

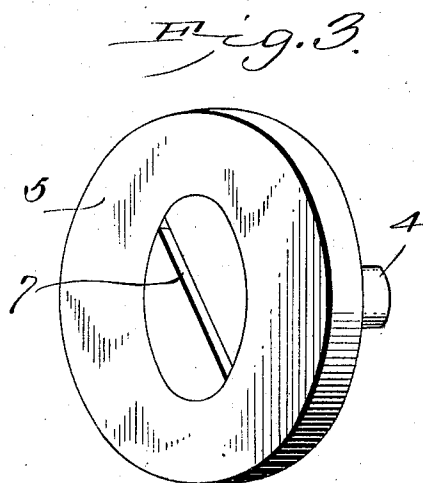
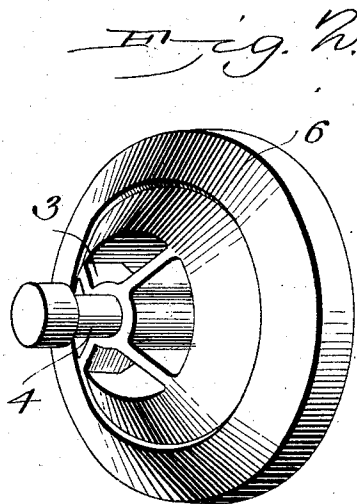
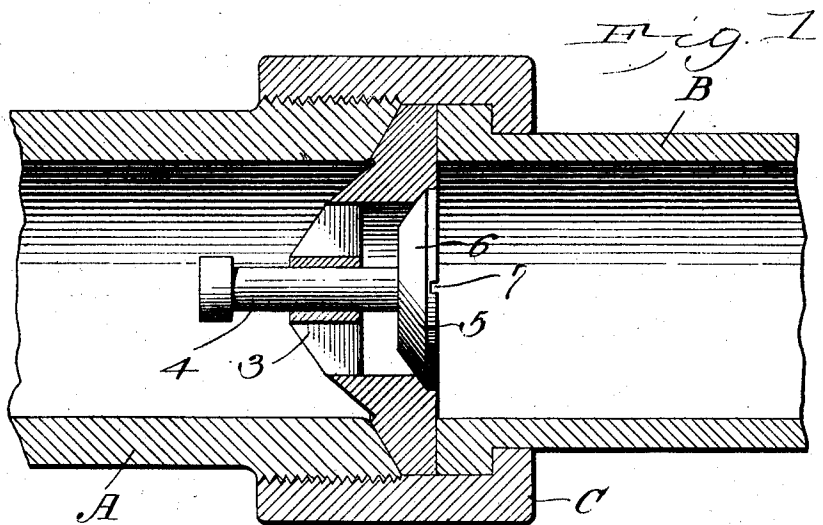
No. 746,402.

PATENTED DEC. 8, 1903.

C. SUTTON.
COMBINED VALVE SEAT AND PACKING RING.

APPLICATION FILED JULY 31, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES SUTTON, OF SODUS POINT, NEW YORK.

COMBINED VALVE-SEAT AND PACKING-RING.

SPECIFICATION forming part of Letters Patent No. 746,402, dated December 8, 1903.

Application filed July 31, 1903. Serial No. 167,779. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SUTTON, a citizen of the United States, residing at Sodus Point, in the county of Wayne and State of New York, have invented a new and useful Combined Valve-Seat and Packing-Ring, of which the following is a specification.

The present invention relates to improvements in the construction of injectors, and has for its principal object to provide an improved form of valve-seat and packing-ring to be used at the discharge end of the injector-casing in connection with the boiler check-valve usually employed for closing communication between the boiler and the injector-casing when the latter is not in use.

In the manufacture of injectors as usually practiced the seat for the check-valve is in the form of a ring having at one end a beveled seat and provided with a spider or cross-bar forming a guide for the valve-stem. The periphery of this ring is threaded and fits within a correspondingly-threaded opening at the end of the casing, while the connection between the end of the casing and the discharge-pipe leading to the boiler is in the form of an ordinary union, a brass packing-ring being interposed between the pipe and the end of the injector-casing and the ring being tapered in cross-section to fit a beveled seat at the end of the casing.

The heated water and steam passing over the valve-seat and the face of the valve soon wears away both members, and it becomes necessary to regrind the valve and its seat or to entirely remove both of them, the removal of the seat being in many cases a very difficult and comparatively expensive operation. In some cases the valve-seats will work loose and be forced from the coupling to the feed-pipe leading to the boiler, requiring disconnection of the pipe and rendering the injector useless until repairs are made.

In carrying out the present invention I aim principally to overcome these and other difficulties by forming a valve-seat and packing-ring integral and arranging it in such manner as to be held between the end of the injector-casing and the adjacent end of the feed-pipe leading to the boiler, so that by uncoupling the valve-seat the valve may be removed instantly and replaced by new members with-

out disconnecting the injector for more than a few moments, while the faulty or worn seat and valve may be reground at any time and placed in another injector when necessary, the construction being such as to permit the application of the device to all standard injectors in ordinary use.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a sectional elevation of a portion of the discharge end of an ordinary injector of the Sellers, Dodge, or Monitor type, a portion of the feed-pipe leading to the boiler being also shown. Fig. 2 is a detail perspective view of the valve-seat and packing-ring detached. Fig. 3 is a view similar to Fig. 2 looking from the opposite side of the valve-seat and packing-ring.

Similar characters of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The outer end of the injector-casing A has a beveled seat for the reception of the convex side of the packing-ring formed by an annular flange projecting from the valve-seat member. The adjacent end of the pipe B, that leads to the boiler, is flanged, and the two are held together to the injector-casing by the usual nut C.

The valve-seat is formed of a single piece of cast metal, preferably of brass, and is provided with a spider 3, having a central opening for the reception of a valve-stem 4. The valve 5 has an inclined face adapted to seat against a correspondingly-inclined face 6, and when properly ground this will form an absolutely steam-tight joint. For assisting in the grinding of the valve the face of the latter has a diametrical slot 7 for the reception of a screw-driver or a similar tool.

Should erosion occur, the nut C is unscrewed and the combined packing-ring and

valve-seat removed. As the valve is carried by the seat, it is also withdrawn from position, and the valve-seat and valve may be quickly replaced by corresponding members in good working condition, so that it becomes unnecessary to employ further tools other than a wrench to remove the nut C, and the injector will be inoperative for but a few moments.

10 Having thus described the invention, what is claimed is--

In combination, a casing having a discharge opening and provided with a beveled seat, said casing forming one member of a union,

15 a combined packing-ring and valve-seat member having a flange of greater diameter than

the opening and beveled on one face to fit the beveled seat, said member having a central hub, and spider-arms extending radially therefrom, the hub being further provided 20 with a central opening, a valve-stem extending through said opening, and a tapered valve carried by the stem and adapted to close against a beveled seat formed in said member, substantially as specified. 25

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES SUTTON.

Witnesses:

S. N. FISH,

C. C. FIELD.