

(No Model.)

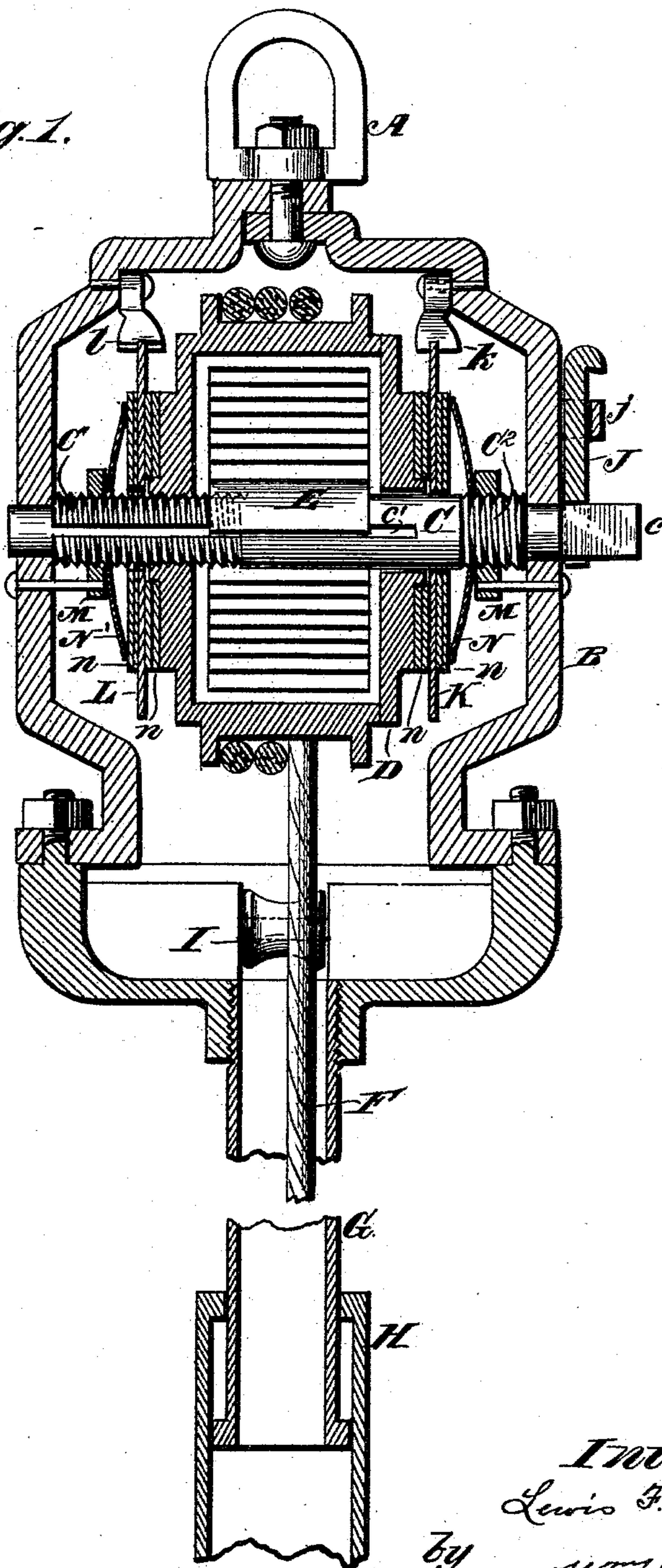
2 Sheets—Sheet 1.

L. F. GRISWOLD.
EXTENSION FIXTURE FOR LAMPS, &c.

No. 401,347.

Patented Apr. 16, 1889.

Fig. 1.



Witnesses:
Phil. Everett
A. Tichell

Inventor:
Lewis F. Griswold
by *Wm H Babcock*
Atty.

(No Model.)

2 Sheets—Sheet 2.

L. F. GRISWOLD.
EXTENSION FIXTURE FOR LAMPS, &c.

No. 401,347.

Patented Apr. 16, 1889.

Fig. 2.

