(No Model.)

T. A WEBER.

SUSPENSION DEVICE FOR LAMPS.

No. 323,090. Patented July 28, 1885.

Fig. 1.

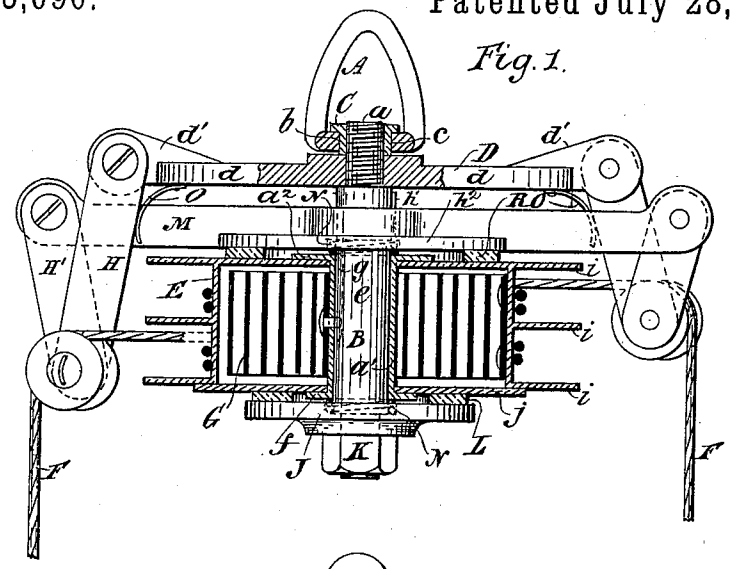


Fig. 2.

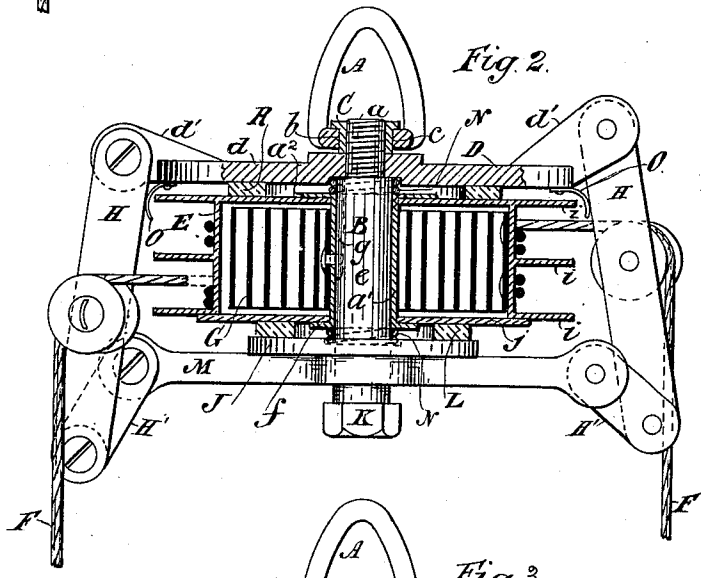
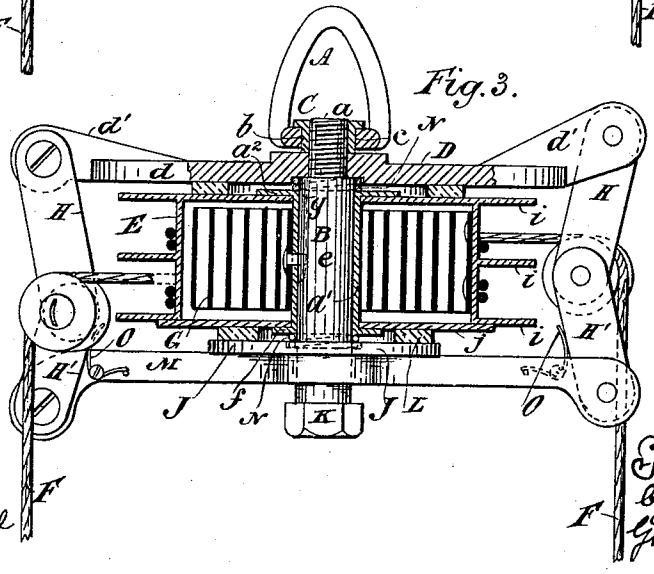


Fig. 3.



