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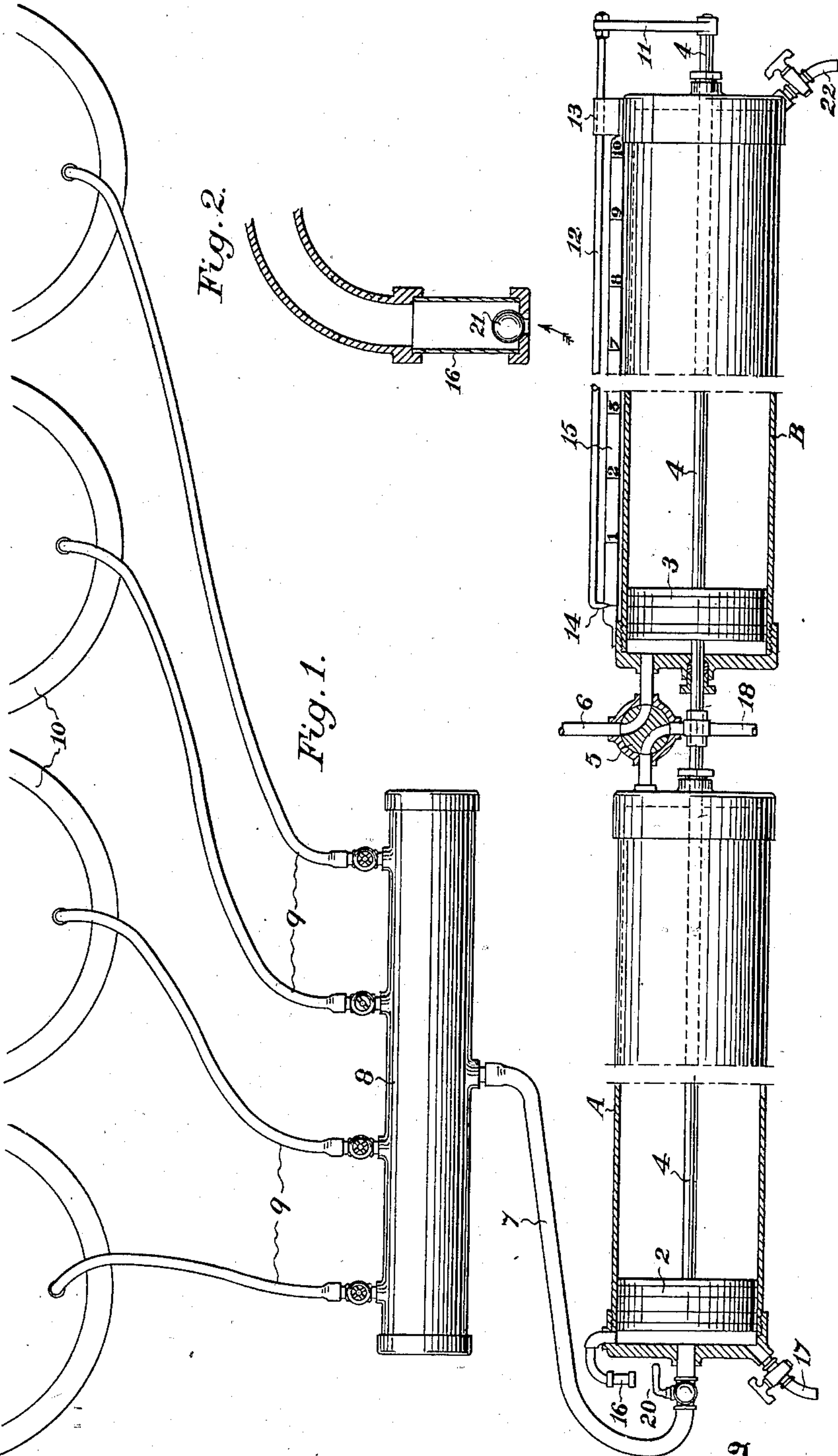
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DEVICE FOR DRAWING STEAM BEER, &c,

(Application filed May 17, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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DEVICE FOR DRAWING STEAM-BEER, &c.

SPECIFICATION forming part of Letters Patent No. 656,418, dated August 21, 1900.

Application filed May 17, 1900. Serial No. 18,961. (No model.)

To all whom it may concern:

Be it known that I, JAMES O'CONNOR, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Devices for Drawing Steam-Beer and the Like; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus which is designed for drawing liquids under pressure; but it is especially useful when connected with casks containing what is known as "steam-beer" or beer in which carbonic-acid gas is contained to produce a high pressure and head within the cask.

