(No Model.)

H. W. HAYDEN & C. S. DIKEMAN.

SUSPENSION DEVICE FOR INCANDESCENT LAMPS.

No. 422,591. Patented Mar. 4, 1890.

Fig. 1.

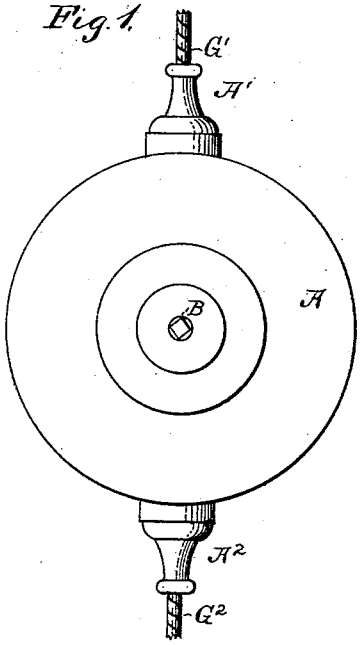


Fig. 2.

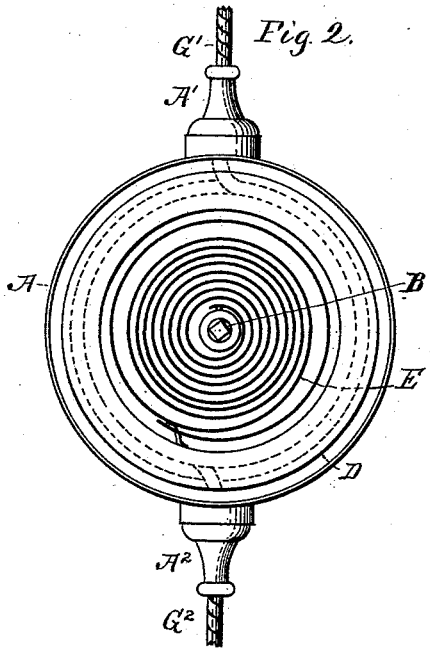


Fig. 4.

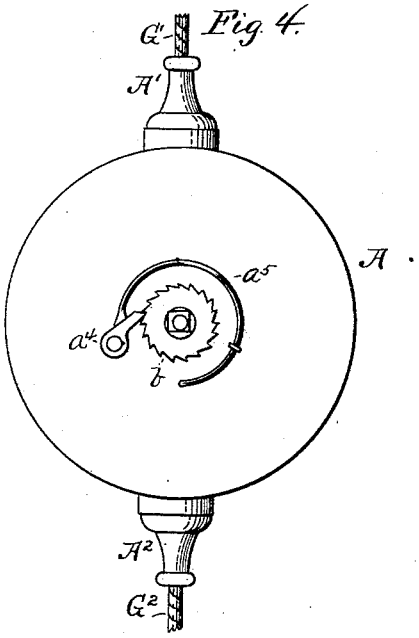
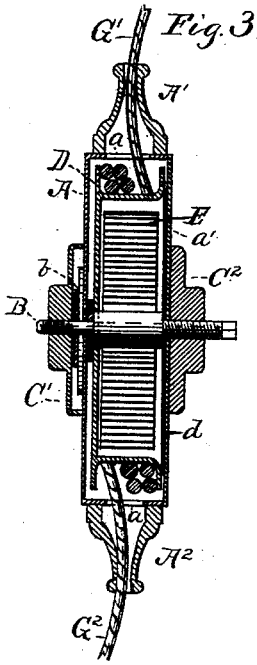


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SUSPENSION DEVICE FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 422,591, dated March 4, 1890.

Application filed April 26, 1889. Serial No. 308,731. (No model.)

To all whom it may concern:

Be it known that we, HIRAM W. HAYDEN and CHARLES S. DIKEMAN, both of Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Spring Suspension Devices for Incandescent Electric Lamps and Similar Articles, of which the following is a specification.

Our improvement consists in a shell or case, a shaft supported in said shell or case and fixed thereto so as to be incapable of rotating, a pulley turning on said shaft, a spring secured at one end to the shaft and at the other end to the pulley, a tension device adjustable from the outer side of the shell, and a wire or cord secured to the pulley and extended out of the case at diametrically-opposite portions. One end of the wire or cord may be attached to the ceiling or any analogous support and the other to the lamp. The lamp may then be pulled down at any time, because whenever a sufficient tension is imposed upon this wire it will cause a rotation of the pulley within the shell, resulting in paying out the upper wire as well as the lower.

