

(No Model.)

2 Sheets—Sheet 1.

W. E. DOW.  
DROP FOR ELECTRIC LAMPS.

No. 451,996.

Patented May 12, 1891.

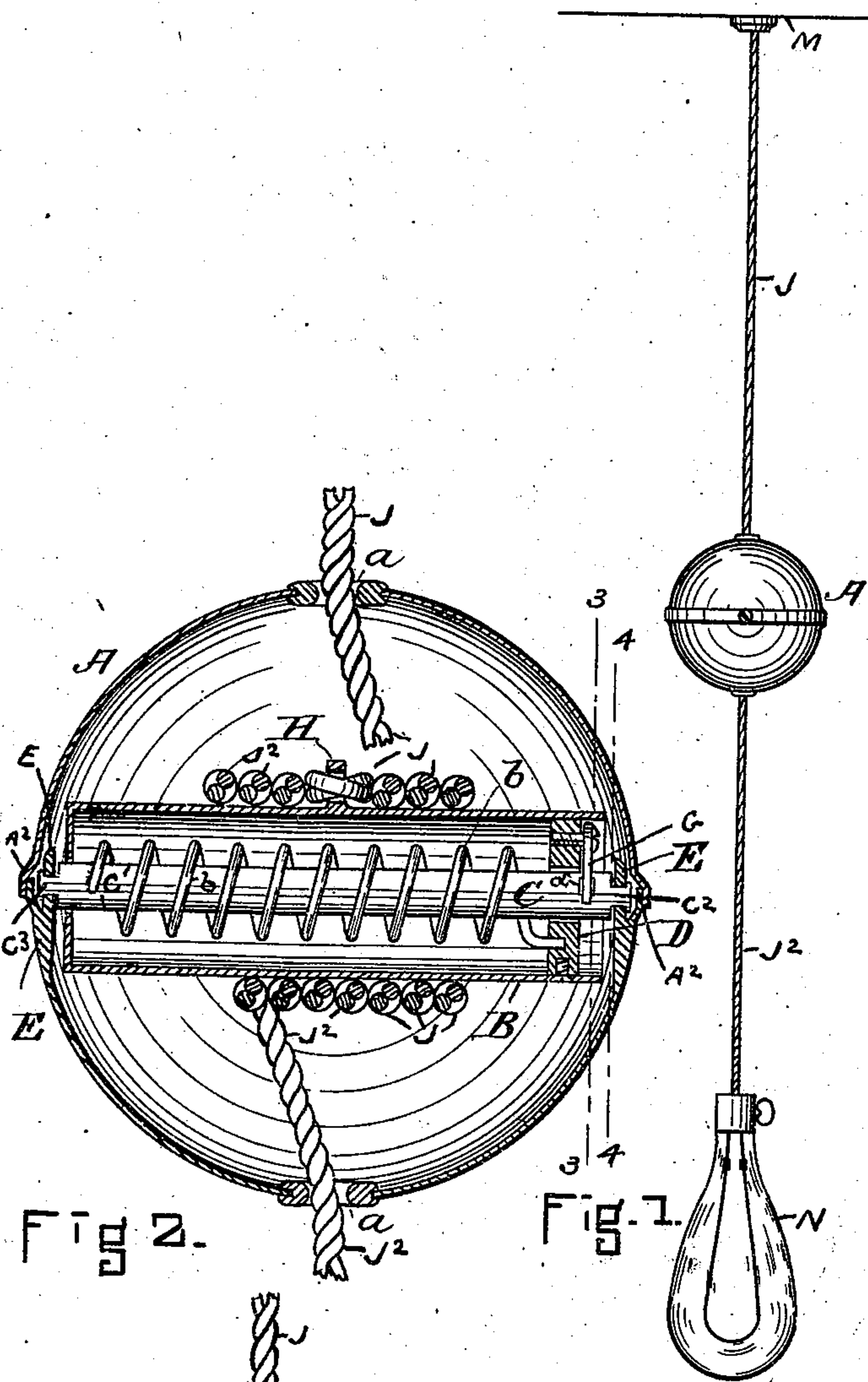


Fig. 2.

Fig. 1.

