

C. W. WELMAN.
 AUTOVALVE.
 APPLICATION FILED SEPT. 3, 1912.

1,076,647.

Patented Oct. 21, 1913.

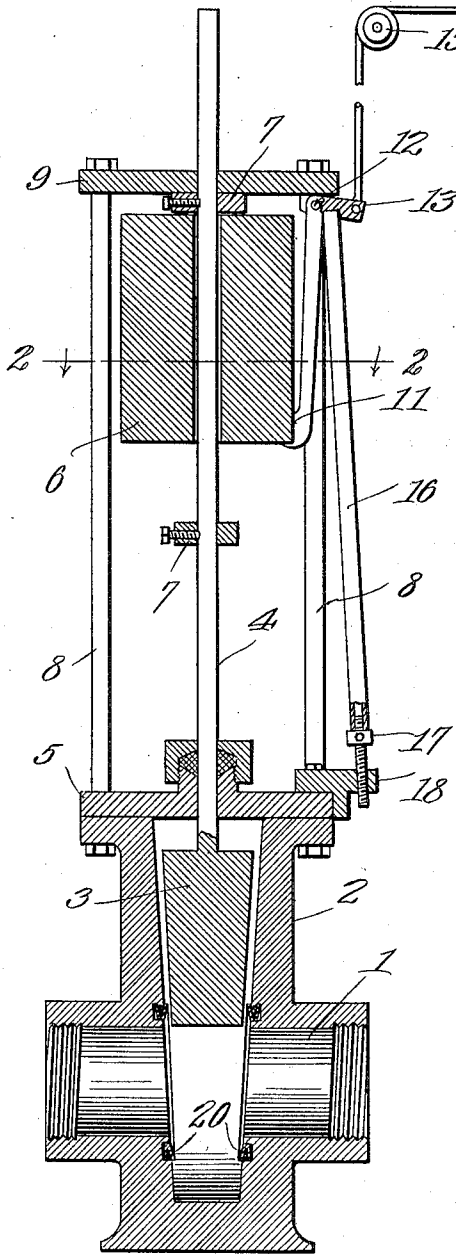


Fig. 1.

Witnesses

H. B. Woodw.
L. H. Woodw.

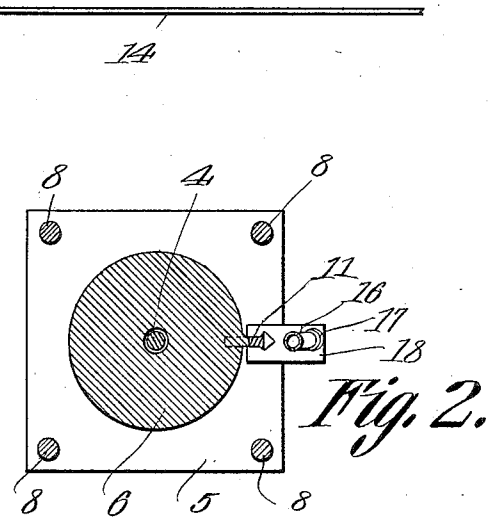


Fig. 2.

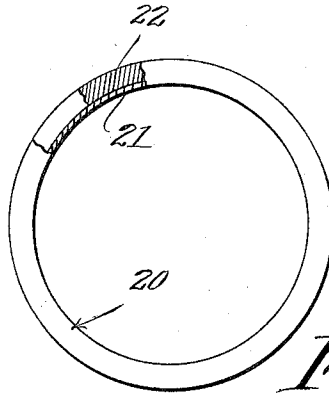


Fig. 3.

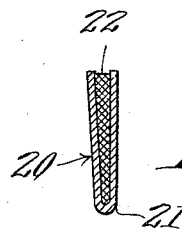


Fig. 4.

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AUTOVALVE.

1,076,647.

Specification of Letters Patent.

Patented Oct. 21, 1913.

Application filed September 3, 1912. Serial No. 713,437.

To all whom it may concern:

Be it known that I, CHARLES W. WELMAN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Autovalve, of which the following is a specification.

This invention relates to automatic valves and has for its object the provision of novel means for cutting off the supply of gas and operating the valve whenever the temperature in the vicinity of the valve rises above a predetermined point.

The invention also contemplates the provision in connection with the valve of a new form of packing adapted to form a complete seal and prevent the escape of gas when the valve operates.

With the above objects in view the invention consists of certain instrumentalities and features substantially as hereinafter described and defined in the appended claim.

