



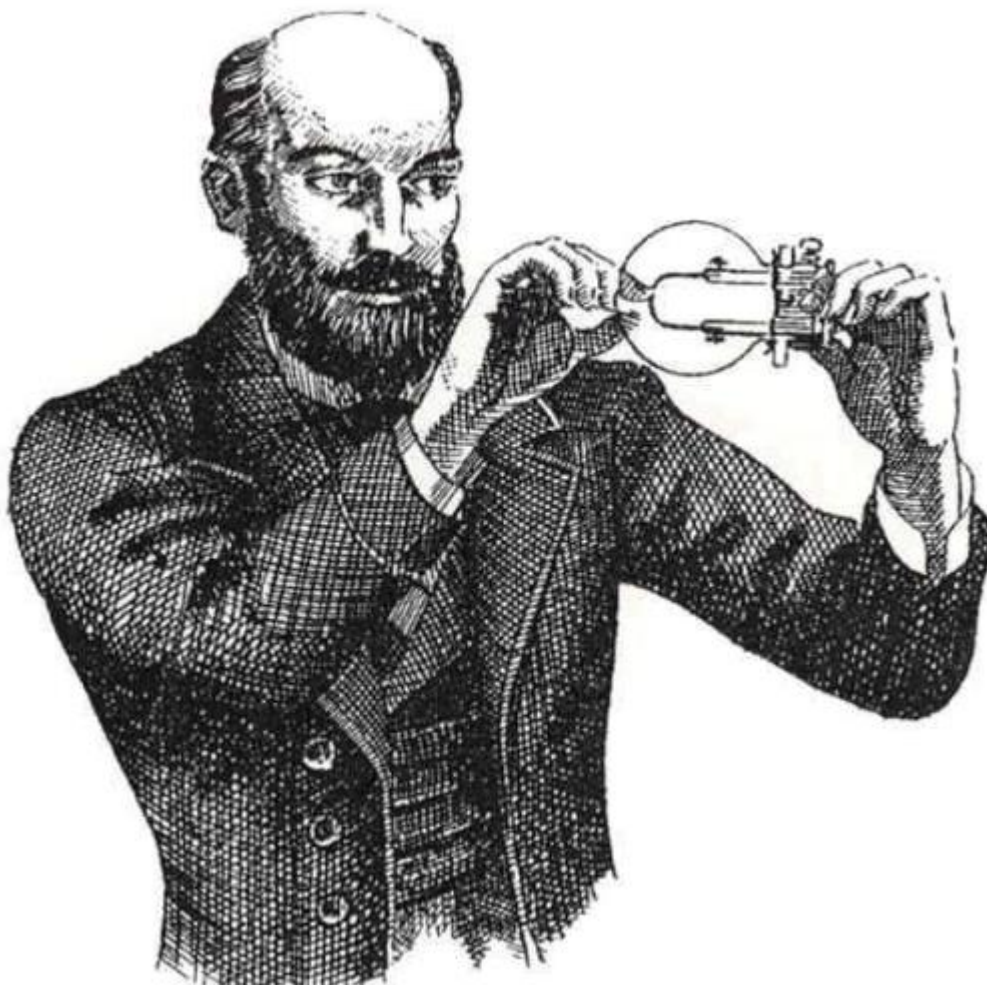
# Building Engineering Services **HERITAGE REVISITED**

## **PART FIVE**

Second Edition 2021

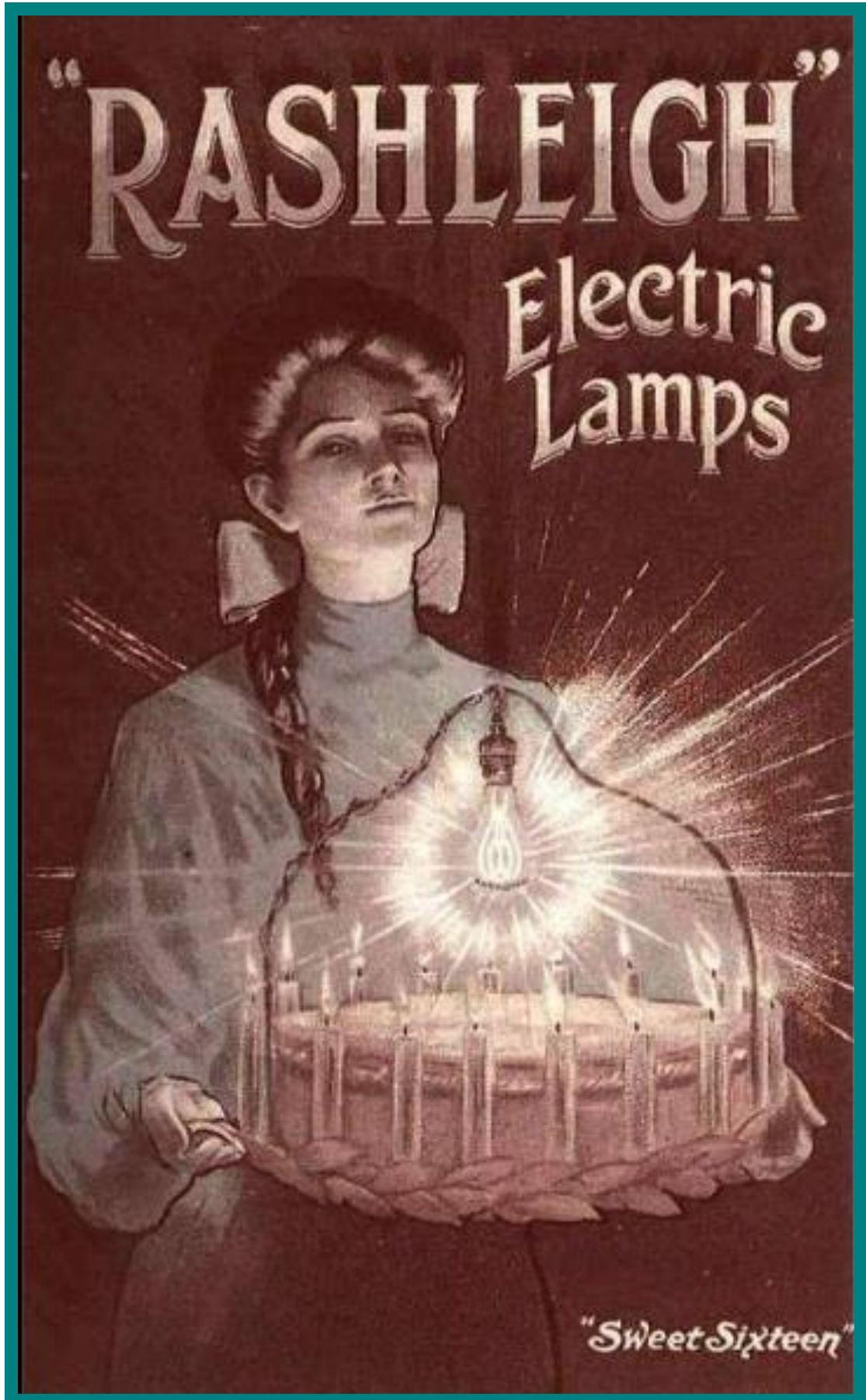
### **BRIAN ROBERTS**

**CIBSE Heritage Group**



**W.E. Staite, an early lamp pioneer.  
Developed an incandescent lamp in Bristol 1848.**

# THE EARLY DAYS OF LIGHTING



# CHANGES IN LIGHTING AND LAMPS



## A HERITAGE GROUP REVIEW IN PICTURES

### COVER

Edison Pearl Street Electric Station-*front cover*, Maxim Lamps-*inside front*,  
Tungsrn Lamps-*inside back*, Royal Exchange Siemen's Arc Lighting-*back cover*

### PIONEERS

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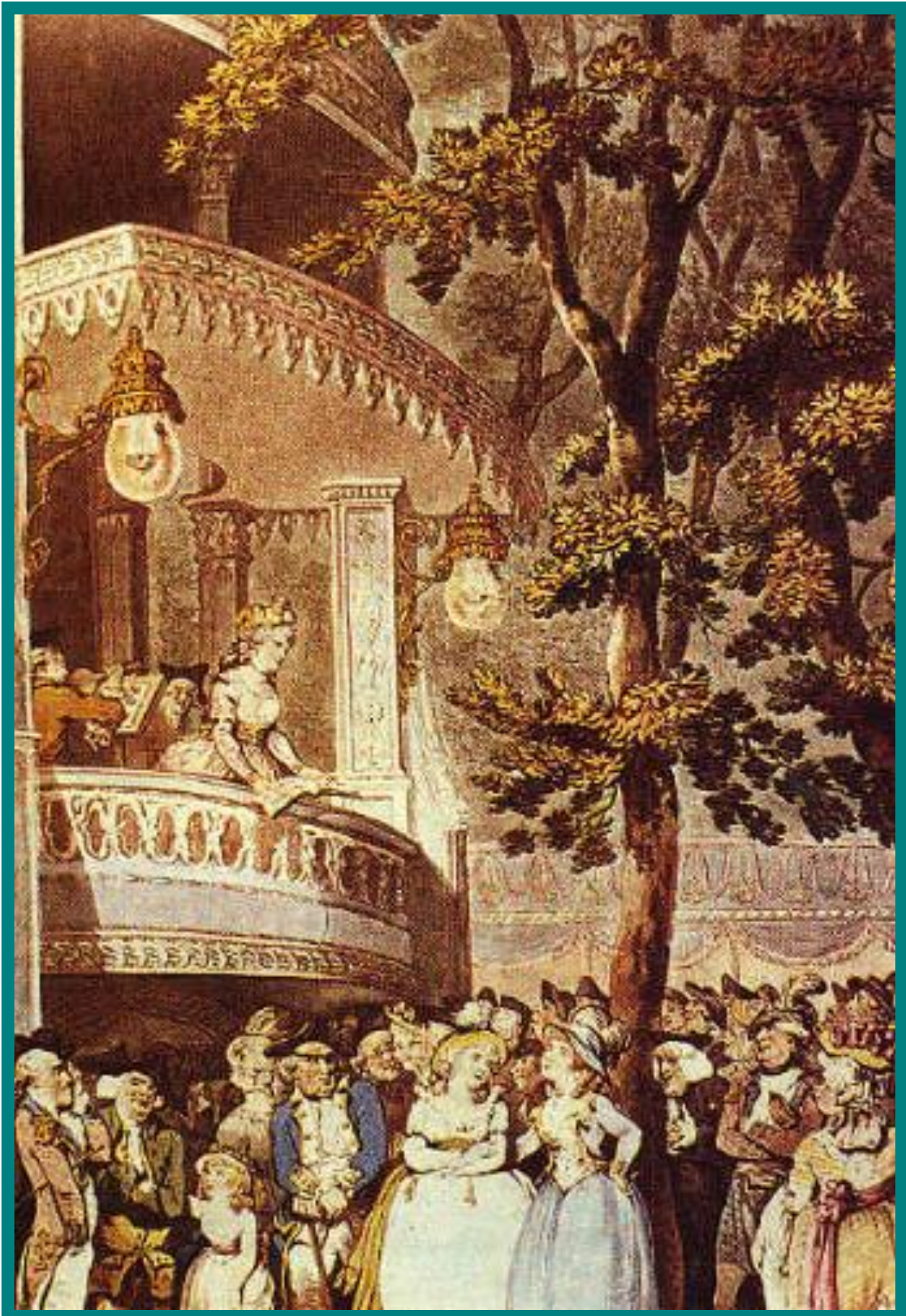
# LIGHTING AT THE MEDIEVAL COURT



Candle lighting at the Medieval Court 15th century (Princely Feasts and Festivals 1988).



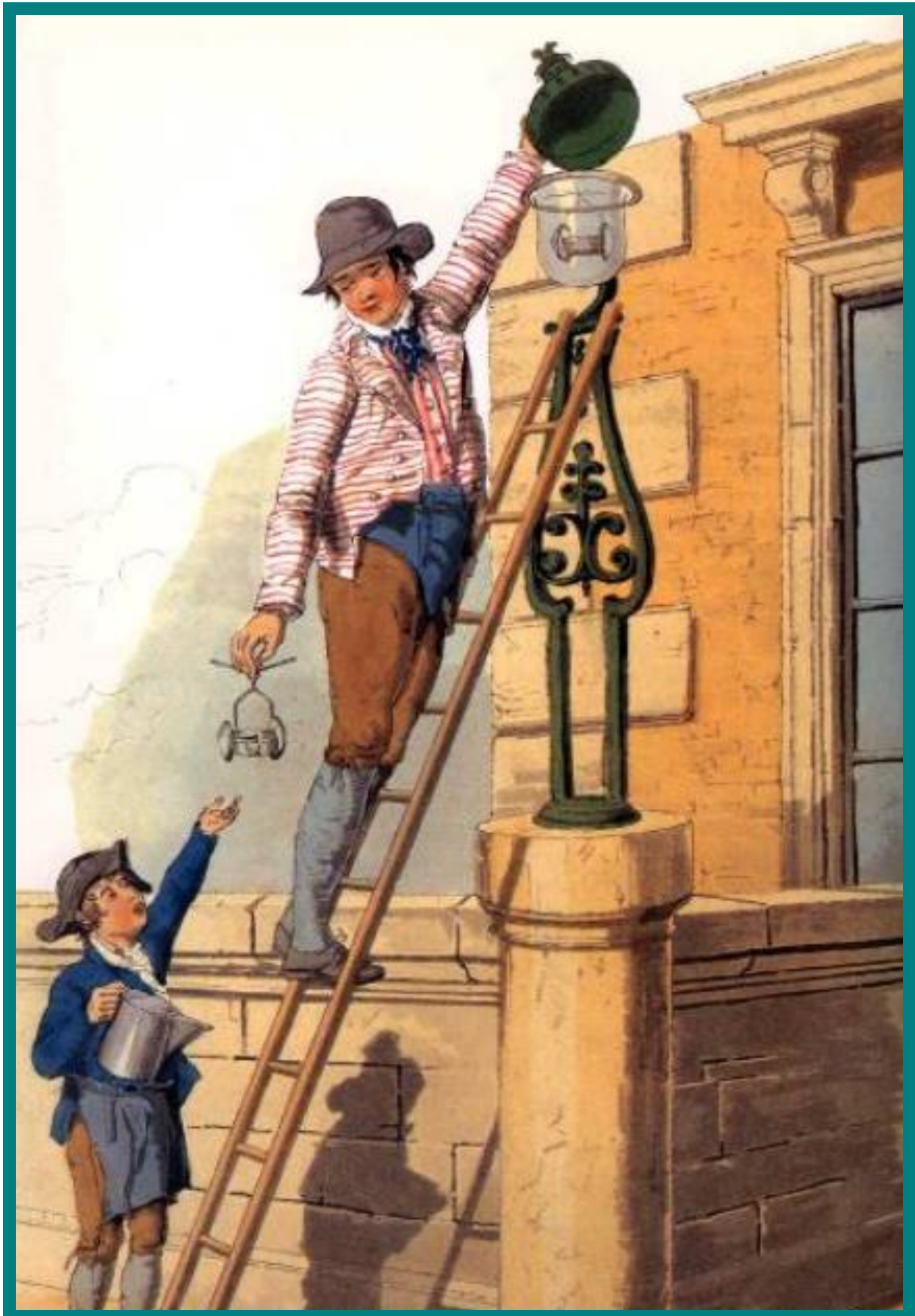
# LIGHTING AT VAUXHALL GARDENS



1785 (detail from Rowlanson in George: Hogarth to Cruikshank).



