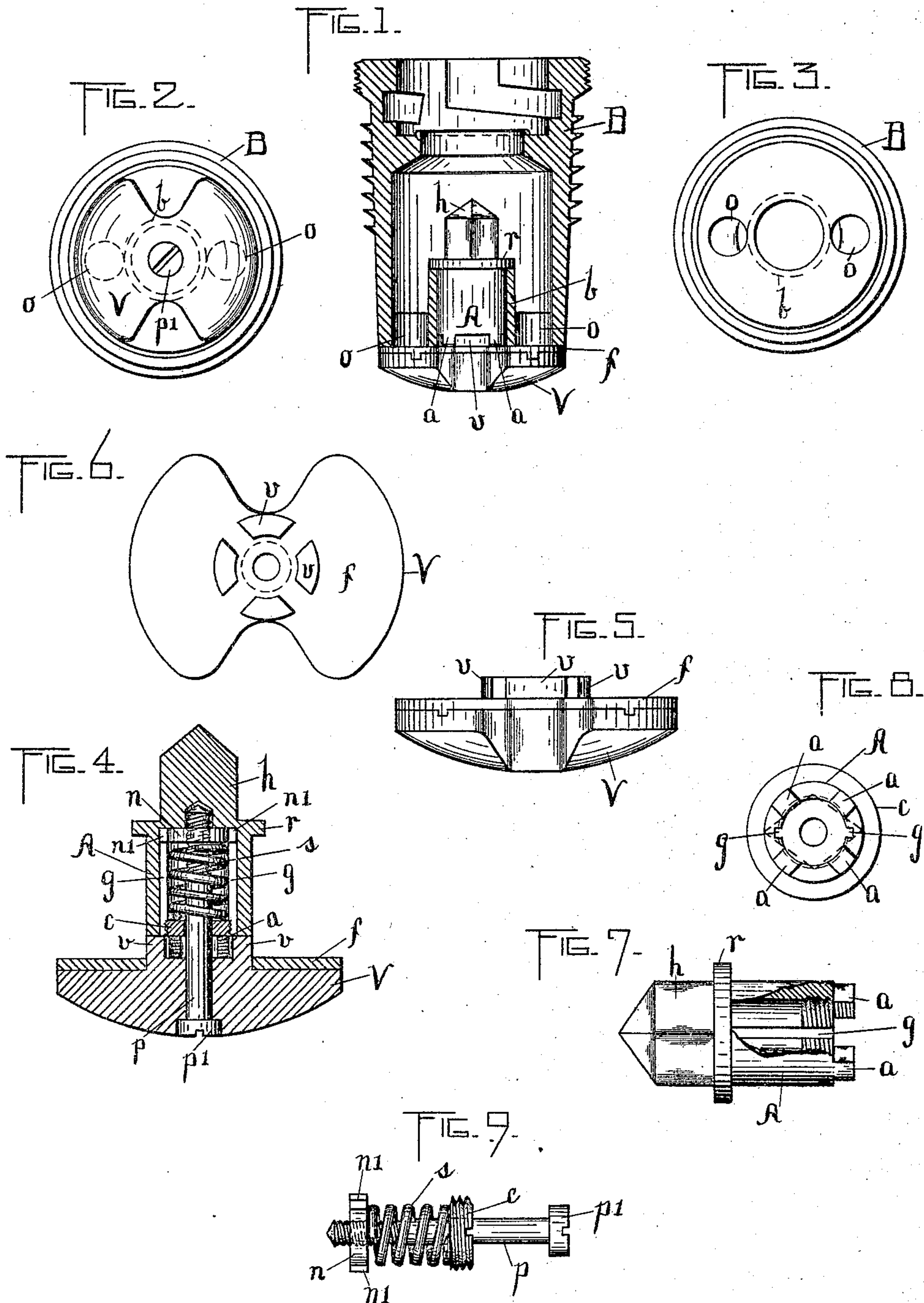


No. 775,609.

PATENTED NOV. 22, 1904.

R. H. SALMONS.  
TAP FOR BARRELS, CASKS, &c.  
APPLICATION FILED MAY 5, 1904.

NO MODEL.



WITNESSES:

Osborne F. Gurney,  
Clara M. Linn.

INVENTOR:

Robert H. Salmons  
by W. H. Cowley, atty.



# UNITED STATES PATENT OFFICE.

ROBERT H. SALMONS, OF ROCHESTER, NEW YORK.

## TAP FOR BARRELS, CASKS, &c.

SPECIFICATION forming part of Letters Patent No. 775,609, dated November 22, 1904.

Application filed May 5, 1904. Serial No. 206,440. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT H. SALMONS, a citizen of the United States, and a resident of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Tap for Barrels, Casks, &c., of which the following is a specification.

The object of my invention is the construction of a tap for the above-mentioned uses in which the valve will be forced against its seat by means of an elastic and yielding medium—such, for instance, as a coiled spring or its equivalent.

