Jan. 2, 1923. 1,440,821.

G. H. DIERS.

AUTOMATIC GAS VALVE.

FILED OCT. 1, 1921.

Fig. 1.

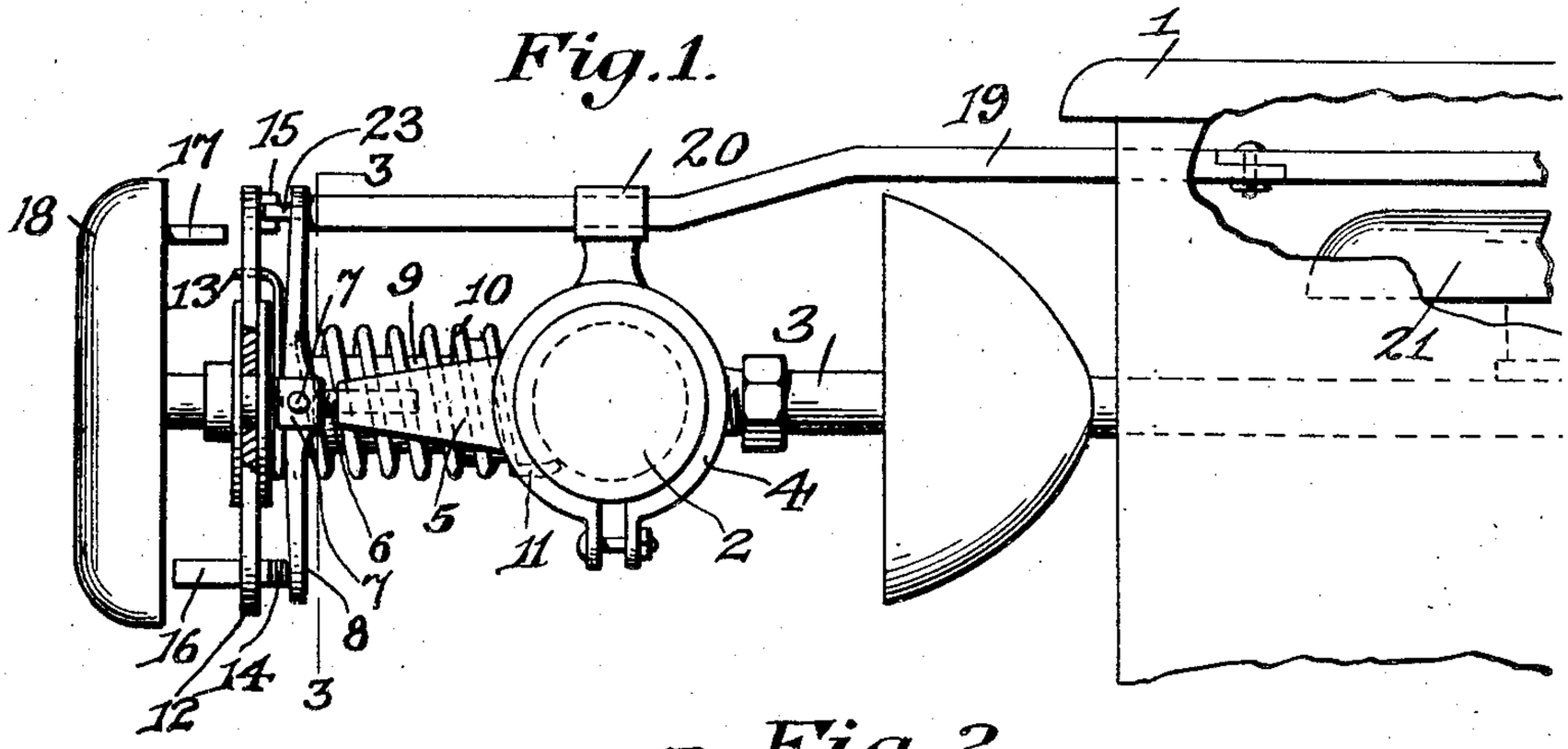


Fig. 2.

