(No Model.) 2 Sheets—Sheet 1.

E. H. BROWN.

SUSPENSION DEVICE FOR LAMPS, &c.

No. 323,293. Patented July 28, 1885.

Fig. 2.

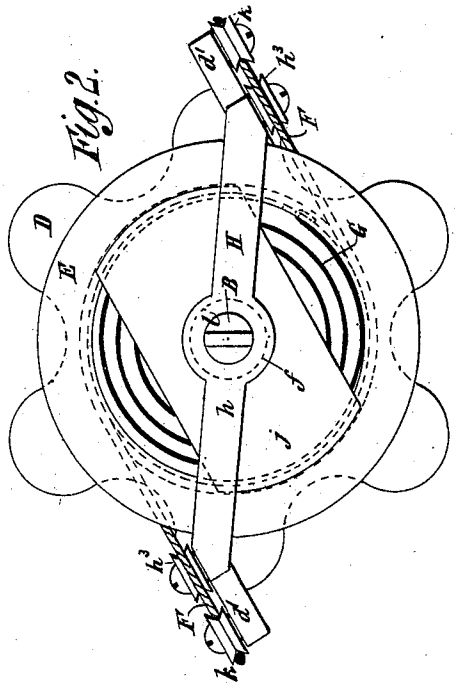


Fig. 1.

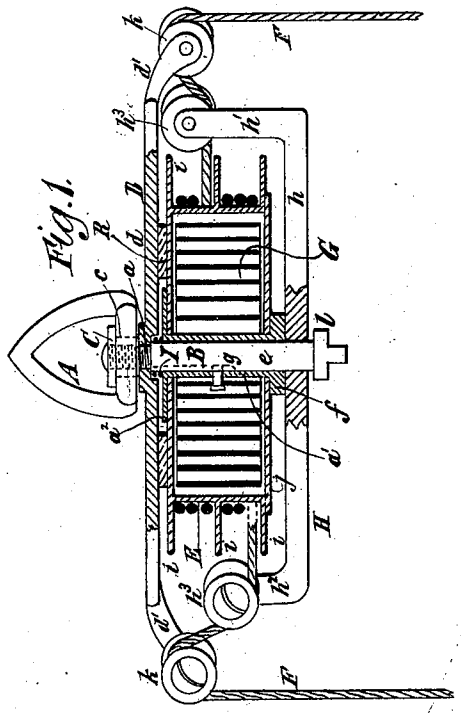


Fig. 4.

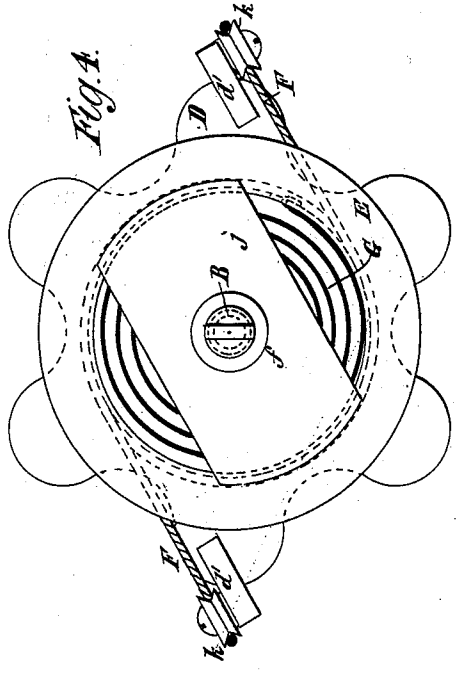
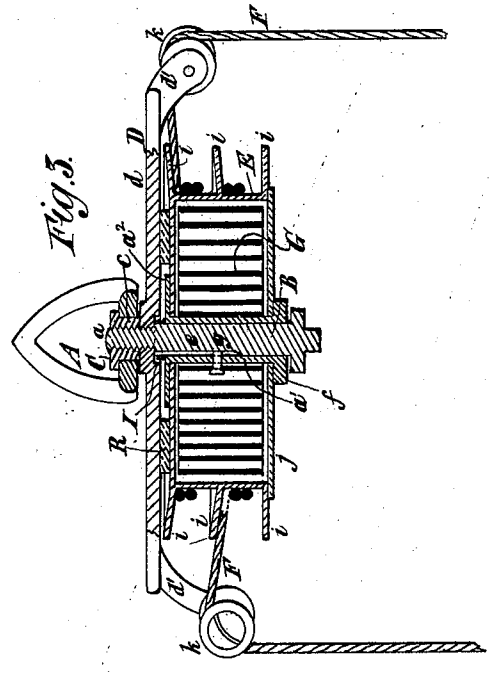


Fig. 3.



