

H. B. EADS.
 AUTOMATIC VALVE AND RIM.
 APPLICATION FILED MAR. 8, 1918.

1,300,935.

Patented Apr. 15, 1919.

Fig. 1.

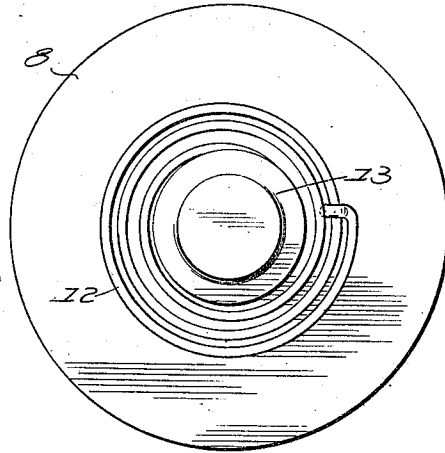
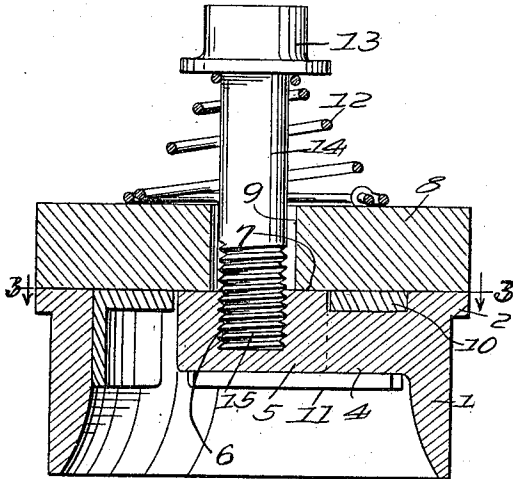


Fig. 2.

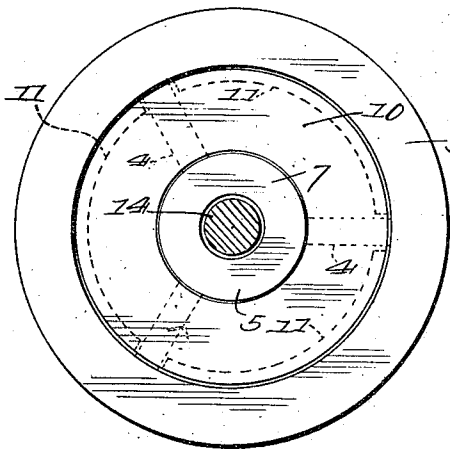


Fig. 3.

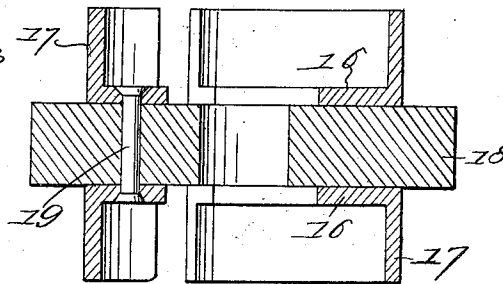


Fig. 4.

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UNITED STATES PATENT OFFICE.

HARRY B. EADS, OF VICKSBURG, MISSISSIPPI.

AUTOMATIC VALVE AND RIM.

1,300,935.

Specification of Letters Patent.

Patented Apr. 15, 1919.

Application filed March 8, 1918. Serial No. 221,185.

To all whom it may concern:

Be it known that I, HARRY B. EADS, citizen of the United States of America, residing at Vicksburg, in the county of Warren and State of Mississippi, have invented new and useful Improvements in Automatic Valves and Rims, of which the following is a specification.

This invention has reference generally to improvements in valves and more particularly relates to an automatic valve and rim.

It is the principal aim and object of this invention to provide a device of the above character designed to act in the capacity of a check when used in conjunction with suitable pumping apparatus for controlling the flow of liquids while suitable resilient means also acts in connection with the pumping means for reseating the valve.

As an additional object the invention embraces the provision of a device of the above mentioned character wherein the rim employed is of a novel form and operates with the valve body for protecting the latter during operation so as to increase the longevity thereof.

It is a more specific object of this invention to provide a device of the above mentioned character wherein the valve casing is designed to form a seat for the rim while in addition suitable guiding means is provided with the rim and designed to co-act with the casing in guiding the movement of the valve body and rim.

As a further improvement the present invention includes the provision of improved means for governing the tension of the resilient means.

Among the other aims and objects of this invention may be recited the provision of a device of the character described with a view to compactness, and in which the number of parts are few, the construction simple and the cost of production low and the efficiency high.

