

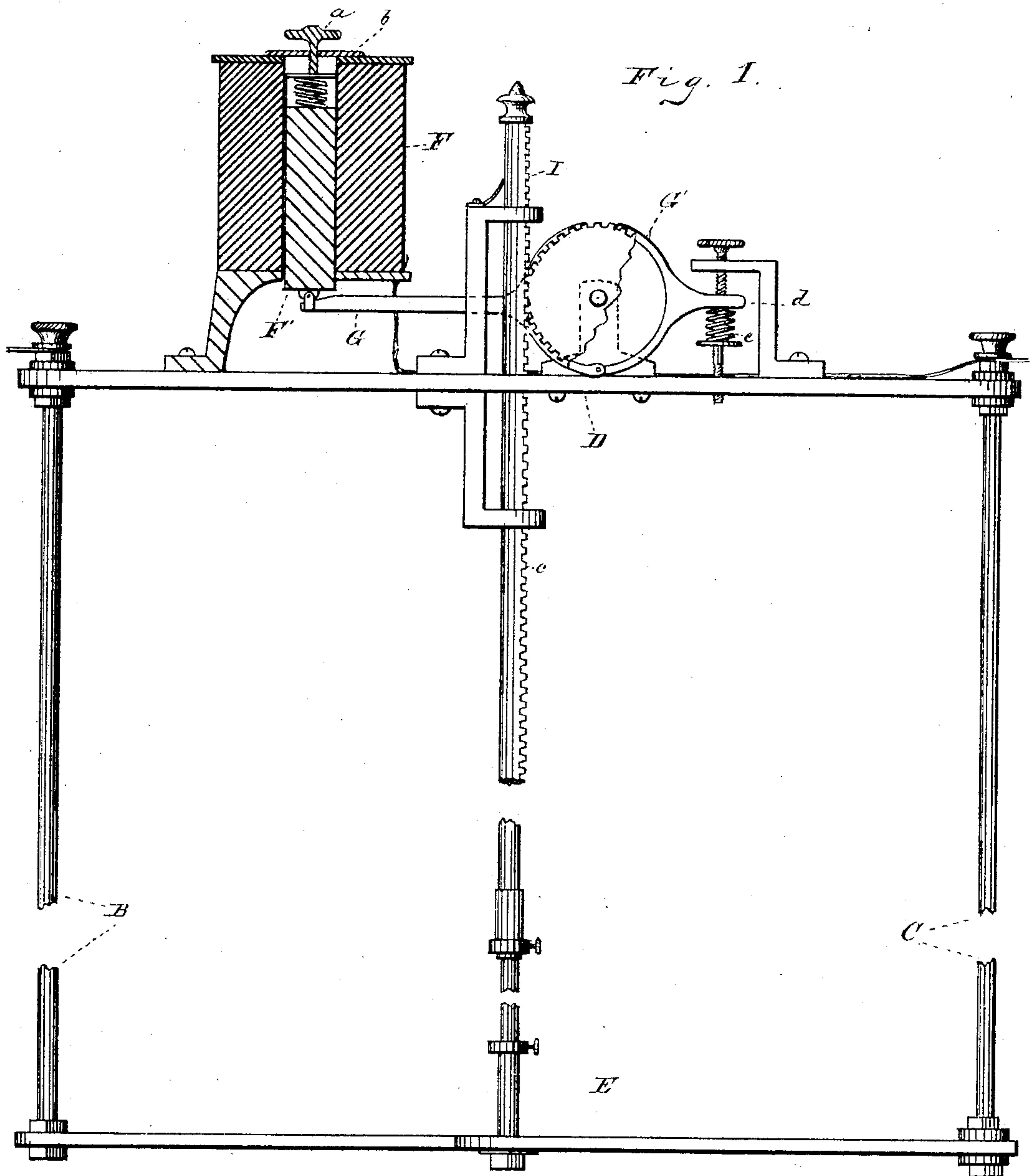
(No Model.)

3 Sheets—Sheet 1.

E. H. AMET.  
ELECTRIC ARC LAMP.

No. 271,395.

Patented Jan. 30, 1883.