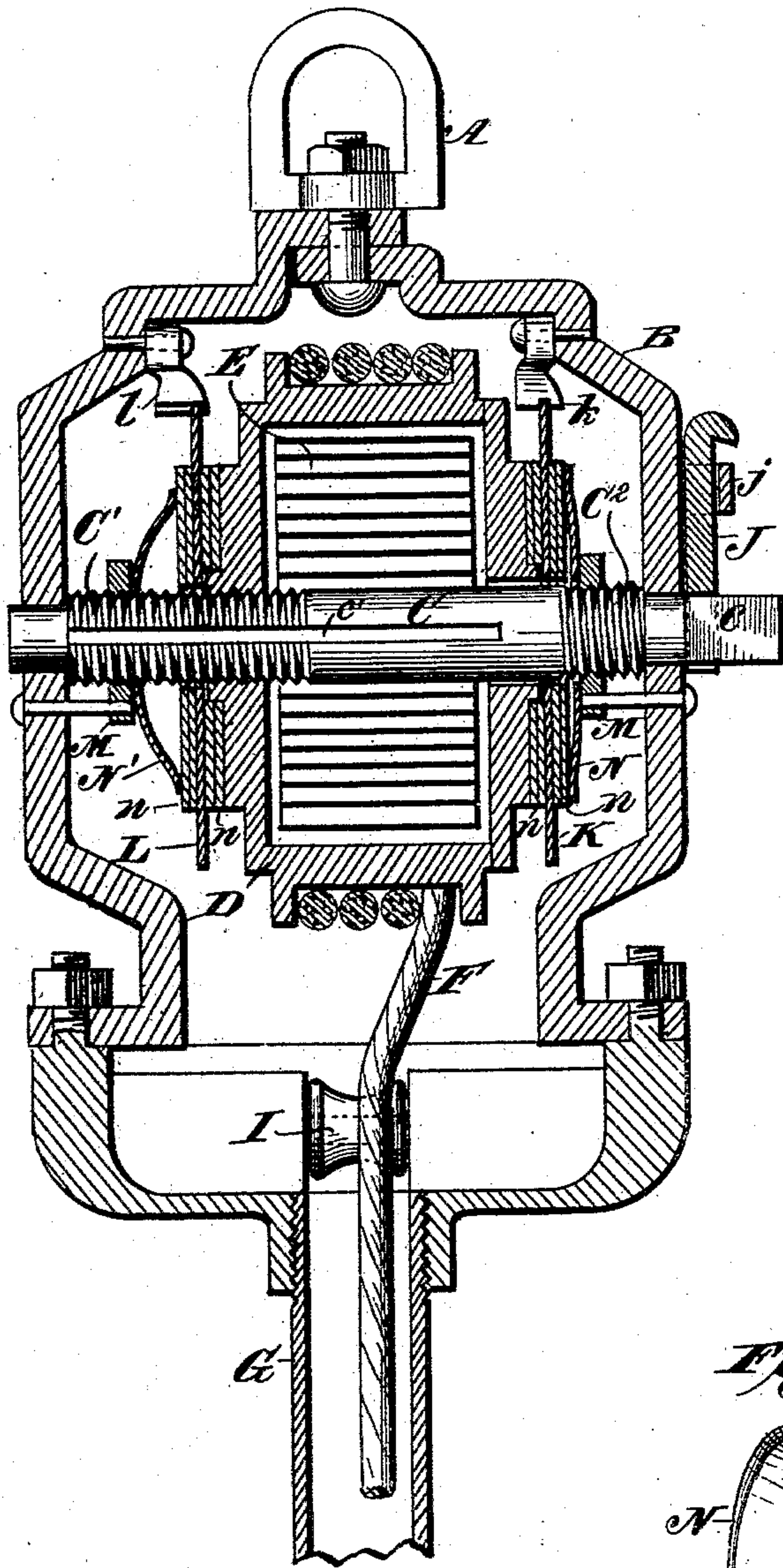


Fig. 3.

