June 23, 1931. F. YARDLEY 1,811,166

CHECK VALVE STRUCTURE

Filed April 14, 1930

Fig. 1.

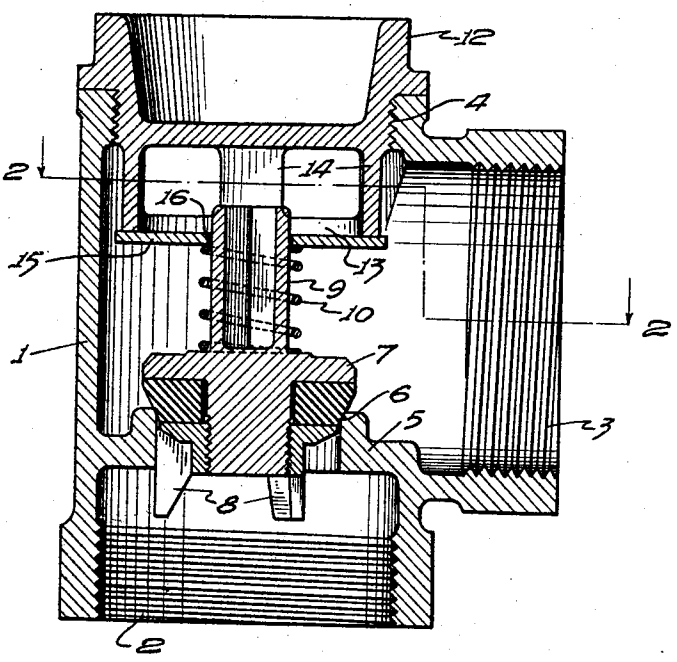
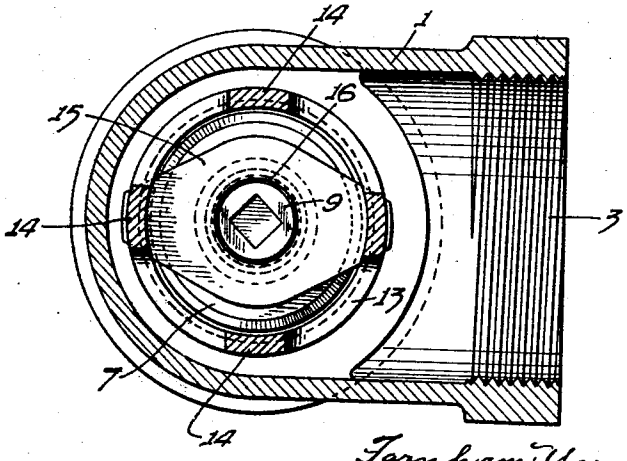


Fig. 2.



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Patented June 23, 1931 1,811,166

UNITED STATES PATENT OFFICE

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CHECK VALVE STRUCTURE

Application filed April 14, 1930. Serial No. 444,318.

The invention relates to check valves of the general type shown in my prior application Serial No. 397,685, filed October 5, 1929, in which the valve disk is associated with a floating guide, which is traversed by the stem on the back of the valve disk and is held in engagement with an abutment on the valve casing by the usual valve spring, the present invention having for its object the adaptation of the same general structural and operative principles to a valve in which the inlet and outlet openings are angularly disposed.

The invention is illustrated in the accompanying drawings, in which:—

Fig. 1 is a sectional elevation of the complete check valve structure.

Fig. 2 is a horizontal section on line 2—2 of Fig. 1.

Referring to the drawings, 1 indicates the valve casing having an inlet opening 2 and an outlet opening 3 disposed at right angles to the inlet. The portion of the casing in axial alignment with the inlet opening 2 is provided with an opening 4 internally threaded, so that, in its general form, the valve casing is much the same as a T-coupling.

Formed integrally with the casing is a partition 5 extending transversely of the inlet and provided with the usual port having a beveled valve seat 6, with which cooperates the valve disk 7 having the guide lugs or feathers 8 on its face, which engage the walls of the port or opening and serve to guide the disk in its movements to and from its seat. The back of the disk is provided with a stem 9 surrounded by a helical spring 10, which latter serves to force the disk to its seat and to maintain a fluid-tight seal between the disk and the seat, when the valve is closed.

Fitted in the threaded opening 4 is a cap or closure 12, which includes a rim 13 extending within the valve casing and constitutes an abutment for a floating guide plate 15, which is centrally perforated to receive the stem 9 of the valve disk and is held in engagement with the rim 13 by the helical spring 10. The rim 13 is spaced from the body of the cap 12 by means of lugs 14, which provide openings to permit the ready circulation of fluid about the rim 13 and prevent the formation of a pocket in the cap structure.

It will be noted that the guide plate 15 is capable of limited lateral movement with respect to the annular rim 13, which it abuts, but will serve to guide the valve disk in its movements and permit the disk to adjust itself to any necessary position to insure a sealing fit with its seat.

What I claim is:

1. A check valve structure, comprising a casing having angularly disposed inlet and outlet openings, an intermediate valve seat, and a third opening parallel with the valve seat, a valve disk having guide members on its face cooperating with the seat and a stem on its back, a screw cap closing the third opening and having a rim extending within the casing, a floating guide plate slidably engaging said rim and traversed by the valve stem, and a spring surrounding the stem and engaging said guide plate.

2. A check valve structure, comprising a casing having angularly disposed inlet and outlet openings, an intermediate valve seat, and a third opening parallel with the valve seat, a valve disk having guide members on its face cooperating with the seat and a stem on its back, a screw cap closing the third opening and having a circular rim supported by spaced lugs extending within the casing, a floating guide plate engaging said rim and traversed by the valve stem, and a spring surrounding the stem and engaging said guide plate.

In testimony whereof I affix my signature.

FARNHAM YARDLEY.