(No Model.)

C. H. LYMAN.

SUSPENSION DEVICE FOR LAMPS, &c.

No. 324,332. Patented Aug. 11, 1885.

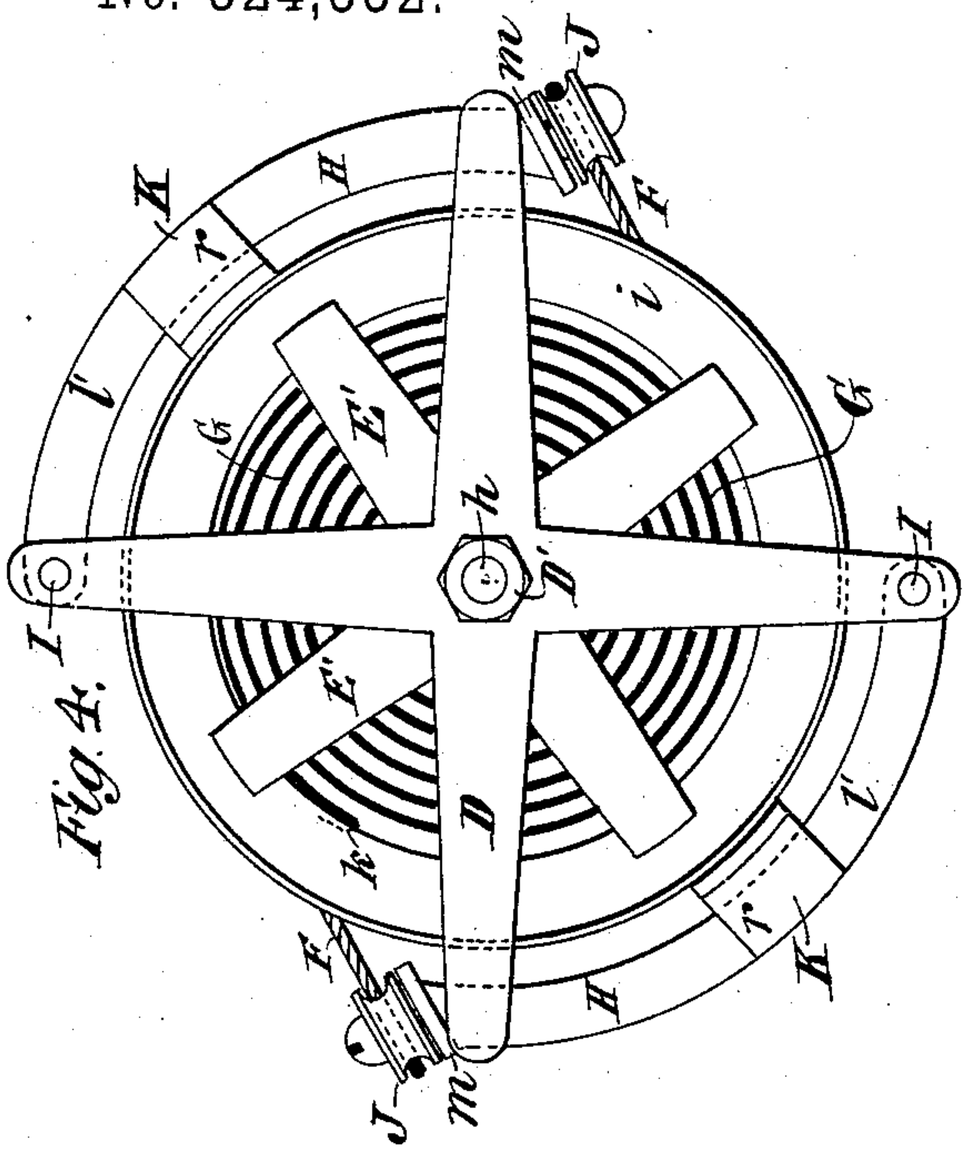

Fig. 4.

