

No. 760,238.

PATENTED MAY 17, 1904.

P. J. NOLAN.
COVER FOR GAS PURIFIERS.
APPLICATION FILED FEB. 1, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

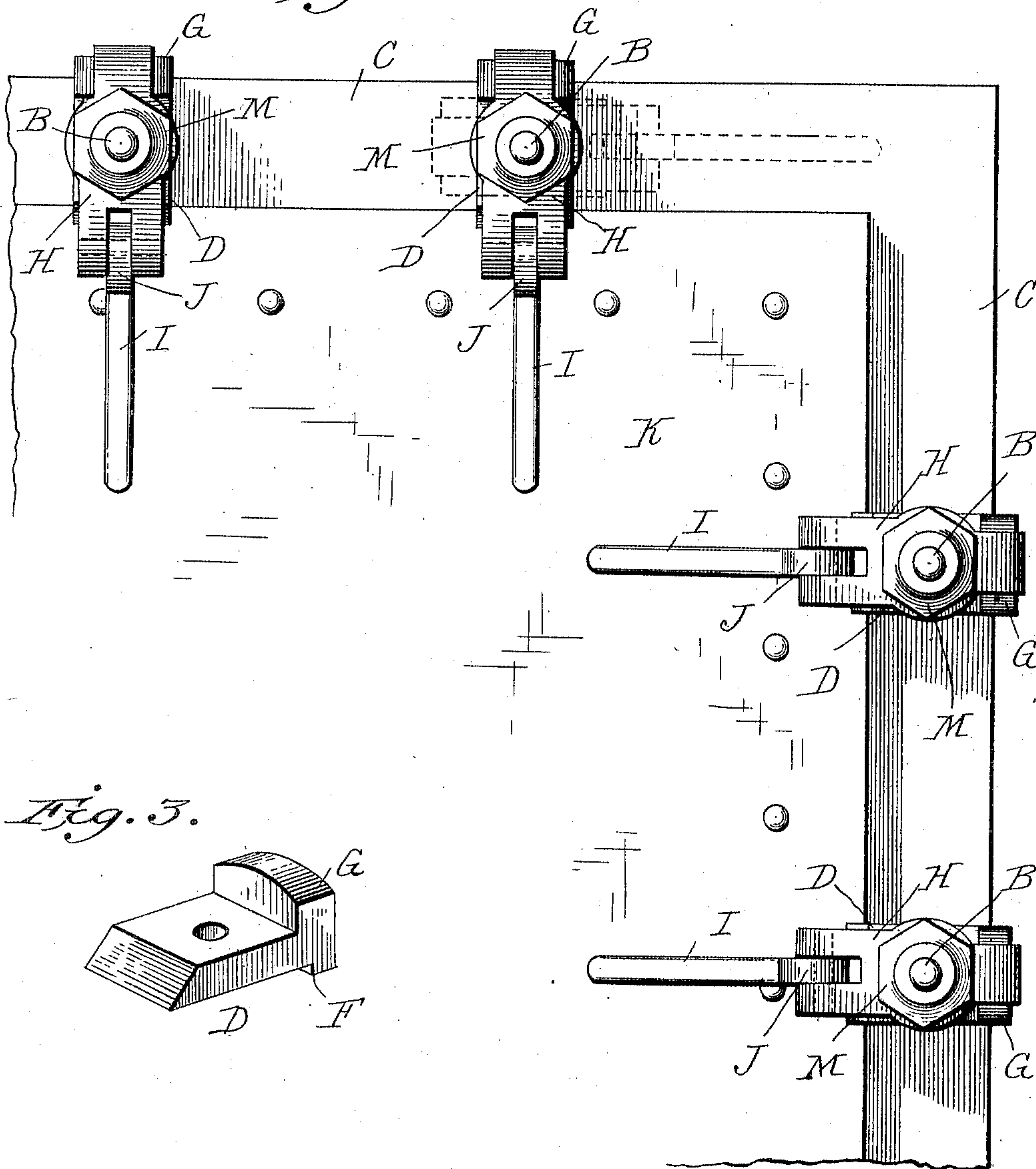


Fig. 3.

