

No. 721,577.

PATENTED FEB. 24, 1903.

I. LINDNER.

LOCKING DEVICE FOR GAS TUBE CONNECTIONS.

APPLICATION FILED JULY 26, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

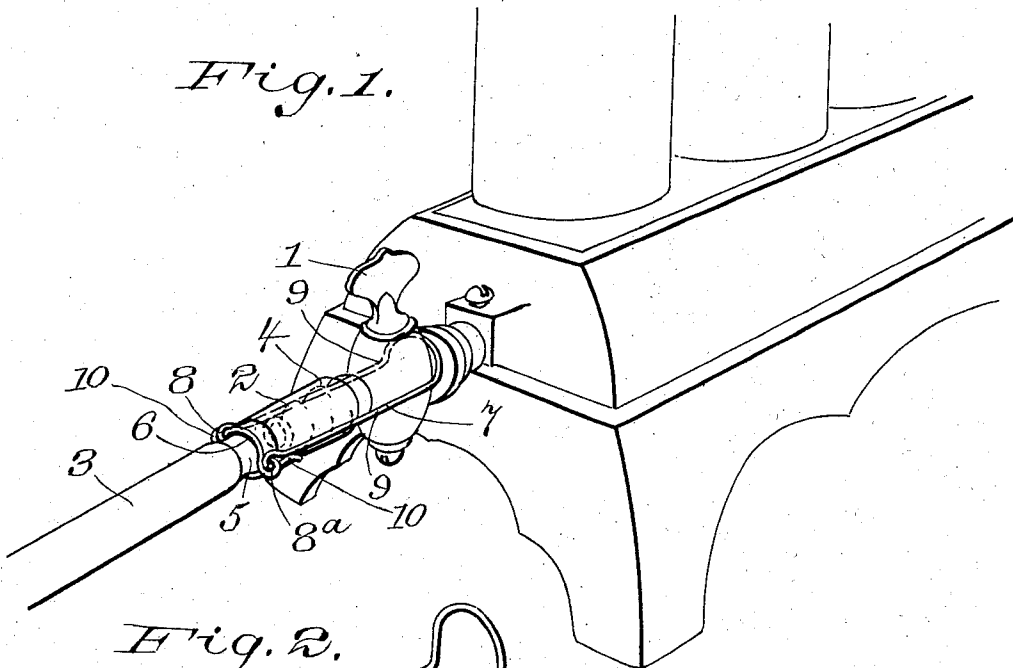


Fig. 2.

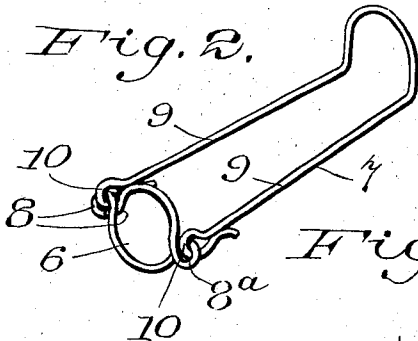


Fig. 3.

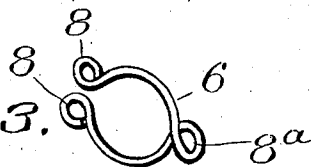
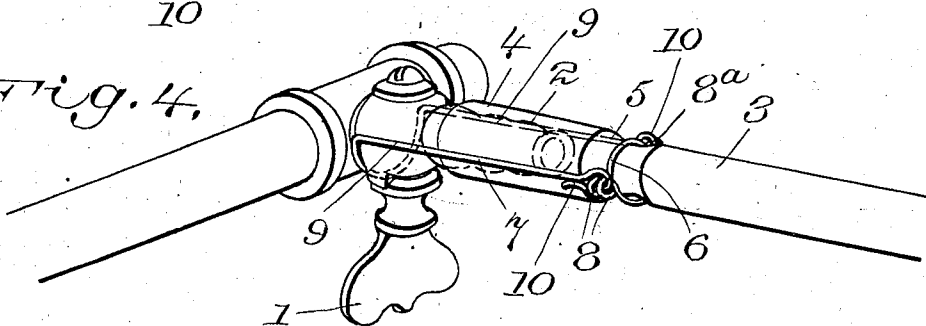


