J. BYRNE.

Valve for Barrels, Kegs, &c.

No. 202,629. Patented April 23, 1878.

Fig. 1.

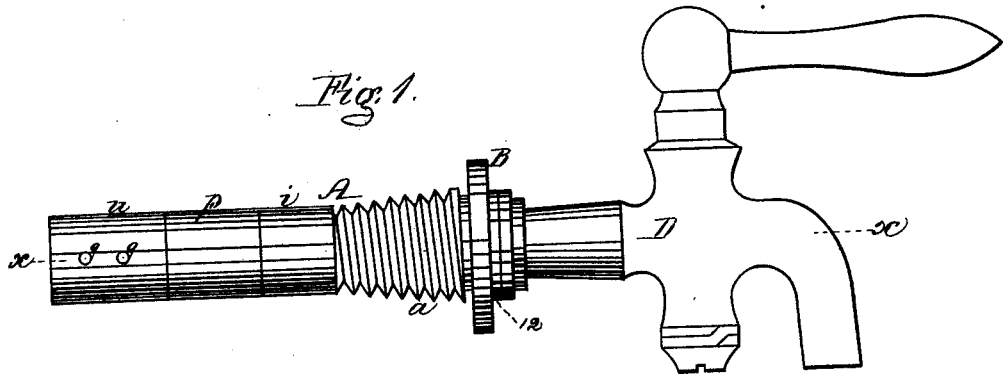


Fig. 2.

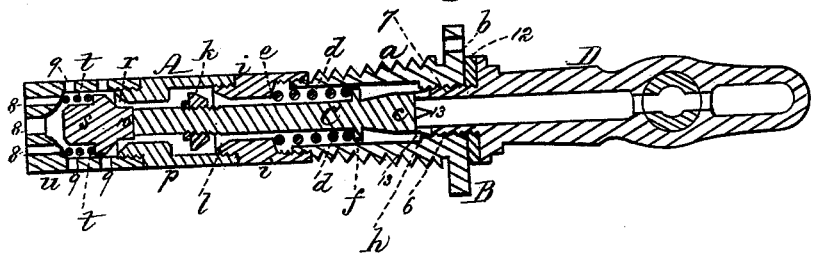


Fig. 3.

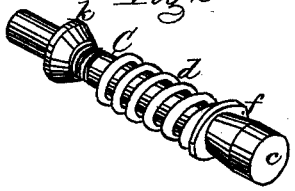


Fig. 4.

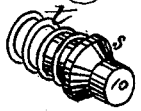
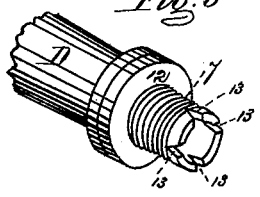


Fig. 5.



Witnesses;

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UNITED STATES PATENT OFFICE.

JOSEPH BYRNE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF, SULLIVAN M. WALDRON, AND JAMES McGRATH, OF SAME PLACE.

IMPROVEMENT IN VALVES FOR BARRELS, KEGS, &c.

Specification forming part of Letters Patent No. **202,629**, dated April 23, 1878; application filed October 10, 1877.

To all whom it may concern:

Be it known that I, JOSEPH BYRNE, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Valves for Barrels, Kegs, and other Receptacles for Liquids, to be used in connection with a faucet, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of my improved valve with a faucet applied thereto. Fig. 2 is a horizontal section on the line *x x* of Fig. 1; Figs. 3, 4, and 5, details in perspective.

My present invention relates to that class of valves for beer-barrels, &c., the draft-outlet of which is opened and closed by the operation of inserting and removing the faucet.

My invention consists in a sectional tubular plug provided with two valves and a spring spindle or follower having an enlarged head, and operated by the faucet, which is provided with a screw-thread, and, on being inserted within a corresponding thread in the mouth of the screw-plug, first opens the outer valve, the stem of which, on being forced in a sufficient distance, acts upon and opens the inner valve, causing the flow of the liquid, the spring-follower, in connection with the outer valve, serving to prevent the entrance of dirt or other foreign matter when the faucet is removed from the screw-plug, and by this construction the liability of the discharge-orifice being opened and the liquid wasted by the tampering of unauthorized persons is entirely avoided.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents a tubular plug, made in sections, and provided on its exterior surface, near the front end, with a thread, *a*, which is intended to be screwed into the draft-outlet of a beer-barrel, keg, or other receptacle by means of a wrench adapted to fit into holes *b* in a flange, B, at its outer end.

