

W. H. McNUTT.  
 LOCKED STRAINER TUBE.  
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929,973.

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FIG. 1.

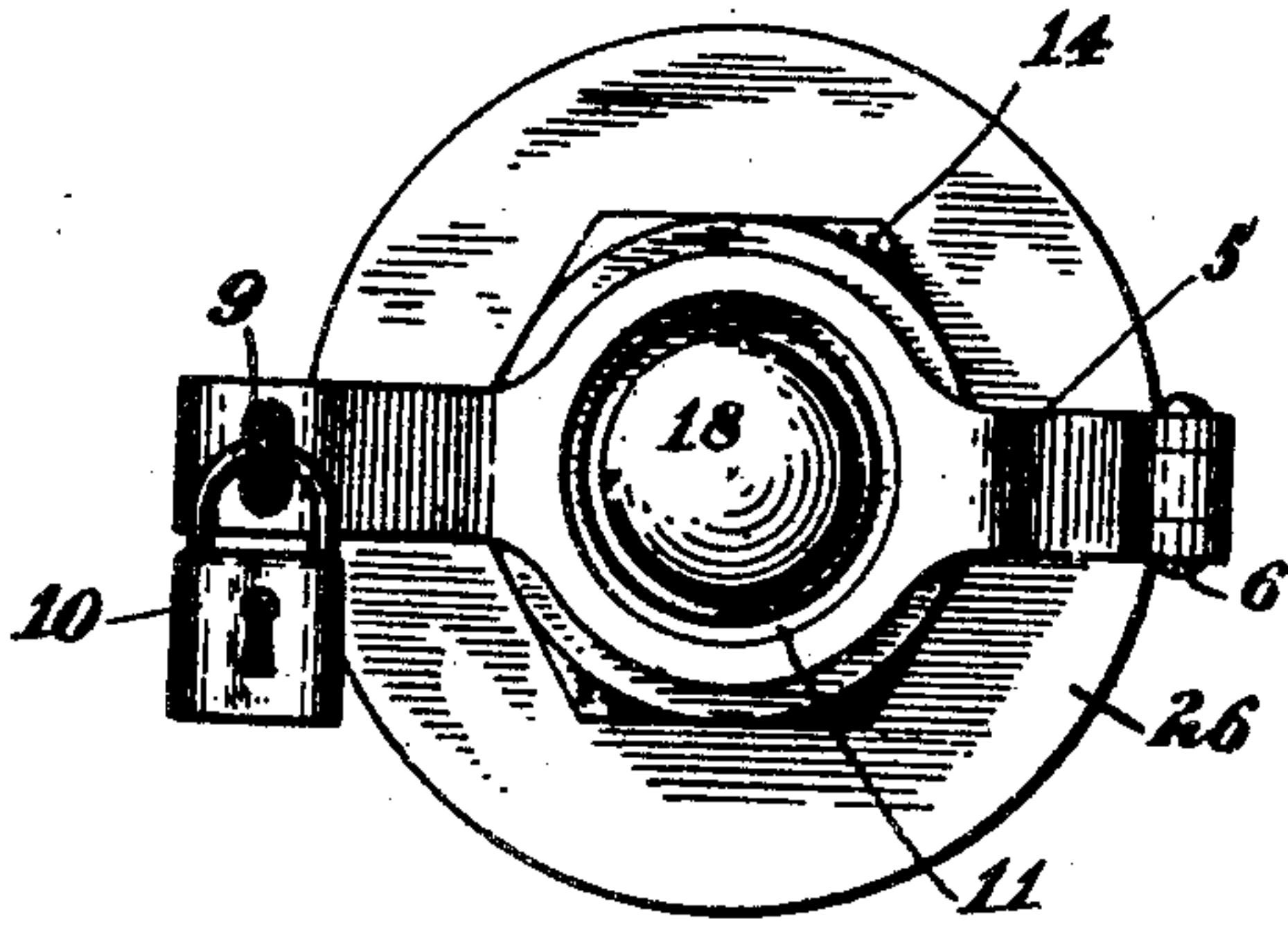


FIG. 2.