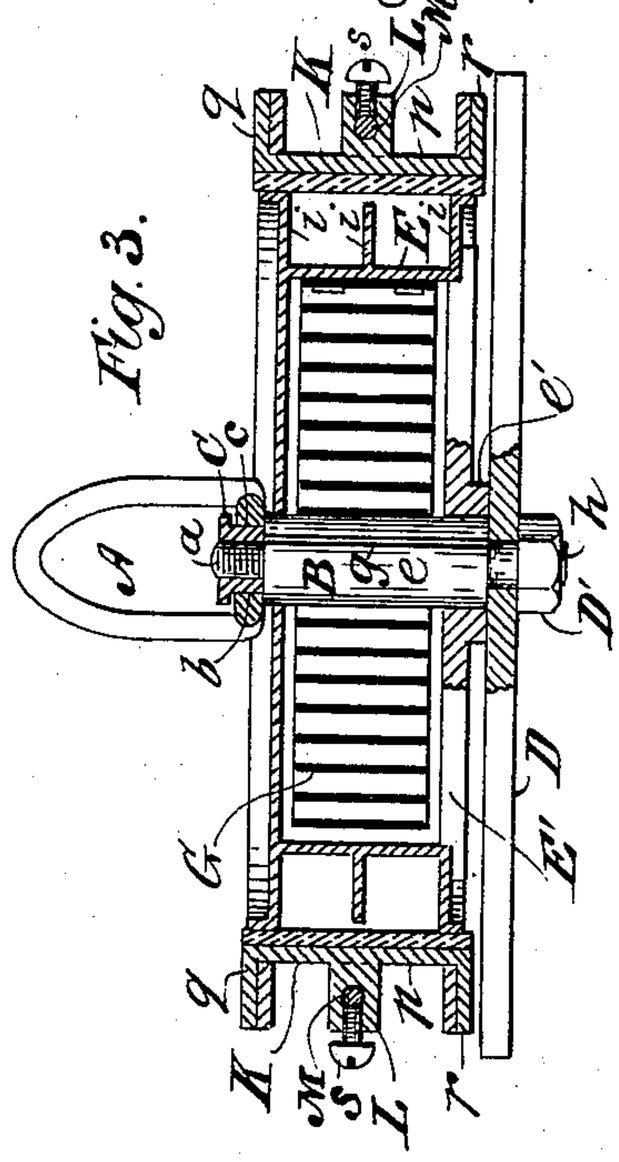

Fig. 3.

