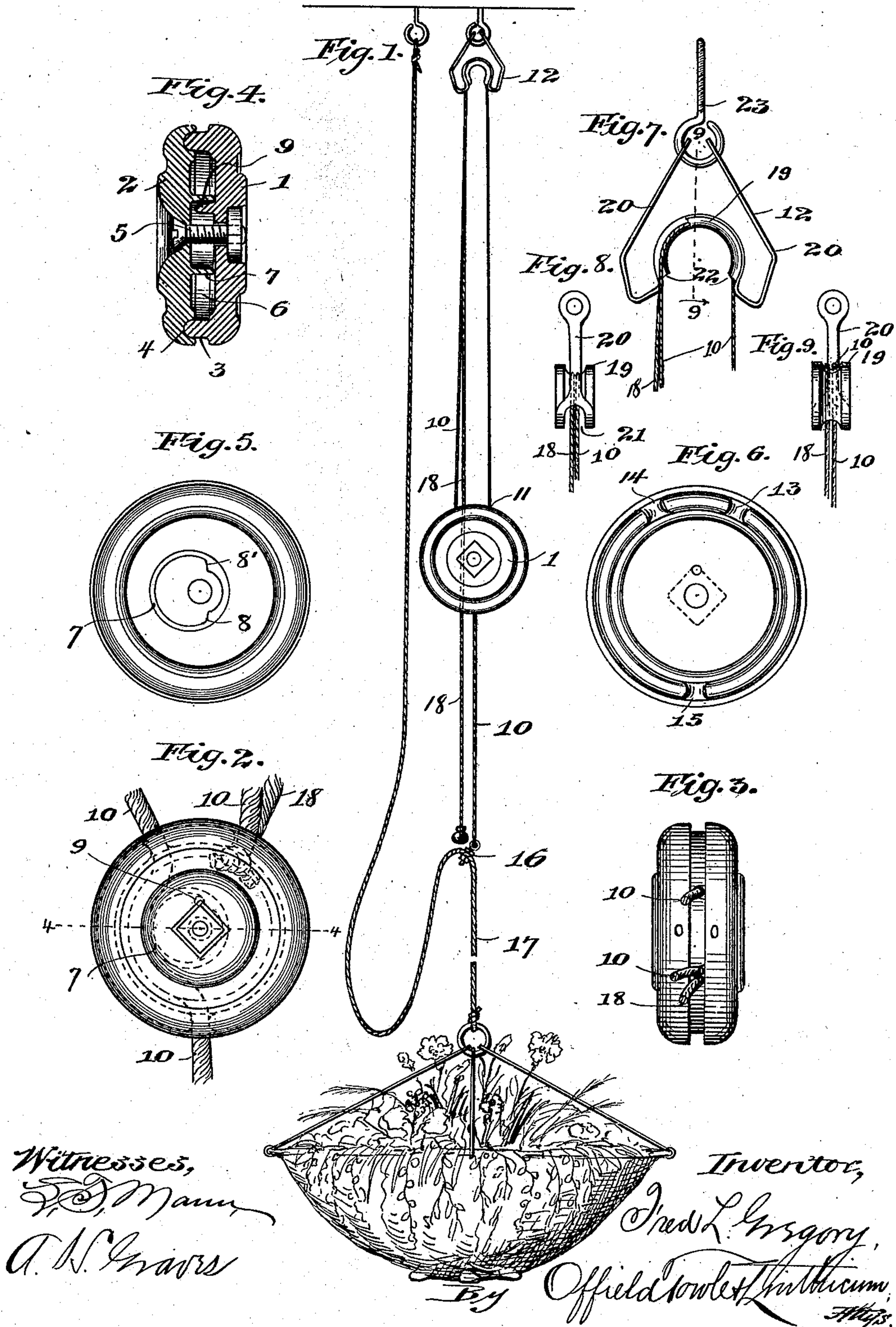


No. 815,422.

PATENTED MAR. 20, 1906.

