

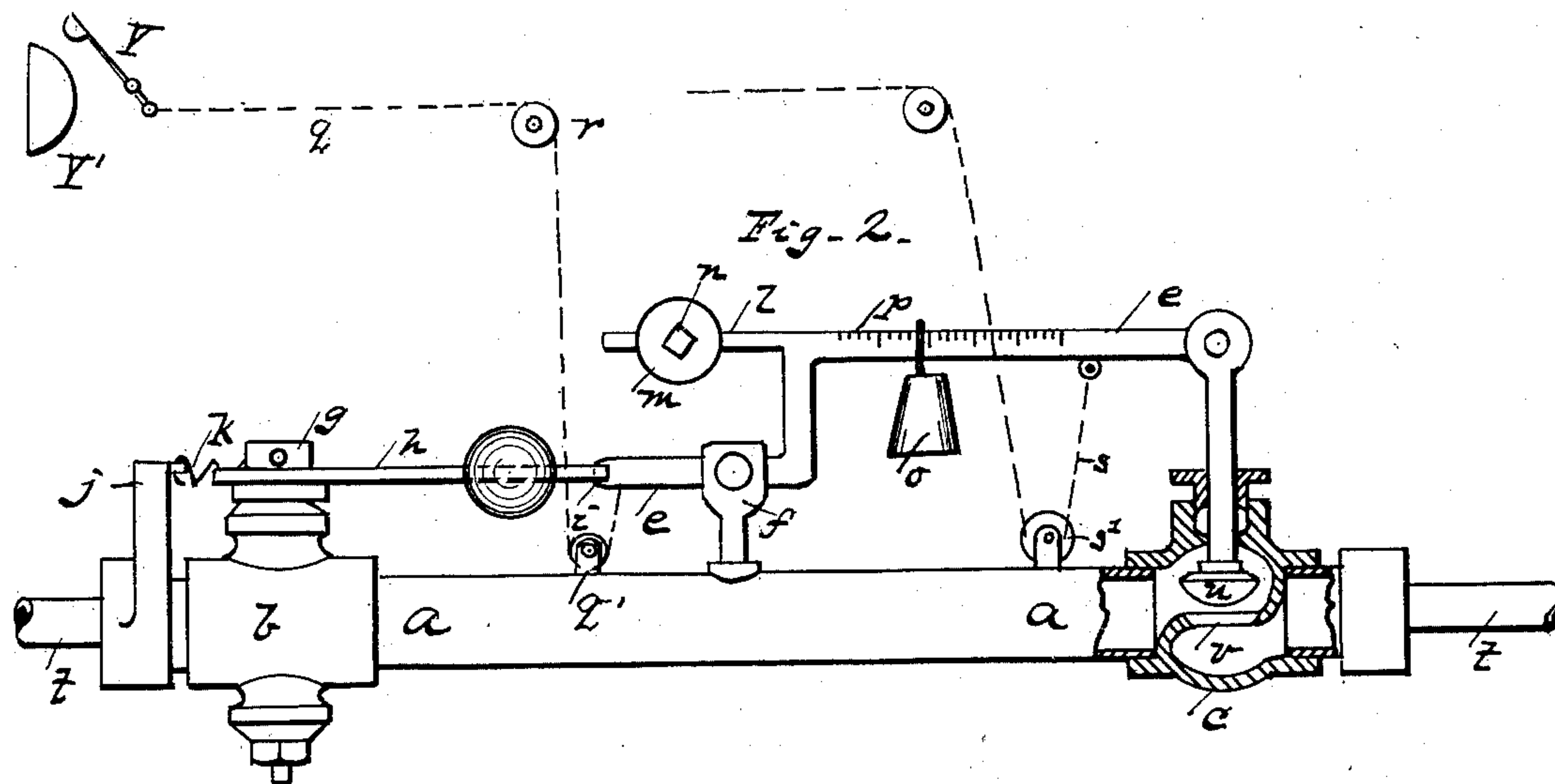
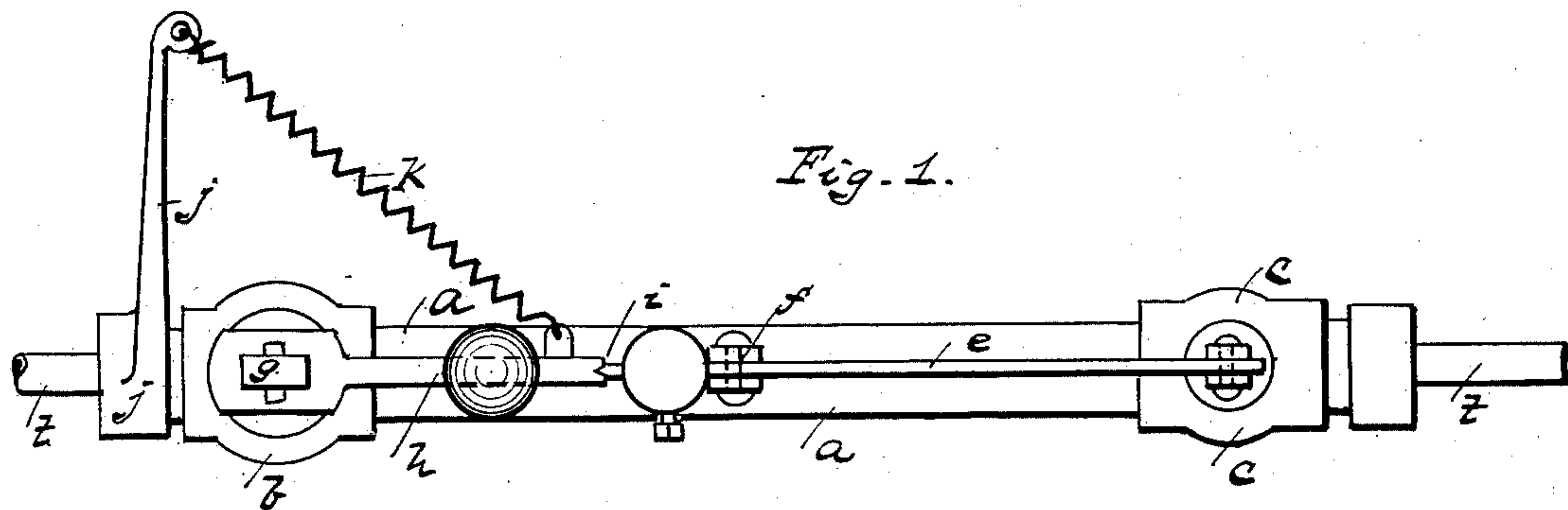
(No Model.)