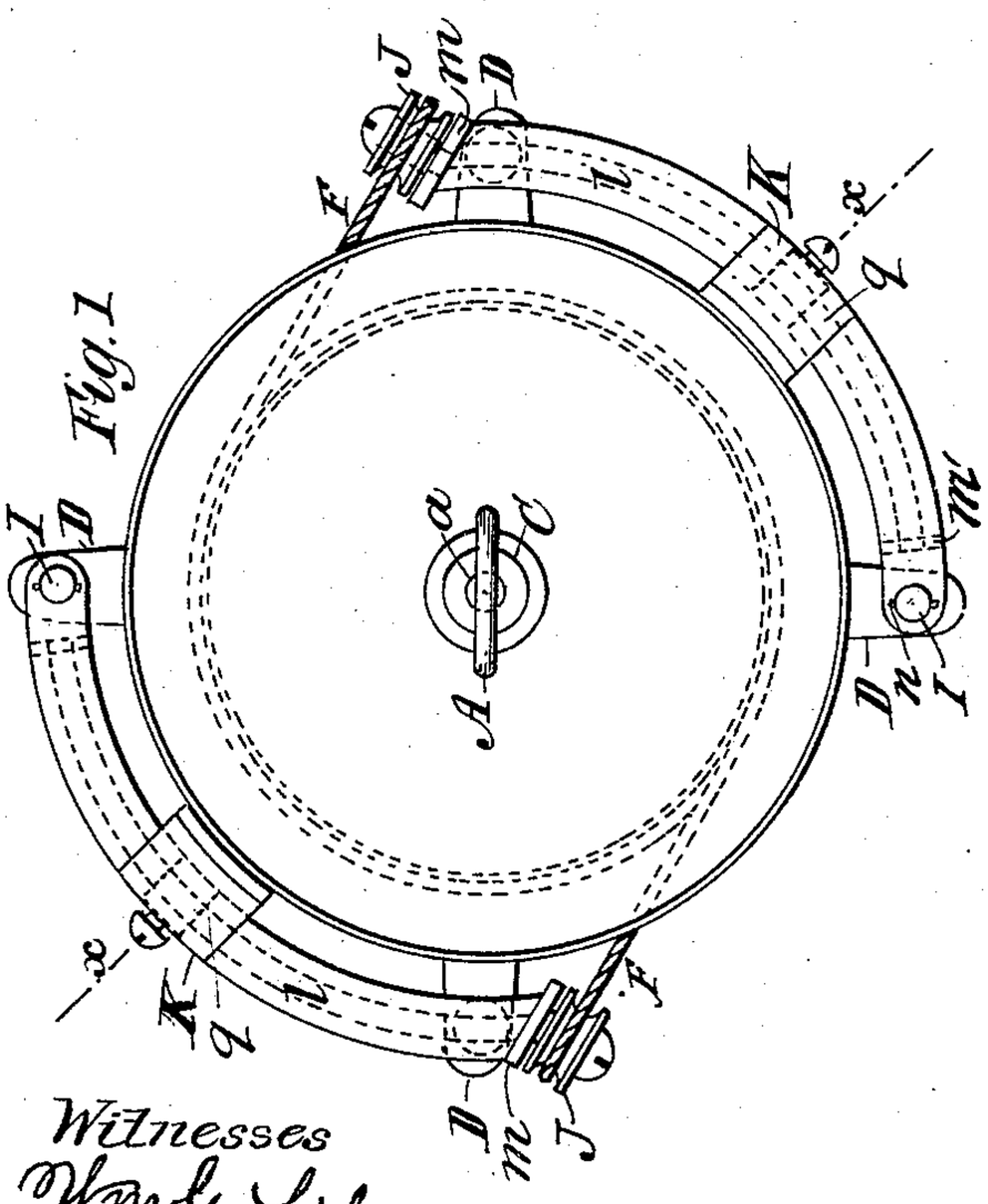

Fig. 1

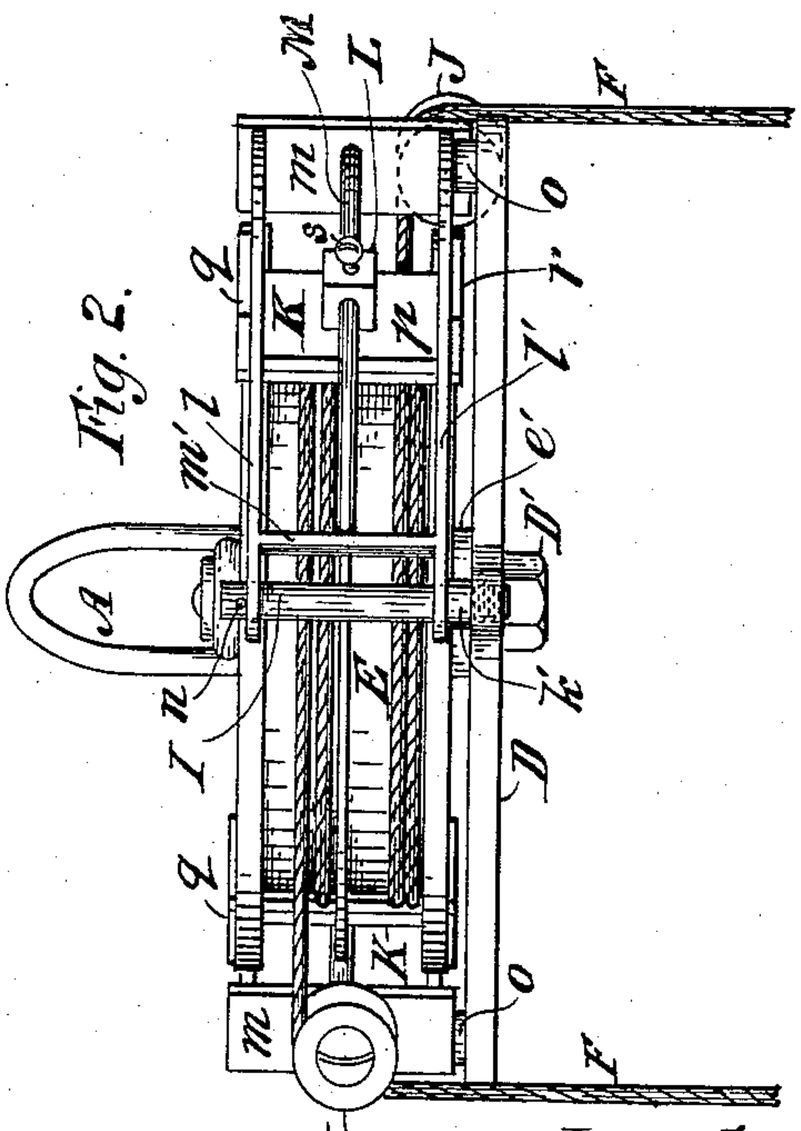

Fig. 2.

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UNITED STATES PATENT OFFICE.

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SUSPENSION DEVICE FOR LAMPS, &c.

SPECIFICATION forming part of Letters Patent No. 324,332, dated August 11, 1885.

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

To all whom it may concern:

Be it known that I, CHARLES H. LYMAN, of Ansonia, in the county of New Haven and State of Connecticut, 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 the claims.

