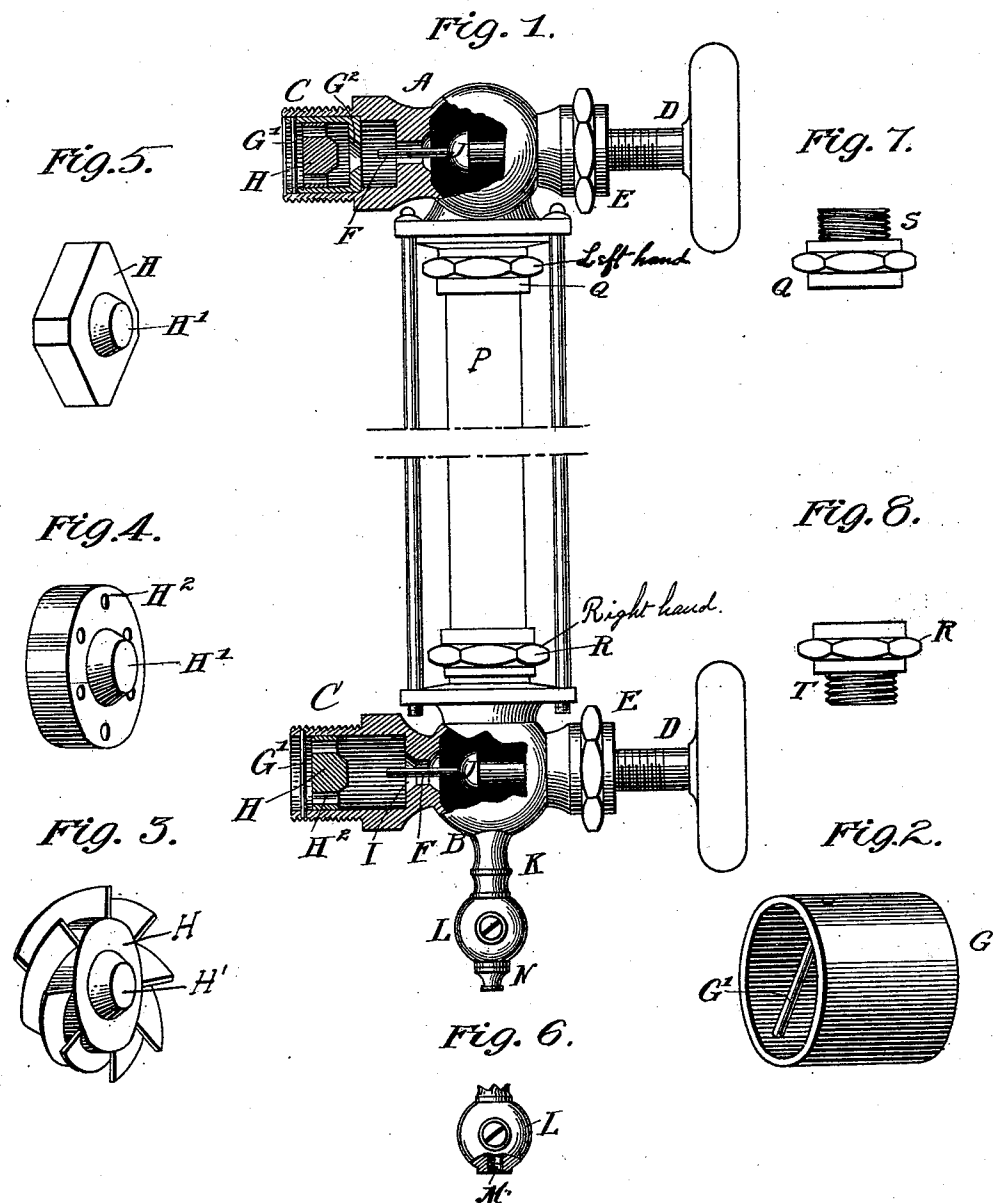


(No Model.)

F. M. ASHLEY.
WATER GAGE.

No. 518,171.

Patented Apr. 10, 1894.



WITNESSES:

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FRANK M. ASHLEY, OF HAWTHORNE, NEW JERSEY.

WATER-GAGE.

