

(No Model.)

G. W. BALDWIN.
SUSPENSION DEVICE.

No. 481,157.

Patented Aug. 23, 1892.

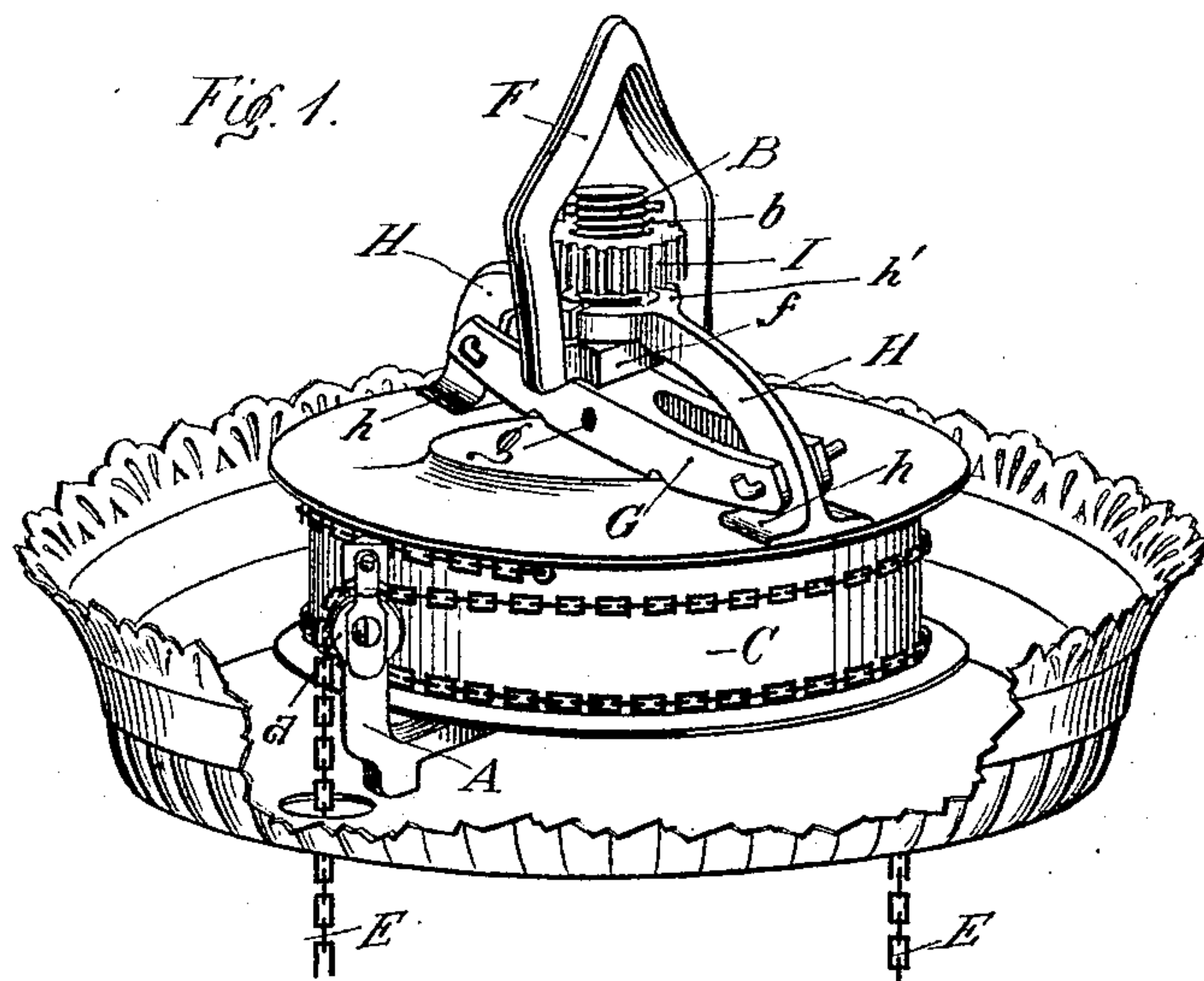


Fig. 2.

