No. 782,414. PATENTED FEB. 14, 1905.

A. W. NICHOLLS.

GAS DROP LIGHT.

APPLICATION FILED AUG. 8, 1904.

Fig. 1

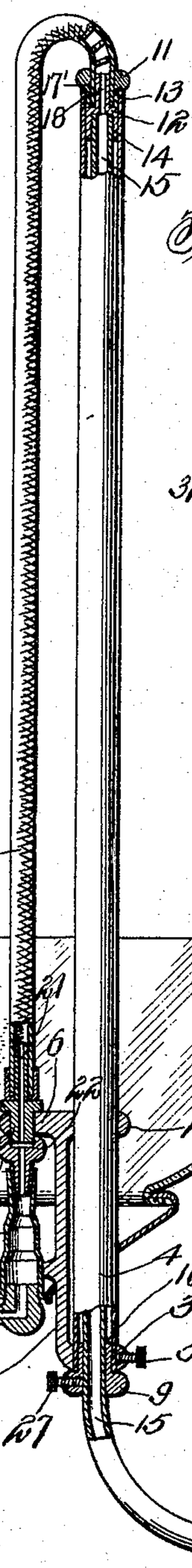


Fig. 2.

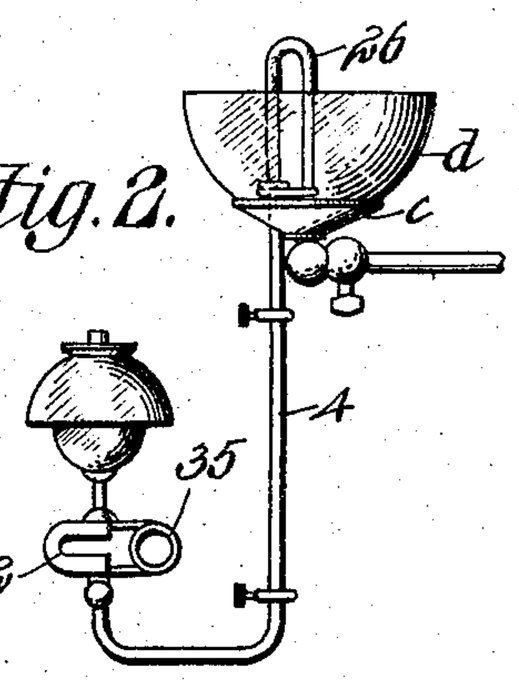
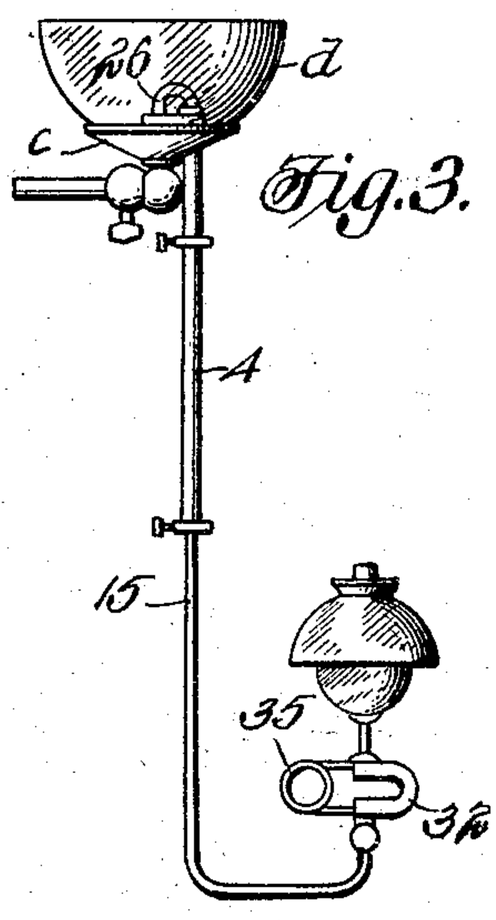


Fig. 3.