SPECIFICATION forming part of Letters Patent No. 518,171, dated April 10, 1894.

Application filed September 7, 1892. Serial No. 445,286. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. ASHLEY, a citizen of the United States, residing at Hawthorne, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Water-Gages, of which the following is a full, clear, and exact description.

The object of the present invention is to construct a safety water gage, and a gage so arranged that in case the glass should break from any cause there will be an automatic closure to prevent water and steam escaping.

My invention also provides a means for readily attaching the glass to the gage so as to prevent breaking of the glass, as will now be set forth in detail.

In the accompanying drawings, Figure 1 is a side view with portions in section, of my improved water gage. Fig. 2 is a perspective view of the removable thimble which contains the closure valve. Figs. 3, 4 and 5 are views of different forms of valves; Fig. 6 a detached view, partly in section, of the petcock on the lower end of the gage, and Figs. 7 and 8 views of the upper and lower detachable screw heads to which the glass tube is secured.

In constructing my invention the upper and lower horizontal tubes A B which screw into the boiler are made in the usual manner, provided with the screw threads C, and the bulbous enlargements which communicate with the vertically disposed water glass or tube. The stem of the cocks D, pass through the suitable stuffing boxes E, and each stem has at its inner end a pin F, which passes through the port F'. The inner end of the tube A has a thimble G within, open at its outer end and having a cross pin G', while the other end of the thimble is closed and has centrally a port G² with its inner sides countersunk. Within this thimble I place a movable disk valve, of which I show several forms. Thus in Fig. 5 the disk H is squared and has a frusto-conical projection H' projecting toward the countersunk port G². In Fig. 4 I make the disk circular in form and place a number of holes H² through the same to provide a ready means for passing of water and steam.

Instead of using a thimble G, as would be

employed in case this invention should be applied to old forms of gages I prefer, in originally constructing the gages to simply place the valve H in the end of the tube and hold it in place by means of the pin G'. In this case I countersink the port G², as shown at I so that the frusto-conical projection H' will rest therein and close the port in case the glass should break.

In practice the cock D is screwed in so that the projecting pin F will move in the disk valves H, to the positions shown in tube B, Fig. 1. Water and steam then flow into the bulbs and water glass, after which the cocks are turned back until the ends of the pins F are clear of the ports, and the valve heads J on the ends of the cock stems are entirely clear of the ports. In the event the glass is broken the sudden outflow of steam and water will move the valves H against their respective seats and prevent the water and steam from discharging. The under side of the lower bulb has a downwardly projecting tube K to which is attached a pet cock L. The lower end of the pet-cock has a screw thread M therein to which a nozzle N is ordinarily attached.

It frequently happens that the water glass P is broken while it is being placed in the gage, owing to the fact that the tube heads are usually provided with screw heads which in screwing up produce a torsional strain on the glass tube, which is very injurious, and particularly so after the water reaches the glass. To provide against this I reverse the threads on these heads, placing the threads T on the lower head in one direction and the threads on the other head in the opposite direction so that by turning the heads in the same direction they will screw into place without producing a torsional strain.

The valve shown in Fig. 3 is provided with a series of spiral blades around its periphery. When the pet cock is opened to blow off, the rush of steam or water through the valve twists it and grinds its seat and this operation may be continued as long as desired by loosening the valve a little by means of the stem D and pin F.

Having described my invention, I claim—
1. In a water gage the combination of a wa-

ter tube connected with a valve chamber and
a valve located in said chamber consisting of
a disk having around its periphery a series
of angular wings or blades, between which
5 fluid passes for the purpose of rotating the
valve to grind the seat, said wings or blades
being located in oblique planes to the axis of
the disk.

10 2. A water gage having in combination with
the water glass a tubular head at one end with
a right hand screw thread thereon, and a head
at the other end having a left hand screw
thread, substantially as set forth.

3. A water gage having in combination a set
of automatic closure valves, a water glass with 15
two heads therefor having right and left
screw threads respectively, and the lower end
of the water gage having a pet cock with a
screw thread therein, substantially as set
forth. 20

In testimony whereof I subscribe my signa-
ture in presence of two witnesses.

FRANK M. ASHLEY.

Witnesses:

FRANK S. OBER,
JOS. J. UHL.