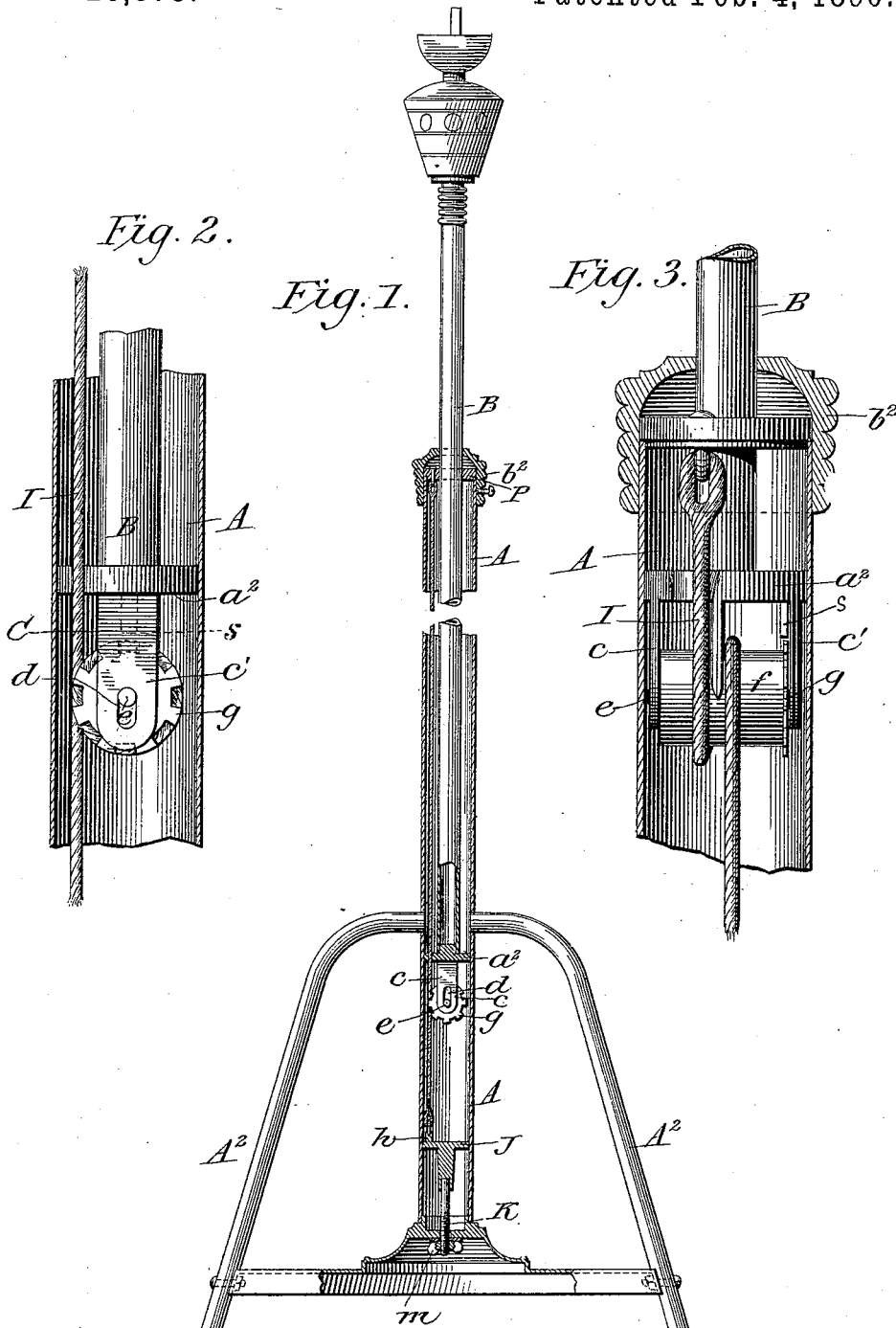


(No Model.)

