

(No Model.)

2 Sheets—Sheet 1.

R. J. SHEEHY.
ELECTRIC LIGHT REGULATOR.

No. 281,800.

Patented July 24, 1883.

Fig. 1,

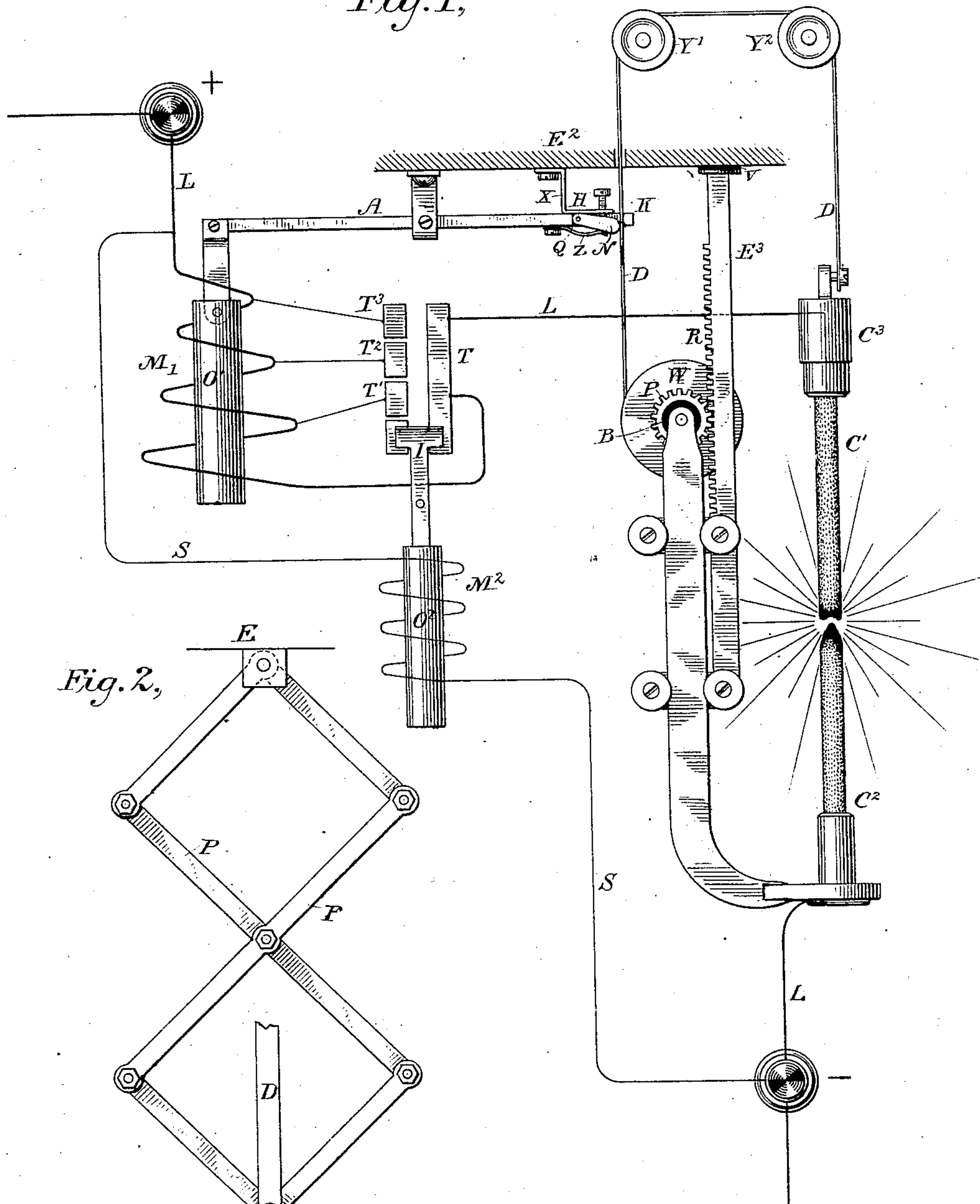
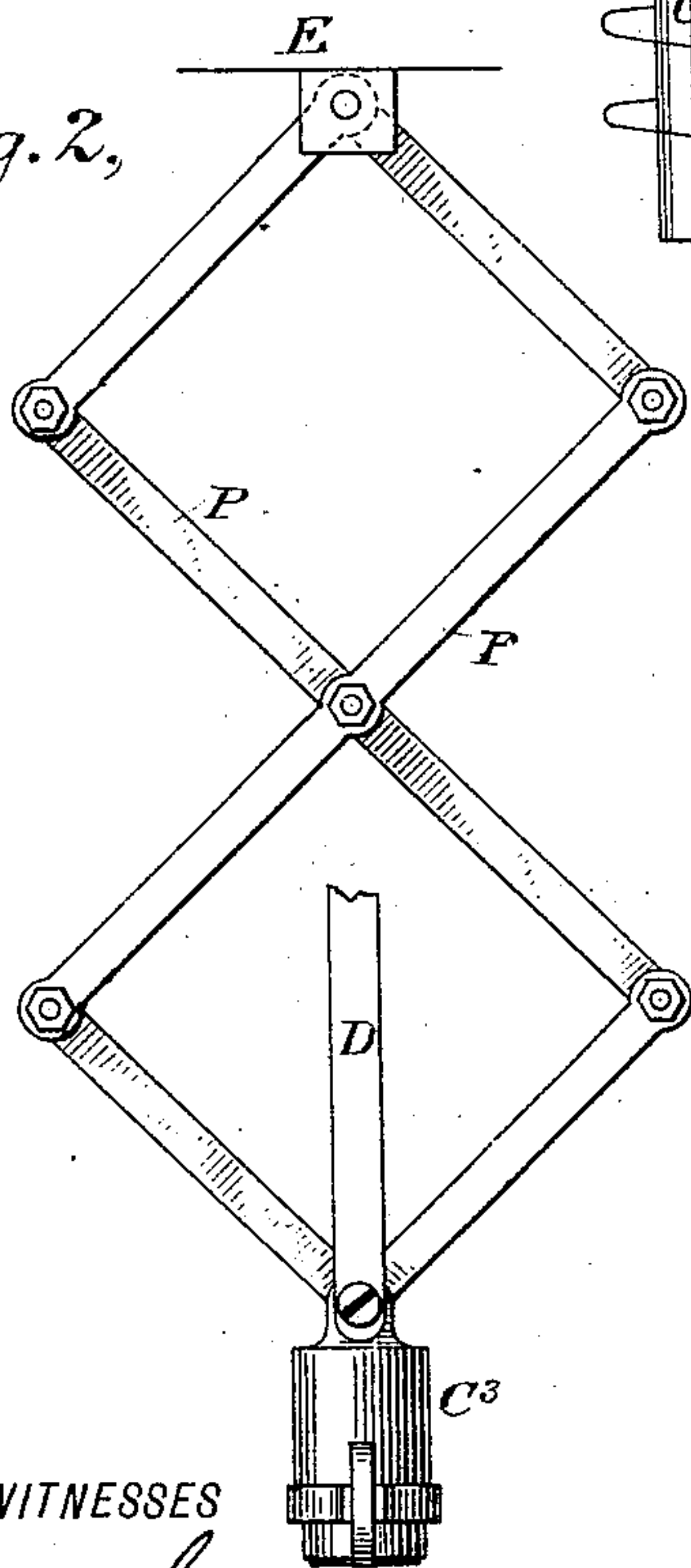


