

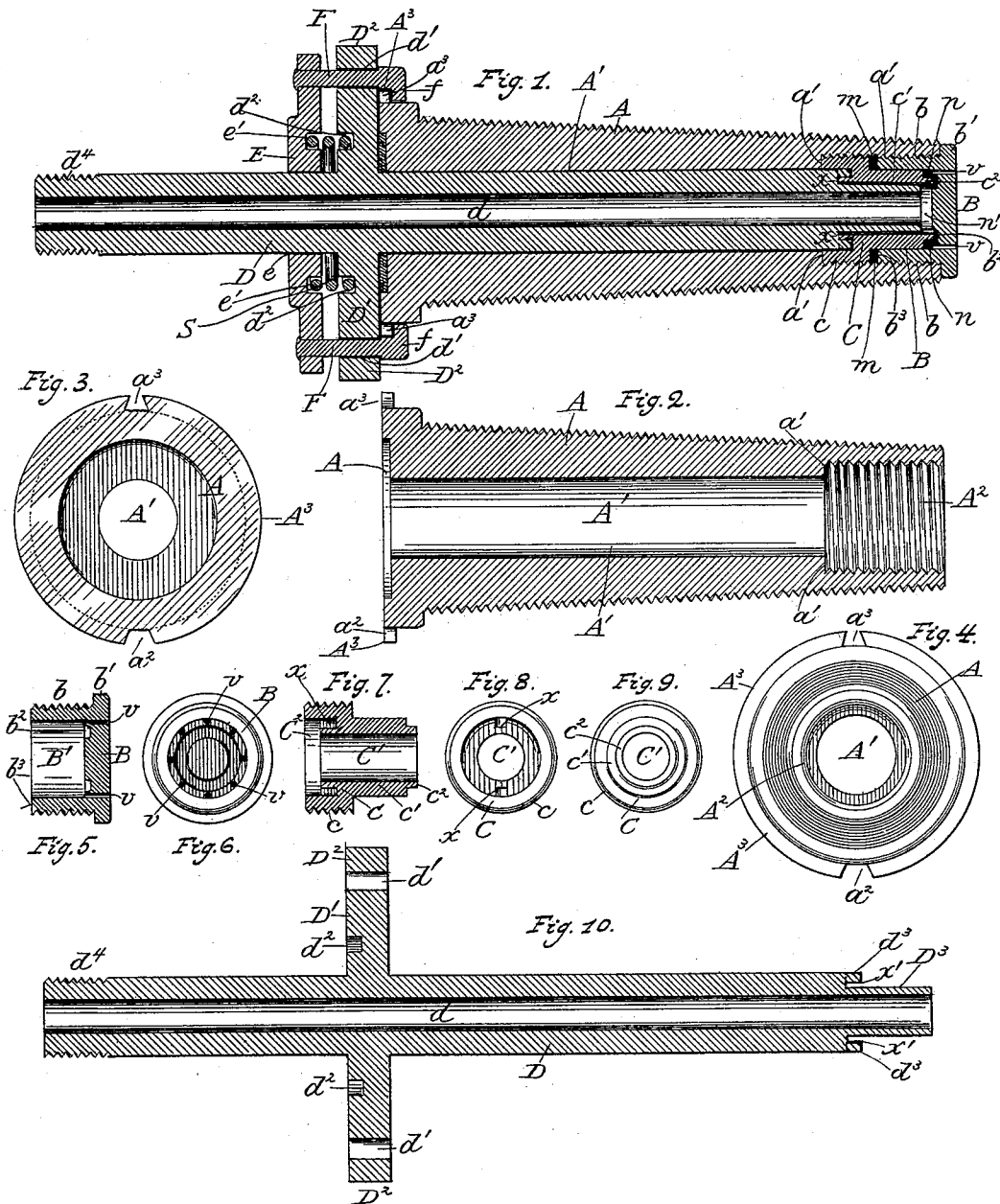
(No Model.)

2 Sheets—Sheet 1.

H. S. JOHNSON.
LOCK VALVE FAUCET.

No. 487,674.

Patented Dec. 6, 1892.



Witnesses.

Charles Seckin.
A. Seckin Jr.