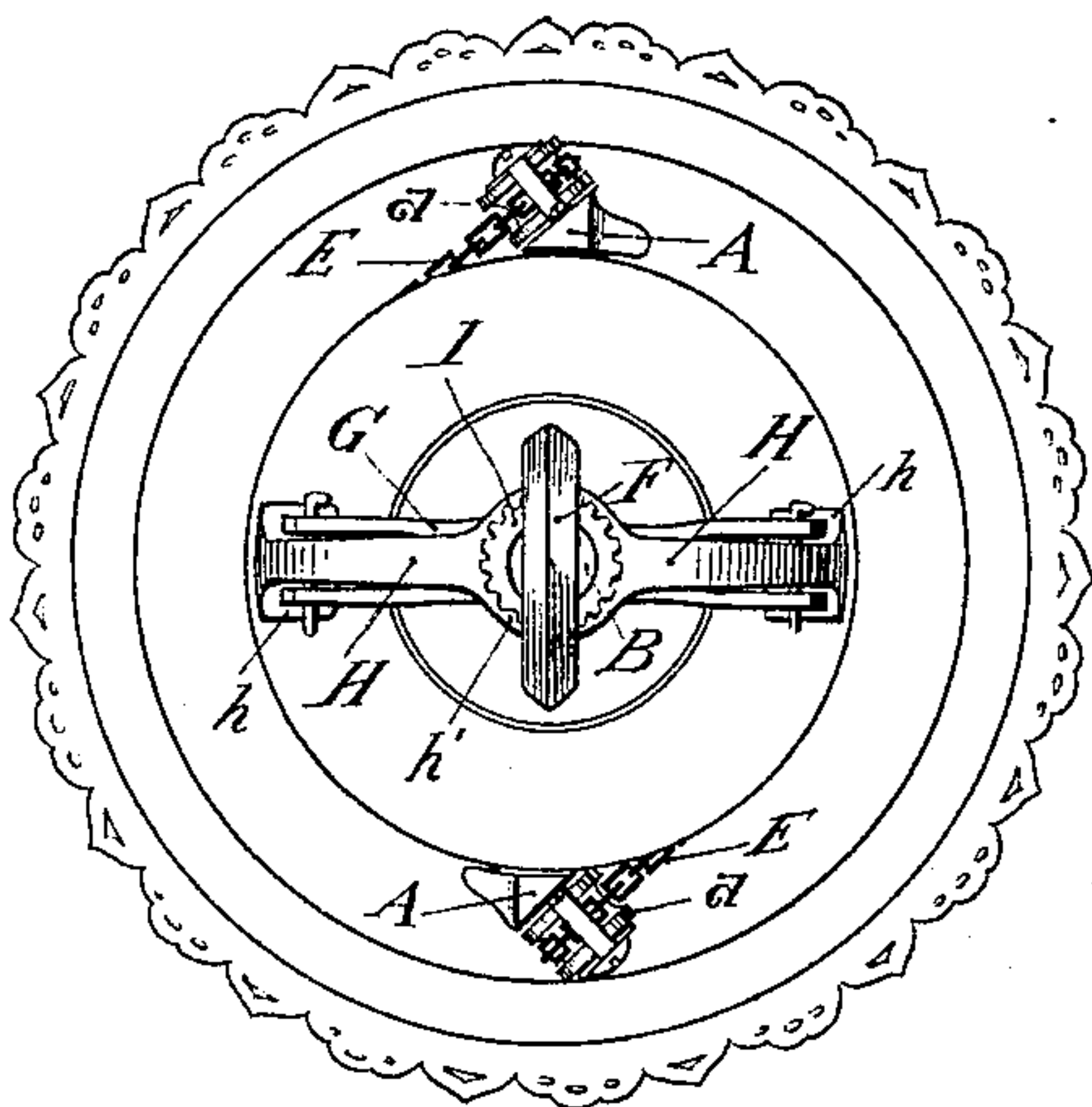