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

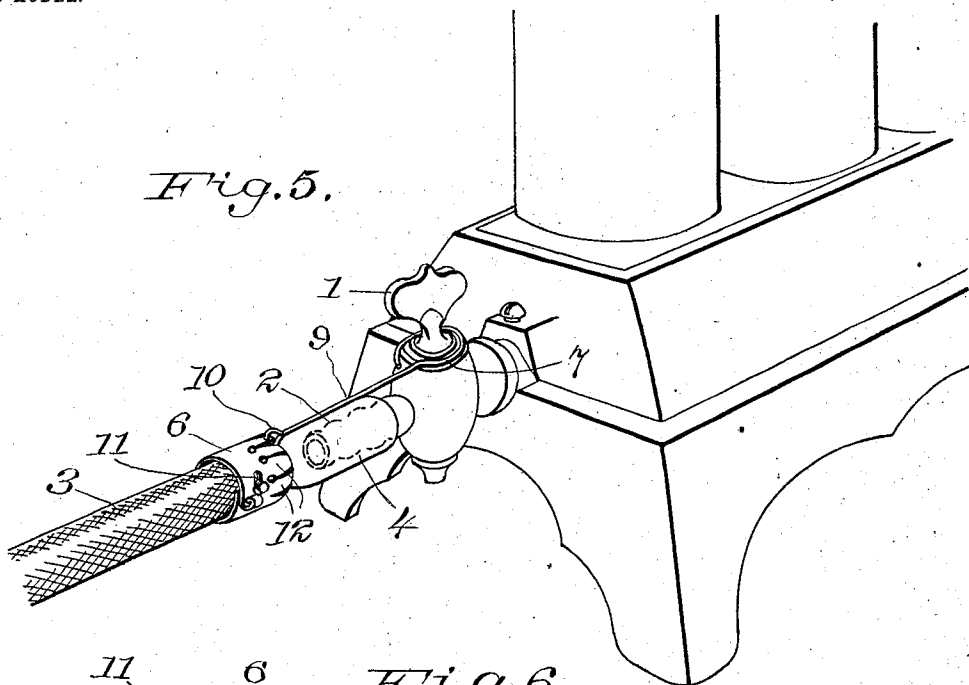


Fig. 6.

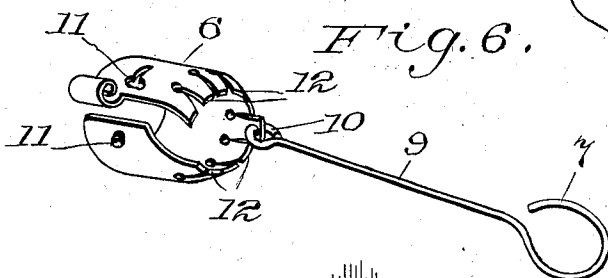
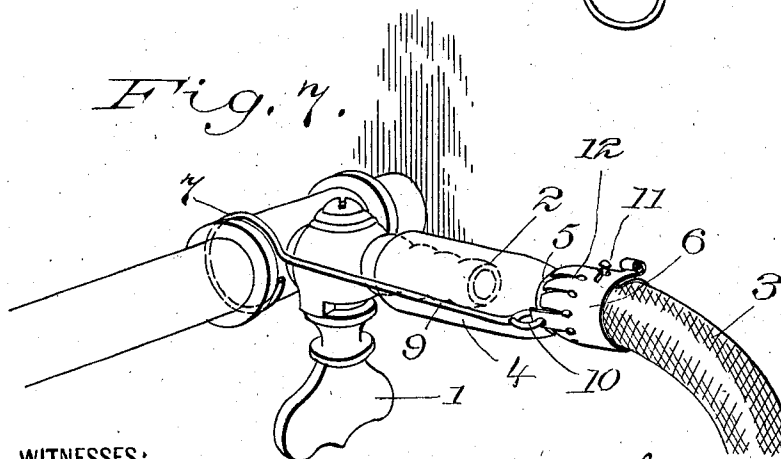


Fig. 7.



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ISIDOR LINDNER, OF NEW YORK, N. Y.

LOCKING DEVICE FOR GAS-TUBE CONNECTIONS.

SPECIFICATION forming part of Letters Patent No. 721,577, dated February 24, 1903.

Application filed July 26, 1902. Serial No. 117,081. (No model.)

To all whom it may concern:

Be it known that I, ISIDOR LINDNER, a citizen of the United States, residing at No. 2328 Third avenue, borough of Manhattan, city, county, and State of New York, have invented a new and useful Improvement in Locking Devices for Gas-Tube Connections, of which the following is a specification.

My invention relates generally to flexible gas-tubing, and is specifically designed to produce a device adapted to cooperate with the terminal attaching-tips of the tubing in locking the same in position and preventing the connection from being accidentally broken. Ordinarily tubing of this class for use as a connection between the service-pipe and radiator, lamp, range, or the like is provided at each end with a soft-rubber tip intended to be forced onto a tapered nipple at the point of attachment to form a gas-tight connection. This connection when first made—that is, when the tip is new—is comparatively secure; but after the tip has been detached and reconnected several times it stretches and becomes permanently enlarged and then may be readily disconnected with little or no effort. Consequently it is likely to be accidentally detached and, if not immediately observed, may result in filling the room with gas, setting fire to the building, and loss of life.

The object of my invention, therefore, is to avoid the objectionable features above pointed out by securely locking the tube-tip on the connecting-nipple, and for this purpose I employ any suitable device capable of being readily secured on or adjacent to the rubber tip of the tube, together with means extending from said device into locking engagement with the valve-key, gas-pipe, or other part of the apparatus to which the tube is connected.

Preferred forms embodying my invention are illustrated in the accompanying two sheets of drawings, throughout the several views of which like numerals of reference indicate corresponding parts.

