

(No Model.)

T. H. RHODES.

ELECTRICAL GAS LIGHTING APPARATUS.

No. 257,188.

Patented May 2, 1882.

Fig. 2.

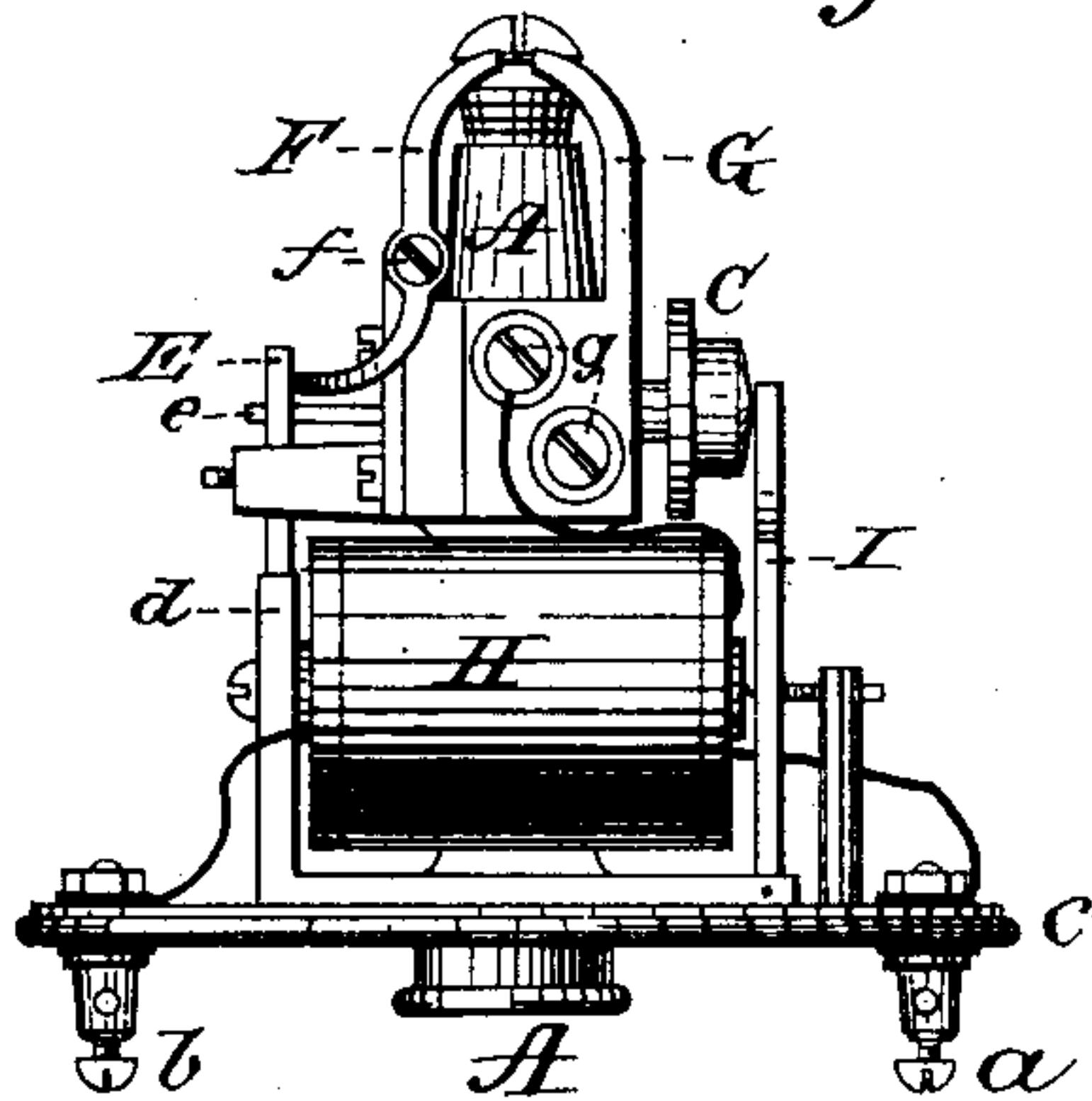


Fig. 1.

