

J. C. SPOTTS.
 AUTOMATIC VALVE FOR WATER HEATERS.
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1,050,705.

Patented Jan. 14, 1913.

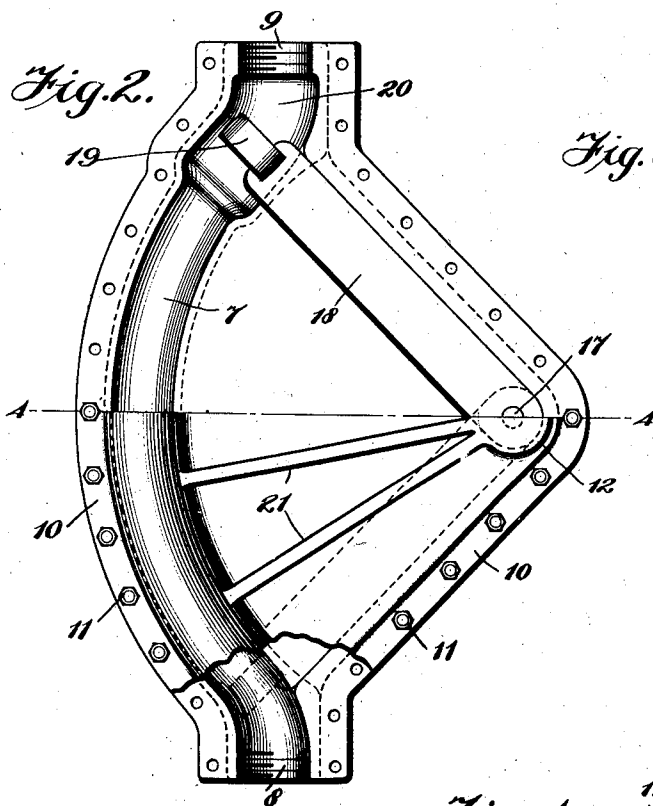
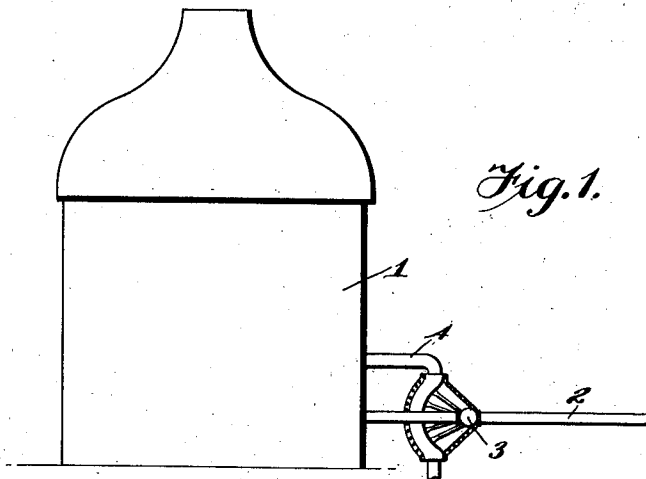


Fig. 3.

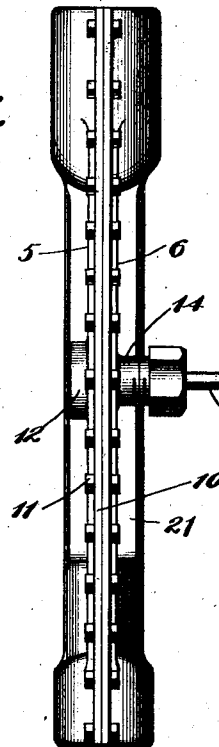
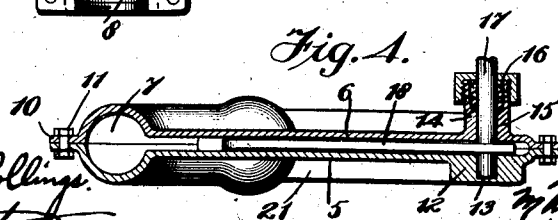


Fig. 4.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC VALVE FOR WATER-HEATERS.

1,050,705.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES CAMPBELL SPOTTS, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Automatic Valves for Water-Heaters; 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 appertains to make and use the same.

