No. 676,065. Patented June 11, 1901.

J. W. HOUGH.

AUTOMATIC DRIP FOR GAS LINES.

(Application filed Apr. 4, 1901.)

(No Model.)

Fig. 2.

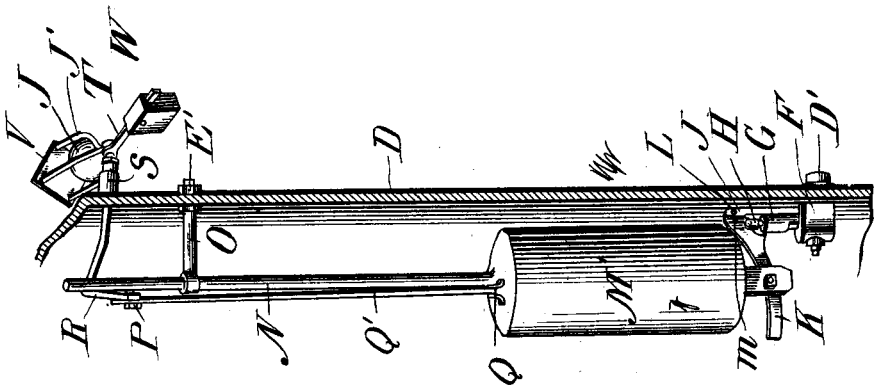

Fig. 1.

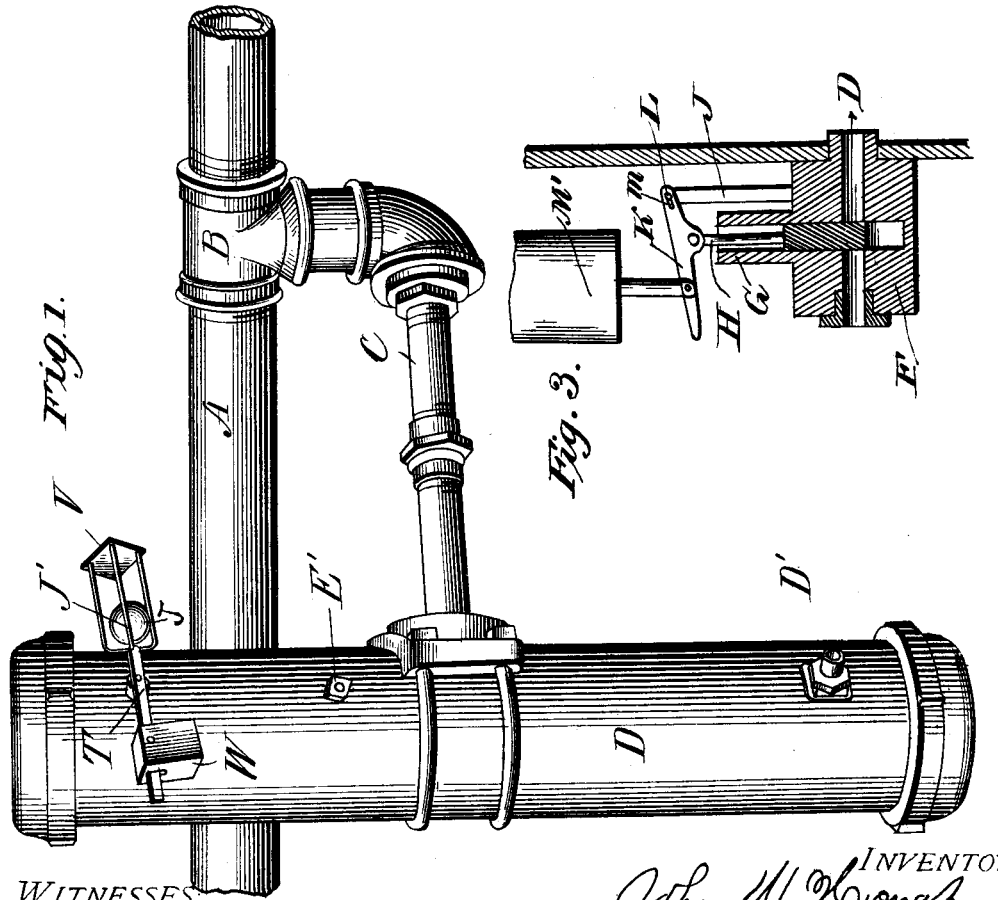

Fig. 3.

WITNESSES:

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AUTOMATIC DRIP FOR GAS-LINES.

SPECIFICATION forming part of Letters Patent No. 676,065, dated June 11, 1901.

Application filed April 4, 1901. Serial No. 54,343. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HOUGH, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Automatic Drips for Gas-Lines; and I do declare the following to be a full, clear, and exact description of the invention, such 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, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in automatic drips for gas-lines; and it consists in the provision of means for automatically trapping off water of condensation which forms in gas-mains, and, further, in the provision of a receptacle into which the condensed water is adapted to flow by gravity until a sufficient quantity has accumulated to cause the float to rise, which is connected at one end to the valve of an outlet-passage, while the other end is connected to a differential weight.

