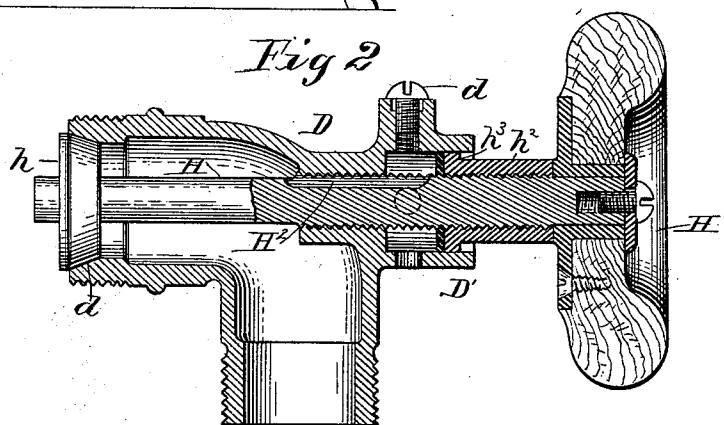
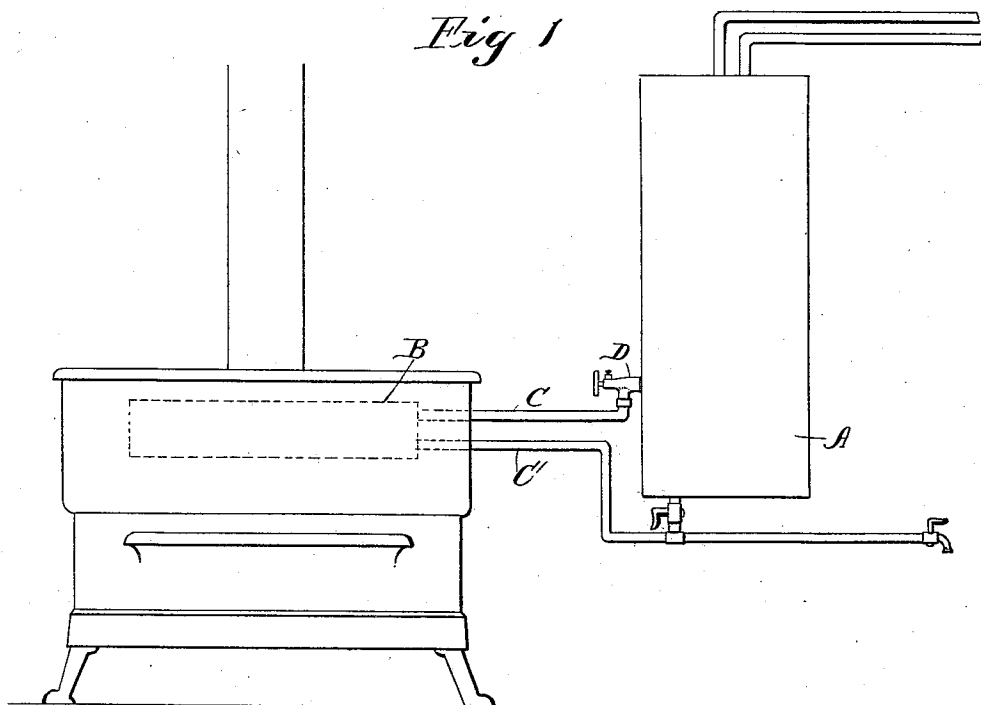


(No Model.)

G. OLIVER.
VALVE.

No. 521,040.

Patented June 5, 1894.



WITNESSES:

Chas. Burdine,
A. S. Bacon

INVENTOR

George Oliver

BY

Geo. H. Hunter

ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE OLIVER, OF CHICAGO, ILLINOIS.

VALVE.

SPECIFICATION forming part of Letters Patent No. 521,040, dated June 5, 1894.

Application filed February 27, 1893. Renewed April 18, 1894. Serial No. 508,048. (No model.)

To all whom it may concern:

Be it known that I, GEORGE OLIVER, 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 Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in domestic boilers and heaters and it consists in the peculiar features of construction and arrangement of parts more fully hereinafter described and definitely pointed out in the claims.

The object of my invention is to provide improved means for ascertaining the safety condition of the water before starting fires in stoves provided with a water front and having a boiler or heater.

In the drawings accompanying this specification wherein like letters of reference indicate corresponding parts in the several views, Figure 1 is a diagrammatic view of a domestic boiler with my attachment, and Fig. 2 is an enlarged detail sectional elevation of my improved valve.

