6d. Postage, 1/ extra.

Spare round pushes for No. 119, 1/9 each; for No. 120, 2/ each.

Printed diagrams of connections are sent with both Instruments or Complete Set. If you want advice write us enclosing stamp for reply.

THE "PREMIER" TELEPHONES.

THE No. 121 "PREMIER" is one of the cheapest and most reliable 'Phones in this Catalogue. Guaranteed perfect workmanship throughout. It is our latest Improved Pattern brought thoroughly up-to-date and can be recommended for its CLEAR SPEAKING.

Mounted in selected Polished Real Walnut Cases, with Special Long-Distance Induction Coil, Double-Pole Watch Receiver, Call Bell, Improved Form Granulated Carbon Transmitter with Ebonite Mouthpiece, Ringing Key, Automatic Switch Hook, with all metal parts brightly plated. Suitable up to 3/4 mile.

List No. 121 EACH 12/6

THE "PREMIER" COMPLETE SET.

COMPRISING Two Telephone Stations, No. 121, Four Reliable Own Make E.E.C. Dry Cells, 55 yards 2/22 Telephone Wire Staples, and full diagrams of connections with each Set.

COMPLETE SET 30/-

THE "PREMIER" DESK 'PHONE.

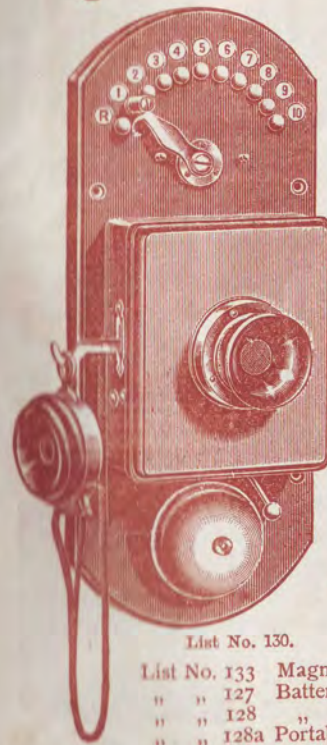
Similar Instrument to 121, but fitted with Loud Tone Buzzer.

List No. 122	... 1 way	... EACH	£0 19 6
" " 123	... 5 "	" "	1 7 6
" " 124	... 10 "	" "	1 12 9
" " 125	... 15 "	" "	1 18 0
" " 126	... 20 "	" "	2 2 0



List No. 121.

**"PREMIER"
FOR
RELIABILITY**



List No. 130.

List No. 129	... For 5 Lines	... EACH	£1 4 0
" " 130	... " 10 "	" "	1 6 0
" " 131	... " 15 "	" "	1 9 6
" " 132	... " 20 "	" "	1 12 9
List No. 133	Magneto Wall 'Phones, with Generator	...	1 19 6
" " 127	Battery	" "	2 4 0
" " 128	" Table	" "	2 1 0
" " 128a	Portable Telephone Sets in Case, with Magneto Generator, and Dry Cells	...	6 0 0



List No. 122.

THE "PREMIER" INTERCOMMUNICATION INSTRUMENT

THESE Reliable Battery Wall Intercommunication Instruments we can supply up to 20 lines. A Special Pattern Improved Line Switch is fitted, so that any station can call up, no matter in what position the Switch is left. Cross ringing with these Instruments cannot take place, being a decided improvement on the old patterns. Mounted in selected Polished Walnut Case, Revolving Granulated Carbon Transmitter, Double Pole Watch Receiver, Automatic Switch Hook, Ringing Key. All Parts Heavily Nickel Plated.

CHEAPEST HOUSE FOR RELIABLE 'PHONES IN LONDON. 15

NEW PATTERN "PREMIER" 'PHONES.

Patented, Registered Nos. 367,701, 367,702, 464,616.

As things go you require a telephone to be always Ready and Reliable, something that won't easily get out of order, and is, above all, Clear Speaking. In our Latest Pattern Telephone, you have all these points embodied. Important improvements have been patented in this neat little instrument. Note no cup in transmitter to accumulate dust or germs, quite the most up-to-date 'phone from a health point of view.

Write direct now for a Set (or one if you wish). Rig them up and if you don't approve in three days, send them back, provided when received they are as despatched; we guarantee to return Cash; Customer paying postage both ways.

List No. 056 Instruments only (including diagram of connections),
REDUCED each 9/- (Postage 6d. extra.) REDUCED each 9/-

List No. 058 Comprising 2 Loud Electric Bells, 2 Reliable E.E.C. Dry Cells or (2 pint Leclanche), 25yds. Twin Bell Wire, Staples, etc., together with 2 Complete Premier Telephones and printed Diagram of Connections, Ringing both ways.

REDUCED the set 22/6 (Carnage Forward) REDUCED the set 22/6

THE "MINIATURE" HANDY TELEPHONES.

A useful little 'Phone which any amateur can easily fit. They compare very favourably with several other high-priced wall battery telephones. Each one is fitted with Watch Receiver, Granulated Carbon Transmitter, Call Bell, Automatic Switch and Push, and the whole mounted in Selected Polished Case. Only two wires are required between the speaking stations. They are RELIABLE and guaranteed tested before despatch. List No. 059. Separate Instruments, each 8/9; per pair, 17/- Postage 5d.

Diagram of Connections sent with Instruments, Postage 6d.
List No. 059A Comprising 2 "Miniature" Telephones, 165ft., 23 D.C.C. Wire, 2 Reliable E.E.C. Dry Cells, Staples, etc., together with full diagram of connections
THE COMPLETE SET 20/6.

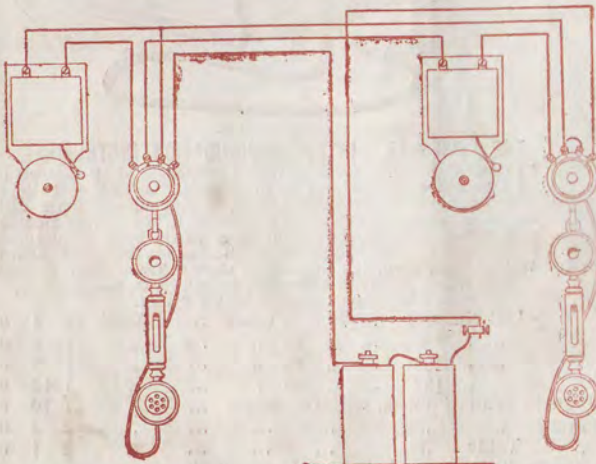


Diagram of Connections for No. 120 'Phones.

TELEPHONE & BELL ANNUNCIATORS.

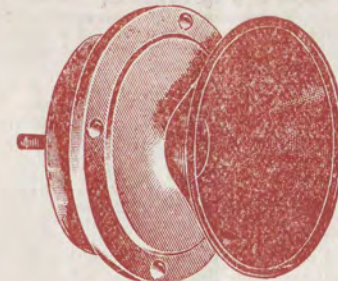


List No. 060. For Battery Call
5 Ohms resistance, Each 10/
List No. 061. 200 Ohms,
Each 11/

TELEPHONE ACCESSORIES.



List No. 135.



List No. 138.



List No. 147.



List No. 153.



List No. 151.

- | | | |
|----------|---|---------------|
| List No. | Description | each |
| 134 | Double Pole Watch Receiver, Nickel-Plated | 3/6 |
| 135 | Flexible Receiver Cords, Superior Finish | 6/ |
| 137 | 4 way Plaited Green Cords | 1/ |
| 138 | Cheap Pattern Carbon Microphone | per yard 1/10 |
| 139 | Carbon Granul. Pattern | 3/ |
| 140 | Granulated Carbon for | per packet 3/ |
| 141 | Ferrotypc Plate 3in. by 3in. (any size cut) | 2/ |
| 142 | 1-way Lightning Arresters | 1/1 |
| 143 | 3 " | 2/6 |
| 144 | Carbon Diaphragms, Best Quality, 2 1/2 " | 9/ |
| 145 | Annunciators in Walnut Cases | 7/ |
| 146 | Magneo Generator | 13/6 |
| 146A | Extension Bells | 13/6 |

Hard Drawn Copper Wire, see page 5.
Books on Telephones " " 9d.
Telephone Wires " " 79.
" Connections " 14, 16, 23.

"ECONOMIC" TELEPHONES are
VALUE FOR MONEY.



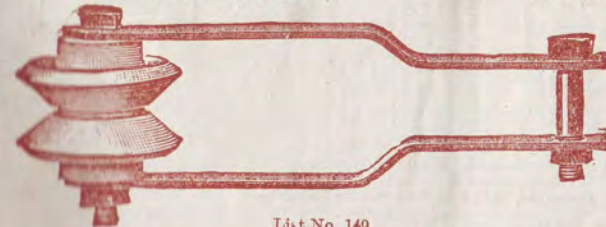
List No. 136.



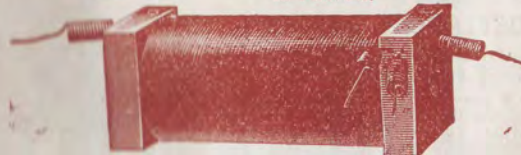
List No. 152.



List No. 150.



List No. 140.



List No. 146B.

LONG-DISTANCE E.E.C. INDUCTION COILS.

250 Ohms and 5 Ohms. Special Value.

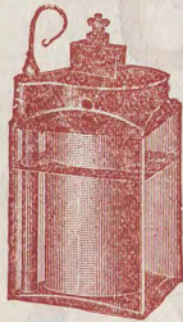
- | | |
|--------------------|-------|
| List No. | each. |
| 146B. | 1/9 |
| Postage 2d. extra. | |

- | | | | |
|----------|--|-------|------|
| List No. | Description | each. | doz. |
| 147 | Single Swan Neck Insulator, Porcelain, height 1 1/4 in. by 1 1/4 in. | 4/ | 3/6 |
| 148 | Larger " " " " 2 1/4 in. by 2 in. | 10/ | 9/ |
| 149 | Shackle Porcelain Insulator (as illustration) | 9/ | 8/6 |
| 150 | Standard Insulator to screw into top of posts, trees, &c. | 8/ | 7/ |
| 151 | Wrought Iron Chimney Bracket for Standard Insulator | 1/3 | 14/ |
| 152 | Porcelain Insulator size , height 2 in. by 2 1/4 in. | 6/ | 5/ |
| 153 | " " size " " 1 in. by 1 in. | 1/ | 9/ |

CLOSE PRICES FOR ALL TELEPHONE MATERIAL

LECLANCHE BATTERIES (E.M.F. 1'6 Volts per cell).

Principally used for House Bells, Telephones, and in some cases Intermittent Electric Lighting. The batteries we are selling we claim are of an **IMPROVED TYPE**. The Jars are clear, and have a good deposit of wax to prevent creeping of salts. The Zincs are thoroughly amalgamated, giving twice the life, and further, **A STRONG POINT, hard ROLLED not CAST.**



Leclanche 2 Pint.

DIRECTIONS.—Make up solution, 3 ozs. of Crystal Salammniac to 1½ pint of water; fill outer jar to within one-third of top. If Cell is required immediately it is a good tip to use warm water for solution.

Size.	Complete Battery with Sal-ammoni- ac. each doz.	Porous Pot Charged. each doz.	Hard Zincs Rolled, each doz.	Glass Jars. each doz.
3 Pint	1/10 20/-	1/ 11/-	4d. 3/9	6d. 5/6
2 Pint	1/- 11/-	6d. 5/3	2½d. 2/3	3d. 2/9
1 Pint	1/ 11/6	7d. 6/-	3d. 2/9	3d. 2/9

N.B.—We guarantee each cell. The price quoted includes 3 ozs. Salammniac to each.

Extra Salammniac, per lb. 6d.

BATTERY MATERIALS, see page 23.

Mercury for amalgamating Zincs, 6d. per oz. bottle.

REMEMBER! We are actual Manufacturers. NO FIRM can make you Closer Prices.

BICHROMATE BATTERIES. (BOTTLE FORM.)

The Bichromate is advised in all Electrical Books. Where a large current is required, the cell can find no equal. We strongly recommend them for driving Electric Motors, Tram Cars, Shocking and Medical Coils, and in some cases Intermittent Electric Lighting. **VOLTS per cell, 2.** When not in use **ALWAYS** remove zinc from acid. A special attachment is provided for this purpose on all our Bichromates.



Bichromate No. 159.

List No.	Size.	Complete Battery.	Spare Bottle with Brass Ring.	Spare Zincs (drilled).	Spare Carbons (Coppered).
158	½ pint	1/9	1/2	3d.	3d.
159	1 "	2/6	1/6	4d.	4d.
160	2 "	3/6	1/10	5d.	5d.
161	4 "	4/6	2/10	9d.	10d.

Postage 4d., 5d., 8d., and 1/- extra.

Use Chromic Acid. We strongly recommend it. Bichromate of Potash, per lb., 7d.

ANNUAL SALE of Bichromate Batteries exceeds over 2,000.

All sizes in stock. Prompt despatch!

The Latest "DEFIANCE" BATTERY.

A Cheap and Reliable Bichromate Battery for Amateurs.

The Defiance if placed in an ordinary jar, is quite the equal of any Bichromate made as regards power. Give 2 VOLTS to each cell and comprises 2 Terminals, Supporter, Lifting Zinc Plate, two 5 x 1¼ Carbons, all connected ready for use. By doing away with jar the customers save 4d. in postage.

OUR SPECIAL PRICE.

Complete, one Carbon, 1 Zinc ... 6d. each.
" two " 1 " ... 8d. "

Postage 3d. extra.

Spare Zincs (drilled) 2d. each } Postage 1d. extra.
" Carbons 1d. " }



SPECIAL FORM OF BICHROMATE FOR MEDICAL COILS.



List No. 416.

Size, 3¼ high, 1¼ by 15, 2/6.

(as Illustration).

Spare Zincs, 1½d. each.

" Carbons, 1½d. each.

Postage, 4d. extra.



BATTERIES—continued.

CARPOROUS LECLANCHE BATTERIES.

A very powerful Battery, capable of producing very heavy currents. Suitable and generally used for circuits where Bells or Telephone are in almost continuous use.

DIRECTIONS.—Fill outer glass jar two-thirds full with a solution of 3ozs. Salammniac to 1½ pints water.



List No. 163.

AGGLOMERATE LECLANCHE BATTERY.

(E.M.F. 1'6 Volts per Cell).

Another form of Leclanche Battery. Does not polarize quickly and gives large current. Suitable for Telephone or Bells.

List No.	Size.	Complete Cell.	Agglomerate Blocks only.	Zincs.	Spare Carbons.
164 ...	2 pint ...	1/9 ...	/10 per pair ...	/3 each ...	/4 each.

For further full description of this and all our Batteries, see our book "Electric Batteries," post free, /7.



THE "BUNSEN" BATTERY.

(E.M.F. nearly 2 Volts per Cell).

Exciting fluid Nitric Acid in Inner Pot, and Sulphuric Acid (1 to 12 parts water) in Outer Jar. Always remove Zinc from Jar when not in use; keep well amalgamated.

List No.	Size.	Complete Cell.	Porous Zincs.	Carbons.
165	1 pint	3/6	1/11	4/5 /6
166	2 pint	4/6	2/6	5/6 /9

N.B.—We recommend our customers to buy acid for above Cell from local chemist.



List No. 166.

An Ideal Battery for producing a constant current. Specially adapted for Electro-Plating, Testing, or experimental work. Copper Sulphate in Outer Jar and dilute Sulphuric Acid in Inner Jar.

List No.	Complete Cell.	Jar.	Zinc.	Copper Cylinder.	Porous Pots.
167 ...	2/8 ...	1/ ...	1/ ...	/10 ...	/5

Copper Sulphate, /8 per lb., see page 23.



List No. 167.

THE "DANIEL" BATTERY.

(E.M.F. 1'1 Volts).

WE HAVE OVER 12 YEARS, MANUFACTURING EXPERIENCE. 19

THE "ECCON" CHARGING BATTERY.