# THE LAMPLIGHTER



(Pyne's Book of Costumes, early 19th century)



# BLESSED EFFECTS OF GAS LIGHTING



Cartoon of about 1820 (The Quest for Comfort).

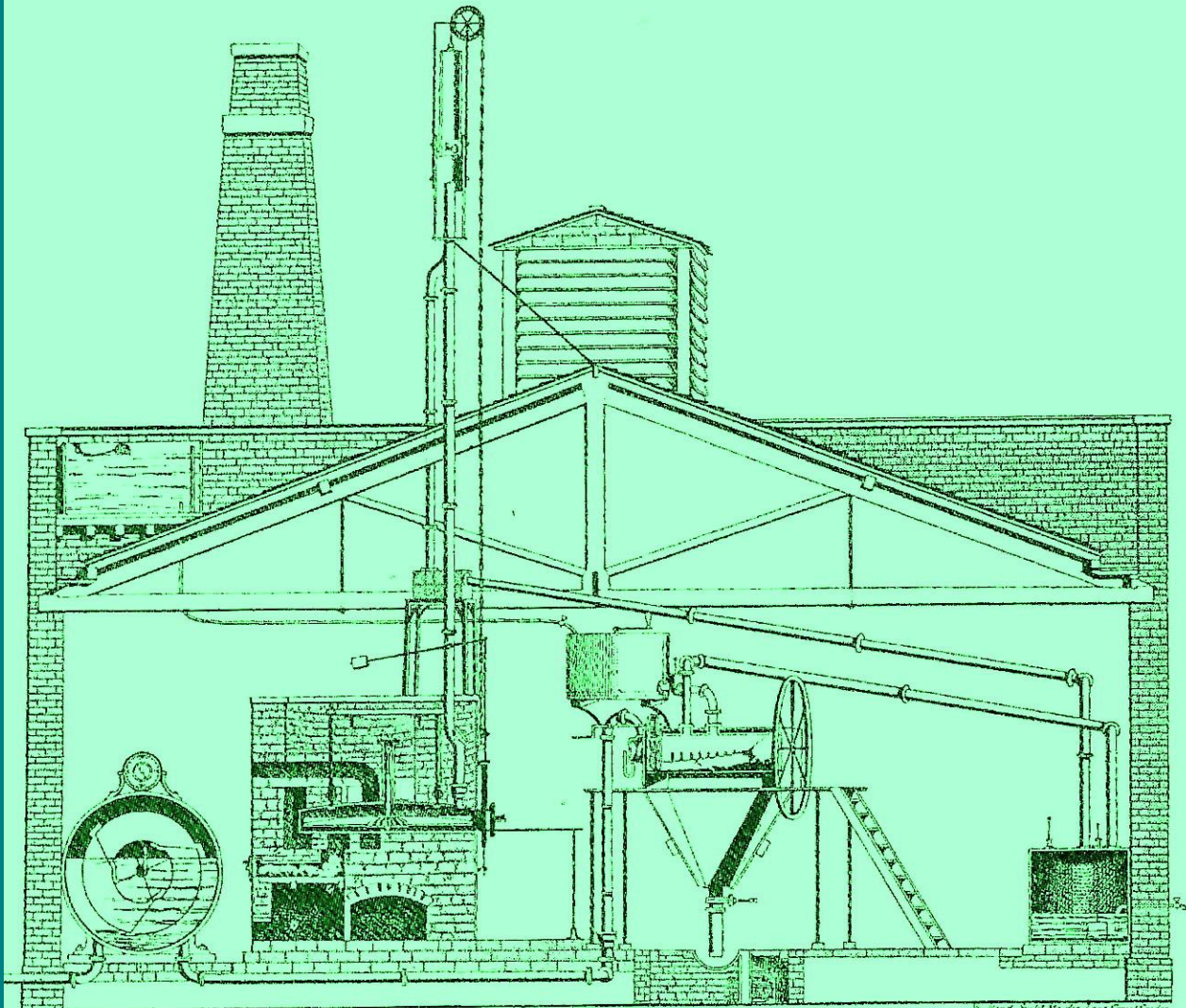


# ROYAL MINT GAS LIGHTING

## *Gas Lighting*

We thankful are that sun and moon  
 Were placed so very high  
 That no tempestuous hand might reach  
 To tear them from the sky.  
 Were it not so, we soon should find  
 That some reforming ass  
 Would straight propose to snuff them out,  
 And light the world with Gas.

*Rhyme from Glasgow, c1805*

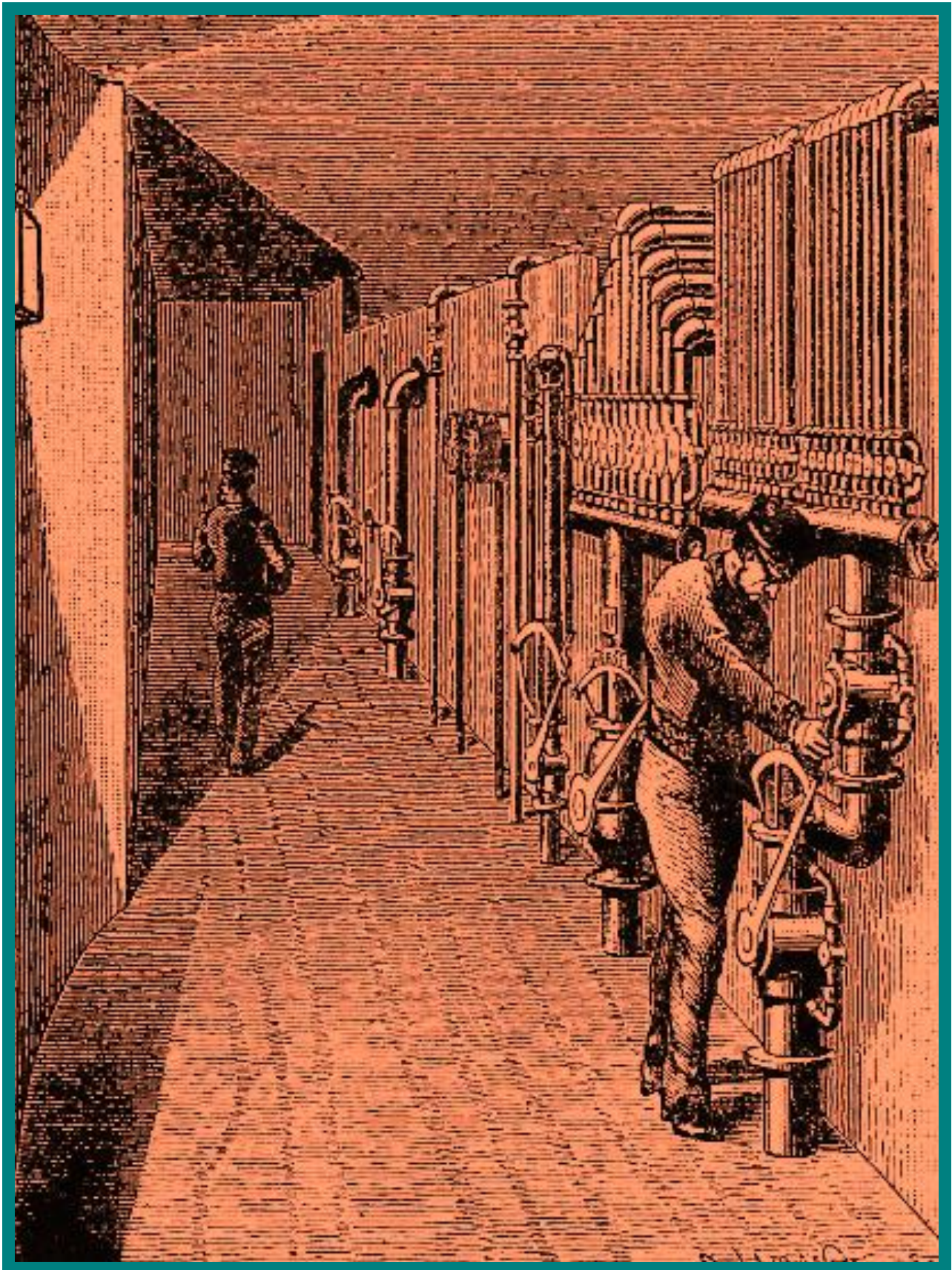


GAS LIGHT APPARATUS,  
 Created by Order of Government at THE ROYAL MINT, by Fredk. Accum?

Drawing from Samuel Clegg pamphlet of 1820.



# PARIS OPERA GAS LIGHTING



Gas lighting controls (Jeu d'orgue) at the Paris Opera 1875.



# THEATRE GAS LIGHTING REGULATIONS

## REGULATIONS

FOR THE BETTER

### Protection against Accidents by Fire at Theatres,

*Licensed by the Lord Chamberlain.*

#### I.

All fixed and ordinary GAS BURNERS to be furnished with efficient Guards. Moveable and occasional Lights to be, when possible, protected in the same manner, or put under charge of persons responsible for lighting, watching, and extinguishing them.

#### II.

The FLOATS to be protected by a Wire Guard. The first Ground-Line to be always without Gas, and unconnected with Gas, whether at the Wings or elsewhere. Sufficient space to be left between each Ground-Line, so as to lessen risk from accident to all persons standing or moving among such lines.

#### III.

The rows or lines of GAS BURNERS at Wings to commence Four Feet at least from the level of the Stage.

#### IV.

WET BLANKETS or RUGS, with BUCKETS or WATER-POTS to be always kept in the Wings; and attention to be directed to them by PLACARDS legibly printed or painted, and fixed immediately above them. As in Rule I., some person to be responsible for keeping the Blankets, Buckets, &c., ready for immediate use.

#### V.

These REGULATIONS to be always posted in some conspicuous place, so that all persons belonging to the Theatre may be acquainted with their contents; every Breach or Neglect of them, or any act of carelessness as regards Fire, to be punished by Fines or Dismissal by the Managers.

**SYDNEY,**

Lord Chamberlain.

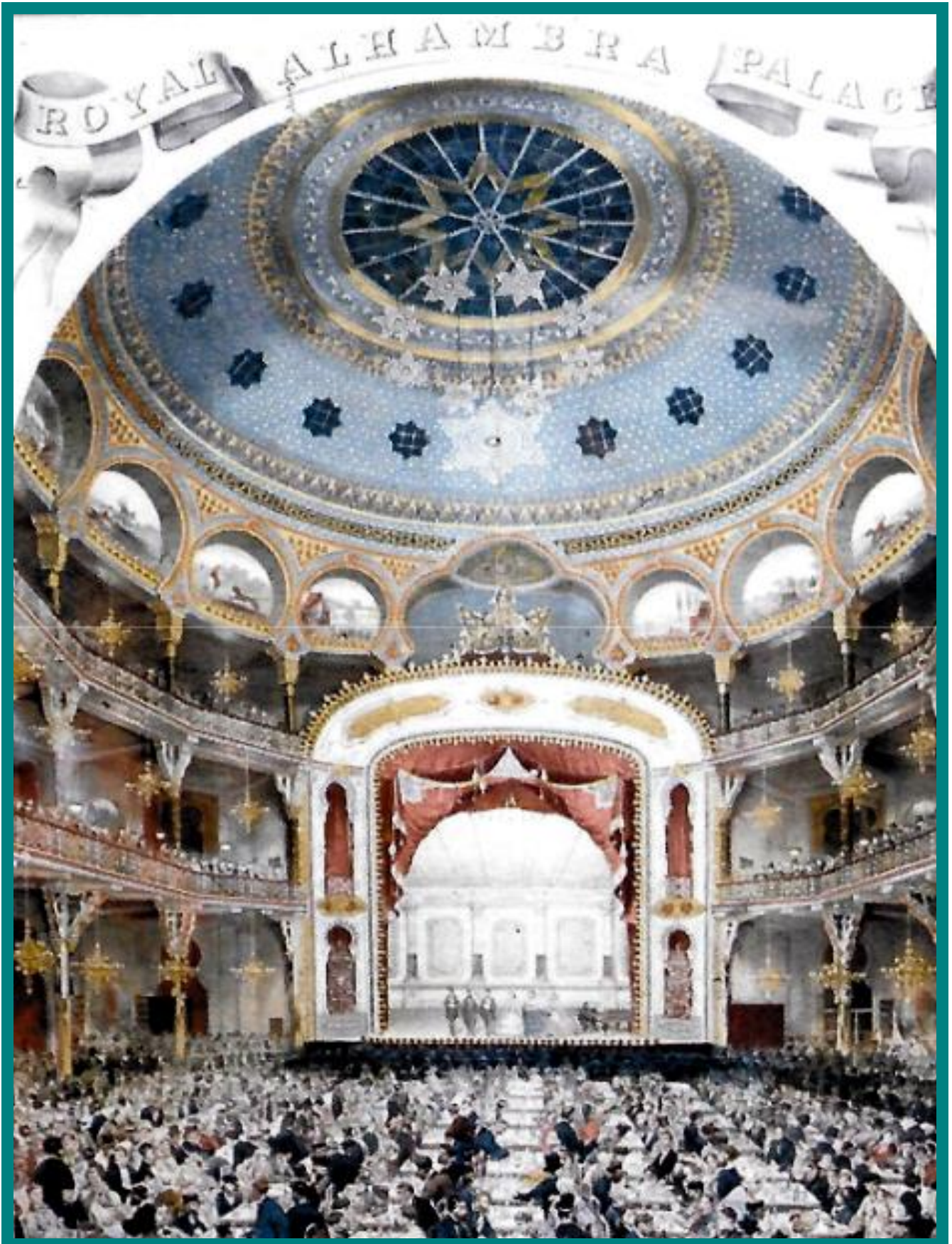
Lord Chamberlain's Office,  
St. James's Palace,

February 5, 1864.

Printed by Harrison and Sons, St. Martin's Lane.



# ROYAL ALHAMBRA PALACE



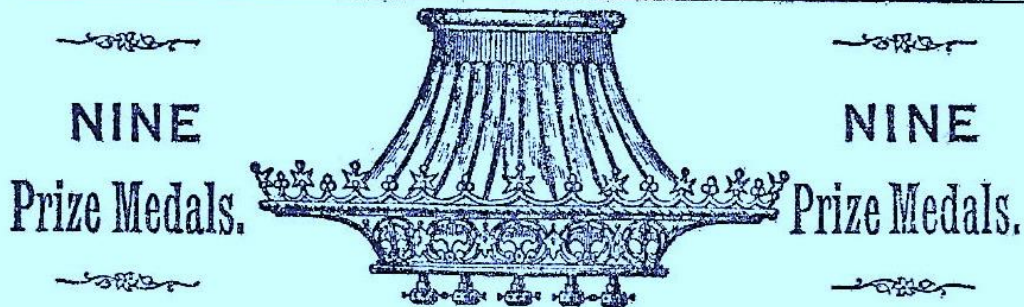
Gas lighting by chandeliers at the Royal Alhambra Palace, London (Heritage Group website)



# STRODE GAS & ELECTRIC LIGHTING

*Advertisements,*

3



## STRODE & CO., Gas and Electric Lighting and Ventilating ENGINEERS.

MANUFACTURERS AND PATENTEES OF  
**THE VENTILATING SUN BURNER,**  
*For Lighting and Ventilating Large Rooms, Theatres, &c.*

MANUFACTURERS OF STAGE FITTINGS, &c.  
**THE IMPROVED FLASH BURNER**  
FOR INSTANTANEOUSLY LIGHTING BATTEN LIGHTS,  
FLOAT LIGHTS, &c.