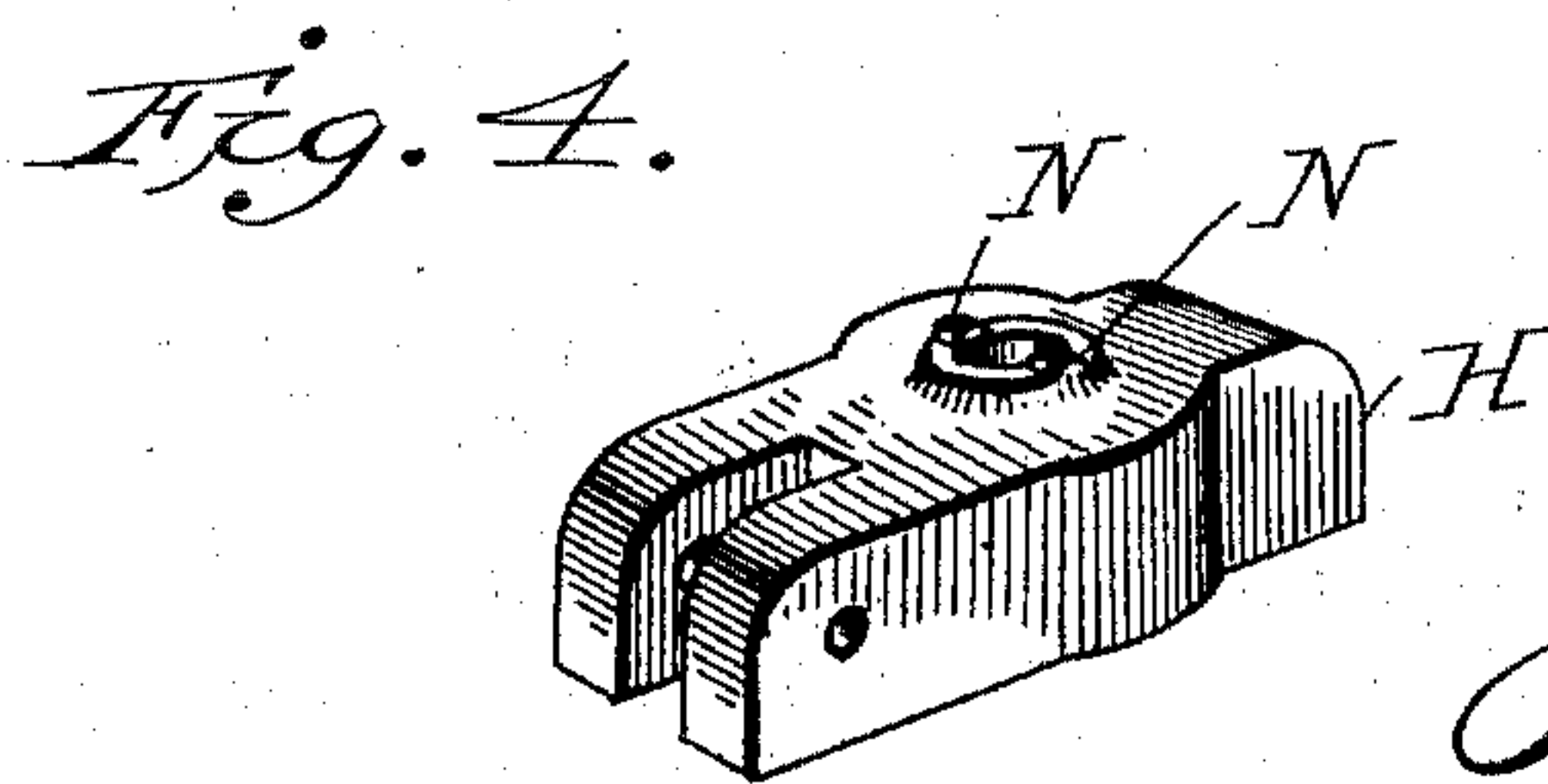
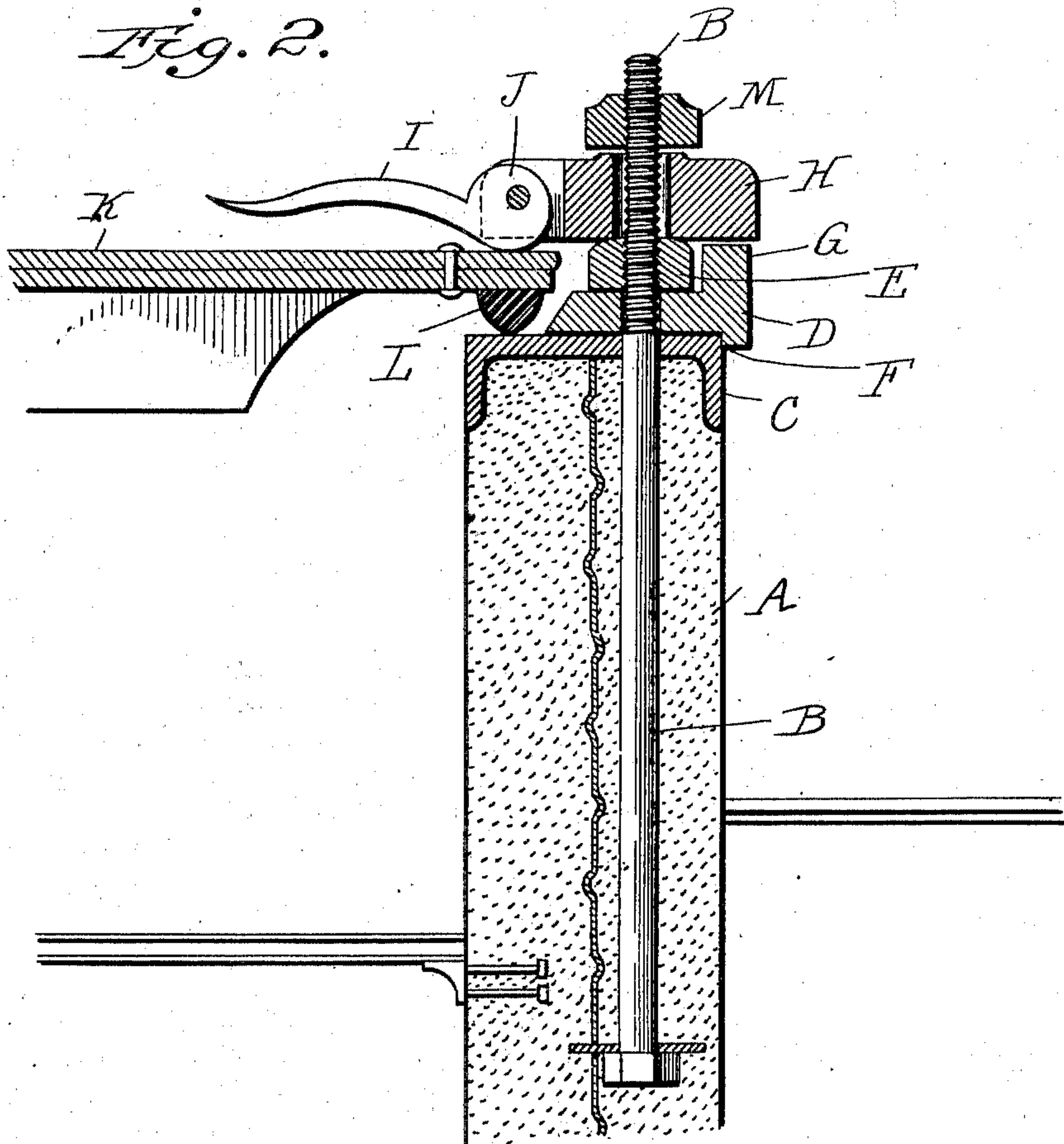
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

