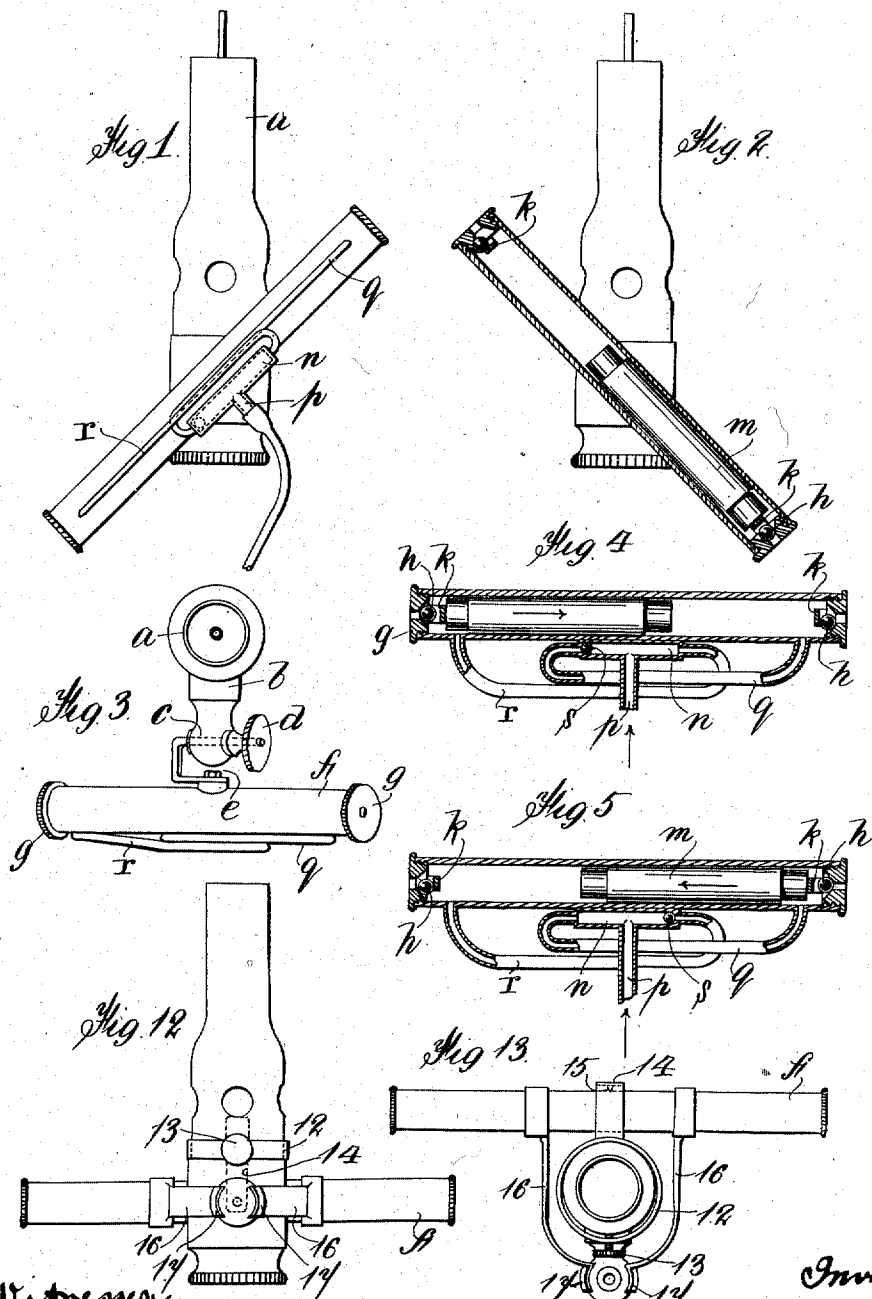


B. C. H. PEGLER.
 DEVICE FOR OPENING AND CLOSING GAS TAPS FROM A DISTANCE.
 APPLICATION FILED MAY 7, 1910.

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Patented Jan. 31, 1911.