It consists of connections between one or more casks and a distributing-chamber and connections between said chamber and a cylinder containing a piston which is reciprocable within the cylinder, so that when beer is admitted into the cylinder the piston will be moved toward the opposite end until the desired amount of beer has been admitted, which is shown by a suitable recording device. The beer is drawn from the cylinder through a discharge-cock, and the gas in the beer is so diffused and caused to escape from the beer that little or no foam results when it is drawn from the cylinder. A second cylinder in line with the first contains a piston, the piston-rod connecting the pistons in both cylinders, so that they move in unison. A four-way cock is interposed between the cylinders, and water under pressure is brought through this cock and allowed to enter the second cylinder while the beer is entering the first and the cock is turned so as to allow the water to escape from this cylinder and to enter the first cylinder to return the piston therein to its normal position after the beer has been drawn.

My invention also comprises details of construction to be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a part longitudinal section and elevation of the device. Fig. 2 is a vertical section through the valve-chamber.

A and B are two horizontally-disposed cylinders standing in line with each other and having pistons 2 and 3, fixed to a piston-

rod 4, which is common to both and which also extends through the rear end of the cylinder B, with suitable packing where it passes out of the cylinders to prevent leakage in any usual or well-known manner. As here shown, the apparatus is placed in any suitable position with relation to casks 10, which contain the beer or liquid under pressure to be drawn.

8 is a receiving and distributing chamber which is connected by pipes 9 with any number of casks 10, the object being to equalize the pressure within this chamber from casks which are full and under the highest pressure and those from which the pressure has been partly exhausted. The pressure within the chamber 8 will always be sufficient to force the beer out through the pipe 7, which connects the chamber 8 with the cylinder A. This pipe has a suitable cock or connection 20, by which the liquid may be allowed to flow into the cylinder A or to be cut off therefrom. From the opposite end of the cylinder B the piston-rod 4 extends and carries an arm 11. This arm has fixed to it a slidable rod 12, moving in a guide at 13, and it has an indicating-arm or pointer 14, adapted to travel over a scale 15, suitably placed with relation to the apparatus. As here shown, it is in line with and outside of the cylinder B; but it may occupy any desired position. When the cock 20 is opened, the beer from the equalizing and distributing chamber 8 will flow into the cylinder and by reason of its pressure will force the piston 2 along the cylinder until by the register 14 15 as many glasses of beer have been admitted as it is desired to draw at one time.

17 is a cock through which the beer may be drawn, and the cock 20 being closed so that no more beer enters the cylinder A it will be seen that the beer within the cylinder is then subjected to only as much pressure as the amount of gas contained within the cylinder will produce. In order to reduce this pressure still further if found desirable, I have shown a four-way cock 5 located between the cylinders A and B, and a pipe 6 brings water to this cock from the main or under such pressure as is obtainable. When this cock is turned as shown in the sketch, a passage

connects the supply-pipe 6 with the cylinder B, so that water admitted into this cylinder will move the piston 3 backward and with it the piston 2 in the cylinder A. This acts to
 5 reduce the pressure in the cylinder A, if it be found desirable, so that by enlarging the space within the cylinder A the gas within the beer will be allowed to escape therefrom to fill the enlarged space, and the beer can
 10 thus be drawn in a correspondingly-solid condition from the cock 17. An air-cock 22 at the rear end of cylinder B allows air to pass in and out. Connected with the upper part of the cylinder A and the chamber in
 15 which the beer is contained is a valve-chamber 16, having within it a valve 21, opening upwardly. The sides or some portion of this chamber 16 may be made of transparent material, so that the interior of the chamber is
 20 visible. When the beer has been drawn down to a point where there is no gas-pressure in the chamber, the remainder of the beer can be drawn out through the cock 17 by gravitation, the air to supply its place entering through the valve-chamber 16 by the
 25 automatic raising of the valve 21, which in the present case is shown as a ball-valve. After the beer has been drawn and it is desired to again return the piston 2 to the end
 30 of its cylinder the cock 5 is turned so that the inlet-passage to the cylinder B is closed, and an outlet-passage 18 is connected therewith, while the inlet-passage is opened to the cylinder A behind the piston 2. The pressure thus produced from the pipe 6 will force
 35 the piston 2 to the end of the cylinder, thus expelling the air or gas or any small amount of beer that may remain within the cylinder through the cock 17. This cock being again
 40 closed whenever it is desired to draw more beer the cock 20 will be opened and beer from the equalizer and distributor A will again be admitted. By this arrangement and combination of parts I am enabled to
 45 regulate the gas-pressure from any number of casks, so that the beer will always contain a sufficient amount and not become flat before it is drawn, and by the movable pistons in the cylinders and the recording attachment I am enabled to draw as many glasses
 50 of beer as have been called for without waste. The gas-pressure can then be reduced or increased upon the beer by means of the water-pressure connected with the two cylinders, so that the beer can always be drawn in any
 55 desired condition.