F. L. GREGORY.
ADJUSTABLE SUSPENSION DEVICE.

APPLICATION FILED NOV. 7, 1904.



UNITED STATES PATENT OFFICE.

FRED L. GREGORY, OF CHICAGO, ILLINOIS, ASSIGNOR TO INNOVATE MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ADJUSTABLE SUSPENSION DEVICE.

No. 815,422.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed November 7, 1904. Serial No. 231,817.

To all whom it may concern:

Be it known that I, FRED L. GREGORY, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Suspension Devices, of which the following is a specification.

This invention relates to adjustable suspension devices, and refers more particularly to an automatic take-up device used in conjunction with a cord for suspending lights, merchandise, and the like adjustably from an overhead support.

Among the salient objects of the invention are to provide an extremely simple and efficient device of the character referred to the parts of which may be readily cast or struck out by means of dies; to provide a construction composed of a minimum number of parts, but nevertheless adjustable to support articles of varying weight within a wide range of variation; to provide, in conjunction with a friction-holding device of the character referred to and its main suspension-cord, an auxiliary cord whereby the frictional grip of the suspension device may be instantly released and the weight be permitted to descend practically through its own gravity; to provide, in conjunction with such an apparatus, a simple and extremely efficient supporting-guide, and, in general, to provide a simple and improved apparatus of the character referred to.

To the above ends the invention consists in the matters hereinafter described, and more particularly pointed out in the appended claims, and the invention will be readily understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a complete apparatus shown as arranged to suspend a flower-pot. Fig. 2 is a side elevation looking at that member which contains the peripheral rim and may therefore for convenience be designated the "body." Fig. 3 is a top plan view of the device. Fig. 4 is an axial sectional view on line 4 4 of Fig. 2. Fig. 5 is an inside face view of the cover member. Fig. 6 is an inside face view of the body mem-

ber. Fig. 7 is a detail in elevation of a suspension-guide support. Fig. 8 is an edge elevation of the same, and Fig. 9 a central vertical view taken on line 9 9 of Fig. 7.

Describing first the suspension device proper and referring to the drawings, 1 and 2, respectively, designate the body member and what may be termed the "cover member" of the device, these parts being of generally disk form and constructed to interfit, so as to form a flattened cylindric or disk-like body, as clearly shown in the drawings. The body member is provided with a peripheral flange 3 and the cover member with a corresponding peripheral groove 4, the arrangement being such that when the parts are secured together by means of a central clamping-bolt 5 a chamber or cavity 6 is provided between said parts. The bolt 5 is arranged to extend through the center of the device, and the flange and groove 3 and 4 are concentric with said bolt, so that one part may be rotated upon the other when the bolt is sufficiently loosened.

In the central portion of the cover member and upon its inner face is formed a cylindric projection or boss 7, which, however, is eccentrically disposed with reference to the center of the device, the height or thickness of this boss being substantially equal to the width of the chamber 6. The boss 7 is made hollow, being conveniently made in the form of a relatively thin circular flange provided interiorly at two points with stop-shoulders 8 8'. Upon the inner face of the body member is provided a stop-stud 9, which projects within the hollow of the boss 7 and is adapted to cooperate with the shoulders 8 8' to limit the rotation of one member relatively to the other in each of its two directions of relative rotation.

The main suspension-cord 10 is secured to one edge of the body, as indicated at 11, extends thence up over a suitable guide-support 12, (of special construction in the present instance,) thence returns to and passes through the suspension device in an indirect course and supports at its lower end the device or commodity to be suspended. In the preferred construction shown the peripheral