PETER J. NOLAN, OF CHESTER, PENNSYLVANIA.

COVER FOR GAS-PURIFIERS.

SPECIFICATION forming part of Letters Patent No. 760,238, dated May 17, 1904.

Application filed February 1, 1904. Serial No. 191,525. (No model.)

To all whom it may concern:

Be it known that I, PETER J. NOLAN, a citizen of the United States of America, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Covers for Gas-Purifiers, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part hereof.

The object of this invention is to provide a cheap and simple construction by means of which the lids or covers of gas-purifying boxes may be securely locked and held in position against the pressure of the gas, and gas-tight joints will be formed around the top edge of the box, while at the same time the lid may be readily removed when necessary. This object is attained by the use of the device illustrated in the accompanying drawings, and hereinafter fully described; and the invention consists in certain novel features of the same, particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a portion of a gas-purifying box, showing my improvement applied thereto. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a detail view of the clamping-plate, and Fig. 4 is a view of the fulcrum-block.

The purifying-box is constructed of concrete and expanded metal, so as to possess sufficient strength to resist the high pressure of the gas being treated therein. Embedded in the concrete wall A is a long bolt B, the threaded end of which projects above the top of the wall, and on the top of the wall is arranged a channel-iron C to provide a smooth and firm bearing-surface for the packing-ring on the top or lid of the box, as will be hereinafter more particularly referred to. Fitted over the end of the bolt and resting directly on the channel-iron or cap-plate C is a clamping-plate D, which is secured firmly in place and against the cap-plate by a nut E, mounted on the bolt and turned home against the clamping-plate. This clamping-plate is provided with a downturned lip or flange F, which fits

against the outer side or edge of the cap-plate, whereby the said clamping-plate will be prevented from turning on the bolt. In order to effectually guard against leakage of the gas, I employ a packing of red lead or similar substance between the cap-plate and the concrete body of the wall, between the cap-plate and the clamping-plate, and also between the nut and the clamping-plate. The inner surface of the wall is also coated with the same substance. On the upper surface of the clamping-plate at the outer end of the same is a resistance-block G, the upper surface of which is convex, as shown in Fig. 3. The purpose of this box will presently appear. Fitted loosely on the bolt and resting on the nut E and the clamping-plate is a fulcrum-block H, one end of which is bifurcated and has pivoted therein the locking-lever I. The said locking-lever is constructed with a cam portion J, which bears on the upper side of the lid or cover K, and thereby when the lever is turned down forces the lid toward the walls of the box and compresses the packing-ring L, of rubber or some other elastic substance, so as to form a gas-tight joint between the lid and the box, as will be readily understood. Above the fulcrum-block a retaining-nut M is mounted on the bolt and is turned down to the block, so as to prevent it being accidentally or prematurely lifted from the bolt. This nut, however, is not turned completely home against the block, so as to clamp it, but is left slightly free, so that the block may be swung around the bolt in a horizontal plane. Furthermore, the upper surface of the block is formed with two slight teats or lugs N, having convex upper surfaces, and the nut rests on these lugs or teats, which act as journals or pivots to permit slight vertical play of block in the operation of the device.