Hiram S. Johnson,
Inventor.

per Alex. Selkirk

Attorney,

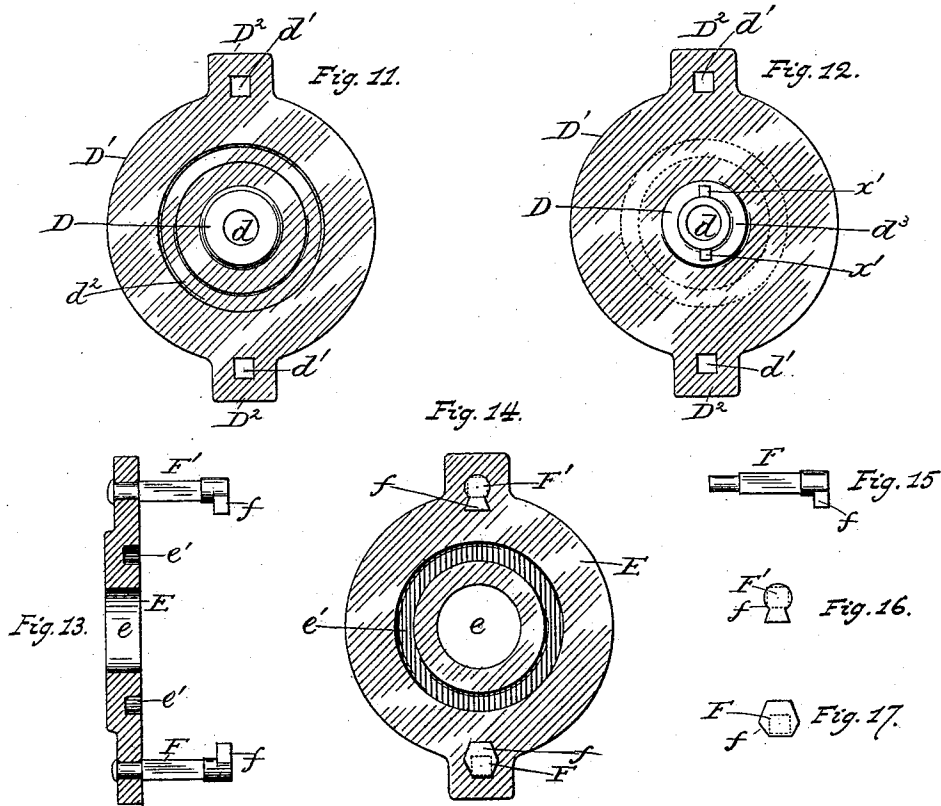
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Charles S. Kirk.
H. S. Kirk.

Hiram S. Johnson,

Inventor.

per

Alex. Selkirk.

Attorney.

UNITED STATES PATENT OFFICE.

HIRAM S. JOHNSON, OF CANAAN FOUR CORNERS, ASSIGNOR OF ONE-HALF
TO MILFORD L. BATES, OF CANAAN, NEW YORK.

LOCK-VALVE FAUCET.

SPECIFICATION forming part of Letters Patent No. 487,674, dated December 6, 1892.

Application filed October 1, 1891. Serial No. 407,445. (No model.)

To all whom it may concern:

Be it known that I, HIRAM S. JOHNSON, a citizen of the United States, residing at Canaan Four Corners, in the county of Columbia and State of New York, have invented certain new and useful Improvements in Lock-Valve Faucets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to lock-valve faucets for use with vessels containing gaseous or fermented liquids; and it consists in the combinations of devices and parts hereinafter described, and specifically set forth in the claims.

The objects of my invention are, first, to provide a water and gas tight valve which may be readily applied to a keg, cask, or other vessel; second, to combine with such water and gas tight valve a key which is removable at will and serves as a means for opening and closing said valve and also as a conduit for the liquid while being drawn, and, further, to provide particular combinations of devices and parts by which my improvements in this invention may be embodied in faucets. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal sectional view of a faucet embodying the improvements in my invention. Fig. 2 is a longitudinal sectional view of the body of the faucet. Fig. 3 is a front-end view of the same. Fig. 4 is a rear-end view of the same. Fig. 5 is a sectional view of the liquor-straining piece. Fig. 6 is a view of the same from its front end. Fig. 7 is a sectional view of the valve. Fig. 8 is a front-end view of the same. Fig. 9 is a rear-end view of the same. Fig. 10 is a sectional view of the key. Fig. 11 is a view of the same from its front end. Fig. 12 is a view of the same from its rear end. Fig. 13 is a sectional view of the follower of the key. Fig. 14 is a rear-side view of the same. Fig. 15 is a side elevation of clamping-hooks used with the follower. Fig. 16 is a view of one of said clamping-hooks from its head end. Fig. 17 is a view of the other from its head end.

