No. 732,122. PATENTED JUNE 30, 1903.

A. SCHNEIDER.

BARREL TAP.

APPLICATION FILED JUNE 7, 1901.

NO MODEL.

Fig. 1.

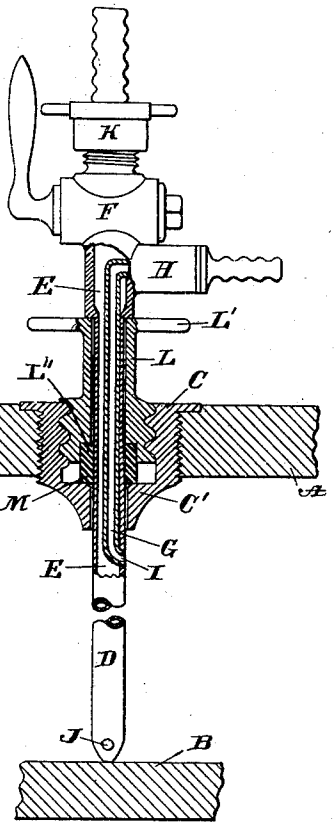


Fig. 2.

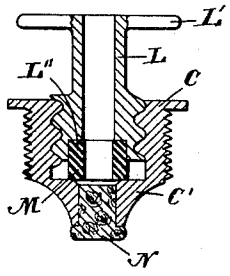
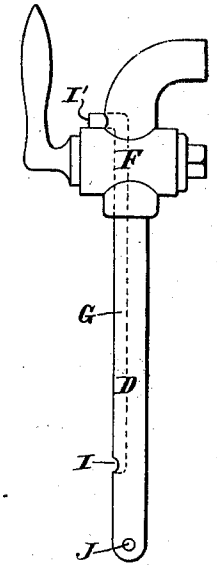


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

ADOLPH SCHNEIDER, OF TRINIDAD, COLORADO.

BARREL-TAP.

SPECIFICATION forming part of Letters Patent No. 732,122, dated June 30, 1903.

Application filed June 7, 1901. Serial No. 63,654. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH SCHNEIDER, a citizen of the United States, residing at Trinidad, in the county of Las Animas, State of Colorado, have invented new and useful Improvements in Barrel-Taps, of which the following is a specification.

The invention relates, primarily, to barrel-taps more particularly intended for use in drawing or transferring effervescing liquid, such as beer, from one receptacle to another, but which can also be used for drafting liquids.

The objects of the invention are to construct a barrel-tap which can be readily applied to or removed from a receptacle without any great inconvenience or trouble and which when applied to a receptacle will enable the liquid contained in the receptacle to be drawn therefrom without liability of waste, to effectually prevent leakage in applying the tap to the receptacle, to enable air or other fluid pressure to be applied to the receptacle as the liquid is withdrawn therefrom without change in the tap, thereby maintaining the requisite amount of pressure in a receptacle for properly transferring the liquid under a predetermined pressure, to simplify the construction and improve the operation of barrel-taps, and to construct a barrel-tap which as a whole will be very compact, easily applied, and effective and reliable in use.

The invention consists in the features of construction and the combinations of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of the barrel-tap of the invention with the bushing for the receptacle and the carrying-plug for the eduction-tube in section and with the eduction-tube partly in section and the pressure-supply passage or channel in section and showing also in section a fragment of the receptacle, which may be the heads of a cask, barrel, or keg; Fig. 2, a sectional elevation of the bushing for the receptacle and of the detachable plug and stem carrying the eduction-tube and showing the cork or stopper for the bushing inserted therein, and Fig. 3 an elevation showing a modification of the delivery spout or nipple of the eduction-tube.

The receptacle may be a cask, barrel, keg, or other retainer for liquids which have a head or end A and a head or end B, fragments of which are shown in Fig. 1. The tap is constructed with a bushing C, adapted to be entered into the receptacle at a point suitable for the purpose. This bushing, as shown, has an exterior screw-thread for entering it into the wall or head of the receptacle and has an extension or prolongation constituting a bottom C′ for the chamber of the bushing, and this bottom has a central hole therethrough for the reception of the cork or stopper and for the passage of the eduction-tube in applying the tap to the receptacle, and, as shown, the interior of the wall of the bushing has a screw-thread of coarse spirals. An eduction-tube D of a diameter and length required passes through the hole in the bottom C′ of the bushing when the tap is applied to the receptacle for use. This eduction-tube D in the construction shown has a passage-way E for the liquid, and the outer or discharge end of the tube is attached to or connected with the shell or casing of a controlling-valve F, the plug of which valve has therein a passage which can be brought into communication with the passage-way or channel of the eduction-tube for the outflow of the liquid in being transferred from one receptacle to another or otherwise. The eduction-tube D has located therein a tube G, having a passage therethrough which at one end communicates with a passage in a nipple H, formed at its extreme end, for the attachment of a hose by means of which air or other fluid under pressure may be admitted to the receptacle, for which purpose the passage or channel in the tube G leads through the wall of the eduction-tube by a port I, which opens just below the end of the bottom of the bushing C, so that when the eduction-tube is entered into the receptacle through the bottom of the bushing the port I will discharge pressure into the receptacle to act on the liquid contained in the receptacle and maintain the requisite pressure on the liquid as the liquid is lowered in withdrawal from the receptacle. The passage-way or channel for the liquid in the eduction-tube D communicates by a port or ports J, leading through the wall of the tube at the lower end, so that liquid can flow from the interior of the recep-

