(Model.) 2 Sheets—Sheet 1.

R. L. BREWER.

SUSPENSION DEVICE FOR LAMPS, &c.

No. 335,107. Patented Feb. 2, 1886.

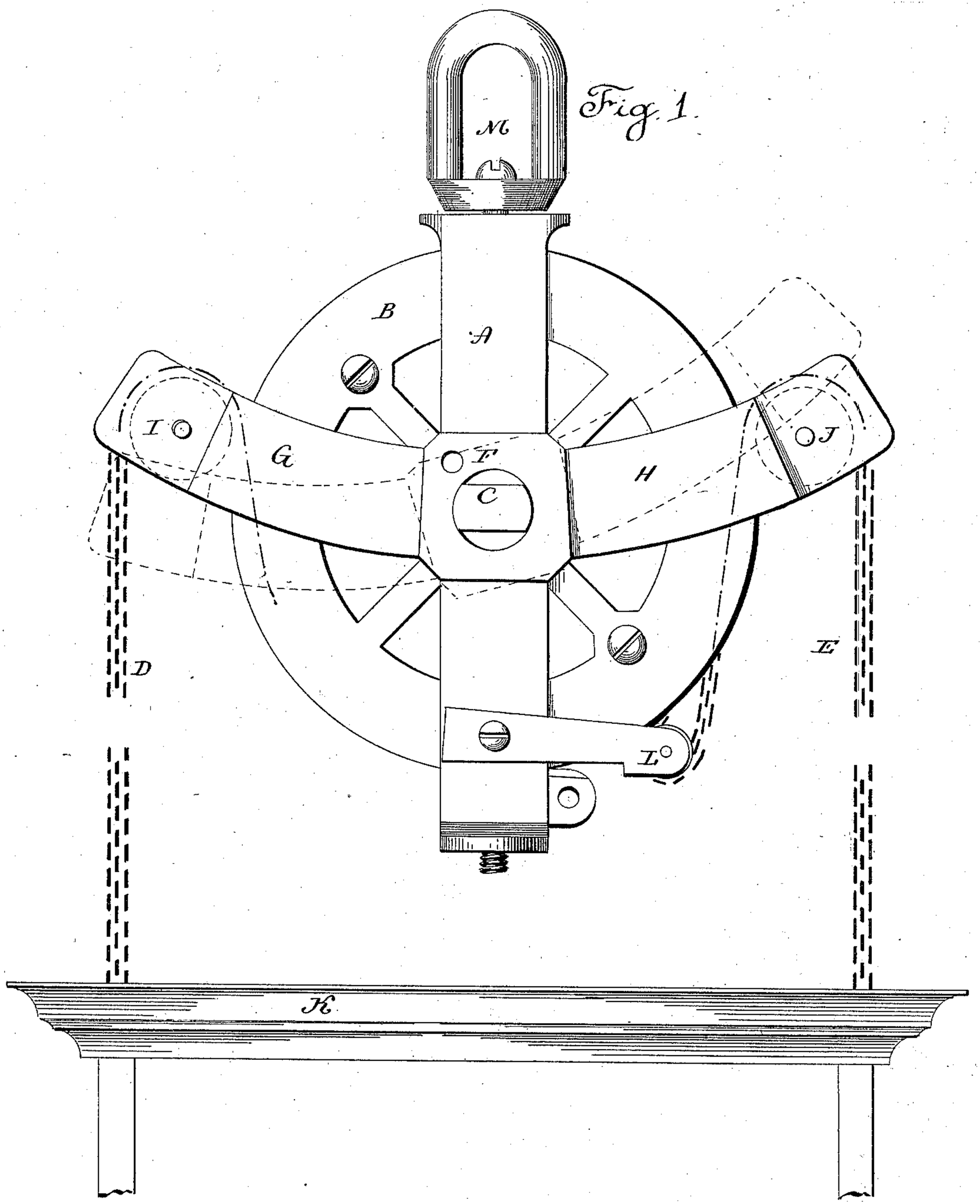

Fig. 1.

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(Model.) 2 Sheets—Sheet 2.