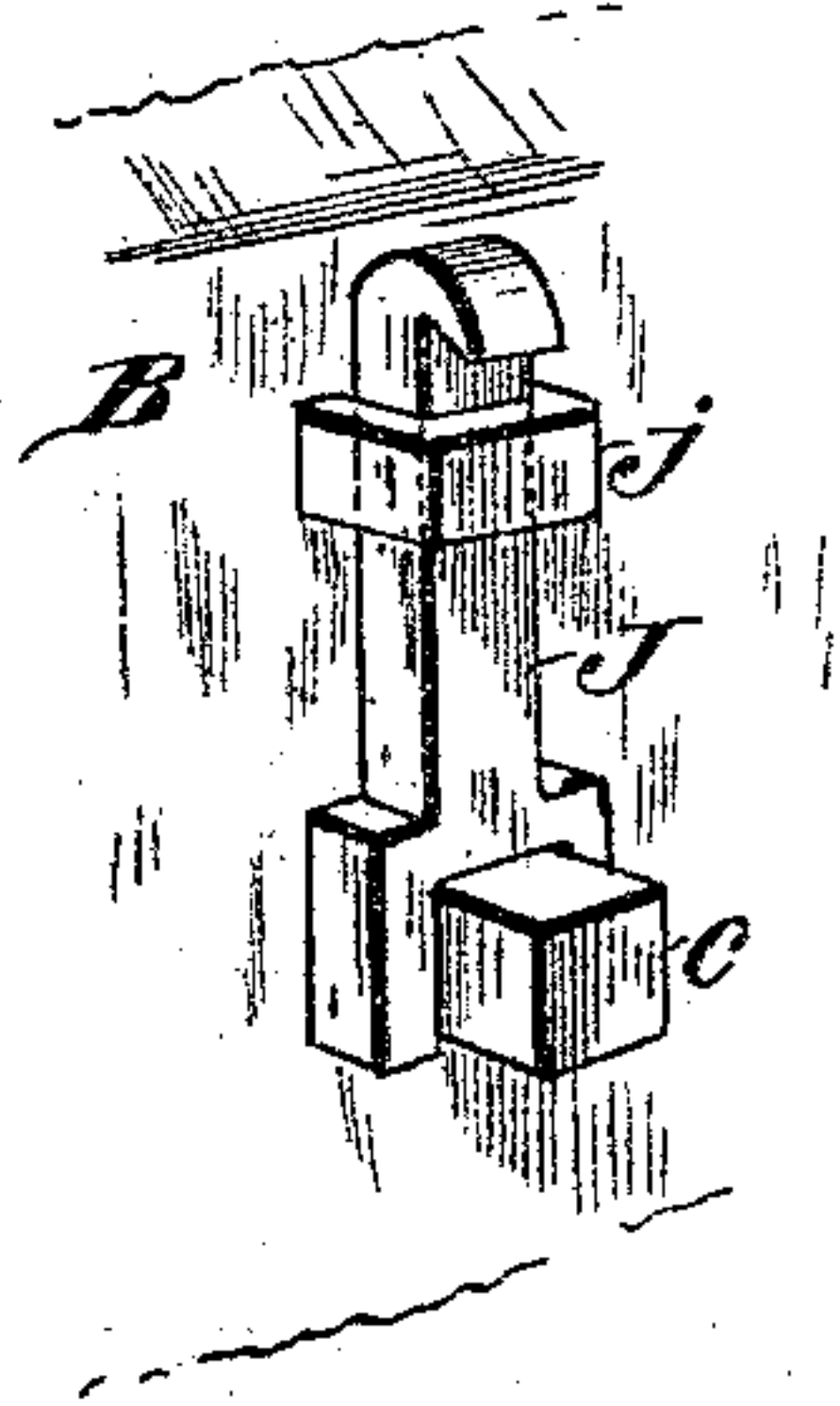


Fig. 4.