*THEATRES LIGHTED BY OUR SUN BURNER.*

Alhambra.  
Aberdeen.  
Alexandra, Liverpool.  
Adelphi.  
Astley's.  
Bradford.  
Belfast.  
Brighton.  
Bristol.  
Cork.  
Dumfries.  
Eastbourne.

Edinburgh Theatre Royal.  
Gaiety, London.  
Gaiety, Dublin.  
Glasgow.  
Grafton, Dublin.  
Haymarket.  
Her Majesty's,  
Leamington.  
Londonderry.  
Lyceum, London.  
Lyceum, Edinboro'.  
Northampton.

Nottingham.  
Novelty.  
Opera House, Florence.  
Opera House, Leicester.  
Portsmouth.  
Princess's.  
Prince of Wales', London.  
Prince's, Manchester.  
Prince of Wales', Birmingham.  
Plymouth.  
Queen's.

*Works and Offices*—48, Osnaburgh-St., Regent's Park, N.W. }  
*Show Rooms* — 67, St. Paul's Churchyard, E.C. } LONDON.  
188, Piccadilly, W. }

H 2



# WILLIAM SUGG GAS BURNERS

75 HIGHEST AWARDS IN OPEN COMPETITION.

Telephone No. 166 WESTMINSTER.  
Telegrams: "SUGG, LONDON."

OCTOBER 1905. LIST NUMBER 1.

**WILLIAM SUGG'S**  
**PATENT**

NEAREST APPROACH  
TO  
DAYLIGHT.

THE "CHRISTIANIA"  
INCANDESCENT BURNER

**INCANDESCENT GAS BURNERS**

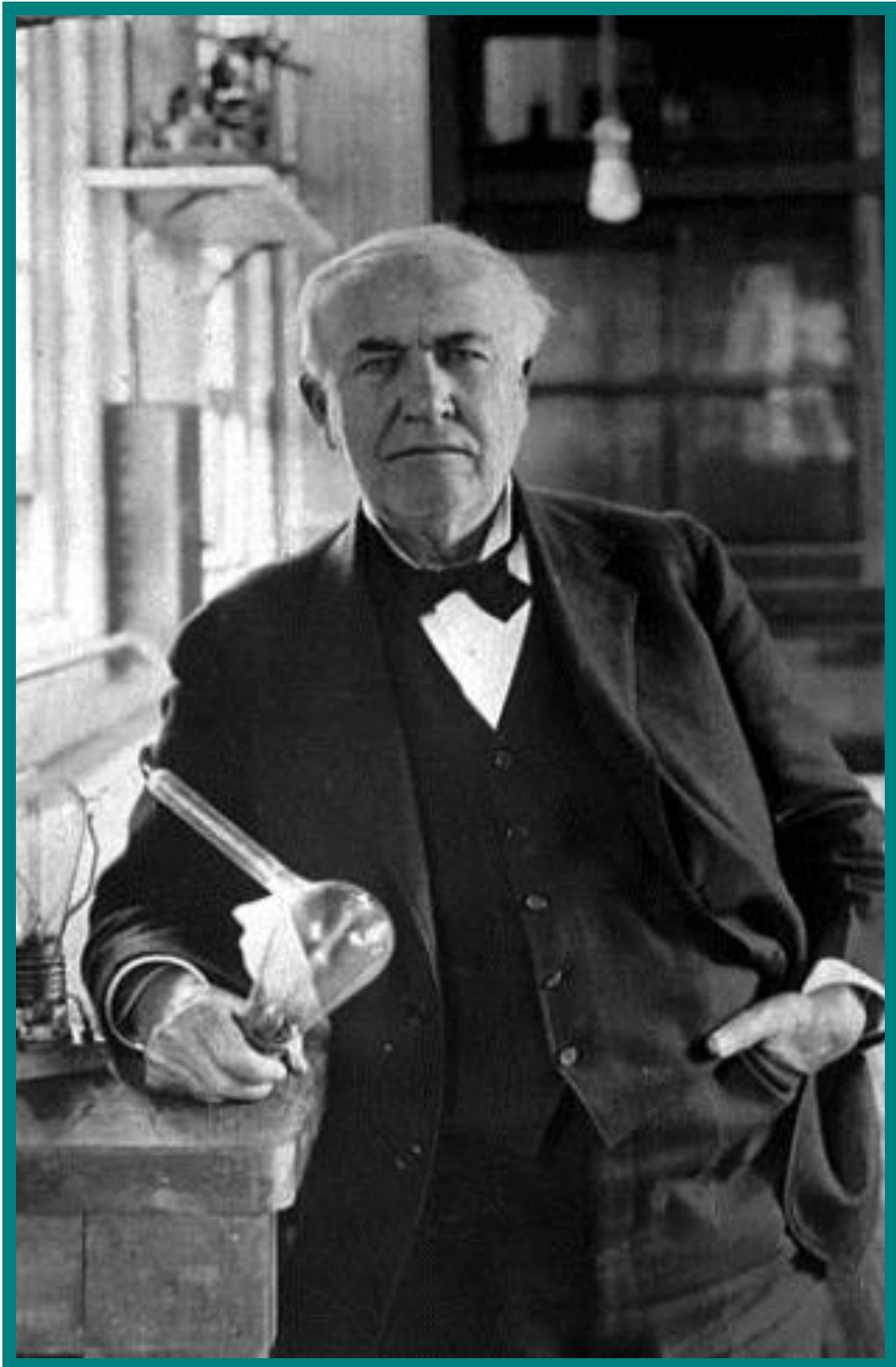
WILLIAM SUGG & CO. VINCENT WORKS, WESTMINSTER.

The advertisement is a vintage poster for William Sugg's Patent Incandescent Gas Burners. It features a central illustration of a gas burner, labeled 'THE "CHRISTIANIA" INCANDESCENT BURNER', which is depicted as a glowing sun with rays. The text 'NEAREST APPROACH TO DAYLIGHT.' is written inside the burner's glow. The main title 'WILLIAM SUGG'S PATENT' is written in large, stylized red letters at the top. Below the burner, the words 'INCANDESCENT GAS BURNERS' are written in a similar style. At the bottom, the company name 'WILLIAM SUGG & CO. VINCENT WORKS, WESTMINSTER.' is printed. The top of the poster includes the text '75 HIGHEST AWARDS IN OPEN COMPETITION.' and 'OCTOBER 1905. LIST NUMBER 1.' along with contact information for the company.

(1905, Christopher Sugg Collection)



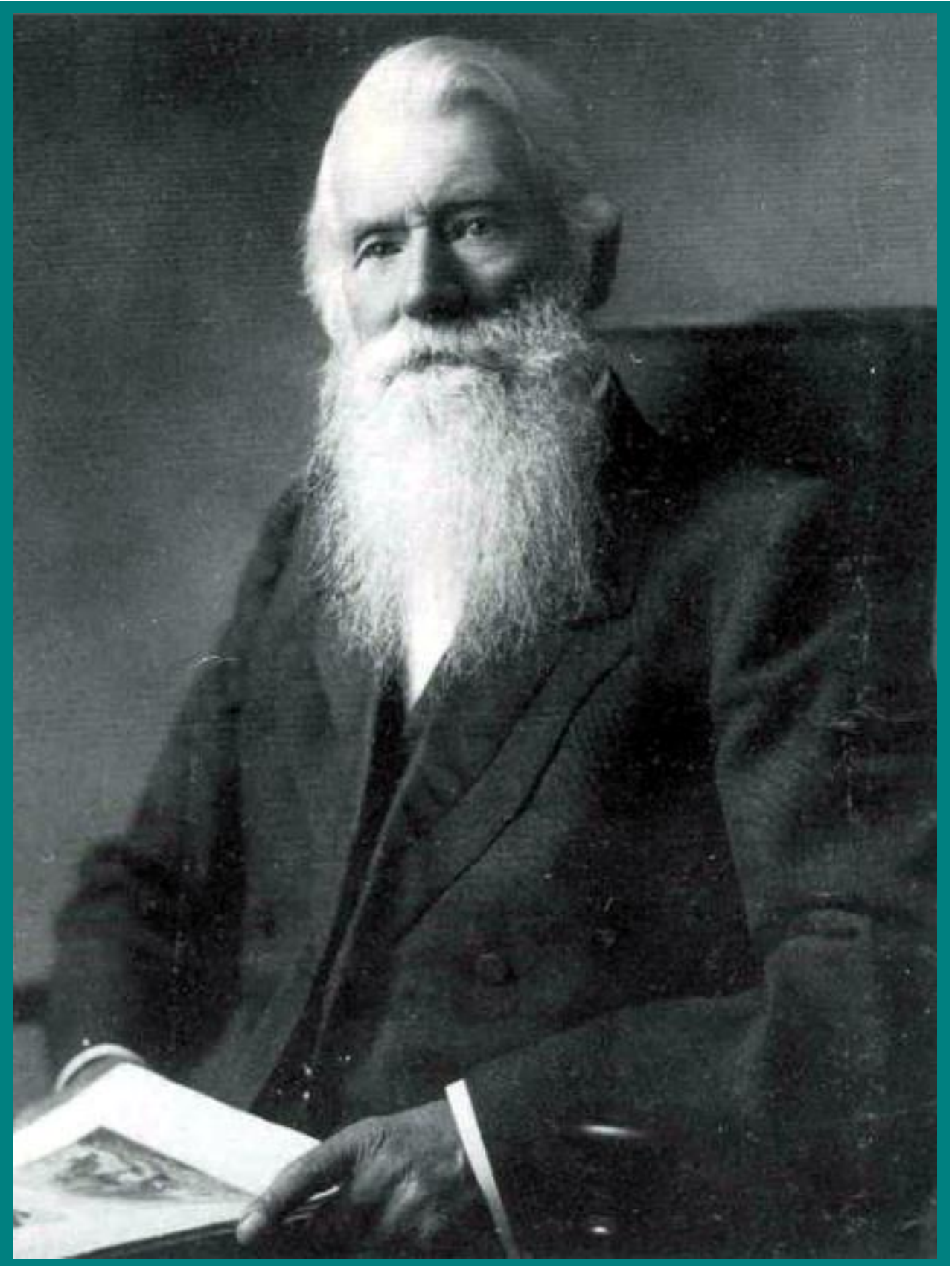
# THOMAS ALVA EDISON 1847-1931



Developed the first successful incandescent lamp in 1879.



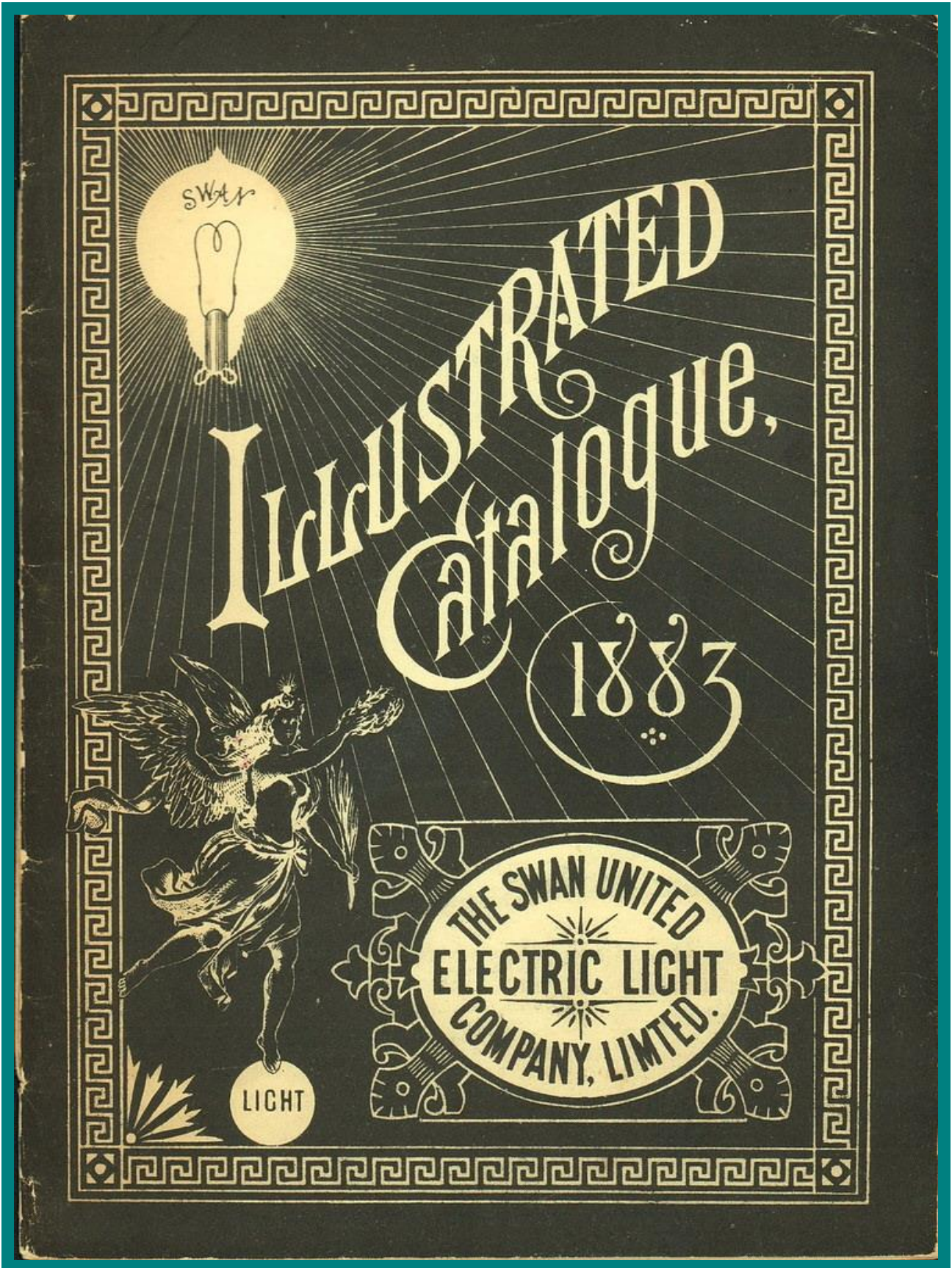
## **SIR JOSEPH WILSON SWAN 1828-1914**



**Patented his incandescent electric lamp in 1878.**



# SWAN UNITED ELECTRIC LIGHT



The Swan United Electric Light Company Catalogue of 1883.



# EDISON & SWAN UNITED LAMPS

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TRADE "EDISWAN" MARK

Section I.

**INCANDESCENCE  
LAMPS**

**PRICE LIST.**

THE  
**EDISON & SWAN**  
UNITED ELECTRIC LIGHT  
COMPANY, LIMITED.