WITNESSES

*W. Engel*  
*W. E. Donnelly*

*E. H. Amet.*

INVENTOR

*By Leggett & Leggett.*

ATTORNEYS

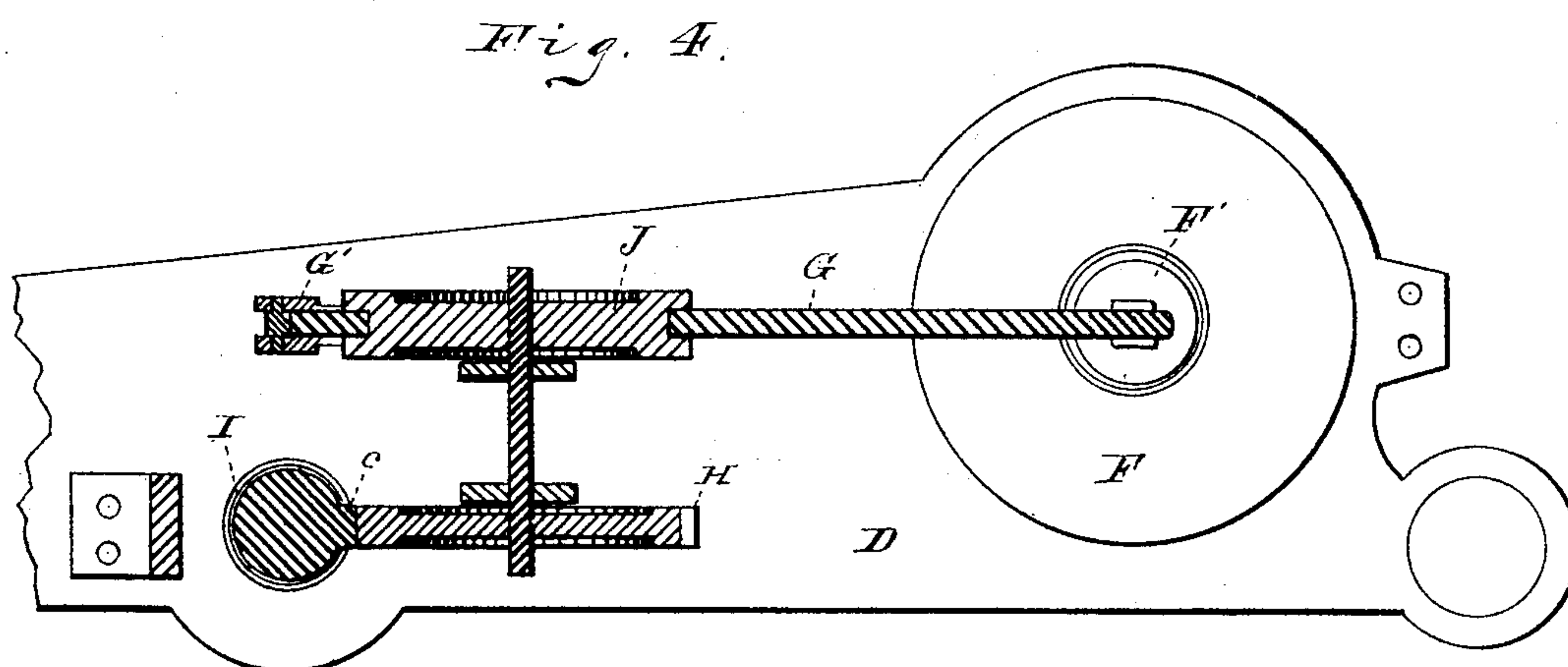
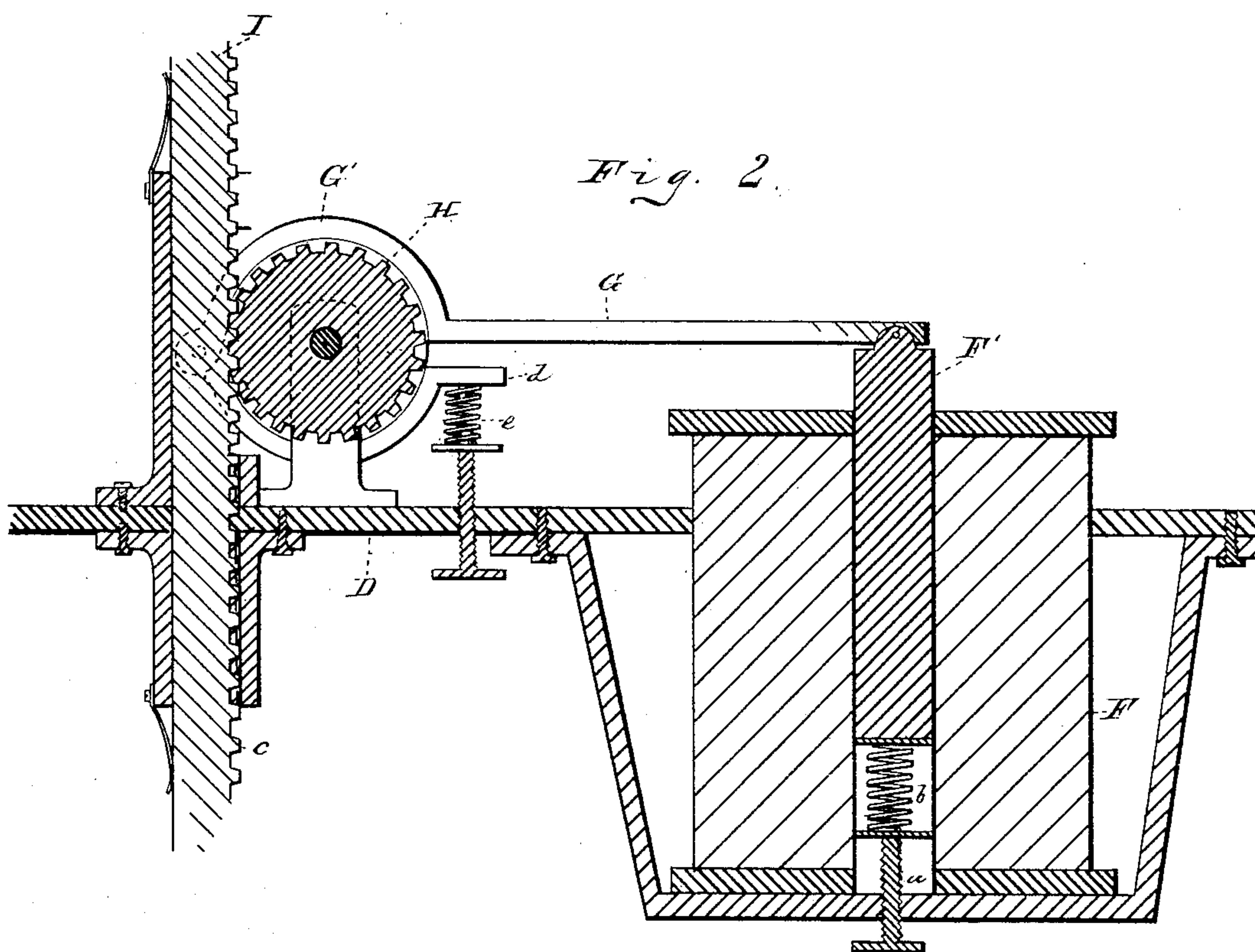
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