Last year we received a great many enquiries from our customers for a really efficient battery for charging ignition accumulators. These enquiries, we noted, were generally from country customers who could not obtain facilities for charging their cells locally, or again, others who preferred to charge their own accumulator in preference to handing them over to be ruined by some careless attendants at the charging stations. To all these "THE ECCON BATTERY," which we illustrate in this section, deserves their special attention. Its superiority over other makes is immediately apparent—Moderate Price, Efficient, Easy Replacement of Spare Parts, Chemicals, &c., Simplicity in working, and, above all, rapidity with which a charge is effected. It is a Two Fluid Battery, contains 3 carbons, 1 massive zinc in each cell. The Zincs are heavily amalgamated. Note special lifting arrangement for zincs.

DIRECTIONS.

Fill Outer Jar two-thirds full with solution of BICHROMATE OF POTASH and Dilute SULPHURIC ACID (1 part acid to 10 parts water), put approximately 6 ozs. Bichromate into each cell with the dilute Sulphuric Acid. Fill Inner Porous Pot with solution of dilute SULPHURIC, only 10-1 of acid. Put into this Inner Porous Pot sufficient MERCURY to cover bottom, then replace Zinc on Mercury in pot. Current can be regulated by adjusting the amount the zinc stands in solution.

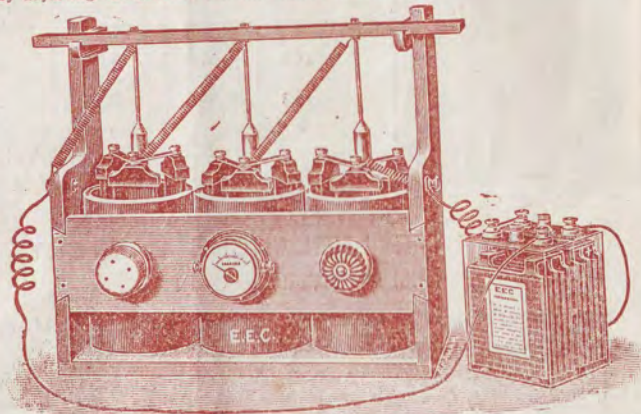
DIRECTIONS.

Fill Outer Jar two-thirds full with solution of BICHROMATE OF POTASH and Dilute SULPHURIC ACID (1 part acid to 10 parts water), put approximately 6 ozs. Bichromate into each cell with the dilute Sulphuric Acid.

Fill Inner Porous Pot with solution of dilute SULPHURIC, only 10-1 of acid.

Put into this Inner Porous Pot sufficient MERCURY to cover bottom, then replace Zinc on Mercury in pot.

Current can be regulated by adjusting the amount the zinc stands in solution.



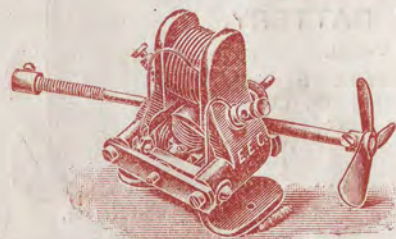
BATTERY SETS COMPLETE (with Lifting Arrangement for Plates).

SIZE.	3-Cell Battery for Charging 4-V. Accum., gives 6 Volts.	4-Cell Battery for Charging 6-V. Accum., gives 8 Volts.	6-Cell Battery for Charging 8-V. Accum., gives 12 Volts.	8-Cell Battery for Charging Three 4-V. Accum. in series, gives 16 Volts.
2-pint Size	£0 15 0	£1 0 0	£1 9 6	£2 6 6

If fitted with Ammeter (as illustration) add 8/- extra to above prices. Prices quoted are fitted with Charging Terminals but without Ammeter. We are ACTUAL MANUFACTURERS of these Sets, and can make any alteration to suit customers.

Volts. per cell.	Price Single Cell.	Set of 3 Carbons.	Spare Zincs.	Porous Pots.	Outer Jar.	Bichromate of Potash.	Mercury.	Frame with Lifting Attachment.
2	3/-	1/4	each 10d.	6d.	8d.	per lb., 7d. per 7 lb., 3/9	per oz., 6d. per lb., 5/-	5/-

N.B.—The above Sets will be found useful for working Spark Coils, Intermittent Electric Lighting with Metal Filament Lamps, Driving Experimental Electric Motors, etc., etc.



BOAT "DESTROYER." MOTOR

OUR very Latest Design. A very speedy and quiet Little Boat Motor, fitted with self-starting Tri-polar Armature. Complete with Flexible Coupling, 3-Blade Propeller Shaft, and Pulley.

List No. 0134, EACH (as Illustration) 4/10
Postage 3d. extra.

Runs at high speed and is self starting on 2 volts. Weight, with propeller and shaft, 10 1/2 ozs.; size, without shaft, 2 ins. long, 2 1/4 wide, 2 1/2 in. high. Price includes Detachable Pulley for driving Models.

THE "E.E.C." SACK LECLANCHE BATTERIES.

WE strongly urge our customers to use the E.E.C. Batteries in all cases for INTERMITTENT ELECTRIC LIGHTING. Three E.E.C. Sack Cells will brilliantly light one of Our Latest 4v. Metallic Filament Lamps or one 4v. H.E. Lamp from 20 to 30 minutes (these Cells regain their normal powers if left standing for 15 minutes after using and are in every respect AS NEW). Two ADVANTAGES stand out prominently in their favour. Only Salammoniac Solution is used to charge (4 pints cost 3d.). The E.E.C. Sack Cell when exhausted can be easily and at small expense replaced with spare parts, which is absolutely impossible in the case of cells sealed with pitch. When Sack Carbon is placed in a glass jar the Cell is dustproof. Volts per cell 1.60.



NOTE
REDUCED PRICES.

WEIGHTS.	POSTAGE.
List No. Each	Each
168 3lbs.	5
169 1 1/4 "	6
170 2 1/2 "	9

3 No. 168 can be sent for 7d. or 3 No. 169 for 1s.
SALAMMONIAC 6d. per lb.

List No.	Approx. Size.	Size of Glass Jar.	Complete Battery.	Sack Carbon and Zinc only	Circular Zinc only.	Sack Carbon only.	Glass Jar only.
168	1/2 pint.	Height. 4 1/2 ins. × Width. 2 1/4 ins. × Breadth. 2 1/4 ins.	1/6	1/3	/7	/10	/4
169	1 "	4 3/4 ins. × 2 3/8 ins. × 2 3/8 ins.	1/9	1/5	/8	1/	/5
170	2 "	6 1/2 ins. × 3 5/8 ins. × 3 5/8 ins.	2/8	2/3	1/2	1/4	/6

Charging Solution, 4ozs. of Salammoniac to 2 pints of water.

DON'T MISS READING THESE LETTERS.

Mr. H. W. Tibbot, of Wrexham, writes:—

Received 4 Sack Batteries, &c., yesterday, with which I am more than pleased. They are the best batteries I have come across for lighting purposes. They light a 4 v. 3 c.p. lamp for 1/2 hour. Thanking you for very prompt attention.

Yours very truly.

Mr. J. Durrant, of Sutton, Surrey, writes —

I am writing re your Sack Batteries. I had some from you about a year ago, and found them the most efficient and best batteries for intermittent lighting. I speak in great praise of them. Mine have been running now close on a year, lighting a 4 v lamp and doing long periods.

FULLER'S BICHROMATE BATTERY.

TO meet our Customers who require a Cheap and at same time Reliable Battery to charge their own accumulators, we list the "Fuller" Bichromate.

DIRECTIONS.

Fill outer jar two-thirds full with strong solution of Bichromate Potash and Dilute Sulphuric Acid (1 part acid, 10 water). Inner jar fill with solution of Dilute Sulphuric only, 10 parts water, 1 part acid.

Put in sufficient Mercury to cover bottom of inner pot, and then stand Zinc on Mercury in pot.



List No. 171.
FULLER BICHROMATE.

List No.	Size.	Complete Battery.	Carbon only.	Zinc only.	Stoneware Jars.	Porus Pot.
171.	2-pint	2/3	/6	/10	/8	/4
172.	Set of 3 Cells for charging 4-v. Accumulator	6/6				

For Mercury, Bichromate of Potash, &c., see page 23.

THE "E.E.C."

BRITISH MADE DRY AND EXPORT BATTERIES.

WELL-KNOWN. RELIABLE. LARGE CURRENT.



List No. 173.

(ANNUAL SALE runs into thousands.)

Guaranteed manufactured throughout in our Twickenham factory from the best materials and under personal supervision. It is now an important branch of the "Economic," a well-known and very popular type of cell fitted with massive carbon plates and substantial zinc cases specially filled by improved and secret process. Remember "Economic" Cells will not freeze and are unaffected by climatic conditions. Further, we can supply you retail at wholesale prices direct from the factory.



List No. 173.

- | | | Each. | Doz. |
|--------------|--|-------|------|
| List No. 173 | Round (as illustration) size 6½ in. high by 2½ in. diam. | 1/10 | 9/6 |
| " " 174 | " " " " 4½ in. " " 1½ in. " | 1/ | 9/6 |
| " " 175 | Square Cell " 4 in. " " 1½ in. " | 1/ | 9/6 |
- Postage, large size 1/6 extra, small size 1/4 extra.

NOTE—We are open to quote and in a position to supply any size cell to order for ignition or any purpose at very LOW PRICES.

THE "E.E.C." EXPORT DRY BATTERY.

For Colonial Customers we can thoroughly recommend this Cell. Will keep in stock for indefinite period without any deterioration. Directions on each Battery. Only water required to charge this Cell. Contained in Glazed Stone Jars. Impossible for "shorts" to occur.

Size List No. 176, Each 1/9, weight 2lbs. Postage 1/6.



List No. 176.

THE "HELLESEN" IGNITION DRY CELL.

Most suitable for Motor Cyclists who require a Reliable and Cheap Form of Ignition. In case one finds a difficulty in charging accumulators we can with confidence recommend the "Helleesen."

- | | Each. |
|---|-------|
| 178 The "Flash," 6½ in. by 4½ in. by 2½ in. | 6/6 |
| 179 " " Flight," 5½ in. by 5½ in. by 2½ in. | 6/6 |
- To each purchaser of a Helleesen Cell we give a 20 page descriptive list.



List No. 178.

AMATEUR ELECTRIC LIGHT SETS. UP-TO-DATE. RELIABLE. EVER-READY.

The "Rival," List No. 187, consists of two "Defiance" Batteries, one 4-volt Loop Lamp Carbon Filament, 9ft. Twin Silk Flexible Wires, one Sealed Bottle of Chromic Acid (directions for charging on bottle). COMPLETE SET 2/2. Postage 1/5 extra.

The "Amateur's Own," List No. 188, consists of four "Defiance" Batteries, one 8-volt High Vacuum Loop Lamp, Loop Lamp Holder, one Nickel Plated Switch, four Sealed Bottles of Chromic Acid together with 18ft. Twin Silk Flexible Wire and diagram of connections. COMPLETE SET 4/6. Postage 1/8 extra.

List No. 189, similar to the "Amateur's Own," but with six "Defiance" Batteries and one 12-volt Lamp. COMPLETE SET 6/. Postage 1/0. If Metal Filament Lamps supplied instead of Carbon, extra, 1/6.

THE POPULAR "E.E.C." DRY CELLS—TRY THEM.

ZINC BATTERY PLATES.

Size.	½ in. Thick.	
	Each.	Doz.
6 in. high by 1 in. wide	2	1/10
6 in. " 1 in. " "	3	2/9
6 in. " 1½ in. " "	3½	3/4
6 in. " 1½ in. " "	4½	4/3
7 in. " 2 in. " "	5½	5/
8 in. " 3 in. " "	7	6/

Zincs for Bichromates, see page 18.
Zincs for Leclanche, see page 18.

STONEWARE BATTERY JARS.

Specially Strengthened to Stand Acids.

Size.	Inside Measurement.	
	Each.	Doz.
6 in. high by 2½ in. diameter	3	2/9
4 in. " 3 in. " "	4	3/9
5 in. " 3 in. " " 1 pint	6	5/6
6 in. " 4 in. " " 2 "	8	7/6
6 in. " 4 in. " " 3 "	10	9/



SPECIAL IMPROVED LECLANCHE CARBONS

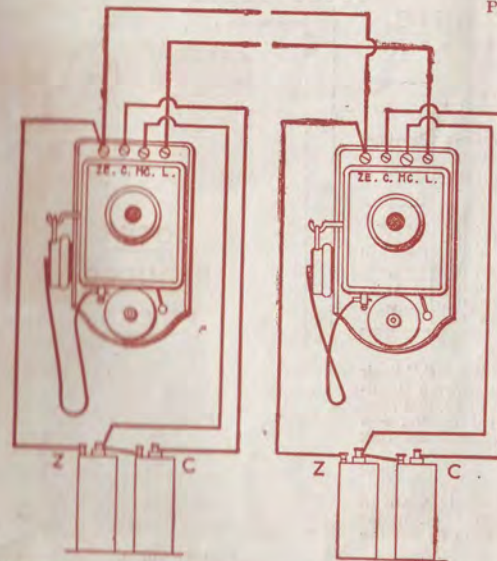
Solid Carbons with Brass Terminal. Creeping impossible with this pattern (recommended).

List No.	Each.	Doz.
180 6 in. Plates	3½	3/
181 6 in. " "	4	3/6
182 7 in. " "	5	4/

Postage 1½d. and 2d. extra.

DIAGRAM OF CONNECTIONS

For "Premier" Phones, No. 121. See page 15. Books on Telephones, see page 91.



SPECIAL CARBON PLATES

FOR BATTERIES (Best Quality). ½ in. Thick.

Size, 6 in. high by	1 in. wide	2 in. wide	3 in. wide	4 in. wide	5 in. wide	6 in. wide	per pair
6 in.	1 in.	2 in.	3 in.	4 in.	5 in.	6 in.	1½
7 in.	1 in.	2 in.	3 in.	4 in.	5 in.	6 in.	2
8 in.	1 in.	2 in.	3 in.	4 in.	5 in.	6 in.	2½
9 in.	1 in.	2 in.	3 in.	4 in.	5 in.	6 in.	3
10 in.	1 in.	2 in.	3 in.	4 in.	5 in.	6 in.	3½

Single Carbons at Proportionate Prices.
Carbons, Rods, 1ft. long ½ in. diameter each 1/2
Odd Carbons, Scrap, etc. ... doz. 1/4
Carbons for Bichromates, see page 18.
Special Cut Carbons. Ask for Quotations.

POROUS POTS (EMPTY.)

Size.	Outside Measurement.	Each.	Doz.
6 in. high by 1½ in. diameter	2½	2/	2/
4½ in. " 2 in. " "	3	2/9	2/9
5½ in. " 2½ in. " "	4	3/9	3/9
6 in. " 2½ in. " "	4½	4/	4/
6 in. " 2½ in. " "	7	6/6	6/6

BATTERY CHEMICALS.

Salammoniac, Best Crystal	per lb.	1/6
Bichromate of Potash	"	1/7
Sulphate of Copper	"	1/8
Paraffin Wax, Best Clear	"	1/6
Crushed Carbon (no Rubbish)	"	1/3
Peroxide of Manganese	"	2½
Ditto, Special for Dry Batteries	"	1/8
Mercury	per oz.	1/6

SPECIAL CHROMIC ACID.

In Sealed Glass Bottles. A Special Preparation of Bichromate of Potash and Sulphuric Acid in Powder Form. Directions on each Bottle for Charging Bichromate Batteries. We strongly recommend.



List No.	Each.	Doz.
183 Sufficient for ½ pint.	2½	2/4
184 " " 1 "	3½	3/4
185 " " 2 "	7½	7/4
186 " " 4 "	11/	11/

Postage, 3d., 4d., and 6d. extra.



List No. 065.

GRAVITY DANIEL CELL.
Complete Three pint size. List No. 065.
Each (as illustration), 3/10. Postage 1/ extra.
Zincs ... Each 2/3 Postage extra 1/6
Coppers " " 1/8 " " 1/3
Glass Jars " " 1/10 " " 1/7
For other Batteries, see pages 7, 18, 24 to 53 in Catalogue.

A PROMPT SERVICE AND QUICK DESPATCH IS SURE FROM LONDON.