2 SHEETS—SHEET 1.



Witnesses:
 F. E. Hehlen
 Geo. C. Heinicke

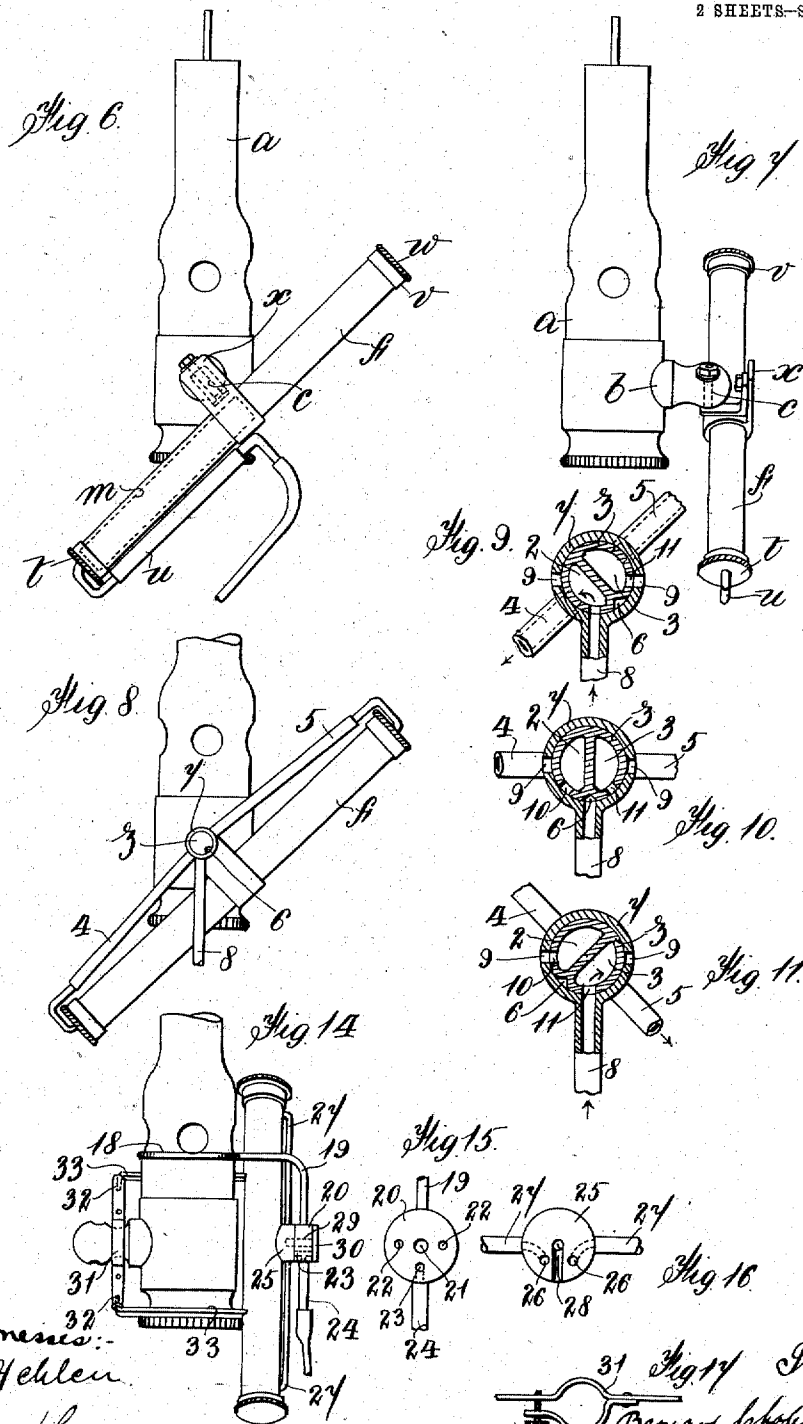
Inventor:
 Bernard Charles Holmes
 Pegler
 by B. Singer
 atty.