---

Head Office:  
**100, VICTORIA STREET, LONDON, S.W.**

City Office and Show Rooms:  
**110, CANNON STREET, E.C.**

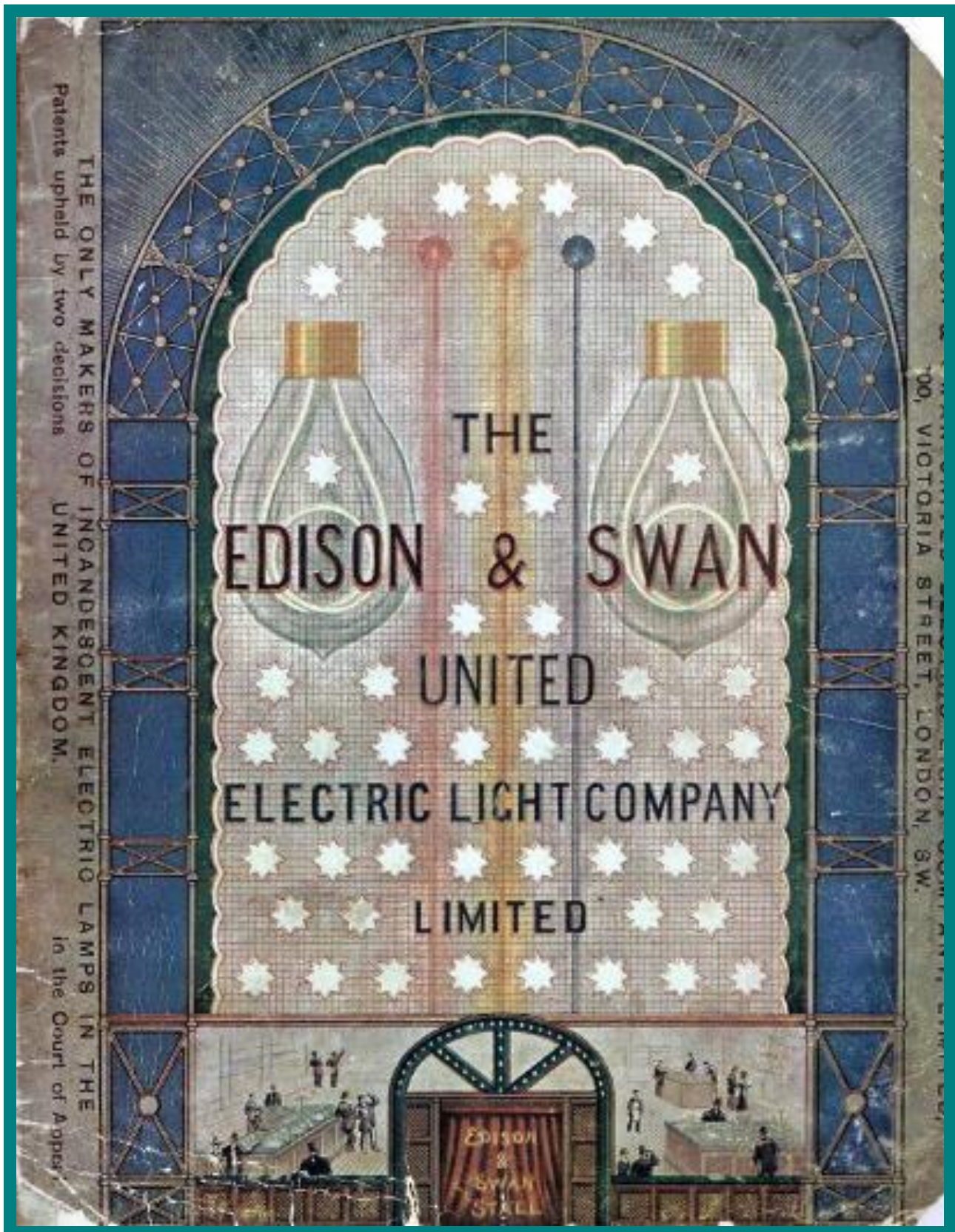
West End Order Office:  
**50, PARLIAMENT STREET, S.W.**

Works:  
**PONDER'S END, MIDDLESEX,  
AND  
SOUTH BENWELL, NEWCASTLE-ON-TYNE.**

To avoid British Patent disputes Edison and Swan formed a joint Electric Light Company.



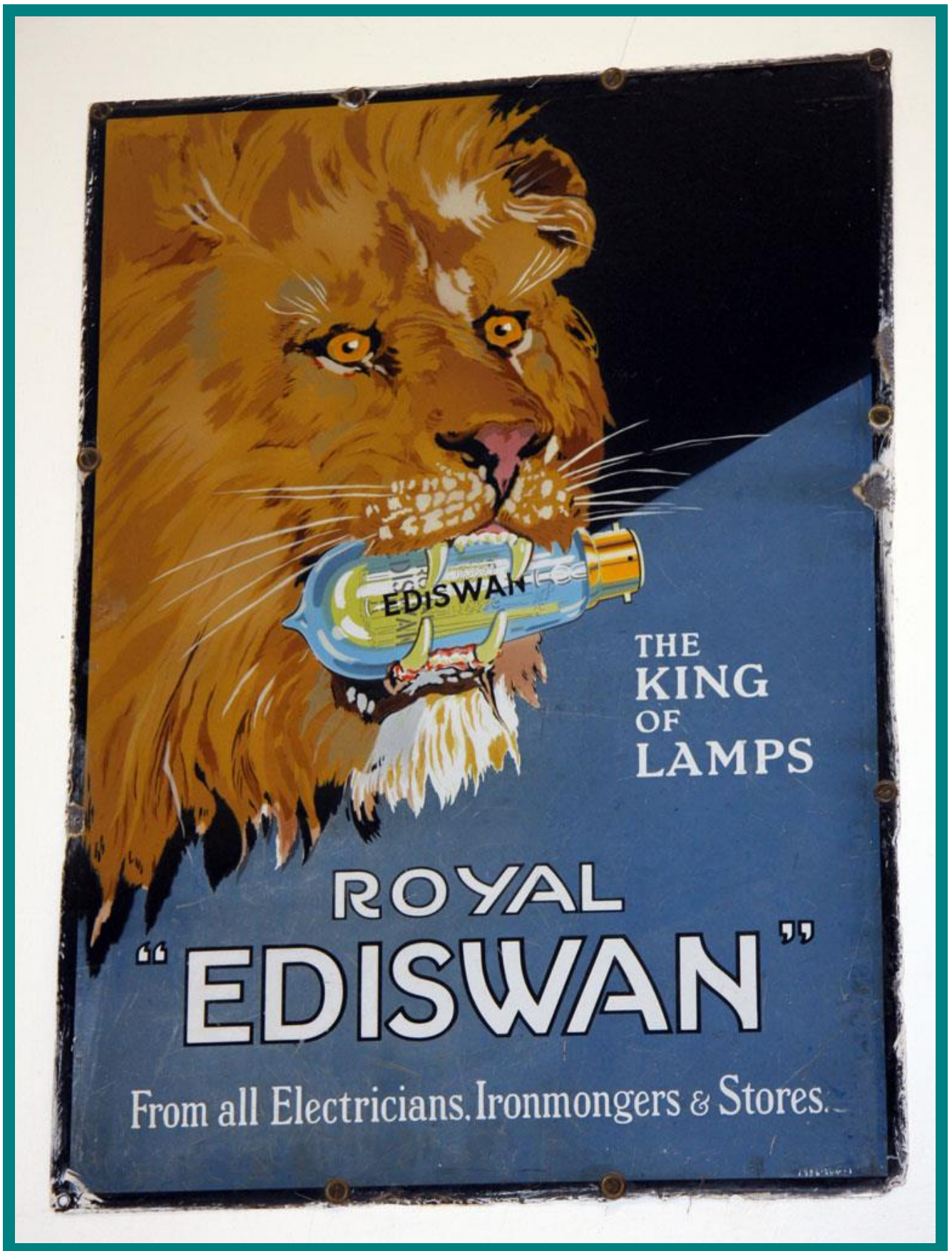
# EDISON & SWAN UNITED LAMPS



Edison & Swan "The Only Makers of Incandescent Electric Lamps in the United Kingdom."

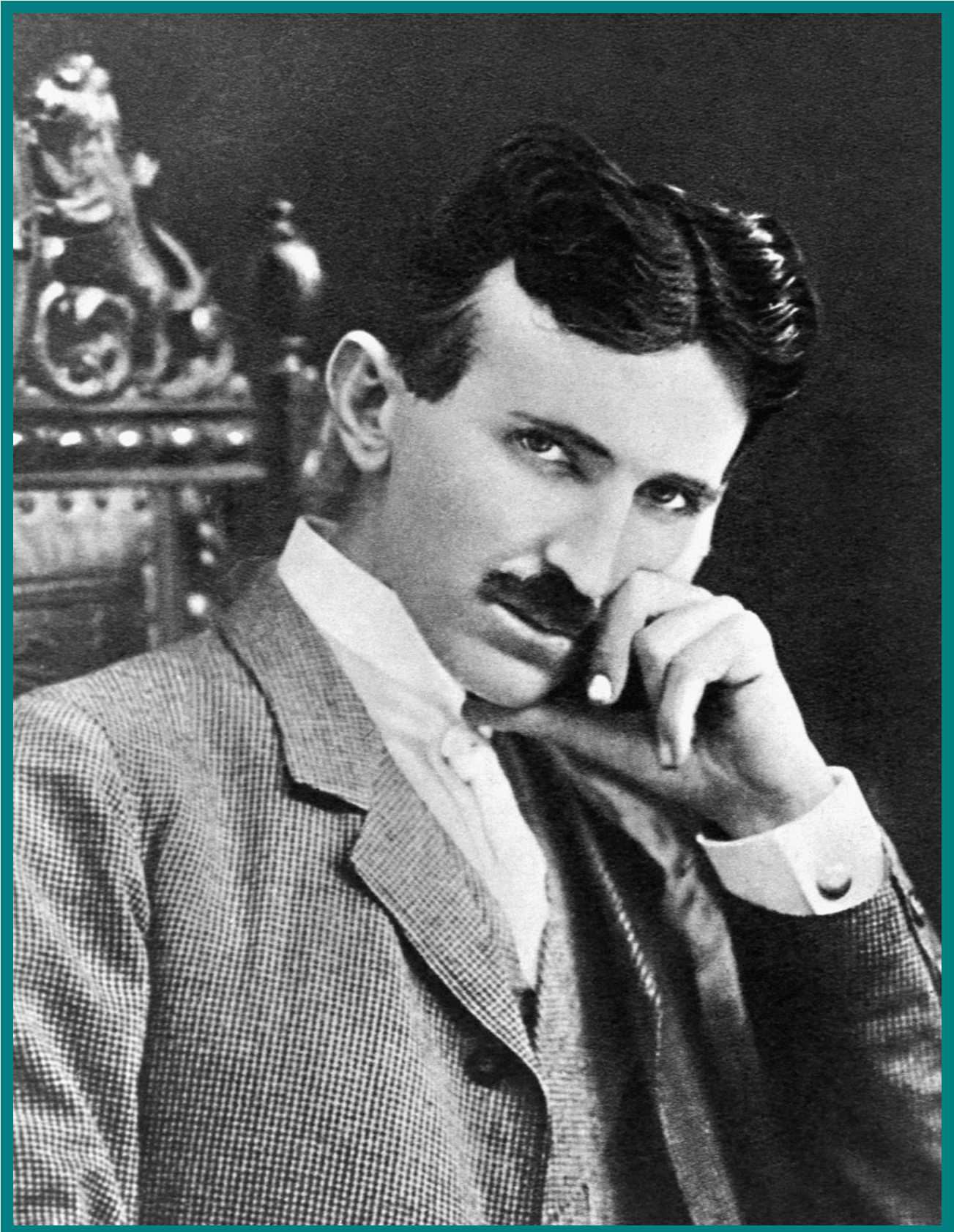


# ROYAL EDISWAN KING OF LAMPS





# NIKOLA TESLA 1856-1943



The Father of Alternating Current



# TESLA versus EDISON (AC v DC )



Edison actively promoted the adoption of direct current, but after a bitter battle Tesla's alternating current proved superior because it could be transmitted over long distances.

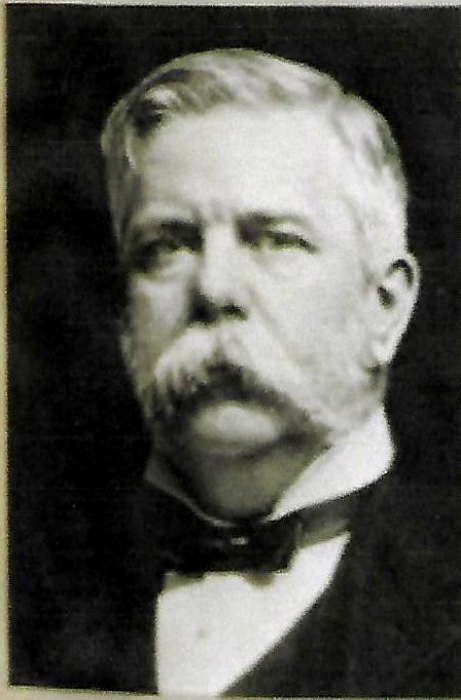
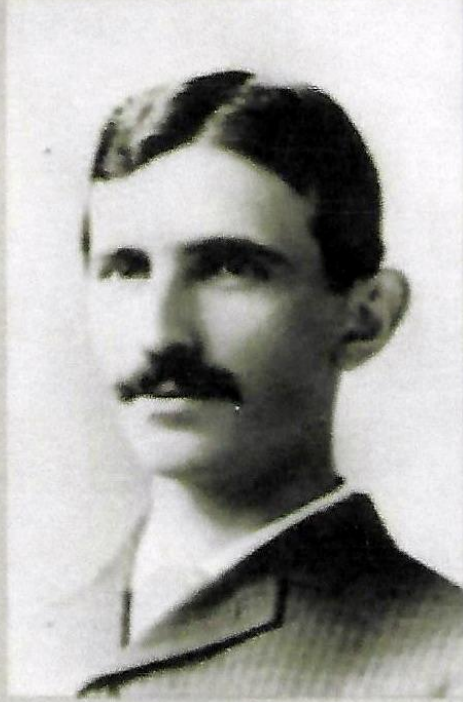


