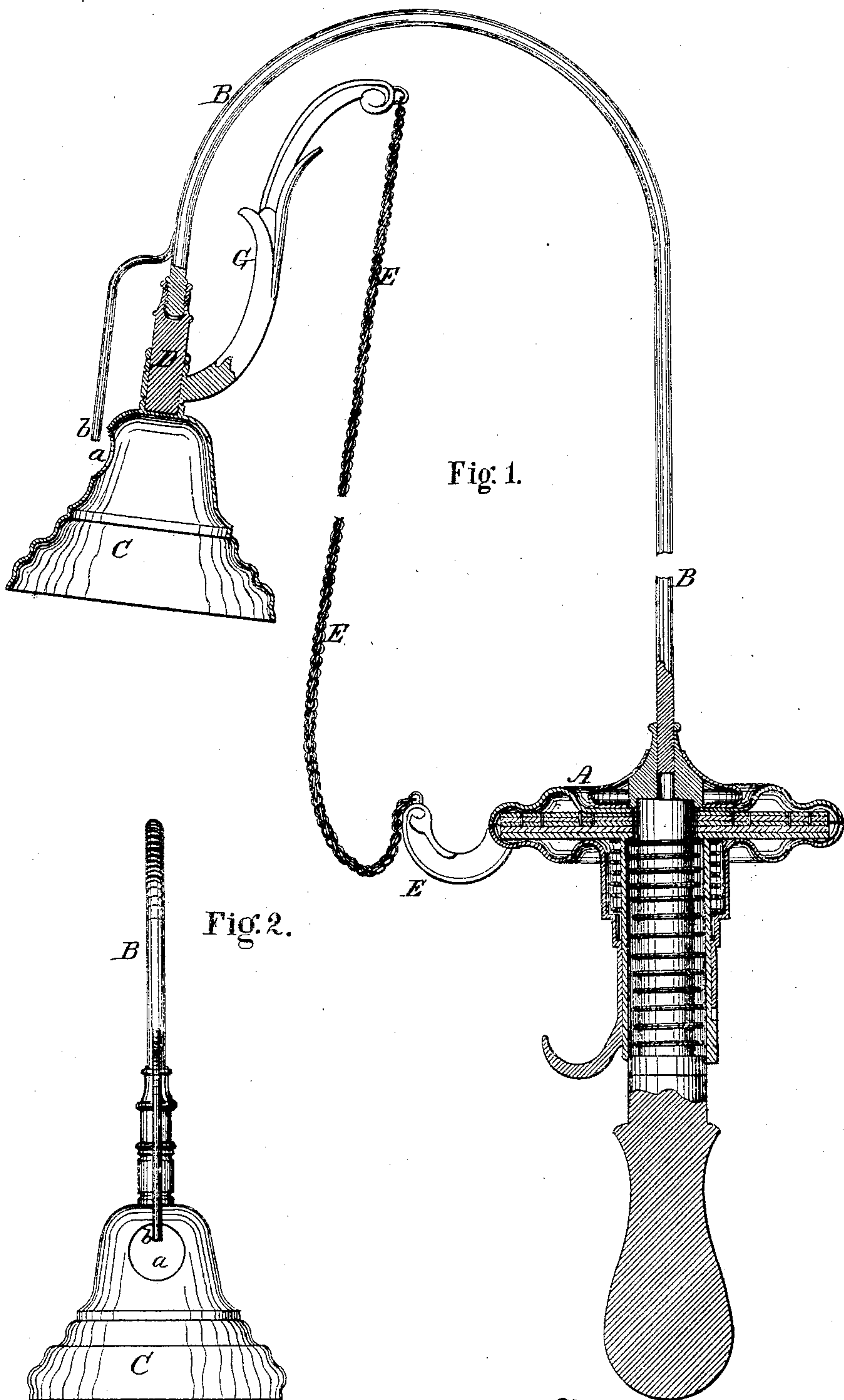


WILLIAM W. BATCHELDER.  
Improvement in Electric-Torch for Lighting Gas.  
No. 126,251. Patented April 30, 1872.



Witnesses:

*J. West Wagner.*  
*Wm. J. Peyton.*

Inventor:

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## UNITED STATES PATENT OFFICE.

WILLIAM W. BATCHELDER, OF NEW YORK, N. Y.