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Fig. 17 Inventor
 Bernam Labadie Holmes
 by B. Singer
 atty

UNITED STATES PATENT OFFICE.

BERNARD CHARLES HOLMES PEGLER, OF KINGSTON-UPON-THAMES, ENGLAND.

DEVICE FOR OPENING AND CLOSING GAS-TAPS FROM A DISTANCE.

982,861.

Specification of Letters Patent.

Patented Jan. 31, 1911.

Application filed May 7, 1910. Serial No. 560,002.

To all whom it may concern:

Be it known that I, BERNARD CHARLES HOLMES PEGLER, a subject of the King of England, residing at Allerton House, Kingston-upon-Thames, in the county of Surrey, England, have invented new and useful Improvements in Devices for Opening and Closing Gas-Taps from a Distance, of which the following is a specification.

10 My invention relates to an improved appliance for regulating the supply of gas for lighting or other purposes, and refers to improvements in means for turning on and off a tap for the supply of gas to a burner, such means being applicable also for other purposes where it is desired to obtain semi-rotary motion controlled from a distance.

20 The invention is of the type in which a weight is caused to move from one end to the other of a vessel or container pivoted toward its middle and actuating the gas or other tap, such weight being caused to move from side to side of the fulcrum by variation of fluid pressure.

25 Devices of this type as hitherto constructed have utilized liquids for moving the gravity controlled device, the liquid being moved by means of gas pressure supplied from the main, in some cases entering through a hollow fulcrum or pivot upon which the liquid container is mounted.

30 My invention relates to a device in which in place of employing a liquid, a heavy sliding piston is used in the cylinder and pneumatic means is added for propelling the piston from one end to the other of the cylinder, a device which is obviously much more practicable than the utilization of a liquid for actuating the gravity controlled device.

40 In the usual form of this apparatus which I will describe as applied to the turning on or off of a gas tap by way of example, I attach temporarily or permanently to the plug of a gas tap and by preference almost in a horizontal position, a cylindrical tube having an easily sliding piston which in being blown from one end of the cylinder to the other in the manner hereinafter described, weighs down that end of the cylinder in which the piston happens for the time being to remain. Thus, by compressing the bulb at the distant point alternately the heavy piston can be driven from one end to

the other of the cylinder, causing a rocking motion of such cylinder and the plug to which it is attached. At each end of the cylinder is a ball valve opening inward when the ball is off its seating. When the cylinder is tilted with the right end upward the air enters on the left end or lower side of the cylinder, and the ball closing over the valve will not allow the exit of the air from the cylinder and, therefore, it drives the piston to its highest position, tilts the cylinder over and thus turns the gas on. The air in front of the piston is driven out upward through the open valve, the ball having in the meantime fallen away from its seating.

55 In order to control the entrance of the air into the correct position, underneath the piston a second central valve is made in such a way that a ball or other valve closes the opening to the part of the cylinder which is for the time being uppermost only allowing air to come downward under the piston to enable it to be forced into its uppermost position. It is easily understood that by means of a ratchet upon the axis of the plug and a pawl upon the actuating cylinder a continuous rotary motion in one direction only can be given to such ratchet wheel and plug. In this case there would be no subsidiary central valves but the air would be driven in below the piston and would merely force the piston to its uppermost position during a space of time sufficient to actuate the ratchet by means of the ascending pawl. And in order that my said invention may be better understood, I will now proceed to describe the same with reference to the drawing accompanying this specification, in which:—

60 Figure 1 is an elevation of a burner with my device fitted thereto; Fig. 2 is a similar view with the mechanism in another position; Fig. 3 is a plan of Fig. 1; Figs. 4 and 5 are diagrammatic views explaining the action of the mechanism; Fig. 6 is an elevation of a modified form of the device; Fig. 7 is a side elevation of same; Fig. 8 is an elevation of a third form of the device; Figs. 9 to 11 are details explaining the construction and action of this form of the device. Figs. 12 and 13 are plan and elevation respectively of a method of attaching the device. Figs. 14 to 17 show a further method

of carrying out the invention and a method of attaching the device to the tap or the like to be actuated.

