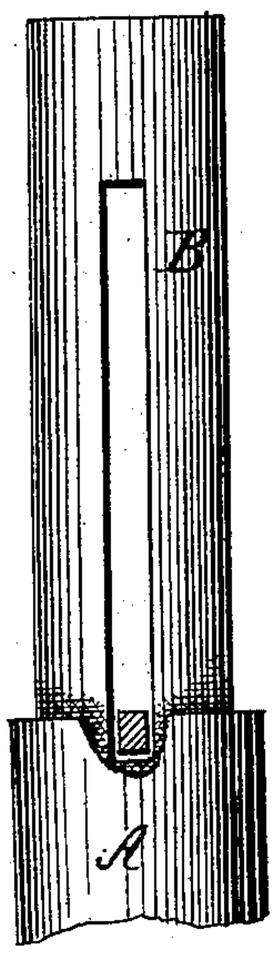
(No Model.) 2 Sheets—Sheet 1.

S. S. NEWTON.

CHANDELIER.

No. 256,587. Patented Apr. 18, 1882.

Fig. 3.



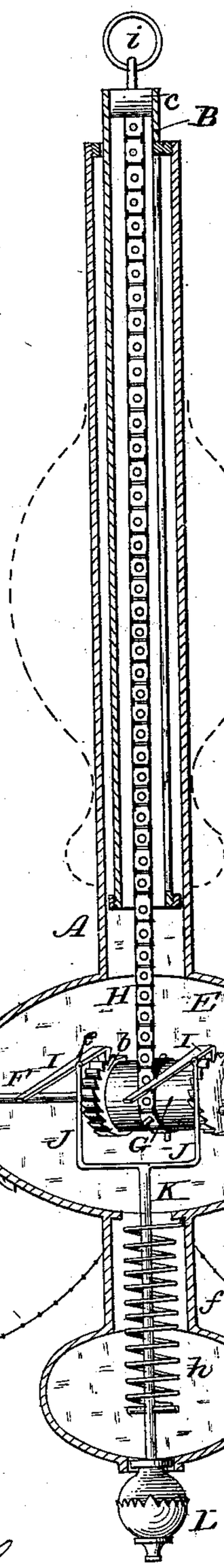
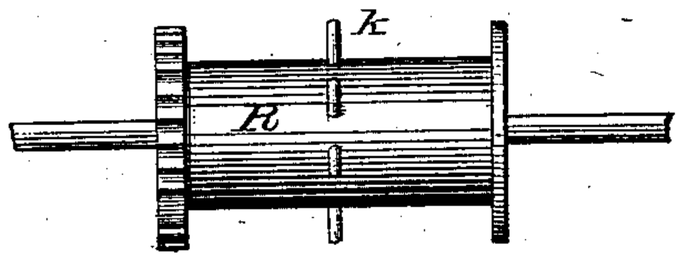


Fig. 1.

Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

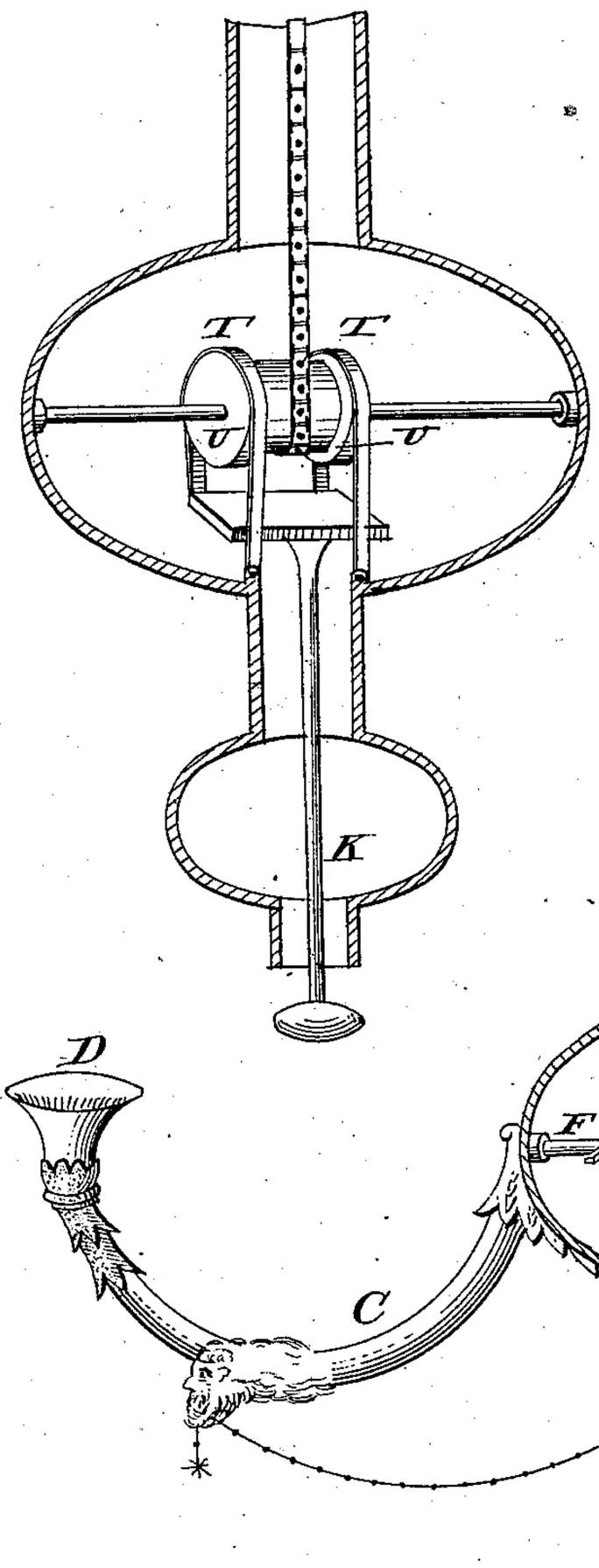
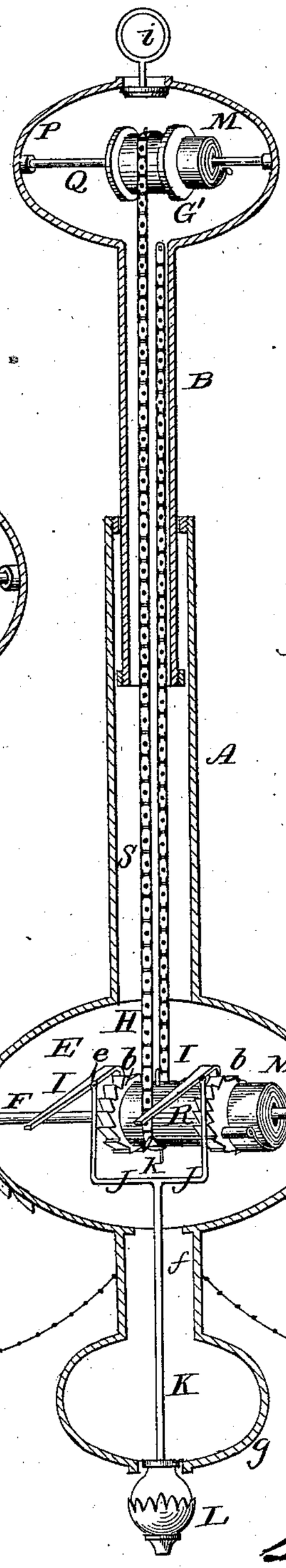


Fig. 2.



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attys

UNITED STATES PATENT OFFICE.

STEPHEN S. NEWTON, OF BINGHAMTON, NEW YORK.

CHANDELIER.

SPECIFICATION forming part of Letters Patent No. 256,587, dated April 18, 1882.

Application filed November 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN S. NEWTON, a citizen of the United States of America, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Chandeliers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in chandeliers for holding lamps, &c., in such manner that they may be vertically adjusted in position, the invention pertaining more especially to that class of chandeliers illustrated in a patent granted to me March 14, 1876, No. 174,841.

The object of the present invention is to so construct the chandelier that it can be made more ornamental than could those that have been heretofore used, and also arrange the parts so that the shell which supports the lamp-brackets and conceals the adjusting and locking mechanism shall be smaller than it could be made when the parts were arranged in the manner heretofore common.

Figure 1 is a vertical section of a chandelier embodying some of my improvements. Fig. 2 is a vertical section of a somewhat modified form, it showing also features additional to those shown in Fig. 1. Fig. 3 illustrates the method of preventing the tubes from rotating relatively to each other. Fig. 4 is a detailed view. Fig. 5 shows a modification of the devices for controlling the movement of the chain spool or drum.

In the drawings, B represents an inner tube, and A an outer tube, arranged to slide to a limited extent vertically upon the tube B. At the bottom of tube A there is an expanded shell or casing, to which are attached the lamp-brackets C. Any suitable number of the latter may be employed, and each carries at the outer end a socket or recess, D, for the reception of the lamp.

Within the shell or casing E there is mounted a shaft, F, by means of any suitable journals or boxes. This shaft F carries a drum or cylinder, G, and also one or more cogged wheels; or, instead of cogged wheels, the drum G may be flanged and the flanges cogged or toothed, as shown at *b b*.

