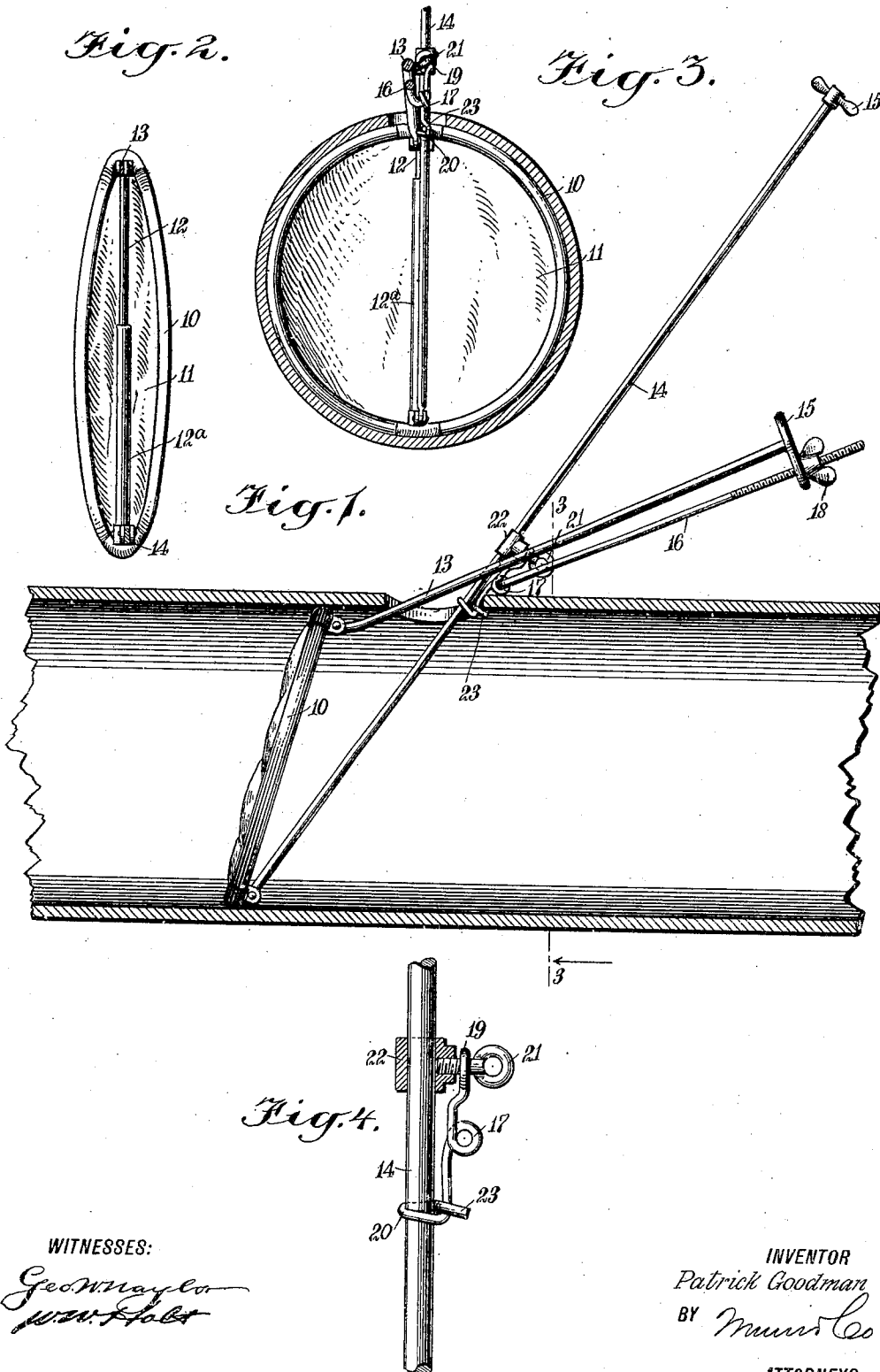


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GAS MAIN STOPPER.
APPLICATION FILED JAN. 27, 1910.

960,086.

Patented May 31, 1910.



WITNESSES:

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GAS-MAIN STOPPER.

960,086.

Specification of Letters Patent.

Patented May 31, 1910.

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To all whom it may concern:

Be it known that I, PATRICK GOODMAN, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Gas-Main Stopper, of which the following is a full, clear, and exact description.