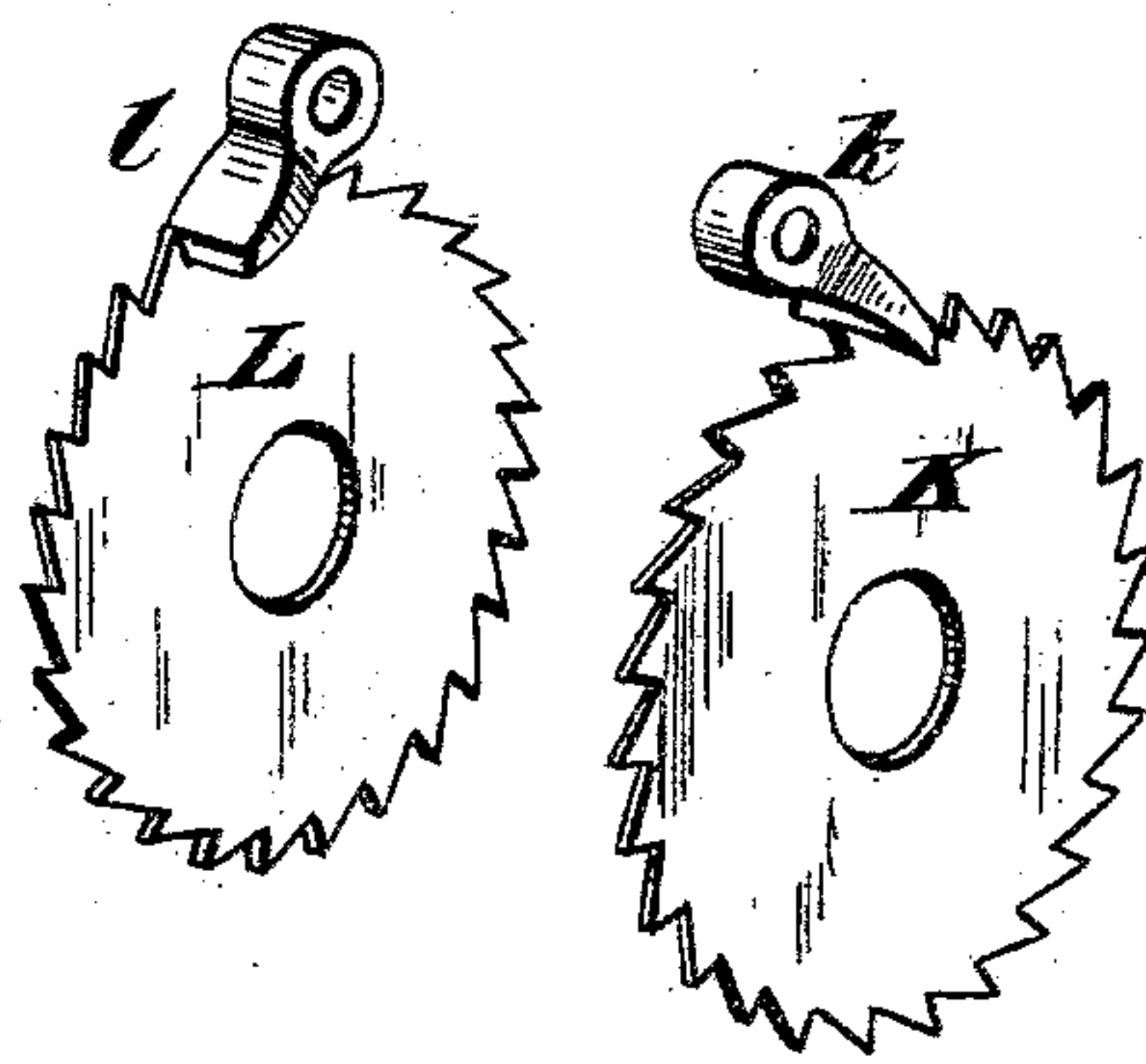
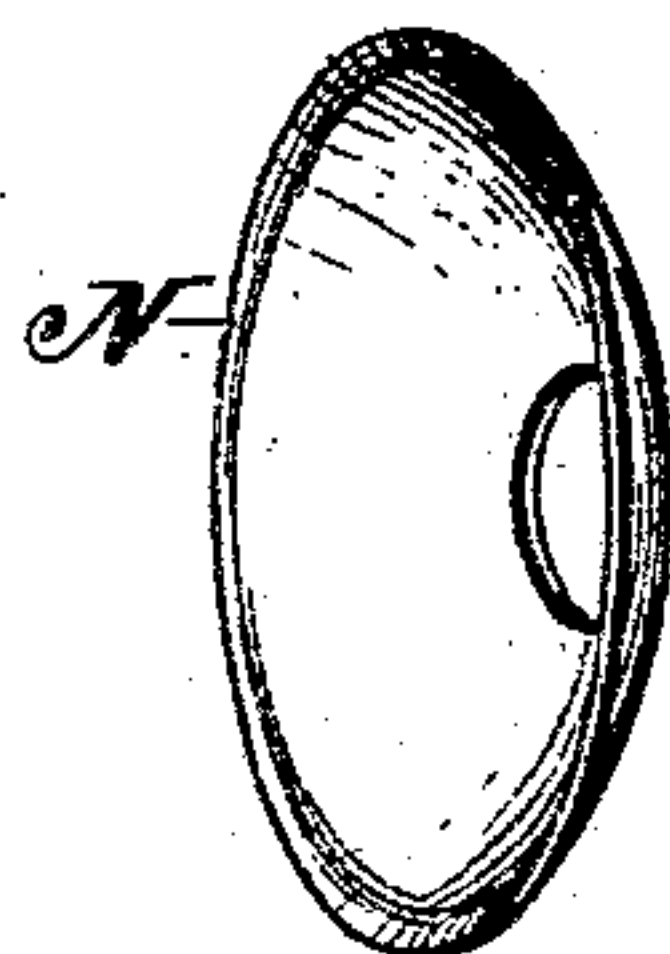