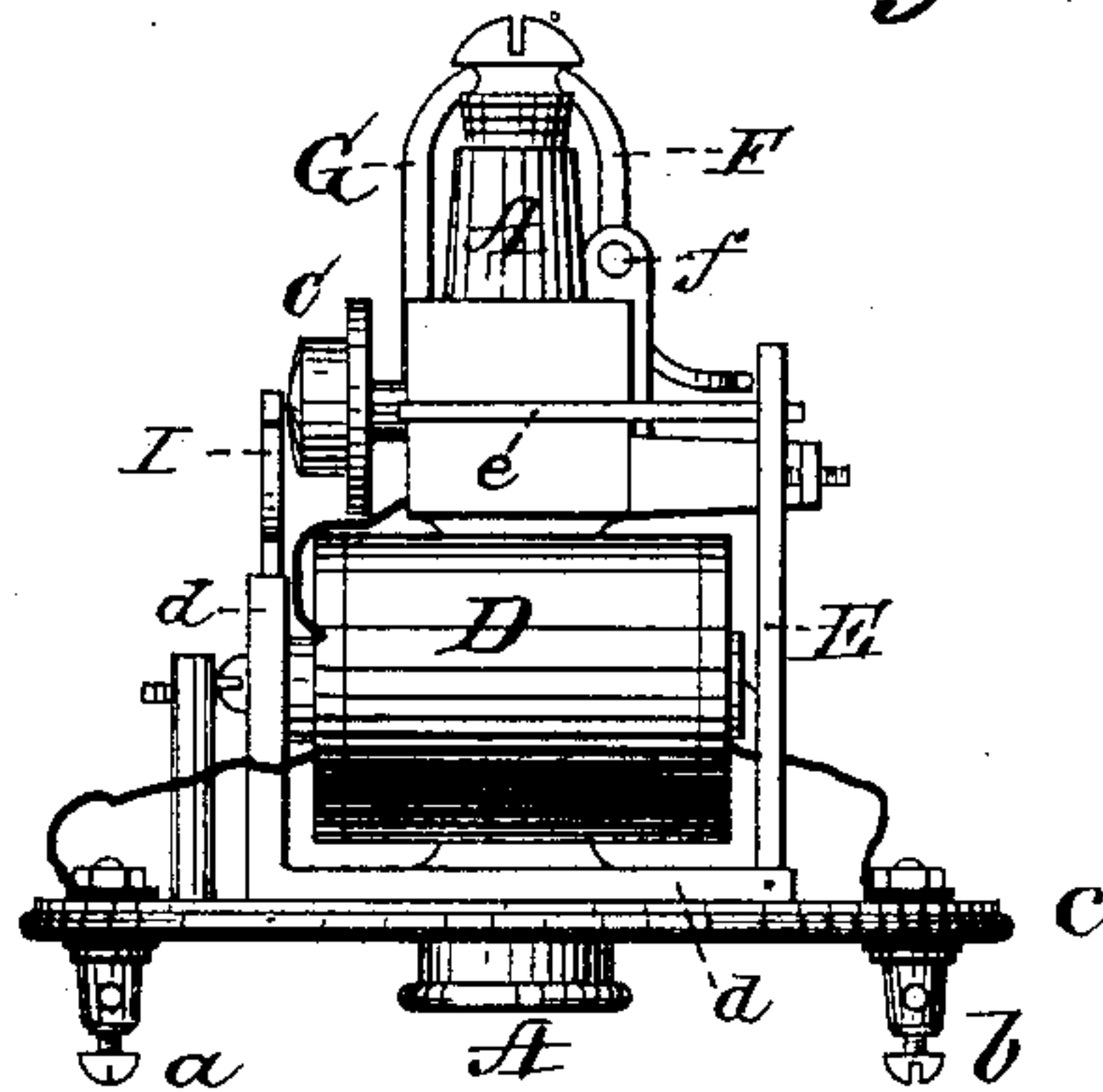


Fig. 3.

