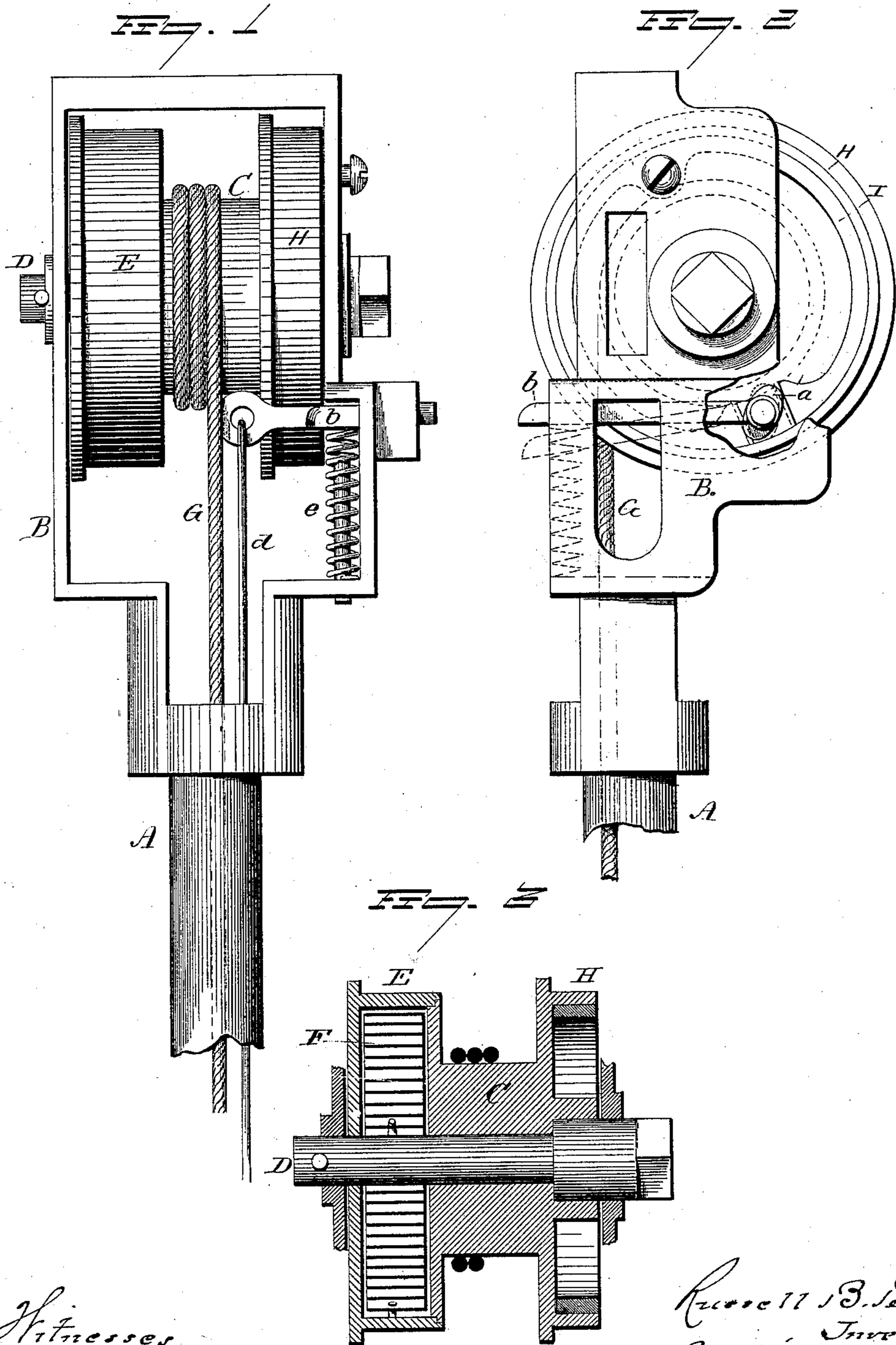


(No Model.)