Fig. 5.



Witnesses:
Robert Smith
A. Fichtl

Inventor:
Levin F. Griswold
by *W. H. Babcock*
Atty.

UNITED STATES PATENT OFFICE.

LEWIS F. GRISWOLD, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE
CHARLES PARKER COMPANY, OF SAME PLACE.

EXTENSION-FIXTURE FOR LAMPS, &c.

SPECIFICATION forming part of Letters Patent No. 401,347, dated April 16, 1889.

Application filed September 13, 1888. Serial No. 285,286. (No model.)

To all whom it may concern:

Be it known that I, LEWIS F. GRISWOLD, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Extension-Fixtures for Lamps, Chandeliers, and other Articles; 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.

This invention relates to extension-fixtures for lamps and chandeliers which use a spring-drum for suspending the movable part of the fixture and its attachments, and frictional devices for resisting the turning of the drum as the lights are raised or lowered.

In the present improvement I make use of two such frictional devices, one on each side of the drum, which is movable endwise on the shaft to bear against one or the other as the lights ascend or descend, one of said devices resisting the upward motion only and the other resisting the downward motion only. I also provide said frictional devices with means for regulating their frictional action, and provide the suspending-spring with means for adjusting its tension, so that it will counterbalance the movable part of the fixture and the lights attached thereto when the latter are midway between their highest and their lowest position, however their weight may vary. So far as I am aware, it is new to employ, in combination with a fixture having its movable part balanced in this middle position, two brakes, one retarding downward motion, the other upward motion.

In the accompanying drawings, Figure 1 represents a vertical section through an extension-fixture for a lamp or chandelier, omitting the lower part of the lower tube and the devices attached thereto. This section is taken on the axial line of the drum-shaft, the parts being shown in the positions occupied when the lights are midway between their highest and lowest points of suspension. Fig. 2 represents a similar view, the parts being shown in the positions occupied when the lights are at their highest point of suspension. Fig. 3 represents a detail view of the

winding end of the shaft and the key which locks it. Fig. 4 represents a detail view of the two disks and their pawls in perspective. Fig. 5 represents a similar view of one of the disk-shaped springs bearing thereon.

A designates the suspension eye or loop; B, the frame attached thereto; C, the shaft of the drum journaled in the sides of said frame and having a protruding prismatic or rectangular end, *c*; D, the spring-drum mounted on said shaft, so as to be capable of endwise and rotary motion thereon, and screw-threaded at one side to engage screws-threads *C'* on said shaft; E, the coiled spring for counterbalancing the lamps and movable part of the fixture, said spring being, as usual, attached to said shaft at its inner end and to said drum at its outer end; F, the suspension-cord wound on said drum; G, the upper tube screwed into the lower end of said frame; H, the lower tube sliding up and down on said upper tube, and I the guide-pulley, over which the cord passes. Except the special construction of the shaft and drum, the above parts are old and well known.