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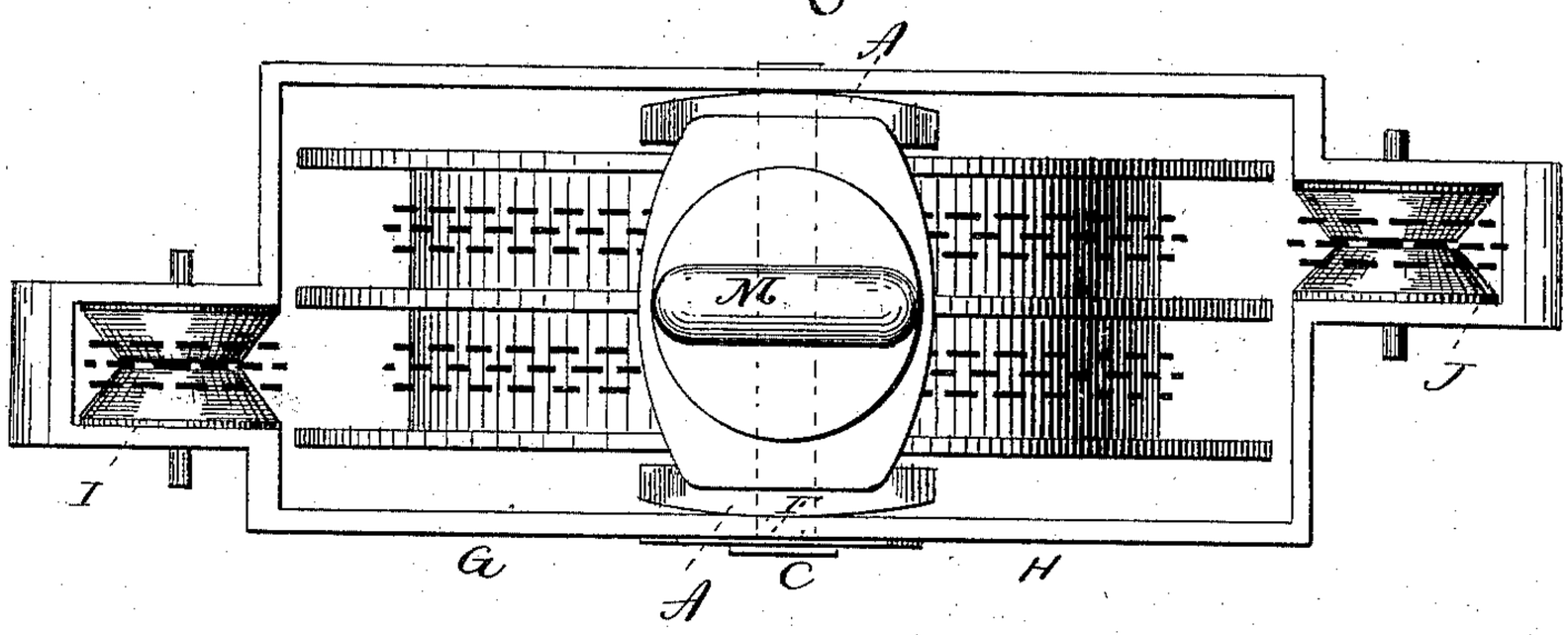
Fig. 2.



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UNITED STATES PATENT OFFICE.

ROLAND L. BREWER, OF MERIDEN, CONNECTICUT, ASSIGNOR TO EDWARD MILLER & CO., OF SAME PLACE.

SUSPENSION DEVICE FOR LAMPS, &c.

SPECIFICATION forming part of Letters Patent No. 335,107, dated February 2, 1886.

Application filed November 16, 1885. Serial No. 182,914. (Model.)

To all whom it may concern:

Be it known that I, ROLAND L. BREWER, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Suspension Devices for Hanging Lamps, &c.; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of the device, showing a portion of a lamp-fixture suspended therefrom; Fig. 2, a top view of the suspension device.

This invention relates to an improvement in that class of suspension devices employed in hanging lamps and for like purposes, and in which a spring-drum is the lifting device, and particularly to that class in which two chains are employed to suspend the lamp, or whatever it may be, the one upon one side and the other upon the opposite side, but both arranged so as to be simultaneously wound upon the drum. In the more general construction of this class of spring-drums the drum is composed of two parts, or with two grooves in its periphery, as seen in Fig. 2, one chain to be wound in one groove and the other in the opposite groove, one drawing from the drum at diametrically-opposite points from the other—that is, say one from the top and one from the bottom—and whereby the chains being drawn from the drum will impart rotation to the drum, so that the chains will be drawn equally from the drum. In such rotation of the drum the spring will be wound, and so that the spring will impart rotation to the drum in the opposite direction when free so to do, and such reaction or return of the drum will wind the two chains upon the drum. This spring-drum and arrangement of chains is well known. The chains necessarily extend several times around the drum, and it is practically impossible to lay the two chains with such perfect uniformity that both will draw precisely alike—that is to say, because on one side the chain may pile more compactly than the other. The compact side will make the winding-surface of somewhat less diameter than that of the opposite side, and consequently will draw the chain slower. The result of this is, that the lamp or thing suspended will be turned out of its proper horizontal plane and hang inclined. Various devices have been introduced between the suspending device and the thing suspended, of a character such as commonly known as "eveners," the chains from the thing suspended being attached at different points, or to different parts from that to which the chains or suspending devices are attached. While this arrangement equalizes the draft upon the chains, so that the horizontal plane of the lamp or thing suspended is maintained, the equalizing device detracts from the general symmetry of the fixture, and would be gladly avoided, if possible.