This invention relates to improvements in automatic valves and is particularly designed for controlling gas to an instantaneous water heater.

The object of the invention is to provide an automatic valve which is arranged in the water service pipe to a heater and adapted to be actuated when the water from the heater is turned on for admitting gas to the heater, and to shut off the gas when the water is turned off.

A further object of the invention is to provide an automatic valve of simple and durable construction in which friction is reduced to a minimum.

With the above and other objects in view as will appear, the invention consists in certain combinations and arrangements of the parts hereinafter described, and the novel features thereof will be particularly defined in the claims.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which like characters of reference indicate corresponding parts.

Figure 1 is a view showing my invention attached to a water heater; Fig. 2 is a side elevation of an automatic valve embodying my invention, the upper half of the casing being removed and the lower portion being broken away to show the interior construction; Fig. 3 is an edge elevational view; and Fig. 4 is a section taken on line 4-4 of Fig. 2.

1 represents an instantaneous water heater of ordinary construction, to which is connected a gas pipe 2 provided with the usual gas-valve 3 and a water service pipe 4 in which is arranged my automatic valve for controlling said gas-valve.

The casing of the automatic valve consists of two sector shaped corresponding halves having flat sides 5 and 6, which are

arranged in spaced relation and bulged out at their outer portions forming a tube 7 curved on the arc of a circle and provided at its extremities with a threaded inlet 8 and an outlet 9 for attachment to the water service pipe. The halves of the casing are preferably flanged as at 10, and secured together in a water tight manner by means of bolts 11 in order that one of the sides may be removed and the working parts of the valve readily examined. The side 5 of one of the sector shaped halves is provided with an outwardly extending boss 12 having in the inner face thereof a bearing 13, and from the other side 6 projects a boss 14 having therethrough an opening 15 and a suitable stuffing box 16.

Journalled in the bearing 13 and projecting through the opening 15 is a stub-shaft 17, which may be attached to the gas-valve stem in any suitable manner. Arranged between the sides 5 and 6 of the casing and rigidly secured to the stub-shaft 17 is a flat arm 18 carrying at its outer end a circular valve or plunger 19 adapted to be operated in the tube 7 by the pressure of the water passing therethrough for opening the gas-valve, and to fall by gravity when the water is turned off to close the gas-valve.

The curved tube 7 is enlarged at 20 near its outlet 9, so that when the valve or plunger 19 is in its uppermost or open position, as shown in full lines in Fig. 2, the water may pass around said valve or plunger and flow to the heater.

The sides 5 and 6 of the casing may be strengthened by a plurality of radially disposed ribs 21.

It is apparent from the foregoing that when the automatic valve is arranged in the water service pipe to the heater and the stub-shaft connected to the gas-valve stem, the turning on of the water from the heater would permit water to flow through the curved tube and force the valve or plunger to its highest position, which movement would rotate said stub-shaft and open the gas-valve. As soon as the water is turned off the pressure becomes equal on each side of the valve or plunger, and same falls by gravity to its lowest position thereby rotating the stub-shaft in the opposite direction to close said gas-valve.

Although the elements set forth and fully described are well adapted to serve the in-

tended purposes, it is to be understood that various changes in the form, proportion and minor details of construction may be resorted to without departing from the principles or sacrificing any of the advantages of this invention.

Having fully described my invention what I claim is:—

In an automatic valve device, the combination of a sector-shaped casing comprising vertical sides slightly spaced apart by edge flanges and recessed to provide an annular tubular conduit having an enlarged bore at its upper discharge end, a piston in said annular conduit, and a flat arm rigidly carrying said piston and pivoted concentrically with said annular conduit, said arm extend-

ing loosely between said parallel walls and adapted to engage the top spacing flanges thereof for positively stopping said piston within the enlarged conduit bore, whereby a flow of water through the annular conduit will force the piston therethrough with a uniform pressure perpendicular to the axis of the said rigidly-connected pivoted arm, and said piston will be positively maintained within the enlarged conduit bore during the flow of water.

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

JAMES CAMPBELL SPOTTS.

Witnesses:

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