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

60 1. The combination with casks or receptacles containing beer or liquid under pressure of an equalizing-chamber, connections between a plurality of the containing-casks and said chamber, a cylinder, a piston movable
 65 therein and connections between the equalizing-chamber and said cylinder whereby the liquid is delivered into the cylinder, means

for indicating the amount of liquid delivered to the cylinder, and means for controlling the liquid supplied to the cylinder.

70 2. The combination with casks or the like containing beer under pressure of an equalizing and distributing chamber, pipes connecting the casks with said chamber, a cylinder having a piston movable therein and a gage
 75 or indicator carried by the piston, a pipe connecting the equalizing-chamber with the cylinder, and a controlling-cock whereby an amount indicated by the gage can be delivered into the cylinder.

80 3. The combination with casks or the like containing beer under pressure of an equalizing and distributing chamber, pipes connecting a plurality of the casks therewith, a cylinder and a valve-controlled connection
 85 between said cylinder and the equalizing-chamber whereby liquid may be admitted into the cylinder, a gage or register connecting with the movable piston to indicate the amount thus admitted, and a cock through
 90 which the contents of the cylinder may be withdrawn.

95 4. The combination with one or more casks containing beer under pressure of a cylinder having a piston movable therein, a pipe having a valve or cock through which beer may be admitted into the cylinder and the piston
 100 moved toward the opposite end, an indicator carried by the piston to show the amount admitted to the cylinder, a cock by which the contents of the cylinder can be withdrawn after the admission-cock has been closed, and an inwardly-opening valve through which air
 105 may be admitted to the cylinder.

110 5. The combination with one or more casks containing beer under pressure, of a cylinder having a piston movable therein, a pipe through which liquid may be admitted from the cask to the cylinder, a controlling-valve by which the supply is cut off, means cooperating
 115 with the piston and indicating the amount of liquid delivered to the cylinder, a cock through which the beer within the cylinder may be drawn, and a valve through which water under pressure may be admitted to the opposite side of the piston to return it to its
 120 normal position.

125 6. The combination with one or more casks containing beer under pressure, of a cylinder having a piston movable therein, a pipe with an admission-cock through which beer is allowed to enter the cylinder and move the piston toward the rear, a second cylinder
 130 axially in line with the first-named cylinder having a piston fixed upon the piston-rod common to both whereby the pistons move in unison, a gage and an indicator carried by said second piston, to indicate the amount of liquid delivered to the first-named cylinder, a four-way cock through which water under
 135 pressure is admitted to the second cylinder to move it in unison with the movements of the piston in the first cylinder, and means for reversing the valve to allow the water to

escape through said cylinder and to return the first piston to its normal position.

7. The combinatton with one or more casks containing beer under pressure of cylinders 5 standing in line with each other having pistons fixed to a piston-rod common to both whereby the pistons move in unison, connections between the beer-casks and one of the cylinders, and a cock by which beer under 10 pressure may be admitted and the piston in said cylinder forced backwardly, a four-way cock with passage which is turned to admit water into the second cylinder while its piston is moving in unison with that of the first 15 cylinder, a four-way cock to admit water into the rear of the first cylinder to move its piston after the beer has been withdrawn from the cylinder, and a second passage which connects either of the cylinders with a discharge-pipe. 20

8. The combination with casks containing beer under pressure of cylinders standing

in line, pistons movable in said cylinders and connected by a piston-rod common to both, a pipe by which beer from the casks may be admitted to the end of one of the cylinders, and 25 a controlling-cock therefor, means including an indicator and gage coöperating with one of the pistons to indicate the amount of liquid delivered to the first-named cylinder, 30 a four-way cock intermediate between the cylinders and adapted to deliver water under pressure into the first cylinder upon the opposite side from the beer-chamber, or into the second cylinder whereby the pressure in the 35 beer-chamber may be regulated, and a draw-off cock connected with the beer-chamber of said cylinder.

In witness whereof I have hereunto set my hand.

JAMES O'CONNOR.

Witnesses:

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