The invention will be hereinafter more fully described and then specifically defined in the appended claims, and is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form part of this application, and in which drawings—

Figure 1 is a perspective view of a gas-line, showing my drip-cylinder connected thereto, the differential weight, which is connected to the float within, being shown on the side of the receptacle. Fig. 2 is a view of the float and attachments with the cylinder removed, and Fig. 3 is a detail sectional view.

Reference now being had to the details of the drawings by letter, A designates a gas-line, in which water forms from condensation, which water it is desired to automatically discharge from the line. A T-union B is connected to the pipe-line A, and leading from said coupling is a pipe C, which communicates through elbows and suitable couplings with the cylinder D, which is mounted in an upright position. This cylinder has an outlet D′ near its lower end, and held in a fixed position within the cylinder is a valve-chamber F, through which an opening or duct leads to the outlet-passage D′. This valve-chamber has a guide extension G, in which a plunger H reciprocates. A rigid support J rises from the valve-chamber, and to its upper end is pivoted one end of the lever K, which carries a pin L, said pin having a slight play in a slot *m* in the lever K, which is secured to the lower end of the float M′. This float M′ has a guide-rod N rising from its upper end, which is guided through an aperture in the eyebolt O, which bolt is secured to the cylinder D, being held thereto by means of adjusting-nuts E′. Pivoted to the upper end of the float at Q is a rod Q′, the upper end of which is pivotally connected, as at P, to the angled crank or trip R. This angled trip or crank R passes through the stuffing-box S, which is mounted in an aperture in the cylinder D, and said trip R has a rotary motion within said stuffing-box. To the outer end of the trip or crank is secured a counterbalanced bar T, which has a rolling differential weight J, mounted between the confining-rods J′ on said bar. This weight J is limited at its outward throw by the plate V, while its inner throw is limited by the curved ends of the rods J′. On the opposite end of the lever T is a counterbalanced weight W.

When the various parts before described have been assembled in the manner illustrated in the drawings and hereinbefore described, the operation of the same is as follows, viz: As the condensed water runs from the gas-line through into the receptacle D and a sufficient quantity has accumulated therein to raise the float said float will rise a slight distance before operating the outlet-valve. When the float rises sufficiently to cause the differential weight J to roll down an incline toward the end plate V, the impact of the ball J against said plate causing the jerk will have a tendency to throw the float suddenly higher, and raising the lever K will cause the plunger H to rise from over the outlet-passage, allowing the water to pass out through the passage-way D′. After the water has been automatically discharged from

the cylinder the float will lower and the plunger H will close the outlet-passage in the chamber F, and the rolling weight J as the float lowers will assume a position at the inner limit of its throw.

From the foregoing it will be observed that this drip is entirely automatic, and by adjusting the weight W the bar on which said weight is mounted and which carries the rolling weight may be rigid, so that the apparatus will operate when water accumulates at different heights within the cylinder.

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

1. An automatic drip for gas-lines, comprising in combination with the main line, a cylinder or receptacle having communication with said main line, and into which receptacle the condensed water is allowed to run by gravity from the main, a differential weight, a float mounted within the cylinder and connected to said weight, a valve and connections between same and said float, whereby as water accumulates to a certain height in said cylinder, the valve will be automatically opened, as set forth.

2. An automatic drip for gas-lines, comprising in combination with the line, the cylinder, communicating pipes leading from the main line to said cylinder, to convey by gravity the water condensed in said line, a float mounted within said cylinder, a differential weight and crank or trip member mounted in suitable stuffing-box in the wall of said cylinder, pivotal link connections between said crank or trip member and the float, a valve at the discharge-outlet of the cylinder, a plunger-valve, a lever pivoted to said plunger, and having loose pivotal connections with the float, and means for guiding the float, as set forth.

3. An automatic drip for gas-lines, consisting in combination with the main line, a cylinder with communicating pipes leading from the main line to said cylinder, a float mounted within said cylinder, a valve and lever pivoted thereto, said lever pivoted to a fixed rod, a float having loose pivotal connections with said lever, a trip or crank rod, a stuffing-box mounted in an aperture in said cylinder, through which said trip or crank rod is mounted, and adapted to turn a link pivotally connecting said float with said crank-rod, a guide-post rising from the float, and a stationary eyebolt through which said guide-rod passes, a bar secured to the outer end of the crank-rod and a stationary weight held at one end of said rod, and a differential weight at the opposite end, as set forth.

4. In combination in an automatic drip apparatus for gas-lines, the cylinder and connecting-pipes between said line and cylinder, a valve and float for actuating same, a trip or crank rod passing through said cylinder and having pivotal and link connections with said float, a bar secured to the outer end and rocking with said crank or trip rod, an adjustable weight held on one end of said bar and a rolling weight mounted between confining-rods at one side of its longitudinal center, and a plate to limit the outward throw of said rolling weight, as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JOHN W. HOUGH.

Witnesses:
J. B. ATKINSON,
E. C. THOMPSON.