R. B. PERKINS.
EXTENSION CHANDELIER.

No. 285,668.

Patented Sept. 25, 1883.



Witnesses
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EXTENSION-CHANDELIER.

SPECIFICATION forming part of Letters Patent No. 285,668, dated September 25, 1883.

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To all whom it may concern:

Be it known that I, RUSSELL B. PERKINS, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Extension-Chandeliers; and I do hereby declare the following, when taken in connection with 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 view looking toward the face of the drum; Fig. 2, side view, a portion of the frame broken away; Fig. 3, vertical section.

This invention relates to an improvement in that class of extension-chandeliers in which a spring is employed as a counter-balance for the movable part of the chandelier.

In the more general construction of this class of chandeliers a spring-barrel is arranged in the stationary part of the chandelier above, and a chain or cord wound upon the periphery of this barrel extends down through the central rod and is attached to the movable part of the fixture, and so that as the movable part is drawn down it unwinds the cord from the barrel, correspondingly turning the barrel and winding the spring, and so that the reaction of the spring aids in the raising of the movable part of the chandelier. As this barrel is necessarily of considerable diameter, in order to get the requisite power of spring, it has been arranged in a central line over the vertical tube, and then, in order that the chain or cord may be carried to a central position with relation to the tube, a pulley has been necessary at the entrance to the tube over which the cord would pass; or, as in other cases, the spring-barrel has been arranged at one side of the center, so that a tangent from its surface will enter the tube. In that case the pulley is unnecessary; but it carries the drum so far to one side that the shell or ornament employed to inclose or hide the barrel must be very large, because it must be substantially concentric with the center tube of the fixture. Again, as the cord runs substantially upon the outside of the spring-barrel, and at so great a distance from the center of the barrel, a powerful spring is necessary to counterbalance the chandelier.

The object of my invention is to overcome

these difficulties; and it consists, principally, in a drum for the cord concentric with the spring-barrel, but of less diameter than the spring-barrel, which not only reduces the power of the spring, but brings the cord into a central line with the tube without the intervention of a carrying-pulley, or without the necessity of arranging the axis of the spring-barrel at any considerable distance one side of the central line, and as more fully hereinafter described.

A represents the vertical central tube, which extends down from the stationary part of the chandelier above. This stationary part forms a frame, B, within which the spring apparatus is arranged.

C is the cord-drum, arranged upon an axis, D, supported in the frame. This drum is of small diameter—say about half the diameter of the usual spring-barrel—and the position of the axis of the pulley is such that a tangent from the drum C enters the tube A, as seen in Fig. 1.

On the same axis with the drum C is the spring-barrel E, the drum and spring-barrel secured so that they revolve together.

Within the barrel E a spring, F, is arranged, one end in connection with the axis D and the other with the drum, it being understood that the axis D is stationary, and so that as the drum C is turned in one direction the spring-barrel will turn with it and wind the spring. Then the reaction of the spring will return the barrel and drum, in the usual manner for barrel-springs. The cord G is attached by one end to the movable part of the chandelier below, and extends up the other end, attached to the drum C, and so that the reaction of the spring will wind the cord onto the drum.

By making the drum C smaller than the spring-barrel, I am enabled to bring the axis D so much nearer the vertical central line of the tube A as that drum is of less diameter than the barrel and into very nearly a vertical central line with the tube, and so that the cord runs directly from the drum into the tube without contact with it, or without the intervention of the carrying-pulley heretofore required when the spring apparatus was arranged near the said vertical central line, and this construction enables me to make the shell which incloses the spring part of the chandelier but

little, if any, larger than that where the carrying-pulley is employed, and the spring apparatus in the center.

Another and important advantage in making the drum for the cord of so much less diameter is that the power of the spring applied at a considerable distance outside the periphery of the cord-drum increases the leverage power of the spring upon the drum over what it would be were the cord applied to the outside of the spring-barrel to so great an extent that a much lighter spring may be employed than in the usual construction.

