C. DEAVS.

DROP-LIGHT GASALIER.

No. 173,773. Patented Feb. 22, 1876.

Fig. 1.

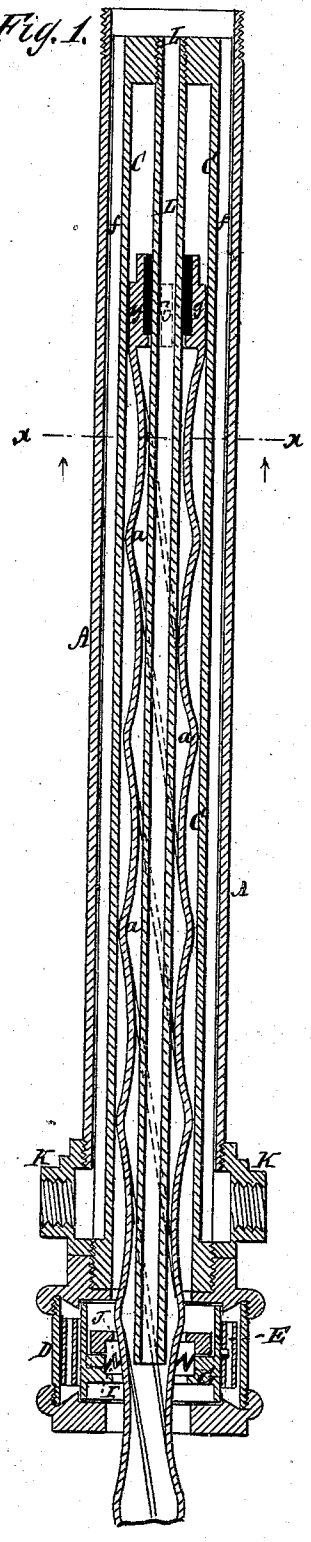


Fig. 2.

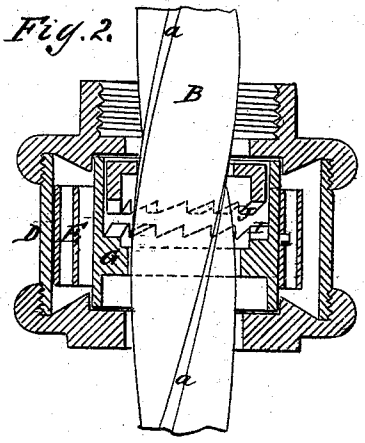


Fig. 3.

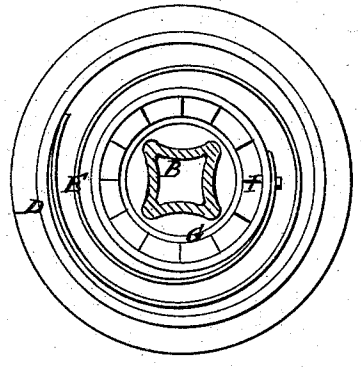


Fig. 4.

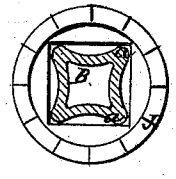
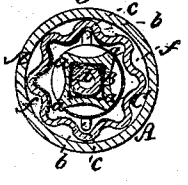


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES DEAVS, OF NEW YORK, N. Y.

IMPROVEMENT IN DROP-LIGHT GASALIERS.

Specification forming part of Letters Patent No. **173,773**, dated February 22, 1876; application filed September 23, 1875.

To all whom it may concern:

Be it known that I, CHARLES DEAVS, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Extension or Drop-Light Gasaliers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms a part of this specification:

The object of my present invention is to produce an improved mechanism for sustaining the weight in a gasalier of the sliding or drop tube, regardless of its position. My invention consists in the combination, with a drop-tube, having a spiral rib or its equivalent on its exterior surface, of a friction-producing spring and a clutch, the latter being made in two parts, and so arranged that when the drop-tube is at rest the two parts of the clutch will be engaged, and when said drop-tube is to be drawn down only sufficient force need be employed to overcome the frictional power of the spring, but when said tube is being slid upward it will meet with no resistance whatever, and hence require only sufficient power to lift it with its attached lights.