The same letters of reference refer to similar parts throughout the several views.

In the drawings, A is the body of the faucet, which body is made tapering and is provided with a screw-thread when it is to be used with a wooden vessel. A' is the central bore of the same, which bore receives the key employed for opening and closing the valve of this faucet. A² is an internal annular recess made in the rear-end portion of said body and provided with the internal screw-thread *a* for receiving and holding the valve and liquor-straining piece.

B is the liquid-straining piece, which closes the rear or inner end of the body A of the faucet. This piece B is made with a diameter of body and a screw-thread *b* which correspond with the diameter and screw-thread *a* of the recess A² and has a flange-form head *b'* for seating tight against the end edge of the rear end of the faucet A. B' is a chamber made in said piece B from its inner side, and *b*² is a ring-form recess at the bottom of the said chamber, which recess may in some cases be dispensed with, if preferred. The back wall of this piece B is provided with a series of small perforations *v v* on a line outside of the circumferential line of the ring-form recess *b*².

C is the valve, made of any suitable material and with a tubular form and provided with the external screw-thread *c*, of diameter and size corresponding with the internal screw-thread *a* of the annular recess A² of the faucet, so as to nicely work in the same. This valve is provided with the plain plug portion *c'*, of diameter corresponding with that of the chamber B' of the liquid-straining piece B, and is provided with the ring-form lip *c*², projected rearwardly from the rear end of the said plug portion *c'* of this valve, which ring-form lip is to nicely fit with a gas-tight joint with the bottom of the liquid-straining piece or bottom of the recess *b*² when made in the bottom of said piece. This valve-piece has through it the central perforation C', and annular to said central perforation is the ring-form recess C², made in said valve from its forward end. When this valve-piece C and the liquid-straining piece B are both in place

in the faucet A, there is provision for an endwise movement of said valve-piece between the inside end of said straining-piece B and the shoulder a' at the forward terminal of the internal screw-thread a of the body A of the faucet. When the valve C is revolved in one direction, it will be carried rearwardly by the coacting screw-threads a and c toward the bottom of the chamber B' of the liquid-straining piece B, with the edge of the ring-form lip c^2 seated tight against the bottom of the said straining-piece or that of the ring-form recess b^2 , when provided in said piece B, and all communication of the ports or perforations $b b$ in the straining-piece B with the central perforation C' of the valve will be closed. A reversed revolution of said valve operates to reverse the movement of said valve and carry the sealing-lip c^2 of the same away from the bottom of the straining-piece B or the bottom of the recess b^2 in the same, and thereby open communication from the ports or perforations $v v$ of the straining-piece B and the central bore C' of the valve. This valve-piece C may be operated by different means for giving it an endwise movement, as above described; yet I give preference to the use of a removable key, which will also serve as a conduit for the liquor drawn through this faucet, and with the use of such a removable key D there are provided in the bottom of the recess C² in the front end portion of the valve C one or more indentations $x x$ or sunken or projected holding devices for engagement with a coacting projection $x' x'$ or an indentation provided with the said key; yet preference is given to the employment of indentations or sub-recesses $x x$ made in the bottom of the ring-form recess C², as shown in Figs. 1, 7, and 8.

D is the key by which the valve C may be operated for opening and closing the faucet. It also serves as a conduit for the liquids drawn from the same. This key is of a tubular form and has an unobstructed central bore d , which leads from the chamber B' of the straining-piece B to a discharge when the valve C is open. When this key is to be removable, it may be held with the body of the faucet by any suitable means which may render it detachable at will from the latter. My preferred means for securing the said key with the body of the faucet is shown in the drawings. In this preferred means the body A of the faucet has made integral with it the flange A³ at its outer end. This flange has in it two or more notches $a^2 a^3$, sunken in its margin edge portion to a depth of one quarter of one inch, more or less, and preferably made with a dovetail form, that of a^2 being made with a spread at the outer edge, while a^3 is more contracted, so that these notches will be of reversed forms, as shown in Fig. 4.

