

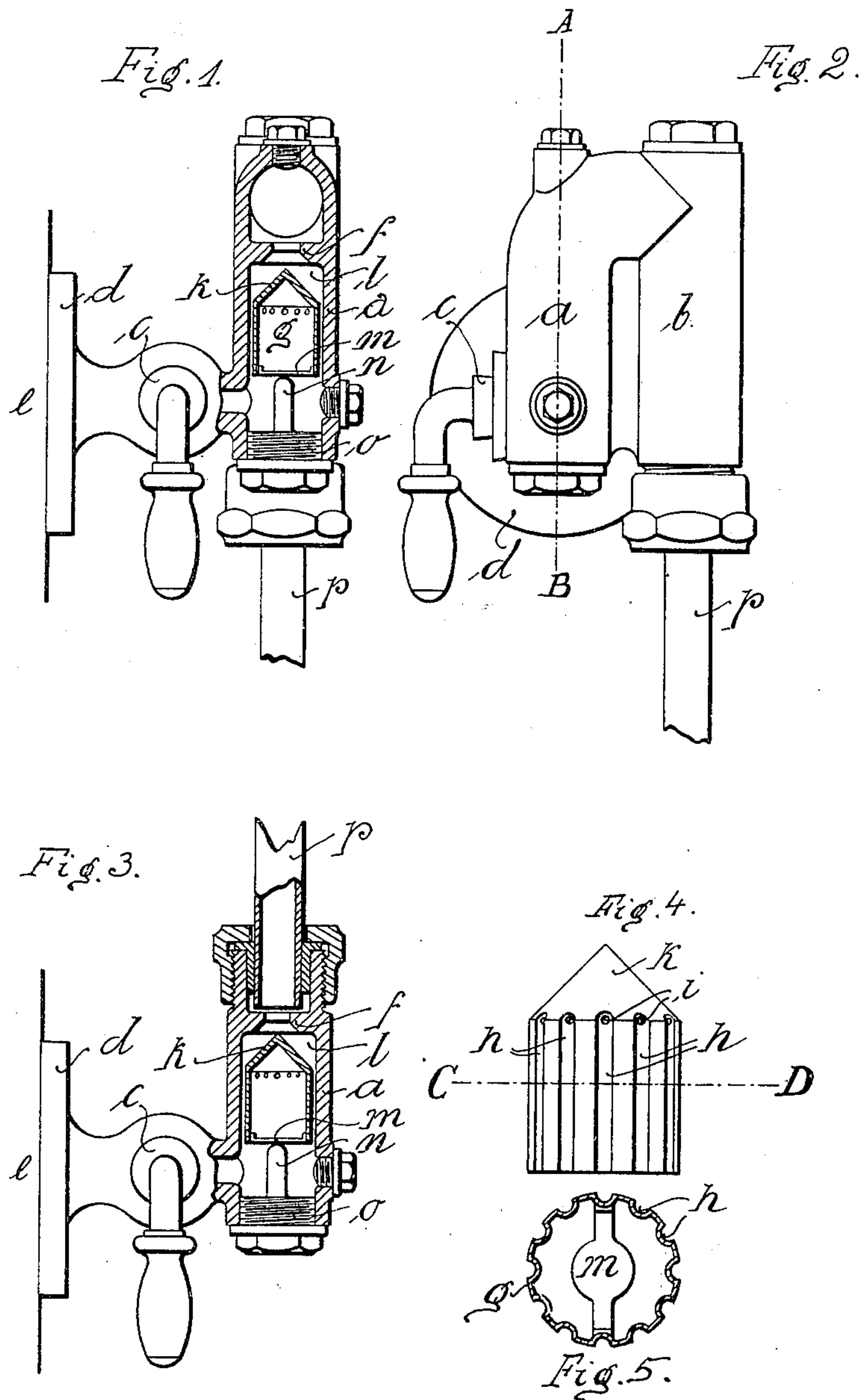
No. 681,681.

F. COLLEWUE.
WATER GAGE.

Patented Sept. 3, 1901.

(Application filed May 20, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

FRIEDRICH COLLEWUIE, OF HAMBURG, GERMANY.

WATER-GAGE.

SPECIFICATION forming part of Letters Patent No. 681,681, dated September 3, 1901.

Application filed May 20, 1901. Serial No. 61,060. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH COLLEWUIE, locksmith, of 102 Steilshoperstrasse, Hamburg, in the Empire of Germany, have invented new and useful Improvements in or Relating to Water-Gages, (for which patent applications have been made in Germany, filed April 26, 1901, and Great Britain, filed May 1, 1901,) of which the following is a specification.