## IMPROVEMENT IN ELECTRIC TORCHES FOR LIGHTING GAS.

Specification forming part of Letters Patent No. 126,251, dated April 30, 1872.

*To all whom it may concern:*

Be it known that I, WILLIAM W. BATCHELDER, of the city, county, and State of New York, have invented certain new and useful Improvements in Electric Torches for Lighting Gas, of which the following is a specification:

My invention relates to hand devices or torches for lighting gas by the generation of an electric current; and my said invention consists of an electric torch or hand device complete in itself, both in the generation and liberation of the electric spark—that is to say, a device that is independent of the gas-burner or fixture to which the gas-burner may be attached, or any medium independent of the torch itself, except that of the hand, as will be more fully hereinafter described; and my said invention further consists of a torch constructed with a chamber or deflector for receiving the escaping gas and mixing it with the air so as to light the gas with the said chamber or deflector away from or above the gas-burner.

In the accompanying drawing, Figure 1 represents a vertical section of an electric torch embracing my invention; and Fig. 2 represents the gas-receiver and distributor or deflector and the liberating-point of the electric spark.

The electrical generating device A may be constructed as shown in the drawing, or any other suitable motor for producing an electric spark may be used, as my invention does not depend upon any particular construction of electric generator, and therefore no special description is necessary of such device in this patent. To the extremity of the stem B a gas-chamber or deflector, C, is secured, so as to be used away from or above the burner, and to receive the escaping gas and mix it with the air at such distance from the burner as will insure the mixing of a sufficient quantity of air with the gas to render it highly explosive. This receiver and deflector C is, therefore, one of the essential features of my invention, and in the example shown it is made bell-shaped and closed at its top, so that the gas cannot escape vertically, but must be deflected laterally; and for this purpose it is provided with a side opening, *a*, to cause the gas to be deflected outward after its mixture with the air. Any means which will pro-

duce this mixture and deflection of the gas will answer the purpose, but the deflection must be toward the liberating-point *b*, and at a distance from the burner, which liberating-point, as shown, is arranged opposite the opening *a* in the gas-chamber. This gas-chamber is insulated from its metallic stem or support by a hard-rubber section, D, which also insulates the liberating-point *a* from the gas-chamber or deflector. The positive electric current is completed from the generator A to the liberating-point *a* through the metallic stem or support B, and the circuit is completed by means of a chain, E, or its equivalent, uniting the generator with the deflector or gas-chamber. This union, however, must be with the lower portion of the electric generator; and in order that this connection may be isolated from the positive portion of the generator the lower end of the connecting-chain is attached to a bracket, E, while its upper end is connected to a bracket, G, of the gas chamber, so as to avoid any interference with globes or shades of the burners. This is a highly advantageous feature, as it allows the gas-chamber or deflector to be used in connection with any kind of shade or burner-chimney in use; the distinguishing feature and object of my invention being to obtain an electric torch which shall be complete in itself and entirely independent of the gas-burner or any part of the gas-fixture, but requiring only to be used so as to gather the gas as it escapes from the burner, chimney, or shade, so as to produce a mixture with the air, and then deflect it against the point from which the electric spark is liberated, so as to render the torch applicable to all gas-burners, with or without shades or chimneys, and not depending upon a connection with anything to complete the liberation of the lighting-spark.

Having described my invention, I claim—

1. An electric torch for lighting gas complete in itself and independent of any connection whatever with the gas burner or fixtures thereof in generating and liberating the lighting-spark.

2. In an electric torch for lighting gas, I claim a gas chamber or deflector, or its equivalent, for receiving, mixing, and deflecting the escaping gas before it is brought in contact

with the lighting-spark and away from the burner, whether the circuit is made in the manner herein described or by any pendent device making connection with the gas fixture or burner.

3. In an electric torch for lighting gas, I claim the chain connection or its equivalent of the gas chamber or deflector with the hand or lower portion of the generator, to complete the electric circuit and adapt the torch for use to light any burner, with or without shade or chimney.

4. The gas chamber or deflector C, having a side opening, *a*, in combination with the liberating-point *b* for the electric spark, to insure the deflection of the mixed air and gas toward the liberating-point.

In testimony whereof I have hereunto set my hand in presence of two witnesses this 12th day of April, A. D. 1872.

WILLIAM W. BATCHELDER.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.