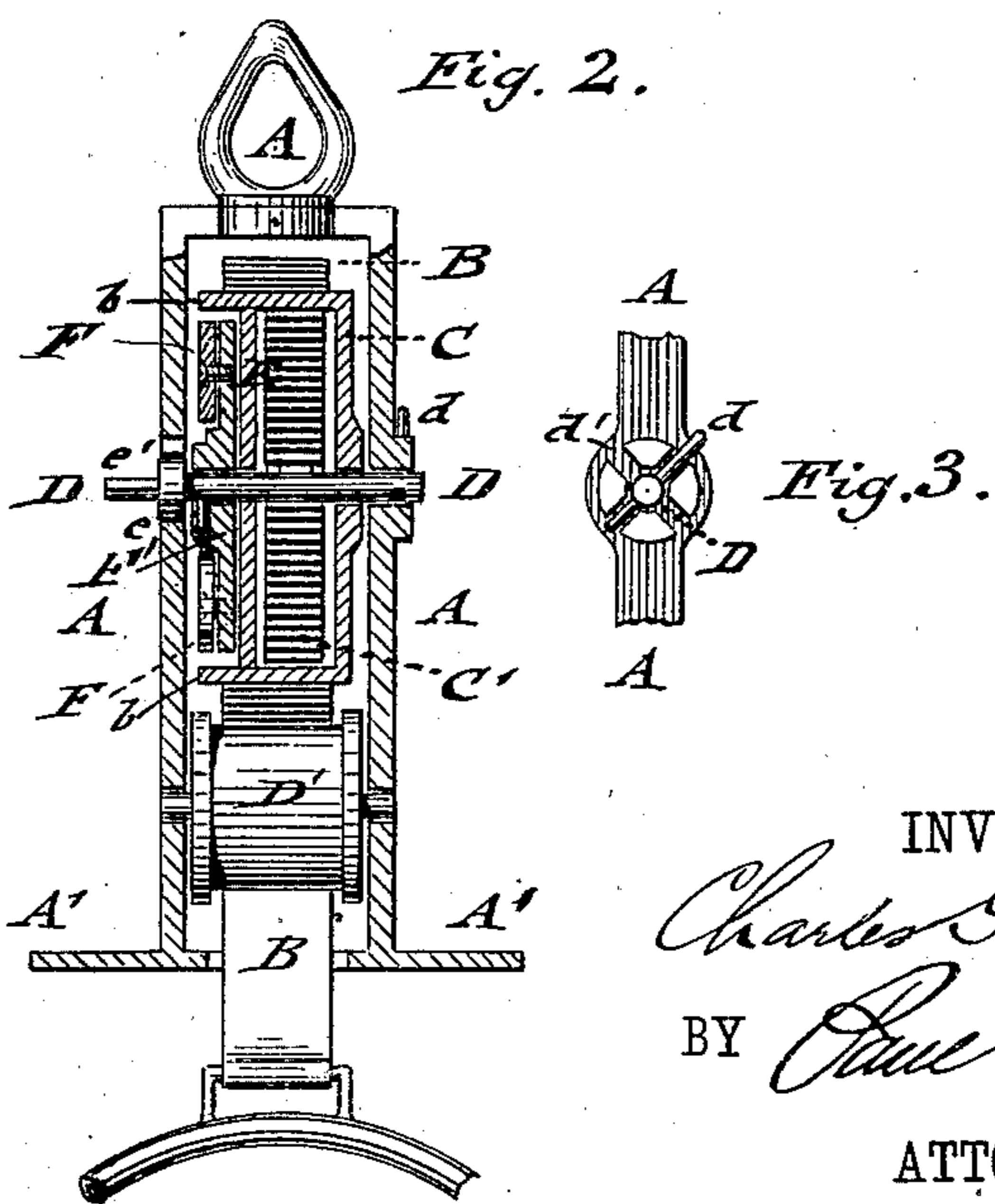
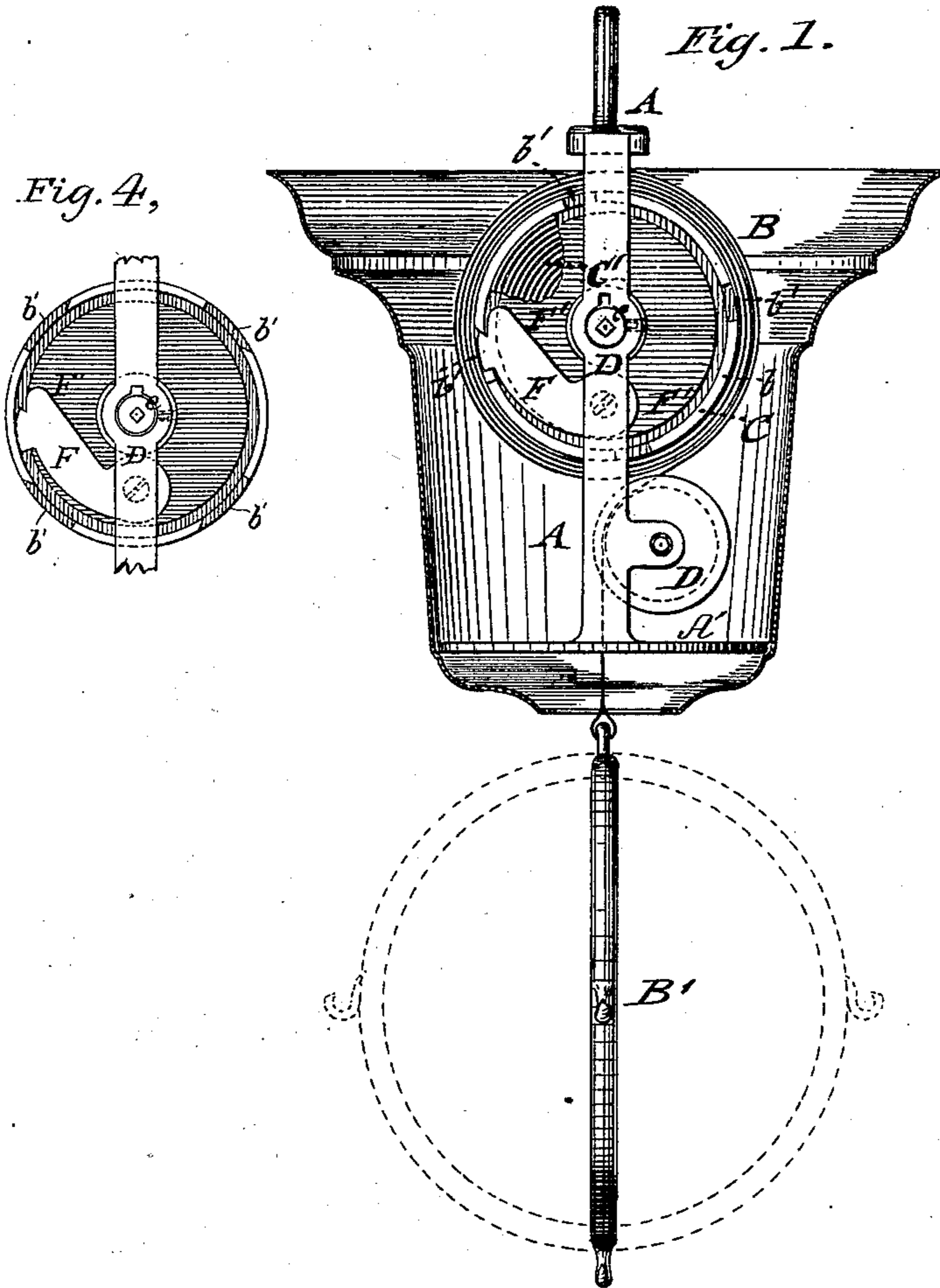