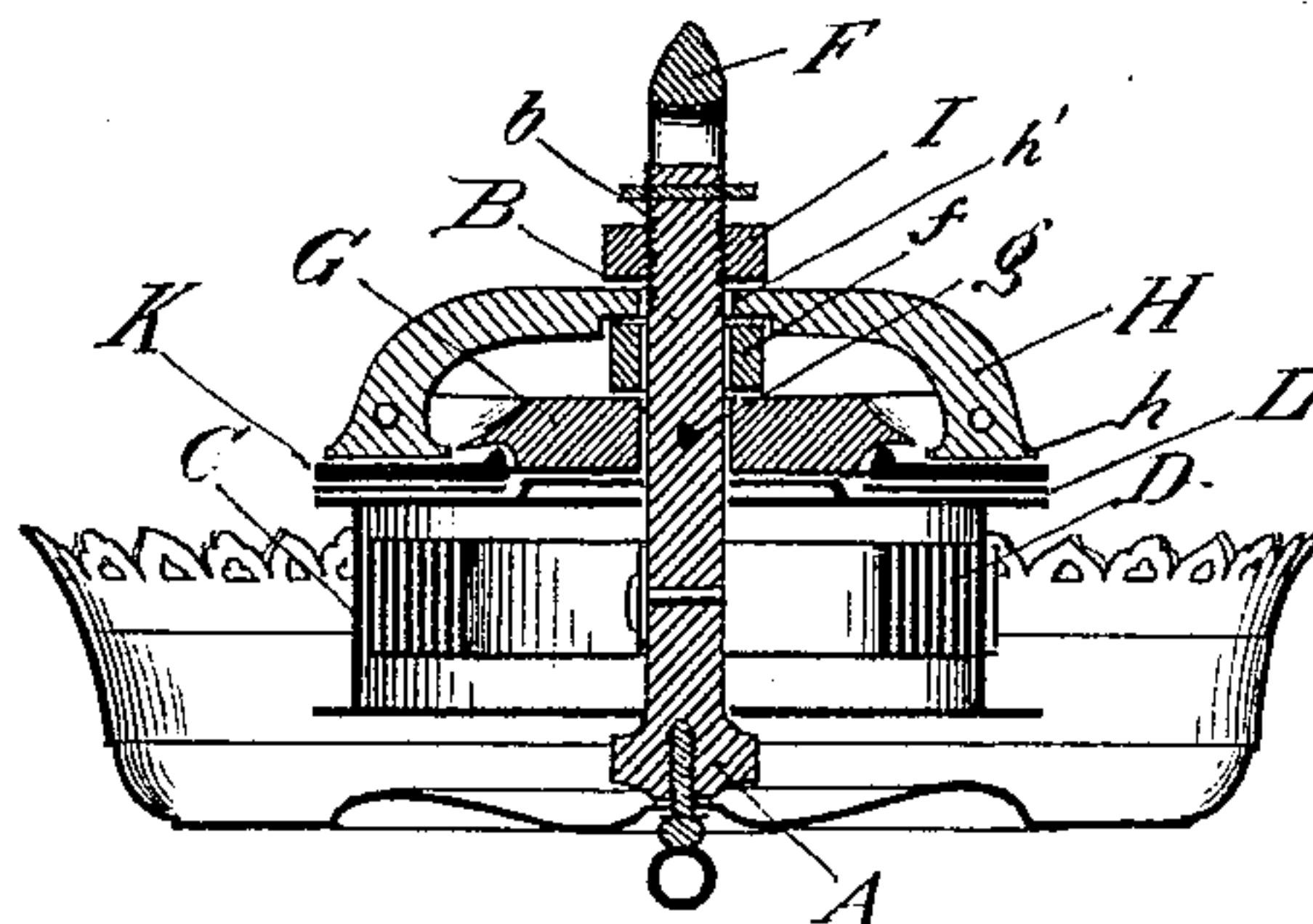