The key D has integral with it the flange-collar D', in which collar or extension D² D² of the same are provided squared perforations $d' d'$ at points which will register with

the dovetail notches $a^3 a^3$ made in the flange A³ of the body A of the faucet. In the outer side of the said flange-collar D' is the ring-form groove d^2 for receiving one end of the spiral spring S.

E is a follower having its central perforation e' of diameter corresponding with that of the body of the key D forward of its flange-collar D'. This follower has in it the ring-form groove e' , corresponding with the groove d^2 in flange-collar D', for receiving the opposite end of spring S, and also has in it perforations $e^2 e^2$, which register with perforations $d' d'$ in flange-collar D'. The spring S is held between the said flange-collar D' and the follower E by the grooves d^2 and e' , respectively, in the same, and, while it operates to crowd the latter away from the former, its elasticity will allow the follower to be drawn tight to said flange collar.

F F' are clamping-hooks having their hook-heads f made, respectively, with forms corresponding with those of the respective dovetail notches $a^2 a^3$ in the flange A³ of the faucet. The stems of these clamping-hooks back of the said hook-heads f are made square and of size corresponding with the squared perforations $d' d'$ in the flange-collar D' of the key D. The tail ends of these clamping-hooks are secured by any suitable means to the follower E, and preferably by riveting, after being entered into the perforations $e^2 e^2$ in said follower.

In some cases the screw-thread a of the rear end recess A² of the body A of the faucet may be extended from shoulder a' only to the inner end of the liquid-straining piece B, while the rearward portion of said screw-thread a (shown in the drawings, Fig. 1, as receiving the screw-thread b of said straining-piece) may be omitted and the periphery of said straining-piece be enlarged and made plain to nicely fit such plain rearward portion of said recess, when the said straining-piece may be secured in place by keying, riveting, or soldering or other suitable means.

When the valve-piece C and the liquid-straining piece B are both in place in the recess A', their united lengths of cylindrical portions at the wall of said recess will be of less extension than that of the recess from shoulder a' to the flange-head b' , so as to produce a chamber m between said shoulder a' and end edge b^3 of the straining-piece B, in which chamber m the larger and screw-threaded portion of the valve-piece C may be moved longitudinally in either direction. A chamber n is also provided between the rear end of the plug portion c' of the valve-piece and the rearwardly-projected ring-form lip c^2 and straining piece B, and with this chamber n the ports $v v$ communicate from the outside of said straining-piece. When the valve-piece C is in position shown by full lines in Fig. 1, the ring-form lip c^2 will be out of contact with the bottom of the recess b^2 of the straining-piece, so that the liquid passing through the

ports *v v* into chamber *n* may readily enter the chamber *n'* between the bottom of the straining-piece B and the adjoining end of the tubular key D, and thence have passage through the bore of the latter to a suitable discharge therefrom; but when the said valve-piece C is in position away from the shoulder *a'* of the recess A² to the full distance it is allowed to move, and so that the rear end of its ring-form lip *c*² is seated tight against the bottom of the recess of said straining-piece the valve will be closed and escape of liquids from the vessel (not shown) through the ports *v v* and thence into the chambers *n n'* and to a discharge through the tubular key will be prevented. This opening and closing of the valve by the longitudinal movement of the valve-piece C is effected by revolving the said valve-piece in a suitable direction so that the screw-threads *a* of the recess A² and *c* of the valve-piece C may coact to move the latter longitudinally in either direction required for those purposes. When the valve-piece C is to be closed against the bottom of the straining-piece B, the former will be revolved, say, to the right, and for moving it away from the same the valve-piece will be revolved in the reverse direction. Any suitable means may be employed for so revolving said valve-piece, yet preference is given to the employment of the holding devices *x x* in said valve-piece and their engaging devices *x' x'*, (shown to be provided at the rear end portion of the key D and projected rearwardly from the shoulder *d*³ of the reduced cylindrical portion D³, which works in the central perforation C' of said valve-piece.) The forward or outer end of the key D is provided with a screw-thread *d*⁴ for coupling with said key a faucet (not shown) of any suitable form of construction or a pipe or hose or other device for controlling or leading the liquid being drawn to a suitable place of discharge.

