

(No Model.)

F. H. RICHARDS.
VALVE GATE.

No. 467,955.

Patented Feb. 2, 1892.

Fig. 1

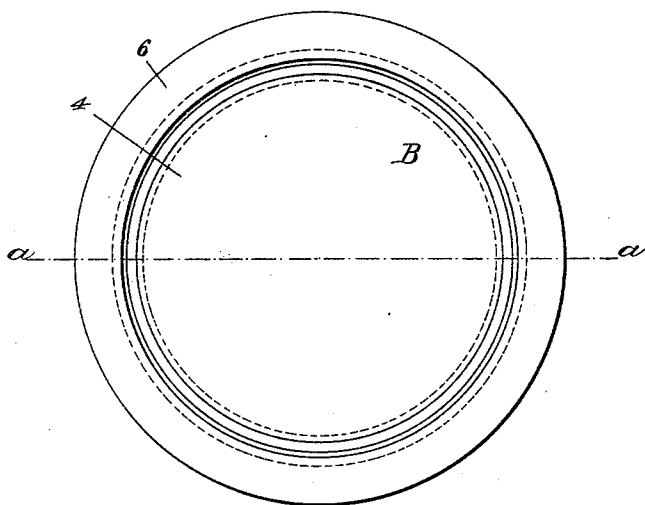


Fig. 2

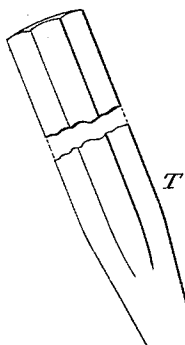
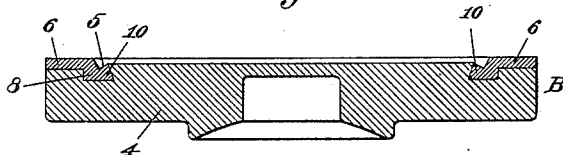


Fig. 3

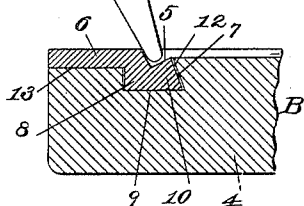


Fig. 5

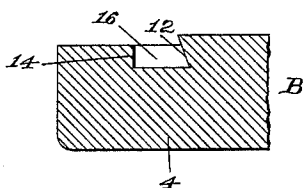


Fig. 4

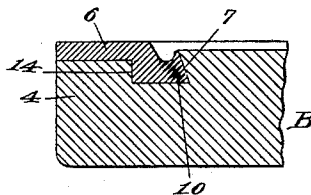
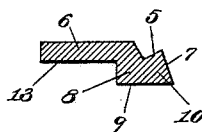


Fig. 6



Witnesses:

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UNITED STATES PATENT OFFICE.

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VALVE-GATE.

SPECIFICATION forming part of Letters Patent No. 467,955, dated February 2, 1892.

Application filed April 4, 1891. Serial No. 387,675. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Valve-Gates, of which the following is a specification.

This invention relates to valve-gates for that class of valves which are used for water and steam, the object being to furnish an iron valve-gate having a non-corrosive seat-ring or face firmly fixed in place.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan view of a valve-gate made according to my present invention. Fig. 2 is a vertical section in line *a a*, Fig. 1. Fig. 3 is an enlarged sectional view similar to a part of Fig. 2 and is illustrative of the manner of calking in the seat-ring. Fig. 4 is a view similar to Fig. 3, illustrating the effect of the calking operation. Fig. 5 is a view similar to Figs. 3 and 4, showing a partial section of the valve-plate with the seat-ring removed. Fig. 6 is a section of the seat-ring, drawn on the scale of Figs. 3, 4, and 5.

Similar characters designate like parts in all the figures.

The valve-gate (designated in a general way by B) comprises the plate 4 and the seat-ring 6, fixed to said plate. The plate 4 is usually made of cast-iron, while it is considered necessary to make the seat-ring of brass or like non-corrosive composition. Said ring consists, according to my improvements, of the seat-ring proper (designated by 6) and the projecting locking rim or flange 8, from whose inner side projects inwardly the beveled calking-ring 10, whose upper side should be below the upper surface or face of the seat-ring, so that the calking operation will not distort said face. The lock-rim, including its calking-ring, is widest on its lower side, so as to fit into the plate 4 after the manner of dovetailing, substantially as shown, the inner edge 7 of the calking-ring being beveled for that purpose.

The method of providing the valve-gate with the brass seat-ring is to first cast the seat-ring of suitable composition and then

lay it in the mold for casting the plate 4, which is then cast over the lock-rim and the two parts removed from the mold locked together, as indicated in Fig. 2. At this time the seat-ring, for various reasons, including the well-known difference in shrinkage of the different metals, is imperfectly joined to the plate. To overcome this defect and make the joint perfectly firm and water-tight, the calking-tool T is set against the upper side or calking-face 5 of the calking-ring 10, and by this means said calking-ring is driven down or calked throughout the length thereof, thereby displacing the metal sidewise, as illustrated by the darker shading at 10, Fig. 4, to closely fill the groove 16, Fig. 5, containing the lock-rim, and thereby rigidly fixing the seat-ring to the plate. The seat-ring standing above the calking-ring, is not distorted by the calking operation, the calking effect (indicated by the darkened shading at 10, Fig. 4) being thus confined substantially to the space between the outer vertical surface 14 and the inner inclined or undercut surface 12 (see Fig. 5) of the lock-rim groove 16. This feature is further provided for by making the calking-face 5 inclined, as shown, and the forward edge thereof as low as or below the under surface 13 of the seat-ring. This construction also facilitates the effective calking of the rim by permitting the calking-tool to be set inclined, as shown in Fig. 3, and thus to drive the metal away from the seat-ring 6 in the direction of said incline, which direction corresponds substantially with the angle of said undercut face 12 of the valve-plate 4.

The improved valve-gate seat-ring herein described is adapted to be made and sold as a separate article of manufacture, since these rings are usually of brass and may be manufactured by the brass-foundryman and by him furnished to the manufacturers of the iron valves.

The method herein described for making the brass-seated valve-gate constitutes the subject-matter of a separate application.

Having thus described my invention, I claim—

1. The improved valve-gate herein described, consisting of the combination, with

the plate having a lock-rim groove undercut on the inner side thereof, of the seat-ring having a projecting lock-rim fitting into said groove and having a beveled calking portion 5 on the inner side of the lock-rim and adapted to be calked independently of the seat-ring face, substantially as described.

2. The improved valve-gate seat-ring herein described, consisting of the disk-shaped ring

having the projecting lock-rim and having to the beveled calking portion on the inner side of the lock-rim and below the plane of the seat-ring face, substantially as described.

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Witnesses:

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