The same letters of reference are employed to denote the same parts in all the views.

5 *a* shows the burner fitting provided with the ordinary tap *b*. Through the hole through which the handle or lever actuating the tap is usually passed, is inserted a screw
10 pin *c* held in position by means of a screw nut *d*. The pin *c* is bent twice as shown at Fig. 3, and is attached by means of a suitable nut *e* to a cylinder *f*. As the ordinary
15 taps are made with the perforation and actuating lever in more than one position, either vertical or horizontal, the pin *c* can be fixed by means of the nut *e* either in the same
20 plane with the cylinder *f* or at right angles thereto, or it may be set at any other angle according to the burner to which it is to be adapted. The cylinder *f* is provided at each
25 end with a cap *g* having a central perforation, and located beneath each of these perforations and within the cylinder *f* is a small ball valve *h* kept in the neighborhood of the
30 hole by means of a cross bar *k* attached to the cap. *m* is a heavy piston fitting closely in but moving easily in the cylinder *f*. *n* is a valve chamber attached to the cylinder *f*
35 and having a pipe *p* leading from the source of air pressure. The ends of the valve chamber *n* communicate by pipes *q* and *r* with opposite ends of the cylinder *f*, as will be seen from the drawing. The valve chamber
40 *n* is provided with a small ball *s*. The action of this form of the device will be easily understood:—Supposing the parts are in the position shown at Fig. 1 and that a
45 pressure of air is created in the valve chamber *n* by means, say, of an air bulb blowing through the pipe *p*, the air can only pass through the pipe *r* since the small ball *s* closes the other pipe *q*. Consequently, the
50 air passing down the said pipe at *r* comes below the piston *m* and as the ball *h* at this end is over the hole in the cap *k*, the air forces the piston *m* to the opposite end of the cylinder *f*, causing it to overbalance and turn
55 the tap *b*, allowing the gas to light by means of a pilot flame. When it is required to turn off the gas it is simply necessary to again squeeze the air bulb when the operation will be reversed, as the ball *s* will have fallen
60 over to the other end of the valve chamber *n*, and closed the passage *r*, and the air will thus be compelled to pass through the pipe *q* and actuate the piston *m* in the opposite direction. In each case the motion of the piston *m* is not impeded by the air in front of
65 it, as the small ball *h* at the forward end drops on to the cross bar *k*.

Referring to the form of the device shown at Figs. 6 and 7, in this case an application is shown in which pressure and suction are
65 relied upon for actuating the mechanism.

In this case the cylinder *f* is provided with a piston *m* and a cap *t* has entering at the center thereof a pipe *u* which is in communication with a small air pump. The opposite end of the cylinder *f* is provided with a cap *v* having a simple hole *w*. In this case
70 the cylinder *f* is provided with a plate *x* to which the fitting of the screw pin *c* is attached, and upon which it can be set in the required position as previously described.
75 The action of this device is as follows:—Assuming the device to be in the position shown at Fig. 6, when a pressure of air passes down the pipe *u* the piston *m* is shot to the other end of the cylinder *f*, the air in
80 front of it escaping through the orifice *w* in the cap *v*. The cylinder *f* consequently overbalances turning on the gas. When it is required to turn it off by means of pulling up the plunger of the pump and creating a suction through the tube *u*, the piston *m* is
85 drawn back by means of suction, air entering through the hole *v* and the tap is turned in the opposite direction.