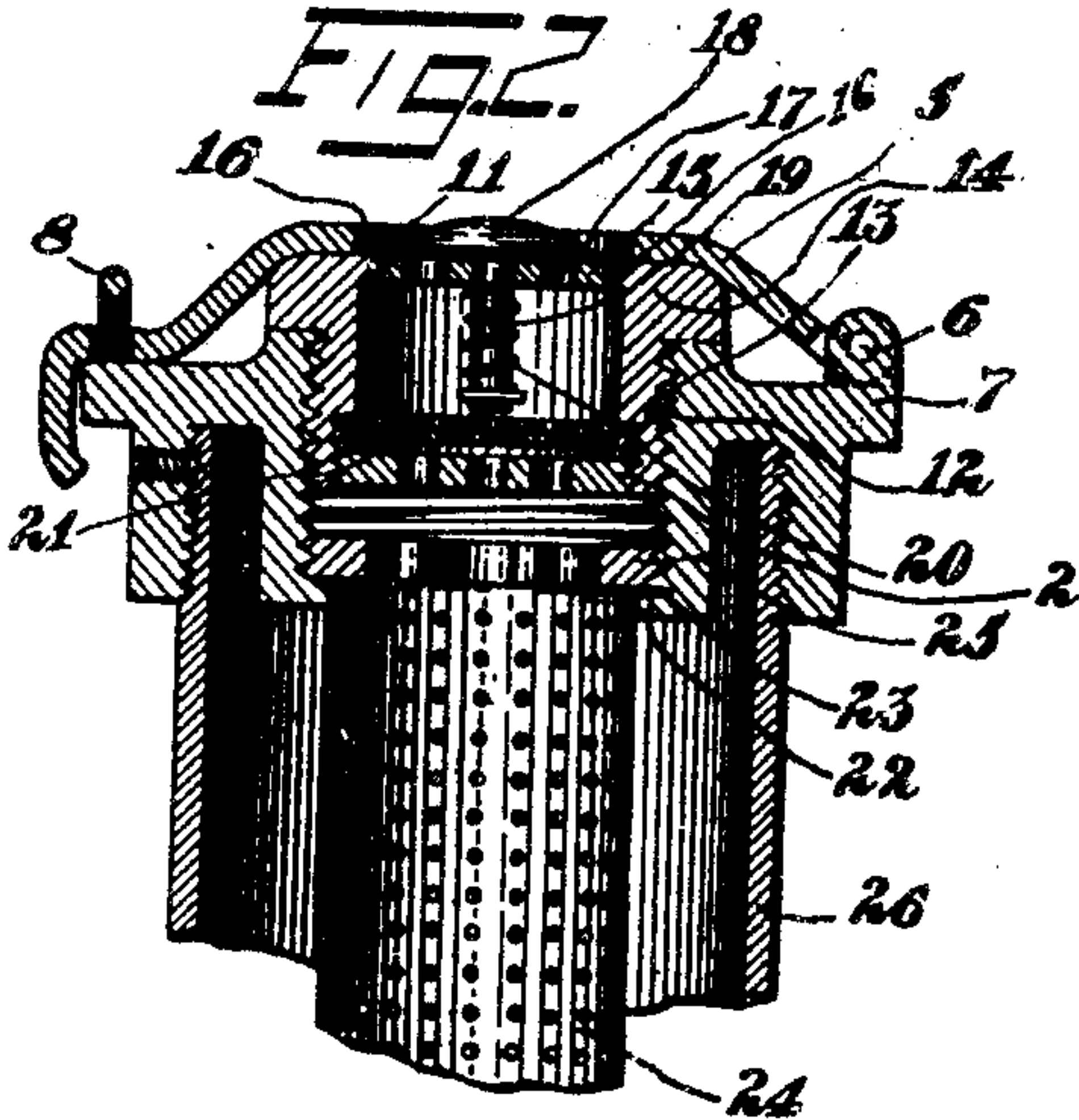
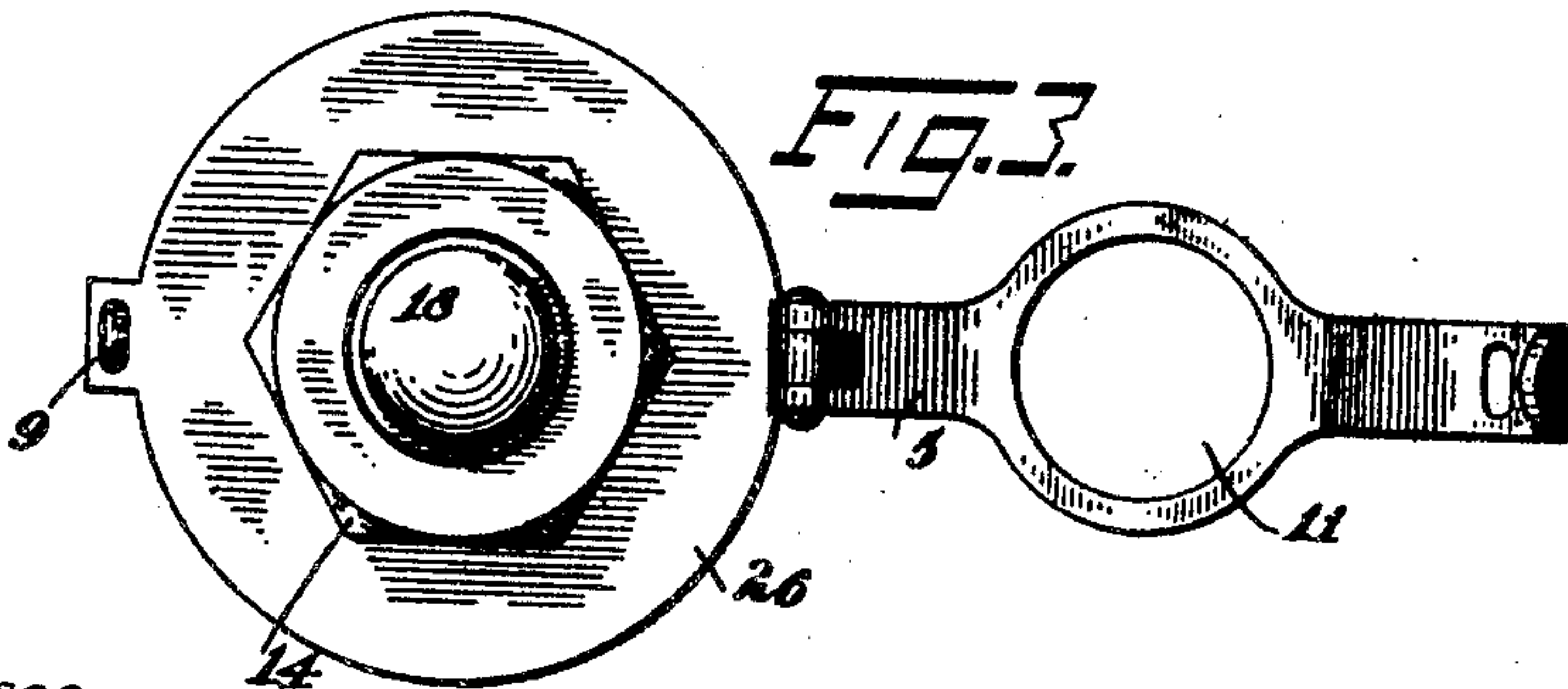


