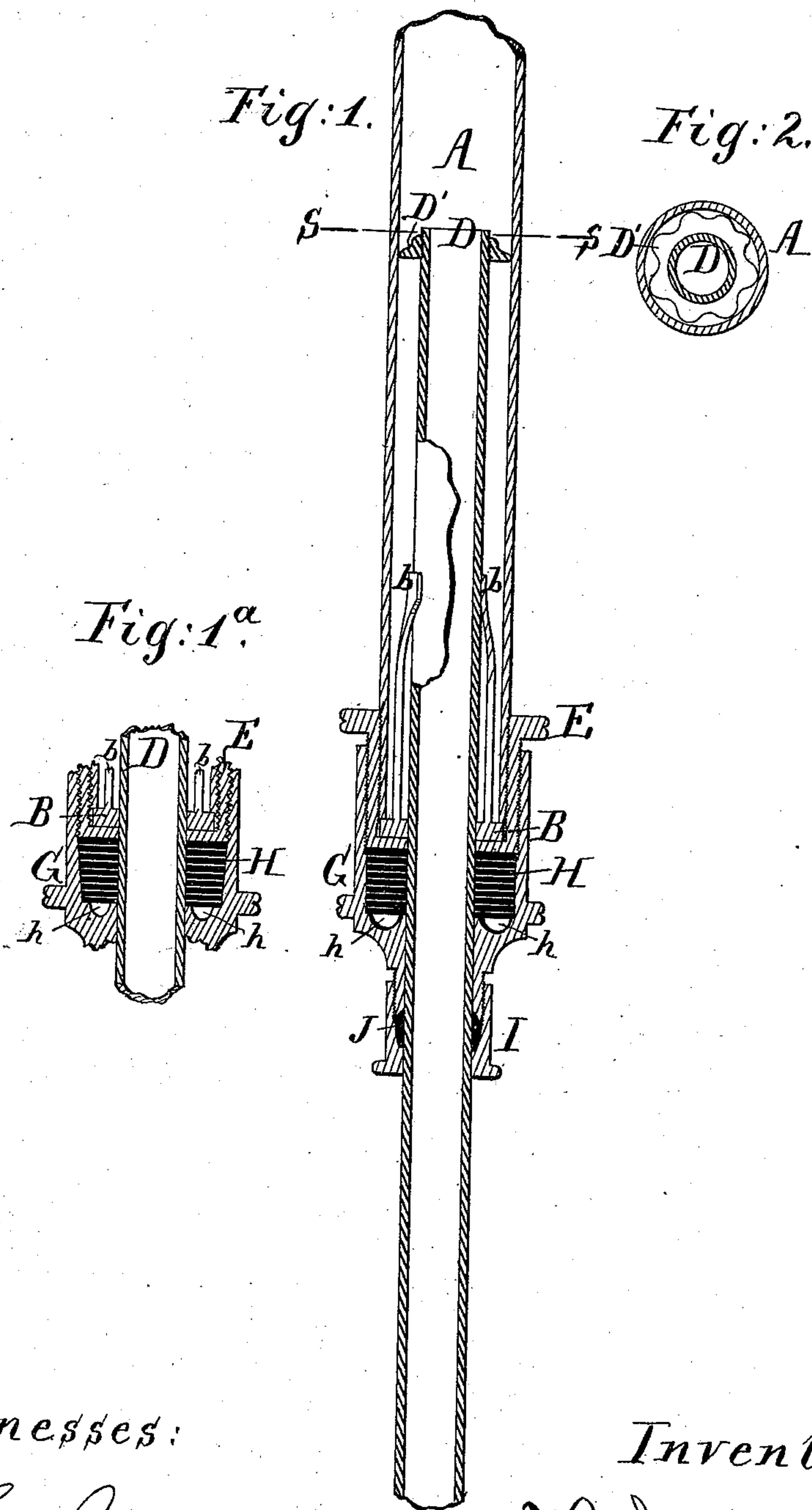


H. IDEN.  
DROP-LIGHT.

No. 173,472.

Patented Feb. 15, 1876.



Witnesses:

*Wm. Henry Jones*  
*Samuel Daniel*

Inventor:

*H. Iden*  
*by his attorney*  
*C. S. Weston*

# UNITED STATES PATENT OFFICE.

HENRY IDEN, OF NEW YORK, N. Y.

## IMPROVEMENT IN DROP-LIGHTS.

Specification forming part of Letters Patent No. **173,472**, dated February 15, 1876; application filed January 22, 1876.