Witnesses
Wm. G. Lipsey
E. J. Loche

Inventor
T. A. Weber,
By his attys,
Gifford & Brown.

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

UNITED STATES PATENT OFFICE.

THEODORE A. WEBER, OF NEW YORK, N.Y., ASSIGNOR TO THE ANSONIA BRASS AND COPPER COMPANY, OF ANSONIA, CONNECTICUT, AND WOLCOTT A. HULL, OF NEW YORK, N. Y.

SUSPENSION DEVICE FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 323,090, dated July 28, 1885.

Application filed December 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, THEODORE A. WEBER, of New York, in the 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 a vertical section of a modification thereof, and Fig. 3 is a vertical section of another modification thereof.

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, *b*, 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 *b* 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 nut *a* of the arbor B the arbor has a cylindric body, *e*. Said body is provided with a longitudinal groove, *g*.

In the example of my improvement shown in Fig. 1 I have shown the body *e* as extending through an aperture in a bar, M, hereinafter to be more fully described, and in all the examples of my improvement I have shown said body *e* 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 laterally-extending flange or collar, *f*.

D designates a frame, shown as having a portion, *d*, extending approximately parallel to the upper part of the drum and arm-like portions *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.

H designates links fulcrumed near one end to the arms d' of the frame D. Said links are capable of having a swinging motion imparted to them toward and from the drum. Near the opposite ends of said links they are pivotally connected to one of the ends of links H', the opposite ends of which are also pivotally connected to the bar M, near the outwardly-extending ends of said bar. The action of the links H and H' is such as to cause them to operate as toggles.

The toggles shown in the example of my improvement illustrated in each of the figures have upon them guides, over which the cords or chains F pass to the lamp or other article to be suspended. As shown, these guides consist of pulleys.

The bar M, as shown in the example of my improvement illustrated in Fig. 1, extends laterally or in the direction of the diameter of the drum E, above the same and between it and the frame D. Said bar fits loosely upon the arbor B, and is capable of a vertical movement thereon. In order to prevent the bar from being turned about on the arbor B, I have provided the inner surface of the aperture through which the arbor passes with a groove adapted to receive a rib or projection, h', on the arbor B. Secured to the under side of said bar, or arranged beneath it, is a plate, h^2, here shown as circular. I prefer to make the plate integral with the bar; but where arranged beneath the bar it should be feathered with the arbor. As shown, the plate h^2 has upon the under side a circular piece or ring, of india-rubber, leather, or like material, R, which is secured to the plate in any suitable manner. This ring forms a brake, which will act upon the top of the drum when the bar M is moved downwardly toward the drum sufficiently far.

J designates a brake arranged upon the arbor B, below the drum E. I prefer to make the brake of circular shape, and secure it rigidly upon the said arbor. A nut or bead, K, prevents its being moved off from the arbor. As shown, it has, secured by any suitable means, upon its upper surface a ring of india-rubber, leather, or like material, L. This ring forms a brake, which will act upon the bottom of the drum when the drum is moved down sufficiently far.

I have shown a coil-spring, N, arranged about the arbor B, and having one end abutting against the plate h^2, and the other against the drum E, within a circular groove or recess formed therein. I have also shown a similar spring arranged in like manner between the drum and the brake J. The action of these springs is to relieve the drum from the pressure exerted by the brakes when the weight is removed from the cords or chains F. I may arrange other springs, O, between the arm-like portions d' of the frame D and the links H for swinging the levers outwardly when the weight is relieved upon the cords or chains F; but these may be omitted.

In the example of my improvement shown in Fig. 1, when the weight of the lamp or other article is applied to the cords or chains F, the toggles operate to move the bar M downwardly, and with it the brake R and the drum, thus increasing the pressure which the brakes R and J exert upon the drum E.

In the example of my improvement shown in Fig. 2, the brake R is secured upon the under side of the portion d of the frame D. The bar M, with the brake J, is arranged below the drum E. As here shown, the links H are longer than those in the example of my improvement shown in Fig. 1.

