J. BYRNE.

Valves for Barrels, Kegs, &c.

No. 210,668. Patented Dec. 10, 1878.

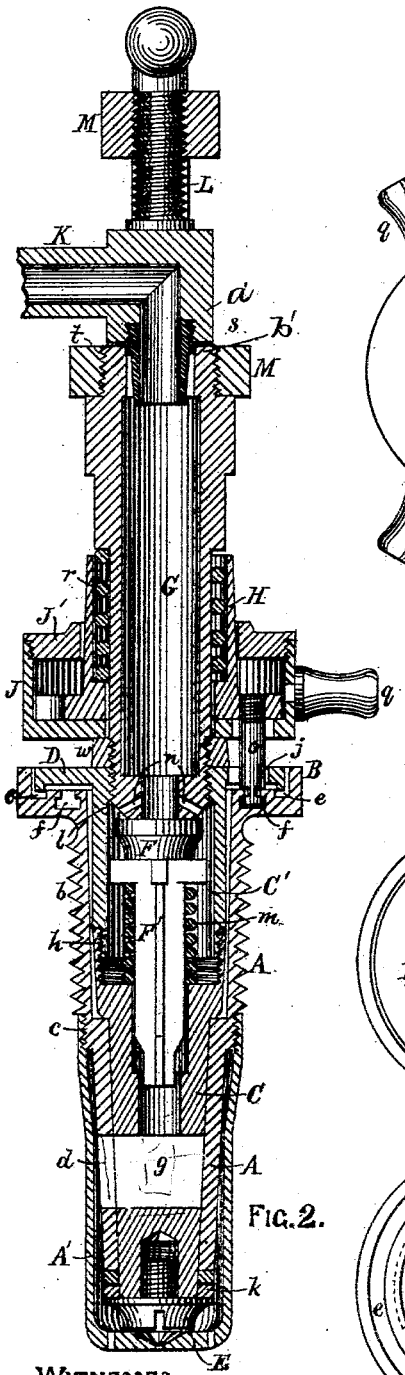

FIG. 2.

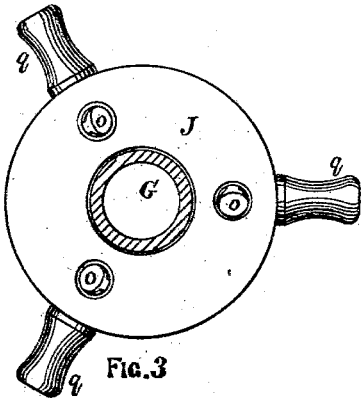

FIG. 3

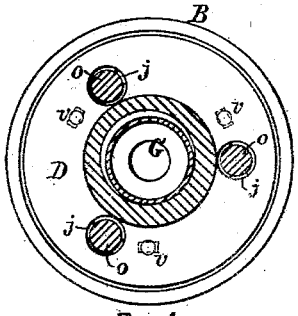

FIG. 4.

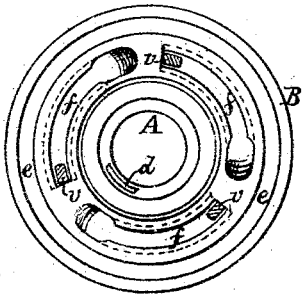

FIG. 5.