We will describe a spring suspension device embodying our improvement, and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a side view of a spring suspension device embodying our improvement. Fig. 2 is a similar view with the side covers belonging to one side removed. Fig. 3 is a central vertical section taken in a plane at right angles to the other figures. Fig. 4 is a view of the reverse side from that shown in Fig. 1. In this view the cap-piece forming part of the spring suspension device is removed.

Similar letters of reference designate corresponding parts in all the figures.

A designates a shell. It may be made of sheet metal. It is shown as of cylindric form. At two diametrically-opposite points it has openings a, and extending from these are tunnel-like guides or tubes A′ A^2.

B designates a shaft. This is supported in the shell A and in the outer cover a' thereof. It is not intended to rotate during the operation of the suspension device. It protrudes through the side of the shell A, and outside of the latter has affixed to it a ratchet-wheel b. A pawl a^4 is pivoted to the exterior of the side of the shell and held in engagement with the ratchet-wheel b by means of a spring a^5. The end of the shaft beyond the ratchet-wheel is screw-threaded. A hollow cap-piece C′ extends over the ratchet, pawl, and spring and is held in place by having its outer portion internally screw-threaded to engage with the screw-thread of the shaft. The other end of the shaft B extends through and has a bearing in the outer cover a'. It protrudes beyond the cover a' and at the extremity is screw-threaded. A cap-piece C^2, having a central screw-threaded hole, engages with the shaft and secures the cover a' in place.

D designates a pulley loosely mounted upon the shaft B. This pulley is made in the form of a hollow drum. Within it is arranged a convolute spring E. At one end this spring is secured to the shaft and at the other to the pulley. It therefore tends to rotate the pulley in one direction. A plate d or inner cover closes the open side of this pulley D and keeps the coils of the spring in place. It is retained in position by the cover a'.

G′ G^2 designate wires or cords fastened to the periphery of the pulley between flanges with which it is provided and extending out of the guides or tubes A′ A^2. These two "wires" or "cords," as we have termed them, may of course be parts of a single cord or wire, and will generally so be when the suspension device is used for an incandescent electric lamp. One of the wires or cords is to be fastened to the ceiling or other support and the other is to have the lamp or other device attached to it.

Whenever it is desirable to lower the suspended device, it has simply to be pulled down. This will result in causing both wires or cords to be paid out.

A considerable extension may be produced with a very simple suspension device. The end of the shaft B which passes through the cover a' is shown as made square, so that it may be engaged by a key. If rotated in the proper direction, it may be made to force the spring to greater tension, because it will shift the position of the ratchet-wheel relatively to the pawl.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a suspension device, the combination of a shell provided at two diametrically-opposite points with guides or tubes, a shaft secured to the shell and having outward extensions for a tension device and a winding device, a pulley mounted loosely upon the shaft, a spring attached at one end to the shaft and at the other to the pulley, and a continuous wire or cord attached to the pulley and extending through the said guides or tubes of the shell in opposite directions, substantially as specified.

2. In a suspension device, the combination of a shell, a shaft supported in the shell, a pawl and ratchet for engaging the shaft with the shell, one end of said shaft extending through the shell to engage a key, a pulley loosely mounted upon the shaft, a spring attached at one end to the shaft and at the other to the pulley, and a continuous wire or cord attached to the pulley and extending in opposite directions from the shell, substantially as specified.

3. In a suspension device, the combination of a shell, a rotary pulley, a spring for rotating said pulley, a tension device adjustable from the outer side of the shell, and a continuous wire or cord at one end leading into said shell, attached between the ends to said pulley, wound upon said pulley, and at the other end leading out of the shell, the said cord or wire serving as a support or conductor, substantially as specified.

4. In a suspension device, the combination of a shell having opposite openings and a cover, a shaft having one end extended through the shell and the opposite end extended through the cover, a ratchet on one of said extended ends, a pawl, a hollow cap-piece engaging a threaded end of the shaft and extended over the ratchet and pawl, a pulley loosely mounted on the shaft, a spring engaging with said pulley and shaft, and cords or wires extending from the pulley through the openings in the shell, substantially as specified.

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