J. M. SLANEY.

Tar-Gate for Hydraulic-Main in Gas-Works.

No. 168,191. Patented Sept. 28, 1875.

Fig. 1.

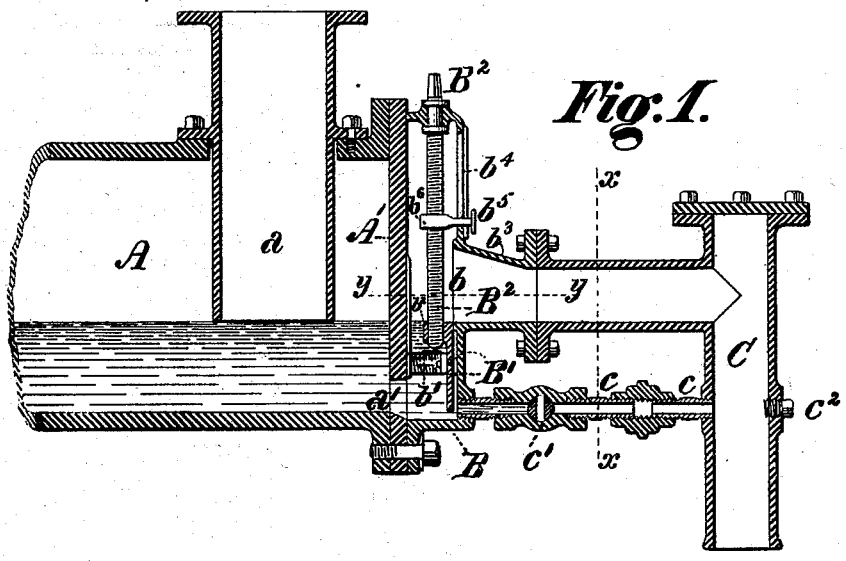


Fig. 3.

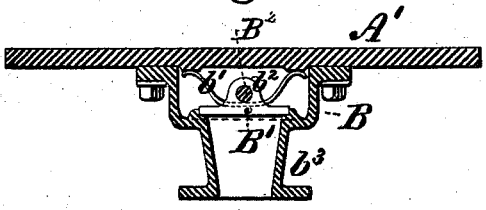
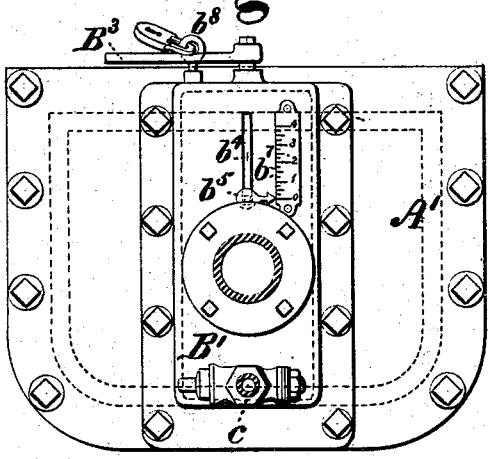


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN M. SLANEY, OF CAMDEN, NEW JERSEY, ASSIGNOR TO JESSE W. STARR AND JESSE W. STARR, JR., OF SAME PLACE.

IMPROVEMENT IN TAR-GATES FOR HYDRAULIC MAINS IN GAS-WORKS.

Specification forming part of Letters Patent No. **168,191**, dated September 28, 1875; application filed September 9, 1875.

To all whom it may concern:

Be it known that I, JOHN M. SLANEY, of the city and county of Camden, in the State of New Jersey, have invented certain new and useful Improvements in Tar-Gates for Gas-Works, of which the following is a specification:

The object of my invention is to provide simple and efficient devices for regulating the height of the tar in the hydraulic mains of gas-works and sealing the dip-pipes therein, as well as for withdrawing the tar entirely therefrom when required; to which end my improvements consist in the combination with a hydraulic main of an end plate having an opening at its bottom, a valve working in a casing on said end plate, and a draw-off pipe and cleaning-plug at or below the lowest point of the hydraulic main, as hereinafter more fully set forth.