Other improvements and novel details in the construction and arrangement of the various parts of the apparatus will be brought out more in detail in the description to follow, which for a clear understanding of the invention should be considered in connection with the accompanying drawings forming a part hereof, and wherein is disclosed for the purpose of illustration a convenient and satisfactory embodiment of the invention. It is to be noted in this connection that

minor changes in the construction and arrangement of parts may be made without departing from the principle of operation of the various parts.

The invention is clearly illustrated in the accompanying drawings, in which;—

Figure 1 is a vertical section of the invention.

Fig. 2 is a top plan view thereof.

Fig. 3 is a horizontal section taken on line 3—3 of Fig. 1, and

Fig. 4 is a detail of another form of the invention.

Similar characters of reference are employed in all of the above described views to indicate corresponding parts.

Referring now, more particularly, to the accompanying drawings there is provided a valve embodying a tubular attaching casing 1 formed on the end with an exterior annular flange 2 the outer surface of which together with the adjacent edge of the casing constitute a valve seat 3. Also formed integral with the casing but internally thereof and near the seat is a spider 4 which bridges the casing. A boss 5 is formed at the juncture of the arms and has the upper or outer surface thereof flush with the seat 3 and provided with an interiorly threaded socket 6 for a purpose that will presently appear. Likewise, a secondary seat 7 is provided on the outer surface of the arms of the spider between the outer edge of the boss and the inner edge of the casing.

The valve body 8 is of a disk like form and preferably is constructed of rubber or a substitute therefor, being provided with a central opening 9 and having the outer edge arranged in substantial alinement with the casing when the inner surface of the body abuts the seat 3.

In order to protect the valve body from the excessive pressure of water when the valve is in use, a rim 10 is employed being of an annular form and constructed desirably of metal and of such size that it may be snugly accommodated on the secondary seat 7 beneath the valve body 8 as indicated in Fig. 1. Guides 11 project at right angles from the inner face of the rim near the outer edge thereof and lie against the inner surface of the casing 1 so as to coöperate therewith in guiding the movement of the rim and valve body.

As intimated improved means have been employed for yieldingly holding the valve

body and rim seated. In reducing this feature of the invention to practice a helical coil spring 12 is employed and has one end bearing against the outer face of the valve body while the opposite or outer end bears against the head 13 of a bolt 14. The inner end of the bolt is threaded as at 15 and adjustably engaged in the threaded socket 6 so that when the head is adjusted the tension of the spring will be regulated to act correspondingly on the valve body and the rim. Incidentally the bolt 14 is arranged through the opening 9 in the body 8 so as to guide the movement of the body when the valve is in operation.

In Fig. 4 there is disclosed a modified form of the invention which consists in the provision of two rims 16 with guides 17, similar in construction to the rim 10 and guide 11, respectively arranged on the opposite faces of a valve body 18 and connected thereto by rivets 19. By employing the two rims et cetera the valve body may be reversed.

The mode of operation of the invention may be reviewed as follows:

Assuming that the parts have been assembled in the manner described and as indicated in drawings particularly Figs. 1 to 3, the action is the same as a check valve. When pressure is exerted beneath the body 8 the latter will raise together with the rim 10 against the tension of the spring while water will flow through the casing 1. In reseating, the tension of the spring 12 against the body after the pressure diminishes and reseats the valve body while the water under pressure acts as a cushion for the rim 8 which lessens the chance of breaking the rim.

It is believed in view of the foregoing description that a further detailed description of the operation of the invention is entirely unnecessary.

As many changes should be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof it is intended that all matter contained in the above description or shown in the accompanying drawings shall be in-

terpreted as illustrative and not in a limited sense. It is also to be understood that the language used in the following claims is intended to cover all the generic and specific features of the invention herein described and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

Having thus fully described the invention what is claimed and desired to be secured by Letters Patent is:

1. A device of the character described including a casing formed with a valve seat and a rim seat, a valve body for cooperating with the rim seat and for protecting the valve body, and resilient means for yieldingly and normally holding the valve body and rim on their seats.

2. A device of the character described including a casing formed with a valve seat, a spider formed in the casing and providing a rim seat, a valve body for engagement with the valve seat, a protecting rim for engagement with the rim seat beneath the valve body, means for guiding the rim, means for guiding the valve body, and resilient means cooperating with the valve body yielding means for yieldingly holding the valve body and rim seated.

3. A device of the character described, including a valve casing formed with a valve seat, a spider formed in the casing, a boss formed centrally of the spider and having a threaded socket therein, the upper surface of the spider between the boss and the casing forming a rim seat, a disk like valve body formed of rubber and having an opening therein, a metallic protecting rim for engagement with the rim seat beneath the valve body, guides projecting from the rim, a bolt formed with a head and also threaded and passed through the opening in the valve body and engageable with the socket and designed to guide the valve body during movement, and a spring disposed about the bolt and bearing against the head of the bolt and the valve body for yieldingly holding the body and rim seated.

In testimony whereof I affix my signature.
HARRY B. EADS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."