tacle through the port or ports J into the passage-way or channel E and through the controlling-valve when the plug of the valve is properly turned to establish communication through the valve. The shell or casing of the controlling-valve F has thereon a coupling K for the attachment of a hose or other pipe, by means of which hose or pipe the liquid can be transferred to another receptacle. An ordinary discharge-nozzle in Fig. 3 may be used in place of the coupling K when it is desired to serve the liquid from the receptacle into glasses or vessels.

A plug L, having an exterior screw-thread corresponding to the interior screw-thread of the bushing C for entering the plug into the bushing, carries the eduction-tube D, which tube passes through a hole in the plug, and in a stem extending from the plug and, as shown, the upper end of the stem abuts against a shoulder or flat face on the wall of the eduction-tube to limit the entering of the tube into the attaching-plug and its stem. At the upper end of the stem of the attaching-plug are arms or handles L′, by means of which the plug can be screwed into the chamber of the bushing, and entered into an annular socket or opening L^2 in the end face of the plug is a gasket or packing M, made of any suitable material, preferably of rubber, which as the plug is advanced into the chamber of the bushing will be compressed by the advance and impinge closely around the eduction-tube and against the face of the bottom of the bushing, making an air and fluid tight joint between the eduction-tube and the bushing against the escape of pressure. The entering of the plug into the chamber of the bushing attaches the eduction-tube in place and at the same time compresses the gasket or packing M, so that the plug serves both as a support for the eduction-tube, holding the tube in place, and also as a means for compressing the gasket or packing around the eduction-tube in the chamber of the bushing. The hole in the bottom of the bushing when the receptacle is filled is closed by a stopper or cork N, driven into the hole by any suitable means before filling the receptacle.

The bushing C is to be screwed into the head or wall of the receptacle, and the cork or stopper N is to be driven or forced into the hole in the bottom C′ of the bushing, so that the receptacle can be filled with the liquid. After the receptacle is filled and to withdraw the liquid therefrom and transfer the liquid to another receptacle or receptacles the plug, with the packing or gasket M carried in its end face, is screwed lightly into the chamber of the bushing. The eduction or tap tube D is inserted into and through the plug L and its stem and the packing until the end of the stem contacts the cork or stopper in the bottom of the bushing. The plug L is then advanced into the chamber of the bushing until the packing or gasket is compressed around the eduction or tap tube to make an absolute tight joint between the tap-tube and the bushing, which will prevent the escape of any liquid when the eduction-tube is driven in, forcing the cork or stopper out of the hole or opening in the bottom of the bushing. The tap or eduction tube as it is driven in removes the cork or stopper by forcing it from the hole or opening, and with such removal if the packing or gasket were not tightly compressed around the tube and against the bottom of the chamber in the bushing the liquid would fly out or escape with the removal of the cork or stopper. The tap-tube is entered into the receptacle until its lower or inner end reaches the bottom of the receptacle or such position in the receptacle as may be desired for withdrawing the liquid, and if after the tap or eduction tube is fully entered any leakage is discovered around the tube and the bottom of the bushing an advance of the plug will further compress the packing or gasket and stop the leakage, making the tap as a whole positively liquid-tight, by which liquids of an effervescing nature can be withdrawn from a receptacle without waste. The withdrawal of the liquid from the receptacle reduces the pressure within the receptacle, thereby interfering with the efficiency of the device in transferring the liquid from one receptacle to another, and to compensate for any reduction in pressure and maintain an equilibrium in pressure for withdrawing the liquid air or other fluid under pressure can be forced into the receptacle through the passage-way or channel of the tube or conduit G, the pressure entering through the nipple H and discharging through the port I into the receptacle to act on the contents of the receptacle.

