

H. V. R. READ & R. H. CAMPBELL.

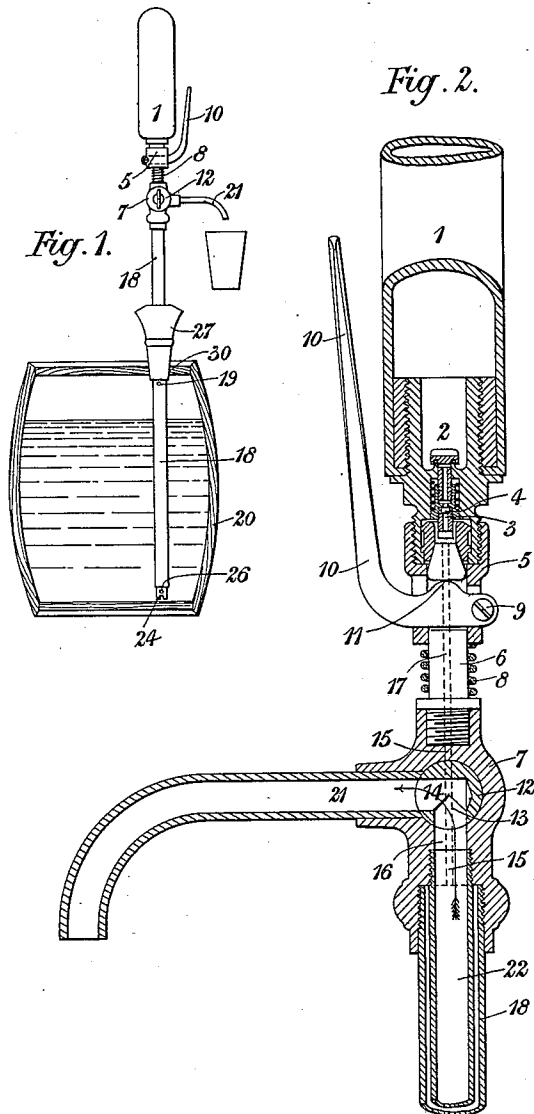
DISCHARGE APPARATUS.

APPLICATION FILED MAR. 6, 1909.

980,835.

Patented Jan. 3, 1911.

2 SHEETS—SHEET 1.



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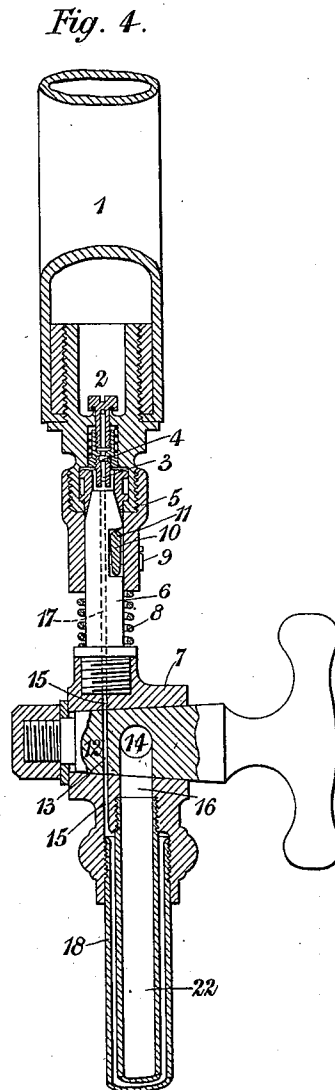
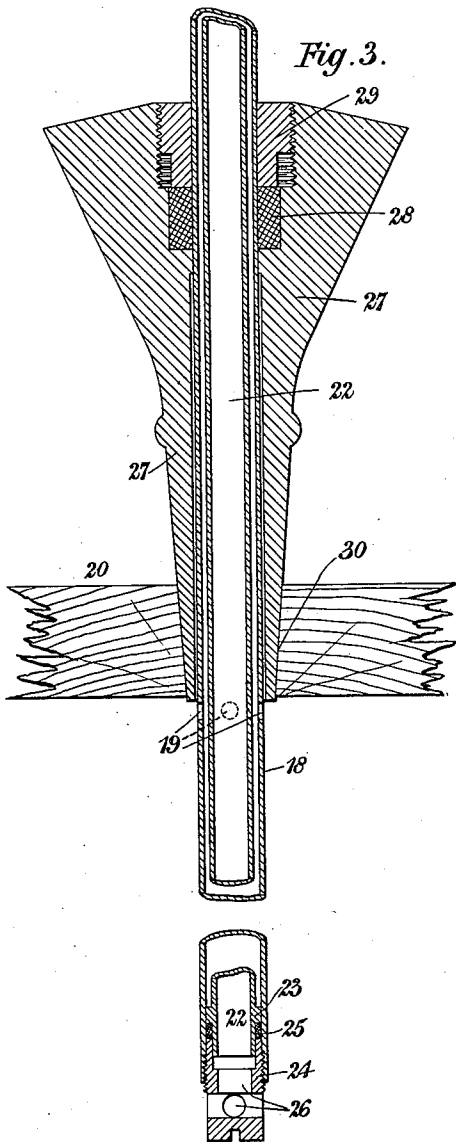
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