When the lid is in place on the box, the lever is turned down over the same, so as to lock it against the box, as shown and as hereinbefore stated. When it is desired to remove the lid in order to clean the box or for other purposes, the lever is turned up and then swung around to the side, as shown in dotted lines in Fig. 1, so as to clear the lid and permit the same to be lifted.

It will be observed that a single bolt serves to hold the cap-plate down onto the wall and also as the support for the lock. Heretofore great annoyance has been caused by the breaking of the bolt or pin on which the lock is mounted; but in my device this objection has been entirely overcome. The fulcrum-block is out of contact with the bolt, so that the vertical play or swing imparted thereto in the use of the device will cause no strain on the bolt. Should the lid be a little high before the locking-lever is turned down, the inner end of the fulcrum-block must be lifted slightly, so as to clear the same, and with the locks in common use this motion frequently bent and broke the bolt. In the present device the resistance-block on the outer end of the clamping-plate arrests the downward motion of the outer end of the fulcrum-block, and consequently prevents the breaking or bending of the bolt from this source. The lip or flange on the under side of the clamping-plate by engaging the outer edge of the cap-plate maintains the said clamping-plate in its proper position, so that the resistance-block will always be under the outer end of the locking-lever when the said lever is in the locking position. The upper surface of the resistance-block is convex, so that there will be no impediment to the horizontal movement of the locking-lever and the fulcrum-block. In order to prevent the vertical play of the fulcrum-block transmitting a strain to the bolt through the retaining-nut, I provide the teats or lugs on the upper side of the block, which form journals or rocking-points for the said block. Were the nut in close contact with the block throughout the area of the under side of the nut the vertical swing or play of the block would at once cause a lateral strain on the bolt through the nut.

The device is simple in construction, efficient in operation, and its durability makes its adoption a measure of economy. While I have described the device as applied only to gas-purifying boxes, and it is intended more particularly for that purpose, it will be understood, of course, that the invention is applicable to hatchways and all other places where an air and water tight joint is desired.

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

1. In a lock for covers, &c., the combination with the box, tank or other containing structure, and the cover, of a fulcrum-block mounted at one side of the cover and adapted to move in a plane parallel to the cover and also having a slight movement in a plane in-

tersecting the cover, and a locking-lever mounted in the end of the fulcrum-block and adapted to bear on the cover.

2. In a device for the purpose set forth, the combination with the receptacle or containing structure, and the cover, of a fulcrum-block adapted to move in intersecting planes, a locking-lever mounted in one end of said fulcrum-block, and means for limiting the movement of the fulcrum-block in one of the intersecting planes.

3. In a device for the purpose described, the combination of a central post or support, a fulcrum-block mounted thereon and adapted to swing horizontally, a locking-lever carried by the inner end of said block, and a resistance-block in position to be engaged by the outer end of the fulcrum-block when in the locking position.

4. In a device of the character set forth, the combination of the central support, a fulcrum-block mounted thereon and adapted to swing horizontally, a locking-lever carried by the said fulcrum-block, a retaining-nut mounted on the central support above the fulcrum-block, and rocking points formed on the upper side of the fulcrum-block and bearing against the under side of said nut.

5. In a device for the purpose described, the combination with the wall of the box, of a bolt embedded therein and projecting above the same, a cap-plate on the upper edge of the wall, a clamping-block on the bolt resting on the said cap-plate, a nut on the bolt holding the said clamping-plate against the cap-plate, a fulcrum-block mounted on the bolt loosely above said nut and carrying a locking-lever in one end, and a retaining-nut mounted on the bolt above the fulcrum-block.

6. In a device for the purpose described, the combination with the wall of the box, of a bolt embedded therein and projecting above the same, a resistance-block held by the bolt and having a depending lip engaging the wall, a nut on the bolt securing the said resistance-block, a fulcrum-block mounted loosely on the bolt, resting on the said nut and adapted to project over the resistance-block and provided with rocking points on its upper side, a locking-lever carried by the said fulcrum-block, and a retaining-nut mounted on the bolt above the fulcrum-block.

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

PETER J. NOLAN.

Witnesses:

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J. DE HAVEN LEDWARD.