The manner in which the several parts of this improved faucet operate is as follows: The body A of the faucet has secured in place in it the valve-piece C and the liquid-straining piece B, with the former tightly seated against the latter, so that all communication from without the faucet through ports *v v* with chamber *n'* will be stopped. This faucet-body A is then secured in place in the vessel with which this improved faucet is to be employed, and when the vessel is of wood it may be secured by screwing it into the same before or after filling the vessel, and the liquid within will be held from escaping by the way of the faucet until the valve C has been moved away from the straining-piece B, so that the ports *v v* will have an uninterrupted communication with the chamber *n'*. When the liquid is to be drawn from the vessel (not shown) this faucet is so applied to, the key D will be inserted in place in the faucet-body A and be secured therewith by a suitable coupling device or the follower E, clamping-hooks F F', and spring S respect-

ively secured in place with said key and the flange A³ of the faucet-body, as shown. This is done by inserting the rearward portion of the tubular key D into the bore of the faucet A to its full distance, so that its holding devices *x' x'* will engage with the holding devices *x x* of the valve-piece C, with the heads *f f* of the respective clamping-hooks F F' passed through the dovetail-form openings *a*² *a*², with which they respectively correspond, when the key may be turned slightly in either direction, so as to carry the said heads *f* of said hooks into engagement with the rear side of the flange A³ of the faucet-body A, when said key will be locked in place with the same and be ready to be operated at will for opening and closing the valve. When the key is locked in place with flange A³, there will be a small space between the said flange and the flange-collar D' of the key, which will allow the key to be turned in either direction and also give to the clamping-hooks an elastic holding with the faucet. The reversed order of the forms of the hook-heads *f f* of the clamping-hooks F F' coact with the reversed dovetail notches *a*³ *a*³ in the flange A² of the faucet-body to allow each of said hook-heads to pass the dovetail notch not in correspondence, so that a full revolution of the key may be had without liability of the hooks being withdrawn from a holding with the faucet-body.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a faucet, the combination, with the faucet-body A, having through it the longitudinal central bore A' and in its rear end portion the internal annular recess A², provided with the screw-thread *a*, commencing at the rear end of the said faucet-body and extending to shoulder *a'*, and the valve-piece C, provided with a central bore and having the external screw-thread *c*, working in the screw-thread *a* of the annular recess A², and provided with the rearwardly-projected ring-form lip *c*², of the liquid-straining piece B, having an internal chamber and provided with a series of ports *v v*, which are set in a circle relatively greater than the outer circumference of the said ring-form lip *c*² of the valve-piece C and secured to close the rear end of the faucet-body, with provision for the longitudinal movement of the said valve-piece to make and close communication of said ports *v* with the central bore of the said valve-piece, substantially as and for the purposes set forth.

2. In a faucet, the combination, with the faucet-body A, provided with a central bore and the screw-threaded annular recess A² in its rear end portion, and the chambered liquid-straining piece B, provided with the ring-form recess *b*² in its chambered side and having the circular series of ports *v v*, communicating with said ring-form recess, of the centrally-perforated valve-piece C, provided at its rear end with the rearwardly-projected

ring-form lip c^2 and working by a screw-thread within the recess A^2 , so as to be capable of being moved in either direction, accordingly as it is revolved, and a hollow key for engagement with the said valve-piece C, with its bore communicating with the central perforation of the said valve-piece C, substantially as and for the purposes set forth.

3. In a faucet, the combination, with the faucet-body A, having with it the flange A^3 , provided with one or more notches a^2 , and the removable key D, centrally perforated, for operating the valve of said faucet by revolving the same and for conducting the liquid out

from the faucet and having with it flange D' , provided with openings d' , of the follower E, spring S between said flange and follower, and one or more clamping-hooks holding said follower and key to the faucet-body, substantially as and for the purposes set forth.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

HIRAM S. JOHNSON.

Witnesses:

ALEX. SELKIRK,
CHARLES SELKIRK.