The invention is an improvement in gas main stoppers of the character disclosed in Letters Patent Number 940,458, granted to me November 6, 1909, wherein a collapsible frame having a diaphragm is adapted to be passed through an opening in the side of the main and expanded therein to cut off the flow of gas, the frame having handle-bars to extend through the said opening, and having means arranged to force them in opposite directions to lock the stopper in place. I have found in practice that in some instances the stopper tends to move toward the opening in the side of the main when the locking means is tightened, and allow the gas to escape. I overcome this in accordance with the present invention by providing a finger or projection in connection with the ring or eye carried by one of the handle-bars, arranged to engage the inner wall of the main at the opening and prevent the handle-bar from pulling out of the main under the action of the locking means, the finger and eye being adjustable along the length of the handle-bar to accommodate the stopper to the point at which it is placed in the main, the eye being arranged close to the outer wall of the main when the finger is engaged.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of a gas main stopper embodying my improvements, the stopper being shown locked in position in the main, and the main in longitudinal central vertical section; Fig. 2 is an inner face view of the stopper when collapsed, showing the handle-bars in section; Fig. 3 is a vertical section substantially on the line 3—3 of Fig. 1; and Fig. 4 is a fragmentary side view of one of the handle-bars, showing the adjustable sleeve which carries the finger and eye, in section.

The stopper proper to which I apply my improvements is shown to be the same as that disclosed in Letters Patent Number

591,271, granted to me October 5, 1897, and in the Letters Patent before referred to, the same embodying in its construction a collapsible spring frame 10 covered by a yielding packing and having a flexible diaphragm 11, which is stretched across the frame in circular form by exerting pressure on the frame at diametrically opposite points. At these points the frame is provided with pivotally-connected telescoping members 12 and 12^a, bridging the diaphragm, and pivotally-connected handle-bars 13 and 14, each bar being provided with a suitable hand-grip 15. A hook 16 has a threaded shank slidable through the hand-grip 15 of the handle bar 13, connected to the top of the spring frame, the hook being adapted to engage in a ring or eye 17 carried by the handle-bar 14, and having a nut 18 threaded on its shank and arranged to bear on the outer side of the hand-grip, and tending, when tightened, to force the handle-bars in opposite directions.

The construction thus far described is the same as that disclosed in the Letters Patent first referred to, except as to the manner in which the eye or ring 17 is carried on the handle-bar 14. This eye is preferably made intermediate the length of a piece of wire which is constructed with eyes 19 and 20, respectively located at the inner and outer ends, the eye 19 receiving a set-screw 21, adjustably securing a slidable collar 22 to the handle-bar, and the eye 20 receiving the handle-bar 14, and from which the free end of the wire is extended to provide a finger 23, this finger being arranged to engage the inner wall of the gas main adjacent to the opening in the side thereof, through which the stopper is passed when the hook 16 is caught in the eye 17, and prevent the handle-bar 14 from drawing out of the main with the body of the stopper when the nut 18 is tightened. Thus, the tightening of this nut will exert an inward pressure on the upper portion of the spring frame and lock the same crosswise of the main, with the diaphragm stretched out. By reason of the finger 23 and eye 17 being relatively fixed, the eye will at all times be located closely adjacent to the outer wall of the main when the finger is engaged, and the adjustability of these features, afforded by the set screw 21 and sleeve 22, accommodates them to the varying positions at which the stopper is placed in the main.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. An expansible and contractible gas main stopper adapted to be inserted in an opening in the side of the main, having handle-bars, a projection arranged on one of the handle-bars to engage the inner wall of the main adjacent to the said opening, and means to exert pressure on the other handle-bar to lock the stopper in the main, adapted to be connected to the first-named handle-bar.
2. A gas main stopper having handle-bars pivotally connected at substantially diametrically opposite points, an eye adjustable along the length of one of the handle-bars, and a hook adapted to engage in said eye and adjustably carried by the other handle-bar.
3. An expansible and contractible gas main stopper adapted to be inserted in an opening in the side of the main, having handle-bars, a projection adjustable on one of the handle-bars and arranged to engage the inner wall of the main adjacent to the said opening, and means to exert a pressure on the other handle-bar, detachably connected to the first-named handle-bar.
4. An expansible and contractible gas main stopper adapted to be passed through an opening in the side of the main and expanded in the main to cut off the flow of gas, having handle-bars connected to the upper and lower portions thereof, a finger carried by the handle connected to the lower portion of the stopper and arranged to engage the inner wall of the main adjacent to the said opening, an eye carried by the han-

dle-bar having the finger, and a hook adapted to be engaged within the eye and adjustably connected to the other handle-bar.

5. An expansible and contractible gas main stopper adapted to be inserted in an opening in the side of the main and having handle-bars pivotally connected to the upper and lower portions thereof, a member adjustable along the length of one of the handle-bars connected to the lower portion of the stopper, having a finger arranged to engage the inner wall of the main adjacent to said opening and provided with an eye located to stand at the outer wall of the main when the finger is engaged, and a hook adapted to engage in the eye, having means for forcing the other handle-bar inwardly.

6. An expansible and contractible gas main stopper adapted to be inserted through an opening in the side of the main and having handle-bars respectively connected to the upper and lower portions thereof, means to simultaneously force the handle-bars in opposite directions to lock the stopper in the main, and means carried by the handle bar connected to the lower portion of the stopper, arranged to engage the wall of the main adjacent to the opening and prevent the handle-bar from being drawn outwardly under the action of the first-mentioned means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PATRICK GOODMAN.

Witnesses:

M. L. McMANUS,
M. F. DUNN.