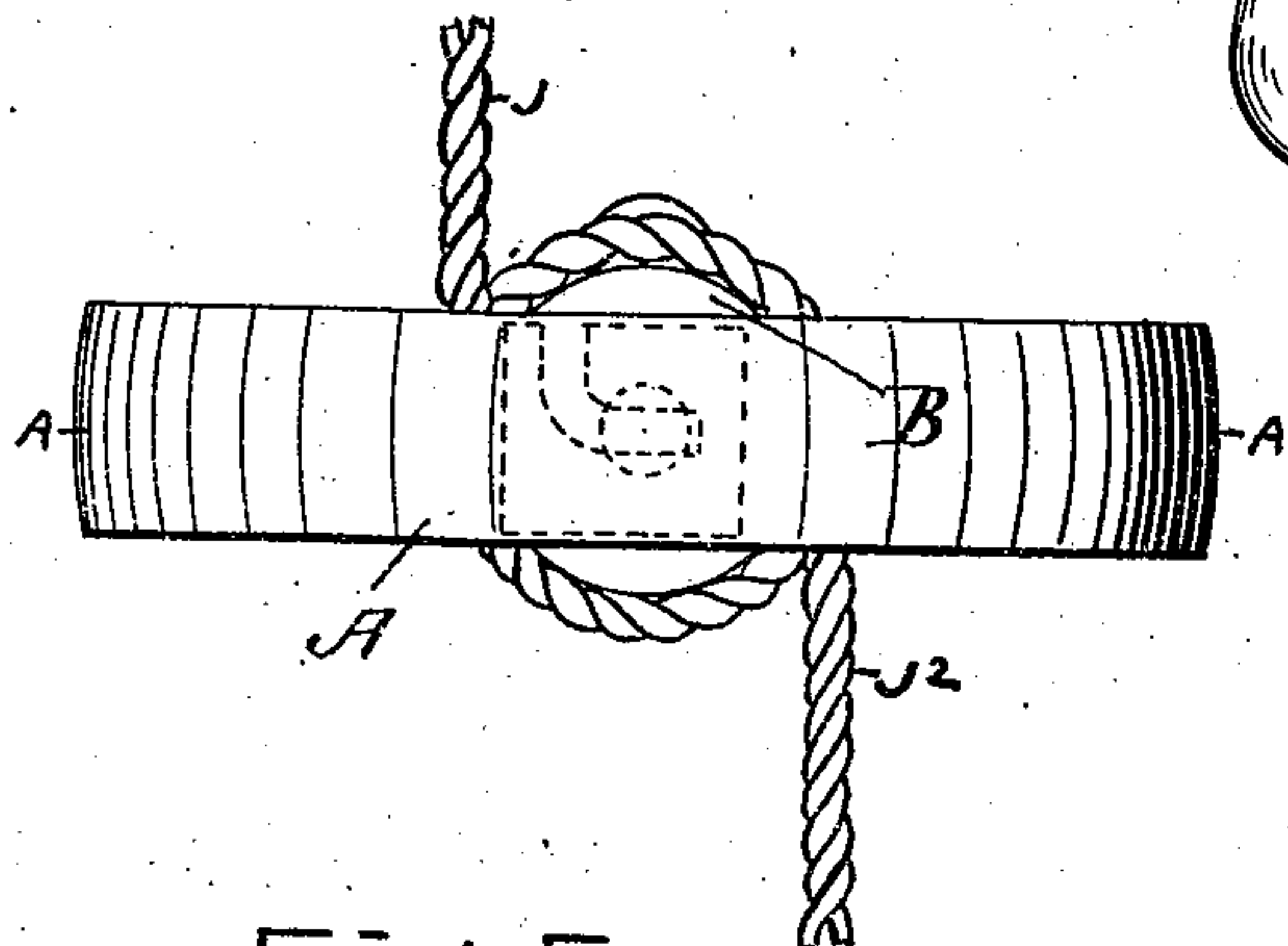


Fig. 5.

