

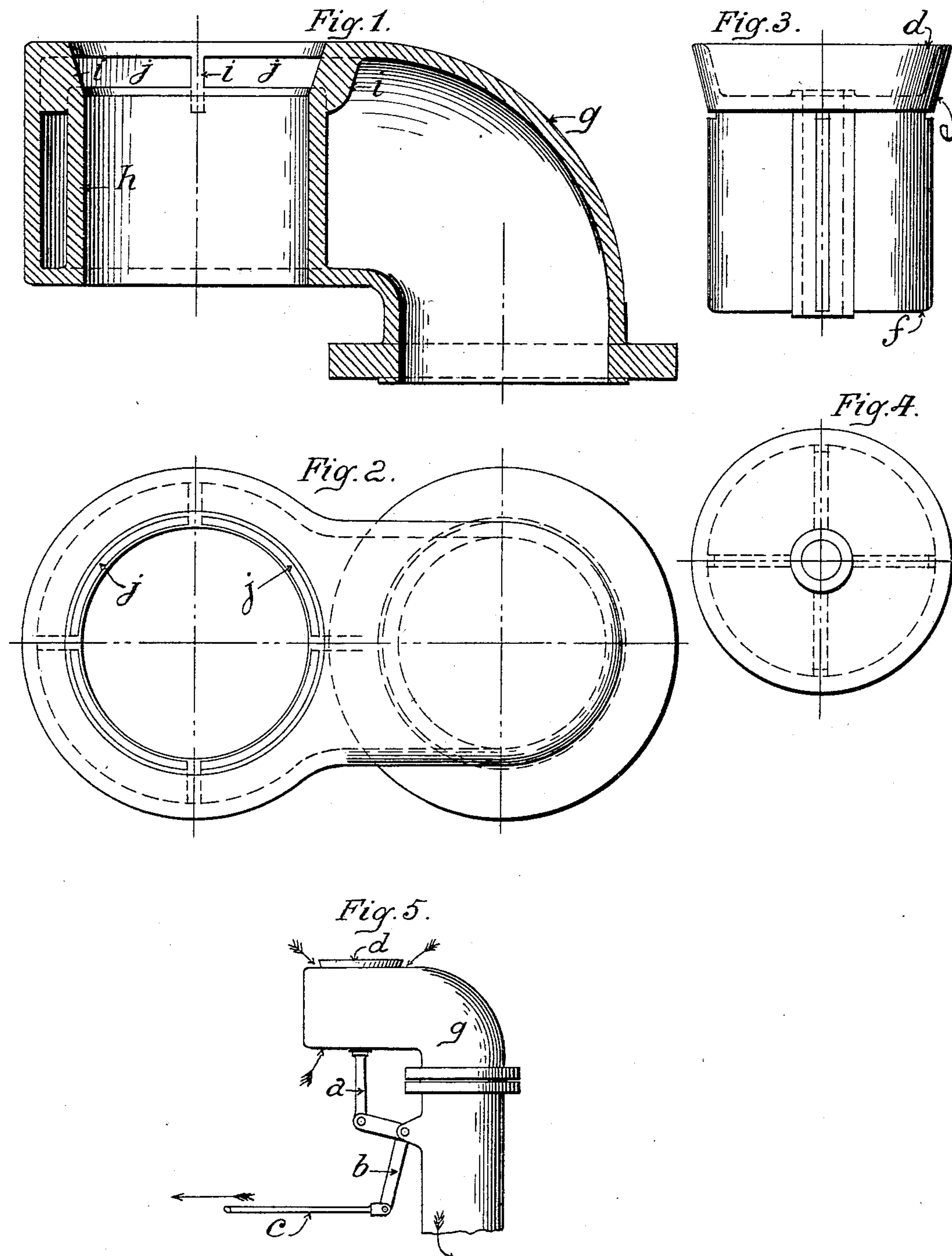
No. 625,555.

Patented May 23, 1899.

W. J. HEALY.
BALANCED THROTTLE VALVE.

(Application filed Oct. 25, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM J. HEALY, OF SUSQUEHANNA, PENNSYLVANIA.

BALANCED THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 625,555, dated May 23, 1899.

Application filed October 25, 1898. Serial No. 694,501. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. HEALY, a citizen of the United States, residing in Susquehanna, in the county of Susquehanna and State of Pennsylvania, have invented certain new and useful Improvements in Balanced Throttle-Valves, of which the following is a specification.

My invention relates to an improvement in throttle-valves.

The object is to attain simplicity of construction and operation, and more particularly to provide a valve in which only a single joint is employed as contradistinguished from the two joints universally employed in valves of this character, thus avoiding the objection of fitting two joints to their seats, so common in throttle-valves hitherto in use.

With this object in view my invention consists in certain novel features of construction and combinations of parts, which will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through the valve chamber and seat. Fig. 2 is a plan view. Fig. 3 is a side elevation of the valve. Fig. 4 is a plan view of the valve; and Fig. 5 is a view in side elevation of the valve, valve-chamber, and connections.

The letter *g* represents the usual steam pipe or chamber, and *h* an annular ring cast in the center of the valve-chamber, a suitable distance within the latter, so that the space *j* is formed outside of it, and it being held in place at the top by means of several ribs or spacing devices *i*. These ribs and also the upper edge of the ring and the metal above are beveled at the top to form a seat for the valve.

The letter *d* indicates the valve, it having a conical seat *e*, adapted to fit the seat at the top of the valve-chamber. The valve is also provided with three or more guiding-ribs *f*, which center it in the ring *h* in its vertical movements.

Connected with the lower end of the valve is a stem *a*. A bell-crank lever *b*, pivoted in suitable position, is pivotally connected with this stem, and a rod *c*, pivotally connected with the other end of the bell-crank lever, extends to a convenient position to be operated.

The device affords a perfectly-balanced

throttle-valve, because the pressure of steam on top of the valve is due to the difference in the diameters at the top and bottom of the conical portion of the valve, and this difference can be as small as desired.

The fact that the valve has but one seat renders the task of fitting it and making a perfectly steam-tight joint an easy one, which is a decided advantage over the valve in common use, because of the fact that they employ two valve-joints located frequently several inches apart, thus making it most difficult to fit a valve so that it will not leak steam and will stay tight. By my improvement this objection is obviated.

It is hardly necessary to explain the operation, as that is similar to all throttle-valves. The steam enters the chamber *j* in both directions and passes downward through the valve-chamber or pipe *g*, as indicated by the arrows.

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

1. The combination with a valve-chamber having a single tapering seat and an annular ring formed concentrically therewith, of a balanced throttle-valve having a conical portion fitted to the seat and guiding-ribs connected with the valve and engaging the walls of the ring for maintaining its central position.

2. The combination in a throttle-valve with a valve-chamber having an annular ring therein with a surrounding chamber, said ring and valve-chamber having spacing devices and a tapering seat formed at the top into which the chamber outside of the ring opens, of a valve having a conical portion adapted to fit the seat and guiding-ribs fitting the wall of the ring for centering the valve and means for raising and lowering the valve.

3. The combination with a valve-chamber having an annular ring therein with a surrounding chamber and a valve-seat into which this chamber opens, of a valve fitted to this seat said valve having a closed, imperforate top and provided with guiding-ribs fitting the walls of the ring for centering the valve.

WILLIAM J. HEALY.

In presence of—

E. CHRISTEN,
W. A. HEALY.