# PIONEERS OF ELECTRICITY

Stanley



Tesla



Westinghouse

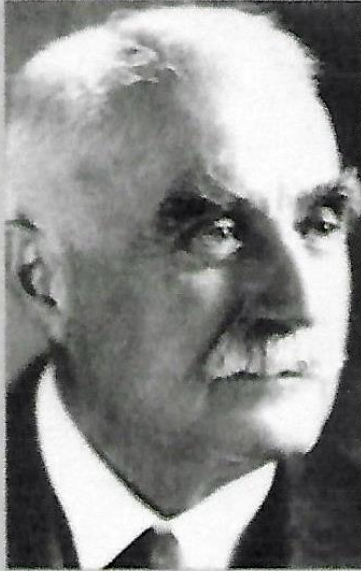


Steinmetz



# PIONEERS OF ELECTRICITY

Brush



Van Depoele



Sprague



Thomson



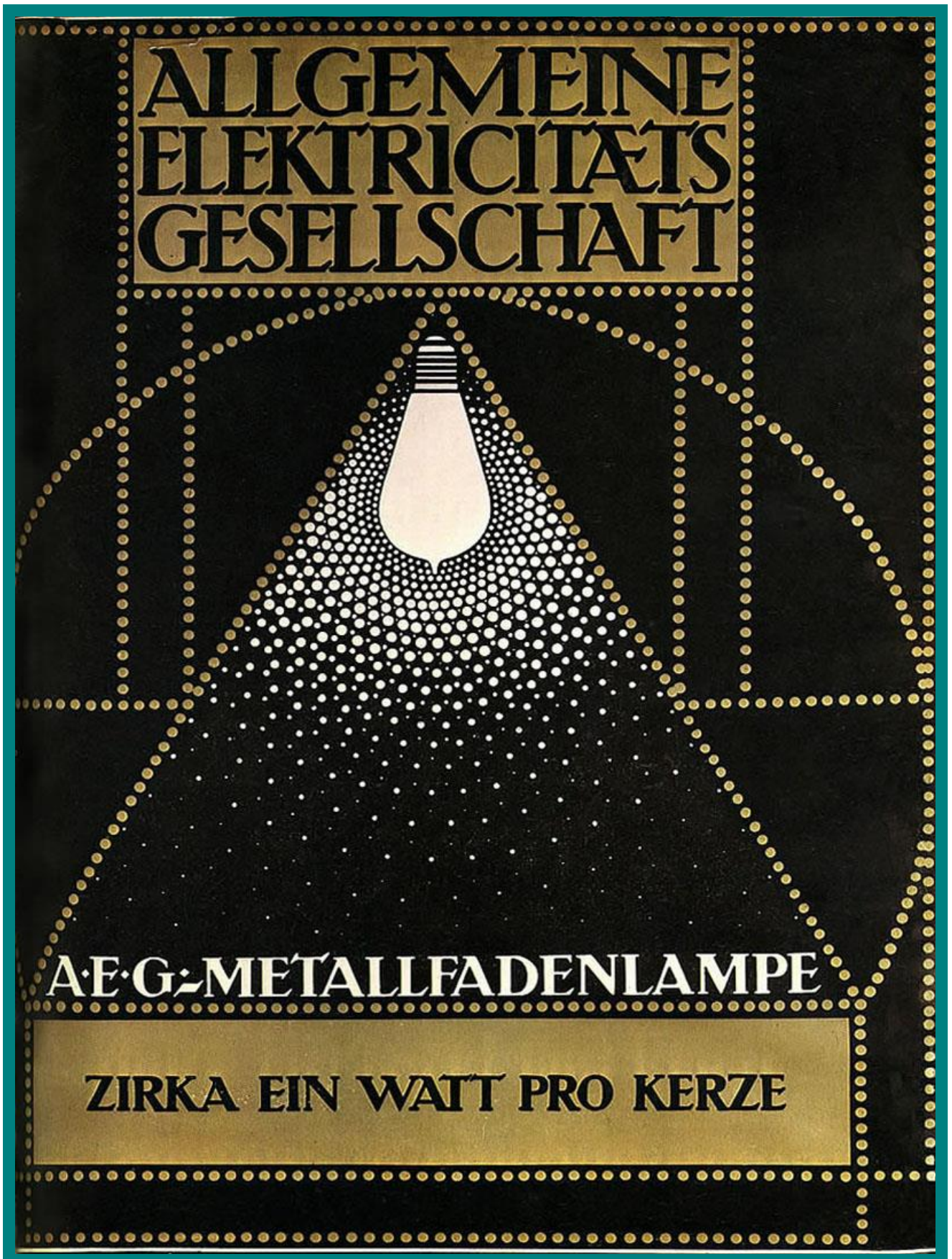
Jablochhoff



Siemens

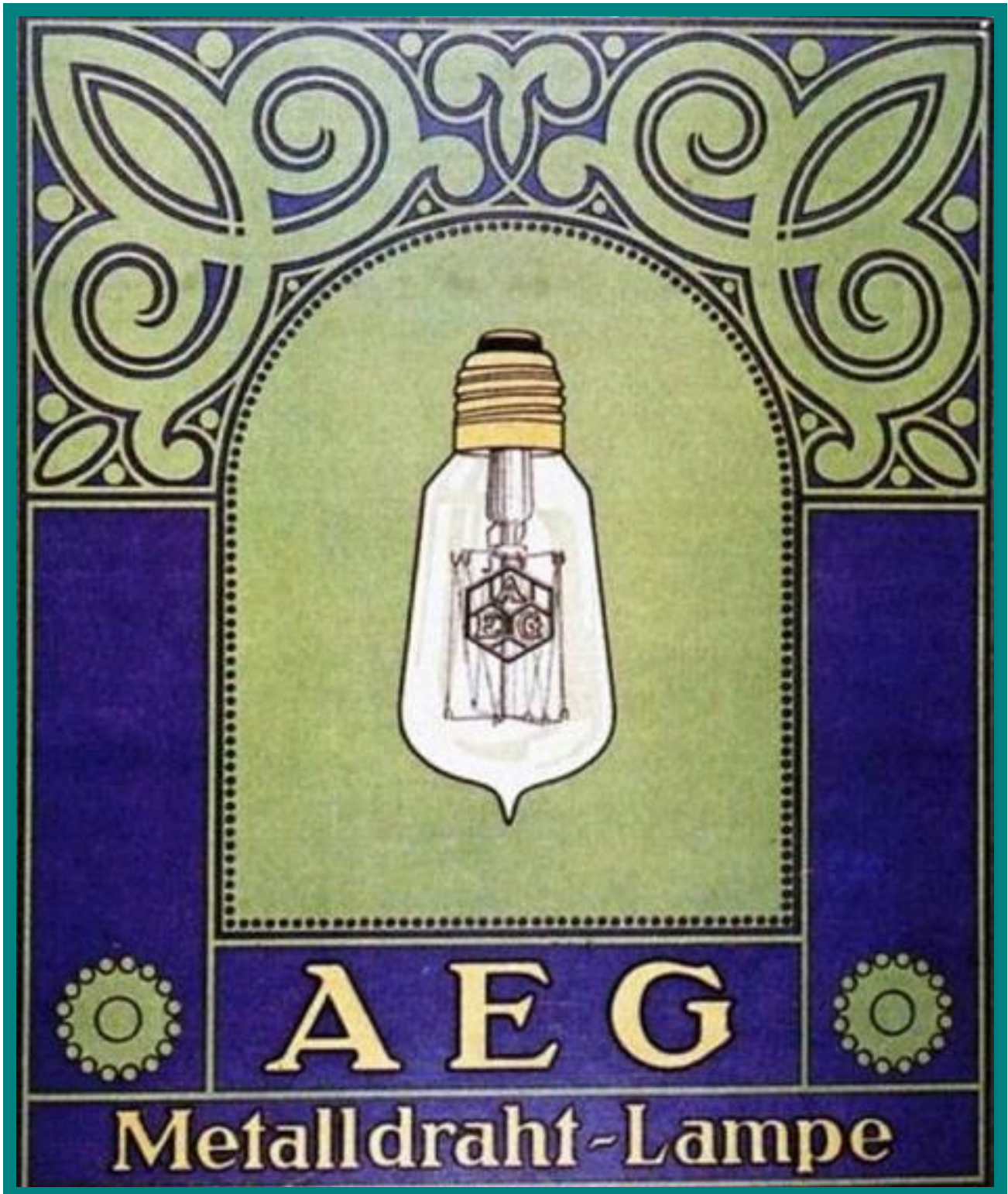


## A.E.G. METALLFADEN LAMPE



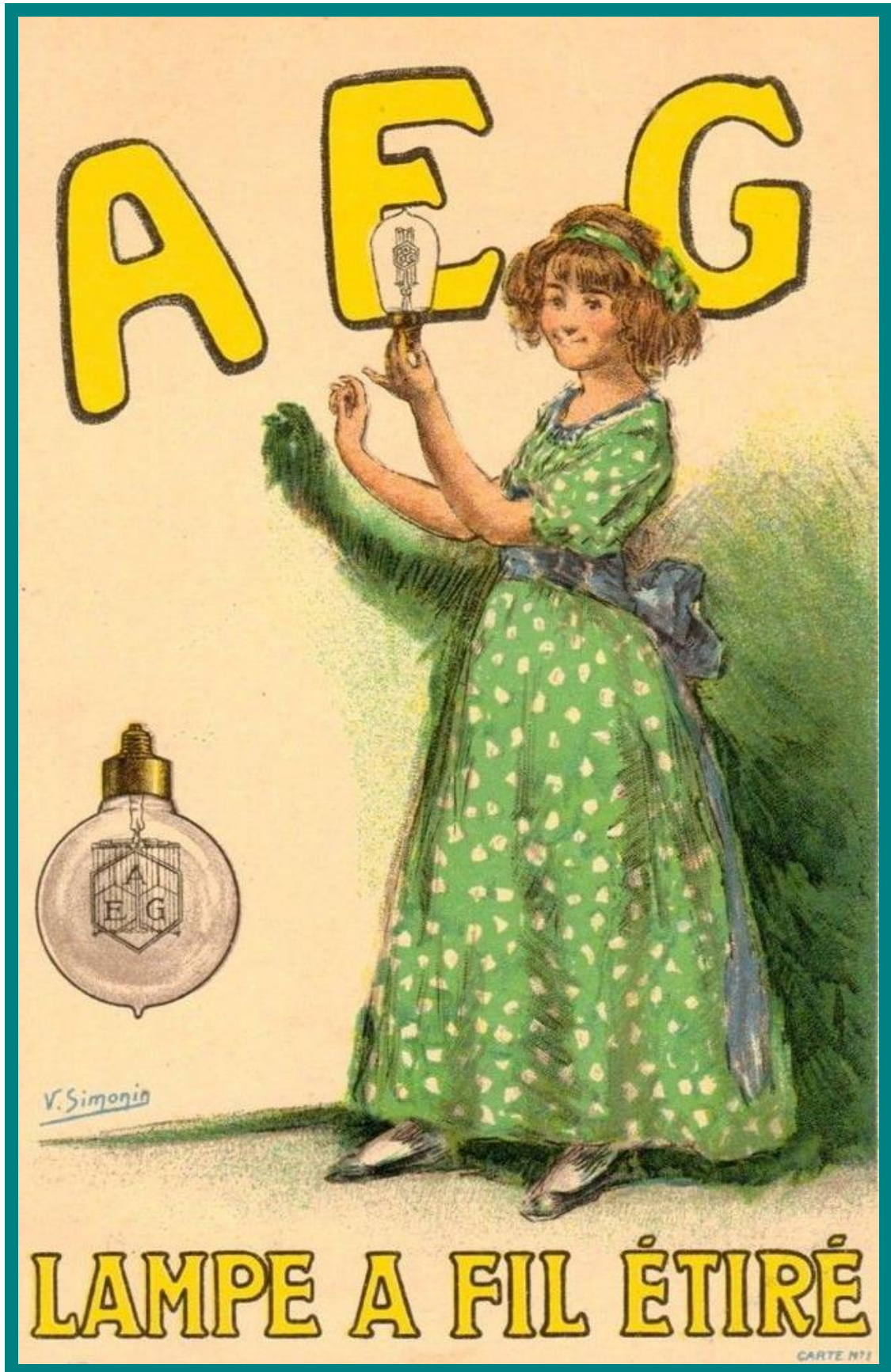


# A.E.G. METALLDRAHT LAMPE



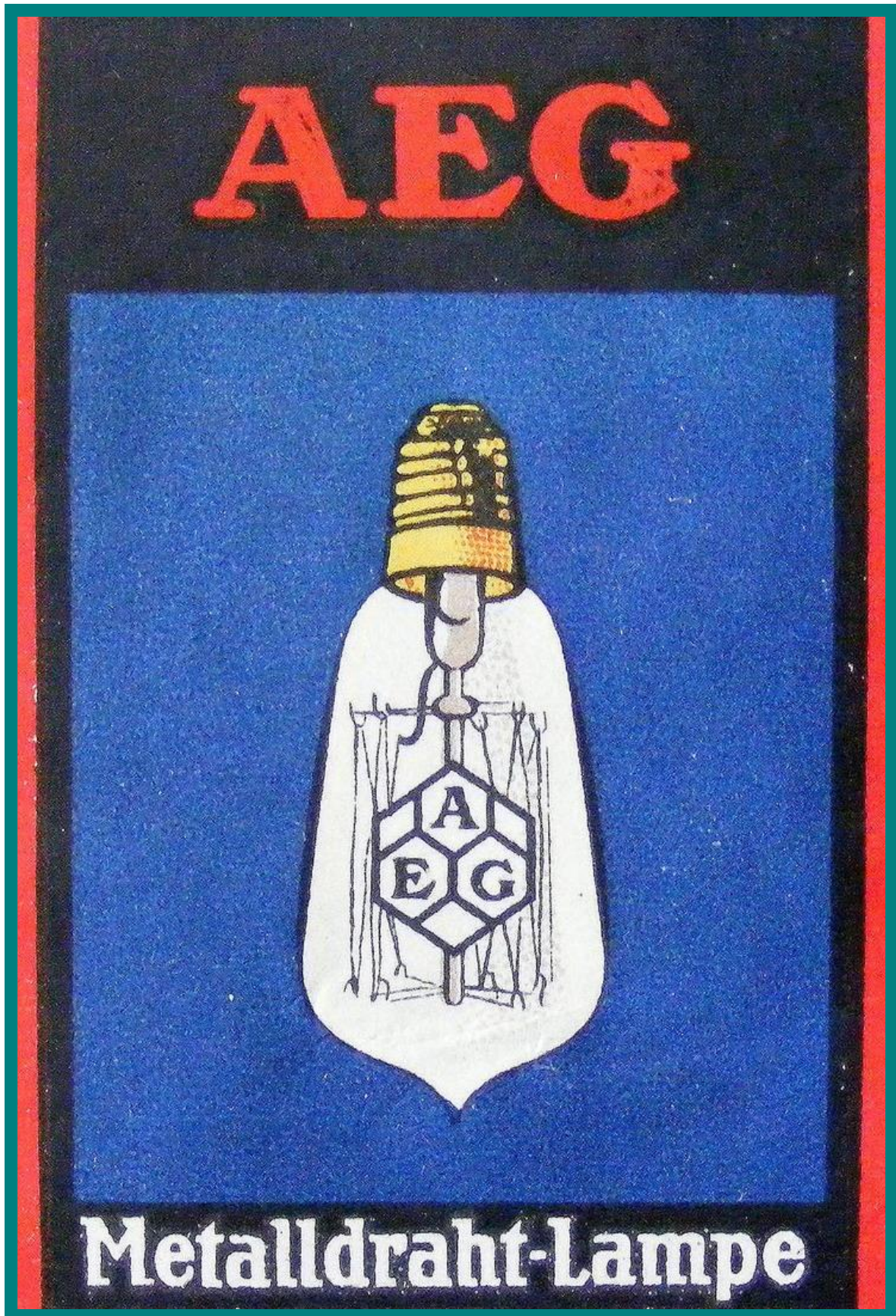


# A.E.G. LAMPE



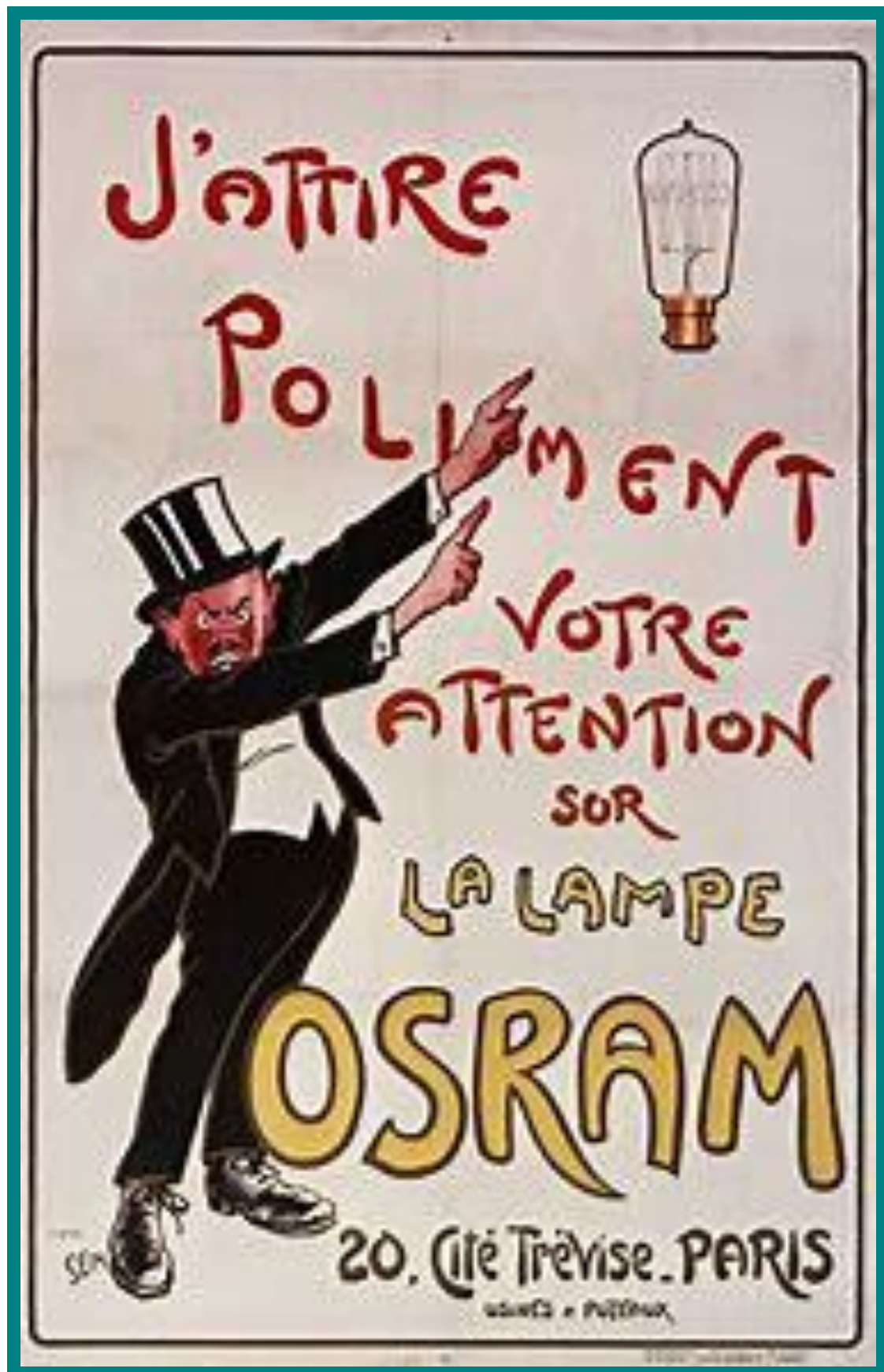


# A.E.G. METALLDRAHT LAMPE



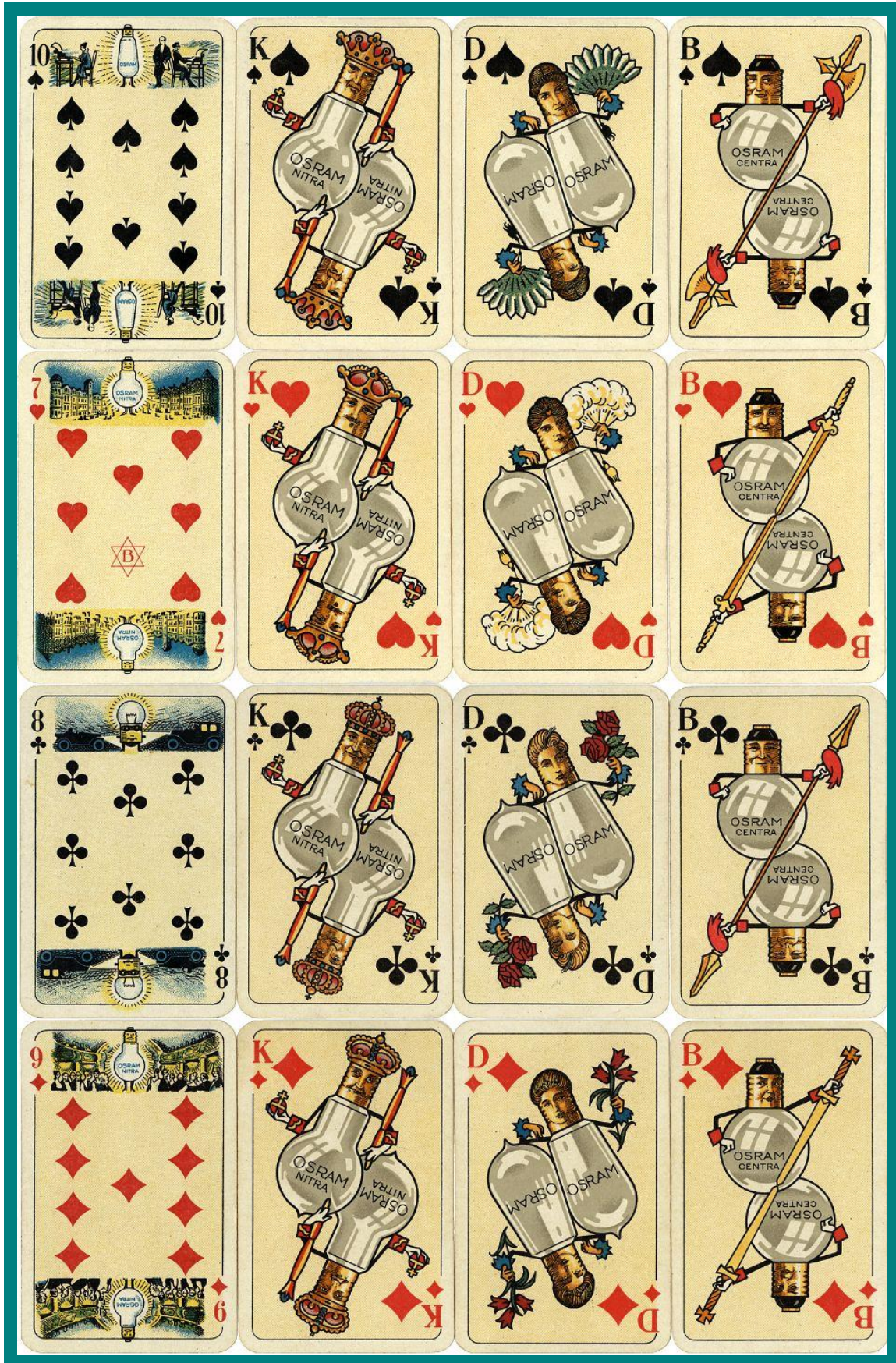


## LA LAMPE OSRAM





# OSRAM PLAYING CARDS





# PHILIPS LAMPADA



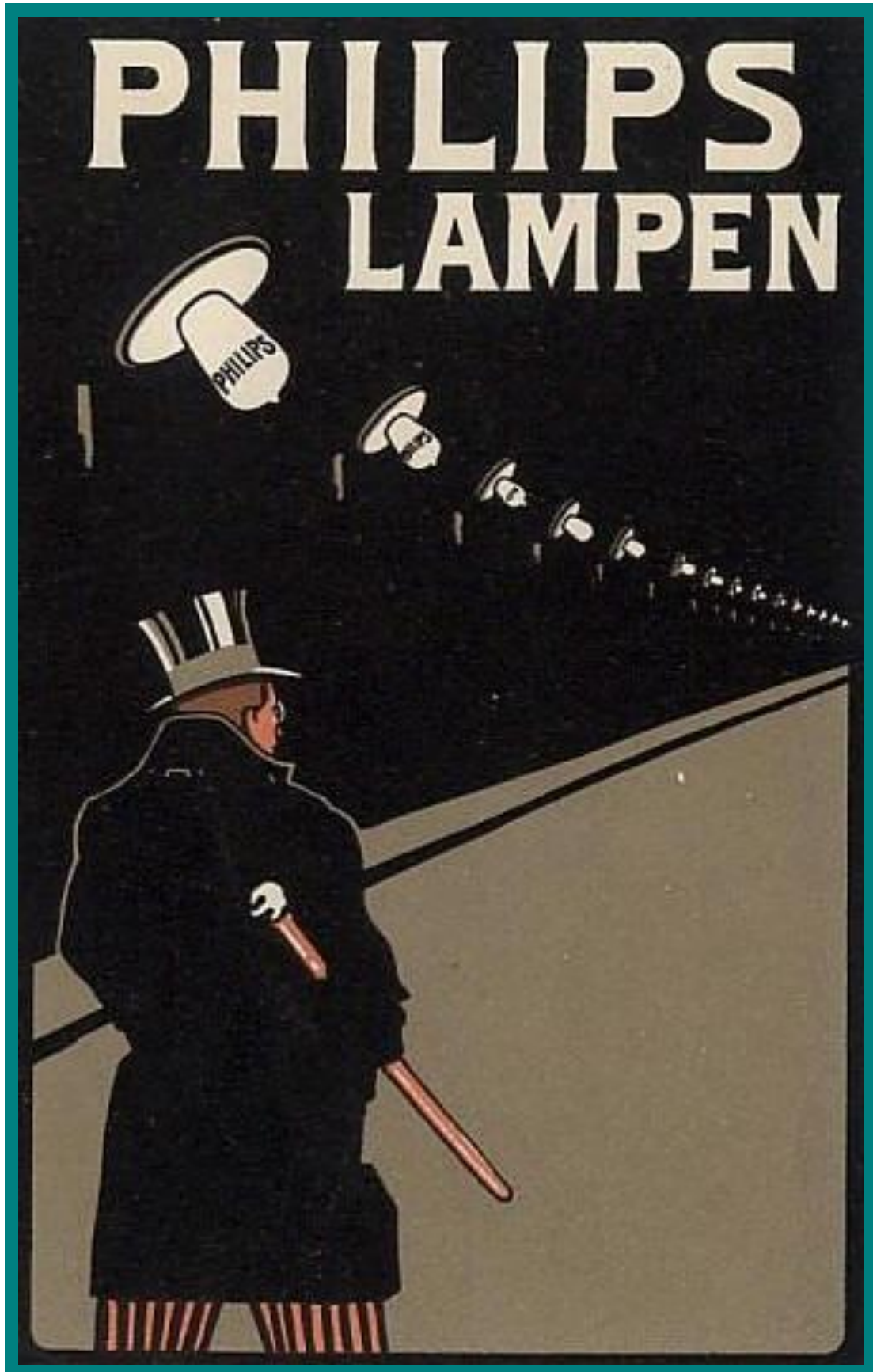
**Lampada "PHILIPS"**

**Economia  
75%  
Luz branca  
& brilhante.**

A vintage advertisement for Philips Lampada. The central figure is a woman in traditional attire, including a red bodice, a long pink skirt with a green border, and a white headscarf. She holds a glowing Philips light bulb in her right hand, which illuminates the scene. The background is dark, and the floor is a light tan color. The text is in a bold, yellow-green font.



# PHILIPS LAMPEN





# PHILIPS ARGAL LAMPARITA

PHILIPS

**ARGAL**

ES LA MEJOR LAMPARITA

Argal. Conoced el encanto de esta misteriosa palabra. Argal. Es una deliciosa "poupée" que seduce con su brillo. Argal es todo sprit, sencillamente sprit.

Fabricantes: PHILIPS Ltd. - Agentes: BOSCO, VILA & MARZONI  
SE VENDE EN LAS BUENAS CASAS DE ELECTRICIDAD