HARRY VAUGHAN RUDSTON READ AND ROBERT HUNTER CAMPBELL, OF EDMONTON, ENGLAND.

DISCHARGE APPARATUS.

980,835.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed March 6, 1909. Serial No. 481,813.

To all whom it may concern:

Be it known that we, HARRY VAUGHAN RUDSTON READ and ROBERT HUNTER CAMPBELL, both subjects of the King of Great Britain and Ireland, and both of Angel Road, Edmonton, in the county of Middlesex, England, have invented new and useful Discharge Apparatus, of which the following is a specification.

This invention relates to means for discharging casks or other receptacles containing beer, petroleum, or other liquid by means of compressed or liquefied carbonic acid gas and it is one of the objects of our invention to admit the gas to the receptacle in such manner that it occupies the entire space above the liquid in the receptacle. The air is thus excluded and its injurious action on the liquid is prevented, and in the case of volatile liquids, such as petroleum, the formation of an explosive mixture is rendered impossible. The passage for the supply of the gas to the receptacle is opened and closed simultaneously with, and by the same operation as, the opening and closing of the passage through which liquid is drawn off, so as to prevent dangerous accumulation of pressure in the receptacle, and dispense with the necessity for reducing valves. The improved arrangement according to this invention hereinafter described enables the supply of gas to be controlled so that no gas, or any required amount of gas, can be admitted while the liquid is being drawn off as required by the condition of the liquid being drawn off.

We will describe, with reference to the accompanying drawings, the arrangement in accordance with this invention.

Figure 1 is a general view, on a reduced scale, of the apparatus applied to a cask. Fig. 2 is a vertical section of the upper part of the apparatus. Fig. 3 is a vertical section of the lower part of the apparatus, and Fig. 4 is a section of the upper part of the apparatus in a plane at right angles to Fig. 2.

The container 1 of compressed, or liquefied, gas and the outlet valve 2 and the means for attaching the container and making a good joint may be of any suitable kind, but the end of the valve may have a small perforated plug 3 screwed into it and the said plug be provided at 4 with a piece of permeable, or porous, material, such as for in-

stance, a slice of cane, to act as a filter and also to check somewhat the rush of gas into the valve. The nozzle of the container 1 is screwed into a tubular piece 5 capable of sliding on a stem 6, screwed, or soldered, into the body of the tap 7. A spring 8 presses the tubular piece 5 upward. Pivoted to the said piece 5 by the pin 9 is a bent lever 10 passing through openings in the piece 5 and through a recess in the side of the stem 6 and having a rounded projection 11 for bearing on the top of the recess in the said stem 6 for pressing the piece 5 downward to open the valve 2 to liberate gas from the container 1.