Fig. 2,



WITNESSES

Wm. A. Shinkle
Geo. W. Breck.

INVENTOR

Robert J. Sheehy,

By his Attorneys

Pope, Edgecomb & Butler.

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Fig. 3,

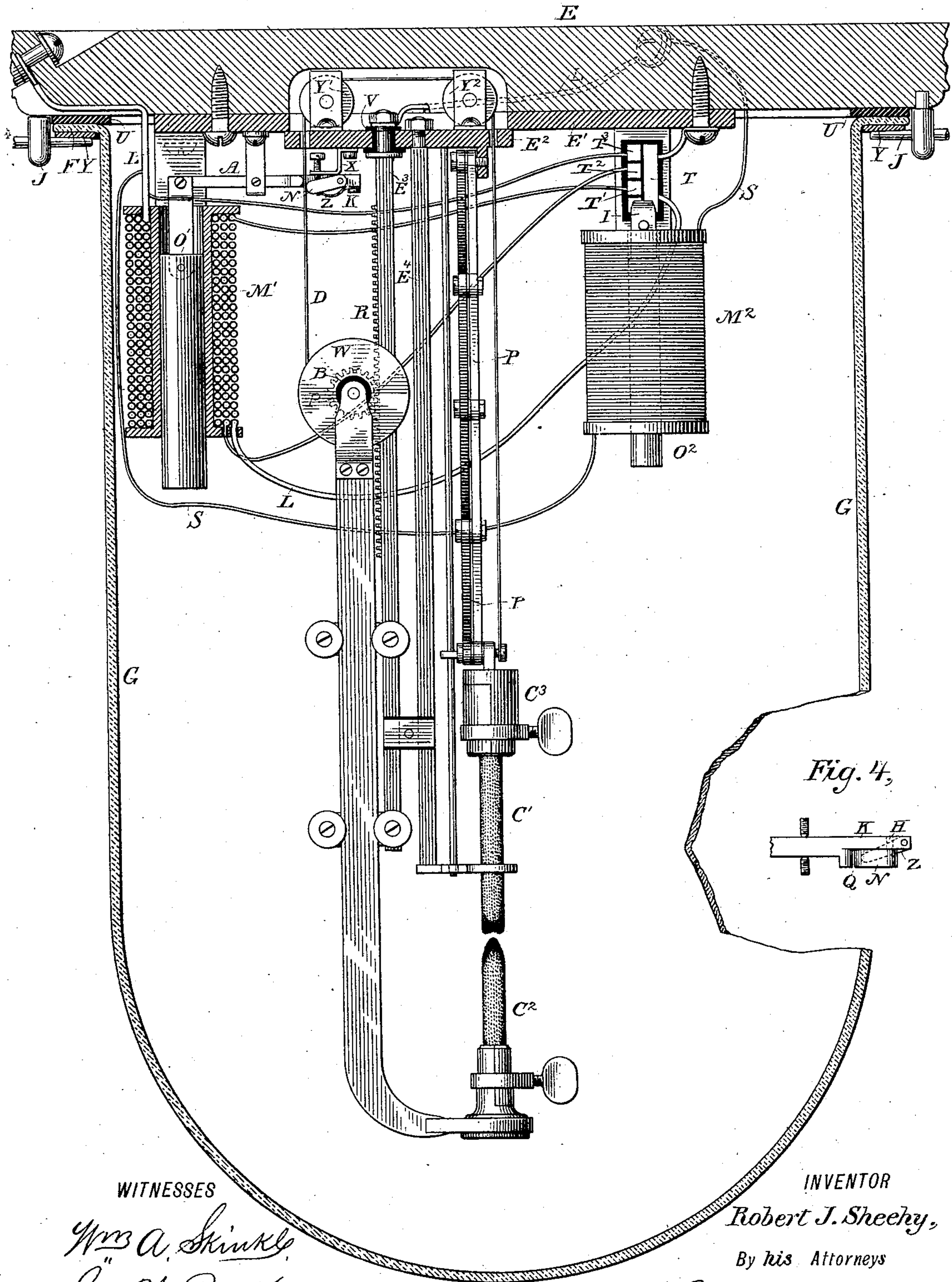


Fig. 4,

WITNESSES

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UNITED STATES PATENT OFFICE.

ROBERT J. SHEEHY, OF NEW YORK, N. Y.

ELECTRIC-LIGHT REGULATOR.

SPECIFICATION forming part of Letters Patent No. 281,800, dated July 24, 1883.