FIG. 3.



Witnesses:

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Inventor:

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By his Attorney

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# UNITED STATES PATENT OFFICE.

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## LOCKED STRAINER-TUBE.

No. 929,973.

Specification of Letters Patent.

Patented Aug.

Application filed September 15, 1908. Serial No. 453,206.

*To all whom it may concern:*

Be it known that I, WILLIAM H. McNUTT, a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Locked Strainer-Tubes, of which the following is a specification.

This invention relates to means for locking in the plug member that is movable for filling purposes, yet which will permit the operation of a relief valve, and will also permit a fusible member to be blown out upon the occurrence of an abnormal temperature, for the purpose of preventing an explosion.

In the accompanying drawings illustrating one embodiment of my invention, Figure 1 is a plan view of the device. Fig. 2 is a vertical section through a portion of a receptacle with the locking member attached thereto. Fig. 3 is a view similar to Fig. 1 with the locking device in open position.

The locking member itself consists essentially of a lever movably secured at one end preferably by a hinge while the other end has locking means for securing it in place by a suitable lock, such as a pad-lock. At the middle portion of the lever is an opening surrounding the relief valve of the safety device, and also surrounding a fusible blow-off device. In the construction shown this member comprises a lever 5 hinged at 6 to an apertured member 7, that is attached to, or may form a part of a container. The other end of the lever is shown as secured in position by an eye 8 secured to the member 7, passing through an opening 9 in the lever, through which eye is passed a pad-lock 10. The lever is shown as provided with a central opening 11 larger than a relief valve in the closure bushing, and larger than a central portion of the bushing carrying the relief valve and secured thereto by a fusible connection such as solder.

The apertured member 7 is shown as having a threaded bore 12 into which is screwed a threaded bushing 13 having a flange 14 engaging the top of the member 7. The flange may be polygonal for engagement with a wrench. The bushing has a bore closed at the top by a disk portion 15, being secured to the bushing by a ring of solder 16. It will be observed that the opening 11 in the lever is larger than this ring permitting the disk to be blown out when the solder is melted by heat, by the gas in the container.

The disk 15 is provided with several openings 17 closed by a valve 18, whose stem 19 projects through a central hole in the disk; a coil spring 20 serving to keep the valve normally closed. The valve being smaller than the disk, its free operation will not be interfered with by the lever because of the large opening 11. The bushing 13 is also shown as provided with a closure at its lower portion containing minute flame-proof openings. The bore of the bushing is threaded at the lower end and a diaphragm 2 screws therein which contains a number of holes. Before this diaphragm is screwed in, one or more disks 21 of wire gauze or the like are inserted. These will serve to prevent the passage of flame through the bushing.