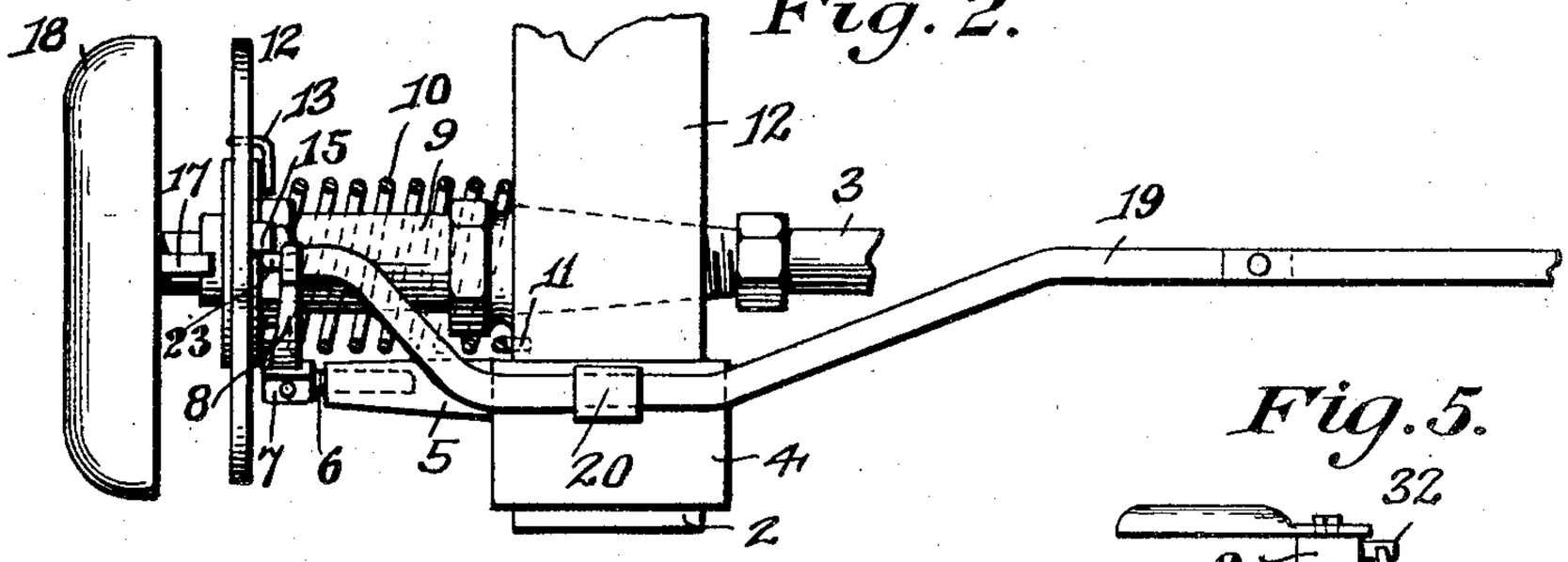


Fig. 3.

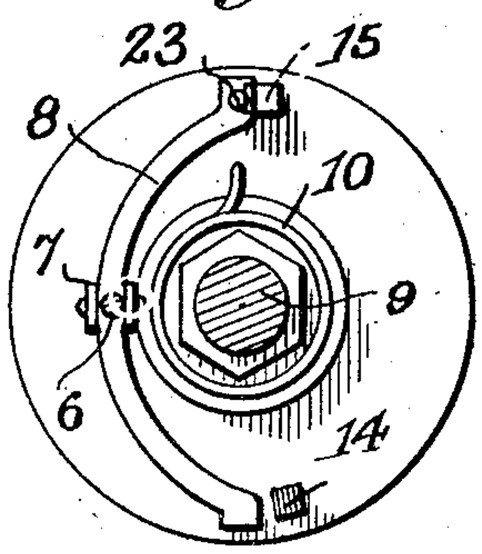


Fig. 4.

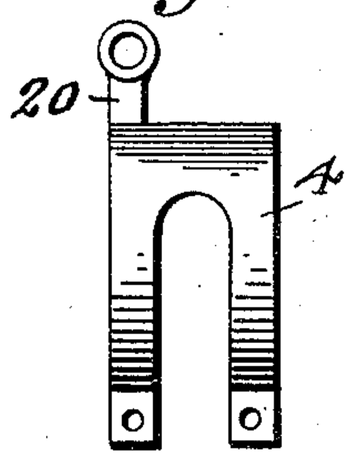
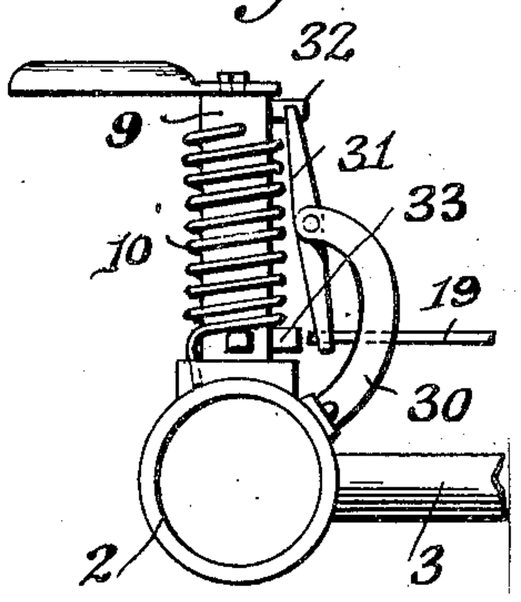


Fig. 5.



George H. Diers, INVENTOR.

BY

Richard P. Clever,

ATTORNEY.