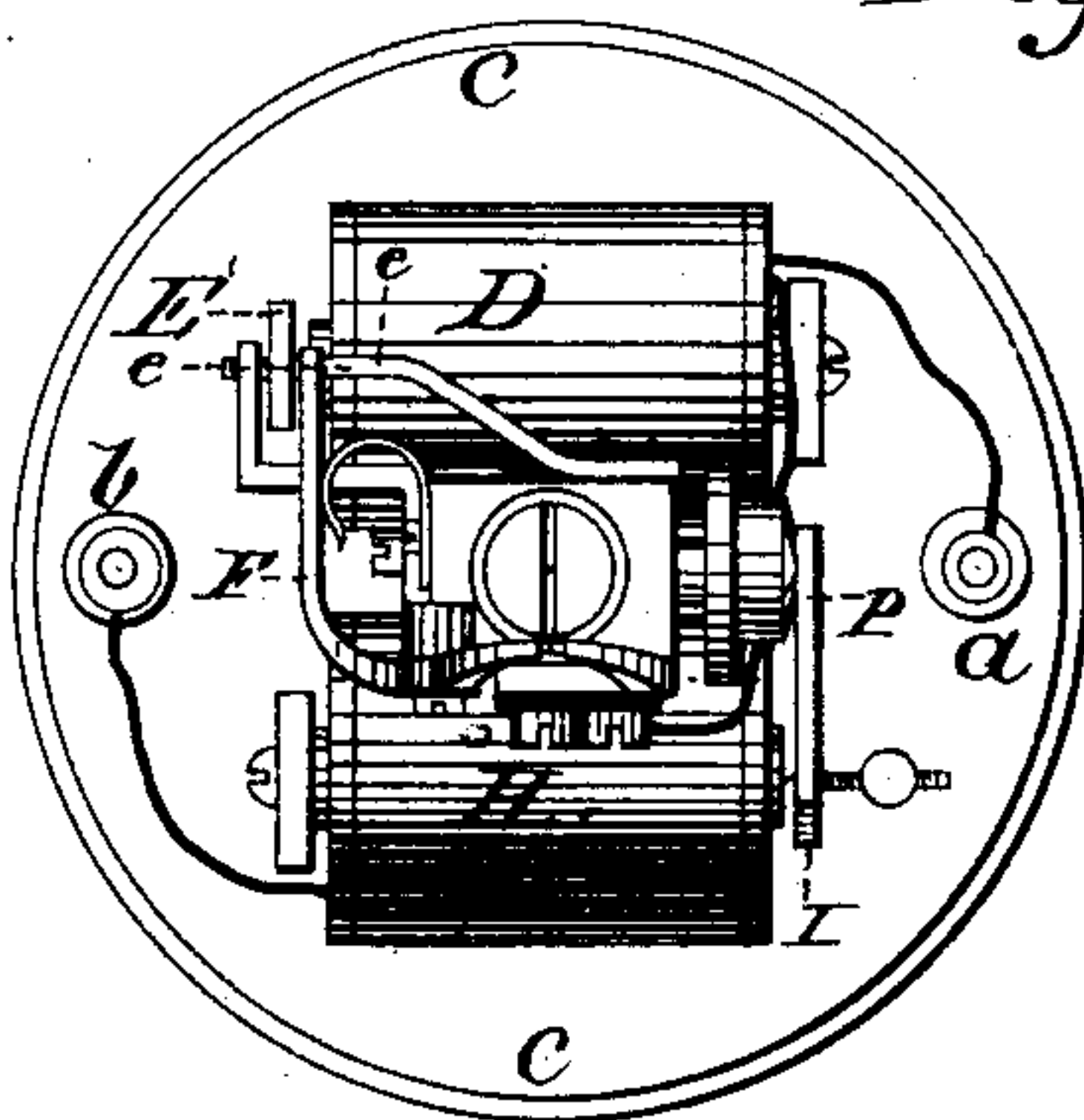


Fig. 4.