A represents the boiler, B the water back of the stove C and C' the water pipes providing communication between said water back and boiler, the former conducting the hot water to the boiler and to which my improved valve is applied.

D is a valve casing screw threaded, into the boiler at one end and to which the pipe C is attached at the other end, the outer end *e* of this casing, located within the boiler, is provided with a valve seat *d*. Opposite and in line with this seat on the casing is formed a cylinder cup D' provided with three side openings, two of which are stopped or plugged with screws *d*, having for its object the discharge of the overflow in the direction desired preferably down, that the discharge may be directed into a receptacle. By these three openings the valve answers for three positions and a downward discharge is obtained by leaving the under opening open and leaving the upper and side openings plugged with the screws as shown.

H is a valve stem carrying on its outer end a disk valve *h*, arranged to closely fit the valve seat *d*, the stem being extended to the outside

of the valve proper and fitted with a handle H' on the opposite end from the valve. This stem is screw threaded as shown and further provided with a groove H² running lengthwise for a short distance with the stem and terminating at the end of the threaded section. When the valve is closed water will pass through the valve case and groove into the cylinder cup and can be drawn off through one of the three openings with which the cylinder cup is provided. There is further fitted on this stem a hexagonal nut or shoulder *h*² made with a disk *h*³ at one end to work in the cylinder cups. This nut extends out to the handle of the valve as shown and is tightly held on the shank of the valve stem. The object of this hexagonal nut is to make a shoulder on the stem H so that when the stem H is screwed in to open the valve this shoulder or disk *h*³ bears against the end wall of the valve casing in the cylinder cup and prevents any outflow or leak of water through the overflow opening. A leather or metal gasket as desired is placed on the stem to rest against this shoulder to better insure against any leakage of water from or around the stem when the same is forced in. The central portion of the valve stem is formed with the groove H² which is so arranged that when one end is within the casing, or when the valve stem is forced in to open the valve the outer end of the channel or groove will be located at a point within the threaded portion of the casing thereby preventing the escape of water therethrough. When the nut is forced out by turning the handle, the disk valve is seated and the outer end of the groove or channel is carried beyond the threaded portion of the casing into the cylinder cup while the inner end or port is open within the casing thereby allowing the water to flow through the groove or channel into the cylinder cup, thence out through the opening therein at the same time it is cut off through the boiler. By this construction I may test the water pipes by forcing the valve stem out (if not frozen at this point) closing the communications to the boiler and ascertain whether or not the water will flow through the pipe C thereby learning whether or no the water is frozen in the pipes or water back thus insuring safety before starting the fire in the stove. If so desired more than one of

these improved valves may be used on the boiler and pipes so that the water may be entirely shut off from the boiler leaving the overflow open allowing all the water to drain out of the connecting pipes and water back in the stove, as would be the case if another valve were placed in the other pipe which connects at the bottom of the boiler.

In making the disk adjustable up and down on the stem I can with a suitable wrench force the disk close on to the inner wall of the chamber, to cut the water off when the valve is closed to repair the boiler or for other purposes.

I am aware that many minor changes in the construction and arrangement of the parts of my invention can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In a domestic boiler or heater, the combination with a boiler or heater and water front, of a pipe leading from the water front to the boiler or heater, a valve in the pipe consisting of a casing having a valve seat at one end, a cylindrical chamber opposite thereto on the outside, a threaded valve stem having a valve on one end, a disk on its opposite end working in the chamber, apertures in the chamber, and a longitudinal groove in the

stem extending part way the length thereof, substantially as described.

2. In a domestic boiler or heater, the combination with a boiler or heater and water-front, of a pipe C, a valve casing into which said pipe discharges having a seat at one end and an outer open ended chamber at the opposite end having ports therein, a threaded valve stem passing through the casing and chamber carrying a valve on its end beyond the casing and having a longitudinal groove therein extending part way its length only, and a flange adjustably held on the stem and working in the chamber, substantially as described.

3. In a domestic boiler or heater, the combination with a boiler or heater and water-front, of a pipe C, a valve casing into which the said pipe discharges, having a seat at one end and an outer open chamber at the opposite end, having ports therein, a threaded valve stem passing through the casing and chamber, carrying a valve on its end beyond the casing and having a longitudinal groove therein, a flange on the stem working in the chamber and a nut on the stem for adjusting said flange, substantially as described.

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

GEORGE OLIVER.

Witnesses:

BEN W. KOHNER,
J. B. KOHNER.