No. 760,534. PATENTED MAY 24, 1904.

E. E. GROVE.

DROP LIGHT.

APPLICATION FILED FEB. 12, 1904.

NO MODEL.

Fig. 1.

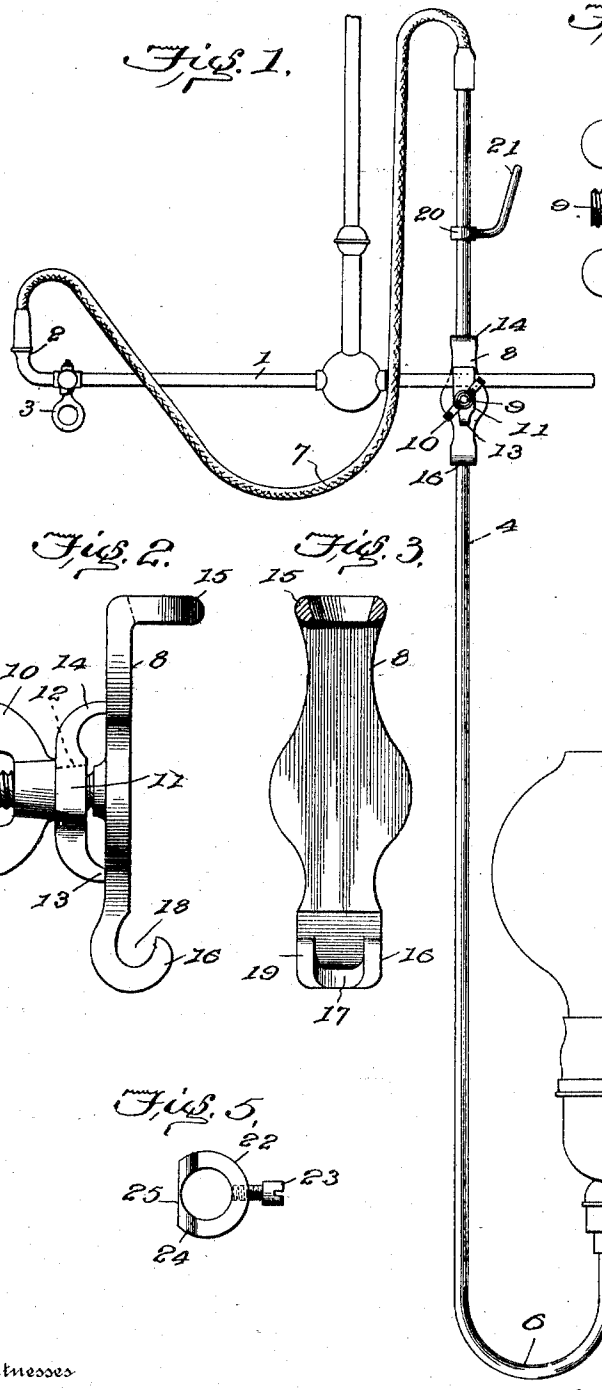


Fig. 4.

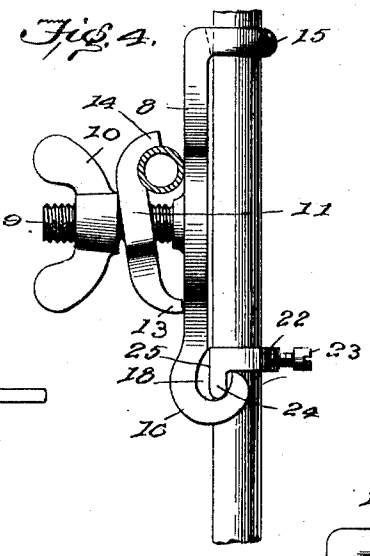


Fig. 2.

Fig. 3.

Fig. 6.

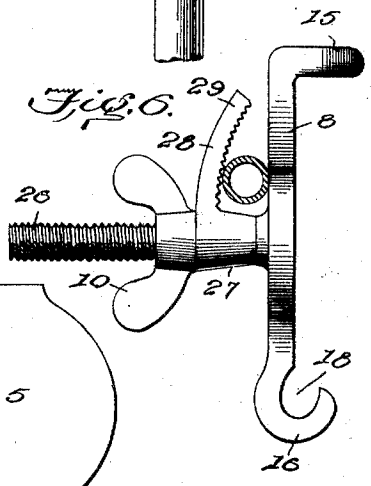


Fig. 5.

Inventor

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No. 760,534. Patented May 24, 1904.

UNITED STATES PATENT OFFICE.

ELMER E. GROVE, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE GROVE MANUFACTURING COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

DROP-LIGHT.