Within the front portion of the plug A is placed a spindle, C, having an enlarged head, *c*, which fits loosely within the mouth of the plug, which is provided with a female screw-thread, 6, for the reception of the threaded portion 7 of the faucet D. This spindle C is surrounded by a spiral spring, *d*, the inner end of which bears against a shoulder, *e*, and the outer end against a collar, *f*, which is pressed against a shoulder, *h*, and serves as a stop to prevent the enlarged head of the spindle being forced out by the spring *d* beyond the face of the flange B, the shape of the collar being such as not to interfere with the flow of the liquid. The inner end of the spindle extends through the portion *i* of the plug, the diameter of a part of the interior of which is contracted; and to this spindle is attached a valve, *k*, which is ground to fit its seat *l* at the inner end of the portion *i*, and is kept snugly thereon by the spring *d*, an outer valve being thus formed, for a purpose to be hereinafter described, and when the spindle C is forced inward by screwing in the faucet D this valve is opened.

Within the inner end of the portion *p* of the plug is formed the seat *r* of the inner valve *s*, which is ground to fit the seat, and is kept snugly thereon by a spiral spring, *t*, located within the inner portion *u* of the plug, which is closed at its end, and is provided with perforations 8, the sides being also provided with perforations 9, this inner portion *u* thus serving as a filter for the liquid passing through the plug. When the faucet is not entered within the plug, both of the valves *k s* are closed, and a space is left between the inner end of the spindle C and the outer end of the stem 10 of the inner valve *s*.

On entering the faucet, the outer valve *k* is opened thereby against the resistance of the spring *d*, as before described, after which the inner end of the spindle is brought into contact with the stem 10 of the inner valve *s*, which is forced away from its seat against the resistance of its spring *t*, and thus opened by the continued turning of the faucet, the opening of the valve occurring just before the washer 12 of the faucet is brought up against the face of the flange B of the plug, when the liquid is free to flow through the plug to and into the faucet through notches 13 in the portion 7 of the faucet, apertures being thus formed be-

tween the head of the spindle and the threaded end of the faucet for the passage of the liquid.

When the faucet is being unscrewed, the inner valve *s* is first closed by its spring *t*, thus stopping the flow of the liquid, after which the outer valve *k* is closed, which thus effectually excludes dirt or other obstructions from the inner valve, which would prevent it from closing tightly, as required. Furthermore, the head *c* of the spindle C immediately follows the threaded portion of the faucet, as it is withdrawn, and prevents any foreign matter from entering the discharge-orifice.

Among the advantages resulting from the use of my improved valve may be enumerated the following: A convenient means of tapping the barrel is afforded, the waste of its contents avoided, and the danger of splitting the head incident to driving in an ordinary faucet prevented.

Furthermore, the opening of the inner valve *s* cannot be easily effected by the pressure of a rod or stick upon the head of the spindle, owing to the great resistance of the springs *d t*, thus preventing the escape and waste of any of the contents of the barrel, should unauthorized persons endeavor to tamper therewith.

My device, when fitted within a barrel, may have a vent-faucet applied thereto, for testing the contents of the barrel, and for allowing gas to escape therefrom, thus rendering the boring of gimlet-holes, as heretofore, unnecessary.

After the liquid contents of the barrel are drawn off, the draft-outlet is tightly closed, thus preventing the souring and formation of mold, which ordinarily takes place when the tapping-hole is left open, and which requires the steaming of the barrel.

By the application of my invention, the use of heavy faucets required to withstand the blow of the mallet in driving them into the ordinary tapping-holes is avoided, a lighter and consequently less expensive faucet being sufficient when used in connection with my improved valve.

What I claim as my invention, and desire to secure by Letters Patent, is—

The tubular plug A, composed of three sections, constructed and connected together as described, valve *s*, and spring-follower C, provided with valve *k* and enlarged head *c*, in combination with a faucet having a screw-thread, 7, to engage with the thread 6 in the mouth of the plug, the several parts constructed and relatively arranged with each other, whereby the spring-follower is adapted to be operated directly by the faucet, substantially as specified.

Witness my hand this 3d day of October, A. D. 1877.

JOSEPH BYRNE.

In presence of—

P. E. TESCHEMACHER,

W. J. CAMBRIDGE.