In the accompanying drawing, Figure 1 is a longitudinal central section of a center-slide gasalier, showing the position of the parts of my sustaining mechanism when the drop-tube is at rest or when being drawn down. Fig. 2 is a similar section (on a larger scale) through my sustaining mechanism, showing the position of the parts when the drop-tube (a portion of which is shown in side elevation) is being slid upward. Fig. 3 is a plan view (on same scale as Fig. 2) of the frictional spring-box, the cover of which, as well as the loose part of the clutch, having been removed to expose the spring and lower part of the clutch, and also showing a cross-section of the drop-tube. Fig. 4 is an inverted plan view, on same scale as Figs. 2 and 3, of the loose part of the clutch, showing a cross-section of the drop-tube within its square aperture; and Fig. 5 is a transverse section of a main stem, taken on the plane of the line *x x*, Fig. 1, and (when looking in the direction of the arrows) showing the wings on the drop-tube which slide in longitudinal grooves, and prevent said drop-tube from turning or twisting.

I have shown my present improvement as applied to that style of gas-fixture which is technically termed a "center-slide gasalier."

A is the outer or main tube, and C a tube within it, of lesser diameter, and so arranged as to provide independent gasways *f*, for supplying gas through a distributer, K, to stationary branch lights. B is the drop or extension tube arranged to slide upon a stationary pendent supply-tube, L, a gas-tight joint, *g*, being provided at the upper end of the drop-tube. The above combination of parts is not new. The drop-tube B is provided at its upper end, on opposite sides, with wings *b*, (see Fig. 5,) which project into grooves *c*, which run lengthwise of the tube C. These wings and grooves serve to steady the drop-tube B, and to prevent its being twisted or turned round, it being necessary for said drop-tube to travel in a vertical line without the capability of torsional movement. The said drop tube is also provided on its exterior surface with four spiral ribs, *a*, which fit into the four corners of the square aperture in the upper part of the clutch, as shown in Fig. 4, for revolving it, as will be presently explained.

The above-described construction of the drop-tube, with its ribs and wings, as well as equivalent constructions thereof, will be found fully described and shown, in combination with a counterbalancing winding and unwinding spring, in United States Letters Patent granted to me May 12, 1874, No. 150,837.

D designates a box, which, in the example shown, is secured to the lower side of the main distributer K. Within this box there is arranged a friction-producing spring, E, which, in the example shown, is a convolute spring, its inner end being fastened to a hollow hub, G, the latter being so arranged in bearings upon the box D that it may be revolved, as will be understood by reference to Fig. 2. The outer end of said spring is caused to bear against the inside of the said box D with sufficient force to produce the frictional power necessary to sustain the weight of the drop-tube and its lights.

I will here remark that I do not confine my-

self to a convolute spring, for it is evident that a dog or lever provided with a spiral or flat or other suitable spring for causing it to bear against the inside of the box with the requisite force may be employed, and such mechanism I should consider an equivalent for the convolute spring.

I J designate a clutch made in two parts, the part I being secured to the hub G, and provided with teeth which point upward, and the part J being arranged loosely above the part I, and provided with teeth which point downward. The drop-tube B passes through both parts of the said clutch, but it engages with only one part—the loose upper part J—as will be clearly understood by reference to Figs. 3 and 4, where the drop-tube is shown in cross-section in the apertures through the upper and lower parts of the clutch. It will thus be seen that an upward movement of the drop-tube will cause the part J of the clutch to revolve uselessly, it being lifted by the motion of the drop-tube away from the part I of the said clutch, as shown in Fig. 2. It will also be seen that the weight of the drop-tube causes the upper part J of the clutch to engage with the lower part I, as shown in Fig. 1, and thus cause the drop-tube to remain stationary. Now, to draw down the drop-tube, only sufficient force need be exerted to overcome the friction of the spring E. This being down, the whole clutch I J and the spring E will revolve so long as the drop-tube is drawn downward. Then, when the drop-tube is again pushed up the lower part I of the clutch and the spring remain at rest, (the part J of the clutch being disengaged, as before stated,) and the friction-producing mechanism is ready to continue its revolutions when the drop-tube is again pulled down, there being no backward rotation of the lower part I of the clutch.

I will here remark that the clutches, instead of being provided with teeth, may have engaging-pins, or be otherwise so constructed as to insure a quick engagement and disengagement of the two parts.

The above-described sustaining mechanism is equally as applicable to simple drop or extension gasaliers as to gasaliers having stationary lights, like the example shown in the drawing.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the drop or extension tube B in a gasalier, of a clutch, I J, and a friction-producing spring, substantially as herein specified.

2. The combination, with the tubes C L and drop-tube B, of the box D, spring E, hub G, and two-part clutch I J, substantially as herein specified.

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Witnesses:
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