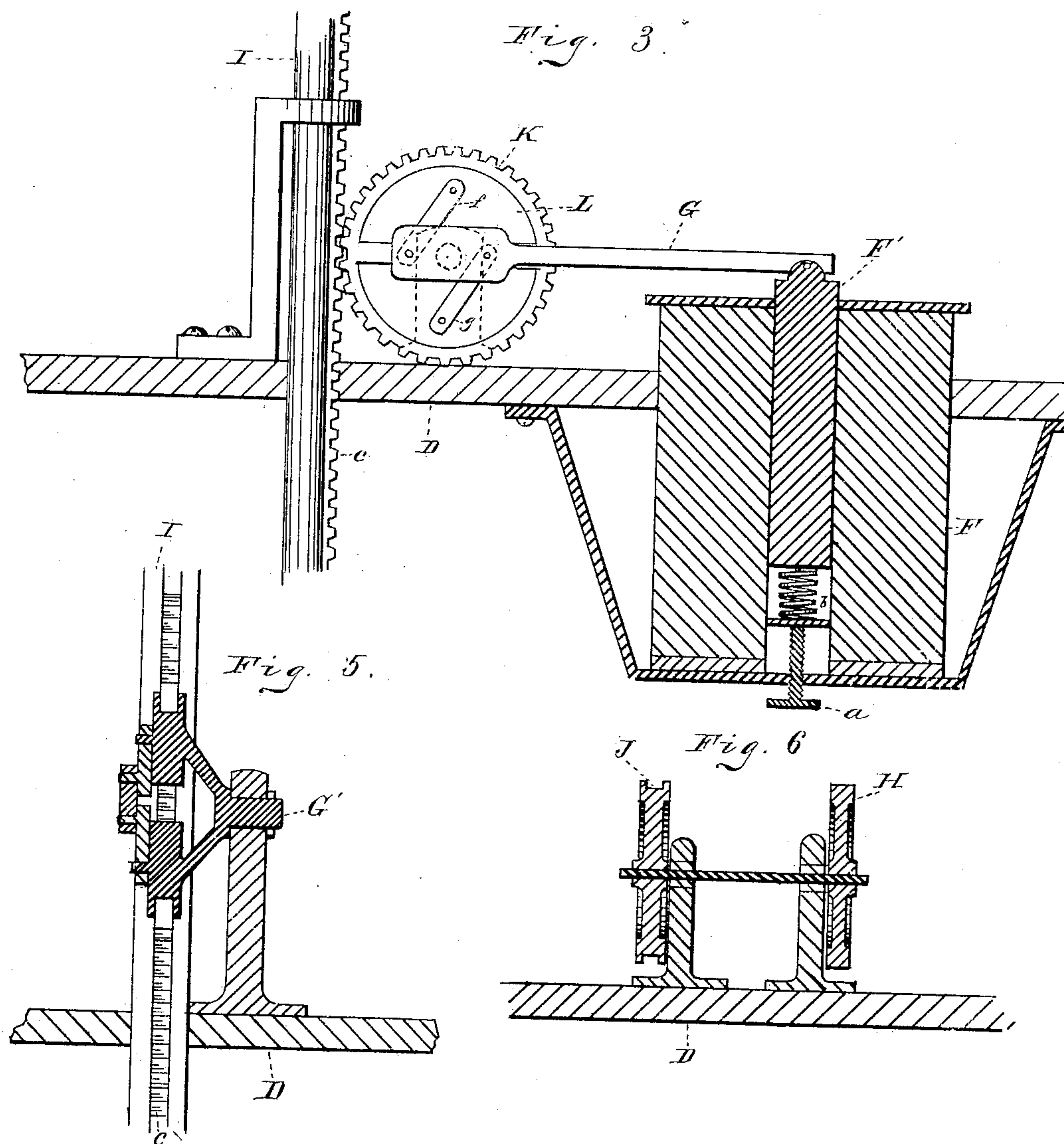
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# UNITED STATES PATENT OFFICE.