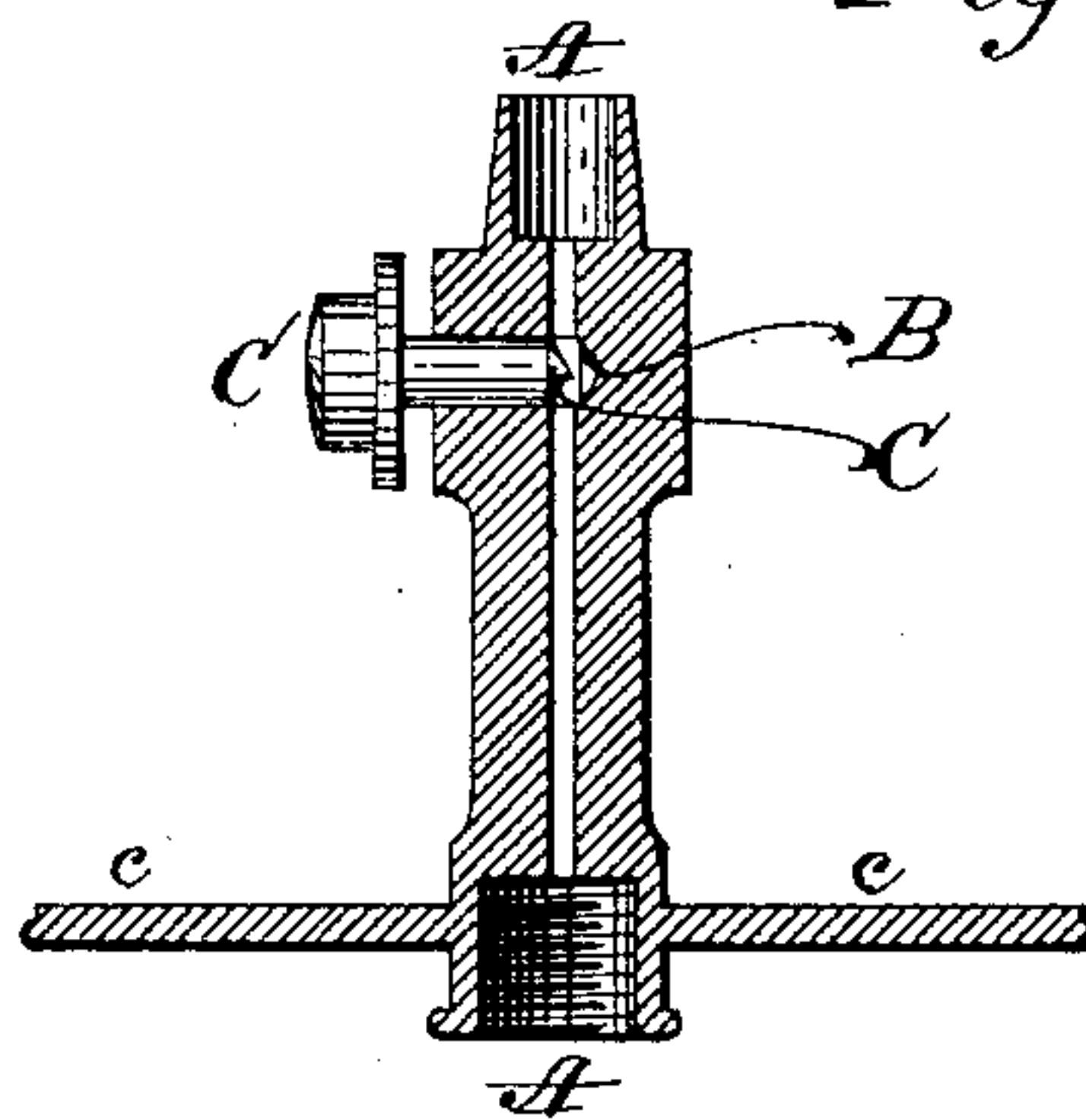


Fig. 5.



WITNESSES:

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ELECTRICAL GAS-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 257,188, dated May 2, 1882.

Application filed November 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. RHODES, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Apparatus for Lighting Gas by Electricity, of which the following, taken in connection with the accompanying drawings, is a full, clear, and accurate description.