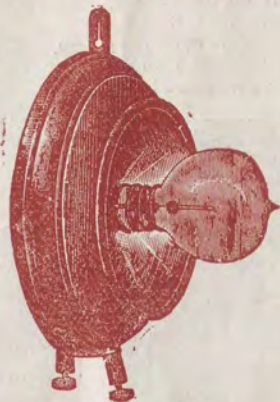
SHADES, BRACKETS, HANGING-LAMP SETS.



List No. 221.



List No. 217.



List No. 216.



List No. 214.



List No. 215.

- List No. **214.** Handsome Solid Brass 6in. Swan-necked Wall Bracket, fitted with Best Quality Fancy Crinkled Opal Shade (without Lamp) ... **1/4**
 No. 214, fitted with Carbon Lamp, 7d. extra; with H.E. Lamp, 10d. extra; or with "ECO" Metal Filament Lamp, 2, 4, 6 or 8 Volts, 1/3 extra. *Postage 3d. extra.*
- 215.** Complete Set (as illustration), mounted on Handsome Polished Wood Base. Complete, with One-Way Nickel-Plated Switch, 2 Battery Terminals, One 6-inch Solid Brass Lacquered Bracket, Fancy Opal Shade (without Lamp, otherwise as illustration) ... **2/3**
 No. 215, fitted with Carbon Lamp, 7d. extra; with H.E. Lamp, 10d. extra; or with "ECO" Metal Filament Lamp, 2, 4, 6, or 8 Volts, 1/3 extra.
 N.B.—We can supply Nos. 214 and 215 with No. 068 Fancy Shade at 4d. extra. *Postage 4d. extra.*
- 216.** Handsome Wall Fitting for Loop Lamps, Complete, ready wired and Reflector (without Lamp, otherwise as illustration) ... **1/4**
 No. 216, fitted with Carbon Lamp, 6d. extra; with H.E. Lamp, 9d. extra; with "ECO" Metal Filament Lamp, 4 c.p., for 2, 4, 6, or 8 Volts, 1/3 extra. *Postage 3d. extra.*
- 217.** Complete Hanging Lighting Set (as illustration), fitted with 3ft. Twin Silk Flexible Wire, One Nickel-Plated Powerful Reflector, Polished Brass Bayonet Holder, Shade Carrier and Cord Grip, and Selected 2-in. Polished Wood Rosette ... **1/1**
 No. 217, fitted with Carbon Lamp, 6d. extra; H.E. Lamp, 10d. extra; or "ECO" Metal Filament Lamp, 2, 4, 6 or 8 Volts, 1/3 extra. *Postage 3d. extra.*
 N.B.—No. 217, we can supply with No. 068 Fancy Coloured Shade, 4d. extra.
- 220.** 3in. Nickel-Plated Shade to fit above Holders, S.B.C. ... **/6**
- 221.** 3in. Handsome Crinkled Glass Opal Shade (as illustration) ... **/4**
- 068.** 6½in. by 4½in. High Fancy Shade, tinted at edges with Pink, Red or Yellow or Frosted White, Exceptionally Handsome Fitting, ... **/8**
Postage 3d. extra.
- 222.** Hanging Lighting Sets with 2 Lights, with Shades, &c. (without Lamps) **3/9**
- 223.** " " " " 3 " " " " " " **5/3**
- 224.** " " " " 4 " " " " " " " **6/**
- 225.** " " " " 5 " " " " " " " **8/1**
Postage 3d., 4d., 6d. extra.

* Fitted with Carbon Lamps, per light, 7d. extra; with H.E. Lamps, per light, 10d. extra; or with "ECO" Metal Filament Lamps, per light, 2, 4, 6 or 8 Volts, 1/3 extra.

THE "ECO" METAL FILAMENT LAMP.
(VALUE FOR MONEY).



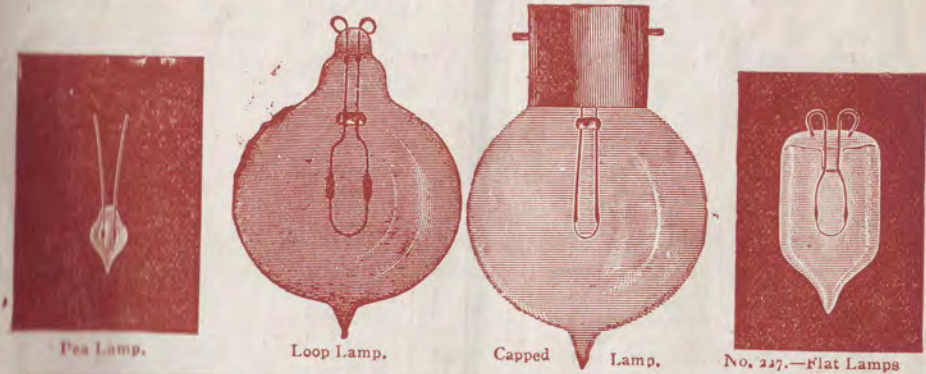
The "Eco" Metal Filament Lamp is the Latest Production of the "Economic," and is sold under the special guarantee of that name. By purchasing direct from the Company, you have the advantage of getting the genuine "Eco" at the Rock-bottom Price. EFFICIENCY 1 WATT PER CANDLE POWER.

LOOP LAMPS.				CAPPED LAMPS (S.B.C.).			
2, 3, 4, 6 and 8 Volts.		10, 12, & up to 30 Volts.		2, 3, 4, 6 and 8 Volts.		10, 12, & up to 30 Volts.	
Each.	Doz.	Each.	Doz.	Each.	Doz.	Each.	Doz.
1/3	12/6	1/9	19/6	1/3	14/	2/	23/

INCANDESCENT ELECTRIC LAMPS.
(CARBON FILAMENT).

THE Lamps sold are genuine E.E.C. High Vacuum Lamps for lighting from Batteries, Dynamos, or Accumulators. The carbon filament is carefully manufactured and supported. By our process almost a complete vacuum is obtained with these Lamps.

N.B.—On grounds of ECONOMY we strongly advise the use of H.E. Lamps (H.E. stands for High Efficiency; that is, takes small current to light) where lighting by accumulators. They consume about three quarters less current than the ordinary, and give approximately same candle-power.



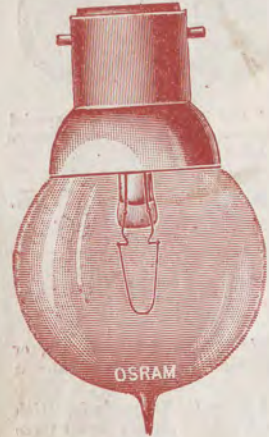
PEA LAMPS.	LOOP LAMPS.				CAPPED LAMPS.				FLAT LAMPS.
Voltage 2, 3, 4 or 6 Volts.	Voltage 2, 3, 4, 5, 6, 7 & 8 Volts.				Voltage 2, 3, 4, 5, 6, & 8 Volts				4 or 8 Volts.
ORDINARY.	ORDINARY.		HIGH EFFICIENCY.		ORDINARY.		HIGH EFFICIENCY.		Each, 2/.
Each. Doz.	Each.	Doz.	Each.	Doz.	Each.	Doz.	Each.	Doz.	PEAR SHAPE.
/6 5/6	/6	5/6	/9	8/6	/7	6/6	/10	9/6	English H. E. lamps for lanterns.
HIGH EFFICIENCY	Voltage 10, 12 & up to 25 Volts.				Voltage 10, 12 & up to 25 Volts.				2 to 12 Volts.
Each. Doz.	Each.	Doz.	Each.	Doz.	Each.	Doz.	Each.	Doz.	Each, 1/3,
8/ 7/6	/8	7/6	1/0	11/6	/9	8/6	1/0	11/6	

COLOURED LAMPS, 1½d. each extra. Colours:—Blue, Green, Red, Yellow, &c. STAINS for customers to colour their own Lamps, in assortment as above, 9d. per bottle. Above Capped Lps. are for ¼ S.B.C. (Small Bayonet Caps); if wanted for ½ L.B.C. add 2d. ex. on above prices.

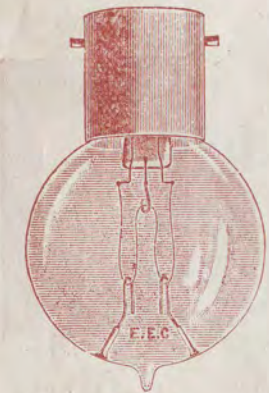
“OSRAM”

METALLIC PATENT FILAMENT.
The recognised Supply House for Battery “Osrams.”

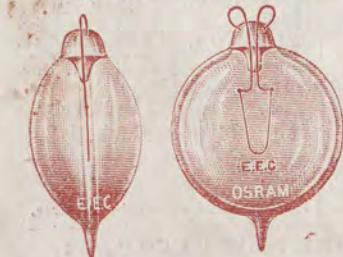
We hold one of the largest and most varied stocks in the Country. In addition to important improvements, we have recently added several new patterns to our already large stores. **MAKE SURE.** Buy direct from us. **GUARANTEED GENUINE.**



No. 879



No. 829



No. 814

M.S.E.S.—Miniature Small Edison Screw, $\frac{1}{8}$ size
S.E.S.—Small Edison Screw $\frac{1}{4}$ size
S.B.C.—Small Bayonet Cap $\frac{1}{4}$ size
L.B.C.—Large “ ” $\frac{1}{2}$ size
MINIATURE S.E.S.

List No.	Candle Power	Volts	Amps	Each
871	4	1.2	.55	1/3
872	5	2	.4	1/3
873	8	2	.6	1/3
874	1	2	.8	1/3
875	1	4	.4	1/6
876	1.5	4	.6	1/6

Postage 1d. extra.
N.B.—Above Bulbs suitable for any of our Pocket Lamps.

ROUND BULBS S.B.C. or LOOP.

List No.	Candle Power	Volts	Amps	Each
877	1	2	.8	1/6
878	1.5	2	1	1/6
879	4	4	1	1/9
880	3	4	.8	1/9

Postage 1d. extra.
PEAR SHAPE L.B.C., S.B.C. or LOOP.

List No.	Candle Power	Volts	Amps	Each
882	8	8	1	2/3
883	7.5	10	.75	2/3
884	10	10	1	2/3
885	9	12	.75	2/3
886	12	12	1	2/3
887	10.5	14	.75	2/3
888	14	14	1	2/3
889	12	16	.75	2/6
890	16	16	1	2/6
891	10	25	.5	3/
892	16	25	.7	3/
892A	25	25	1	3/6

Postage 2d. and 3d. extra to size.
N.B.—Osram Pear Shaped must be used in a hanging position straight down as illustration.

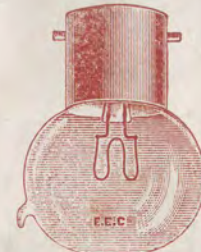
ROUND BULBS, S.B.C. with Supported Filament. FLAT LOOP BULBS.

List No.	C.P.	Volts.	Amps	Each.	List No.	C.P.	Volts.	Amps	Each.
825	4.5	6	.75	2/	811	1.5	2	1	2/6
826	6	6	1	2/	812	4	4	1	2/6
827	6	8	.75	2/3	813	4.5	6	.75	2/6
829	8	8	1	2/3	814	6	8	.75	2/6

Postage 2d. each extra. Postage 1d. each extra.
Illustrations are approximately full size.
Osrams coloured or frosted 2d. each extra.

BUY DIRECT and be certain of obtaining Genuine “OSRAMS.”

OSRAMS FROM “E.E.C.” are genuine.



No. 802



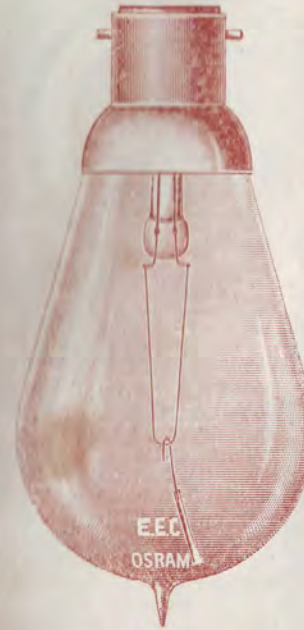
No. 820



No. 872

“OSRAM”

THE LEADING LIGHT.



No. 832



No. 835



No. 894

S.B.C. TUBULAR.

List No.	C.P.	Volts	Amps	Each
830	1	2	.75	2/6
831	3	4	.75	2/6
833	4.5	6	.75	2/6
835	6	8	.75	2/9

Postage 1d. extra.
S.B.C. for use with Hand Lamps, etc.

List No.	C.P.	Volts	Amps	Each
800	1.5	2	1	1/6
802	4	4	1	1/9

Postage 1d. extra.
FLAT BULBS, S.B.C.

List No.	C.P.	Volts	Amps	Each
820	4	4	1	2/9
821	4.5	6	.75	3/0
822	6	8	.75	3/0

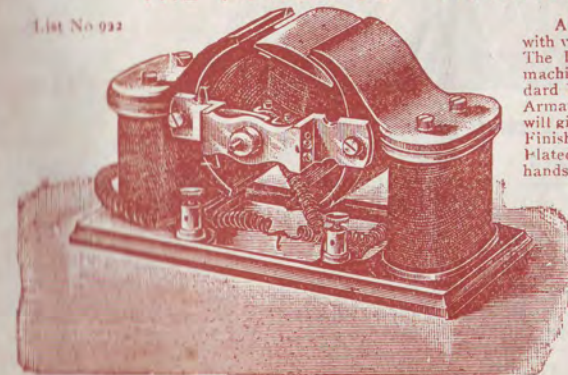
Postage 1d. extra.
FESTOON.

List No.	C.P.	Volts	Amps	Each
893	4	4	1	2/9
894	6	6	1	3/0
895	8	8	1	3/0

Postage 1d. extra.
Osram Lamps coloured or frosted 2d. each extra. When ordering, LIST No. is quite sufficient. We guarantee that every lamp is tested to give a BRILLIANT LIGHT, and carefully packed before despatched.

THE POWERFUL “TRACTION” MOTORS.

List No. 922



A Special Design embodying great power with very heavy and substantial construction. The illustration does not do justice to this machine, inasmuch that it is fitted with standard bearings, massive self-starting Tri-polar Armature of 2 1/2 in. diameter. The weight, 8 lbs., will give some idea of the machine's proportions. Finished in Chocolate Enamel with Nickel-plated Screws, etc., this motor has very handsome appearance. Size 7 in. long, 4 1/2 in. wide, 4 in. high.

List No. 922. **EACH 19/6.**

Postage 1/
Or with Special cog-gear to produce more power.
EACH 21/6 Postage 1/



THE “LITTLE LOCO” MOTOR.

The “Little Loco” is invaluable to the amateur, equipping his Electric Loco, Launch, or Tram Car. It is decidedly a miniature, measuring 1 1/2 ins. wide, 2 1/2 ins. long by 1 1/2 ins. high, total weight 4 ozs. For its size we maintain there is nothing on the market to equal its power. Self-starting Tri-polar Armature, 3 in. diam. **COMPLETE MOTOR 3/** List No. 0101 **COMPLETE SET OF PARTS 2/** Postage 2d. extra

THIS “LITTLE LOCO” MOTOR IS WORTH CONSIDERING.

INSPECTION and CYCLE LANTERNS.

Advantages of our latest up-to-date Lamps are immediately apparent over the old messy Oil Lamps. No Smell or Smoke. Does not spill over one's clothes. Gives artistic and neat appearance to machine. Cannot be blown out by wind. Can be switched on or off immediately. Gives intense white light.

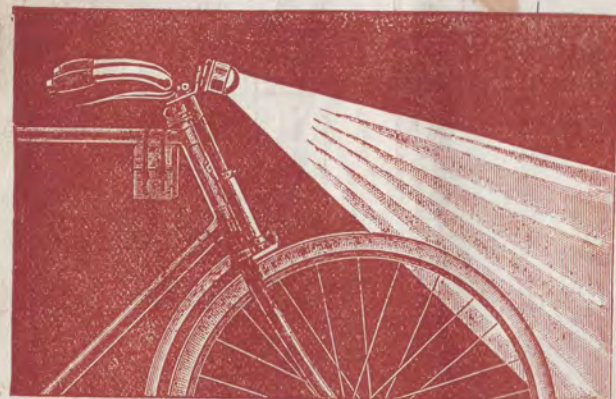


THE "MONARCH."