Fig. 3.



WITNESSES.
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SUSPENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 481,157, dated August 23, 1892.

Application filed May 6, 1892. Serial No. 432,060. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BALDWIN, a citizen of the United States, residing at Meriden, New Haven county, Connecticut, have
5 invented a new and useful Improvement in Suspension Devices, of which the following is a specification.

My invention relates to that class of suspension devices in which an article is supported at different elevations by the resilience of a spring, and in which frictional resistance to downward motion of the suspended article is caused or increased by the weight of the article itself.

15 In the accompanying drawings, Figure 1 represents in perspective a suspension device embodying my invention. Fig. 2 is a top plan view of the same. Fig. 3 in central vertical section shows a modification.

20 The same letters refer to like parts in the several views.

A designates a frame; *a*, a guide on the frame A; B, an arbor; *b*, a thread on the arbor B; C, a drum; D, a convolute spring; E,
25 a chain or cord; F, a loop or hanger; *f*, a collar on the loop F; G, a yoke or cross-bar; *g*, a pivot in the bar G; H, a brake-lever; *h*, a shoe; *h'*, a fork, both on the lever H; I, a nut; K and L, Fig. 3, respectively a disk and a
30 washer.

In the example of my invention illustrated in Figs. 1 and 2 of the drawings the frame A, guides *a*, arbor B, drum C, spring D, and chains or cords E may be of any desired form
35 and dimensions. As shown, the guides *a* are idlers or pulleys, two in number, and the arbor B is vertical, integral with the frame A, and provided with a screw-thread *b* at its upper end. The drum C is free to revolve on
40 the arbor B and contains the convolute spring D. The inner end of the spring D is secured to the arbor B, while its outer end is attached to the drum C. The drum C is flanged to receive the chains E, which are two in number,
45 are attached to the drum C, and are wound in the direction of the spring D, so that the unwinding of the chains winds up the spring, and conversely. The free ends of the chains E pass over the idlers or guides *a* to the arti-
50 cle suspended.

The construction so far described is well

known in the art and forms no part of my present invention.

The collar *f* of the loop or hanger F surrounds and is capable of free vertical motion 55 upon the arbor B. Secured to the arbor B below the loop F is the yoke or cross-bar G. As shown, the yoke is pivotally attached to the arbor B, so as to have a limited movement thereon in a vertical plane. It must in any 60 case be attached rigidly as to motion in a horizontal plane. Pivotaly attached to the yoke G near its end are the brake-levers H. These levers H (here shown as two in number) are provided at their outer ends with brake-shoes 65 *h*, adapted to bear against the upper surface of the drum C. At their inner ends the levers H are formed with forks *h'*, adapted to embrace the arbor B and rest upon the upper side of the collar *f* of the loop F. The verti- 70 cal movement of the inner ends of the levers H may be regulated by means of an adjusting-nut I.

The operation of the device will be readily understood from an inspection of the draw- 75 ings. In practice any article, as a lamp, may be suspended from the free ends of the chains E. To lower the lamp, it is necessary to overcome the resistance of the spring D and the friction of the shoes *h* on the upper surface 80 of the drum C. It is clear that the entire weight, not only of the suspended article, but also of the device itself, is applied to the longer arms of the levers H to produce frictional resistance to the rotation of the drum. 85 In raising the lamp a large portion or all of its weight is lifted by the operator, thereby very much decreasing the frictional resistance. The resilience of the spring D is then sufficient to rewind the chains E on the drum 90 C. To prevent too sudden or jerky action of the spring D some constant friction is necessary. In my construction this is supplied by the weight of the device itself acting through the levers H, even though the entire weight 95 of the suspended article is removed. By screwing down the nut I the pressure of the shoes *h* on the drum C may be reduced, thereby lessening the friction to any desired extent.

In Fig. 3 of the drawings a disk K and 100 washer L are shown interposed between the outer ends of the brake-levers H and the top

of the drum C. The disk K engages with the levers H so as to prevent rotation of the disk, so that the size of the surfaces in frictional contact is much increased. The function of the washer L, which may be of leather, rubber, or the like, is to prevent unpleasant rattling or noise.

It is evident that many mechanical changes other than those suggested may be made in my device without departing from my invention. Thus the number of chains and guides and the number and form of the brake-levers may be varied, or cords or other flexible connections may be substituted for chains, &c.

What I claim as my device, and desire to secure by Letters Patent of the United States, is as follows:

1. In a suspension device, in combination, an arbor, a spring-actuated drum on said arbor, a chain on said drum, a loop on said arbor and capable of vertical motion in relation thereto, and a brake-lever, one end of which engages with said loop, its other end acting upon said drum, substantially as described.

2. In a suspension device, in combination, an arbor, a spring-actuated drum on said arbor, a chain on said drum, a loop on said arbor and capable of vertical motion in relation

thereto, a brake-lever, one end of which engages with said loop, its other end acting upon said drum, and means, as a nut, for regulating the motion of said brake-lever, substantially as described.

3. In a suspension device, in combination, an arbor, a spring-actuated drum on said arbor, a chain on said drum, a loop on said arbor and capable of vertical motion in relation thereto, a brake-lever, one end of which engages with said loop, its other end acting upon said drum, and a disk interposed between said brake-lever and said drum, substantially as described.

4. In a suspension device, in combination, an arbor, a spring-actuated drum upon said arbor, a chain on said drum, a loop on said arbor and capable of vertical motion in relation thereto, a brake-lever, one end of which engages with said loop, its other end acting upon said drum, a disk interposed between said brake-lever and said drum, and a washer interposed between said disk and said drum, substantially as described.

GEORGE W. BALDWIN.

Witnesses:

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