SPECIFICATION forming part of Letters Patent No. 760,534, dated May 24, 1904.

Application filed February 12, 1904. Serial No. 193,226. (No model.)

To all whom it may concern:

Be it known that I, ELMER E. GROVE, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Drop-Lights, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to drop-lights, and is in the nature of an improvement upon what is set forth in a former application, filed by me September 19, 1903, Serial No. 173,778.

The invention relates to that class of drop-light which may be readily attached to any part of an ordinary gas fixture or chandelier, so as to be supported therefrom, and which may be readily lowered to a predetermined point when in use and raised and held out of the way when not in use.

My present invention relates more particularly to that portion of the structure which guides the device during its vertical movements and which holds it in place when raised, and has for its object to provide means for guiding the device in an efficient manner during its vertical movement, for supporting it in such a way as to insure a true vertical position when lowered, and to more securely lock it in position when raised.

To these ends my invention consists in certain novel features, which I will now proceed to describe and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is an elevation of a gas-fixture having my improved drop-light applied thereto. Fig. 2 is a side elevation of the guiding aud supporting device detached. Fig. 3 is a front elevation of the same, partly in section. Fig. 4 is a detail side elevation showing the position of the parts when the drop-light is raised and locked in raised position. Fig. 5 is a detail bottom plan view of the locking-collar detached, and Fig. 6 is a view illustrating a modified form of the clamping-arm.

In the said drawings the device is shown in Fig. 1 applied to a chandelier having straight arms, although it may be readily applied to curved or vertical portions of the chandelier or bracket with equal facility. The chandelier-arms are indicated at 1 and the usual burners and stop-cocks at 2 and 3, respectively.

4 indicates the drop-pipe, constructed of metal and provided at its lower end with a suitable burner or lamp 5, which is offset from the line of the pipe by a curve or bend 6. 7 indicates a flexible pipe or hose, which connects the upper end of the drop-pipe with one of the burners of the fixture. These parts may be of any suitable construction, and are similar to those shown in my prior application, herein referred to. In connection with them are employed stop-collars on the drop-pipe and a guiding and supporting device coöperating therewith and connecting the drop-pipe with the gas-fixture. This guiding and supporting device comprises an elongated base or body portion 8, provided on one side with guiding and locking devices for the lock-pipe and on the other side with clamping devices to engage the fixture. These clamping devices are preferably similar to those set forth in my prior application and comprise a fixed screw 9, projecting from the back of the base, near the center thereof, and having mounted thereon a clamping-nut 10, preferably a wing or thumb nut, as shown.

11 indicates the clamping-arm, provided with a central aperture 12, (shown in dotted lines in Fig. 2), said aperture being sufficiently large at its smaller end to pass freely over the screw 9 and flaring or increasing in diameter from said smaller end, so as to permit the arm to rock or tilt upon the screw, upon which it is also free to rotate. One end of the arm 11 is provided with a toe 13, which is adapted to bear upon the base 8 and form a fulcrum for said arm. The other end of said arm is preferably curved or recessed, as shown at 14, so as to grip one of the pipes or arms of the gas fixture or chandelier and clamp the same firmly against the base 8 when the thumb-nut 10 is tightened. Since the clamping-arm is free to rotate on the screw, the device may be applied to any part of a chandelier, whether the same be vertical, horizontal, or inclined,

straight, or curved. Whatever its position may be, it will be understood that the base will be so turned as to be substantially vertical.

At its upper end the base is provided on the side thereof opposite to that on which the clamping device is located with a sleeve 15, which constitutes a guide and support for the drop-pipe, which passes through said sleeve and slides therein. In order to prevent binding of the pipe during its vertical movements, the opening of said sleeve is preferably made flaring or of gradually-increasing diameter upward, so as to have a limited area of contact around the drop-pipe. At its lower end, which is located at a considerable distance from the upper end, the base or body 8 is provided with a projection 16, which is recessed vertically, as indicated at 17, to fit against the rear of the drop-pipe, which it embraces on both sides, said recess being open at the front to permit movement of the drop-pipe in that direction. The upward flare of the opening in the sleeve 15 also permits this movement of the drop-pipe. The projection 16 is grooved transversely, as indicated at 18, thereby forming a double hook 19, between the branches of which the drop-pipe passes.