I have found that in the ordinary tap for barrels and casks, such as are used for ale and beer, the temperature to which the cask is subjected oftentimes results in such an expansion of the shell and sometimes of the cylinder inclosing the valve-stem as to loosen the valve on account of the valve-stem itself not expanding as readily and to the same extent as the shell and the cylindrical casing for such valve-stem. Many taps for casks and barrels have valves therein with composition seats that are vulcanized into place, and when such an unequal expansion takes place as just above described the composition seat for the valve is oftentimes compressed out of shape, and therefrom there results a serious loosening of the valves and such as cannot consistently be remedied except by a refacing of the composition seat on the valve.

In carrying out my invention I have preferred to use a valve and bushing of practically the usual construction, my present invention relating more especially to means for overcoming the difficulties above enumerated, comprising an elastic medium arranged to firmly hold the valve against its seat and yet permit of a withdrawal therefrom to a slight extent sufficient to compensate for any unequal expansions, while the elastic medium is also arranged to compensate for the wear of the valve and its seat automatically operating, therefore to keep the valve tight.

The accompanying drawings, illustrating my invention, are as follows:

Figure 1 is a vertical sectional view through the center of a bushing containing a valve made in accordance with my invention and in

which the valve is shown in full. Fig. 2 is a view of the complete bushing from the under side thereof, or from the inside of the cask, with the valve closed, while Fig. 3 is a view of the bottom of the bushing with the valve removed. Fig. 4 is a vertical central sectional view of my valve proper with its stem, showing the inside mechanism in full, while Fig. 5 is a side view of the valve alone. Fig. 6 is a top view of my valve proper. Fig. 7 is a side view of the detachable portion of the stem with a part thereof broken away to show the internal construction. Fig. 8 is a view of the detachable portion of my valve-stem as seen from the right in Fig. 7. Fig. 9 is a side view of the mechanism for retaining the elastic medium or spring in position within the hollow stem of my valve and shows also the means for adjusting the tension thereon.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, B is the usual bushing, having its lower end closed to form a valve-seat, with the ports or openings *o* and between them the upwardly-extending tubular member *b*, constituting a casing and guide for the stem A of the valve proper, V. The valve proper, V, has on its upper surface a composition facing *f*, arranged to bear against the valve-seat on the under side of the bushing B. Two holes *o* are provided, as mentioned, for the ingress and egress of air and liquids to and from the cask or barrel. The valve proper, V, is, as seen in the drawings, arranged when in its closed position to entirely cover these openings *o* and when in its open position to leave them uncovered and exposed through the cut-away portions of the valve proper, V. The valve V carries on its upper surface and extending upwardly from and through the facing *f* four lugs *v*, arranged to mesh with the four cooperating lugs *a* on the lower end of the hollow valve-stem A, near the upper end of which is seen a shoulder *r* and immediately above that the operating end or head *h*, which may be either triangular or square or of any desired conformation to cooperate with the hole therefor in the lower end of the usual combined tap-wrench and faucet for operating such valve. This



hollow valve-stem A is bored out, as indicated, on the inside to receive a nut  $n$ , having projections thereon,  $n'$ , engaging the grooves  $g$ , cut on the inner surface of the hollow spindle A, so as to prevent such nut  $n$  from being rotated within such shell A, while permitting of a free longitudinal motion of such nut  $n$  within such shell A. This hollow spindle A is internally threaded at its lower end, as seen, to receive the externally-threaded cap  $c$ . This cap  $c$  has a hole therethrough to receive the bolt  $p$ , which is shouldered at its lower end into the under side of the valve V and extends upwardly through such valve and also through the cap  $c$  and upwardly within the coils of the spring  $s$  and has its upper end threaded into the nut  $n$ . The spring  $s$  is compressed between the cap  $c$  at its lower end when such cap is in place, as indicated in Fig. 4, and the nut  $n$  at its upper end. The tension on this spring  $s$  may be adjusted by means of this bolt  $p$ , which is provided with the usual screw-head  $p'$  at its lower end for this purpose. This spring  $s$  operates to forcibly draw the valve V and the stem A together, with the lugs  $a$  on the lower end of such stem intermeshing with the lugs  $v$  on the upper surface of the valve V.

The entire valve-stem A is contained within the cylinder  $b$  therefor, and the collar  $r$  on the upper end of the stem A is forced downwardly against the upper end of the cylinder  $b$ . The valve-stem A and the valve V, on account of the intermeshing lugs on such members, may be slightly withdrawn from each other and yet be firmly maintained in angular alinement by means of the lugs  $a$  and  $v$ , and at the same time by turning the stem A by means of a suitable wrench engaging the operating-head  $h$  thereon the valve will be turned therewith. The tension of the spring  $s$  is of course regulable by means of the screw  $p$  in the manner indicated.

In assembling the parts of my valve the nut  $n$  is first inserted within the hollow spindle A and then the spring  $s$ , and after that the screw-cap  $c$  is inserted in its proper place. Then the valve-stem A is inserted into the tube  $b$ . The screw  $p$  is inserted upwardly through the valve V, and then such valve V is properly placed in its seat, with lugs  $v$  thereon extending upwardly into the lower end of the tube  $b$ , and the screw  $p$  is then turned until by engagement with the nut  $n$  the desired tension upon the spring  $s$  is secured, and thereby the desired pressure between the facing  $f$  on the valve and the seat therefor, constituting the lower end of the bushing B.