In the drawings, Figure 1 is a view in perspective, showing the lower end of a radiator and the gas-tubing connected therewith, also the application of my tube-locking device to the connection. Fig. 2 is a view in perspective of the locking device detached from the tube. Fig. 3 is a view in perspective of

the tube-clamping ring. Fig. 4 is a view in perspective of the tube-clamping device applied to a drop-light connection. Fig. 5 is a view in perspective, showing a modified form of device applied to a radiator. Fig. 6 is a view in perspective of the device detached; and Fig. 7 is a view in perspective, showing the same applied to a drop-light connection.

Referring to the drawings, 1 may represent the key or valve controlling the gas-supply either from a gas bracket, fixture, or service-pipe or to a radiator, range, lamp, or the like, and 2 represents the tapered nipple extending outward from the valved pipe. The tubing 3 at each end is provided in the usual manner with a soft-rubber tip 4, which at its inner end is encircled by a metallic collar 5 and tapers outward until its diameter is considerably larger than the outside diameter of the tubing proper.

The locking device for the tubing comprises a tube-clamp 6 in the form of a split or open ring, collar, or sleeve, of wire or sheet metal, and a locking member 7, extending from the clamp into locked engagement with the gas key, valve, or other convenient part or member. In the form shown in Figs. 1 to 4 an open ring of spring-wire is employed as a tube-clamp, having its ends bent up to form terminal eyelets 8 8 and provided, further, at a point diametrically opposite these eyelets with a third eyelet 8". The locking member is also of spring-wire and is approximately U-shaped. The straight parallel portions 9 9 thereof extend along opposite sides of the rubber tip of the tubing to a point beyond the key or valve, where the curved portion is bent up and arched over or under the gas-pipe, as shown in Figs. 1 and 4. The ends of this locking member are shaped into snap-hooks 10 10 to engage the ring-eyelets. In placing the device in position the members are first separated by disengaging the hooks from the eyelets, and the ring is sprung onto the tubing, preferably at a point to encircle the metallic collar 5. The terminal eyelets of the ring are then pressed together and one hook of the locking member snapped into engagement therewith. In thus connecting the locking member with the ring-clamp the latter is at the same time clamped upon the tube. The tip is then forced over the nipple

and is secured by adjusting the U-shaped locking device over the key or valve and hooking its free end in the ring-eyelet 8^a, as shown. To disconnect the tubing, it is only
 5 necessary to disengage the hook last mentioned from the eyelet 8^a and lift the loop clear of the key or valve, when the tip may be slipped off the nipple without removing the ring-clamp, which latter remains securely
 10 locked upon the tubing encircling the metallic collar thereof.

In the modification shown in Figs. 5 to 7 a split sleeve is employed as a tube-clamp, the same being sprung onto the tubing and
 15 detachably secured in any suitable manner—as, for example, by the headed pin and key-hole connection 11 shown. The end of the sleeve adjoining the tip is slitted axially to form a circularly-disposed series of spring-
 20 fingers 12 12, &c., which are bent or curved inward at their ends to engage the tapered portion of the soft-rubber tip as the sleeve is forced onto the same. When thus adjusted, the spring-fingers securely clamp the tip, and
 25 are thus locked by a hook extending outward from the split collar and adapted to take around the gas key, pipe, or the like, and thereby securely lock the connection against accidental breaking. To apply this device,
 30 the sleeve is opened, clasped around the tubing, and after being secured is forced upon the tip until the spring-fingers become embedded slightly therein. Then the tip is forced on the nipple, and the connection is locked
 35 by adjusting the hook to engage the key or pipe, as above described.

Some of the main advantages of my invention are as follows: The extreme simplicity of the device enables unskilled persons to
 40 readily adjust it, &c. Its effectiveness in insuring against the possibility of accident resulting from a broken connection, &c., renders it of great value, &c.

It will be understood that I do not wish to

limit myself to the exact construction and 45 arrangement of parts herein shown and described, as various changes may be made without departing from the spirit and scope of my invention. Other means might be substituted for the open ring to clamp the tub- 50 ing, and the engaging hooks and eyes might be dispensed with. Devices other than the hook might also be employed to lock the connection; but all such modifications I consider obvious and immaterial variations of 55 form and not of substance and still within the meaning of the present invention.

Having, therefore, described my invention, I claim—

1. The combination of the valved supply- 60 pipe, the flexible tube provided with a terminal connecting-tip of greater diameter than the tube and a locking device comprising a clamping member encircling the tube at a point adjacent to the inner end of the tip, 65 and a locking member extending from said clamping member into engagement with the valved supply-pipe.

2. The combination of the valved supply- 70 pipe, the flexible tube provided with a terminal tip of greater diameter than the tube, and a locking device comprising an approximately C-shaped clamping member having its ends eyeleted and overlapping to completely en- 75 circle and grip the tube at a point adjacent to the inner end of the tip and a locking member engaging the eyeleted ends of the clamping member and extending therefrom into locking engagement with the valve of the 80 supply-pipe.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 1st day of July, 1902.

ISIDOR LINDNER.

Witnesses:

W. H. PUMPHREY,
 J. E. PEARSON.