The plug 12 of the tap is perforated at 13 for the passage of gas and at 14 for the passage of liquid, these perforations being respectively simultaneously brought into communication with the perforations 15 and 16 in the body of the tap 7, the perforations 15 forming continuations with respectively the perforation 17 through the stem 6 for gas and with the pipe 18 screwed at top into the body of the tap the pipe having openings at 19 for the escape of gas into the cask, or receptacle, 20 above the liquid therein. The perforation 14 communicates with the outlet nozzle 21 of the tap and with the passage 16 which opens into the pipe 22. The latter is screwed, at top, into the body of the tap 7, and provided, toward its lower end with a flange 23, there being packing 25 between the said flange 23 and the piece 24, screwed into the lower end of the pipe 18. The piece 24 is perforated at 26 for the passage of liquid from the cask, or receptacle, 20, the ends of the tubes 18 and 22 being near to the bottom of the said cask, or receptacle, as shown in Fig. 1. The pipe 18 passes through a spigot-piece 27, a joint, through which the said tube 18 can slide, being made by the packing 28, held in place by the screw piece 29. The said spigot piece 27 is broadened out at top to present surfaces for hammering it into the hole 30 in the cask, or the like. This hole 30 is closed by a bung when the cask, or receptacle, is not in use.

To apply the apparatus, the tube 18 is drawn up in the socket piece 27, so that the end of the piece 24 is level with, or within, the spigot piece 27, and then the spigot piece is driven into the hole 30, forcing in the bung and becoming fixed in place, and

then the apparatus is forced down (by sliding the tube 18 in the socket piece 27) to the position shown in Fig. 1. When liquid is to be withdrawn, the plug of the tap 7 is turned till the perforations 13 and 14 coincide respectively with the passages 15 and 16 and 21, and, if the condition of the liquid requires the admission of gas thereto, the lever 10 is operated so that gas is liberated from the container 1 by opening the valve 2 and gas (in any quantity controllable by the lever 10) passes through the said valve, through the perforation in the piece 3, and through the perforations 17, 15 and 13, into the tube 18, and, by the perforations 19, into the cask, or receptacle, above the liquid therein, so as to exert pressure thereon and force liquid through the openings 26, up the tube 22, and through the perforations 16 and 14, and out by the nozzle 21 of the tap. When the lever 10 is released, the valve 2 closes, and, as no gas then passes from the container 1, liquid ceases to pass from the nozzle 21 (unless there be still sufficient gas in the liquid to cause it to be expelled) until the lever 10 is again operated, when more liquid passes, but only if the tap be open. By the separately controllable means for admitting gas, any required amount of gas can be readily admitted, while none need be admitted when the condition of the liquid shows that no gas is needed.

We do not limit ourselves to the precise details illustrated, which may be varied

in many ways without departing from our invention.

We claim:—

1. A discharge apparatus comprising a discharge pipe, a tap controlling the same with a supplemental passage therethrough, in combination with a gas pressure appliance mounted on said pipe, comprising a stem communicating with the vessel to be discharged through said supplemental passage in the tap, a sleeve sliding on said stem and adapted to carry a gas capsule, and a lever for sliding said sleeve on said stem to open said capsule, substantially as described.

2. A discharge apparatus comprising a discharge pipe, a tap controlling the same with a supplemental passage therethrough, in combination with a gas pressure appliance mounted on said pipe, comprising a stem communicating with the vessel to be discharged through said supplemental passage in the tap, a spring pressed sleeve sliding on said stem and adapted to carry a gas capsule, a lever pivoted to said sleeve and bearing on said stem whereby the sleeve may be depressed on said stem to open the capsule, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HARRY VAUGHAN RUDSTON READ.

ROBERT HUNTER CAMPBELL.

Witnesses:

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