This invention relates to water-gages for steam-boilers and the like, and has for its object to provide an improved device for automatically closing water-gages at the breaking of the glass, so as to prevent any persons in proximity thereto being scalded. Although similar contrivances have heretofore been constructed for this purpose, they all have the objection, more or less, that the ball for closing the outlet is not taken along by the escaping steam or water, so that it often fails to act. In my improved arrangement the solid ball usually employed in devices of this kind is replaced by a body of larger surface and of such form as to insure with certainty the closing of the outlet at the occurrence of the breaking of the gage-glass.

In order that my invention may be readily understood and carried into effect, I will describe the same fully with reference to the accompanying drawings, in which—

Figure 1 is a section of the upper portion of the water-gage, taken on the line A B of Fig. 2. Fig. 2 is a front elevation of the upper part of the gage. Fig. 3 is a section of the lower portion of the gage. Fig. 4 is an elevation of the closing device. Fig. 5 is a section of the same, taken on the line C D of Fig. 4.

According to this invention I provide a U-shaped downwardly-projecting casting, having the two legs *a* and *b* formed in one piece with a cock *c*, which latter is provided with a flange *d*, by which it is fixed to the boiler *e*. In the leg *a* is formed a valve-seat *f*, adapted to be closed by a closing device *g*. This latter, as shown in Figs. 4 and 5, is hollow from below and has longitudinal grooves *h*, at the upper end of which latter are holes for the easy passage of steam and water at normal conditions. The conical top *k* is ground upon the valve-seat *f*. The diameter of the body

g is such as to allow it to move freely within the shell *l* of the leg *a*. It is necessary that the opening *f* should be larger than the free passage left by closing valve in the interior of the leg *a*, and the larger this difference is the better will be the working of the device. The closing device is provided with a bridge-piece *m*, resting upon a pin *n* of the screw-plug *o*. The water-gage glass *p* is secured in the leg *b* in the ordinary manner.

The arrangement shown in Fig. 3 of the lower portion of a water-gage is provided with a closing device similar to that employed for the upper portion; but the gage-glass is here directly secured in the prolongation of the closing-chamber. As this lower part is more readily subjected to being clogged by the deposits from the water, it is advantageous to make the passages slightly wider than those in the top portion.

The operation of this device is as follows: If the glass breaks, the steam or the water will try to effect an outlet to the exterior. As the cross-section left open by the closing valve is less than the opening in the valve-seat, the steam will escape into the air at a greater speed than that at which it can flow through the openings of the valve, and thus produces a difference of pressure at the two ends of the said valve, which effects the forward projection of the valve upon its seat, thereby closing the same and preventing further escape of either water or steam.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a water-gage, a substantially U-shaped casting having legs *a*, *b*, with the gage-glass connected to the leg *b*, a valve-seat in the leg *a*, a hollow valve with a conical end to seat on said valve-seat, said valve being grooved in its periphery and having openings at the upper ends of the grooves, and a screw-plug in the leg *a*, carrying a pin for normally supporting the valve, substantially as described.

2. In a water-gage a substantially U-shaped casting having the gage-glass connected to one leg thereof, a valve-seat in the other leg of the casting, a hollow valve arranged below the valve-seat and provided with a conical upper end to engage said seat, said valve having peripherally-arranged openings, a screw-plug in the casting below the valve, and a pin

carried by said plug for normally supporting the valve, substantially as described.

3. In a water-gage, a casting having a chamber, a valve-seat in the casting above the
5 chamber, a hollow valve within the chamber and provided with a conical end to engage the valve-seat, said valve being peripherally grooved and provided with openings at the upper end of the grooves, a plug for closing
10 the chamber at the lower end thereof, and means carried by the plug for normally supporting the valve, substantially as described.

4. In a water-gage, a casting having a chamber, a valve-seat in the casting above the

chamber, a ribbed hollow valve in the cham- 15
ber, said valve having a conical end to engage the valve-seat, a bridge-piece carried by the valve, a plug in the casting for closing the chamber at its lower end, and a pin carried by the plug to engage the bridge-piece to nor- 20
mally support the valve, substantially as described.

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

FRIEDRICH COLLEWUIE.

Witnesses:

ERNEST H. L. MUMMENHOFF,
OTTO W. HELLMRICH.