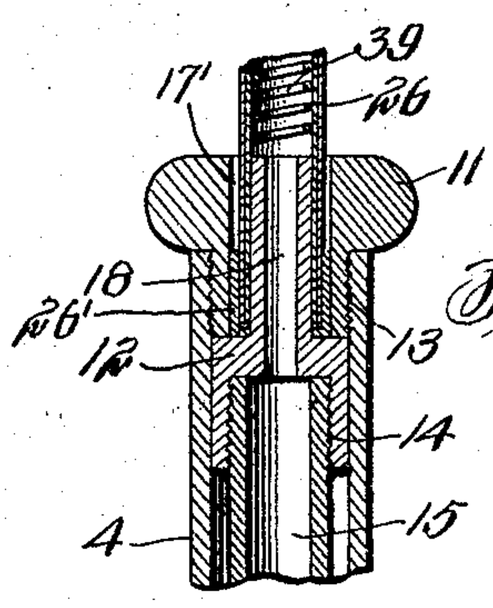
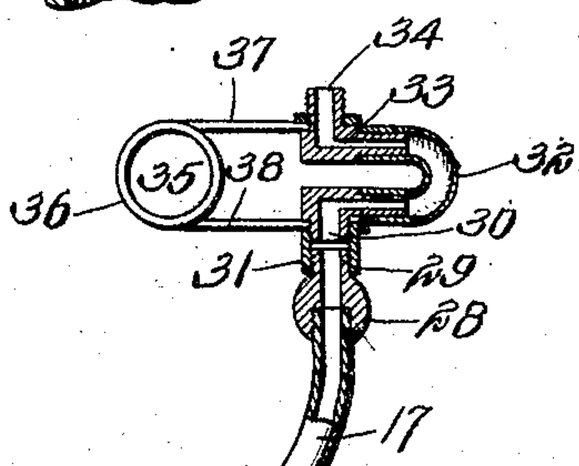


Fig. 4.



Witnesses
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No. 782,414. Patented February 14, 1905.

UNITED STATES PATENT OFFICE.

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GAS DROP-LIGHT.

SPECIFICATION forming part of Letters Patent No. 782,414, dated February 14, 1905.

Application filed August 8, 1904. Serial No. 219,949.

To all whom it may concern:

Be it known that I, ALBERT W. NICHOLLS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gas Drop-Lights; and I do 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.

My invention relates to improvements in gas drop-lights; and it consists in the construction, combination, and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view of a gas drop-light embodying my improvements. Fig. 2 is an elevation of the same, on a smaller scale, showing the gas drop-light in an elevated position. Fig. 3 is a similar view showing the drop-light in a lowered position. Fig. 4 is a detail sectional view showing the upper portion of the telescopically-related tubes and their connections.

In the embodiment of my invention I provide a holder or bracket 1, which has arms 2 3 at its upper and lower ends projecting from one side thereof and provided with vertically-alining openings to receive the lower portion of an outer vertically-disposed tube 4. The same is secured to the holder or bracket by means of a set-screw 5, which clamps it to the lower arm 3. The holder or bracket is provided at its upper end, on the side opposite the arm 2, with an arm 6, which has a vertical cylindrical opening near its outer end. Below the said arm 6 is an arm 7, which also projects laterally from the holder or bracket and has an opening for the reception of the lower portion of a gas-tip pillar *a*, the same being clamped thereto and rendered detachable therefrom by means of a set-screw 8. At the lower end of the outer tube 4 is a bushing 9, which has on its upper side a cylindrical vertical extension 10, which is secured into the lower end of said outer tube. The bore of the said extension 10 extends also through lower portion of the said cap. At the upper end of the outer tube 4 is a bushing 11, which has a downwardly-extending collar provided at its base portion with screw-threads 13, which engage corresponding screw-threads on the inner side of the tube 4 at its upper end, and thereby the said bushing is detachably secured to said outer tube. A cap 12, which slides in the outer tube, has its lower end counterbored and screw-threaded, as at 14, to receive the upper end of an inner tube 15, which is screw-threaded thereto, said inner tube extending downwardly through the bore of the bushing 9. The said inner tube 15 has its lower portion bent laterally to form an arm 16, the extreme outer end of which is upturned, as at 17. The upper portion of the bushing 11 has a counterbore 17′, and an upwardly-extending cylindrical stem or tube 18 projects from the cap 12, the bore of which extends into the counterbore 14 and communicates with the upper end of the inner tube.

In the opening in the arm 6 of the holder 1 is a downwardly-extending stem 19 of a connection 20. Said connection has also an upwardly-extending stem 21 and a bore forming a gas-passage, which extends through the said stem 21 and also through the stem 19. The lower portion of the latter is exteriorly screw-threaded and fits in and is screwed to a socket 22 of a socket-piece 23, at the lower side of which is a depending tapered tubular stem 24, the bore of which communicates with that of the connection 20. On the said tapered stem 24 is a cylindrical packing-sleeve 25, which is preferably made of rubber and which fits tightly in the upper end of the gas-tip pillar *a*, a gas-tight connection being thereby effected between the said pillar and the socket-piece 23. A flexible tube 26 has one end attached to the upwardly-extending stem 21 of the connection 20, and its opposite end is attached to the upwardly-extending stem or tube 18 of the cap 12. Hence when the tube 15 is lowered in the tube 4 the flexible tube 26 is drawn into said tube 4. The ends of the said flexible tube are provided with ferrules 26′, which serve to protect the ends of said flexible tube. The gas-tip pillar

is of the usual construction and is here shown in Fig. 1 as on a gas-burner *b*, which is also of the usual construction and is provided with a holder *c* and a globe *d*. The outer tube 4 is slidable in the holder 1, and the inner tube 15 is slidable in the said outer tube, as will be understood. The lower cap or closure 9 of the outer tube has a set-screw 27, by means of which the inner tube may be secured in an elevated position, the outer tube being secured in an elevated position by means of the set-screw 5.