flange 3 is provided in its edge with three notches or interruptions, (designated 13, 14, and 15, respectively,) which accommodate the suspension-cord, it being understood that when the cover member is secured in place these notches constitute, in effect, apertures. The suspension-cord has one end inserted through the aperture 13 and knotted inside of the rim to serve as an attachment. The other end of the suspension-cord after passing around the guide-support passes in through the aperture 14, thence is deflected around the eccentric boss (see dotted lines in Fig. 2,) and passes out through the lower aperture 15. In the preferred use of the apparatus the lower end of the suspension-cord is provided with a clamp 16, which is attached to a cord 17, which serves as the direct means of suspending the commodity; but obviously the suspension-cord 10 may itself directly support the commodity. In the case of use for electric lights and the like it is desirable that the conductor-wire be not used as the cord which renders through the suspension device and guide-support, because such use of the cord tends both to break the metallic conductors therein and also to wear the insulating-cover therefrom, and thus render them dangerous. It will be obvious that the frictional hold exerted by the suspension device upon the suspension-cord will be proportionate to the extent to which it is deflected in passing through the suspension-body and around the eccentric boss. Accordingly such frictional tension may be instantly and readily adjusted by simply loosening the screw-bolt 5 slightly and rotating the cover member relatively to the body member, so as to change the angular disposition of that part of the eccentric most remote from the axis of the body relatively to that part of the cord which engages the boss. When the eccentric is turned into the position shown in dotted lines in Fig. 2, it exerts its maximum frictional tension, and in this position the stop-stud 9 is shown as engaging the subshoulder 8'. When, however the cover be rotated approximately one half-revolution, that part of the eccentric-periphery nearest the axis will be in bearing with the cord, the latter will pass through the suspension device in a nearly direct line, and accordingly the frictional tension will be at a minimum.

As a further feature of improvement I provide an auxiliary controlling-cord, by means of which I am enabled to ease the tension created by the weight acting upon that part of the cord which renders through the suspension device. In the drawings, 18 designates the auxiliary cord, which may conveniently be secured to the suspension device in the same aperture 13 as is the main cord 10. Said auxiliary cord likewise passes up over the guide-support 12 alongside of the

main cord and then extends downwardly to a point accessible to the operator, but does not pass through the suspension device. When it is desired to lower the suspended object, the operator takes hold of the auxiliary cord and pulls down on the latter, so as to take a considerable part of the weight off from the frictionally-held part of the cord 10, whereupon the latter will slide through the suspension device, or, in other words, the weight of the object suspended will overbalance the frictional grip of the suspension device when thus lessened by pulling down on the auxiliary cord. The raising of the suspended object is accomplished by simply placing the hand under the latter and lifting it bodily, the weight of the suspension device itself serving to automatically take up the slack of the main cord thus created.

As a further feature of the present invention I have provided the improved guide-support 12. This device is formed of sheet metal and comprises an approximately semi-circular or segmental guide portion 19 and suspension-arms 20, formed integrally with each end of said guide portion. The guide portion is grooved in its upper surface, as shown clearly in Figs. 8 and 9, and at the points of juncture of the lower ends of said guide portion with the arms is apertured, as indicated at 21, to permit the cords to pass through. It is to be noted that the lower ends of the guide portion are turned inwardly, so that the bottom of the groove falls inside of the vertical tangents thereof, as at 22, thus insuring that the cords will render freely over the guide without engaging the edges of the apertures 21. The upper ends of the arms 20 may conveniently be both secured in an ordinary screw-hook 23.

While I have herein shown and described what I deem to be preferred embodiments of the several features of the invention, yet the details of construction may be modified without departing from the invention, and I do not, therefore, limit myself to such details, except to the extent that they are made the subject of specific claims.

I claim as my invention—

1. A suspension device of the character referred to, comprising two main members adj-justably secured together and adapted to be adjusted in rotative angular relation to each other, a pair of guide-passages formed to extend through said device at angularly-separated points, an eccentric friction member within said device arranged to project across a direct line extending between said guide-passages, a suspension-cord adapted to pass through the guide-passages of said device and means for attaching one end of said cord to the device.

2. A suspension device of the character referred to, comprising two main members fit-

ting together face to face, and a securing device extending through or connecting said parts at their central portions whereby they are adapted to be adjusted in rotative angular relation to each other, a chamber formed between said parts, guide-passages leading into said chamber at angularly-separated points, an eccentric friction member upon one of said parts projecting within said chamber, a suspension-cord adapted to pass through the guide-passages of said device and means for attaching one end of said cord to the device.