(No Model.)

C. G. MILLER.
SPRING BALANCE FOR LAMPS.

No. 256,912.

Patented Apr. 25, 1882.



WITNESSES:
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CHARLES G. MILLER, OF BRIDGEPORT, CONNECTICUT.

SPRING-BALANCE FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 256,912, dated April 25, 1882.

Application filed December 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. MILLER, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain
5 new and useful Improvements in Spring-Balances for Lamps, of which the following is a specification.

This invention has reference to an improved spring-balance for lamps, by which the lamp
10 may be supported at any desired height; and the invention consists in the combination, with a supporting-frame, of a metallic band wound around a spring-actuated drum, the notched circumference of which is engaged by one or
15 more gravity-pawls applied to a disk keyed to the fixed spindle of the drum. The band to which the lamp is applied is guided by means of a guide-roller so as to move centrally below the spring-drum.

20 In the accompanying drawings, Figure 1 represents a vertical longitudinal section of my improved spring-balance for lamps. Fig. 2 is a vertical transverse section, and Fig. 3 is a detail side view of a part of the main frame. 25 Fig. 4 is a vertical section, showing the pawl when disengaged from the drum.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents an
30 oblong supporting-frame of cast metal, to which my improved spring-balance is applied. The supporting-frame A is provided at the lower end with a disk, A', having an opening for the metallic band or tape B.