To the drum G is attached a cord, flat band, or chain, H, which not only connects and holds together the two parts of the chandelier, but also, in combination with the drum or cylinder G, enables the lifting up of the outer and lower part of the chandelier by the winding of the cord, band, or chain upon the drum or cylinder.

The supporting device may be made in the form of a chain, as shown, or of a narrow piece of flexible sheet metal. When made in the form of a chain the separate links may have central apertures to engage with sprocket-teeth, or the links may be without such apertures.

In order to hold the shell E (and with it the lamps) at any desired points, I combine with the parts described the following devices:

I I are dogs connected to the inner side of the shell or casing by pivots, the dogs being of suitable length to engage at their inner ends with the cogged flanges or wheels at *b b*. By examining the drawings it will be seen that these dogs I I are situated and swing in planes substantially at right angles to the axis of the drum.

J J represent arms pivoted at their upper ends to the dogs I, as shown at *e*. These arms are preferably joined rigidly together at their lower ends, or formed from one piece of metal, and are connected rigidly to a downwardly-extending rod, K, which passes through the bottom of the casing or shell E, and is made of any suitable length. The greater part of that portion of this rod K which is not concealed within the shell or casing E is covered by a supplemental shell, which in the drawings is shown to be formed of a short cylindrical part, *f*, and a bulb or globe, *g*, which parts may be made of any ornamental configuration desired. The rod projects somewhat through the bottom of the lower shell, *g*, and carries a ball or thumb-piece, L. The weight of the parts K and L should be so adjusted as that under ordinary circumstances they shall tend to pull the dogs I downward sufficiently to hold them in engagement with the cogged wheels or

flanges *b*. However, to insure a downward movement of the rod K and the part L a spring, *h*, may be combined with the rod, arranged to bear against the shell and the rod, substantially as shown.

M is a coiled spring placed around the shaft F, and arranged to wind up a cord or band, H, when the dogs I are released from the toothed wheels or flanges *b*.

At *i* there is a ring or hook joined by a swiveling connection to the inner tube, B, so that the whole apparatus can rotate about it, the ring or hook being attached to any suitable support on the ceiling. The inner tube, B, and the outer tube, A, can be prevented from rotating relatively to each other by means of one or more grooves or slots in one of the tubes, as shown in Fig. 3, and in the other tube one or more pins or lugs adapted to engage with said grooves or slots.

It will now be seen that if the hand of the operator be pushed upward slightly against the ball L the rod K will be moved upward and the dogs I will be released from the toothed wheels or flanges at *b*, and that the spring at M can then operate to draw up the shell E, and with it the lamps.

When the movable parts are at the desired point they can be secured by withdrawing the hand from the ball L, for this permits the rod K to drop down and brings the dogs into engagement with the teeth at *b*.

An important advantage which I have gained by arranging the sliding tubes relatively to each other as shown—that is to say, arranging the upper or stationary tube inside of the sliding tube—is that the lower part can be made much more ornamental than is the case when the lower or sliding tube is arranged inside of the upper or stationary one. Thus objects of ornamentation—such as globes or shells or leaf-work of any suitable character, as at O—may be attached to the lower or sliding part, or may be formed integral therewith. When this arrangement is followed the parts of the chandelier which are brought down into the lower parts of the room can be made much more ornamental than when the inner tube is arranged to slide.

In addition to the improvements above set forth, others may be embodied in a chandelier, which are shown in the drawings, and which I will now describe, referring more particularly to Fig. 2.

In the construction shown in said figure, at the upper end of the inner tube, B, a small supplemental shell or casing, P, is employed to receive the supporting ring or hook at *i*, and also to hold the spring-shaft Q and the winding-drum. The said shaft may be mounted in the manner already described. In the lower shell or casing, E, there is mounted another shaft, F, to which is attached a drum, R, there being toothed or cogged wheels or flanges *b*, as already described for the other construction. The drum R in this case is provided with sprocket teeth or lugs *k k*, whereby it is adapted to engage with a chain, S, and in the construction shown in Fig. 2 is provided also with a spring mechanism at M. One end of the chain S is secured to the fixed parts of the chandelier—as, for instance, at the upper end of the inner tube, or the lower end, or at any suitable point. The other end of the chain is secured to the winding-drum G.

The parts I, J, K, L, *f*, and *g* may be the same as those shown in Fig. 1—that is to say, so arranged that the drum R may be prevented from rotating by allowing the parts K and L to hold the dogs I in engagement with the toothed wheels or flanges *b*. When it is desired to bring the lower parts of the chandelier downward the parts K and L are thrust upward to release the dogs, and the casing E is then pulled down, this operation resulting in a winding up of the springs on shafts Q and F. When the lamps have been brought down far enough the rod K is released and the dogs are again brought into engagement, after which the lamps will be locked in position. When the lamps are to be carried upward the dogs are released in the manner described, and the springs M M rotate the drums G′ and R and wind up the chain S, which lifts or pulls upward the casing E and the lamps. When the latter are at the desired point they are again locked, as before.