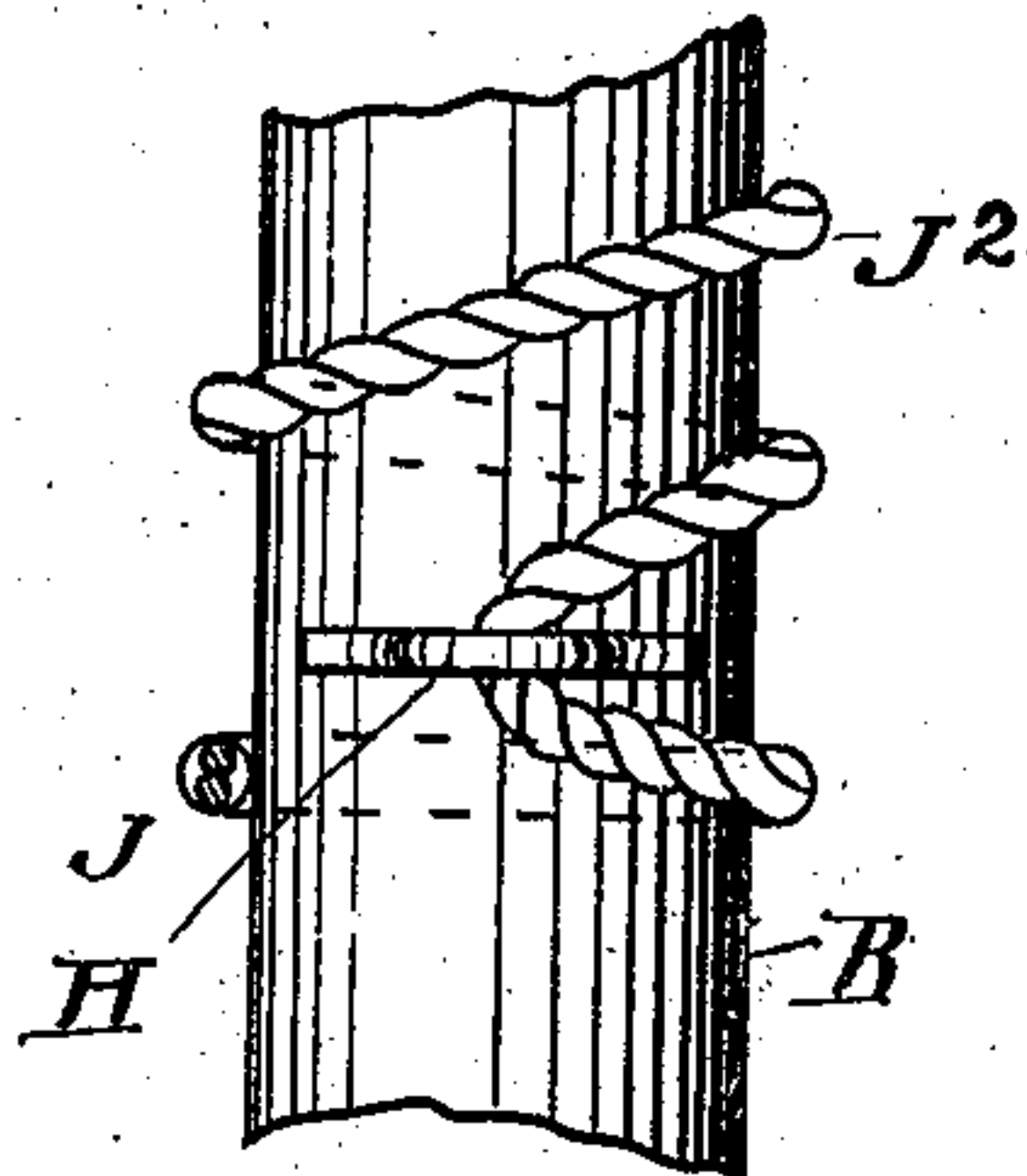


Fig. 6.