To the upturned end 17 of the inner tube is screwed a burner connection 28, which has on its upper side a screw-threaded tubular sleeve extension 29. A tubular elbow 30 is coupled to the said connection by a coupling-sleeve 31, which is screwed thereto, and is also screwed to the said tubular sleeve 29. A flexible tube 32, which is U-shaped, as shown, has one end attached to the elbow 30 and the other end attached to a similar elbow 33. The said elbows have gas-passages formed therein which communicate with the bore of the said rubber tube, and the upper elbow 33 forms the connection for the burner 34, which may be of any suitable construction. A spring 35 supports the upper elbow and connects it to the lower elbow. This spring in the form of my invention here shown is provided with a spring-coil 36 and with a pair of arms 37 38, which are respectively attached to the upper and lower elbows. The said spring, together with the said elbows and flexible tube 32, form an antivibrator-support for the burner, which serves by its elasticity to neutralize vibrations and prevent same from being communicated to the burner and from injuring a mantle with which the burner may be provided.

It will be understood that when the inner and outer tubes are in their elevated position (shown in Figs. 1 and 2) the drop-light is raised and that when they are in their lowered position (shown in Fig. 3) the drop-light is lowered. To lower the drop-light to an intermediate position, as shown in Fig. 2, the set-screw 5 will be first loosened to permit the descent of the outer tube 4, the same carrying the inner tube with it. To lower the drop-light to its fullest extent, the set-screw 27 will also be loosened to permit the inner tube to be drawn downwardly through the outer tube, as shown in Fig. 3.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A gas drop-light having a holder provided with means whereby it may be attached to a gas-fixture, an outer extension-tube carried by the holder, slidably related thereto and guided thereby, an inner extension-tube telescopically related to the outer extension-tube projecting beyond the outer extension-tube and carrying a light, and a flexible pipe connecting the inner tube with the gas-fixture.

2. A gas drop-light comprising a holder having an upper arm and a lower arm provided with alining openings, the opening of the lower arm being of a size to enable it to receive a gas-tip pillar, a stem in the opening of the upper arm and adapted to enter the upper end of the gas-tip pillar, an outer extension-tube carried by and vertically slidable in the holder, means to secure said outer extension-tube at any adjustment with reference to the holder, closures in the upper and lower ends of the outer extension-tube and each provided with a bore, an inner extension-tube in the outer extension-tube extending through and slidable in the bore of the lower closure, said inner tube having a cap at its upper end slidable in the outer extension-tube, and a flexible tube secured to said cap, passed through and slidable in the bore of the upper closure of the outer bore, said flexible tube being also secured to the stem in the opening in the upper arm of the holder, substantially as described.

3. A gas drop-light having a holder provided with means whereby it may be attached to a gas-fixture, an outer extension-tube carried by the holder, slidably related thereto and guided thereby, closures in the upper and lower ends of said outer extension-tube and each provided with a bore, an inner extension-tube telescopically related to the outer extention-tube and slidable in the bore of the lower closure, said inner extension-tube having a cap at its upper end slidable in the outer tube, and a flexible tube having one end passed through the bore of the upper closure of the outer extension-tube and connected to the cap of the inner extension-tube and communicating with the latter, the opposite end of the said flexible tube connecting the inner tube with the gas-fixture, substantially as described.

4. A gas drop-light having a holder provided with means whereby it may be attached to a gas-fixture, an outer extension-tube carried by the holder, slidably related thereto and guided thereby, closures detachably secured to the upper and lower ends of the outer extension-tube and each provided with a bore, an inner extension-tube telescopically related to the outer extension-tube, slidable in the bore of the lower closure thereof and having

a detachable cap at its upper end slidable in the outer extension-tube, and a flexible tube provided at one end with means to attach it to the gas-fixture and having its opposite end passed through the bore of the upper closure of the outer extension-tube and connected to the cap of the inner extension-tube, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT W. NICHOLLS.

Witnesses:
BENJ. E. COWL,
S. A. TERRY.