EDWARD H. AMET, OF LA GRANGE, ILLINOIS.

## ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 271,395, dated January 30, 1883.

Application filed March 9, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD H. AMET, of La Grange, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Electric Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

10 My invention relates to electric lamps; and it consists in the peculiar construction of the same, and more particularly in the arrangement for regulating the carbons.

15 In the drawings, Figure 1 is a view in elevation of an electric lamp embodying my invention. Figs. 2, 3, 4, 5, and 6 are views of modifications of my improved regulating device.

20 A is the frame of an electric lamp, which is composed of two upright bars, B and C, and the upper and lower horizontal bars, D and E. The upper cross-bar, D, is insulated from the vertical bars B and C, and the lower cross-bar, E, is insulated from the vertical bar C.  
25 The upper end of the vertical bars B and C are suitably connected—one to the plus-wire and the other to the return-wire of a dynamo-machine. Leading from the vertical bar C is a wire or other suitable electrical conductor,  
30 which is connected to the wire forming the helix of a solenoid, F. From thence electric connection is made, through the regulating mechanism, to the upper-carbon rod, whence, after passing through the upper and lower carbons, it passes to the lower-carbon holder,  
35 which is secured to the lower bar, E, and then out through said bar E to the upright bar B, and then is returned through the return-wire.

Fitting loosely in the center of the solenoid  
40 F is a movable core, F', which may be adjusted by means of a set-screw, a, which presses against a spring, b, said spring b in turn pressing against the core F'. The object of the adjusting-screw and spring is to limit the distance  
45 which the core shall move into the solenoid F, and also act to push said core out when the current of electricity is weakened, as will be hereinafter fully explained.

50 Connected pivotally to the outer end of the core F' is one end of a lever, G, the other end of said lever G being provided with a clutch or braking device, G', which, by engaging with

a spur-gear, H, or any suitable device connected to said spur-gear, will act, when the lever G is drawn toward the solenoid, to first  
55 arrest the movement of the said gear H in one direction and then give to it a partial revolution in an opposite direction, and the gear H, in turn engaging with a rack, c, on the side of the upper-carbon holder, I, acts to arrest the  
60 downward movement of said carbon-holder I, and then raise it for the purpose of forming an arc. This clutch or brake G' may be formed in any suitable manner, three different constructions being shown in the drawings. 65

The apparatus shown in Fig. 1 consists of a band divided in two parts and hinged together, one of the parts being attached to or  
70 formed in one piece with the lever G, and the other part being provided with an arm, d, which rests on an adjustable spring-fulcrum, e. This band surrounds a brake-wheel, J, (see Fig. 6,) which is secured on the same shaft with the spur-gear H.

75 The device just specified will operate as follows: Before the passage of the electric current the carbons will rest in contact by the gravity of the upper-carbon holder I. Upon the passage of the electric current through the lamp it operates, by passing through the solenoid F, to draw in the core F', which in turn  
80 pulls with it the end of the lever G, to which it is pivoted or attached. As this end of the lever G is drawn upward it acts to cause the band secured to the other end to firmly clasp  
85 or engage with the brake-wheel J and give to the same a partial revolution, which partial revolution is imparted to the spur-gear H. The teeth of the spur-gear H, by engaging with the rack on the side of the carbon-holder  
90 I, act to raise said carbon-holder, which in turn acts to separate the carbons and produce the electric light. Now, as the carbons are burned away and the distance between them is increased the resistance becomes greater,  
95 and hence the current of electricity is weakened and the spring b acts to push the core F' outward, which acts to release the clutch or band from the brake-wheel J and allow the upper-carbon holder to drop by its gravity. 100  
The spur-gear H being now free to revolve, as the carbons near each other the current of electricity is increased (the resistance being less) and the core F' is drawn into the solenoid



F. This acts, by causing the clutch to engage with the brake-wheel J, to first arrest the downward movement of the carbon-holder I and then to raise it, as hereinbefore explained.

5 The operation of the devices shown in Fig. 2 is somewhat similar to that shown in Fig. 1, and will be readily understood from the drawings.

10 The clutching device shown in Fig. 3 consists of a gear-ring, K, which fits over a split brake-wheel, L, said brake-wheel L being forced outward by means of arms *f* and *g*, which are pivotally attached to the lever G, said lever G being pivoted between said arms *f* and *g*, as  
15 shown.

Instead of using a solenoid and core, an electro-magnet and armature may be used, if desired, to which the lever G may be connected, said armature being constructed in any suitable manner to best adapt it to the said purpose; but I prefer to use a solenoid and core.

What I claim is—

1. In an electric lamp, the combination, with a

carbon-holder provided with a rack and a gear-wheel engaging therewith, of a solenoid located 25 in the main circuit, a spring for moving the core outwardly from the solenoid, a lever connected at one end with the core and supported at its opposite end by a spring, and a hinged clutch-ring for rotating the gear-wheel and 30 raising the carbon-holder, substantially as set forth.

2. In an electric lamp, the combination, with a carbon-holder provided with a rack-bar, a gear-wheel meshing with the rack-bar, a lever, 35 G, provided with the hinged clutching-ring G', and the adjustable spring *e*, of the solenoid F, core F', spring *b*, and set-screw *a*, substantially as set forth.

In testimony whereof I have signed my name 40 to this specification in the presence of two subscribing witnesses.

EDWARD H. AMET.

Witnesses:

WM. S. D. HUNT,  
P. J. MEANEY.