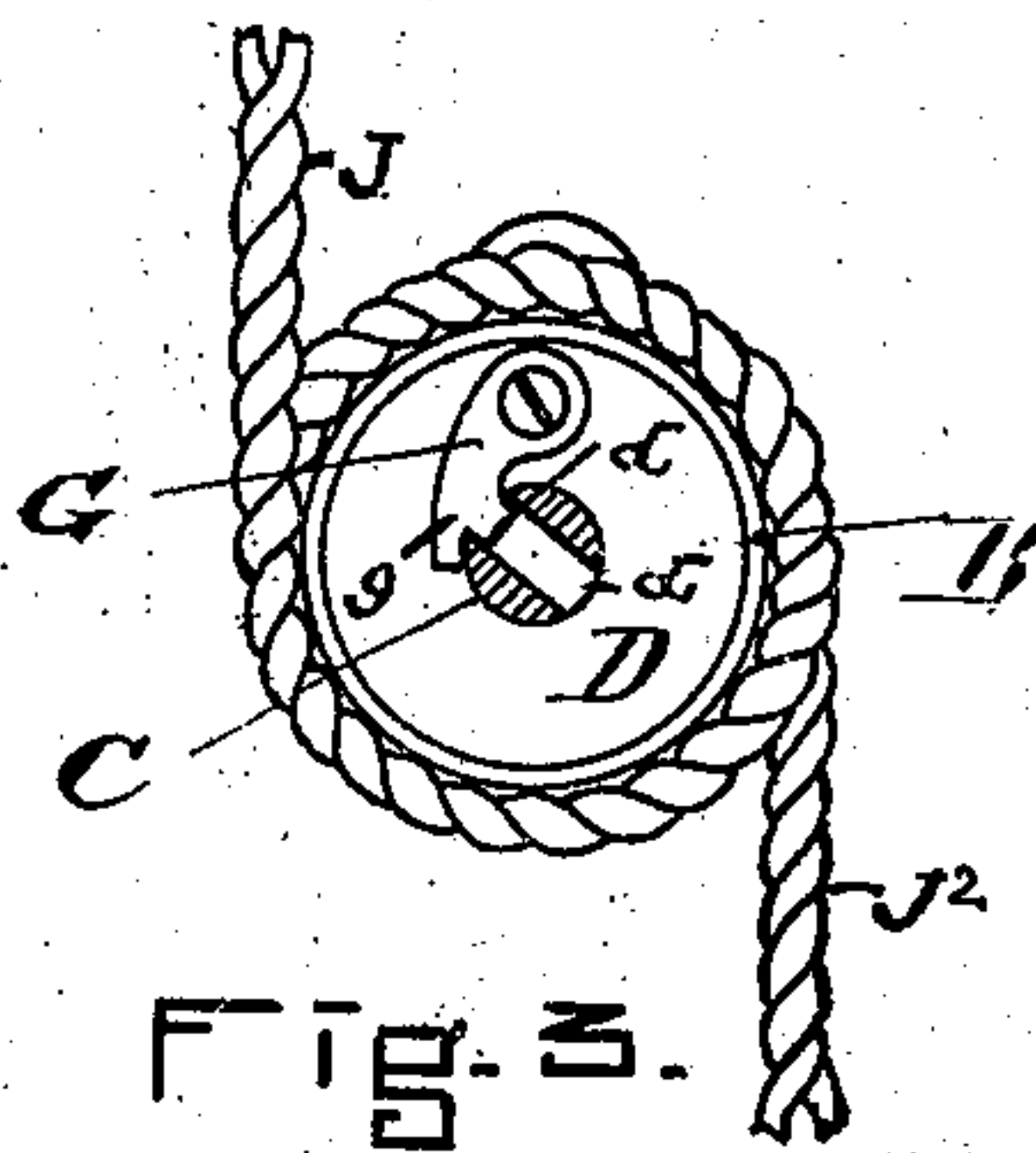


Fig. 3.

Fig. 4.

INVENTOR.

WITNESSES.

*George S. Fairbanks*  
*Frank G. White*

*Willard E. Dow*

(No Model.)