In the accompanying drawings, illustrating the preferred embodiment of my invention, wherein it is understood that various changes or modifications may be made as to the detailed construction and arrangement of parts, without departing from the spirit of the invention: Figure 1 is a view in vertical section of a valve constructed in accordance with my invention. Fig. 2 is a view in horizontal section on the line 2-2 of Fig. 1. Fig. 3 is a detailed view showing in elevation the packing described in the following specification. Fig. 4 is a detailed sectional view of the packing.

In the drawings, corresponding parts are designated by similar characters of reference throughout.

1 designates a conduit of any suitable construction which is intended to convey gas of any suitable composition.

2 designates a housing for the valve which is raised at right angles to the pipe 1.

3 designates the valve, which is preferably of tapered form, as shown.

4 designates the stem of the valve which extends upward to pass through the cover 5 which is suitably secured on the housing 2. A weight 6 is suitably mounted on the stem 4, the extent of movement of the weight relative to the stem being determined by means of the adjustable stops 7 which are secured on the stem of the valve. Rising upward from the member 2 are a plurality of rods 8, preferably four in number, as

shown in Fig. 2. These rods extend upward to a suitable height and on their upper ends are provided with an upper piece 9 which is similar to the piece 5 fitted on the upper end of the member 2, as described. When the valve is open, as shown in drawing, the weight 6 is raised into contact with the upper member 7 as described, so as to raise the valve into the position shown in the drawing. When in this position the weight is engaged by a pivot hook 11. This member 11 is pivoted on the under side of the cover piece 9 at 12 and is provided with a laterally extending lug 13. To the rear extremity of the lug 13 is preferably attached a cord 14 which extends upward to a suitable height and then over a pulley 15, from which it passes to a point at which it may conveniently be grasped.

Engaging a suitable opening in the lug at the upper end of the arm 11 is a member 16 which is preferably formed of readily expansion metal. This member 16 is provided at its lower end with a device 17 by which the length of the member may be conveniently adjusted. The device 17 is in threaded engagement with a piece 18 which is fitted upon the upper side of the member 5 and the length of the member 16 is adjusted by rotation of the member 17, which is secured as shown in the supporting member 18.

In order to insure proper seating of the valve 3 in the pipe 1, I preferably provide the pipe with pieces of packing 20, which are preferably of the construction shown in detail in Figs. 3 and 4. As shown in these figures the piece of packing 20 is formed preferably from a piece of tin or other suitable metal which is folded on itself as shown at 21 in Fig. 4. Between the sides of said metal is preferably provided a ring 22 of asbestos of suitable thickness.

The operation of the device will be readily understood from inspection of the drawings. In order to place the device in position to permit the passage of gas through the pipe 1, the member 3 is raised to the position shown in Fig. 1 and the weight 6 is engaged and supported by the hook 11 which holds the entire device in the inoperative position shown in Fig. 1. When in this position gas can flow through the pipe 1 without interruption. But if there should be a leak of gas and burning of the gas in consequence thereof, which will heat up the mem-

ber 16 to a suitable extent, the member 16 will extend and disengage member 11 which affords a support to the weight 6. As soon as the weight 6 is disengaged it will descend rapidly on the stem 4 and engage the lower member 7 which is secured thereon, thus effecting a closure of the valve. The pressure of the weight 6 upon the member 7 will force the valve downward rapidly into engagement with the packing 20 which is provided in the tube 1 to cooperate therewith. The outer member of the packing 20 will be folded against the inner member 22 thus forming a tight seal on the member 3, which is of suitable dimensions to cooperate therewith. In case it should be desired to release the member 3 without waiting for a fire, a pull on the cord 14 will release the weight 6 and allow it to descend, closing the valve. Having thus described my invention what I claim as new and desire by Letters Patent is:

In a mechanism of the class described, the combination of a valve casing, a cover secured thereto, posts secured to said cover, a

platform supported thereby, a valve head, a valve stem secured thereto and extending through said cover and said platform, stops secured to said valve stem between said cover and said platform, a weight slidably mounted upon said valve stem disposed between the stops, a hook pivotally mounted upon said platform adapted to normally engage said weight to hold it in position to maintain the valve in an open position, said hook provided with a projection extending therefrom, a thermally controlled rod secured to said cover engaging said hook projection and adapted to release said hook from said weight at an abnormal temperature, to thereby allow said weight to drop and engage said lower valve stem stop to thereby close said valve.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES W. WELMAN.

Witnesses:

J. MACLELLAN SMITH,
MILTON LYLE MCKENZIE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."