The operation of my valve is believed to be sufficiently obvious from the description already given.

What I claim is—

1. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guid-

ing and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite such valve and seat therefor, such valve-stem elongable between such member thereon and such valve, and elastic means operating to longitudinally contract such elongable valve-stem.

2. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite such valve and seat therefor, such valve-stem elongable between such member thereon and such valve, and elastic means operating to longitudinally contract such elongable valve-stem, such valve and seat therefor located between the inside of the barrel and such elongable valve-stem.

3. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite such valve and seat therefor, such valve-stem elongable between such member thereon and such valve, and elastic means operating to longitudinally contract such elongable valve-stem, such guiding and supporting mechanism comprising a chamber for containing such valve-stem and such chamber closed at one end by such valve and at the other end by such member on such valve-stem.

4. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite such valve and seat therefor, such valve-stem elongable between such member thereon and such valve, and elastic and adjustable means operating to longitudinally contract such elongable valve-stem.

5. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite such valve and seat therefor, such valve-stem elongable between such member thereon and such valve, and elastic and adjustable means operating to longitudinally contract such elongable valve-stem, such valve and seat therefor located between the inside of the barrel and such elongable valve-stem.

6. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such



mechanism on the side thereof opposite such valve and seat therefor, such valve-stem elongable between such member thereon and such valve, and elastic and adjustable means operating to longitudinally contract such elongable valve-stem, such guiding and supporting mechanism comprising a chamber for containing such valve-stem and such chamber closed at one end by such valve and at the other end by such member on such valve-stem.

7. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite to such valve and seat therefor, such valve-stem comprising two longitudinally-separable elements one connected to such valve and the other to such member engaging such supporting mechanism, means for maintaining angular alinement between such elements and elastic means for forcing such elements together longitudinally of their axes.

8. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite to such valve and seat therefor, such valve-stem comprising two longitudinally-separable elements one connected to such valve and the other to such member engaging such supporting mechanism, means for maintaining angular alinement between such elements and elastic means for forcing such elements together longitudinally of their axes, such valve and seat therefor located between the inside of the barrel and such valve-stem.

9. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite to such valve and seat therefor, such valve-stem comprising two longitudinally-separable elements one connected to such valve and the other to such member engaging such supporting mechanism, means for maintaining angular alinement between such elements and elastic means for forcing such elements together longitudinally of their axes, such guiding and supporting mechanism comprising a chamber for containing such valve-stem and such chamber closed at one end by such valve and at the other end by such member on such valve-stem.

10. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite to such valve and seat therefor, such valve-

stem comprising two longitudinally-separable elements one connected to such valve and the other to such member engaging such supporting mechanism, means for maintaining angular alinement between such elements and adjustable and elastic means for forcing such elements together longitudinally of their axes.

11. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite to such valve and seat therefor, such valve-stem comprising two longitudinally-separable elements one connected to such valve and the other to such member engaging such supporting mechanism, means for maintaining angular alinement between such elements and adjustable and elastic means for forcing such elements together longitudinally of their axes, such valve and seat therefor located between the inside of the barrel and such valve-stem.

12. In a tap for a barrel or cask, a bushing, a valve, a seat for such valve, a stem for such valve having an operating-head thereon, guiding and supporting mechanism for such stem, a member on such stem arranged to engage such mechanism on the side thereof opposite to such valve and seat therefor, such valve-stem comprising two longitudinally-separable elements one connected to such valve and the other to such member engaging such supporting mechanism, means for maintaining angular alinement between such elements and adjustable and elastic means for forcing such elements together longitudinally of their axes, such guiding and supporting mechanism comprising a chamber for containing such valve-stem and such chamber closed at one end by such valve and at the other end by such member on such valve-stem.

13. In a tap for a barrel or cask, a bushing, a valve-seat therein, a valve cooperating with such valve-seat and having a stem thereon, guiding and supporting mechanism for such valve-stem, such valve-stem carrying a member arranged to engage such supporting mechanism therefor, means for clamping such supporting and guiding mechanism between such member and such valve, such means comprising two elements, one connected to such member and the other to such valve, such elements intermeshing with each other to maintain angular alinement with each other while permitting a withdrawal of one of such elements from the other, a spring and means for applying the tension thereon to such two elements in opposite directions whereby such valve is yieldably held against its seat in such bushing.

14. In a tap for a barrel or cask, a bushing, a valve-seat therein, a valve cooperating with such valve-seat and having a stem thereon, guiding and supporting mechanism for such valve-stem, such valve-stem carrying a mem-



ber arranged to engage such supporting mechanism therefor, means for clamping such supporting and guiding mechanism between such member and such valve, such means comprising two elements, one connected to such member and the other to such valve, such elements intermeshing with each other to maintain angular alinement with each other while permitting a withdrawal of one of such elements from

the other, a spring and means for applying the tension thereon to such two elements in opposite directions whereby such valve is yieldably held against its seat in such bushing and means for adjusting the tension on such spring.

ROBERT H. SALMONS.

Witnesses:

CLARA M. SIENER,

OSBORNE F. GURNEY.