J designates a vertically-sliding bar having a square recess at its lower end, and having a hook formed on its upper end for a handle. It is held in a guide-loop, *j*, formed on the outside of frame B, and occupies a position above the protruding end *c* of said shaft. This bar forms a key for locking and unlocking said shaft. When raised out of engagement therewith, it allows said shaft to be turned for winding said spring to the desired tension. The key J is then pressed down until it bears against three of the flat faces of said rectangular end, and thereby holds said shaft against all further rotation. Brake-disks K L are arranged on said shaft and forced by springs N N' toward drum D, which is between them, and against interposed washers *n*. Nuts M, turning on screw-threads *C'* *C*² of shaft C, regulate the tension of said springs and hold them in place. The screw-threads *C*² do not engage the drum, although the screw-threads *C'*, as already stated, do engage it. Each brake-disk is provided with peripheral ratchet-teeth, those of disk K being engaged by a pawl, *k*, and those of disk L by a pawl, *l*. The former pawl and ratchet-teeth are arranged

to hold disk K motionless when the lights descend, but allow it to turn freely when they ascend, whereas pawl *l* and the ratchet-teeth with which it engages have the reverse action with respect to disk L.

The operation is as follows: The shaft C is turned by a wrench applied to end *c* until the spring E is sufficiently wound to counterbalance the movable part of the fixture and the lamps and attachments suspended thereby when the latter are midway between the highest and lowest position. The drum and proximate parts appear as in Fig. 1 when the lights and movable part of the fixture are then raised to the highest position by hand, the spring E simultaneously turning the drum D, winding the suspension-cord thereon, and, by the engagement of the screw-threads of said drum with the screw-threads C' on shaft C, forcing said drum from left to right and compressing spring N, as shown in Fig. 2. The nut M, bearing against said spring, is then tightened, if necessary, until the disk K and spring N are able to hold the lamps and movable part of the fixture against descent. When the lights are pulled down by hand, the drum travels along the shaft from right to left, relieving the pressure on spring N, so that the increasing tension of the spring is compensated for by the lessening friction of the brake. On reaching the middle position and thereafter the spring alone supports the movable part of the fixture, the disk K no longer offering any appreciable resistance; but the continued travel of the drum toward the side on which is disk L as the lights descend forces back said disk and compresses spring N' more and more, so that when the lamp or chandelier is released by the person drawing it down the disk L, held by pawl *l*, will resist the upward motion of said lights sufficiently to compensate for the increased tension of the spring E due to such descent.

The axis or shaft C is provided with a longitudinal slot, *c'*, which receives the inner end of the spring and allows said spring to move endwise with drum D without separating.

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

1. In a suspension device, the combination of a spring which counterbalances the suspended article midway between its highest and lowest elevation, a drum turned by said spring, and two friction brakes or stops, one resisting upward motion and the other resisting downward motion, substantially as set forth.

2. The combination of a shaft, a drum movable endwise thereon, friction-brakes on each side of it, with which it is brought in contact alternatively by such endwise motion in either direction, a suspending-cord wound on said drum, and a spring actuating the latter, substantially as set forth.

3. A spring-actuated drum, a shaft with which it has screw-thread connection, and frictional devices alternatively on each side of said drum arranged for contact with said drum, in whichever direction the latter is moved, substantially as set forth.

4. In combination with a shaft having screw-threads, a spring-actuated drum movably mounted thereon and having screw-threads to engage therewith, brake-disks arranged on each side of said drum and having peripheral teeth facing in opposite directions, pawls engaging said teeth, and springs forcing said brake-disks toward said drum, substantially as set forth.

5. In combination with a shaft and spring-drum movable endwise thereon, a suspension-cord winding on said drum, a pair of friction-brakes arranged to resist, respectively, upward motion only and downward motion only, and the locking-key J, arranged to make contact with one of the faces of the prismatic end of said shaft, or to free the same at will, substantially as set forth.

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

LEWIS F. GRISWOLD.

Witnesses:

W. H. LYON,
J. H. BECKETT.