It will be undestood that a bushing is to be entered into the head or wall of each receptacle and when entered is to have the hole in its bottom plugged or closed by a suitable cork or stopper, so that every receptacle with which the tap as a whole is to be used is provided with a bushing adapted to receive the plug carrying the tap or eduction tube. The tap or eduction tube can be removed from a receptacle after the contents have been withdrawn therefrom by simply turning backward the plug, permitting the removal of the eduction-tube with the plug when the plug is detached from the bushing. The detachable plug, with its eduction-tube, can be applied to another receptacle by entering the plug into the chamber of the bushing of the receptacle and compressing by the advance of the plug in the chamber the packing or gasket around the tap or eduction tube, as already described, making a tight joint for driving out the cork or stopper as the eduction-tube is forced into the receptacle and into position for withdrawing the liquid from the receptacle, as already described. It will thus be seen that the detachable plug and its tap or eduction tube can be used with receptacles supplied with the attaching bushing, it only being necessary to detach the plug and

its tube from one receptacle and apply the plug and tube to another receptacle. The tap as a whole of the invention insures the withdrawing of the liquid without any leakage or waste in applying the tap to a receptacle, and by reason of the separate passage-ways or channels for the liquid and pressure the admission of pressure does not interfere with the withdrawal of the liquid. The liquid will flow through the eduction-tube and into the coupling and hose attached thereto leading to another receptacle when the plug of the valve F is properly turned to have communication through the plug between the tap or eduction tube and the coupling, and in inserting the plug and the eduction-tube into a receptacle the plug of the valve is to be turned, so as to close or shut off communication from the eduction or tap tube.

The construction shown in Fig. 3 for drafting liquid from a receptacle into a glass or vessel for use has the tap or eduction tube shorter than is required for such tube in transferring liquid from one receptacle to another, as in the construction of Fig. 1, and a short tap-tube is enabled to be used, for the reason that the receptacle, especially a beer barrel or keg, is usually lying upon its side when tapped and is tapped at the lowest point in its head for the contents to run out, and it is not necessary, therefore, that the eduction-tube should extend to the bottom or lower side or opposite head of the barrel, as required with a cask, barrel, or keg standing on one head, which is the usual position in filling bottles or other receptacles. The tube or conduit G for the pressure is shown in dotted lines in Fig. 3 and does not terminate in a coupling, as in Fig. 1, and with this arrangement a passage is formed in the plug of the valve to communicate with the passage-way or channel in the tube or conduit, and an elbow is connected with the shell or casing of the valve to communicate with the passage in the valve-plug, to which elbow a supply hose or pipe for the pressure can be attached, and a check-valve (not shown) can be located in the elbow or otherwise which will permit pressure to enter the receptacle when the liquid is being drawn therefrom and which will shut off the passage of the pressure from the receptacle when the tap is not open for the withdrawal of liquid.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a barrel-tap, the combination of a bushing having its bottom provided with a hole for the reception of a cork and the passage of a liquid-eduction tube with the removal of the cork, a plug screw-threaded into the chamber of the bushing and provided in its lower end with a central chamber or recess, a stem outwardly extending central from the plug and through which and the plug the liquid-eduction tube passes giving the tube an elongated support, a packing in the chamber or recess of the plug and projecting beyond the end face of the plug and having a less exterior diameter than the interior diameter of the bushing, a liquid-eduction tube having therein a liquid-eduction passage and a pressure-supply passage each independent of the other and passing through the plug and its stem and the packing and around which, with the advance of the plug, the packing is compressed in the space between the end of the plug and the bottom of the bushing and in the chamber or recess of the plug, a controlling-valve at the outer end of the liquid-eduction tube, and a nipple carried by the eduction-tube and having communication with the pressure-supply passage or channel in the liquid-eduction tube, substantially as described.

2. In a barrel-tap, the combination of a bushing screw-threaded on its exterior and interior and having its bottom provided with a hole for the reception of a cork and the passage of a liquid-eduction tube with the removal of the cork, a plug having an exterior screw-thread engaging the interior screw-thread of the bushing for entering the plug into the chamber of the bushing and further provided with an annular central recess in its inner face, a stem outwardly extending centrally from the plug and through which and the plug the liquid-eduction tube passes giving the tube an elongated support, a packing carried within the recess in the end of the plug and projecting beyond the end face of the plug for contacting with the bottom of the bushing, the packing having a less exterior diameter than the interior diameter of the bushing, a liquid-eduction tube having therein a liquid-eduction passage and a pressure-supply passage each independent of the other and passing through the plug and its stem and the packing and around which with the advance of the plug the packing is compressed in the recess of the plug and in the chamber of the bushing, the eduction-tube having a shoulder for engagement with the end face of the plug-stem and limiting the passage of the tube through the plug, a controlling-valve at the outer end of the liquid-eduction tube, and a nipple carried by the eduction-tube and having communication with the pressure-supply passage or channel in the liquid-eduction tube, substantially as described.