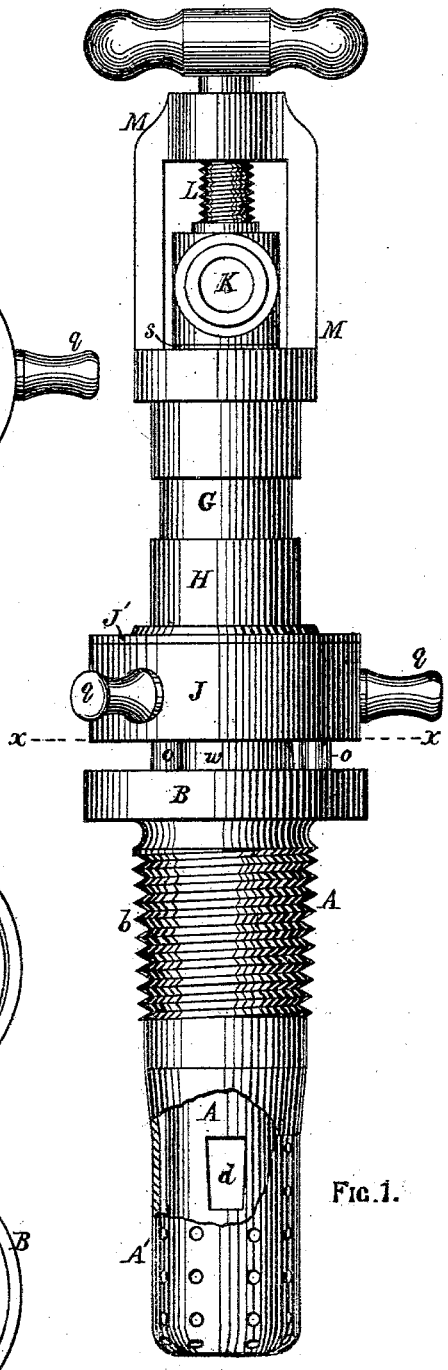

FIG. 1.

WITNESSES.

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JOSEPH BYRNE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF, JAMES McGRATH, AND DANIEL MADDEN, OF SAME PLACE.

IMPROVEMENT IN VALVES FOR BARRELS, KEGS, &c.

Specification forming part of Letters Patent No. **210,668**, dated December 10, 1878; application filed September 7, 1878.

To all whom it may concern:

Be it known that I, JOSEPH BYRNE, of Boston, in the State of Massachusetts, have invented an Improvement in Valves for Barrels, Kegs, and similar vessels, of which the following is a specification:

My invention relates to the use of a temporary discharge-pipe or faucet in connection with a valve-plug permanently screwed into a cistern, barrel, keg, or similar vessel; and consists in combining with such pipe or faucet and valve-plug a key operating in such manner that the pipe or faucet can be removed from the valve-plug only when the valve of the latter is closed.

The invention consists, also, in an improved form of valve-plug; and it consists, further, in a contrivance whereby the discharge-pipe or faucet, when inserted in the valve-plug, may be connected with the pump or the pump-pipe without twisting the latter.

In the drawings, Figure 1 is an elevation of the valve-plug, key, and discharge-pipe combined in working order. Fig. 2 is a horizontal section of the same. Figs. 3 and 4 are sections above and below on line *x x* of Fig. 1. Fig. 5 is an elevation of the plug with the valve apparatus removed, but showing certain pins *v v v* in cross-section.

A is a tubular valve-plug having a flange, B. It has on its exterior surface two screw-threads, *b c*, by the former of which it is screwed into and permanently held in the barrel or other vessel. A slot, *d*, serves as a valve-port. A′ is a filter, secured to the plug by the screw-thread *c*.

The flange B is hollowed, as shown, and within the cup thus formed has a groove, *e*, and slots *f f f*, for purposes hereinafter described. The slots *f* have large openings or mouths at one end and flanges for the remainder of their extent, as shown.

C is a conical valve, turned on its exterior to fit the interior of a portion of the plug, and working with the valve-port *d*. It is hollow, and has a slot, *g*, corresponding to the port *d*.

C′ is a tube, screwed or otherwise rigidly connected at *h* to the valve C, so as to form an extension of said valve, and provided with the flange D, having upon its inner face an annular lip or rib, which fits into the groove *e*, as shown. The flange D has three holes, *j j j*, whose path, when the tube C′ is turned to open or close the valve-port, as hereinafter described, is concentric with the slots *f*. It has also three stop-pins, *v v v*, whose outer ends project into the slots *f* and travel therein. The flanges D and B are held together, and the valve C is held in its seat by a set-screw, E, a spring-washer, *k*, determining the resistance which must be overcome to turn the valve.