Exactly as illustrated above to fit any Flash Lamp with List No. 065b.] Bullseye and Lamp. Without battery each 1/11 | With battery ...each 2/5 Postage 3d. extra.

THE "VIVID"

Fitted with Bullseye Lens, Powerful Reflector, Flexible Silk Wire to fit on Cycle Bracket, including lamps. List No. 065a, each 3/3. Postage 3d. extra. Or with 2 or 4 v. Metal Filament Lamp, each 4/ Postage 2d. extra.



THE "E.E.C." CYCLE HEADLIGHT. LIST No. 262. Handsome Pattern Cycle Lamp (as illustration), fitted with 4, 6, or 8 volt H.E. Lamp, together with Switch brilliant Reflector, Nickel-plated Brass Case and Powerful Bullseye Lens, etc. Each 11/

LIST No. 923. Leather Case for Accumulator, to strap on to Cycle (as in illustration). Each 3/ N.B.—We can supply above lamp with metal filament lamp, 1/ extra.

LATEST "E.E.C." NON-SPILLABLE POCKET LAMP ACCUMULATORS.



Non-spillable, with Flat Plates, not as illustration, and absorbed in woven glass. Fit any Pocket Lamp. For 2 or 4 volt. List No. 062. Each 2/10, Post. 3d.

THE "JEWEL" ACCUMULATOR POCKET LAMP.



Fitted with Special 2 volt Non-spillable Accumulator and Powerful Metal Filament Lamp, consuming small current. That is the specification of a Lamp, for which we have in the past had considerable enquiry. It is not only reliable, but of extra neat appearance in its leather faced case, with nickel plated ends. Substantial Sliding Switch and Special Lens.

Sent fully charged. Each ... 6/ Postage 4d.

THE "BRITISH" DYNAMOS.

SEVERAL unique and important improvements have recently been introduced into the latest built "BRITISH" Dynamos. They are the outcome of ACTUAL TESTS, and among Manufacturers hold a high standard for Substantial Construction, Efficiency, and Symmetrical Design. Our ANNUAL SALE for these Machines last season was OVER 300. You will find "BRITISH" Dynamos in all quarters of the Globe humming away and giving our Customers that entire satisfaction which can only result from a perfect Machine.

A FEW PARTICULARS.

"BRITISH" Dynamos, with Drum Armatures, can be used for Electric Lighting, Accumulator charging, Electro-Plating, or will run as powerful self-starting Motors. H Armatures can only be used for Electric Lighting or as Motors.

A SET of Castings include Massive Field Magnets and Bed-Plates, Brush Holder and Pulley.

A SET of Castings, Wire and all Materials, include Fields and Bed Plate, Annealed Stampings, Terminal Screws, Bolts, Commutator Materials, Pulley, Copper Gauze, Brush Rocker and Brush Holders, and pair of Bearings, together with correct gauge and quantity of Wire for Armature and Fields.

If you can afford TYPE B, so much the better. Of course it is the best Machine, although TYPE A is capable of much useful work and is guaranteed to give the output as listed.

NOTE.—Both A and B types are Shunt Wound. We can supply Series Wound same price; Compound Wound, add 10 per cent. extra.

WEIGH THESE POINTS. "BRITISH" DYNAMOS ARE ENGLISH, RELIABLE, MODERATE PRICE

SPECIFICATION.

TYPE A.

Armature.—Best Annealed Laminated Stampings
Fields.—Massive Design in Soft Grey Iron.
Pulley.—Can use either Round or Flat Belt.

Commutator.—Hard Metal, mounted on Vulcanised Fibre.

Bearings.—Gunmetal, extra long surface,
Brushes.—Copper Gauze, Spring Contacts.
Insulation.—All Winding two coats Shellac.

Finish.—Glossy Green Enamel.
Winding.—Binding Wires on all Armatures.

TYPE B.

Armature.—Best Annealed Laminated Stampings
Fields.—Massive Design in Soft Grey Iron.

Pulley.—Can be used for Round or Flat Belt.

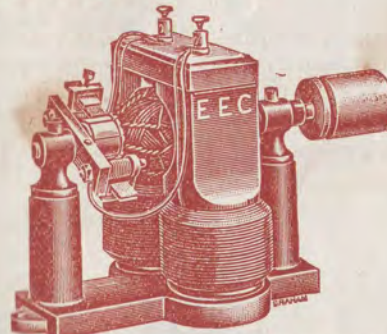
Commutator.—Carefully built up Copper Commutator Sections, well Insulated, substantial depth of Copper to allow for wear and turning when Commutator gets worn.

Bearings.—Automatic Oil Rings are fitted, which ensure the Machine being efficiently lubricated. Capable of continuous running without attention. Bushed with Gunmetal; the Bearings are the whole set-off with these Machines.

Brushes.—Gunmetal Adjustable Rocker, Copper Gauze Brushes, Spring Tension.

Insulation.—All Winding two coats Shellac.
Terminals.—Massive, and mounted on Polished Wood.

Finish.—Glossy Green Enamel.



From actual Photo of our No. 272A, 15½ Volt 5 Amp.

TYPE.	270A. 270B.	271A. 271B.	272A. 272B.	273A. 273B.	274A. 274B.
Width ...	3½ ins.	4½ ins.	5 ins.	6½ ins.	7½ ins.
High ...	4½ "	6 "	6½ "	7 "	7½ "
Long ...	7 "	8 "	9 "	10½ "	11½ "
Funnel Long }	1½ "	1½ "	1½ "	2½ "	2½ "



From actual Photo, No. 270A, 6 Volt 5 Amp.

TYPE A.

List No.	Output.		Candle Power.	Speed per Minute.	Size of Armature.	H.P. to Drive.	Weight.	Size of Pulley.	No. of Sections of Comm.	Complete 8-hole Drum Machine.		Complete H Armature Machine.		Castings, Wire and all Materials Drum Armature.		Ditto, but Machine ready for Winding.		Castings only.
	Volt.	Amp.								£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.				
270	6	5	35	1000	1½ in.	1-16	4½ lbs.	1 in. by 1½	8	£ 14 6	0 12 6	0 6 0	0 11 0	2 6				
271	10	5	50	1000	1½ in.	1-10	8½ "	1½ "	8	1 0 0	0 17 0	0 8 0	0 14 6	4 0				
272	15	5	75	500	2 in.	1-8	12½ "	1½ "	8	1 7 0	1 1 0	0 11 0	0 19 0	5 6				
273	30	0	100	1500	2½ in.	1-6	14½ "	1½ "	8	1 13 6	1 5 0	0 15 0	1 4 6	9 0				
274	35	0	130	1500	2½ in.	1-4	16½ "	2 "	8	2 0 0	1 12 6	0 18 6	1 11 0	10 0				

TYPE B.

270B	0	5	35	1000	1½ in.	1-16	5 lbs.	1 in. by 1½	8	1 0 0	0 17 6	0 7 6	0 16 6	3 0				
271B	10	5	50	1000	1½ in.	1-10	8½ "	1½ "	8	1 10 0	1 2 6	0 10 0	1 0 0	5 0				
272B	15	5	75	500	2 in.	1-8	12½ "	1½ "	8	1 18 0	1 8 0	0 12 6	1 10 0	6 6				
273B	30	0	100	1500	2½ in.	1-6	14½ "	1½ "	8	2 5 0	1 14 6	0 19 0	1 18 0	11 0				
274B	35	0	130	1500	2½ in.	1-4	16½ "	2 "	8	2 15 0	2 5 6	1 2 6	2 2 0	14 0				

THE "BRITISH-MADE COLONIAL" DYNAMOS.

SUBSTANTIAL. GUARANTEED OUTPUT. EFFICIENT.

ILLUSTRATIONS of the "British-Made Colonial" Dynamos are produced from recent photos. Your attention is directed to several important features. The Design of Field's—magnetically this is correct, being a massive casing in one whole, therefore no magnetic leakage. The AIR GAP is to a minimum providing for the Machine's efficiency. The Tunnel is proportionately long, and the Armature well balanced. Binding Wires are used on all Armature Windings.

Strictly speaking, to call a Machine "RELIABLE," it must be capable of Hard Continuous Running without attention, and its **OUTPUT ABSOLUTELY CORRECT** at the speed listed. Remember! it is on those conditions you select, and we supply a "Colonial."

SPECIFICATION.

BEARINGS—Long Gunmetal Automatic Feed Ring Lubrication.

FIELDS—One Massive Soft Grey Iron Casting.

ARMATURE—Laminated Stampings, 50 to the inch. Each Stamping Shellac varnished.

PULLEY—In sizes 290 to 294, can be used either as V or Flat.

COMMUTATOR—Of ample proportion, built up from hard copper and carefully insulated, sufficient depth of metal is left for turning when Commutator gets worn.

BRUSH GEAR—Simple and substantial Spring Holders and Copper Gauze Brushes.

FINISH—Glossy Holly Green Enamel Winding, 2 coats of Shellac, all metal parts polished.

OUTPUT—Guaranteed at speeds listed.

A FEW PARTICULARS.

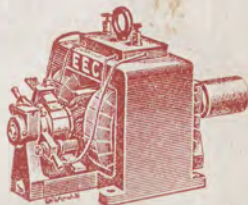
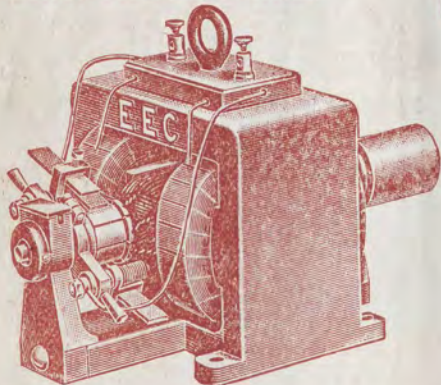
A SET OF CASTINGS include—Massive Field Casting, Pulley, Commutator Casting, Brush Holders, Brush Rockers, Ring Oiler, Bearing and Pair Terminals.

A SET OF CASTINGS AND ALL MATERIALS include above Castings and Steel for Armature Spindle Laminated Stampings, Armature and Field Wires, Bushes, Nuts, Copper Gauze, in fact, everything to complete machine.

SPEED at which the "Colonial" has to be driven is low in proportion to other makes. Just compare!

CANDLE-POWER was obtained using Osram Lamps. "COLONIAL DYNAMOS" can be supplied Compound Wound to per cent. extra on listed prices. Using a "Colonial" with continuous magnetic circuit you get the highest possible efficiency, consequently obtaining the best results from your engine.

IT'S ENGLISH throughout, therefore if you are a Colonial customer, you obtain the advantage of Preferential Tariff in your own Colony.

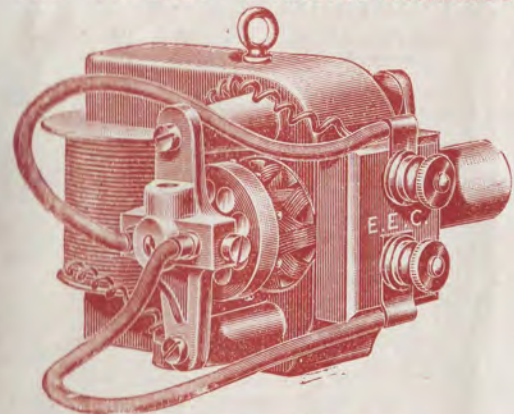


List No.	Output.		Approx. Speed.	B.H.P. req'd to drive	Candle Power.	Size of Pulley, Dia. Long.	Approx. Weight.	Price Shunt Wound.	Castings only.	Castings Wire & all Materials	Castings Wire & all Materials Machined	Spare Commutators.	Working Drawings.
	Volts.	Amps.											
290	6	4	3200	1-8	24	1 x 1 1/2 ins.	9 1/2 lbs.	£1 15 6	£0 7 0	£0 14 6	£1 7 6	£0 5 0	£0 1 0
291	10	5	2900	1-6	45	1 1/2 x 1 1/2 "	10 1/2 "	1 17 0	0 7 6	0 15 6	1 9 0	0 5 6	0 1 6
292	15	5	2800	1-6	60	1 3/4 x 1 1/2 "	18 "	1 19 0	0 8 4	0 16 6	1 10 6	0 6 6	0 2 0
293	20	5	2800	1-6	75	1 7/8 x 1 1/2 "	22 1/2 "	2 9 6	0 9 6	0 17 0	1 18 6	0 6 6	0 2 6
294	25	6	2700	1-4	85	2 x 2 "	32 "	2 19 0	0 12 1	1 3 6	2 6 0	0 7 6	0 3 6
295	30	5	2500	1-4	95	2 1/4 x 2 1/4 "	40 "	3 12 6	0 16 6	1 10 6	2 19 0	0 8 6	0 4 0
296	50	5	2000	3-4	170	2 1/2 x 2 1/2 "	75 "	4 18 6	1 0 4	1 17 6	3 17 6	0 10 6	0 4 6
297	50	10	1800	1	320	3 x 2 "	130 "	8 10 6	2 0 4	3 17 6	7 5 0	0 12 6	0 4 6
298	50	20	1600	2 1/2	750	3 x 2 "	280 "	12 10 0	3 5 4	5 18 6	11 5 6	1 0 0	0 5 0
299	100	10	1400	4 1/2	1000	4 x 3 "	280 "	13 0 0	4 0 4	7 0 0	10 19 0	1 9 0	0 5 0
300	100	20	1000	9	3000	8 x 4 "	500 "	24 10 0	7 5 4	15 10 0	21 10 0	1 9 0	0 5 0

"COLONIAL" DYNAMOS compare most favourably with any other High-class Machine, both as regards Speed at which it has to be driven, Output and Price. Look up some of the Foreign-Made Prices, that should convince you!

32 "COLONIAL" DYNAMOS ARE MADE FOR HEAVY WORK.

THE "TURBINO" CHARGING DYNAMOS



Specially designed for Hard Continuous Running, either Charging Accumulators or Lighting. Fitted with Disc Stud Commutator or ordinary round pattern as in British Dynamos, with Brush Rocker (when ordering, state type preferred). This type of machine stands distinctly alone from all others. It is one of the most efficient electrical generators it is possible to obtain, principally on account of its unbroken magnetic circuit. Fitted with Spring Copper Gauze Brushes, Automatic Feed—reliable under any conditions, a carefully wound 8 Pole Cogged Drum Armature, extra **LONG GUN-METAL BEARINGS**, Flat (which can also be used as a V) Pulley, Shunt Wound, Massive Field, cast in Soft Grey Iron. Perfect finish in Glossy Green Enamel.

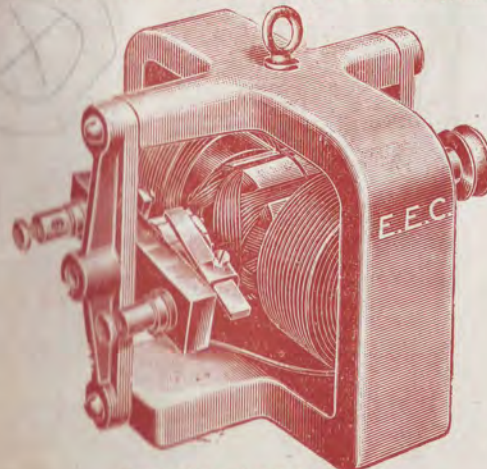
From recent photo. of List No. 924.
B Castings and all materials are machined ready for winding. Price includes all Wires. Castings only include Fields, Pulley and Bearings

List No.	Output.		Candle Power.	Speed per Minute.	Size of Armature.	Approximate H.P. required to drive.	Fitted with 8 Pole Drum Armature.	Castings, Wire, and all Materials. A.		Castings, Wire, and all Materials. B. Machined.		Castings only.
	Volts.	Amps.						£ s. d.	£ s. d.	£ s. d.	£ s. d.	
924	10	3 1/2	30	2,500	1 1/2 by 8	1-8th h.p.	£ 1 2 6	£ 0 10 0	£ 0 18 0	£ 0 5 0	0 5 0	
925	15	3 1/2	45	2,300	1 3/4 " 8	1-6th "	1 9 6	0 13 6	1 3 6	0 7 0	0 7 0	
926	20	5	85	2,000	2 " 8	1 1/2 h.p.	2 5 6	0 17 6	1 18 0	0 10 6	0 10 6	

Carriage forward. N.B.—Any of our Dynamos we are prepared to wind for special outputs to suit customers' requirements. Write us your enquiries.