In the example of my improvement shown in Fig. 3, the arrangement of the parts is the same as that show in Fig. 2. The two toggles extend in reverse directions from the ends, which are connected together.

In both of these examples of my improvement when the weight of the lamp or other article is applied to the cords or chains F the toggles operate to move the bar M upwardly, and with it the brake J, and the drum thus increasing the pressure which the brakes R and J exert upon the drum E. It will be observed also that the bar M and the brake J have each a movement vertically relatively to the drum E and the frame D.

When the weight of the lamp or other article is removed from the cords or chains F, the drum will be relieved from the action of the brakes, and may then rotate freely to rewind the cords or chains.

Obviously the sleeve a' may be omitted, in which case the counterbalance-spring G would have its inner end secured to the arbor in any suitable manner.

All the various parts of the suspending device may be made of metal, except, possibly, the pieces R and L.

The construction of this drum, the supporting of the drum on an arbor, the means whereby an article is to be suspended from the drum, and the spring in the drum for counterbalancing the weight of the suspended article are substantially like corresponding parts of a device which is the subject of an application for Letters Patent filed by me on the 6th day of December, 1884, and numbered 149,656, and a device which is the subject of an application for Letters Patent filed by me on the 13th day of December, 1884, and numbered 150,218.

One of the distinctive features of my application No. 149,656 consists in a friction-drum made independently of the frame to which the arbor of the drum is connected, and adapted to be slid along the arbor toward the drum when the suspending cords or chains are subjected to the weight of the suspended article, and to slide away from the drum when the said cords or chains are relieved of the weight of the suspended article. Another feature consists in arranging the sliding brake just described below the drum, in adapting the

drum to slide lengthwise of the arbor, and in arranging another brake above the drum and upon the frame to which the arbor of the drum is connected. When the sliding brake is slid upward to the drum it serves to force the drum up against the upper brake, and hence both brakes will then be rendered effective. Another feature consists in employing a wedge or bar having an inclined surface to act with the cords in order to force the sliding brake toward the drum. I do not claim any of these features in the present application.

One of the distinctive features of my application No. 150,218 consists in a friction-brake arranged beneath the drum, another friction-brake arranged above the drum, but independently of the frame to which the arbor of the drum is attached, both said brakes being rendered effective by the weight of the suspended article acting through the agency of the suspending cords or chains and released when the cords or chains are relieved of the weight of the suspended article. Another feature consists in providing for the movement of the upper brake downwardly upon the drum when the weight of the suspended article acts upon the suspending cords or chains, and in allowing a reverse movement when the cords or chains are relieved from the weight of the suspended article. Another feature consists in employing levers provided with guides, over which the suspending cords or chains pass, and furnished with rollers or bowls operating with a cam-like action upon a bar arranged above the drum and the upper brake. Another feature consists in a brake arranged above the drum and adapted to slide along the arbor of the drum independently of the frame to which the arbor is supported.

I do not claim any of these features in the present application.

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 a frame, an arbor, a rotary drum upon the arbor capable of vertical movement thereon, cords or chains wound upon the drum, toggles supported by the frame, guides upon said toggles for receiving the cords or chains and from which the cords or chains pass to the lamp or other article to be suspended, and a brake, substantially as described, whereby when the cords or chains are subjected to the weight of the lamp or other article attached to them the brake will be rendered effective through the toggles, and when the cords or chains are relieved from the weight of the lamp or other article the brake will be released.

2. In a suspending device for a lamp or other article, the combination of a frame, an arbor, a rotary drum upon the arbor capable of vertical movement thereon, cords or chains wound upon the drum, toggles supported by the frame, guides upon said toggles for receiving the cords or chains and from which the cords or chains pass to the lamp or other article to be suspended, a brake above the drum, and another brake below the drum, substantially as described, whereby both said brakes are rendered effective through the toggles by the weight of the lamp or other article attached to the cords or chains, and released when said weight is removed from the cords or chains.

THEODORE A. WEBER.

Witnesses:
T. J. KEANE,
WM. G. LIPSEY.