The lower end of the apertured member 7 is shown as provided with an internal flange 22 on which rests the flange 23 of a closed tube 24 that is provided with minute flame-proof openings. A threaded ring 25 is screwed down through the bushing onto this flange before the bushing 14 is placed in position, and securely locks the apertured tube in position.

The apertured member 7 is shown as closing the top of a tube 26 that may be secured on top of a suitable tank or container. When it is desired to fill the container, the pad-lock is unlocked and removed and the lever swung to open position. This will permit removal of the bushing 14, when the gasoline or other explosive liquid can be poured down into the apertured tube from which it will flow into the vessel. Then the bushing is screwed into position, and the lever locked in its proper position. This will prevent removal of the bushing. But the relief valve 18 is free to permit escape of vapor or gas that may generate in the tank. Upon the occurrence of fire that would heat the ring of solder, and the generation of a large volume of gas and high pressure, the disk forming the top of the bushing will be released and blown out, which action is permitted by a large opening in the lever. But the apertured diaphragm in the bushing is still locked in position that will effectually prevent back firing into the container.

Having thus described my invention, I claim:

1. In a device of the character described, the combination of an apertured member, a closed tube having minute flame-proof openings therein and secured in said opening, a



closure bushing removably secured in the opening above the tube, the bushing having central openings therein, a relief valve normally closing said openings but permitting escape therefrom by internal pressure, a lever hinged to the said apertured member at one end and arranged to extend across above the said closure bushing, locking means for the other end of the lever to secure it in position to prevent removal of the bushing, the lever having an opening therein exposing the said valve controlled openings in the bushing permitting operation of the valve yet preventing removal of the bushing.

2. In a device of the character described, the combination of an apertured member, a closed tube having minute flame-proof openings therein and secured in said opening, a closure bushing removably secured in the opening above the tube, the bushing having central openings therein, a relief valve normally closing said openings but permitting escape therefrom by internal pressure, a lever hinged to the said apertured member at one end and arranged to extend across above the said closure bushing, locking means for the other end of the lever to secure it in position to prevent removal of the bushing, the lever having an opening therein exposing the said valve controlled openings in the bushing permitting operation of the valve yet preventing removal of the bushing, said bushing containing a diaphragm having minute flame proof openings at its lower portion below the valve.

3. The combination of an apertured member having a threaded bore and an internal flange at the lower end, a closed tube having minute flame-proof openings and having an external flange engaging said latter flange, a ring nut screwed into said threaded bore locking the tube in position, a flange bushing threaded to screw into said threaded bore, the bushing having a closed top containing openings, an escape valve normally closing said openings but arranged to open from internal pressure, one or more diaphragms at the lower part of the bushing having minute flame-proof openings, a lever having one end hinged to the apertured member and extending across on top of the said bushing, means for locking the other end of the lever, the lever having an opening around the said relief valve permitting escape through the said opening controlled by the valve.

4. The combination of an apertured member having a threaded bore and an internal

flange at the lower end, a closed tube having minute flame-proof openings and having an external flange engaging said latter flange, a ring nut screwed into said threaded bore locking the tube in position, a flange bushing threaded to screw into said threaded bore, the bushing having a closed top containing openings, an escape valve normally closing said openings but arranged to open from internal pressure, one or more diaphragms at the lower part of the bushing having minute flame-proof openings, a lever having one end hinged to the apertured member and extending across on top of the said bushing, means for locking the other end of the lever, the lever having an opening around the said relief valve permitting escape through the said opening controlled by the valve, the top portion of the bushing containing the openings and the relief valve, being separate from the bushing and located in position by fusible material, the said opening in the lever being outside of said fusible connection whereby the said portion of the bushing with the relief valve can be blown out by heat and abnormal pressure.

5. In a device of the character described, the combination of an apertured member, a closed tube having minute flame-proof openings therein and secured in said opening, a closure bushing removably secured in the opening above the tube, the bushing having central openings therein, a relief valve normally closing said openings but permitting escape therefrom by internal pressure, a lever hinged to the said apertured member at one end and arranged to extend across above the said closure bushing, locking means for the other end of the lever to secure it in position to prevent removal of the bushing, the lever having an opening therein exposing the said valve controlled openings in the bushing permitting operation of the valve yet preventing removal of the bushing, the top portion of the bushing containing the openings and the relief valve, being separate from the bushing and locked in position by fusible material, the said opening in the lever being outside of said fusible connection whereby the said portion of the bushing with the relief valve can be blown out by heat and abnormal pressure.

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