3. In a barrel-tap, the combination of a bushing screw-threaded on its exterior and interior and having its bottom provided with a hole for the reception of a cork and the passage of a liquid-eduction tube with the removal of the cork, a plug provided with a central chamber or recess in its lower end and having an exterior screw-thread engaging the interior screw-thread of the bushing for entering the plug into the chamber of the bushing, a stem outwardly extending centrally from the plug and through which and the plug the liquid-eduction tube passes giving the tube an elongated support, a packing

within the recess or chamber of the plug and projecting beyond the end face of the plug and having a less exterior diameter than the interior diameter of the bushing, a liquid-eduction tube having therein a liquid-eduction passage and a pressure-supply passage each independent of the other and passing through the plug and its stem and the packing and around which with the advance of the plug the packing is compressed in the chamber of the bushing in the space formed by the end of the plug and the bottom of the bushing and around the eduction-tube in the recess or chamber of the plug, a controlling-valve at the outer end of the liquid-eduction tube, and a coupling on the shell or casing of the controlling-valve having communication with the liquid passage or channel of the eduction-tube, substantially as described.

4. In a barrel-tap, the combination of a bushing screw-threaded on its exterior and interior and having its bottom provided with a hole for the reception of a cork and the passage of a liquid-eduction tube with the removal of the cork, a plug provided with a central chamber or recess in its lower end and having an exterior screw-thread engaging the interior screw-thread of the bushing for entering the plug into the chamber of the bushing, a stem outwardly extending centrally from the plug and through which and the plug the liquid-eduction tube passes giving the tube an elongated support, a packing within the recess or chamber of the plug having a less exterior diameter than the interior diameter of the bushing and projecting beyond the end face of the plug, a liquid-eduction tube having therein a liquid-eduction passage and a pressure-supply passage each independent of the other and passing through the plug and its stem and the packing and around which with the advance of the plug the packing is compressed in the chamber of the bushing in the space formed by the end of the plug and the bottom of the bushing and around the eduction-tube in the recess or chamber of the plug, a controlling-valve at the outer end of the liquid-eduction tube, a coupling on the shell or casing of the controlling-valve having communication with the liquid passage or channel of the eduction-tube, a tube or conduit in the liquid-eduction tube opening at each end through the wall of the tube and furnishing the pressure-supply passage or channel of the tube discharging at a point below the closed bottom of the bushing, and a nipple attached to the eduction-tube above the bushing and stem and having communication with the pressure-supply tube or conduit for the pressure, substantially as described.

5. In a barrel-tap, the combination of a bushing having its bottom provided with a hole for the reception of a cork and the passage of a liquid-eduction tube with the removal of the cork, a plug entered into the chamber of the bushing and provided with an annular central recess or chamber in its lower end, a stem outwardly extending from the plug and through which and the plug the liquid-eduction tube passes giving the tube an elongated support, a packing in the recess or chamber of the plug projecting below the end face of the plug having a less diameter than the interior diameter of the bushing and for contacting with the bottom of the bushing, a liquid-eduction tube having therein a liquid-eduction passage and a pressure-supply passage each independent of the other and passing through the plug and its stem and the packing and around which with the advance of the plug the packing is compressed in the chamber of the bushing and in the recess or chamber of the plug when forced against the bottom of the bushing by the pressure of the plug, and a controlling-valve at the outer end of the eduction-tube, substantially as described.

6. In a barrel-tap, the combination of a bushing having its bottom provided with a hole for the reception of a cork and the passage of a liquid-eduction tube with the removal of the cork, a plug entered into the chamber of the bushing and provided with an annular central recess or chamber in its lower end, a stem outwardly projecting centrally from the plug and through which and the plug the liquid-eduction tube passes giving the tube an elongated support, a packing in the recess or chamber of the plug having a less diameter than the interior diameter of the bushing and projecting below the end face of the plug for contacting with the bottom of the bushing, and provided with a shoulder for engagement with the outer end face of the stem to limit the passing of the tube through the plug, a liquid-eduction tube having therein a liquid-eduction passage and a pressure-supply passage each independent of the other and passing through the plug and its stem and the packing and around which the packing is compressed in the chamber of the bushing and in the recess or chamber of the plug when forced against the bottom of the bushing by the pressure of the plug, and a controlling-valve at the outer end of the eduction-tube, substantially as described.

In witness that I claim the foregoing I have hereunto subscribed my name this 17th day of May, 1901.

ADOLPH SCHNEIDER.

Witnesses:
G. E. HARPHAM,
MATTIE MCGINNIS.