In the manufacture of illuminating-gas, as ordinarily conducted, the dip-pipes through which the gas, tar, and other products of distillation pass from the retorts into the hydraulic main are sealed by the tar in the latter, so as to prevent communication between the several retorts, and the pressure on the retorts varies as the difference of level of the tar in the main being greater or less in proportion as the same is higher or lower. It therefore becomes necessary to provide means whereby the level of the tar and the consequent induced pressure can be accurately regulated as circumstances may require; and to this end sundry devices have been proposed and operated with a greater or less degree of success. A prominent defect in many of these has been the employment of levers and articulated connections within the hydraulic main in such position as to become clogged with tar, and to be almost inaccessible for cleaning or oiling. Moreover, as generally constructed, it is within the power of ignorant or mischievous persons to secretly tamper with the valves, and thereby to dangerously increase the pressure in the retorts.

My invention has all its moving parts outside of the hydraulic main, and in its operation the level of the tar cannot be altered except by an authorized person, nor in any case without immediately indicating the variation of level produced.

In the accompanying drawings, Figure 1 is a vertical central section of a portion of a hydraulic main with my improvements applied; Fig. 2, an end view of the same, the pipes being shown in section at the line *x x;* and Fig. 3, a horizontal section through the valve-casing and end plate at the line *y y*.

The hydraulic main A and dip-pipes *a* are of the ordinary construction, the discharge end of the hydraulic main being closed by a flat end plate, A′, which serves as a tar-dam, and prevents the escape of gas into the tar-pipe. An opening, *a′*, is formed in the bottom of the end plate of sufficient size to carry off the tar, the bottom of this opening being on a line with the lower inner surface of the main. A valve-casing, B, is formed upon or secured to the end plate A′, having an opening, *b*, from which a flanged nozzle, b^3, projects outward. The nozzle b^3 is connected to the horizontal arm of the tar-pipe C, which leads to a suitable tar-cistern. The lowest point of the opening *b* (which must be at least of equal area with the opening in the end plate) is on a level with the lower ends of the dip-pipes *a*. A valve, B^1, is arranged upon the inner face of the valve-casing B, so as to work over the opening *b*, and partially or wholly close the same. The valve is kept up to its seat by a spring, b^1, and is raised or lowered, as required, by a screw, B^2, which is journaled in the top of the casing and works in a nut, b^2, on the back of the valve. A slot, b^4, is formed in the casing above the nozzle b^3, through which slot a pointer, b^5, projects. The pointer is connected to a nut, b^6, on the screw B^2, so as to be raised and lowered coincidently with the valve B^1, and indicates the degree of elevation of the latter upon a graduated scale, b^7, on the outside of the casing. The slot b^4 enables oil to be introduced when required for the lubrication of the screw and nuts. The end of the screw B^2, which projects from the casing, is squared to receive a lever or wrench, B^3, by which it may be turned, and when the valve is set in any desired position the lever is locked to a hasp or staple, b^8, by a padlock. It will thus be seen that any

degree of elevation of the valve will always be indicated upon the scale, and that no change in its position can be made by an unauthorized person. For the purpose of drawing off the whole or any portion of the tar from the bottom of the main, I provide a draw-off pipe, *c*, which extends from the lowest point of the valve-casing to the tar-pipe C, and is provided with a suitable cock or valve, c^1. A cleaning-plug, c^2, is inserted in the tar-pipe C, nearly opposite the pipe *c*, to enable a rod to be inserted for the purpose of clearing away any obstructions that may accumulate in the pipe *c* or in the opening a'.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of a hydraulic main, an end plate closing the same, and having an opening in its bottom, a valve-casing on the end plate having an opening in its face at the level of the bottoms of the dip-pipes, and a vertically-moving valve closing the opening in the casing and operated from the outside thereof, substantially as set forth.

2. The combination, in a tar-gate, of a vertically-moving valve and its operating-screw, and a pointer attached to a nut on said screw and projecting through a slot in the valve-casing, substantially as set forth.

3. The combination, in a tar-gate, of a vertically-moving valve, an operating-screw journaled in the valve-casing, and a locking wrench or lever, substantially as set forth.

4. The combination of the valve-casing, the draw-off pipe, the tar-pipe, and the cleaning-plug, substantially as set forth.

JOHN M. SLANEY.

Witnesses:

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