In the accompanying drawings, Figure 1 is a top view of a suspending device embodying my improvement. Fig. 2 is a side view of the same. Fig. 3 is a vertical section thereof taken on the lines *x x*, Fig. 1, and Fig. 4 is an inverted plan view 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, containing the hole or eye *b*. 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*. At the lower end of the body *e* is a screw-threaded portion, *h*, of smaller diameter than the body *e*. All these parts of the arbor may be made integral.

D designates a spider or frame consisting of a number of arms extending from a common central portion, which is provided with a hole so that it can surround the portion *h* of the arbor B. When in place upon the portion *h* of the arbor B, it abuts against the body *e* and is firmly held in such position by means of a nut, D′, upon the end of the portion *h* below the spider or frame D. The spider is thus prevented from either vertical or rotary motion.

E designates a cylindric drum, having flanges *i*, preferably made of sheet metal, between which are wound upon it cords or chains F, whereby a lamp or other article may be suspended. The outer edges of the upper and lower flanges, *i*, are preferably turned outwardly in a direction at approximate right angles to the diameter of the drum, in order to broaden their exterior surfaces. This drum, as shown, is open at the bottom, and has partially extending over it a spider, E′, or device having a number of arms extending from a common central portion, which is provided with a hole, so that it can surround the body *e* of the arbor B. Below the central portion the spider E′ is provided with a collar or ring, *e′*, preferably made integral therewith and surrounding the arbor B, by which means the drum is prevented from resting upon the arms of the spider or frame D. The arms of this spider are rigidly secured at their free ends to the drum E. The drum is, as shown, closed at the top, with the exception of a central hole, enabling it to fit upon the body *e* of the arbor B. The drum may rotate upon the arbor. It must be borne in mind that the arbor B supports the spider or frame D, and consequently supports the drum also. The drum is rotated by the unwinding of the cords or chains F from it. A counterbalance is intended to be combined with the drum for the purpose of resisting the unwinding of the cords or chains, and thereby sustaining the articles attached to the cords or chains. I have shown a counterbalance, G, consisting of a convolute spring. This spring is coiled around the arbor B. One end is bent back to form a hook, which engages with the groove *g* in the body of the arbor. The other end is bent to form a hook, *k*, which engages with the drum. 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 a reverse direction.

H designates levers fulcrumed near one of their ends upon standards I, extending upwardly from the outwardly-extending ends of two of the arms of the spider or frame D outside the drum. Said standards are secured to the arms by screw-threads, or in any other suitable manner. As shown, they are shouldered, as at *k'*. The levers H are frame-like in construction and extend for a distance circumferentially about the drum E in the arc of a circle approximately parallel with that of the periphery of the drum. As shown, these levers consist of top pieces, *l*, bottom pieces, *l'*, and end pieces, *m m'*. The end pieces *m'* are located somewhat inwardly of the adjacent ends of the top and bottom pieces, *l l'*. The ends of the top and bottom pieces, *l l'*, adjacent to the end pieces *m'* are provided with holes through which pass the standards I. Pins *n*, extending through holes near the tops of the standards I, prevent the levers H from being moved off from the standards. The ends of the levers H, just described, are supported upon the shoulders *k'* on the standards I. These levers may swing freely upon the standards I toward and from the drum E. The end pieces *m* of the levers are provided with guides, here shown as consisting of pulleys J mounted on pins or studs. Over these guides pass the cords or chains F to the lamp or other article to be suspended. Near the ends of the levers upon which are arranged the pulleys, said levers preferably rest upon two of the other arms of the spider or frame D outside of the drum. Said arms are here shown as provided with upwardly-extending portions or projections *o* for that purpose.