Patented Jan. 2, 1923. 1,440,821

UNITED STATES PATENT OFFICE.

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AUTOMATIC GAS VALVE.

Application filed October 1, 1921. Serial No. 504,553.

To all whom it may concern:

Be it known that I, GEORGE H. DIERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in an Automatic Gas Valve, of which the following is a specification.

This invention relates to the improvement of automatically controlled gas valves and the objects of my invention are to provide in conjunction with a gas valve, improved mechanism whereby the valve will be automatically turned to a closed position in case the flame at the burner is extinguished through low gas pressure or otherwise and to provide certain improvements in the details of construction and operation which will be more fully pointed out hereinafter.

In the drawing:—

Figure 1 is an elevational view of the device,

Figure 2 is a top plan view thereof,

Figure 3 is a section taken substantially on the line 3—3 of Figure 1 looking in the direction of the arrow,

Figure 4 is a detailed view of the thermostat supporting bracket, and

Figure 5 is an elevational view of a modified form of the invention.

Referring to the drawing in detail it will be seen that 1 designates a gas range of any preferred construction having the usual supply pipe 2 for feeding gas to the burner pipes 3. The clamp or collar 4 is mounted on the supply pipe 2 and is provided with a bracket 5 in the end of which is mounted a screw threaded shank 6 which supports the fulcrum 7 in which is mounted the lever 8. The valve stem 9 has disposed thereon a coil spring 10 which has one end thereof fixed to the supply pipe as is shown at 11 and its other end suitably fixed to the valve stem. A disk 12 is keyed to the valve stem and the end of the spring 10 is preferably fixed thereto as is shown at 13. This disk 12 is provided upon its inner face with a beveled lug 14 and a stop lug 15 which are disposed in diametrical relation to each other, the lug 15 being situated adjacent the rim of the disk while the lug 14 is situated a short distance therefrom. A trigger lug 16 projects from the outer face of the disk 12 and is adapted to be engaged by a similar lug 17 carried on the knob 18 which is rotatably mounted in any preferred manner independently of the valve stem 9. A thermostatic controlling means consists of a rod 19 passing through the bracket 20 which is fixed to the clamp 4. One end of this rod 19 is disposed over the gas burner 21 and will become heated when the same is lighted. The other end of the rod 19 is suitably attached to one end of the lever 8 having a lug 23 projecting from the opposite side thereof as shown to advantage in Figure 2. The rod 19 is slidable through the bracket 20.

When it is desired to open the gas valve the knob 18 is rotated in a counter-clockwise direction and the lug 17 will engage the lug 16 thereby rotating the disk 12 in a similar direction and opening the valve and at the same time tensioning the spring 10 which will tend to close the valve. As the disk 12 rotates the beveled lug 14 engages the lever 8 and fulcrums the same so as to press the other end thereof toward the disk 12 which will cause the rod 19 to slide in a similar direction and place the lug 23 in such a position as to engage the stop lug 15 and preventing the disk from rotating when the knob 18 is released. In this manner the valve will be in an open position and the rod 19 heated and of course expanded. Should the supply of gas become low or cut off or the flame extinguished on the burner 21 the rod 19 will cool quickly and contract so that the lug 23 will disengage with the lug 15 and the spring 10 will at this time close the valve as will be readily understood.

In the modified form disclosed in Figure 5 a bracket arm 30 extends from the main supply pipe 2 and has a lever 31 fulcrumed on its end. A beveled lug 32 is connected directly to the valve stem 9 and stop lugs 33 are also attached thereto. This beveled lug 32 will engage the lever 31 upon rotation of the valve stem 9 so as to fulcrum the same whereby the rod 19 will be pulled inwardly so as to engage the stop lug 33 and thereby hold the valve in an open position. Should the flame be extinguished of course this rod 19 will cool quickly and contract so as to move the lever 31 so that the lug 33 will be free and the spring 10′ will return the valve to a closed position.

Having thus described my invention what I claim as new is:—

In combination, a gas burner, a gas supply pipe, a valve therein, a clamp disposed on

the gas supply pipe, a bracket projecting from the clamp, a curved lever fulcrumed intermediate its ends to the bracket, a valve stem on the valve, a spring disposed thereon for normally holding the valve stem in a closed position, a disk keyed to the stem, a lug projecting inwardly from one face of the disk and its periphery, a second bracket projecting from said clamp, a thermostatic rod mounted in the second bracket and having one end thereof extended over the gas burner and its other end fixed to one end of the lever, a lug on the lever for engaging the lug on the disk so as to prevent rotation thereof, a beveled lug on the same face of the disk adapted to engage the lever for fulcruming the same so as to engage the lug on the lever with the other lug on the disk, and manually operated means for rotating the disk.

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

GEORGE H. DIERS.

Witnesses:
WILLIAM J. JOHNSON,
JOHN BISHOP.