Witnesses
Wm. G. Lipsey
Edward T. Roche

Inventor
Edward H. Brown,
by his attorneys,
Gifford & Brown.

N. PETERS, Photo-Lithographer, Washington, D. C.

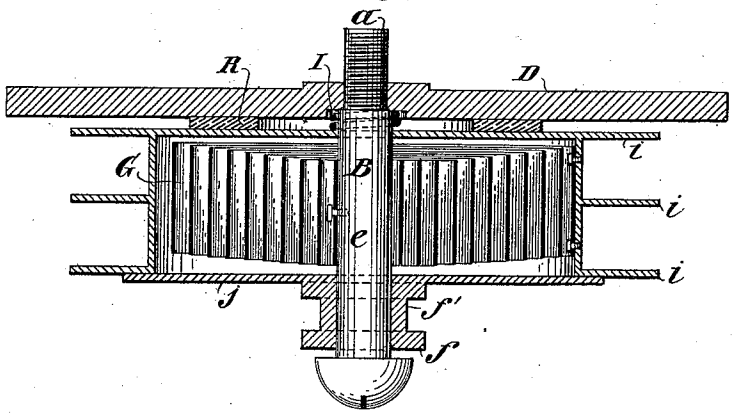
(No Model.) 2 Sheets—Sheet 2.

E. H. BROWN.

SUSPENSION DEVICE FOR LAMPS, &c.

No. 323,293. Patented July 28, 1885.

Fig. 5.



Witnesses
Wm. G. Lipsey
James K. Bowen.

Inventor
Edwin H. Brown,
by his attorneys,
Gifford & Brown.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EDWIN H. BROWN, OF BROOKLYN, NEW YORK.

SUSPENSION DEVICE FOR LAMPS, &c.

SPECIFICATION forming part of Letters Patent No. 323,293, dated July 28, 1885.

Application filed December 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWIN H. BROWN, of Brooklyn, in Kings county and State of New York, have invented a certain new and useful Improvement in Suspending Devices for Lamps and other Articles, of which the following is a specification.

I will describe a suspending device embodying my improvement, and then point out the improvement in claims.

In the accompanying drawings, Figure 1 is a vertical section of a suspending device embodying my improvement. Fig. 2 is an inverted plan view of the same. Fig. 3 is a vertical section of a suspending device embodying my improvement, and showing a modification thereof. Fig. 4 is an inverted plan view of the same, and Fig. 5 is a sectional view showing a modification of certain parts.

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

A designates a loop, which may be hung on a hook or other appendage of a ceiling or other object. This loop is connected to an arbor, B. As shown, the arbor B has at the upper end a neck, *a*, or portion of smaller diameter than the portion below it, and the loop A has a hole or eye, which receives the neck *a* within it. The neck is externally screw-threaded, and has a nut, C, applied to it. The nut C, as shown, has a cylindric body, *c*, which extends into the hole or eye of the loop A, and a flange which extends above the lower portion of the loop A. After the nut has been applied to the neck *a* of the arbor the end of the neck will preferably be upset, to preclude the nut from coming off. Thus the loop and arbor are secured together with a swivel-joint. The arbor can be turned around relatively to the loop without becoming detached from it. Immediately below the neck *a* of the arbor B the arbor has a cylindric body, *e*. Said body is provided with a longitudinal groove, *g*. I have shown the body *e* as extending through a sleeve or tube, *a'*. At the upper end said sleeve is provided with a laterally-extending flange or collar, a^2, rigidly secured thereto. At its lower end the sleeve is provided with a head or flange, *f*.