THE "O.T." DYNAMO.

To the Amateur with Limited Pocket our Latest O.T. Dynamo is distinctly fascinating. Everyone obtaining our Catalogue, we are perfectly aware, cannot afford £3 or £4 for a generator. Already we are manufacturing O.T. DYNAMOS in large quantities, and by that method shall supply the Amateur with a useful little Machine at a VERY LOW COST.



The illustration is from a recent photo. of the O.T. DYNAMO. It develops 6 VOLTS 1 AMP, and is fitted with 8 pole 1 1/4 in. Cogged Drum Armature, Movable Brush Rocker, Spring Brush Holders V Pulley, or Flat if required, and 8 Section Commutator, height 3 1/2 in., width 4 1/2 in., length 5 in. outside of pulley, weight approx. 4lbs. From ACTUAL TEST at works the O.T. Dynamo will charge 3 of our well-known O.T. Accumulators in about 4 1/2 hours or brilliantly light 24 v 3 c.p. Osrams.

- 00 EACH 12/6, With 8 pole armature.
- 02 EACH 10/-, With H armature. Postage 8d. extra.
- 03 Castings only 2/9 per Set. Postage 6d extra.
- 04 Complete Set of Castings, Wire and all Materials for 8 pole armature, 5/6; postage, 8d. extra.
- 05 Complete Set of Castings, Wire and all Materials for 8 pole Laminated Armature, machined ready for winding, the complete Set 9/6.

We hold one of the LARGEST STOCKS OF DYNAMOS IN LONDON.

From photo. of O.T. Dynamo.

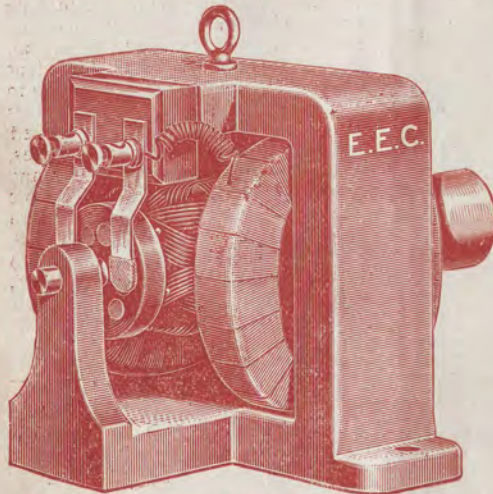
If possible give us a Personal Call.

FULL OUTPUT OF ALL DYNAMOS GUARANTEED.

Handwritten note: Think about the size you want to get on next page 34 and mark X in the left.

THE "E.E.C." CHARGING DYNAMO.

The Machine illustrated is from a recent Photo of our Latest "E.E.C." Charging Dynamo, specially designed for Amateurs requiring a Reliable Generator taking small power for House Lighting or Accumulator Charging. The Machine is capable of being run continuously at high speeds with very little attention. THE OUTPUT is 8 Volts 3.75 Amps. at 3,000 Revs. per minute and is guaranteed absolutely accurate. Each individual Dynamo is tested for 2 hours at its GUARANTEED output before leaving our works. There can be no question of "will it work?" You may rest assured if you pass your order for one of these Machines it will do what we say. The Dynamo is Shunt Wound, fitted with 8 pole cogged Drum Armature, built up from 1 1/2 inch Best Charcoal Annealed Stampings.



From Photo of E.E.C. Dynamo No. 927.

Special 8 Section Commutator, an improvement to that illustrated, thick disc pattern or round drum pattern if preferred.

Copper Gauze brushes. Massive Field Castings and carefully insulated winding. Weight 6lbs. Height 4in. by 6in. by 6in. suitable to work with our 1/2 B.H.-P. Gas Engine.

List No. 927 Each 15/.

Carriage Paid 8d. extra.

At 2000 revs. it gives 6 volts 3.75 amps.
 " 3000 " " 8 " "
 " 3500 " " 10 " "

Requires 1/2 H-P.

Driven as a Motor it runs speedy and quiet and is well adapted to drive small Machines, Phonographs, &c., will charge two 4 volt 2 Amps. hrs. Accumulators comfortably without undue heating, or light 4-6 volt 6 candle power Metal Filament Lamps brightly.

Gunmetal Bearings.

Carefully bored and finished.



Illustration 1/4 in. size.

In rough	Centre Hole.	each Pst.
1 1/2 inch to centre, 3/8 in.	1/8	2
1 3/4 " " " " 1/2 in.	1/8	2
1 7/8 " " " " 5/8 in.	1/8	3
2 " " " " 3/4 in.	1/8	3

Bored (as illustration), any size hole drilled and fitted with helmet lubricator, double above prices.

Brush Holders.

Drilled and fitted with adjustable Screw Centre Hole 3/16 in. for contact spindle.

List No. To take Brush Ea. Castings only

928	3/8 in. wide	1/4	2
929	1/2 in. " "	1/8	3
930	5/8 in. " "	1/8	4

Postage 1 and 2 extra.

Dynamo Copper Gauze Brushes.

List No.	Each.
931	1 1/2 ins. long by 3/8 in. wide
932	2 " " " 1/2 in. " "
933	2 1/2 " " " 5/8 in. " "

Any size made to order at moderate price. Copper Gauze to make your own brushes, 1/ sq. ft.

Special Silver Steel Shafts.

In 1 1/2 ins. length, specially for dynamos.
 3/8, 1/2, 5/8, 3/4, 7/8, 1 in. diam.
 1/5, 1/7, 1/9, 1/11 per 1 1/2 in. length.



Commutators (ready made).

List No.	No. Segt.	Length ins.	Dia. ins.	Centre hole.	Each.
086A	2	1 1/2	1 1/2	1/8	1/8
087A	3	1 3/4	1 3/4	1/8	1/7
088A	3	2	2	1/8	1/9
089A	3	2 1/2	2 1/2	1/8	1/8

Postage 1 extra.

The above Coms. are mounted on red

Vulcanized Fibre and fitted with connecting screws.

List No.	No. of Sections.	Diam.	Centre Hole.	Each.	Post.
092	4	3/4 in.	3/8 in.	1/8	1
093	6	1 in.	1/2 in.	1/8	1 1/2
094	8	1 1/4 in.	3/4 in.	1/8	2
095	12	1 3/4 in.	1 in.	1/8	3

The above are mounted on Red Vulcanized Fibre, reliable and made from Stout Metal. Copper Built Coms. of Superior make, see page 32.

Brush Rockers.

with Brushes and Holders.

"British" Dynamo sizes.

List The complete

List No.	Size	Set.
934	6v. 5 amp.	1/4
935	15v. 5 amp.	2/0
936	25v. 6 amp.	2/6

Above Rockers made of Vulcanized Fibre.

List Colonial Dynamo Sizes

List No.	Size.	The Set.
937	6v. 3amp.	3/0
938	15v. 5 amp.	4/6
939	25v. 6 amp.	5/0

Above Rocker made from Gunmetal and Fibre Bushed Best Quality.

List No. 937.

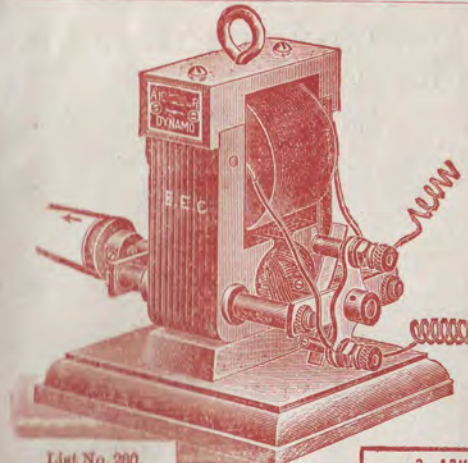
THE "AMATEUR'S" DYNAMO AND PARTS.

In the Amateur's Set we have undoubtedly a good thing. No expense has been spared by ourselves to make them in every way perfect. The unique design and guaranteed workmanship, backed by our 12 years' manufacturing experience, should assure them of a quick journey to our customers' workshops. Note new type of Laminated Field Magnets, which greatly add to the dynamo's electrical output, also adjustable Brush Rocker. In this Set of Parts all Machining is done, Holes drilled and tapped. The Price includes all Materials, Screws, Wires, &c., to make the machine outright.

Splendidly finished in Glossy Black Enamel All Fittings, Terminals, &c., heavily nickel-plated.

Packed in strong dove-tailed wood box, together with full instructions showing clearly how to fit, wind and connect.

Can be used for Accumulator Charging, Electric Lighting, Nickel Plating, or as a Powerful Self-starting Electric Motor.



List No. 200.

Weight 4 1/2 lbs., length 5 1/2 in., height 5 1/2 in., width 4 1/2 in.

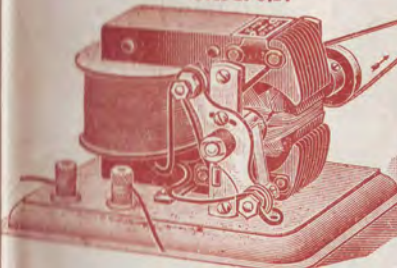
At 2,500 revs. give 6 v. 2 1/2 amps.

At 3,500 " " " 8 v. 2 1/2 "

No. 200 Price (complete) 18/ Postage 8d.

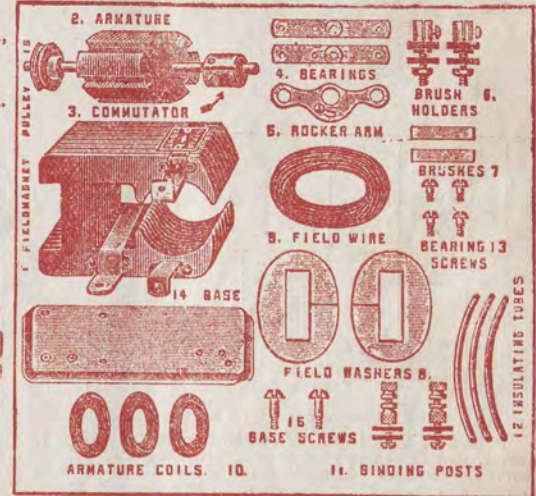
" 201 " (parts only) 15/6 extra.

These machines guaranteed to give over 20 C.P.



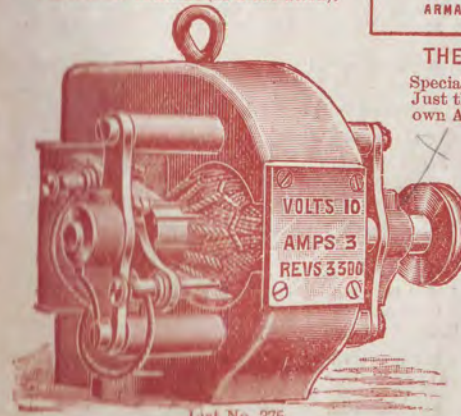
List No. 201.

Parts make machine (as illustration).



THE "CAPTAIN" CHARGING DYNAMO.

Specially designed for Accumulator Charging or Lighting. Just the machine for Amateurs requiring to charge their own Accumulators or run the house lights. Fitted with Massive Soft Iron Field Magnets, Drum Armature 8-pole Spring Brush Holders and Adjustable Brush Rockers. A very compact and neat machine.



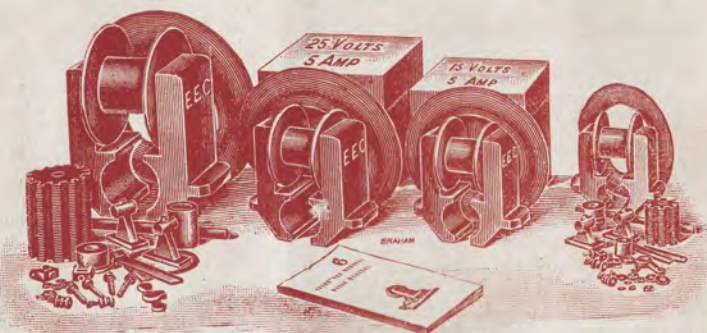
List No. 275.

List No.	Amps.	Volts.	Complete Machine.	Castings only.	Castings, Wire and all material.	Same, but machine ready for winding.
275	4	10	1 3 0	3/9	8/	1 4 0
276	4	16	1 10 0	6/9	13/6	1 9 0
277	4	20	1 16 6	9/	17/	1 15 0
278	4	50	2 7 6	12/	25/	2 10 0
279	6	50	3 10 0	17/	36/	2 10 0

N.B.—With each set of Castings and all material we include our book, "Small Dynamo: How Made."

THE "MODEL ENGINEER" DYNAMO PARTS.
CLEAN CASTINGS. NO TUNNEL BORING NECESSARY.

IF YOU are an Amateur on the look-out for a useful Set of Dynamo Castings and Materials easily fitted together, and giving most satisfactory results, you can with confidence pass your **Order to us.** With each complete Set of Parts we include No. 10 Handbook of "M.E." Series "Small Dynamos and Motors—How Made and Used." This book comprises 76 pages, and fully describes with detail measurements, diagrams, and illustrations, how to build up these useful Generators, and, when finished, how to run them. **Few Tools are necessary,** and nothing could be more concise and practical than the instructions.



List No.	Volts.	Amps.	Candle Power.	Armature Tunnel.		Armature Stampings.	Complete Set of Castings, Wire, and all Materials. See details below.		Field Magnet Casting Only.	Field Magnet Casting Weight.	Finished Commutators on Fibre
				Length.	Diam.		Rough	Machined			
1608	6	5	25 c.p.	1½ inch	1½ inch	8 pole	6/6	10/	1/6	4 lbs.	2/
1609	15	5	65 "	2 "	1½ "	"	12/6	18/	2/6	7 "	2/6
1610	25	5	100 "	2½ "	2 "	"	20/6	38/6	5/	10½ "	3/
1611	50	5	250 "	3½ "	3 "	12 pole	45/6	65/6	13/6	27 "	4/

N.B.—Candle quoted from actual tests when using Metal Filament Lamps.

A Set of Castings, Wire, and all Materials Include Massive Field Magnet (see weights above), Gunmetal Bearings, Steel Shaft, sufficient Laminated Armature Stampings (no cheeseparing), ample supply of both Armature and Field Wires, Brush Holders and Rockers, Copper Gauze for Brushes, Commutator Parts, Pulley Castings, all Insulating Materials, together with Spring Wire, Nuts, Screws and Terminals.

NOTE. We can cast from Customers' own Patterns. Patterns made promptly from Sketches at Reasonable Prices.

Iron ... per lb. ¼. Aluminium ... per lb. 4/3 Gunmetal ... per lb. 1/3 Brass ... per lb. 1

STEEL SHAFTS FOR DYNAMOS.

Cut to any length, not polished.

per foot	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1 inch.
	1/1	1/1½	1/2	1/2½	1/3	1/3½	1/4½	1/6½	1/8	1/9 per foot

SMALL TESTING COMPASS FOR DYNAMOS, each 2½d. Postage 1d. extra.

GREASE LUBRICATORS FOR DYNAMOS.

No hot bearings when using these Lubricators.

List No.	Diam.	Thread.	Each.
1616	... ½ in.	... ½ in. Whitworth	7
1617	... ½ in.	... ½ in. Gas	11
1618	... 1 in.	... 1 in.	1/4

Postage extra.

DYNAMO REPAIRS.

Re-winding Armatures and Fields, New Commutators, Bearings, Brushes, &c.

We can give you low quotation for this class of work.

We cannot quote without seeing Machine.

DYNAMO PULLEYS.

Turned and Finished with Set Screw, can be used Flat or V.