G. W. McKENZIE.

AUTOMATIC VALVE OR SHUT-OFF FOR GAS MAINS.

No. 375,760.

Patented Jan. 3, 1888.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

GEORGE W. McKENZIE, OF VAN PORT, PENNSYLVANIA.

## AUTOMATIC VALVE OR SHUT-OFF FOR GAS-MAINS.

SPECIFICATION forming part of Letters Patent No. 375,760, dated January 3, 1888.

Application filed March 5, 1887. Serial No. 229,871. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. McKENZIE, a citizen of the United States, residing at Van Port, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in an Automatic Shut-Off for Gas-Mains; and I do hereby 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in an automatic shut-off for gas-mains, the object being to provide a means whereby gas or other fluid traveling through pipes may be automatically shut off should the pressure of the same suddenly cease from some interruption at the source of supply. This I accomplish by certain details of construction and combination of parts, as will be fully set forth hereinafter.

In the accompanying drawings, Figure 1 is plan view of my improved automatic shut-off constructed in accordance with my invention. Fig. 2 is a side elevation of the same, partly shown in section the better to show its inner working parts.

To put my invention into practice I construct a cylinder, *a*, provided at one end with an ordinary plug-valve, *b*, and at the other with a ball or globe valve, *u*. To this ball-valve *u* I attach a bent lever, *e*, fulcrumed to the cylinder *a* by means of an upright post, *f*. Attached to the plug *g* of the valve *b* is a short lever, *h*, having a V-shaped groove, *i*, formed in the end of the same. At the rear of the plug-valve *b*, I attach an arm, *j*, for the purpose of connecting to the lever *h* a spiral spring, *k*. On a projecting arm, *l*, on the short end of the lever *e*, I loosely attach a weight, *m*, provided with a set-screw, *n*, for the purpose of securing the same in any desired position. On this same lever, *e*, at the other side of the fulcrum *f*, I place a weight, *o*, which can be moved over a graduated scale, *p*.

To the short arm of the lever *e*, I attach a wire or cord, *q*, and conduct the same beneath a pulley, *g'*, and over a pulley, *r*, to the hammer Y of an alarm-bell, Y', located at any convenient distance from the automatic shut-off device. By means of the wire *q* the valve *u* in the box *c* can be opened when necessary. To

the top of cylinder *a*, near the valve-box *c*, I suitably attach a pulley, *s'*, and to the lever *e*, I attach a wire or cord, *s*, which is carried down beneath said pulley *s'* and carried off to any convenient point, preferably near the alarm terminus of the wire *q*. By means of this cord *s* the valve *u* can be shut when desired.

In operation the small weight *m* on the lever *l* is moved and secured in a position that will balance the lever *e* and the weight *o* opposite, placed on the graduated scale *p* in a position indicating the required pressure in ounces. The weight *o* being adjusted, as described, for a given pressure against valve *u*, should this pressure diminish the weight *o* will cause valve *u* to close upon its seat, lift the short arm of lever *e*, and detach this arm from the lever *h* of cock *g*, thus allowing the spring *k* to swing this lever *h* around and shut the valve *b*. Simultaneously with the detachment of lever *e* from lever *h* the wire *q* will be pulled and an alarm sounded.

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

1. In an apparatus such as described, the combination consisting of the cylinder *a*, provided with a plug-valve, *b*, at one end and a ball-valve, *u*, at the other, the levers *e* and *h*, attached to the valves *b* and *u*, the spiral spring *k*, and weights *m* and *o*, as and for the purpose specified.

2. In an automatic shut-off consisting of the cylinder *a*, valves *b* *u*, levers *e* *h*, spiral spring *k*, and a means for sounding an alarm by the action of the lever *h* and spring *k*.

3. In an automatic cut-off, the combination, with the cylinder-section *a* of a gas-main, of the valve *u*, a lever, *e*, attached at one end to the stem of said valve and provided on opposite sides of its fulcrum with adjustable weights, the valve-plug *g*, provided with a horizontal lever adapted to engage the lower short arm of lever *e*, as described, a spring, *k*, for shutting valve-plug *g*, and a wire connecting lever *e* with an alarm, all substantially as described.

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Witnesses:

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