Referring to the forms of the device
90 shown at Figs. 8 to 11, in this case the cylinder *f* which may be fitted in a similar way to that described with reference to Figs. 6 and 7, has a tube *z* attached thereto. This
95 tube *z* is closed at its outer end and divided into two chambers 2 and 3. The chamber 2 is in connection with a pipe 4 and the chamber 3 in connection with a pipe 5, the pipes 4 and 5 leading to the opposite ends of the cylinder *f*. The chambers 2 and 3 are also
100 furnished with entry holes 10 and 11. 6 is a longitudinally fluted slot, used for the purpose hereinafter explained. 7 is a sleeve embracing the tube *z* and having fitted thereto a pipe 8 for the admission of the air.
105 This pipe and sleeve are held fixedly in position to the burner by any suitable means not shown on the drawing, and the sleeve 7 is provided with two outlet holes 9.

In actuating the device suppose the parts
110 to be in the position shown at Figs. 8 and 9, when a pressure of air enters through the pipe 8, it passes into the chamber 2 through the hole 10, thence along the pipe 4 behind the piston *m* and forces the piston *m* to the
115 other end of the cylinder. This drives the air from the other end of the cylinder through the pipe 5 into the chamber 3, thence through the holes 11 and 9 into the open air. The mechanism thence passes
120 over into the position shown at Fig. 11. The object of the fluted slot 6 will be understood from the following consideration. If the operator continues to press the bulb after the mechanism has started turning,
125 the excess of pressure not used in blowing the piston *m* over escapes through the pipe 8 and along the fluted slot 6 into the open air. Where this is not the case, the cylinder would overbalance and still having the
130

pressure through the pipe 8 would immediately return to the first position. It will be evident that this form of the device may be so constructed and attached that the tube *z* is fixed while the sleeve 7 is caused to rotate, the pipe 8 in that case being attached to the tube *z*.

Coming now to the form of the device shown at Figs. 12 and 13, these show a preferred way of attaching any of the forms already described to the burner. 12 is a ring attached over the burner by means of an adjustable screw 13. This is provided with an outwardly and downwardly extending back portion 14, carrying a pivot 15 which forms one of the pivots upon which the cylinder *f* turns. Attached to the cylinder *f* are two spring arms 16 which are provided at their outer ends with jaws 17 which spring against the actuating portion of the gas tap, and by means of which the tap is turned. The drawing shows the device in an intermediate position with the tap half on. This form of the device is particularly advantageous as it can be fitted very quickly on to an existing tap. It is simply necessary to put on the ring 12 to tighten up the screw 13 and to clamp the jaws 17 around the burner and over the actuating portion of the tap, and the device is ready for use. It is, moreover, extremely well balanced when in use.

Referring to Figs. 14 to 17, in this form of the device the attachment is effected by means of a spring clip 18 embracing the outside of the burner. This clip has a depending portion 19 to which is attached a circular plate 20. This plate is shown detached at Fig. 15, from which it will be seen that it is provided with a central hole 21 and two other holes 22 placed diametrically opposite one another and a fourth hole 23, which last hole communicates with the air supply pipe 24. The cylinder *f* is furnished with a bush 25 which is seen at Fig. 16. This bush has two holes 26 communicating with pipes 27 leading to the opposite ends of the cylinder as before explained, and a groove 28 similar in function to the fluted slot 6 already described. This bush has a central hole into which screws a spindle 29 passing through the central hole 21 in the plate 20, where the surface of the spindle is plain (*i. e.* not screw threaded) and made with a disk 30 coming on the outside of the plate 20 and having two holes in the same relative angular position as the holes 26. It will be seen that the plate 20 is always in one position and that the bush 25 and the disk 30 revolve on either side of it moving with the cylinder *f*. When in one position the air passes through the hole 23, through one of the holes 26 to the lower end of the cylinder, and blows the piston to the other end, the air being forced out in front of the piston

through one of the pipes 27, the other hole 26, through one of the holes 22 and out to the open air, through one of the holes in the outer plate.