35 To the lower end of the tape is applied a suspension-frame, B', to which the lamp is hung. At the upper end of the frame A is a fixed hook or eye, by which the frame is applied to the fixed suspension-hook at the ceiling. The
40 entire mechanism is preferably inclosed by a sheet-metal bell, which is secured to the supporting-frame A.

To the frame A is applied a spring-actuated drum, C, which is operated by an interior coil-
45 spring, C', the inner end of which is applied to a fixed spindle, D, while the outer end is applied to the exterior casing of the drum. The drum is closed at one side by a detachable disk, E, which retains the spiral spring C'. The cir-
50 cumference of the drum projects beyond the detachable end plate E so as to form a flange,

b, which flange is provided with a number of equidistant notches or recesses, b', which are engaged by one of two or more gravity-pawls, F, which are pivoted to an end plate, F', that
55 is keyed to the fixed spindle of the drum.

By means of the following construction I arrange the tension of the drum: The spindle D is secured at one end to the supporting-frame A by a transverse key, d, driven through a
60 hole in the projecting end of the spindle and seated in one of two exterior diametrical grooves, d', of the frame, as shown in detail in Fig. 3. The opposite end of the spindle is provided with a collar, e, and with a square shank,
65 e', projecting beyond the collar for applying a key, by means of which the spindle may be turned around its axis after removing its key d at its opposite end, so as to adjust the tension of the interior spiral spring of the drum B, ac-
70 cording to the weight to be supported on the spring-balance. When the spring-drum is set to the proper tension the key of the spindle is reset into one of the diametrical grooves of the frame A. The tape which is wound around the
75 spring-drum B is guided along a roller, D', the spindle of which turns in bearings of the supporting-frame A, the roller being arranged at one side of the vertical axis of the spring-balance immediately below the spring-drum in
80 such a manner that the band is run out and suspended vertically below the spring-balance. When the tension of the spring of the drum is properly balanced to the weight of the lamp,
85 only a slight effort is necessary to set the lamp by means of the gravity-pawl and of the notches in the flange of the drum to any desired position or height above the table, while it may be readily raised by giving a slight pull on the band,
90 so as to release the pawl from the notch and then return the lamp into raised position.

The spring-balance is operated as follows: When the lamp is in position the upper (preferably inclined) shoulder of the notch b' is in contact with the outer end of the lug on pawl
95 F, and it being desired to lower the lamp the latter is drawn downward, and the spring-drum by the action of the tape is turned from right to left reversely to the tension of its spring. The turning motion of the drum brings the op-
100 posite or lower shoulder of the notch b' in contact with the inner end of the lug on the grav-

ity-pawl and lifts said pawl out of the notch *b'* in the same manner as the gravity-pawls of the well-known spring-rollers are operated, the notch *b'* being larger than the lug of the pawl, so as to allow a free outward movement of the latter when released from the tension of the spring-drum. The drum is turned until the lamp arrives at the position required, when the pawl is allowed to drop into one of the recesses of the circumferential flange by "feeling" for it, as in spring-rollers. For raising the lamp the pawl is first thrown out of the recess by a slight downward pull, the lamp is then lifted, and the action of the spring turns the drum rapidly, whereby the tape is wound up thereon. The upper edge of the pawl is slightly curved inward, so as not to press against the flange of the drum when the same is rotated. The drum by its rapid rotation escapes the action of the pawl. When the lamp arrives below the casing or bell of the spring-balance the pawl is allowed to drop into one of the recesses, so that the lamp is then securely supported.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a supporting-frame, of a spring-actuated drum, and of a metallic suspension band or tape applied to the drum, with one or more gravity-pawls applied to a stationary end plate and adapted to engage notches in the flanged circumference of the same, substantially as set forth.

2. The combination of the following parts: a supporting-frame having a centrally-perforated bottom plate and top hook or eye, a fixed transverse spindle, a spring-actuated drum, a metallic suspension-tape applied to the drum, one or more gravity-pawls pivoted to a stationary end plate and adapted to engage notches in the flanged circumference of the spring-drum, and a guide-roller below the drum and at one side of the bottom opening of the frame, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in the presence of two subscribing witnesses.

CHARLES G. MILLER.

Witnesses:

WM. M. TOMPKINS,

M. E. HOWE.