3. A suspension device of the character referred to, comprising two circular main members adapted to fit together face to face and having concentric interfitting parts, a clamping-bolt extending through the center of said members and adjustably holding the latter together, a cavity formed between the meeting faces of said members, a friction-boss within said cavity located eccentrically of the axis of said securing-bolt, guide-passages leading into and out of said chamber at opposite sides of the latter, and means for attaching one end of a suspension-cord to the suspension device.

4. A suspension device of the character referred to, comprising two disk-like circular main members, one provided with a peripheral flange and the other with a corresponding groove to receive the edge of said flange whereby a cavity is formed between the proximate faces of said members, a clamping-bolt extending through the center of and uniting said members, a hollow eccentric boss upon the interior of one of said members and surrounding said bolt, stop devices arranged to limit the extent of rotation of one member relatively to the other about said bolt, guide-passages formed through said peripheral flange to communicate with the interior of the device at approximately diametrically opposite points, and a third passage or aperture formed through said peripheral flange for the reception of one end of a suspension-cord.

5. In combination with a suspension device, provided with an indirect passage there-through, and a suspension-cord extending through said passage and frictionally held therein, of an auxiliary cord attached to the suspension device extending over an overhead support and thence downward to a point of access, whereby the frictional tension on the main cord may be lessened by force applied to the auxiliary cord.

6. In combination with a suspension device of the general character described, provided with a suspension-cord attached to the device, extending thence over an overhead support, thence downwardly through an indirect passage in the suspension device and to a weight supported by the cord, of an auxiliary

cord attached to said suspension device, extending thence over an overhead support and downwardly to a point of access, said auxiliary cord being arranged to exert a direct lift upon the suspension device when a downward pull is exerted upon its depending end as and for the purpose set forth.

7. A suspension device of the character described, comprising two main members adjustably secured together and adapted to be adjusted in rotative angular relation to each other, a pair of guide-passages formed to extend through said device and angularly displaced a definite and fixed amount, an eccentric friction member within said device arranged to project across a direct line extending between said guide-passages, a suspension-cord adapted to pass through the guide-passages of said device, and means for attaching one end of said cord to the device, substantially as described.

8. A suspension device of the character described, comprising two main members, rotatively adjustable one upon the other, a pair of guide-passages formed to extend through said device, an eccentric friction member fixed to one of said members and adjustable by relative movement of said main members one upon the other to extend more or less into the path through said guide-passages, and a suspension-cord adapted to pass through said guide-passages, substantially as described.

9. A suspension device of the character described, comprising two main members, rotatively adjustable one upon the other, a pair of guide-passages formed to extend through said device, an eccentric friction member fixed to one of said members and adjustable by relative movement of said main members one upon the other to extend more or less into the path through said guide-passages, a suspension-cord adapted to pass through said guide-passages, and means for attaching one end of said cord to the device, substantially as described.

10. A suspension device of the character described, comprising two main members rotatively adjustable one upon the other, one of said members having a pair of guide-passages formed to extend through said device, an eccentric friction member fixed to the other of said main members and adjustable by the relative movement of said main members one upon the other to extend more or less into the path through said guide-passages, and a suspension-cord adapted to pass through said guide-passages, substantially as described.

11. In combination with a suspension device of the character described, provided with a suspension-cord attached to the device, an overhead support, said suspension-cord passing over said overhead support, and

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thence downwardly through an indirect pas-
sage in the suspension device and to a weight
supported by the cord, of an auxiliary cord
attached to said suspension device extending
5 thence over said overhead support, and down-
wardly to a point of access, said auxiliary
cord being arranged to exert a direct lift upon

the suspension device when a downward pull
is exerted upon its depending end, as for the
purpose set forth.

FRED L. GREGORY.

Witnesses:

W. R. LITZENBERG,
FREDERICK C. GOODWIN.