The object of my invention is to apply an equalizing device directly to the suspension apparatus, and so that the chains from the drum to the thing suspended may be continuous, as in the more general construction of fixtures where no equalizing device is employed; and it consists in combining with the frame which supports the drum a saddle hung to the frame so as to swing in a plane parallel with the plane of the drum, and extending to the right and left of the drum, with a carrying pulley or bearing in the ends or arms of the saddle, over which the chains may respectively run to the drum, said saddle oscillating upon its center, according to the variation there may be in the piling of the chain upon the drum.

A represents the frame; B, the drum, arranged upon an axis, C, and provided with the usual spring, which is wound by the rotation of the drum in one direction, and then by its reaction will impart rotation to the drum in the opposite direction. This arrangement of spring is not shown, it being too well known to require detailed description.

The drum is constructed in two circumferential divisions or grooves—one for one chain and the other for the opposite chain—and upon these two parts the chains D E are respectively arranged. On the frame, and preferably concentric with the axis of the drum, I hang a saddle, F. This saddle is composed of two arms, G H, the one extending to the left and the other to the right, but so as to rock freely

on its axis and in a plane at right angles to the axis—that is, parallel with the plane of the spring-drum. In the end of the arm G a pulley, I, is arranged, over which the chain D runs. In the other end of the arm is a like pulley, J, over which the other chain, E, may run, these pulleys I and J being in the plane of the respective grooves, as seen in Fig. 2. The chain D runs directly from the under side of the drum up over the pulley I, thence down, and is attached to the upper part, K, of the lamp-fixture, or whatever it may be desired to suspend. The other chain, E, may run directly from the upper side of the drum to its pulley J; but I prefer to carry it down around a guide-pulley, L, thence up over the pulley J, as shown in Fig. 1, and thence down, attached to the thing to be suspended at a point diametrically opposite to that to which the chain D is suspended.

By placing the carrying-pulley below, as shown, and the chain upward, I make the draft of the two chains more perfectly uniform upon the saddle than it would be were the chains to draw upon the saddle at different angles.

The lamp or thing suspended is drawn down in the usual manner, and in so doing the chains are drawn from the drum, and consequently wind the spring in the usual manner. If, because in the winding of the chain upon the drum, the chain on one side has been so piled as to increase the diameter of the pile beyond that of the other, then a single rotation of the drum will take a greater length of chain from that of the greatest pile than from the opposite side; hence that side of the longest chain will descend the fastest, were there no equalizer; but as the lifting-power is equal upon both chains, it follows that the chain which is drawn to the greatest extent from the drum will permit the saddle on that side to rise, while the other side will descend, and thus maintain an equal draft upon the two chains—say as seen in Fig. 1, broken lines indicating this change of the equalizing device when the chain E shall have been drawn the fastest. Again, if the chain should have been drawn down with uniformity, and so that when so drawn down the perfectly horizontal plane of the thing suspended, on the rewinding of the chains upon the drum the same differential piling of the chains upon the drum may occur, and in so doing that chain which piles the fastest will be drawn up the fastest, and the other chain will give way, so that its end of the saddle may rise, as indicated at the right in broken lines, Fig. 1, while the other will descend, as indicated at the left in Fig. 1; hence such an equalizing of the draft of the chains will be attained that the thing suspended will always retain its horizontal plane, irrespective of the irregularities with which the chains may be drawn upon the drum.

The frame A is provided with a suspending-loop, M, or any suitable device by which it may be secured, so as to hold the device and the thing suspended.

I claim—

1. In a suspension device for lamps, &c., consisting of a frame carrying a spring-drum, with two chains adapted to be wound upon said drum by the reaction of the spring, or to wind the spring as the chains are drawn from the drum, the combination therewith of a saddle hung to the frame so as to oscillate in a plane parallel with the plane of the drum, and extending to each side of the drum, and at such each side provided with a bearing for the chains, respectively, substantially as described.

2. In a suspension device for lamps, &c., consisting of a frame carrying a spring-drum, with two chains adapted to be wound upon said drum by the reaction of the spring, or to wind the spring as the chains are drawn from the drum, the combination therewith of a saddle hung to the frame to oscillate in a plane parallel with the plane of the drum, the said saddle carrying a bearing at each side of the drum, a guide-pulley, L, on one side of the drum, and around which the chain drawn from that side passes, thence over the bearing in that end of the saddle, the other chain passing directly from the drum over the bearing in the opposite end of the saddle, substantially as described.

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