Application filed June 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. SHEEHY, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Electric-Light Regulators, of which the following is a specification.

My invention relates to that class of electric lights in which the so-called "electric arc" is maintained between two carbon electrodes. It particularly relates to a class of devices or appliances commonly denominated "regulators," the function of which is to automatically maintain said electrodes in that relation to each other which is essential to the production of a uniform and maximum degree of illumination.

To this end my invention consists in a method of and apparatus for maintaining the proper relative positions of said electrodes, which method may be described as follows:

First. The carbon electrodes are subjected to the action of a constant force, preferably that of gravity, operating to bring them together. To facilitate such action I prefer to make use of a mechanical device, by virtue of which the said force of gravity is not only exerted to depress the positive but also simultaneously to elevate the negative electrode.

Second. I employ a novel form of clutch (one of the essential features of this invention) actuated by an electro-magnet, the function of which clutch is to grasp (through intermediate mechanism) said electrodes at the proper time and subject them to the mechanical force exerted by said electro-magnet, which by its superior strength overcomes the normal action of gravity upon said electrodes and maintains them in the relative positions best suited to the development of a maximum intensity of light.

Third. Said electro-magnet is vitalized by the light-producing current, so that an increase in the strength of said current produces a separation of the electrodes, while its decrease causes them to approximate.

Fourth. To enhance the efficiency of said electro-magnet, I employ an automatic bridge or cut-out for introducing and withdrawing from said light-producing current one or more of the convolutions or helices of said electro-

magnet, accordingly as it is desired to increase or diminish its magnetic effects. The automatic bridge is preferably actuated or controlled by a branch of the main current traversing a shunt-circuit which spans both the electric arc and the controlling or regulating electro-magnet. Such a current is especially well adapted for this purpose, inasmuch as its strength varies correlatively with the resistance of the arc between the carbon electrodes.

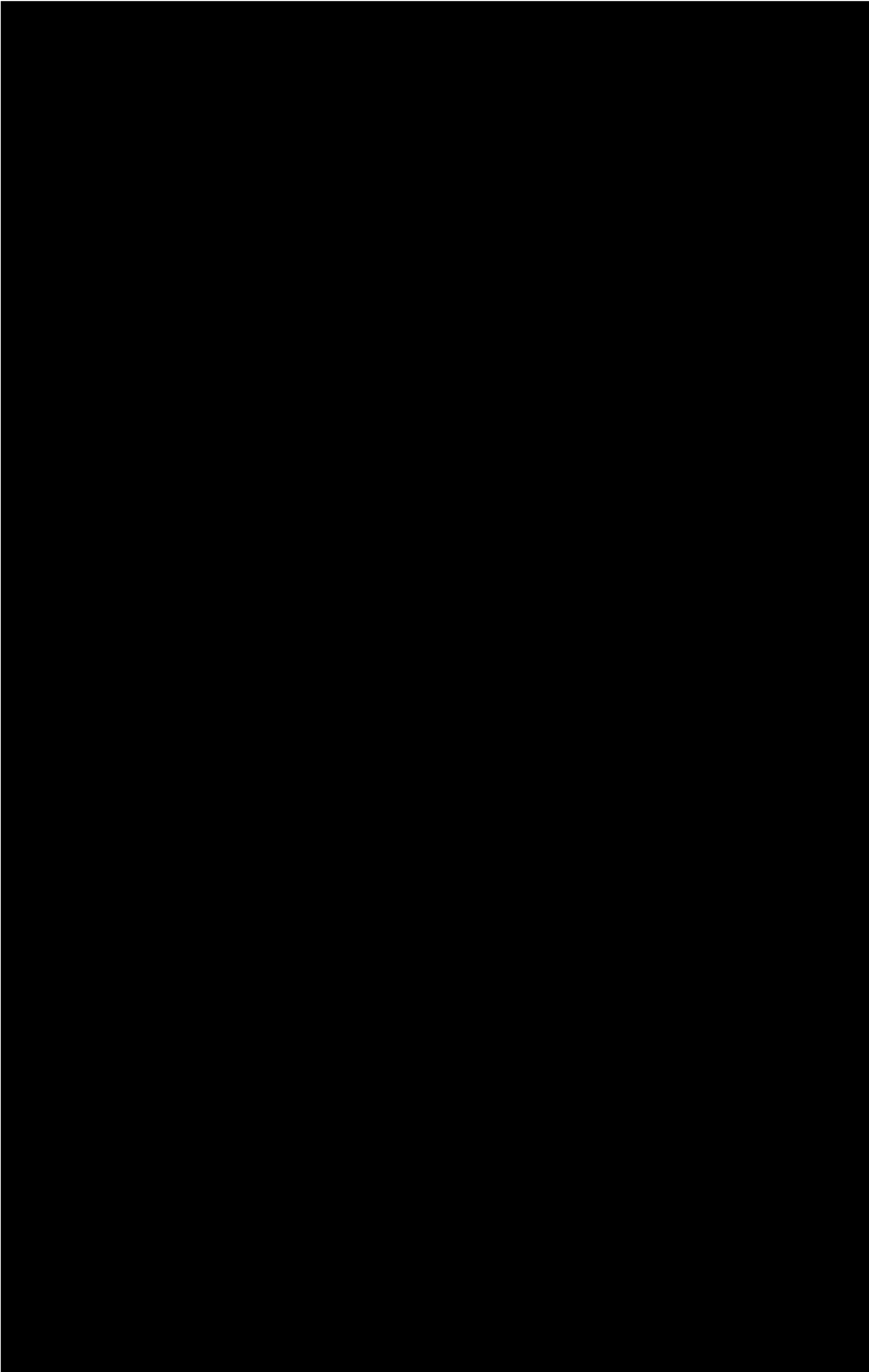
My invention further comprises certain details of mechanism, the particular subject-matter claimed being hereinafter specifically designated.