In this class of chandeliers the spring is usually of sufficient power to raise the movable part of the chandelier; hence a catch of some kind is necessary to hold the movable part when pulled down.

Various devices have been employed for this purpose, more or less complicated, and many which make the stopping or starting movement very sudden. To obviate these difficulties I construct the spring-barrel with a flange, H, projecting from one side, and within this flange I arrange a divided ring, I, which fits closely within the flange, but so as to allow the drum to revolve around the ring. At the point where the ring is divided I arrange a cam, *a*, hung in the frame, the cam standing between the two ends of the ring, and from this cam a lever, *b*, extends over the tube A, and from the lever a cord or rod, *d*, extends down to a convenient position for the hand. A spring, *e*, is arranged in connection with the lever, the tendency of which is to raise the lever *b* and turn the cam into a position to force the two ends of the ring asunder, and thereby expand the ring into frictional contact with the flange of the drum, this friction being sufficient to overcome the power of the main spring; hence, when thus engaged, the main spring is held from action; but by pulling down upon the cord *d* the lever *b* is turned, as seen in broken lines, to release the ring I from the action of the cam, when it contracts by its own elasticity and leaves the spring-barrel free to revolve. Thus, when a person desires to move the chandelier either up or down he turns the lever *b* as described to release the ring I, and when the chandelier is adjusted to the desired position the lever *b*, left free, will force the ring I into engagement with the spring-barrel and hold the chandelier in place. The frictional contact prevents any sudden stopping of the chandelier, and the upward movement of the chandelier under the action of the main spring may be regulated by the extent to which the spring is permitted to contract—that is to say, if the lever *b* be but slightly depressed, so as to remove but a portion of the friction, then the action of the spring in the upward movement of the chandelier will be counteracted to the extent of that friction.

Instead of this peculiar frictional device, which I prefer, other catches or spring devices may be employed to lock the chandelier at the required point of elevation, and this

peculiar frictional device may be employed with other spring-barrels and cord-drums than that which I have described.

I have represented this spring arrangement as applied in the stationary part of the chandelier; but it may be applied in the movable part as other spring apparatus are applied.

The spring barrel and drum may be employed without a catch of any character, the spring being adjusted with relation to the weight of the chandelier as in other spring-fixtures in which no catch is employed. I therefore do not wish to limit my invention to the specific arrangement shown.

In describing the spring-barrel I do not wish to be understood as necessarily limiting the invention to the barrel which will inclose the spring, as the spring may be attached at one end to the shaft and the other to a plate or disk in connection with the cord-drum, or to a disk upon the outside, upon which the flange may be formed to receive the frictional divided ring.

I claim—

1. In an extension-chandelier, the combination of the tube A, through which the lifting cord or chain works, a drum for the cord, and a spring-barrel concentric with said drum, the cord-drum of smaller diameter than the spring-barrel, and arranged with relation to said tube A so that the periphery of the drum is substantially in line with the tube, and substantially as described.

2. In an extension-chandelier, the combination of the tube A, through which the lifting cord or chain works, a drum for the cord, and a spring-barrel concentric with said drum, the cord-drum of smaller diameter than the spring-barrel, and arranged with relation to said tube A, so that the periphery of the drum is substantially in line with the tube, and mechanism, substantially as described, to arrest the reaction of the spring, substantially as described.

3. In an extension-chandelier, the combination of a spring-barrel operating to wind the cord by which the movable part is supported, constructed with a circular flange, H, a divided ring, I, within said flange, and mechanism, substantially such as described, to expand said ring into frictional contact with said flange or release it therefrom, substantially as specified.

4. In an extension-lamp chandelier, the combination of the spring-barrel operating to wind the cord by which the movable part is supported, constructed with a circular flange, H, a divided ring, I, within said flange, a cam, *a*, between the ends of the said divided ring, lever *b*, extending therefrom, a spring, *e*, operating upon said cam to expand the ring or permit its contraction, substantially as described.

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