F is a plug, bearing somewhat closely against a shoulder, *l*, within the tube C′, its office being to prevent the accumulation of dirt in the valve-plug when the discharge-pipe is not inserted therein. It is kept against the shoulder by a spring, *m*, coiled around a triangular shaft, as shown. The sides of the triangular shaft are scooped to permit the free passage of the contents of the vessel.

From the shoulder *l* outward the tube C′ has a female screw-thread to receive the corresponding male thread on the end of the delivery-pipe or faucet G, when the latter is inserted in the valve-plug. The delivery-pipe is screwed into the valve-plug far enough to overcome the resistance of the spring *m* and to open communication between its interior and the interior of the tube C′ by means of perforations *n* in the end of the delivery-pipe.

The key proper consists of a flanged tube, H, with three prongs or pins, *o*, one end of each of which is notched, while the other end is rigidly inserted in the flange, as shown. This flange and a portion of the tube are placed within a box or ring, J, having holes *p* for the passage of the pins *o*, as shown. The box or ring J has also fingers *q*, by which it, and with it the key proper, may be turned to the right or left. The box is merely a handle for the key, and the two are secured to the discharge-pipe by a collar, *w*. The compression of the spiral spring *r* allows a slight play to the key and box. The box J has a cover, J′, as shown.

The mode of operation of the invention thus far described is as follows: The delivery-pipe, with its key attached, is screwed into the valve-plug (which has been permanently screwed into the barrel or other vessel) as far as the collar

w will permit, and the key turned by the fingers *q* until the pins *o* enter the holes *j*. If the valve-plug and delivery-pipe have previously been used together in a proper manner, the holes *j* will now be over the mouths of the slots *f*, and the pins *o* will be driven into the said mouths by the spring *r;* and if the holes *j* and slots *f* have not the required relative positions, they may be obtained by a further turning of the key. When the pins *o* are driven into the mouths of the slots *f*, as just described, the valve-port *d* is closed. To open the valve-port the key is turned to the left until the stop-pins *v* strike against the farther ends of the slots *f*. The pins *o* being locked by their notches behind the flanges of the slots *f* will now prevent the unscrewing of the delivery-pipe from the valve-plug until the valve-port *d* is again closed by turning the key to the extreme right, when the pins *o* may be drawn from the mouths of the slots *f* and free from the valve-plug, and the delivery-pipe may be unscrewed. When the key and delivery-pipe have been withdrawn the valve-plug is not only closed, but it may be said to be locked, for the valve C is held by the spring-washer *k* in a position to keep the valve-port *d* closed, and the slots *f*, with their flanges, form, as it were, the wards of a lock, which cannot readily be opened, excepting by its own key.

It remains to describe the pump-connection. M is a slotted casing, screwing at one end upon the end of the faucet or delivery-pipe, and at the other end having a thumb-screw, L. The pipe leading to the pump is marked K, and is bent, as shown. The short arm is inserted in the delivery-pipe and the thumb-screw turned until it is there firmly held. This avoids any twisting of the pump-pipe.

The extreme end of the short arm of the pipe K consists of a short tube, *a'*, screwed into the main part of the short arm, as shown. This tube has a shoulder, *b'*, as shown, and a washer, *s*, placed between the shoulder and the main part of the short arm prevents any leaking at the connection between the delivery-pipe and pump-pipe, and the washer, from being placed on the screw-thread above the shoulder, cannot be removed by accident or otherwise, whether the pump-pipe be connected or disconnected with the valve apparatus, and this holds, whether the pipe have an elbow or not.

I claim—

1. The plug-valve consisting of a valve seat or shell, A, and a valve, C C', flanged, as shown, in combination with the delivery-pipe G and a key, substantially as described, for the purpose specified.

2. The flanged valve-seat A and slots *f*, the flanged valve C C' and holes *j*, and screw E, arranged and operating together substantially as described, for the purpose specified.

3. The delivery-pipe G, casing M, screw L, and bent pump-pipe K, substantially as described, for the purpose specified.

4. The washer *s*, in combination with the tube *a'*, shoulder *b'*, and a pump-pipe or other pipe, substantially as described, for the purpose specified.

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Witnesses:
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