List No.	Diam.	Length.	Each
1612	... 1 in.	... 1½ in.	7
1613	... 1½	... 1½	1/
1614	... 1½	... 1½	1/4
1615	... 1½	... 1½	1/9
1615A	... 2	... 2	2/6

Postage extra.

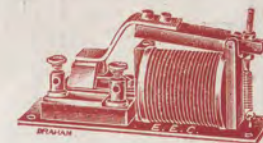
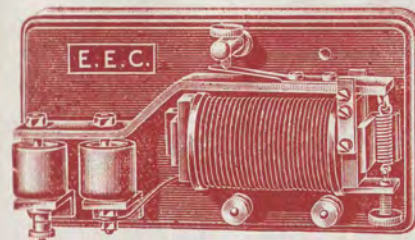
36 "ECONOMIC" IS ALWAYS AT YOUR SERVICE AND PROMPT

THE "E. E. C." SPECIAL REGISTERED CUT-OUTS.

In the past we have received many enquiries for an efficient and moderate-priced Automatic Cut-out. **ACTUAL TESTS** have been made on several of our Customers' requirements, from which many important details have resulted. Taking all the suggestions as a whole, and having carefully considered each individual point, we have produced and registered a Cut-out of some considerable merit for **EFFICIENCY, Reliable Action, and Moderate in Price.** The illustrations produced below are taken from actual photos, which in themselves render a lengthy explanation unnecessary.

ADJUSTABLE AUTOMATIC CUT-OUTS FOR ACCUMULATOR CHARGING.

List No. 938—943 are cut out only. | List No. 944—951 are cut-out and cut in.



TYPE A.

Fitted with Spring Contacts and wound with Series and Shunt Coils.

ACTION.—Immediately dynamo voltage falls to that of cells the armature of Automatic Cut-out is magnetically released, breaking accumulator connection, and leaving dynamo on open current. This operation is absolutely automatic and guaranteed at voltage listed.

Type A.

List No.	Can be adjusted to Cut-out at or between	Current.	Each.
938	... 4 to 5 volts	... 3 amps.	... 7/6
939	... 6 " 8 "	... 3 " "	... 8/6
940	... 8 " 10 "	... 3 " "	... 10/
941	... 10 " 15 "	... 5 " "	... 11/6
942	... 15 " 20 "	... 6 " "	... 13/6
943	... 20 " 30 "	... 6 " "	... 15/

Postage 3d. to 6d. extra.

Type B.

List No.	Can be adjusted to cut in or out at or between	To carry	Each
944	... 4 to 6 volts	... 6 amps.	... 14/6
945	... 6 " 8 "	... 8 " "	... 15/6
946	... 8 " 10 "	... 10 " "	... 17/
947	... 10 " 15 "	... 12 " "	... 18/6
948	... 15 " 25 "	... 15 " "	... 25/
949	... 30 " 50 "	... 20 " "	... 35/
950	... 50 " 75 "	... 50 " "	... 90/
951	... 75 " 100 "	... 100 " "	... 95/

Postage 6d. to 1/ extra.

TYPE B.

The "Economic's" own Special Registered Design, with Mercury Contact Cups, Shunt and Series Coils, with special Automatic Attachment for cutting out the Shunt Coil. The Shunt Coil in a Cut-out is of no further use once the current is exciting the Series Coil, or when the armature is making contact in the mercury cups and accumulators are on charge. If Shunt Coil is left in circuit a dead loss is the result. We maintain for our registered design that it is the most efficient Cut-out on the market, doing away as it does with Shunt Coil loss so prominent in other makes.

ACTION.—The Shunt Coil of Cut-out is excited immediately dynamo is run up, and at a definite voltage (see list above) the Cut-out armature is attracted, making of course the mercury contacts. At the moment of making contact in mercury cups the armature automatically cuts out Shunt Coil on top contacts (see illustration). The accumulators are now connected to dynamo through Series Coil of Cut-out, and this in itself is powerfully magnetising and securely holding contacts in mercury cups. Assume now the dynamo voltage falls below that of cells, the tendency is for accumulators to discharge through dynamo armature. But before this can happen, the Cut-out Poles become demagnetised, releasing armature and breaking mercury contacts.

SPECIAL CUT-OUTS FITTED WITH OUR DESIGN TO ORDER. 37

"E.E.C." ARMATURE STAMPINGS.

MANUFACTURED from the best possible Charcoal Sheet Iron, annealed by Special Process. About 50 Stampings to the inch. NOTE.—The Slots and Centre Holes are clean cut and regular, not pushed through as in the cheaper varieties sold by some firms.

SAMPLES.

To aid you in obtaining the genuine article, and in a measure to stamp out fraudulent imitations, we have decided to forward samples of any type "E.E.C." Stamping on receipt of two 1d. stamps.

Before building your Dynamo or Motor AVAIL YOURSELF of the above OFFER!

NOTE COMPETITIVE PRICES.

Diam. in inches.	Hole in Centre	Price for 1 gross	Less than 1 gross per gross.	Diam. in inches.	Hole in Centre	Price for 1 gross	Less than 1 gross per gross.
1	3/8	1/2	1/4	2	1/2	5/3	5/6
1 1/4	1/2	1/4	1/6	2 1/2	3/8	5/9	6/3
1 1/2	5/16	1/6	1/8	2 3/4	1/2	6/	6/6
1 3/4	3/8	1/10	2/	3	1/2	6/3	6/9
2	1/2	2/4	2/9	12 POLE COGGED DRUM.			
2 1/4	5/8	2/11	3/3	4	7/8	10/6	11/6
H. SIEMENS,				4 1/2	1	12/6	13/6
1	3/16	1/9	2/	5	1	14/6	15/6
1 1/4	1/4	1/10	2/2	16 POLE COGGED DRUM.			
1 1/2	5/16	2/3	2/6	2 1/2	7/8	7/	7/6
1 3/4	3/8	2/6	2/10	2 3/4	7/8	7/6	8/
2	1/2	2/9	3/4	16 HOLE.			
TRI-POLAR,				3	1/2	7/6	8/
1 1/4	5/16	3/3	3/9	6 POLE ALTER.			
1 1/2	3/8	3/10	4/4	1 1/2	3/8	3/	3/6
POLE COGGED DRUM.				8 HOLE DRUM.			
1 1/2	5/16	2/9	3/				
1 3/4	3/8	3/	3/6				
POLE COGGED DRUM.							
1 1/4	5/16	1/8	1/11				
1 1/2	3/8	1/9	2/				
1 3/4	1/2	2/3	2/6				
2	5/8	2/4	2/8				
2 1/4	3/4	2/7	3/				
2 1/2	7/8	3/2	3/6				
2 3/4	1	3/4	3/10				
3	1 1/8	4/2	4/6				
3 1/4	1 1/4	4/6	5/				
3 1/2	1 1/2	5/3	6/				
3 3/4	1 3/4	7/6	8/				

N.B.—You can get the correct count from the "Economic" certain. Postage extra on all Stampings

COLONIAL OPINION,

SUMMER HILL,
SYDNEY, N.S.W.

DEAR SIR,

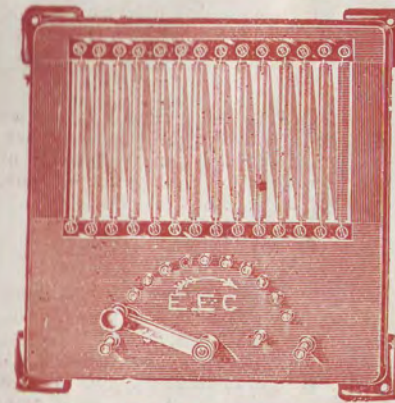
Some time ago I ordered some small armature stampings of you and I may say they have given every satisfaction. I was very surprised at the prompt attention my small order received. Please forward your new supplement, I hope to place a large order with you in the near future.

Yours faithfully,
N. DENHAM.

AUSTRALIANS KNOW!

SPECIAL ORDERS.

If you can take, say, 20 gross lots, we can quote you very low prices. We can quote for any sized stampings, slot or centre hole, but we ask customers to remember that this means special tools, and consequently prices are somewhat advanced to the stock sizes. POSTAGE EXTRA on all stampings, usually 1/4 to 1/8 per gross.



THE "E.E.C." RHEOSTAT

Made to order for any voltage, but stock size 110 volts. Can be used for Dynamos, Accumulator Charging, or reducing Current from supply mains, for driving small motors, tramcars, &c. On Polished Frame, China Insulators, 11 Way Switch (as Illustration). Size 1 1/2 by 1 3/4. LIST No. 0117. EACH (any Voltage) 18/6. POSTAGE 1/0.

MAGNETIC COMPASSES.

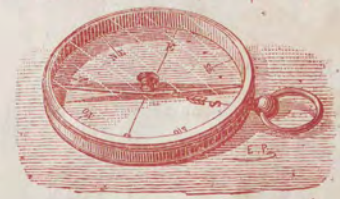
Useful and Reliable Instruments for testing in which direction an Electric Current is flowing, or defining Polarity of Dynamo, Motors, &c. Fits waistcoat pocket, very compact.



LIST No. 643.

LIST No.	DIAMETER.	INCHES.	EACH.
646	Blue Steel Needle, Diam. 1/16	1 1/2	1/6
647	" " " " " " " "	1 3/4	1/9
648	" " " " " " " "	2	1/
649	Blue Steel Needle, Diam. 1/16	1 1/2	11 each.
650	" " " " " " " "	1 3/4	1/4
651	" " " " " " " "	2	1/8

Diam'r in inches.	Hole in Centre inch.	Price for 1 grs.	Less than 1 grs. per gr
2 3/8	3/16	7/	7/6
2 1/2	5/16	7/6	8/
10 POLE DRUM.			
6		36/	10/
32 POLE DRUM.			
5	3 1/4	7/8	8/3
4	2 3/4	7/	7/6
3 1/2	2 1/4	6/6	7/
PLAIN RING.			
1 1/2	3/8	3/3	3/9



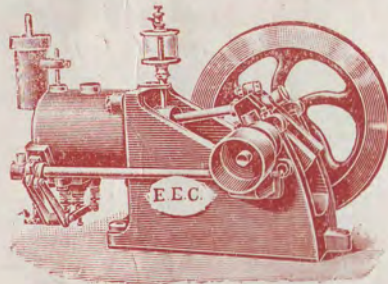
NICKEL PLATED COMPASS. MARKED DIAL.

LIST No.	INCHES.	EACH.
646	Blue Steel Needle, Diam. 1/16	1/6
647	" " " " " " " "	1 3/4
648	" " " " " " " "	2
649	Blue Steel Needle, Diam. 1/16	11 each.
650	" " " " " " " "	1/4
651	" " " " " " " "	1/8

E.E.C. ALWAYS POINTS TO MODERATE PRICES.

E.E.C. GAS AND PETROL ENGINES.

GAS ½-B.H.P.



RUNNING COST
½d. Per Hour.

The name E.E.C., coupled with over 12 years' wide manufacturing experience, give the customer that assurance so necessary in dealing with firms by mail. It is a guarantee that the Engines are constructed on up-to-date lines and supplied at a REASONABLE PRICE. From cylinder to flywheel the E.E.C. Engines are mechanically sound. Constructed for Continuous Running under normal load conditions, beyond occasional oiling it will require NO SKILLED ATTENTION. More convincing from our standpoint would be a personal call, Customers could then examine and test the different Engines under working conditions.

List No. 0107.

½-B.H.P. Otto Cycle, 1½ in. Bore, 2½ in. Stroke, Water Cooled, Balanced Steel Crank, Two Spring Rings, Tube or Electric Ignition, diam. of Flywheel 8½ ins., Weight 7lbs., ¾ in. Face, complete with Lubricators and Water Tank. Speed approx. 400 revs. per min., Weight of Engine 30lbs., Electrical output 30 to 35 watts, Cost of running, one penny for 4 hours. Using petrol, this Engine will develop ½-H.P. actual.

EACH **£3 0 0** Car. Forward.

List No. 0108.

½-B.H.P. Otto Cycle (as illustration on page 105), 2 in. Bore, 3 in. Stroke, Water Cooled, Piston fitted with two Spring Rings to assure high compression, Balanced Steel Crank, diam. of Flywheel 10 in., Weight 10lbs., with 1 in. face Machine Cut Gear Wheels, Sight Feed Lubricator to Cylinder, Tube or Electric Ignition, complete with Gas Bag and Water Tank, Length of Bed, 15 in. by 8 in., Speed 500 revs. per min., Weight of Engine 45lbs. Cost of running, 3 hours for one penny, Electrical output, 60-70 watts. Using Petrol this Engine will develop ½-H.P.

EACH **£4 15 0** Car. Forward.

List No. 0109.

½-B.H.P. Otto Cycle (as illustration above), 2½ in. Bore, 4 in. Stroke, Water Cooled, extra long Piston with Two Spring Rings, Balanced Steel Crank, Gunmetal Split Bearings, Worm Gear running in Grease box, Roller Cam Gear actuating Exhaust, Air and Gas Valves, Flywheel 20lbs., diam. 11 in., with 1½ in. face, fitted with 2½ in. Driving Pulley, Speed approx. 400 revs., Tube or Electric Ignition, Weight of Engine, ¾ cwt., complete with Gas Bag, Lubricators, and Water Tank, Electrical output 180-200 watts. Using Petrol this Engine will develop ½-H.P.

EACH **£9 15 0** Car. Forward.

We supply High-speed Trembler Coil 20 amp. hr. Accumulator Surface Carburettor, with Copper Pipes, Mixing Valve, Hot Air Pipe, Drain Cock to Tank, Unions Sparking Plug, &c., to any of the above Engines for Petrol. To run Engine approx. 4 hours without filling tank.

½-B.H.P. 48/-, extra on above prices, or with 3 dry cells instead of accumulator, 39/-
¾ " 51/-, " " " " " " 41/-
1 " 54/-, " " " " " " 44/-

High-speed Trembler Coil for above Engines 19/6 each. 20 amp. hr. Accumulator, 12/9 each.

RELIABLE!

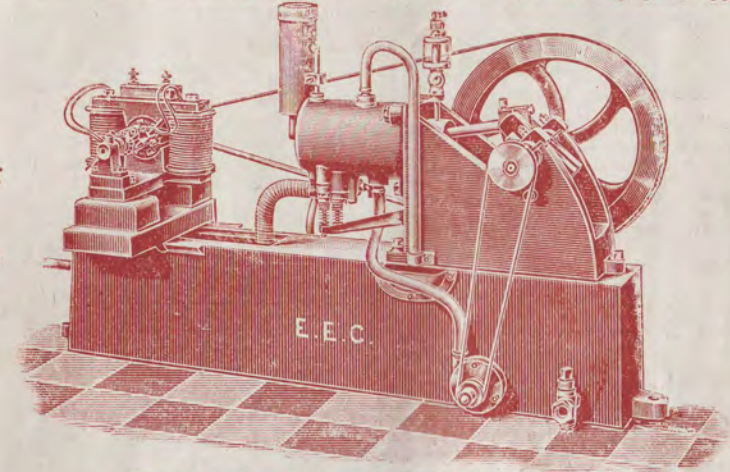
COMPLETE
"E.E.C." Charging and Lighting
Plants.

EFFICIENT!

For Amateurs, Country House Lighting, or Cycle Agents' Accumulator Charging Installations. The Complete Sets listed will be found thoroughly reliable, up to their work, and give general satisfaction to any purchaser.

For Engine Particulars, see page 40. For Dynamo Particulars see pages 31-35.

Running
Cost
½d. per
hour.



Output
15
Volts,
5
Amps.

From photo of List No 0105. ½ H.P. Set.

List No. 0103.

½-B.H.P. Gas Engine, Water Cooled, Tank, Connecting Pipes, Gas Bag, everything to complete, coupled with our "E.E.C." Charging Dynamo (see page 35) together with ¾ in. Belt. COMPLETE **£3 15 6** Car. Forward.

Special "E.E.C." Switchboard for above, comprising 0-12 Voltmeter, 0-6 Ammeter, Switch Fuse, Charging and Dynamo Terminals. EACH **19/6**.

List No. 0104.