In the accompanying drawings, Figure 1 is a theoretical diagram designed to exhibit clearly to the eye the general organization of electric circuits employed in connection with my regulator and the mode of its operation. Fig. 2 is a front elevation of my system of jointed levers or lazy-tongs for carrying the positive carbon. Fig. 3 is a front elevation of a convenient form of my improved regulator in actual employment by me, exhibiting the details of construction. Fig. 4 is a plan view of the clutch or clamping device.

Corresponding parts appearing in different figures have similar letters of reference attached.

Referring to Fig. 1, the negative or lower carbon, C^2 , is suspended loosely from the axle of the wheel W , but insulated therefrom by the hard-rubber bushing B . A pinion, P , carried rigidly by the same axle, gears with the rack R , connected to the frame-work of the lamp, and projecting downward therefrom.

Around the wheel W is coiled a flexible metal band, D , passing from the wheel W over the pulleys Y^1 and Y^2 , and sustaining the positive or upper carbon, C^1 . The latter is weighted at C^3 , and under the influence of gravity tends to descend, thereby causing the wheel to ascend carrying with it the lower carbon. The normal tendency, therefore, of the electrodes is to approximate. This tendency is, however, subject to the control of the clutch mechanism K , carried by the lever A , one end of which co-operates with the flexible band D , while from the other is suspended the core O' of the axial electro-magnet M' , the coils of which are represented in theory—that is to say, for each



shunt-circuit spanning the arc for impelling said switch or bridge.

4. The combination, substantially as here-
inbefore set forth, of the supporting mechanism
5 of the electrode of an arc-lamp, a regulating
electro-magnet, its armature-lever provided
with a shoulder, a clutch mechanism combin-
ing a tongue or clamp pivoted to said lever, a
spring maintaining said tongue in a position
10 to bind or press said supporting mechanism

against said shoulder, and a contact-stop for
arresting the upward movement of said tongue.

In testimony whereof I have hereunto sub-
scribed my name this 5th day of June, A. D.
1882.

ROBERT J. SHEEHY.

Witnesses:

MILLER C. EARL,
ROBERT N. EARL.