10 The object of my improvement is to produce a simpler means for lighting gas by electricity.

To this end the invention is an improvement in that class of devices in which magnets are employed to control the flow of gas and to operate the lighting-contacts; and it consists in the peculiar construction and combination of parts, as more fully hereinafter described and claimed.

20 In the drawings, Figure 1 represents a side view of a portion of my improvement, showing especially the electro-magnet and armature for turning on the gas and the mechanism for lighting the same. Fig. 2 represents a side view of another portion of my improvement, showing especially the electro-magnet and armature for turning off the gas. Fig. 3 shows a plan view of my improvement, both electro-magnets and mechanism between them, with feed-pipe cut-off. Fig. 4 shows a vertical sectional view of feed-pipe with conical valve-seat and valve. Fig. 5 shows my improved valve.

My improvement is made as follows:

35 *a* and *b* are two binding-screws secured on and insulated from a base, *c*, which base *c* is attached to the feed-pipe *A* of a gas-burner. In this feed-pipe *A* is placed the valve-seat *B*, adapted to receive a corresponding valve, *C*. (See Figs. 4 and 5.) The binding-screw *a* is connected with the wire for letting on the gas, the end of which wire may be secured to a push-button. (Not shown in drawings.) From this binding-screw *a* the letting-on wire passes to the electro-magnet *D*, which, when energized by the current, attracts the armature *E*, attached to the lower end of frame *d*, secured to base *c*. The armature *E* is provided with the pin *e*, secured at its upper part, and adapted to engage with the valve *C* and push it out from the valve-seat *B*.

F is a vibrating electrode having its fulcrum on the pivot *f*, and designed to be actuated by the movement of the armature *E* and in connection with the stationary electrode *G*, (which is secured by screws *g* to feed-pipe *A*,) and is connected with one pole of a battery, dynamo-electric machine, or other generator of electricity, breaks the circuit at the tip of the burner, and thus produces the electric sparks for lighting the gas. Both electrodes *F* and *G* are provided at their ends with platinum points.

H is another electro-magnet connected with a wire for turning off the gas, which runs through the binding-screw *b*. The end of this wire may be connected with another push-button. (Not shown in the drawings.)

I is an armature secured at its lower end to the frame *d*, attached to base *c*, and having an arm, *P*, at its upper end bearing against the valve *C*.

The operation of my improvement is as follows: When a current of electricity is passed through the wire for letting on the gas, which passes through the binding-screw *a*, the electro-magnet *D* is energized and attracts the armature *E*, and thus moves the pin *e*, secured to its upper part against the valve *C*, and thus pushes out the valve *C* from its place in the valve-seat *B* and permits the gas to flow through the feed-pipe *A*. At the same time the vibration of the armature *E* is communicated to the vibrating electrode *F*, and causes the same to vibrate, and thus break the circuit at the tip of the burner and produce electric sparks between the stationary electrode *G* and vibrating electrode *F*, thus lighting the gas.

When it is desired to shut off the gas a current of electricity is passed through the turning-off wire, which passes through the binding-screw *b* to the electro-magnet *H*. This electro-magnet *H*, when energized by electricity, attracts the armature *I*, which by motion of the arm *P* pushes back the valve *C* into place in the valve-seat *B*, and thus turns off the gas and extinguishes the light.

It will be seen that my valve and apparatus are very simple, and thus more easily and less expensively made and less liable to get out of order than the means now in use for effecting the same purposes. By placing my apparatus between the two electro-magnets on the stand-

ard I make the whole arrangement very compact, and thus economize space.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

- 5 1. The pipe A and the sliding valve C, having a conical end and seat, in combination with the magnet D, the armature E, and the rod e, substantially as specified.
- 10 2. The pipe A and the sliding valve C, in combination with the magnet H, armature I, arm P, magnet D, armature E, and rod e, substantially as set forth.

3. In combination with the pipe A, sliding valve C, magnets D H, armatures E I, rod e, 15 and the bar P, the pivoted electrode F, adapted to be operated by the movement of the armature E, substantially as described.

In testimony whereof I have hereunto set my hand this 10th day of November, 1881.

THOS. H. RHODES.

In presence of—

HENRY P. WELLS,
CHARLES G. COE.