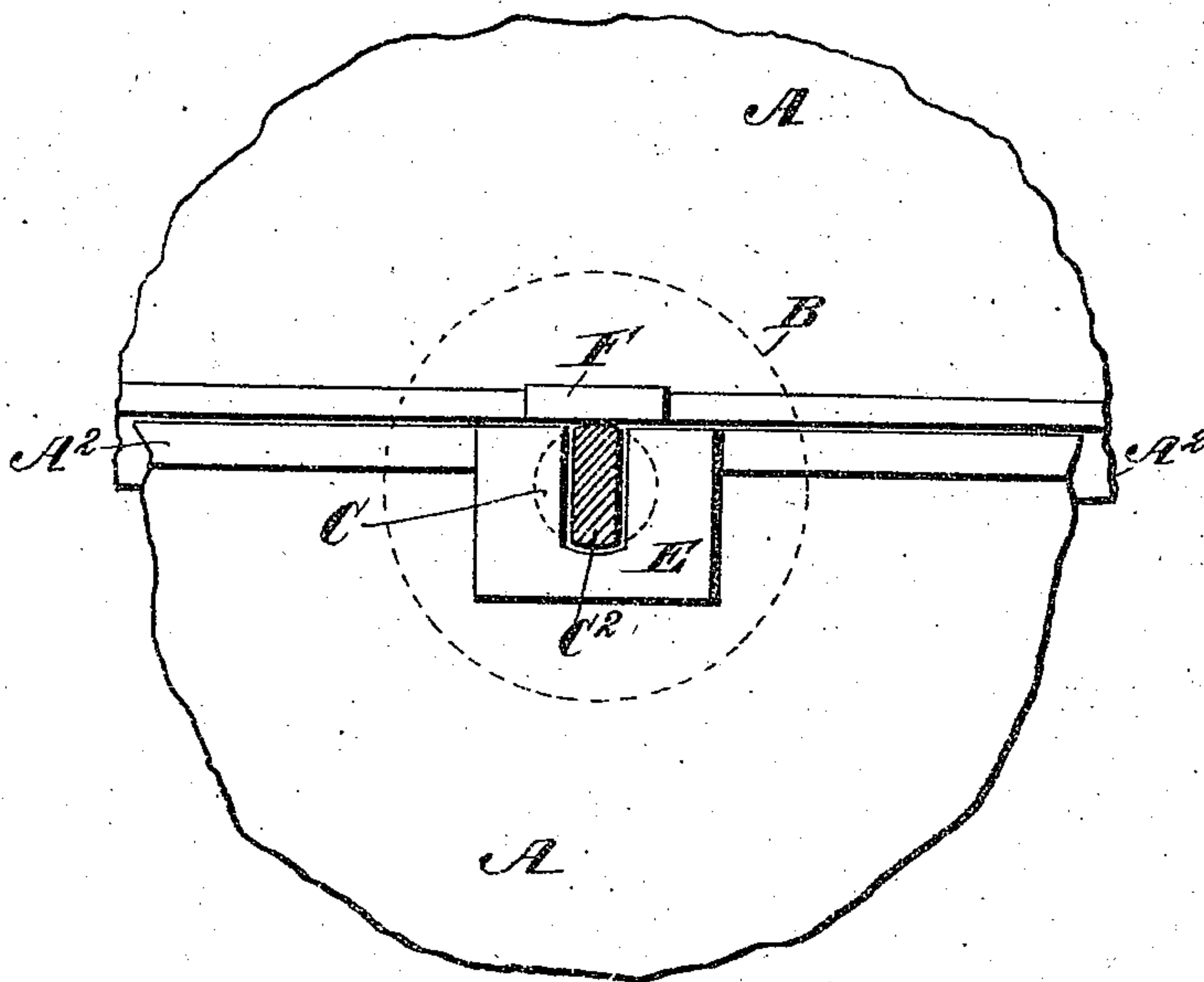
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*Fig. 4.*



*Witnesses.*

*Whatcott*

*A. H. Norris*

*Inventor*

*Willard E. Dow*

*By*

*Brown Bros*

*Attys*



# UNITED STATES PATENT OFFICE.

WILLARD E. DOW, OF BRAINTREE, MASSACHUSETTS.

## DROP FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 451,996, dated May 12, 1891.

Application filed March 22, 1890. Serial No. 344,988. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD E. DOW, a citizen of the United States, and a resident of the town of Braintree, in the county of Norfolk, State of Massachusetts, have invented certain new and useful Improvements in Drops for Electric Lights, &c., of which the following is a full, clear, and exact description.

10 This invention relates to a drop, more particularly designed to be used for incandescent electric-light lamps; but, as will be obvious from the description given, it is applicable to many other useful purposes.

15 This improved drop is composed of a hollow roller closed at its opposite ends, an axial spindle that extends loosely through and projects from the opposite ends of the roller, a ratchet on one end of the spindle, supports, 20 one for each projected end of the spindle, and both supports and projected spindle ends relatively constructed for engagement with and disengagement from each other and in engagement to hold the spindle against turning 25 while the roller is free to turn on the spindle, a spiral spring within and surrounding the axial spindle of the roller and at its opposite ends attached to the spindle and the roller, respectively, and a gravity or other suitable 30 pawl pivoted and in position on one end of the roller to be engaged with and by centrifugal force resulting from the rotation of the roller held out of engagement with said ratchet of the spindle in combination with a 35 cord or cords, or such like, suitably held on the roller intermediately of its length and otherwise so as to present two end portions to be wound on, the one toward one end and the other toward the other end of the roller, 40 and wound to present end portions, one extending from one side and the other extending from the other side of the roller, but in opposite directions, and otherwise all for operation together substantially as hereinafter 45 described.