½-B.H.P. Gas Engine, supplied with everything ready for running, together with our 15 Volt, 5 Amp. "Colonial" Dynamo, including ¾ in. Belt. COMPLETE **£8 16 6** Car. Forward.

List No. 0105.

½-B.H.P. Gas Engine (as illustration), mounted with our 15 volt 5 amp. "Colonial" Dynamo, everything complete and compact (Water Tank and Gas Bag contained in Bed). COMPLETE (as illustration) **£9 10 6** Car. Forward.

Switchboard for List No. 0104 or 0105, comprising 0-25 Voltmeter, 0-6 Ammeter, Switch, Fuse, Charging and Dynamo Terminals, EACH **23/6**.

List No. 0106.

½-B.H.P. Gas Engine, everything tested and ready for immediate use, together with our 30 volt 6 amp. "Colonial" Dynamo. COMPLETE **£13 5 6** Car. Forward.

Switchboard for ½ H.P. set, comprising 0-40 Voltmeter, 0-6 Ammeter, Switch, Fuse, Four 30 volt Lamps and Batten Holders, Accumulator and Dynamo Terminals, as described and illustrated on page 77 in our Catalogue, EACH **30/-**.

SMALL POWER MOTORS.

(SERIES WOUND.)

For driving Small Machines, Dental Lathes, Sewing Machines, Engravers, Fans, etc.

List No.	H.P.	Voltage.	Weight.	Direct.	Alternating.
6014	1-50	100-120	200-250 4lbs.	£1 10 6	£1 15 6
0115	1-20	100-120	200-250 9lbs.	£1 19 6	£2 10 6
0116	1-10	100-120	200-250 12lbs.	£3 10 9	£4 0 9

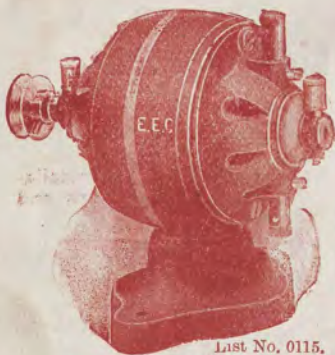
CURRENT CONSUMPTION.

1-50	at 2,000 revolutions per minute,	30 watts.
1-20	" 2,300	" " 50 "
1-10	" 1,900	" " 100 "

N.B.—We can quote **LOW PRICES** for any size up to 2 B.H.P. Send us your enquiries.

SEMI-ENCLOSED SHUNT WOUND MOTORS.

List No.	H.P.	Voltage.	Weight.	Direct.	Sizes.
952	1/2	100-120	200-250 26lbs.	£5 4 0	W r t e n s
953	3/4	100-120	200-250 34lbs.	£5 13 0	for
954	1	100-120	200-250 84 lbs.	£12 12 0	quotation.
List No. 0115, [955	1	100-120	200-250 110 lbs.	£18 10 0	



THE "ECONOMIC" HIGH SPEED DESK FANS.

Exceptionally well made and substantial. Fitted with Regulator giving 3 speeds. Note neat appearance combined with solid base.

List No.	Voltage.	Weight.	Size.	Direct.	Alternating.
956	100-120	200-250 3lbs.	7in.	£1 10 6	£1 1 6
957	100-120	200-250 6lbs.	10in.	£1 19 6	£2 5 0
958	100-120	200-250 14lbs.	12in.	£2 8 6	£2 12 9
959	100-120	200-250 18lbs.	16in.	£3 4 0	£3 15 9

CURRENT CONSUMPTION.

7in. Fan with 18 speed	1,500 V.P.M.
10in. " "	28 " 1,400 "
12in. " "	50 " 1,500 "
16in. " "	100 " 1,250 "

When ordering specify Voltage, List No., whether direct or alternating, and periods of alternating.

We can supply Wall Fans, Swivel and Trunnion at very moderate prices. Obtain quotation. Also Ceiling Fans for Tropical Climates, Cabin and Port Hole Fans; or special fans to order, any voltage.

LOW-VOLTAGE FANS.

Current Consumption Low. High Speed, Silent Running, suitable for Accumulators or Dry Cells, stocked for 4, 6 or 8 volts. List No. 0110. 4-Blade with Guard each £1/9/6 (as illustration).

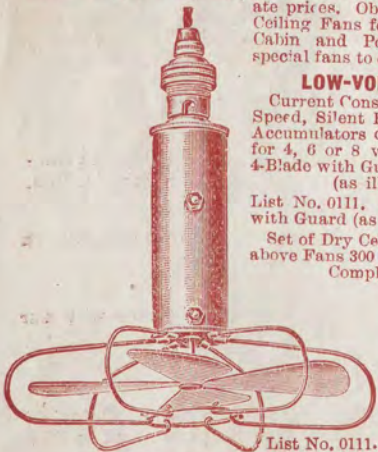
List No. 0111. 4-Blade Ceiling Fan, with Guard (as illustration) £1/12/6

Set of Dry Cells export-type to run above Fans 300 hours.

Complete set 14/9.

Set of Accumulators in Substantial Wood Case to drive above fans.

Complete set 30/. Carriage forward.



List No. 0111.

THE "ECONOMIC" WATER MOTORS.

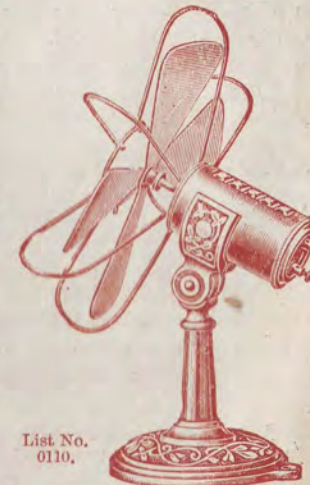
Including Driving Pulley, 3 Nozzles for Speed and Regulation and Lubricators.

List No.	H.P.	Revs.	Pressure.	Price.	Step Valve extra.
980	1-20	1,800	60lbs.	£2 10 0	8/6
981	1-6	1,100	"	£4 10 0	7/6
982	1-3	700	"	£8 0 0	8/6
983	1/4	500	"	£19 0 0	16/

Carriage forward.



List No. 957.

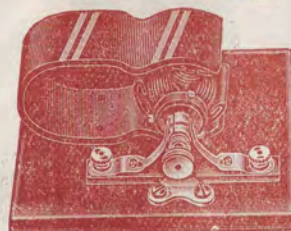


List No. 0110.

WE CAN QUOTE you for small petrol sets, air or water cooled, from 1/2 to 30 H.P. at right prices.

THE "LITTLE DASH" MOTOR.

Speedy Little Model. Hums round at over 3,000 revs. per min. off one "Defiance" Battery. By reversing current you reverse rotation. The very Latest and Cheapest on the market.



THE "LITTLE DASH."

Usual Price 2/6.
Special Low Price.

1/10 each.

Postage 3d. extra.

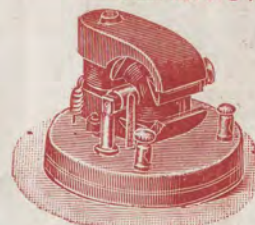
If sent with "Defiance" Battery,

Post free 2/10.

Models this Motor will drive see pages 47, 48.

THE "FAVOURITE" MOTOR.

A favourite with all Amateurs, mounted on round Polished Wood Base. Fitted with Tri-polar Self-Starting Armature. All parts Nickel Plated. Runs well on 2 Volts.



THE "FAVOURITE."

3/8 each.

Postage 3d. extra.

Try our "Defiance" with this Motor, it will give you perfect results.

POWERFUL

"LITTLE HUSTLER" MOTORS.

The powerful 2 Volt "LITTLE HUSTLER" Electric Motor which we illustrate on this page is a complete specimen of the latest electrical science and workmanship.

It is 3 1/2 inches high, finished in glossy black enamel, with nickel plated fittings supplied with Tri-polar Armature causing motor to start without assistance immediately current is applied. It will drive a 4-in fan at 3,000 revs. per min. and is also fitted with a removable pulley wheel for running models, etc. Without a doubt it is the cheapest, most powerful and best-finished motor on the market at the price.

N.B.—This Motor will easily drive six of the models on pages 47, 48.

List No. 314	2 Volt "LITTLE HUSTLER" Electric Motor, packed in strong box	...	4/ each
315	4in. Nickel Plated 3 arm Fan for "LITTLE HUSTLER"	...	1/ "
	Postage on Fan, 1/3d. extra.		
	Postage on Motor, 4d. extra.		

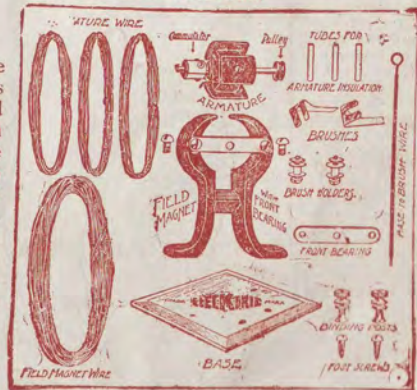
LITTLE "HUSTLER" MOTOR PARTS.

Many of our customers prefer to manufacture their own motor. Our long experience in this line enables us to make them the offer of a good and reliable set of parts easily fitted up with only the aid of a screwdriver. All parts are turned, winding and fitting only necessary to complete an exact copy of the "LITTLE HUSTLER" Electric Motor as above. Packed in strong box, each set is sent with full printed instructions showing how to wind and assemble, also how to make a simple and cheap battery for driving. **SUCCESS** is assured to all who carefully follow instructions.

Mr. W. E. Cray writes:—"Received Motor Parts last night. I wound and fitted together in less than an hour, and it works splendidly.—Gosport, Hants."

N.B.—Originals of all Testimonials can be seen.

List No. 316	Complete Set of "LITTLE HUSTLER" MOTOR PARTS	...	The Set, 3/6 each
316A	Cheap Set of Motor Parts, not "Little Hustler," on Card, with Instructions	...	1/ "
316B	Superior ditto, and parts for making a Battery	...	2/6 "
	Postage 3d. extra.		

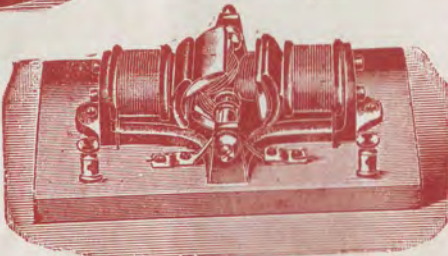


List No. 316.



The "ECCON" MOTOR.
THE "NAVAL" MOTOR.

Very Powerful Tri-polar SELF-STARTING Armature, made on up-to-date methods. Wound with High-Conductivity Copper Wire, and Mounted on Handsome Polished Base; Plated Terminals, Pulley, &c.
Price (as illustration), 3/6.
Postage, 4d. extra.



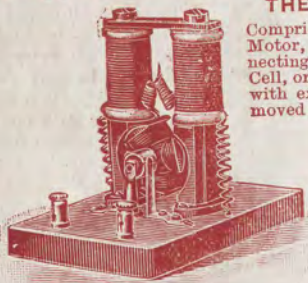
The "Naval" Motor.

THE "LONDON" FAN SET.

Comprises Powerful SELF-STARTING Motor, one 4in. Plated Fan, 3-Blade, Connecting Flexible Wires, one E.E.C. Dry Cell, or one Bichromate Battery, together with extra Pulley, so that Fan can be removed and Pulley used for driving Models.

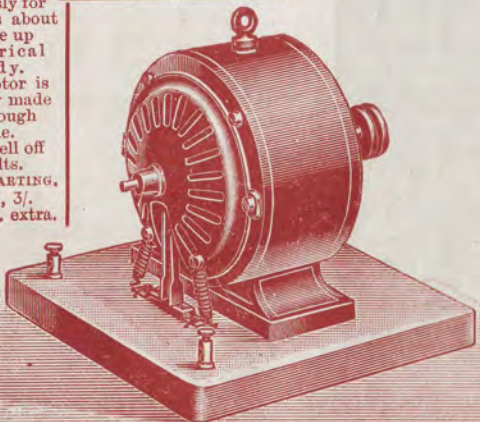
This Set is subject to our usual stiff test, and will be found absolutely RELIABLE.

Price of complete Set, including extra Pulley, 6/6.
Post, 7d. extra.

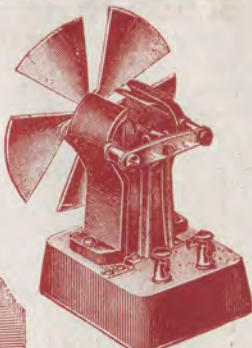


THE "STUDENTS" MOTOR.

An improved type of Motor, recommended expressly for Students about to take up Electrical Study. The Motor is strongly made for a rough time. Runs well off 2 volts. SELF-STARTING.
Price, 3/.
Post, 4d. extra.

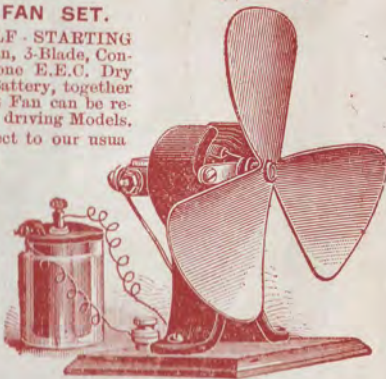


List No. 317.—The "Central Station" Motor.



The "LITTLE JAP."

Modern High-Speed SELF-STARTING Electric Fan. Throws strong breeze directly forward. It is really astonishing what power can be obtained from such a small machine.
Price, 4/6. Post, 4d. extra.



The "London" Set.

THE "CENTRAL STATION" MOTOR.

An exact and perfectly accurate Model of the present day Motors in all Electric Light Stations.

Mounted on Handsome Polished Base, and entirely enclosed. Runs well from 4 volts. Cover can be removed to adjust or clean. This Motor we strongly recommend to Customers in search of a Gramophone Motor. It runs very silent, and for its size is very powerful.

SELF-STARTING.

List No.	High.	Wide.	Each.	Post.
317.	4in.	4in.	10/6	4d.
317A.	4½in.	4½in.	17/6	6d.
318.	5½in.	5½in.	25/	8d.

Nothing to equal this Motor for Power and Speed when run from 4 volts.

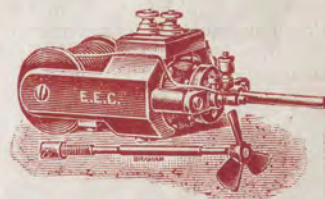
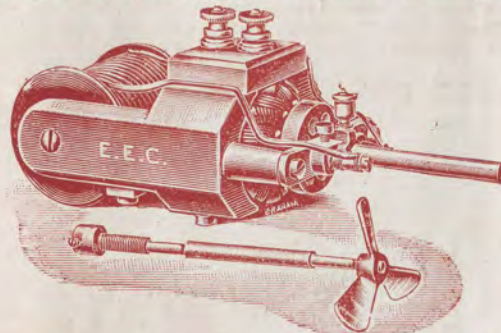
SPEEDY. POWERFUL. QUIET.
The Latest "E.E.C." Launch Motors.

The Latest "E.E.C." Launch Motors are specially designed for boat work and not, as many, adapted from old stock castings. Customers by carefully noting the illustrations can see that the weight is evenly distributed and at the bottom of the boat. In most older patterns the field windings are on top, consequently the boat is not so well balanced, **Top Heavy** of course being the most general objection. In posting us your order you will obtained genuine Launch Motor of the **MOST POWERFUL PATTERN.**

SPECIFICATION.

No. 095 is fitted with 3 pole Self-Starting Tri-polar Armature. Nos. 096 and 097 are supplied with 8 pole Cogged Drum Laminated Armatures and fitted with 8 section Special Disc Commutators. All patterns are SELF-STARTING and have Spring Copper Brush Gear of reliable design giving an even and efficient pressure on commutator with least possible friction. Steel Shaft with a long gunmetal bearing, giving a **WELL BALANCED ARMATURE**, which will run free from overheating, developing its maximum power at 2,000

revs. per min. for hours. Fields and Armature are carefully wound and receive each two coats of shellac varnish, finished in glossy holly-green enamel, all bright parts polished and lacquered.