L. F. GRISWOLD.
EXTENSION DEVICE FOR LAMP FIXTURES.

No. 420,875.

Patented Feb. 4, 1890.



Witnesses:

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UNITED STATES PATENT OFFICE.

LEWIS F. GRISWOLD, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE
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EXTENSION DEVICE FOR LAMP-FIXTURES.

SPECIFICATION forming part of Letters Patent No. 420,875, dated February 4, 1890.

Application filed May 31, 1889. Serial No. 312,737. (No model.)

To all whom it may concern:

Be it known that I, LEWIS F. GRISWOLD, of Meriden, in the county of New Haven and State of Connecticut, have invented a new and useful Improved Extension Device for Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to a novel construction of what are known as "extension devices," employed extensively in the construction of distensible lamp and gas fixtures, of either that type in which the lamp is suspended from the ceiling and adapted to be set at different elevations or that type in which the lamp is supported upon a pedestal or stand and adapted to be raised and lowered, as occasion or convenience may require.

In the drawings hereto annexed, and forming a part of this specification, I have shown my invention applied to that type of adjustable lamp-fixtures known usually as a "piano-lamp," in which the lamp is supported upon a pedestal composed usually of telescopic tubes, and is adapted to be raised and lowered and held at any desired elevation, although my said invention may, under proper modifications, be applied with perhaps equal advantage to that other type of known fixtures in which the lamp is suspended from the ceiling through the medium of a telescopic pendant.

Previous to my invention various devices have been contrived designed for the purpose of and operating to effectuate an adjustment of the lamp to any desired elevation, in some of which the proper engagement between the sliding tubes or an interlocking of one with the other has been effected through the medium of some positively-locking device which had to be manipulated by the person adjusting the fixture, and in others of which a frictional engaging device has been employed to effect the interlocking of the tubes against the tendency either of gravity or the suspension-spring, such frictional engaging device being thrown into and out of operation automatically simply by the relative

movement or adjustment of the telescopic tubes of the fixture.

My improvement relates to the last-mentioned type or species of extension devices, in which a frictional engaging device for maintaining the tubes in any required relative position is employed—that is, thrown into and out of gear, so to speak, automatically by the initial movement of the adjustable portion of the fixture, when the latter may be moved to adjust the lamp.

To enable those skilled in the art to which my improvement relates to understand and practice my invention, I will now proceed to more fully describe the latter, referring by letter to the accompanying drawings, which form part of this specification, and in which I have shown my invention carried out in that form or under those details of construction under which I have so far successfully practiced it, although the novel principle of construction and mode of operation peculiar to my invention may of course be carried into effect under various modifications.

In the drawings, Figure 1 is a sectional elevation of a piano-lamp embracing my invention and having certain portions of the stand or tubular pedestal cut away and the remaining portions moved toward each other for the purpose of condensing the drawing within the requisite limits without having the scale too small to intelligibly illustrate the working parts. Fig. 2 is a duplication of a portion of the devices seen at Fig. 1, and with some of the parts shown differently adjusted. Fig. 3 is a transverse view of the same parts shown in Fig. 2.

In the several figures the same part will everywhere be found designated by the same reference-letter.

A is the usual outer tube or cylindrical casing of the pedestal portion of the lamp-fixture, which is mounted upon or sustained by a stand or suitable supporting legs and frame A², which may be of the design shown or of any other desirable pattern.

Within the outer stationary tube A is arranged or located, in substantially the usual manner, the inner and adjustable lamp-supporting tube B, which is adapted to slide ver-

tically within the outer tube A, and on the upper end of which is supposed to be arranged any desired form of lamp. The tube A is preferably closed at its upper end by means of a perforated disk P, within the central circular opening of which slides and fits the tube B, an ornamental cap-piece b^2 being arranged, as shown, to cover the perforated disk P and make a finish at the jointure of the upper end of the stationary tube with the body of the sliding tube, while the lower end of said sliding tube is provided, as shown, with a disk-like head a^2 , the central portion of which is securely fastened to the lower portion of said tube B, and the perimeter of which fits and works within the bore of the outer tube or casing A, all as clearly shown. This disk-like head a^2 is formed or provided with depending ear-pieces $c c'$, of a construction and for a purpose to be presently explained.