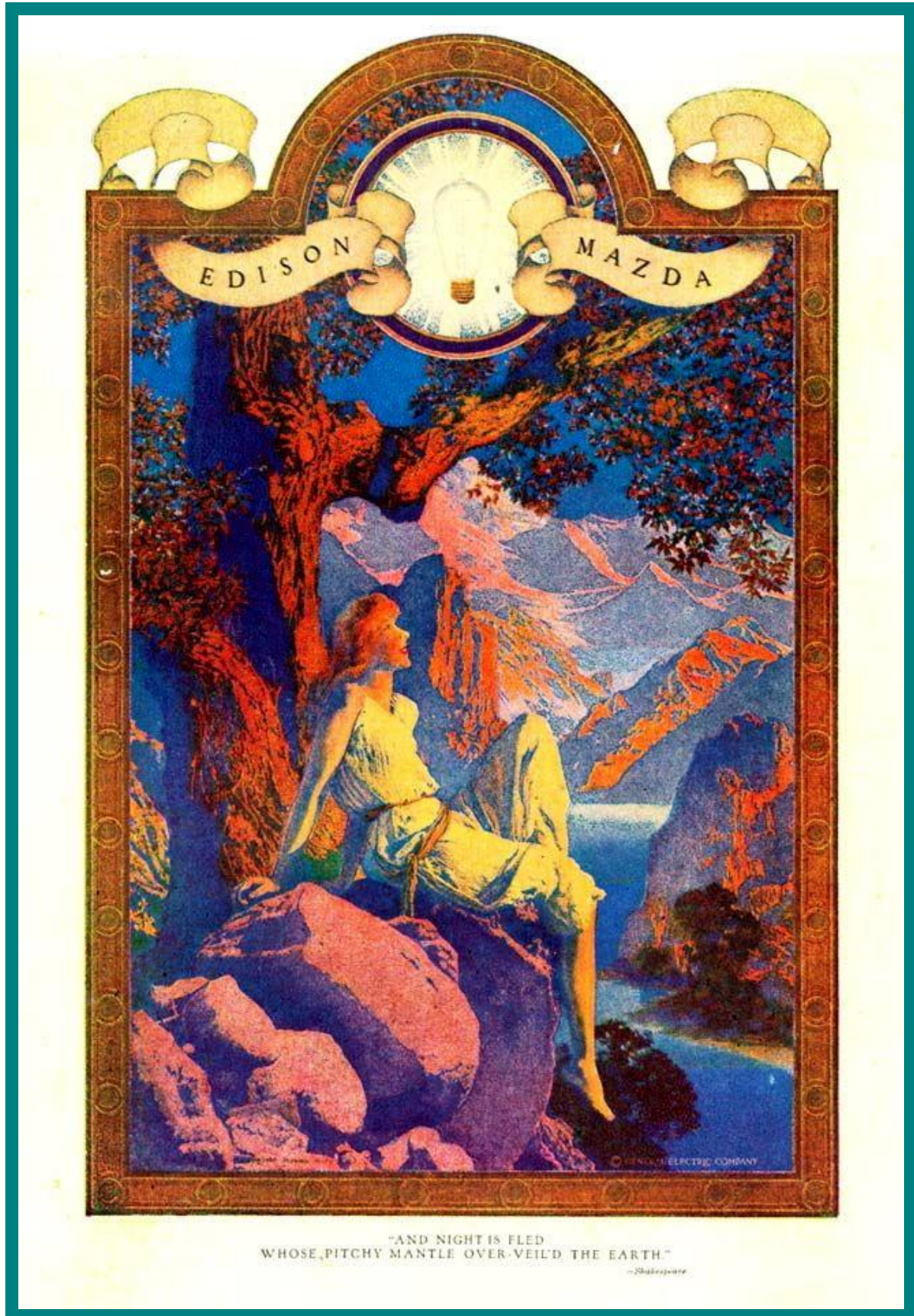


# PHILIPS ARGALAMPARITA





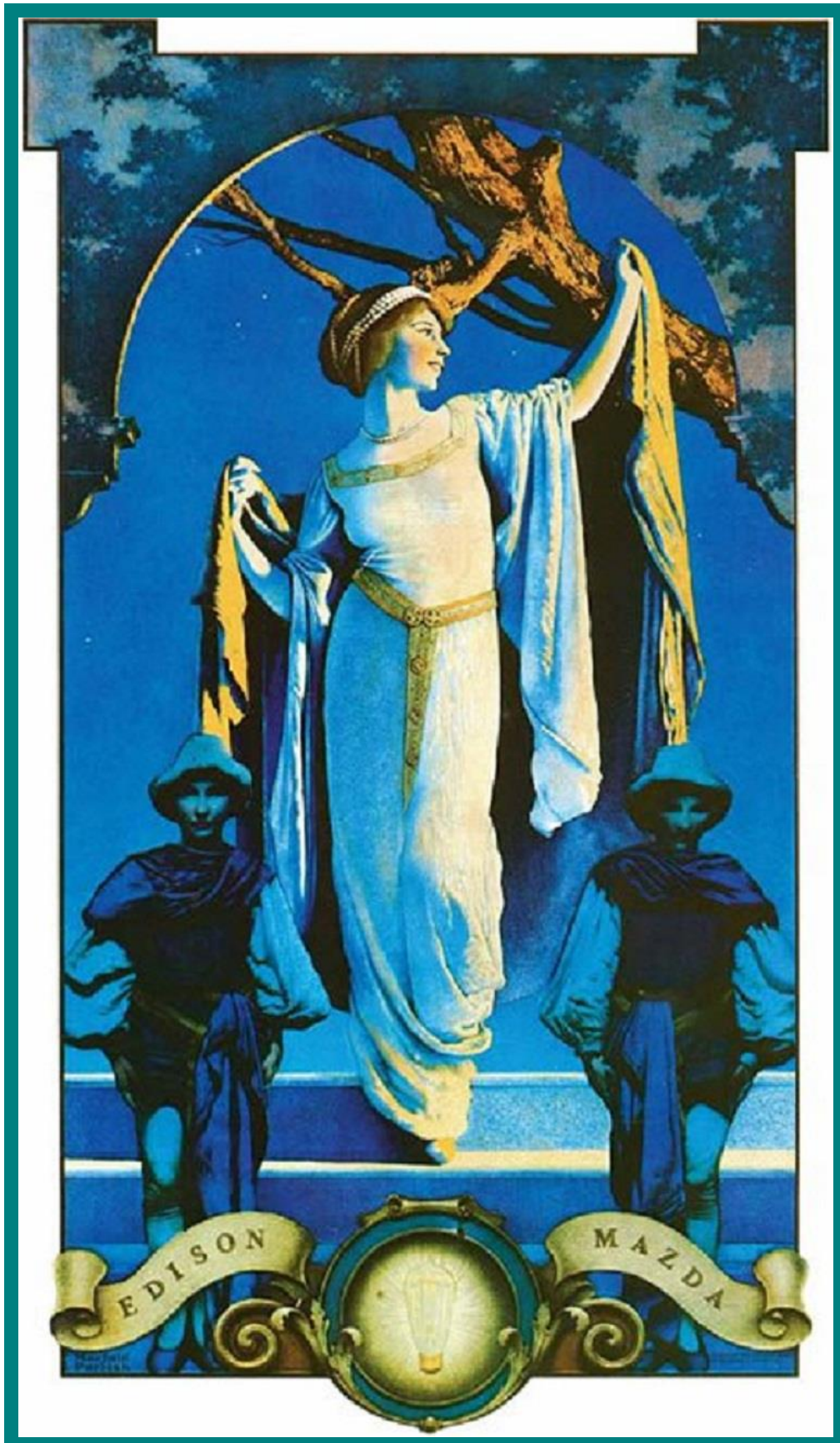
# EDISON MAZDA LAMPS



"AND NIGHT IS FLED  
WHOSE PITCHY MANTLE OVER-VEILD THE EARTH."  
-Shakespeare

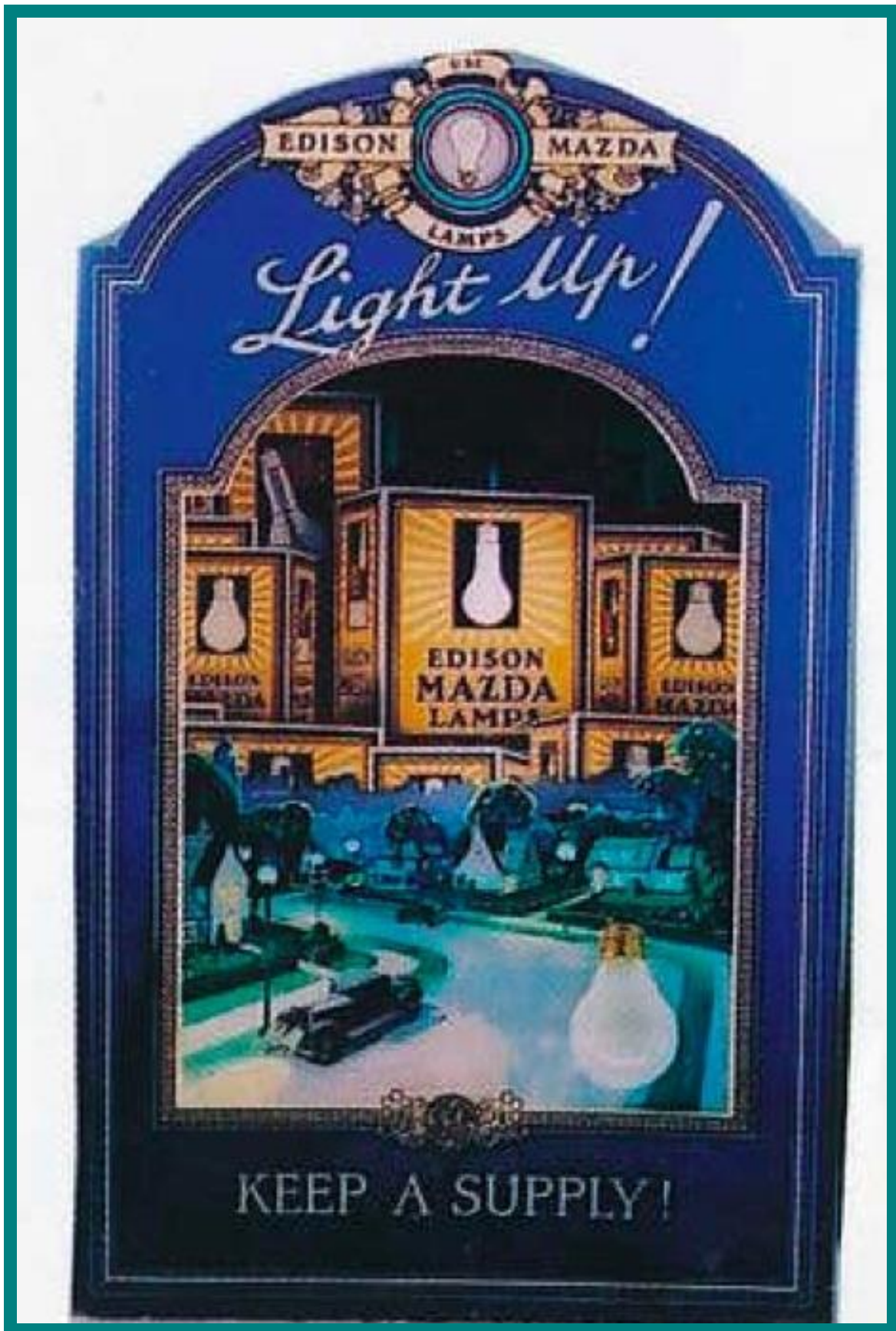


# EDISON MAZDA LAMPS





# EDISON MAZDA LAMPS





# NATIONAL MAZDA LAMPS

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*National* MAZDA LAMPS

**This new lamp  
reveals *new* beauty**

**Y**OU will first note the beauty of this new MAZDA lamp itself, pearl gray, chameleon-like in its response to color in its glass, parchment or fabric shade. Then comes the beauty of its light, cool to the eyes, soft and gentle though clear as day. There is new beauty in living where such light reigns, where all things look their best.

Have you discarded old-fashioned lamps for these new MAZDA lamps? Their frosting, strange as it may seem, is on the *inside* of the bulb. They are better, more rugged, easier to clean, and they cost you less than ever.

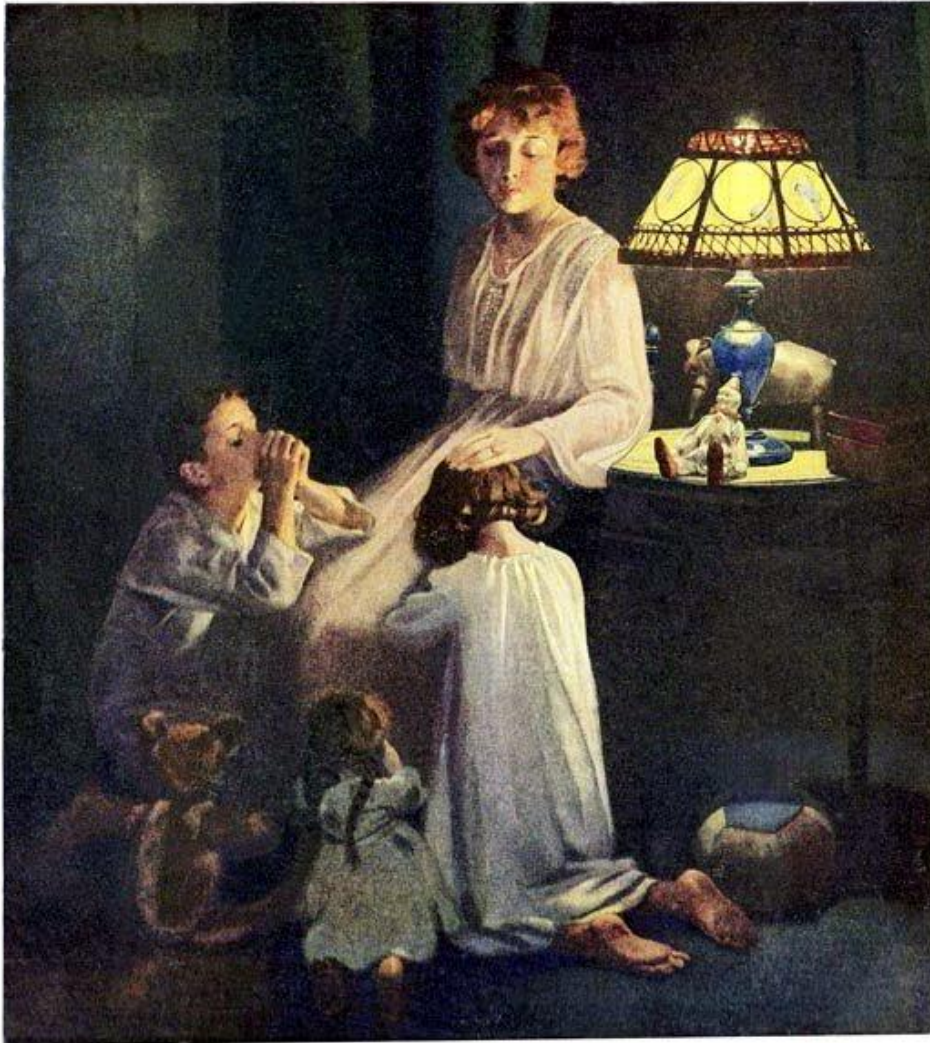
*Put them in every socket—and shade them.*

NATIONAL LAMP WORKS of General Electric Co., Nela Park, Cleveland

MAZDA is not the name of a thing, but the mark of a Research Service centered in the Research Laboratories of General Electric Company.



## EDISON MAZDA G.E. LAMPS



### The stuff of which memories are made

WHEN THE LAST PILLOW IS THROWN, and the last laugh only an echo, they settle down at Her knee —

Through their half-closed eyelids they catch the play of light across Her face, its caress as it touches Her hair — and the picture is etched on their memories forever.

Sensitive films, those childish memories. The pictures they register cannot be changed.

It will pay you to remember that, in the lighting of your children's rooms. Let sunshine flood them by day, and the light of Edison MAZDA Lamps by night. For the light that shines in children's rooms is magic stuff — the stuff of which memories are made.



EDISON LAMP WORKS OF GENERAL ELECTRIC COMPANY



# EDISON MAZDA G.E. LAMPS




DON'T ROB ONE SOCKET TO FILL ANOTHER

## BE SURE

Do have Edison MAZDA® Lamps in all electric sockets in your home. Taking a lamp from one socket to fill another is troublesome and can easily be avoided.

Edison MAZDA Lamps are safely packed in cartons for your convenience. It is the handy way to buy them. Keep a supply in your home for immediate use when sockets need filling.

Edison MAZDA Lamps are made of the finest materials obtainable and with a precision that makes full use of the same material. They bring you the benefits of every improvement in electric lighting.

When you buy lamps, always look for the name EDISON on the carton and the marks MAZDA and  on the bulb.

MAZDA is the mark of a trusted leader.