LIST No. 095 (as illustration), Weight 15 ozs., Size 5ins. Long, 2ins. Wide, 1½ins. High, stock windings 4, 6, or 8 volts. Revs. 2,000 per min. suitable for driving, 3ft. Launch or Electric Loco or Tramacar up to 15 lbs. Current Consumption, 1½ amp. at 4 volts. Supplied with No. 1 propeller, coupling and flexible shaft. Diameter of Armature 1½ins.

COMPLETE, with Laminated Armature ...	...	EACH 8/-	postage 4d. extra.
" " cast " " " " " " " "	...	7/-	" 4d. "
" " only (with stampings) " " " " " " " "	...	THE SET 3/-	" 4d. "
Castings, Wire and all materials, Lam. Armature	...	5/-	" 4d. "
Machined Castings, Wire and all materials, Lam. Armature (ready for winding) ...	...	6/6	" 4d. "

LIST No. 096 Weight 1lb. 4ozs., Size 5ins. Long, 2½ins. Wide, 2½ins. High, stock windings 4, 6, 8, or 12 volts. suitable for Loco or Tramacar of 35lbs. or Launches up to 5ft. Current Consumption, 2 to 3 amps. at 4 volts. supplied with No. 2 propeller, flexible shaft and coupling. Diameter of Armature 1½ins.

COMPLETE with 3 pole Laminated Armature ...	...	EACH 12/-	postage 5d. extra.
" " " " " " " " " " " " " " " " " "	...	14/-	" 5d. "
Castings only with Armature (Laminated) " " " " " " " "	...	5/-	" 5d. "
Castings, Wire and all materials, Lam. Armature	...	8/-	" 5d. "
Machined Castings, Wire and all materials, Lam. Armature (ready for winding) ...	...	11/6	" 5d. "

LIST No. 097 Weight 3lbs. ½oz., Size 7½ins. Long, 3ins. Wide, 2½ins. High, Stock windings 4, 6, or 8 volts, but to order wound for 12 volts, suitable for Electric Loco or Tramacar up to 55lbs. or 7ft. Launch, Current Consumption 3 to 4 amps. at 4 volts, supplied with No. 3 propeller flexible shaft and coupling, diameter of Armature 1½ins.

COMPLETE with Laminated 8 pole Armature ...	...	EACH 18/-	postage 7d. extra.
Castings only with Armature stampings ...	...	9/-	" 7d. "
Castings, Wire and all materials, Lam. Armature	...	12/6	" 7d. "
Machined Castings, Wire and all materials, Lam. Armature (ready for winding) ...	...	15/-	" 7d. "

Worm and Cog Gears for above Motors, see page 46; Boat Accumulators, see page 65; Propellers, see page 46.

THE "E.E.C." PETROL CHARGING and LIGHTING SETS.

RELIABLE. POWERFUL. ECONOMICAL.

Suitable for Country House Lighting, Provincial Cycle Manufacturers, and Colonial Uses. Guaranteed **RELIABLE** and **SUBSTANTIAL** in **CONSTRUCTION**. Enquiries and Correspondence invited.

List No. 1620. 3½ H.P. Water Cooled Petrol Motor, Cylinder dimensions 80 mm. by 80 mm., Spray Carburettor, Automatic Lubrication, Petrol Tank, Silencer, Water Tank, High Speed Trembler Ignition Coil, 20 amp. hr. 4 volt Accumulator, Set of Spanners, Sparking Plug, Wires High and Low Tension, Switches, etc., mounted on Substantial Bed Plate and coupled to our List No. 299 Colonial Dynamo.

List No. **Price Complete Set** **£39 10s.**
1620. **„ Engine Carburettor, Fittings and Bed Plate** ... **£21 5s.**

N.B.—If you are in the Market for a Petrol Set give us an opportunity of quoting. We specially cater for Colonials wanting a useful set. Several of our combined plants are daily in use in India and New Zealand giving most satisfactory results. Spares for Engine and Dynamo always in stock. We can quote special prices for large or small sets.

THE "CRUISER" BOAT MOTORS.

Suitable for Locos or Boats. For efficiency and power, these Motors will recommend themselves to all interested in Launch or Loco work. That they will command a ready sale on account of their Compactness and Reasonable Prices goes without question. They are Reversible and Self-starting, fitted with Automatic Feed Copper Gauze Brushes and extra long Gunmetal Bearings.



List No. 1621.

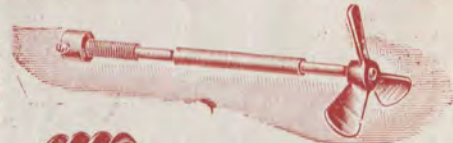
List No. **Size**
1621. 1 in. wide, 1½ in. high, 3½ in. long ... each 6/9
1622. 1½ " " 1¾ " 4 " " " " 10/6
No. 1621 is fitted with 1 in. Cast Tri-polar Armature.
" 1622 " 1¼ Lam.
" 1622 is suitable for No. 1 Gauge Loco and fitted with ⅝ in. shaft.
" 1621 is suitable for No. 0 Gauge Loco and fitted with ¾ in. shaft.

Fibre Reversing Switch fitted with wire to either motor, 3/ extra. Postage 3d. & 4d. extra

BOAT PROPELLERS.

Complete with Shaft and Flexible Coupling.

List No.
1622. Suit No. 095 or 1621 Motors each 1/3
1623. " 096 " 1622 " " 1/7
1624. " 097 " " " 2/
Postage 2d. and 3d. extra.



PROPELLERS ONLY.

1625. With set screw, each 6/6, postage 1d.
1626. " " " 7/ " 1d.
1627. " " " 9/ " 1½d.



CHINA BELL PUSH
3 in. diam.
(as illustration)
Each 1/3
Postage 2d. extra

Polished Bases and Covers for 2½ Bells.
No. 74.

Exceptional Value, the pair 6d.
Postage 3d. extra.



BOAT OR LOCO GEARS.

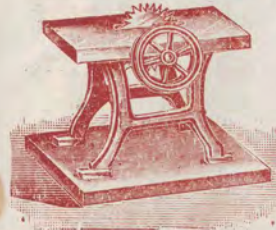
Accurately cut and well-finished Worm Gear.
(as illustration.)
24 to 1, per pair, 1/6
Postage 1d.
We can supply any Gear special to order at slight extra cost.

COG GEAR for BOATS, etc.

Specially made to fit our No. 095, 096, 097, 1621 or 1622 Motor Shafts. Size 2 in. long, 1½ in. wide, ⅝ in. thick, weight 3 ozs. Exceptionally neat and compact, 4 Gear Wheels, 5/; Postage 2d. extra.
Complete Gear in Gunmetal Case.
Gears 4 to 1 and 2 to 1 stock size.

WORKING MODELS.

These Mechanical Models are all fitted with pulleys ready to couple to our small Electric Motors. In practice it will be found that most of the motors will drive two or more Models at **High Speed**.



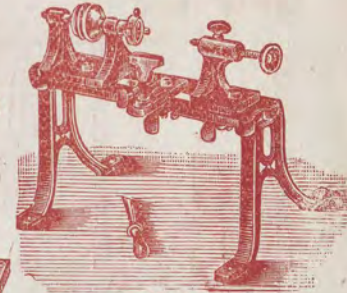
No. 323.



No. 320.



No. 321.

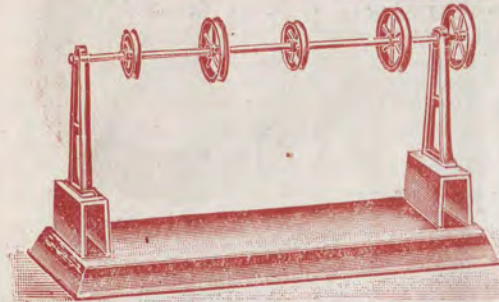
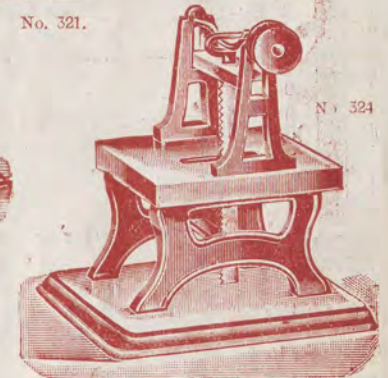


No. 325.

LIST NO. EACH.
320 Polishing Wheel 5
321 Drilling Machine 5
322 Grindstone 5
323 Circular Saw 6
324 Vertical Saw (4½ high, 4½ long) 9
325 Small Lathe, mounted on Polished Wood Base, with Pulleys 3½ high, 4½ long ... 15
Postage 3d. extra on all Models.



No. 324.



MODEL SHAFTING.

For connecting up any number of models to electric motors or engines to drive.

LIST NO. EACH. POST EXTRA.
074 3 Grooved Pulleys 7 ... 3
075 4 " " " " " " " " 10 ... 4
076 5 " " " " " " " " 1 ... 5

WORKING MODEL FOUNTAIN.

10 in. Cylinder, Brass.
EACH 2 6

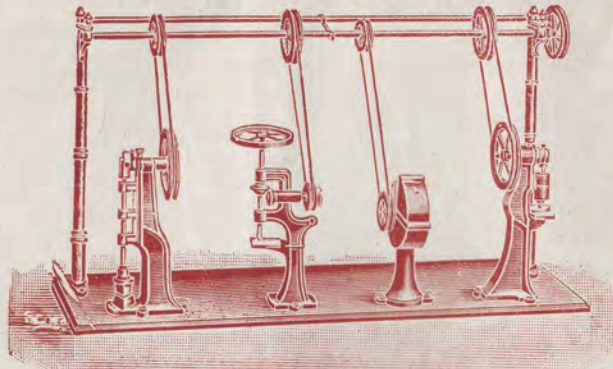


NOTE
REDUCED
PRICES.



THE "DANCING FIGURE" MODEL.
Magnetic Toy. Directions for fitting sent with each Set.
Dancing Figure (as illustration), 1/ each.

Other CHEAP CARDED SETS include Motor Parts, on card with instruc. 1/
Cheap Ready-made Shocking Coil 1/
Coil Parts 1/6 and 2/6
Electric Light Outfit on Cards 1/1, 1/6 and 2/6
Single Needle Telegraph Model ... 1/
Morse Key and Sounder Parts, with instructions 2/6
Postage on any of above, 3d. extra.



List No. 964.

MODELS OF WORKSHOP

List No. 963A.
(As illustration.)
Consisting of
Drop Hammer,
Punching Press,
Drill and Grind-
stone mounted
on Japanese
Base, 12in. by 7
EACH 3/8.

List No. 964.
Consisting of
Drop Hammer,
Drill Lathe and
Punching Press,
17 1/2 in. long and
7 1/2 in. high.
EACH 4/7.

List No. 965.
Consisting of
Five Machines,
23 in. long and
7 1/2 in. high.
EACH 6/9.
Postage extra.



Thermometers.
Usual price 1/.
EACH ... 9d.
Postage 2d.
extra.



THE "RUBY" GAS LIGHTER.

Greatly improved since last season.
List No. 063.
EACH 1/ Post free.



BAROMETERS.

5in. Open Enamel Dial. Very accurate
and reliable (can be recommended).
EACH 11/6. 6 1/2 in., Larger Size, 16/.

HELMET OILERS.

For screwing into oil holes of sma
Dynamos and Motors.
Small ... each 1d. } Postage 1d.
Medium ... " 1 1/2d. }
Large ... " 2d. }

VALUE.

Further selection of
Pushes, see pages 3, 4, 7.



THAT BRASS PUSH

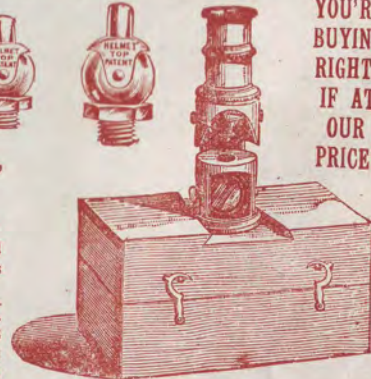
we can supply at
List EACH 11d.
No. 35. Postage 1d.

YOU'RE BUYING RIGHT IF AT OUR PRICES.



THE "STUDENT'S" COMPLETE MICROSCOPE SET.

Very compact, in Polished
Mahogany Case, with Slides
and Forceps.



List No. 640.

ACHROMATIC MICROSCOPES.

Ball and Socket Movement,
Splendid Action, Height 6in.

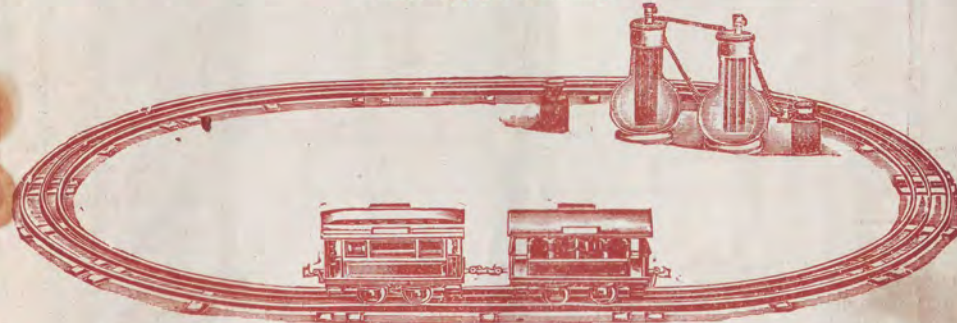
List No.	Each.	With Cdsr.	Complete.
637. Mag. 60 times	18/6	18/6	
638. " 75 " "	18/	20/	
639. " 90 " "	20/	25/	

Postage 6d. extra.

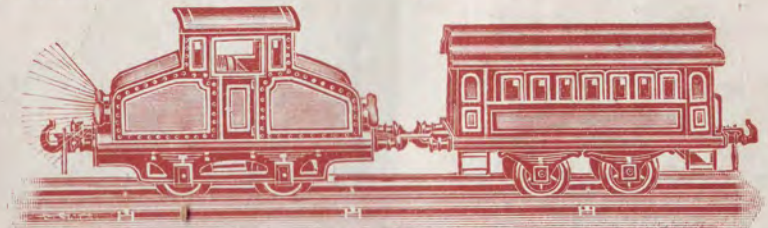
Postage 6d. extra.

POWERFUL ELECTRIC TRAMWAYS.

Model Electric Tramways, more especially when of new and up-to-date design, are always fascinating to the average Amateur. They convey to a studious mind the numerous electrical details connected with Modern Electric Practice. Any Amateur can erect these Models in a short time; only ordinary Electrical Knowledge IS NECESSARY. One advantage: there is no limit with this system to length, the rails are easily coupled up. To Shopkeepers these models make a very effective window attraction. Can be run off main supply if necessary.



List No.	List No. 332.	Each
330. Set complete, comprising 8 Curved Rails (about 9ft.) and one Electric Motor Car without batteries	10/9
331. Set complete, comprising one Electric Tram Car and one open Car, 8 Curved Rails, and 4 Straight Rails	14/6
332. Same as above, but with 2 Bichromate Batteries and Chromic Salts for Charging (complete as illustration)	20/6
333. Extra Tram Car (complete)	9/
334. Ditto, Open ditto	3/
335. Rails, Curved to suit above track	each /5
336. Ditto, Straight ditto	"/5
337. Switches ditto	per pair 7/
338. Crossings ditto	each 3/



Latest Model of London Tube Locomotives, Splendid Finish.

LIST No. 339. Electric Locomotive, 8 1/2 ins. long with 8 Curved Rails ...	each 12/
" 340. " " and one extra Car, total length, 18 ins., 8 Curved and 4 Straight Rails, complete ...	" 15/9
" 341. Same as 340, including 2 1/2 pint. Bichromate Batteries and Chromic Salts ...	" 21/6

N.B.—Above prices are without headlights. If required with headlights as illustration add 4/3 (2 Headlights to each Car). We can supply to order above Cars for 110 or 220 direct current, per Car extra, 14/. Postage, 1/ extra on above Sets. Extra Rails see List No. 335, 336, 337 and 338.

"E.E.C." ALWAYS RIGHT IN FRONT WITH LATEST MODELS. 49