Within the outer casing or tube A, and (in the case shown) between the interior wall thereof and the exterior surface of the sliding tube B, is arranged a rope or cable I, the upper end of which is permanently secured to the perforated disk P, and the lower end of which is fastened to the upwardly-projecting lug or ear-like portion h of an adjustable disk or piece J, the downwardly-projecting stem from which passes through and works within the central aperture of a stationary disk or bar H, said stem terminating in a screw-threaded rod k , the lower portion of which passes downwardly through the bottom plate or portion G of the lamp-stand, and is provided, as shown, with a thumb-nut m , all in a manner and for a purpose to be presently explained. This rope or cable makes a turn around a spool or small drum f , which is mounted, as shown, on a spindle e , the journal-like ends of which are arranged and work within oblong or slotted bearings d , that are formed in the pendent ears $c c'$, hereinbefore mentioned, and said drum or spool f , around which the cable I thus makes a turn, is formed or provided at one end with a notched or toothed circular flange g , which is adapted to be thrown into and out of engagement with a stationary tooth or lug-like projection s on the inner face of the ear-like depending portion c' .

The operation of the parts or devices so far described and shown in the drawings is about as follows: Supposing the parts to be in the relative position shown at Fig. 1, (which shows the relationship in which the parts appear when the lamp mounted on the upper end of the supporting-tube B is being elevated,) as soon as the lamp may be released from the hand of the person manipulating it, its gravity, combined with the weight of the movable tube B and its attachments, will cause the said tube to slightly descend until the projecting lug or tooth s shall have descended into engagement with one of the

notches in the periphery of the flange g of the spool or drum f , which engagement of said tooth with said notched flange will of course prevent any rotation of the spool or drum f upon its axle or spindle e . Now as the rope or cable I, which makes a turn around this spool f , is supposed to be drawn and held sufficiently taut to excite enough friction between itself and the spool f , around which it passes, to prevent any slip of said cable upon the periphery of said spool by the action of gravity of the lamp and its supporting-tube B, said lamp will of course remain in substantially the position in which it was left when released from the hand of the person manipulating it. If, however, it should be desirable to lower the lamp, this degree of friction between the cable and the periphery of the spool f will be insufficient to overcome a slight pressure applied to the movable parts, operating in addition to the gravity of said parts and tending to force the lamp downward to any desired elevation. If it be desired, on the other hand, to elevate the lamp, the initial upward movement of the lamp, which may be effected by hand, will operate to disengage the lug s from the teeth of the circular flange g , and the spool or drum f then being left free to rotate on its axis or spindle e , the lifting of the lamp and its pendent tube B will encounter little or no obstacle from the action of the cord or cable I, since then the spool f will simply roll along, so to speak, upwardly, unwinding in one direction and winding up in the other direction that portion of the cable which makes the turn around the periphery of said spool, and whenever the lamp shall have been elevated to the requisite point in this manner a releasement of it by the hand of the person will permit an almost imperceptible descent of the lamp until the lug s shall have become re-engaged with one of the notches of the flange g , whereupon the spool f will be again locked against any rotatory movement, and the frictional action of the cable upon the periphery of the spool again created to effect the retention of the adjustable parts in the position to which they may have been moved.

It will be seen that by reason of the spindle e of the spool f working within the slotted or oblong bearings or apertures d of the depending ears $c c'$ the mode of operation just explained is made possible, and it will also be seen that under this mode of operation, while no practical impediment is offered to the upward movement of the lamp and its permanent attachments, (during which movement the gravity of the lamp of course has to be overcome by the person manipulating it,) the frictional locking device exerts sufficient force or impediment to any downward movement of the lamp to prevent any automatic or casual descent of the moving parts, while at the same time such parts may be easily forced downward to any desired ex-

tent by the application of a small amount of pressure downward upon the lamp or on the movable tube B.

