(No Model.) 2 Sheets—Sheet 1.

T. & J. TAYLOR.

ELECTRIC GAS LIGHTER.

No. 302,447. Patented July 22, 1884.

FIG: 1.

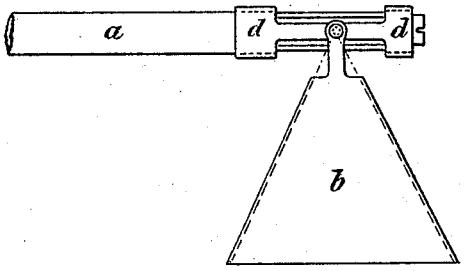
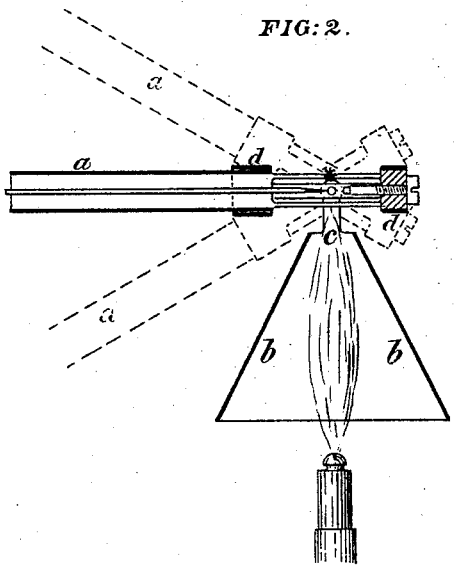


FIG: 2.



Witnesses.

John E. Parker

James F. Johns

Inventors.

Thomas Taylor

and

John Taylor

by their Attys

Howson & Sons

(No Model.) 2 Sheets—Sheet 2.

T. & J. TAYLOR.

ELECTRIC GAS LIGHTER.

No. 302,447. Patented July 22, 1884.

FIG. 4.

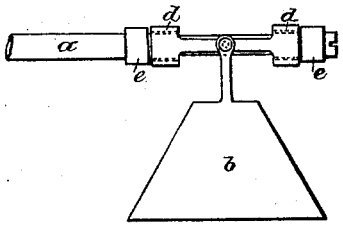
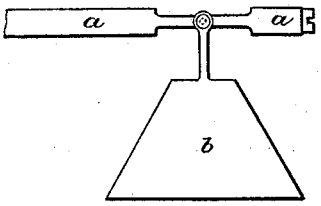


FIG. 3



Witnesses:—
John M. Clayton.
James F. Johns

Inventors
Thomas Taylor
and
John Taylor
by their Attys
Howson & Howson

UNITED STATES PATENT OFFICE.

THOMAS TAYLOR AND JOHN TAYLOR, OF OLDHAM, COUNTY OF LANCASTER, ENGLAND.

ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 302,447, dated July 22, 1884.

Application filed January 2, 1884. (No model.) Patented in England October 27, 1883, No. 5,103; in France December 22, 1883, No. 159,337, and in Belgium December 24, 1883, No. 63,648.

To all whom it may concern:

Be it known that we, THOMAS TAYLOR and JOHN TAYLOR, both residing at Oldham, in the county of Lancaster, England, and subjects of the Queen of Great Britain and Ireland, have invented Improvements in or Applicable to Electric Gas-Lighters, (for which we have applied for a patent in Great Britain, No. 5,103, dated October 27, 1883,) of which the following is a specification.

This invention relates to that class of gas-lighters wherein an electric spark is employed for igniting the gas issuing from a burner or jet, the object of the invention being to concentrate the gas exactly onto the point where the spark is produced, and thus to insure the immediate lighting or ignition of the gas by one single spark only, as well as to prevent the escape and waste of gas. By these means electric gas-lighters are enabled to be used for a much longer time (without the necessity for renewing the galvanic battery) than they can be as ordinarily constructed, as it frequently requires several sparks to be emitted before the gas is lighted, especially if the gas to be lighted is situated some distance above or below the level of the eye. The improvements also allow of a spark of much shorter duration being effectually employed, whereby the life of the battery is still further prolonged.

The invention will be readily understood on reference to the annexed drawings and the following explanation thereof.

The drawings illustrate the application of the "concentrator" to that form of electric gas-lighter wherein the terminal wires are carried in a conducting-tube, *a a;* but it will be evident that very slight alterations will be required to adapt the same to other forms of electric gas-lighters.

Figure 1 is a side elevation, and Fig. 2 a section, of our concentrator or attachment. Fig. 3 is a side view of a modification, and Fig. 4 is a similar view of another form.

We attach to the conducting-tube *a a*, or other part which carries the terminal wires, a hanging or swinging funnel or cone, *b b*, (which we term a "concentrator,") so formed and hung that the apex of the cone coincides with the point where the electric spark is produced, so that any gas entering the base or mouth of the funnel or cone *b b* is collected and concentrated or directed through the opening *c c* at the top thereof exactly onto the apex or point * between the two terminal wires where the spark is formed. Thus it will be evident that if this cone or concentrator is held over a jet of gas, instead of the spark having to find the gas, as heretofore, the gas will be caught and directed onto the spark, even though the "lighter" may be held slightly on one or other side of the jet or burner. The concentrator will also greatly facilitate the lighting of gas inside a globe or shade, or even in a glass chimney.

In constructing new gas-lighters the cone or concentrator may be hung direct upon the tube or other conductor which carries the terminal wires, as shown in Fig. 3; but for adapting our invention to gas-lighters already constructed we hang it from a short open tube or ferrule, *d d*, adapted to slide onto the outside of the ordinary tube, *a a*, which carries the terminal wires; and in some cases we propose to mount this short tube loosely thereon between two fixed collars, *e e*, Fig. 4, so that it can swivel sidewise, as well as swing to and fro on the fulcrum. The dotted lines show the swinging of the cone or concentrator when lighting gas-burners placed some distance above or below the level of the eye. For lighting a collection of jets known as a "sunlight" a larger cone or concentrator will be required.

We claim as our invention—

1. The combination of an electric gas-lighter with a cone or concentrator pivoted to the lighter, so as to be free to swing on its pivots, substantially as described.

2. The combination of an electric gas-lighter with a cone or concentrator pivoted to a sleeve or tube free to swivel on the tube containing the electrodes, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS TAYLOR.
JOHN TAYLOR.

Witnesses:
GEORGE DAVIES,
CHARLES DAVIES.