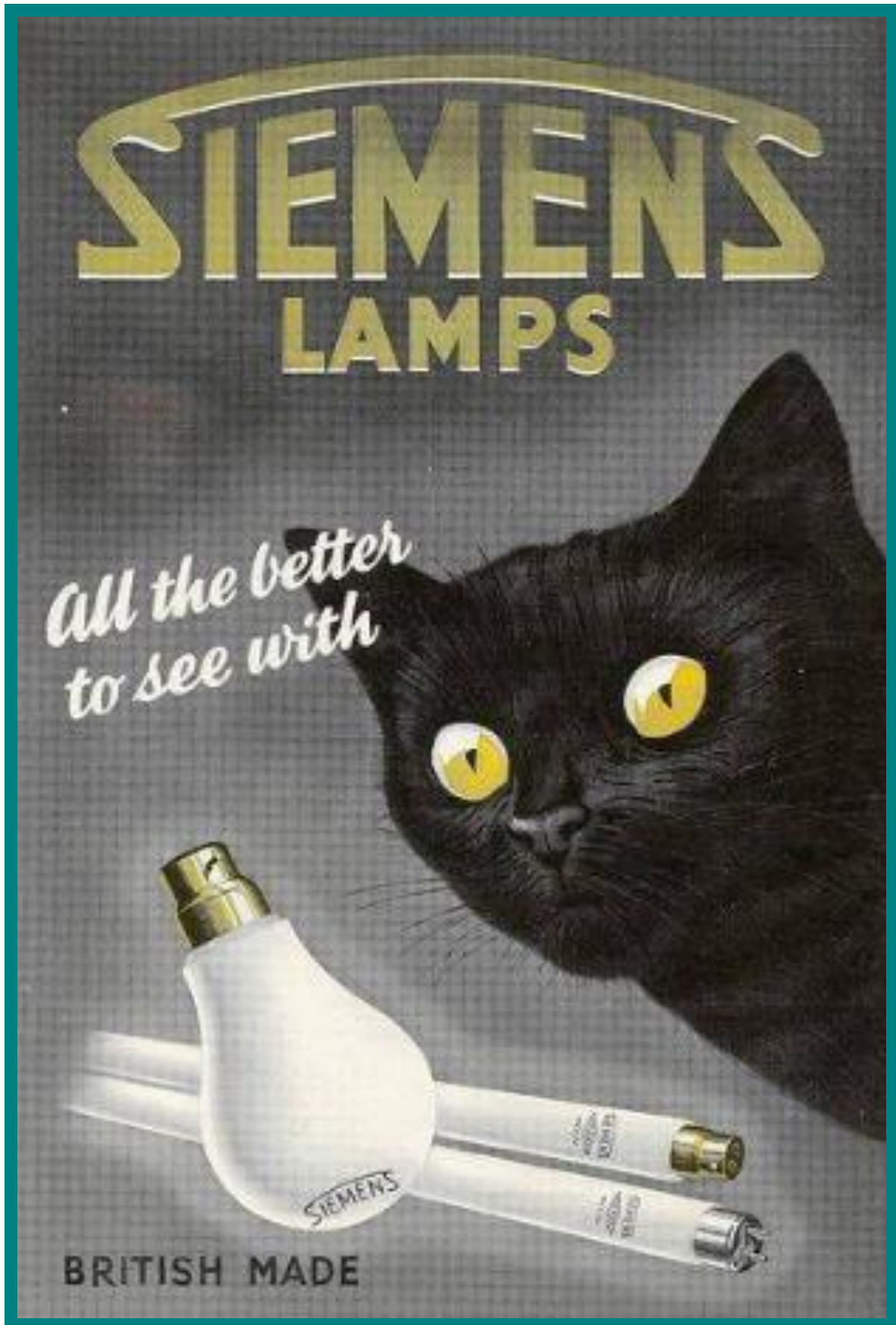
JOHN A. EDISON GENERAL ELECTRIC COMPANY, BOSTON, MASS.  
 GENERAL OFFICE, 100 N. BROADWAY, N. Y. C., OFFICE.

MADE IN  
 U.S.A.

EDISON MAZDA LAMPS  
 GENERAL  ELECTRIC

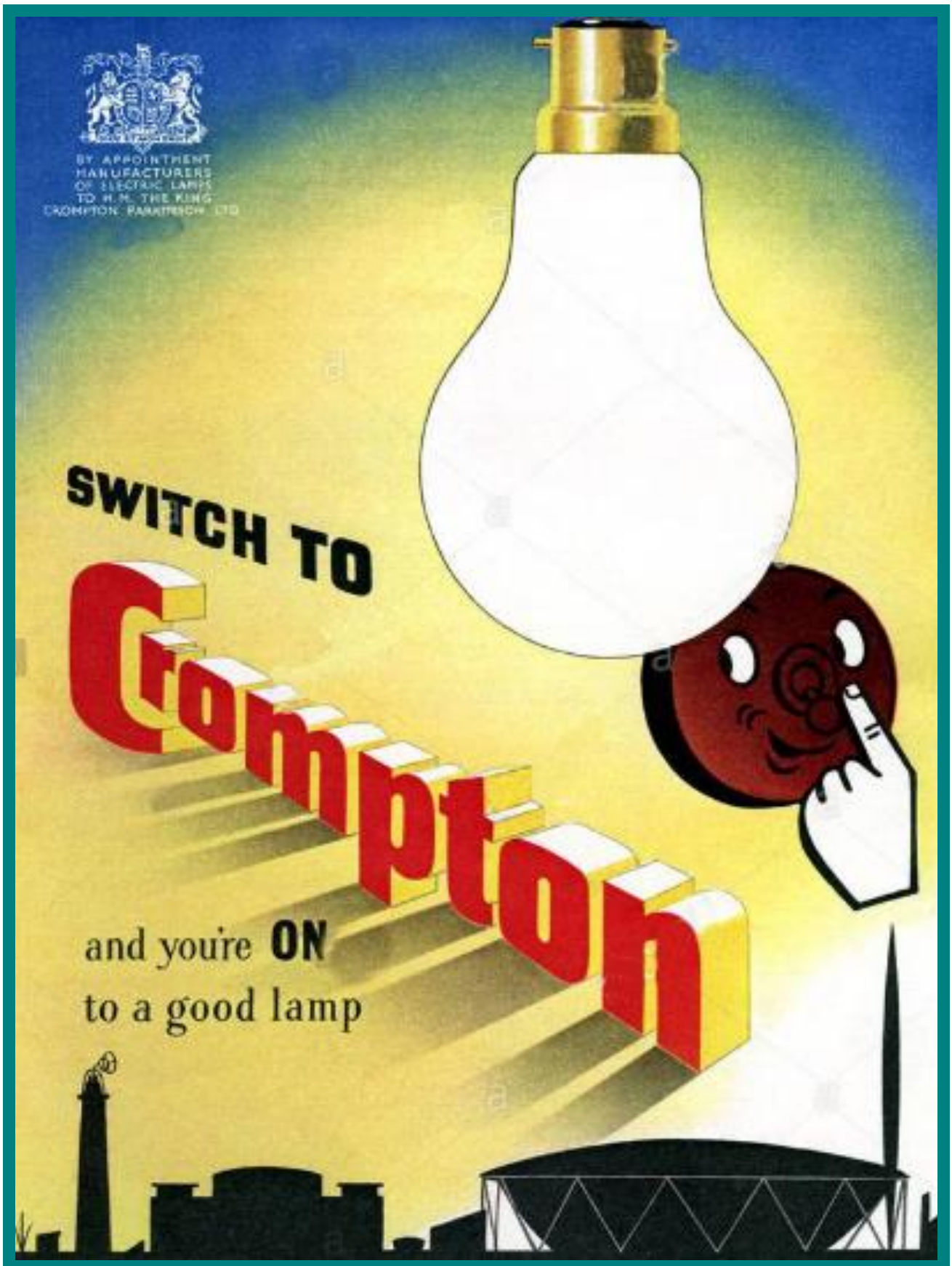


# SIEMENS LAMPS



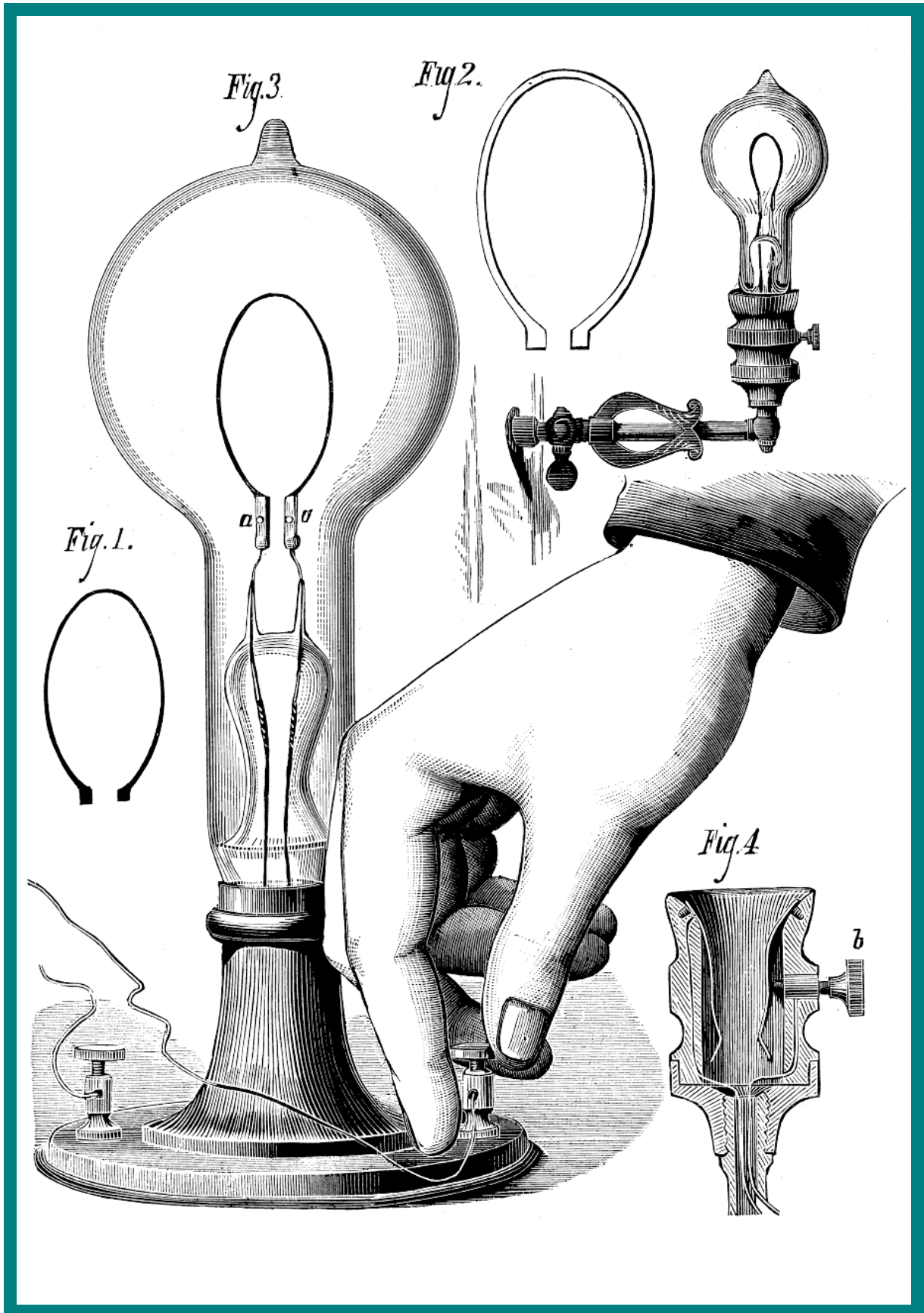


# CROMPTON PARKINSON LAMPS



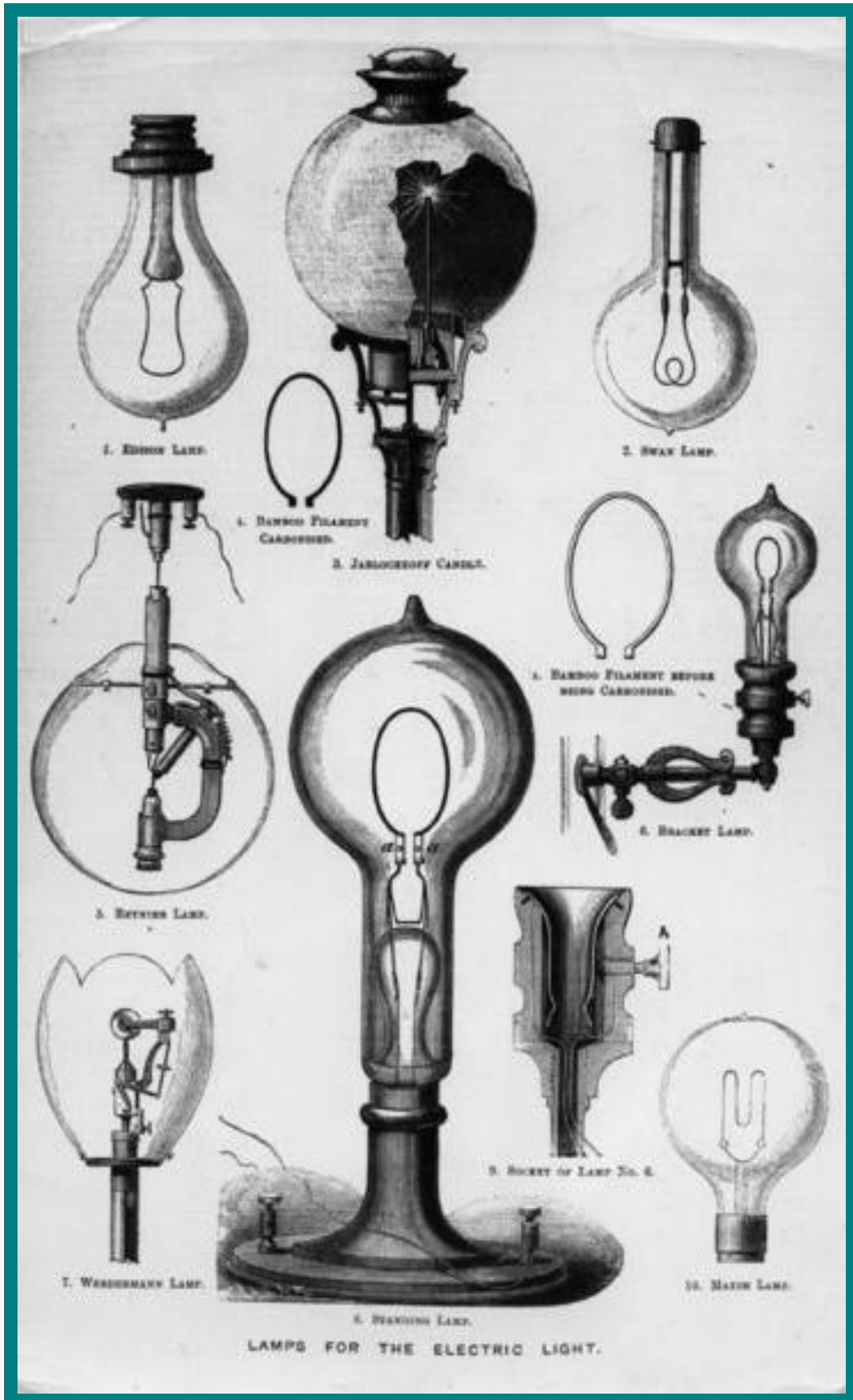


# EDISON LAMP DRAWINGS





# LAMPS FOR THE ELECTRIC LIGHT





# GAS LIGHTS BEFORE ELECTRIC LAMPS

## HISTORIC HOUSEWIFE VICTORIAN INDOOR GAS LIGHTING

**GAS**  
**WITHOUT HEAT SMOKE OR SMELL**  
**Benham's Ventilating GLOBE LIGHTS**

*The following are some of the advantages of this mode of Lighting:—*

- I. It carries off all the heat and foul air from the burner.
- II. It also ventilates the apartment by removing the heated and vitiated air.
- III. It introduces a constant supply of external fresh air.
- IV. The flame is powerful and steady, and cannot be affected by draughts.
- V. No smoke escaping—the ceiling is not blackened.

With this arrangement Gas may now be introduced into Drawing Rooms, Dining Rooms, and Libraries, without any risk of damage to the Decorations, Furniture, Pictures, or Books; and the injurious effects on the health are also entirely avoided.

The above Drawing represents the Pattern supplied to  
**H.R.H. THE PRINCE OF WALES** at Marlborough House.

MANUFACTURED AND SOLD BY  
**BENHAM & SONS**  
50, 52, & 54, WIGMORE STREET, LONDON, W.  
WHERE THEY MAY BE SEEN IN OPERATION.

BLAKY & CO., LONDON, MANCHESTER, & PARIS.

1864-1875/83 2