It will be seen from Fig. 14 that the hole 23 passes right through the plate 22 so that when air is blown through the pipe 24 it exerts a pressure both on the bush 25 and on the plate 20, which balance one another and thus prevent any binding action which might arise if the hole 25 only communicated with the bush 20.

Referring to the portion for actuating the tap, this comprises a clamping device 31 to be clamped around the actuating portion of the tap which is extended into recess tubes 32 or other equivalent devices into the holes of which tubes bent spring arms 33 attached to the cylinder *f* take, so that no weight comes upon the tap.

It will be understood that the various forms of the device herein described and shown on the accompanying drawing are given by way of example only as I may modify the methods of carrying out the invention in several ways to suit particular cases without departing from the principle of the invention. Moreover, although I have explained the application of the invention to the actuation of gas taps it will be understood that the device may be applied in many other cases where it is required to impart a rotary motion to a device especially when such device is fixed at a distance from the operator or in an inaccessible position.

What I claim and desire to secure by Letters Patent of the United States of America, is:—

1. In combination with the plug of a gas tap and a pilot light, a cylinder connected to the tap so as to open and close the same, caps to close said cylinder at its ends, a sliding piston within said cylinder adapted to be operated from a distance and means to alternately propel said piston from one end of the cylinder to the other, for the purpose of opening and closing said tap.

2. In combination with the plug of a gas tap and a pilot light, a cylinder connected to the tap so as to open and close the same, caps to close said cylinder at its ends, and a chamber attached to said cylinder, pipes communicating with the opposite ends of said chamber and cylinder, means to control the air supply of said chamber, ball controlled gravity valves at both ends of the cylinder, and means to operate said controlling means and said valves.

3. In combination with the plug of a gas tap and a pilot light, a cylinder connected to the tap so as to open and close the same, caps to close said cylinder at its ends, a sliding piston within said cylinder adapted to be operated from a distance, a chamber

attached to the cylinder, pipes communicating with the opposite ends of the chamber and cylinder, a ball controlling the air supply to said chamber, ball controlled gravity valves within the caps of said cylinder and cross bars for positioning the balls of said valves and means to operate said cylinder from a distance.

4. In combination with the plug of a gas tap and a pilot light, a cylinder connected to the tap so as to open and close the same, a sliding piston within said cylinder, closing caps at both ends of said cylinder, a pipe entering through one of the caps, means to propel the piston to the other end of said cylinder, and means to return said cylinder into its original position.

5. In combination with the plug of a gas tap and a pilot light, a cylinder connected to the tap so as to open and close the same, a sliding piston within said cylinder, closing caps at both ends of the cylinder, pipes extending through both caps into said cylinder, a tube closed at its outer end attached to the cylinder, two chambers, pipes communicating with the opposite ends of said chambers and cylinder, means to actuate said piston and means to operate said actuating means from a distance.

6. In combination with the plug of a gas

tap and a pilot light, a cylinder, a ring adjustably secured to said tap, a set screw providing a pivot for said cylinder, spring jaws pressing against the actuating portion of the tap and means to operate said actuating portion from a distance, so as to open and close the tap.

7. In combination with the plug of a gas tap and a pilot light, a cylinder; means to operate said cylinder from a distance, a spring clip embracing the burner, a perforated bush upon the cylinder, tubes communicating with each end of the cylinder and said perforations, a circular plate attached to the burner and having four holes, one communicating with said operating means, and the others alternately communicating with said tubes, a clamping device clamped around the actuating part of the tap, recessed tubes into which said clamping device extends and bent spring arms attached to the cylinder and bent into holes of said tubes, substantially as described and for the purpose set forth.

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

BERNARD CHARLES HOLMES PEGLER.

Witnesses:

H. D. JAMISON,

R. WESTACOTT.