D designates a frame shown as having a portion, *d*, extending approximately parallel to the upper part of a drum, E, and downwardly-extending portions or arms *d'*. Near its center the portion *d* is provided with a hole adapted to receive the screw-threaded neck *a* of the arbor B. By this means the arbor B may be rigidly secured to the frame D, and the frame is supported upon the cylindric portion *e* of the arbor B.

E designates a cylindric drum having flanges *i*, between which are wound upon it cords or chains F, whereby a lamp or other article may be suspended. This drum, as shown, is closed at the top, with the exception of a central hole, enabling it to fit upon the sleeve *a'*. It is provided at the bottom with a cross-piece, *j*, through a central aperture in which also extends the sleeve *a'*. Said cross-piece is rigidly secured to the drum. Instead of one of such cross-pieces, I may use two or more. The head or flange *f* is below the cross-piece *j*, and in this example of my improvement is unconnected therewith. The drum E is adapted to rotate about the sleeve *a'*, and is capable of a vertical movement upon the arbor B. The drum is rotated by the unwinding of the cords or chains F from it. A counter-balance is intended to be combined with the drum for the purpose of resisting the unwinding of the cords or chains, and thereby sustaining the article attached to the cords or chains. I have shown in this example of my improvement a counter-balance, G, consisting of a convolute spring. This spring is coiled around the sleeve *a'*. One end is secured to the sleeve *a'* by a rivet or otherwise. The rivet preferably extends through the side of the sleeve *a'*, thereby forming a projection within the sleeve, entering the groove *g* of the body of the arbor. The other end of the spring is fastened to the interior of the drum by rivets or otherwise. When the drum is rotated in one direction, the spring will be coiled up more closely. When relieved of the force which coiled it and kept it coiled up, it uncoils and rotates the drum in the reverse direction.

Referring to Figs. 1 and 2, H designates a yoke consisting of an approximately straight portion, *h*, and upwardly-extending arm-like portions *h' h²*. The approximately straight portion *h* is arranged below the drum, and is

provided near its center with an aperture, by means of which it is enabled to fit upon the lower portion of the arbor B. A head or flange, *l*, on the arbor B serves to retain the yoke upon said arbor. The arm-like portions $h' h^2$ of the device H extend upwardly upon opposite sides of the drum E. The arm h' is preferably longer than the arm h^2. Upon the upwardly-extending ends of the arms $h' h^2$ are guides for the cords or chains F. These guides, as here shown, consist of pulleys h^3, under each of which passes one of the said cords or chains. Inasmuch as these guides are moved bodily upward by the cords or chains, they constitute what are known as "movable pulleys." Other guides for the cords or chains F are provided near the ends of the downwardly-extending arms *d'* of the frame D. As shown, said guides consist also of pulleys *k*. Each of the cords or chains is passed over one of these latter pulleys. From these pulleys the cords or chains F pass to the article to be suspended. It will be seen that the weight of the lamp or other article upon the cords or chains F will cause the yoke to be moved upwardly, and with it the drum, toward the portion *d* of the frame D. When the weight upon the cords or chains F is relieved, the drum will then be relieved from the action of the brake, and the drum may then rotate freely to rewind the cords or chains.

As shown, the portion *d* of the frame D has upon the under side a circular piece or ring of india-rubber, leather, or like material, R, secured thereto in any suitable manner. This ring forms a brake, which will act upon the top of the drum when the drum is moved up sufficiently far.

I designates a spring, shown as helical, arranged about the arbor B within a recess upon the under side of the portion *d* of the frame D, and bearing upon the upper surface of the drum. This spring, when the drum is not otherwise actuated, will keep the drum so depressed that it will not be subjected to the action of the brake. The drum may, however, be forced upwardly against the resistance of the spring, so that it will be acted upon by the brake. A similar result to that produced by the spring I would ensue through the action of the counterbalancing convolute spring by reason of the tendency of the coils to assume a position in one and the same plane transverse to the axis of the drum. To enable it to do this the inner end of the spring will have to be attached to the arbor B lower down than the position the outer coils will occupy when the drum is raised.