For the purpose of regulating and maintaining the proper degree of friction between the periphery of the spool *f* and that portion of the cable which makes a turn around said spool, and for the purpose also of varying the operation of these parts to suit lamps of different weights, which may be applied to the movable tube B, I provide the simple means shown at the lower end of the outer tube A for exerting a draft-strain on the cable I and for drawing it and holding it more or less taut, as circumstances may require, said contrivance consisting, as shown and already briefly described, in the sliding pull-bar or disk J, which is drawn downwardly to any desired extent and held in adjustment through the medium of the thumb-nut *m*, acting upon the threaded stem *k*, all in a manner to be easily understood by those skilled in the art. Of course not only may this adjusting device or contrivance be varied in the details of its construction, but some other means or device may be applied in a somewhat different manner, if deemed expedient, for the purpose of exerting more or less draft-strain on the cable, in order that the turn thereof around the periphery of the spool *f* may be made to bind said spool with more or less frictional force, as circumstances may require, for the purpose of rendering the frictional locking device capable of acting with more or less force.

I, however, consider it an important feature of my improved extension device that the thumb-nut (or whatever other device may be used in lieu thereof) be located exteriorly of the telescopic tubes, so as to constitute a perfectly-accessible means for setting or adjusting the friction lock or brake so as to act with different degrees of force, according to the variableness of the gravity of different lamps or articles to be held in suspension by the extension device.

In lieu of the precise detail construction shown with reference to the frictional and automatically-operating engaging device, modifications in the detail construction may of course be made without departing from the pith or essence of the main feature of my invention, which consists, essentially, in a friction-lock or engaging device which is arranged interiorly of the stem or pedestal of the lamp-stand, is carried by the inner end of the interior tube, which is automatically thrown out of action whenever the lamp may be raised, and which automatically comes into an operative condition whenever the

lamp may be allowed to descend or come to a state of rest by its own gravity, and is adjustable from without the exterior tube.

Of course, in either substantially the form shown or under one or another modification, my invention may be applied with more or less advantage to that other type of extension devices for lamp-fixtures, &c., in which the stationary tube depends from an elevated point of support, and in which the lamp or other article to be raised or lowered is applied to the lower end of the sliding tube.

Having now so fully explained the nature and operation of my improved contrivance that those skilled in the art can make and use my invention, either in the form shown and described or under some modification of such form, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the stationary and sliding parts of an extension device, a spool or drum movably connected with one of said parts, a binding cord or cable which makes one or more turns around the periphery of said spool and has its ends secured or attached to the other one of said parts, and means by which said spool or drum is rendered non-rotative whenever the movable part of the extension device is acted upon by the gravity of the lamp, all substantially in the manner and for the purposes hereinbefore set forth.

2. In combination with the movable and stationary tubes, a drum or spool having its spindle in engagement with one of said parts, and a cable secured to the other of said parts and partially wound around said spool or drum, means for increasing or diminishing the degree of tautness of said cable for the purpose of increasing or diminishing its frictional action on said spool or drum, in substantially the manner and for the purposes hereinbefore set forth.

3. In combination with the two telescopically-arranged tubes and a friction-lock located within the outer tube and carried by the inner end of the interior tube, means for adjusting or setting the said friction-lock to act with different degrees of brake-power, having a protruding portion accessible exteriorly of the outer tube for the purposes of conveniently manipulating the said adjusting device, all substantially in the manner and for the purposes hereinbefore set forth.

In witness whereof I have hereunto set my hand this 6th day of May, 1889.

LEWIS F. GRISWOLD.

In presence of—

W. H. LYON,

W. T. RIGHTMYER.