K designates shoes or bearing-pieces arranged upon the levers H, adapted to bear against the peripheries of the flanges *i* of the drum E when the levers shall have been swung inward sufficiently far. These bearing-pieces constitute brakes. The main or upright portions *p* of these bearing-pieces are arranged to the rearward of the levers H, and their rearmost surfaces are concaved to conform to the curve of the peripheries of the flanges *i*. I may, if desired, arrange pieces or facings of india-rubber, leather, or like material, upon the concaved surfaces of the main portions *p* of the bearing-pieces K. Such facings may be secured to the bearing-pieces by rivets or in any other suitable manner. Rectangular portions *q* extend outwardly from the main portions *p* of the bearing-pieces K, above the top pieces, *l*, of the levers, and similar portions *r* extend beneath the bottom pieces, *l'*. These portions *q r* act as guides for the bearing-pieces K and serve to maintain said bearing-pieces in a vertical position. About midway of their lengths said bearing-pieces are provided with lugs or projections L extending outwardly therefrom or in a direction away from the drum. These projections have in them holes arranged in a direction approximately parallel with the lengths of the top and bottom pieces, *l l'*. Through these holes extend rods M. The holes are of larger diameter than the rods. These rods M are curved longitudinally to conform to the curve of the levers, and their ends are firmly secured one to the end pieces *m* and the other to the end pieces *m'* of the levers. It will be seen that the bearing-pieces K are thus capable of being moved along upon the levers H, for the purpose of arranging them in a position nearer to or farther from the fulcrums of the levers, and so increase or decrease the leverage with which the bearing-pieces act upon the drum, and consequently the pressure which they exert thereon. Set-screws *s* are adapted to secure the bearing-pieces in any desired position upon the levers H.

When the weight of the lamp or other article is applied to the cords or chains F, it will operate to swing the levers H inwardly toward the drum. The bearing-pieces K will then exert pressure upon the peripheries of the flanges *i* and act as brakes. The pressure exerted by the bearing-pieces varies in proportion as the weight of the lamp or other article is increased or decreased. When the weight upon the cords or chains is relieved, the pressure exerted by the bearing-pieces is relaxed and the drum may then rotate freely to rewind the cords or chains.

In some cases it will be desirable to use but one cord or chain, and then a single lever H and its coacting parts may be employed. More than two cords or chains may also be used. In such case a lever H and its coacting parts will preferably be used with each cord or chain.

All the various parts of this suspending device may be made of appropriate metal.

On the 30th day of October, 1884, I filed an application for Letters Patent No. 146,832, and on the 27th day of January, 1885, I filed an application for Letters Patent No. 154,174, for suspending devices, severally having an arbor, a drum adapted to rotate upon the arbor, cords or chains wound upon the drum, passing thence over guides to the article which they are to suspend, a convolute spring coiled within the drum and serving to counterbalance the weight of an article suspended by the cords or chains, and a brake which is rendered effective when the drum is rotated in such direction as to unwind the cords or chains. Thus generally considered these suspending devices and the one which is the subject of my present application bear a resemblance.

The suspending device which is the subject of my application No. 146,832, has the guides for the cords or chains arranged upon a frame which is capable of sliding toward and from the drum, and when slid toward the drum by a force acting upon the cords or chains renders the friction-brake effective. In that sus-

pending device a spring was employed for moving the frame away from the drum whenever the cords or chains were relieved of strain. I do not in my present application lay claim to any of these features.

The suspending device forming the subject of my application No. 154,174 has the guides supported upon a frame that is mounted upon the arbor of the drum. The weight of the article suspended by the cords or chains is not in that suspending device directly a factor in effecting the operation of the brake, but the brake is so combined with the drum that it will be applied when the drum is rotated, and also when anything tends to rotate it in such direction that the cords or chains will be unwound, and so that under other circumstances it will be relaxed. I do not in my present application lay claim to any of these features.

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 vertical arbor, a frame supported by said arbor, a drum adapted to rotate upon the arbor, a spring for rotating the drum in one direction, cords or chains wound upon the drum, levers fulcrumed upon upright standards upon the frame and movable toward and from the periphery of the drum, non-rotary brakes upon the levers, and guides upon said levers for receiving said cords or chains, and from which the cords or chains pass to the lamp or other article to be suspended, substantially as specified, whereby the weight of the lamp or other article upon the cords or chains will operate the brakes through the levers, and when said weight 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 frame supported by said arbor, a drum adapted to rotate upon the arbor, sheet-metal flanges on the drum, having broadened rims on their peripheries, a cord or chain wound upon the drum, a lever fulcrumed upon the frame and movable toward and from the periphery of the drum, a brake upon the lever, and a guide upon said lever for receiving the cord or chain, and from which the cord or chain passes to the lamp or other article to be suspended, substantially as specified, whereby the weight of the lamp or other article upon the cord or chain will operate the brake through the lever, and when said weight is removed from the cord or chain the brake will be released.

3. In a suspending device for a lamp or other article, the combination of an arbor, a frame supported by said arbor, a drum adapted to rotate upon the arbor, cords or chains wound upon the drum, levers fulcrumed upon the frame, guides upon said levers for receiving the cords or chains, and from which the cords or chains pass to the lamp or other article to be suspended, and movable bearing-pieces upon said levers, substantially as described.

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Witnesses:
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