The invention further consists in the combination, with the above, of a carrier or holder for and suitable to join both of said opposite end supports of the roller-spindle. This 50 holder preferably is adapted to inclose the said roller and all its said attachments, and it is so made that each of its opposite sides

has a guide-eye for the passage of the end portions of the cord wound on the roller substantially as hereinafter described. 55

Further than the above this invention consists in other features, all as will hereinafter fully appear.

In the drawings forming part of this specification the drop of this invention is illustrated, 60 and Figure 1 is a side view of the drop and of an incandescent electric light depending from it. Fig. 2 is a central vertical and longitudinal section of the roller and its end supports and guide-eyes at opposite sides of the 65 roller and the two cord-sections and showing in section a spherical shell incasing the roller and having the roller-supports and guide-eyes attached to it. Figs. 3 and 4 are vertical sections on lines 3 3 and 4 4, respectively, 70 of Fig. 2. Fig. 5 is a plan view of a casing or shell different from that of Figs. 1 and 2 and hereinafter explained. Fig. 6 is a detail in plan to illustrate a manner of attaching the cord to the roller. 75

In the drawings, B is the roller. The roller is hollow and closed at both ends, and the block D, closing one end, is attached by screws or otherwise so as to be inserted and removed at pleasure. 80

C is an axial spindle of the roller B, extending loosely through and projected from the opposite closed ends of the roller. Each projected end C<sup>2</sup> C<sup>3</sup> of the spindle is flattened on its opposite sides, and it is set into and engaged with slotted supports or ear-pieces E, E, 85 located at opposite sides of and rigidly held on a spherical shell or case A, incasing the roller.

b is a spiral spring within the roller B and surrounding the spindle C. This spring b at one end is attached to the spindle C, and at the other end to the head-block D of the roller. 90

The shell A is in two halves or sections, adapted, as at A<sup>2</sup>, to overlap each other, and 95 when placed upon each other their overlapping portions A<sup>2</sup> are fastened together by screws (not shown) or otherwise detachably.

The end supports E E for the roller B, as 100 shown, are both held on one and the same shell-section, and the other shell-section has fixed on its opposite sides lugs F in position with the sections placed together to lie across



the open ends of the spindle-supports E E and so insure the retention of the spindle against accidental escape from its end supports.

5 The spindle C at one end has a ratchet *d d*, shown, Fig. 3, as notches on opposite sides of the spindle. G is a gravity-pawl at one end pivoted on the end D of the roller and at its toe end *g* in position to engage the ratchet  
10 *d d* and engaged therewith to hold the roller against turning and disengaged to allow the roller to be turned.

11 is a loop or eye midway of the length and fixed on and projected from one side of the  
15 roller B, and it is at right angles to the axis of the roller.

J J<sup>2</sup> is a cord which midway or thereabout of its length lies in the roller-loop H, and otherwise wound on the roller is disposed so  
20 as to extend upward and downward from and at opposite sides of the roller and thereby in substance the cord is divided into two working sections, one J passing upward and the other J<sup>2</sup> passing downward from the roller,  
25 and for each section there is a guide-eye *a*, both of which are held on the shell A, one at its upper and the other at its lower side.

A mode of bringing a continuous cord held on the roller into two working sections, as explained, is shown in Fig. 6; and it consists in  
30 bending or doubling the cord about one end of the loop H and winding it as so doubled one or more times around the roller and then leading one section upward and the other  
35 downward from and at opposite sides of the roller.

A roller B and axial spindle C for said roller, which is loose thereon, and the guide-eyes *a* of the shell are severally constructed and arranged together, and in combination with a  
40 cord J J<sup>2</sup>, that is held on the roller intermediate of its length, present upper and lower working sections, all substantially as has been described, constitute the drop of this invention, and the drop is used practically by attaching the upper or working section of the  
45 cord to any suitable support—for example, the ceiling M of a room—and then by manipulating the lower section J<sup>2</sup> of the cord—as, for instance, in substance the same as curtains are manipulated—using the well-known  
50 Hartshorn curtain-fixture, the drop is raised or lowered in position, and by engagement of pawl of roller B with ratchet of fixed spindle  
55 C it is held against accidental movement from whatever position placed. In the rise of the drop both working sections of the cord J J<sup>2</sup> wind upon, and in the lowering of the drop both sections of the cord unwind from,  
60 the roller B, and in both cases the roller turns and its axial spindle is stationary.