*To all whom it may concern:*

Be it known that I, HENRY IDEN, of New York city, in the State of New York, gas-fix-ture manufacturer, have invented certain new and useful Improvements relating to Drop-Lights, of which the following is a specification:

My improvements apply to all that class of drop-lights in which a small tube smoothly finished on the exterior is thrust upward or prolonged downward at will by being held in a stuffing-box in the lower end of a tube of larger diameter. It is important to so equip the parts that the whole will serve a long period without requiring attention.

I steady or center the upper end of the small tube within the large one by a ring at its upper end, which is made notched or open-work to reduce the amount of frictional surface. I provide a double stuffing-box, the uppermost of which is adapted to serve the main purpose of arresting the gas, and the lowermost serves to arrest any downward escape of the lubricating material, and also performs an important function in cleanly wiping the pipe and preventing the access of dust and the like to the upper or stuffing box proper. I equip the parts with simple compressing-springs, which exert a gentle but sufficient pressure upon the surface of the inner pipe, so that the stuffing-box is relieved from its function of pinching and holding up the weight of the parts.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a central longitudinal section. Fig. 1<sup>a</sup> represents a modification. Fig. 2 is a horizontal section on the line S S in Fig. 1.

Similar letters of reference indicate like parts in all the figures.

A is the upper or stationary pipe. B is a substantial washer or ring abutting against the lower end of A, and supporting two sufficiently stiff springs, *b b*. The free ends of these springs are smoothly hollowed on their inner faces and adapted to form a fair bearing against the inner tube. D' is a ring formed with notches on its exterior, and threaded upon the tube D, and further secured by slightly riveting the upper end of the latter. The ring D' allows

the gas to circulate freely in the stationary tube A, and serves to allow the tube D to be moved freely upward without creating a vacuum, and also to permit side lights to be attached to the said tube A. E is a confining-cap, threaded upon the lower end of the tube A, and holding the ring B firmly up against the latter. G is a brass casting threaded upon the exterior of E, and providing in its interior a liberal space for a series of felt washers, H. A sufficient annular cavity, *h*, is provided below the latter to receive and retain a considerable quantity of oil or grease, ready to be absorbed by the felt as it shall be required. The casting G is extended downward and threaded on its exterior. Upon this matches a cap, I, within which and between the cap I and the casting G is a space for a second or lower stuffing-box, which is filled with cotton J. I form the cavity for the cotton J oblique or conical on both the upper and lower faces, while the upper stuffing-box H is formed, in effect, square on both the corresponding faces.

Fig. 1<sup>a</sup> shows what may by most be regarded as a preferable form of the interior for the chamber of the main stuffing-box H. It differs from the form shown in Fig. 1, being contracted or tapered from the top downward, so that when in the act of adjusting the casting G is forced upward. It not only compresses the felt H vertically, but also carries it bodily inward against the tube D.

Many of the details may be modified by any good mechanic. I have formed the springs *b b* of steel, and the ring in which they are supported of brass; but they may both be of brass or both of steel. The centering-ring D' on the upper end of the small tube D may be efficiently attached by simply soldering. The function of this ring is specially important when the drop-light is forcibly strained to one side or the other in the extended condition. The wrenching and distortion of the stuffing-box due to the angular positions assumed by the smaller tube under such conditions are mainly or entirely prevented by this ring, while, being notched, it offers no appreciable resistance to the ready adjustment of the parts.

Two stuffing-boxes are capable of being tightened or compressed separately. To compress the upper or main stuffing-box H the



entire casting G is turned. To compress the lower or secondary stuffing-box J only the small cap I is turned.

My invention may be used in connection with a single burner; or it may be used where a number are used, as in a chandelier, where the whole of the lights are lowered and raised bodily; or it may be used where a half or any other proportion of the lights in the chandelier are to be thus lowered and raised. It may also be used in those cases where a center light is lowered and raised relatively to a fixed chandelier.

I claim as my invention—

1. In combination with the stationary tube A and smaller movable tube D, the centering-ring D', corrugated or notched, so as to allow a free passage of the gas, and adapted to serve as and for the purposes specified.

2. The annular oil-recess h, in combination with the packing and with the tubes A D and adjustable casting or piece G, as and for the purposes specified.

3. The double stuffing-box H J and double adjustments G I, combined and arranged to serve relatively to the stationary tube A and movable tube D of a drop-light, as and for the purposes specified.

In testimony whereof I have hereunto set my hand this 21st day of January, 1876, in the presence of two subscribing witnesses.

HENRY IDEN.

Witnesses:

C. C. STETSON,  
THOMAS D. STETSON.