In Fig. 5 I have shown a modification of the mechanism which controls the rotation of the chain spool or drum, which consists in the employment of flexible stops instead of the pawls and detents, and in the figure T T are flexible or elastic strips or bands, preferably of thin metal. Each strip is attached by one end to the shell or other desired part of the lower rising and falling portion of the chandelier, and passing over and resting upon the upper portion of the periphery of a friction-wheel, U, which is rigidly attached to the drum or spool shaft, thence down to a cross-head or T-piece on the upper end of rod K, so that the weight of the rod and bar L is suspended upon the bands or strips, which are thus made to serve as friction-stops, and when desired the pressure of these stops upon the friction-wheels U may be further increased by means of the spiral spring *h*. Thus it will be seen that these parts operate as a friction-stop to hold the wheels U, the shaft, and the chain-drum in any desired position.

By examining Fig. 2 it will be seen that, whether the additional or supplemental spring be used on shaft F or not, pawls I and ratchet-teeth *b* can be made to regulate the rotation of drum R, and thus permit the spring within the shell P to wind up the chain. It will also be seen that by using the supplemental spring on shaft F additional power may be applied to lift the chandelier. This construction also permits the use of very flexible springs by reason of their duplication, thereby providing for the requisite amount of rise and fall

with less danger of breaking the springs than would be involved in the use of a smaller number of stiffer springs.

In the patent previously granted to me, dated March 14, 1876, I showed a chandelier having the telescoping tubes, a bulb at the lower end, a locking mechanism in said bulb, and a stop operated by a rod through the bottom of the bulb.

In the construction herein shown I have done away with the eccentric devices shown in the said patent for locking the winding mechanism, and arrange the operating-rod to extend directly to the locking devices, avoiding the use of the supplemental pivoted parts shown in that patent. Moreover, in the present construction I so arrange the operating-rod and its dog or pawl that under ordinary circumstances the weight of these parts shall operate to hold the pawl in engagement with the ratchets—that is to say, the dogs or pawls are situated above the winding mechanism, so that the rod by its gravity will tend to pull them downward. A spring, however, is shown, as it may be used to assist the gravity of the rod. Again, in the aforesaid patent the locking-dog was situated in a plane substantially parallel to the axis of the ratchet-wheel, and it vibrated in the plane of said axis. When so placed there necessarily results much torsional strain upon the dog, and especially upon its pivoting support. In the present device the dogs vibrate in the planes of the rotation of the ratchet-wheels, and they therefore engage with the wheels to much greater advantage than when the other arrangement is employed. All twisting and straining are removed from the operating parts and a much heavier spring can be employed.

What I claim is—

1. In a chandelier, the combination, substantially as hereinbefore set forth, of the following elements, namely: the telescoping supporting-tubes, an expanded bulb carried by the lower tube, a chain or flexible supporting device connecting the tubes, a coiled spring, and a drum concealed entirely within said bulb, the drum adapted to engage with the chain and to be rotated by the spring, and mounted on a shaft situated across the central line of the telescoping tubes, a stop-wheel which is rotated by said shaft, a locking-piece which at one end is fastened in the plane of rotation of said stop-wheel and at the other is movable in said plane into and out of engagement with said wheel, and an operating-rod passing through the bottom of the inclosing-bulb.

2. In a chandelier, the combination of a stationary tube, a sliding tube, a bulb carried by the sliding tube at or near the lower end thereof, a drum mounted at or near the upper end of the stationary tube, a spring which rotates said drum, a drum situated and concealed entirely within said bulb, a chain extending from the upper drum downward around the lower drum, and thence upward to the stationary tube, a stop mechanism which engages with the lower drum and prevents the winding of the chain, and an operating-rod extending downward from said stop mechanism, substantially as set forth.

3. In a chandelier, a winding-drum and spring attached to the upper stationary tube, a drum and spring attached to the lower sliding tube, a chain attached to the upper drum, passing downward around the lower drum and up to and attached to the stationary tube, and a stop mechanism to limit the rotation of one of the drums, both of said drums being constructed and arranged to engage with the chain, substantially as set forth.

4. In a chandelier, the combination, with the toothed flanges *b* and the vibrating dogs I, of the arms J and the rod K, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

STEPHEN S. NEWTON.

Witnesses:

JAS. G. COOPER,

H. H. DOUBLEDAY.