The drop described and as shown has an incandescent electric light N suspended from the lower working section J<sup>2</sup> of the cord J J<sup>2</sup>,  
65 and when the drop is so used obviously the cord should then be suitably adapted, and, as

well known, to act as an insulated conductor of the electric current to the light.

The shell or case A, as is obvious, serves the purposes of a carrier or holder for the end supports E E of the roller-spindle, for the upper and lower guide-eyes *a a* of the cord J J<sup>2</sup>, and of a guard or protector of the roller, the end supports for its stationary  
70 spindle and the portions of the cord wound on the roller. 75

Fig. 5 illustrates a modified form of the casing for the roller, &c.; and it consists of an annular frame having the roller, its axial spindle and the supports therefor severally  
80 contained within and held thereon, the same as described for the shell of the other figures. 85

In the drop of this invention as the roller B rotates on an axial spindle C fixed at its opposite ends against rotation, steadiness of  
85 rotation of the roller and of the upward and downward movement of the drop are insured, and again the construction of the drop is not only thereby made most simple but most convenient and ready. This combination of  
90 roller and axial spindle is a distinctive feature in the combination of parts making up the drop of this invention. 95

The shell in two parts detachably connected, and, as has been explained, together  
95 relatively carrying the supports E for the axial spindle C of the roller, and means, such as lugs F, to hold the spindle against accidental escape from its supports, as a whole is quite important, as on the detachment of the parts  
100 of the shell the roller and spindle are thereby freed for removal, or without their removal suitably exposed for adjustment of the cord and of the other parts should the cord and they  
105 from any cause have become disarranged, entangled, or otherwise placed out of operative condition. Again, the loop H, projected from the roller for the cord J J<sup>2</sup> is important not  
110 only as a holder for the cord, but also as a guide for the winding and separation of the cord into its two lengths, all as has been explained. 115

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

1. A drop for electric lights and other purposes, consisting of a pair of supports, a non-rotating spindle having a ratchet and provided with projecting ends engaged with and held against axial turning movement by the  
120 pair of supports, a hollow roller solely supported by and adapted to freely turn upon the non-rotary spindle and having a block or head provided with a pawl arranged to engage and disengage the ratchet on the spindle, a spiral spring inclosed within the roller  
125 and having one end attached thereto and its opposite end connected to the spindle, and a cord wound on the roller in the same direction and extending at opposite sides of said  
130 roller in opposite directions, substantially as described.



2. A drop for electric lights and other purposes, consisting of a pair of supports, a non-rotating spindle having a ratchet and provided with projecting ends engaged with and held against axial turning movement by the pair of supports, a hollow roller solely supported by and adapted to freely turn upon the non-rotary spindle and having a block or head provided with a pawl arranged to engage and disengage the ratchet on the spindle, an eye fixed to and projecting laterally from the periphery of the roller, and a cord doubled through said projecting eye to constitute two branches which are both wound upon the roller in the same direction, and at opposite sides thereof extended in opposite directions, substantially as described.

3. A drop for electric lights, &c., composed of a hollow roller B, an axial spindle C, on which said roller is free to turn and having projecting ends  $C^2$   $C^3$ , a ratchet  $d$  at one end  $C^2$  of spindle C, supports E for said spindle

ends  $C^2$   $C^3$ , and it and they relatively adapted to be engaged and disengaged and engaged to secure the spindle against turning, a shell or casing in two parts, one holding said supports and roller and spindle and adapted to close said supports against the escape therefrom of the axial spindle C, a spiral spring  $b$ , incased in the roller B and at its opposite ends attached thereto and to the spindle C, and a pawl to engage ratchet  $d$ , in combination with a cord or cords held and wound on the roller and presenting end portions at opposite sides and in opposite directions of the roller, substantially as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLARD E. DOW.

Witnesses:

LORENZO S. FAIRBANKS,  
FRANK G. WHITE.