In the modification of my improvement shown in Figs. 3 and 4 the yoke H is omitted, and the pulleys *k* are preferably arranged in different planes—one to accommodate the cord or chain F extending from the upper portion of the drum E, and the other the cord or chain F extending from the lower portion of said drum. Said cords or chains pass from the drum and over the pulleys at an upward incline, whereby it will be observed that the cords or chains bear against the flanges upon the drum which are about them. Said flanges are preferably inclined upwardly. It is clear that the weight of a lamp or other article upon the cords or chains F will operate to force the drum upward, whereby it may be acted upon by the brake. Obviously, the sleeve *a'* may be omitted in both examples of my improvement, in which case the counterbalance-spring G would have its inner end secured to the arbor in any suitable manner. Such an arrangement of parts is shown in Fig. 5.

All the various parts of this suspending device may be made of metal, except, possibly, the piece R. In some cases it will be desirable to use but one cord or chain. Then, in the examples of my improvement shown, but one guide *h* need be used, and in the example of my improvement illustrated in Figs. 1 and 2 it will be necessary for the yoke H to be provided with but a single guide. If the number of cords or chains is increased, the guides and yokes would be correspondingly augmented.

On the 12th day of December, 1884, I filed an application for Letters Patent, numbered 150,151, wherein was shown and described a suspending device having an arbor, a rotary drum, cords or chains wound upon the drum, and passing thence over guides and downwardly to suspend any desired article, a convolute spring being employed within the drum to counterbalance the weight of the suspended article, and a friction-brake being combined with these elements in such manner as to be rendered effective by the weight of the suspended article. Thus, generally described, the suspending device which formed the subject of my application No. 150,151 bore a resemblance to the suspending device which is the subject of my present application.

In the suspending device which is the subject of my application No. 150,151 the guides for the cords or chains are arranged upon levers, whereby the drum is slid upward along its arbor into contact with a brake above it when the cords or chains are subjected to the weight of an article attached to them.

I do not in my present application lay any claim to the particular combination of parts just hereinabove described as distinctive of my application No. 150,151.

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

1. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon said drum and adapted to support the lamp or other article, a frame affixed to the arbor, a brake above the drum, and guides arranged upon the frame for receiving the cords or chains, and arranged at such elevation relatively to the drum that the weight of the lamp or other article connected to the cords or chains will operate to move

the drum upwardly toward the frame and render the brake effective, substantially as specified, whereby when the weight of the lamp or other article is removed from the cords or chains the brake will be released.

2. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon the drum and adapted to support the lamp or other article, a frame affixed to the arbor, a brake above the drum, guides arranged upon the frame for receiving the cords or chains, and arranged at such elevation relatively to the drum that the weight of the lamp or other article connected to the cords or chains will operate to cause the drum to move upwardly and the brake to be rendered effective, and a spring for moving the drum away from the brake when the weight is relieved upon the cords or chains, substantially as specified.

3. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon said drum and adapted to support the lamp or other article, a frame affixed to the arbor, a brake above the drum, guides arranged upon the frame and receiving the cords or chains, a yoke arranged below the drum and adapted to rise and fall, and guides or pulleys mounted on the yoke and receiving the cords or chains before they pass to the said guides upon the frame, the said guides upon the frame being arranged at such elevation that the weight of the lamp or other article will operate to cause the yoke to move the drum upward and render the said brake effective, substantially as specified.

4. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon said drum and adapted to support said lamp or other article, a frame affixed to the arbor, a brake above the drum, guides arranged upon the frame for receiving the cords or chains, a yoke arranged upon the arbor beneath the drum and vertically movable upon the arbor, and other guides arranged upon said yoke for receiving the cords or chains, the guides upon the frame being elevated above the guides upon the yoke, substantially as specified, whereby when the weight of the lamp or other article is brought to bear upon the cords or chains it will operate to cause the drum to move upwardly and the brake to be rendered effective, and when said weight is removed from the cords or chains the brake will be released.

EDWIN H. BROWN.

Witnesses:
T. J. KEANE,
E. T. ROCHE.