The drop-pipe is provided above the sleeve 15 with a collar 20, which is movable along the drop-pipe, so that it may be adjusted to any desired position, and which may be secured after adjustment by a clamping-screw 21. The lower part of the drop-pipe is provided with a locking-collar 22, which is also adjustable on said drop-pipe and which may be secured in position after adjustment by means of a set-screw 23. This locking-collar is provided on its rear under face with a downwardly-extending hook projection 24, which is adapted to enter from above the groove 18 and engage with the hook projection 19 of the guiding and supporting device. The back of this collar and its hook projection is preferably flattened, as shown at 25, to permit the same to pass upward along the front face of the base 8 when being engaged with or disengaged from the hook projection of said base.

In practice the stop-collar 20 is adjused so as to give the desired position to the drop-light when lowered, and when said light is thus lowered said collar 20 rests on the sleeve 15 and prevents further downward movement of the drop-light. At the same time the drop-pipe is held in proper alinement by the sleeve 15 and by its engagement with the recess 17 at the lower end of the guiding and supporting device, being thus guided and supported at two points sufficiently far apart to maintain the drop-pipe in a true vertical position. The bend 6 at the lower end of the drop-pipe will ordinarily be so turned as to bring the weight of the lamp or burner 5 on that side of the drop-pipe which is nearest the mouth of the recess 17, and this offset weight will prevent any movement of the drop-pipe toward the mouth of the recess 17, which incloses the drop-pipe in all other directions, and therefore prevents any movement thereof from its vertical position. When it is desired to raise the drop-light out of the way, the locking-collar 22 having been adjusted to the proper position, the entire device is moved upward, the lower end of the drop-pipe being swung out, so as to permit the collar 22 to clear the hook projection 19. When the collar 22 has passed beyond said hook projection, the drop-pipe is swung back into engagement with the recess 17 and moved downward until the hook projection 24 of the collar 22 enters the recess 18 and engages the hook projection 19, whereupon the parts become firmly locked and can only be disengaged by raising the entire drop-light, the weight of which is sufficient to maintain the parts in secure engagement with the projections vertically interlocked.

While the construction of the locking device set forth in my prior application is an efficient and satisfactory one, I have found in practice that there are circumstances where the rotary motion of the drop-pipe necessary to lock the parts would bring the lamp into contact with the fixture, and thus necessitate a shifting of the locking-collar to avoid this difficulty. My present construction overcomes this objection, since no rotation of the drop-pipe is required to lock the parts. Furthermore, the interlocking is more secure and effective, since the parts cannot be disengaged by accidental rotation of the drop-pipe, as in my prior construction.

Where the pipes of the fixture are of large diameter, as in the case of old fixtures, I may employ the form of clamping device shown in Fig. 6, in which the fixed screw (indicated at 26) is made of a greater length than in the construction shown in the remaining figures, the clamping-arm having a sleeve 27 fitting on said screw, so as to slide thereon, and a single arm 28, having a curved clamping-surface 29, which is provided with teeth or otherwise roughened, so as to adapt it to firmly grip the arm or pipe.

I do not wish to be understood as limiting myself strictly to the precise details of construction hereinbefore described, and shown in the accompanying drawings, as the same may obviously be modified without departing from the principle of my invention.

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

1. In a drop-light attachment of the character described, a guiding and supporting device comprising a body having means for connection with a gas-fixture, a sleeve at the upper end of said body in which the drop-pipe may slide freely, and a projection at the lower end of said body provided with a guiding-recess in which the drop-pipe removably fits, in

combination with a drop-pipe having a stop located above the sleeve, said drop-pipe being provided with a projection arranged to interlock vertically from above with the projection of the body, substantially as described.

2. In a drop-light attachment of the character described, a guiding and supporting device comprising a body having means for connection with a gas-fixture, a sleeve located at the upper end of the body in which the drop-pipe may slide freely and rock, and a projection at the lower end of the body forming an upwardly-directed hook provided with an open-mouthed recess in which the drop-pipe removably fits, in combination with a drop-pipe having a stop located above the sleeve, said drop-pipe being provided with a downwardly-directed hook projection arranged to interlock vertically from above with the projection of the body and prevent lateral and downward movement of the drop-pipe, substantially as described.

3. In a drop-light attachment of the character described, a guiding and supporting device comprising a body having means for connection with a gas-fixture, a sleeve at the upper end of said body having an upwardly-enlarged opening in which the drop-pipe may slide freely and rock, and a projection at the lower end of said body having an upwardly-directed hook projection and provided with an open-mouthed recess in which the drop-pipe removably fits, in combination with a drop-pipe having a stop-collar located above said sleeve, and a locking-collar located below said sleeve, said locking-collar being provided with a downwardly-directed hook projection to interlock vertically from above with the corresponding hook projection of the body, said collars being longitudinally adjustable on the drop-pipe, substantially as described.

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

ELMER E. GROVE.

Witnesses:
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