(No Model.) 2 Sheets—Sheet 1.

F. C. C. ISHÖŸ & H. P. LINDEROTH.

DEVICE FOR HANDLING FERMENTED LIQUIDS.

No. 490,565. Patented Jan. 24, 1893.

Fig. 1.

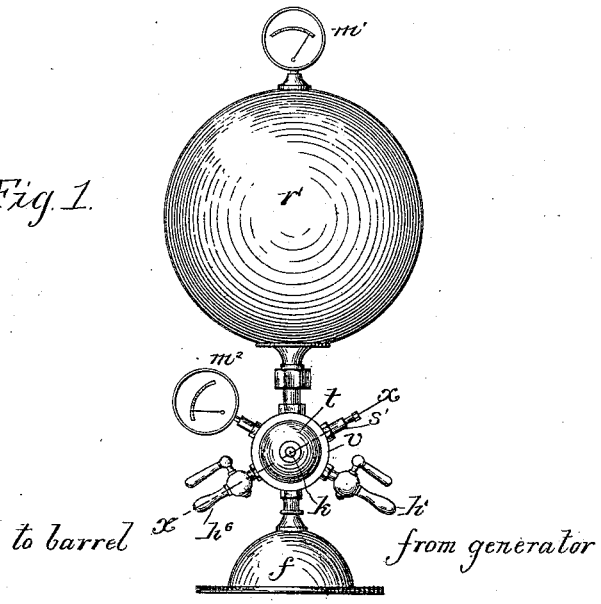

Fig. 2.

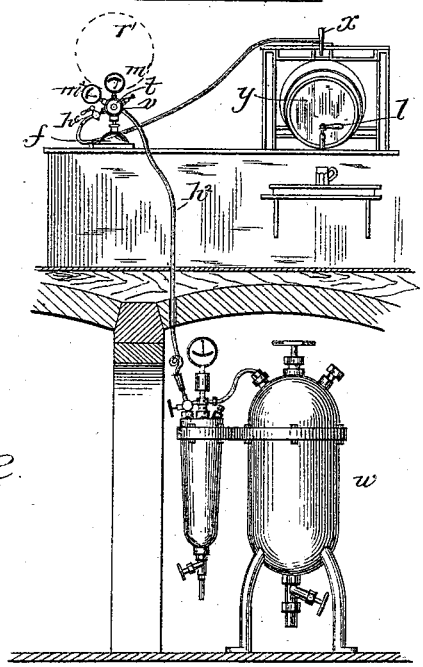

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Fig. 3.

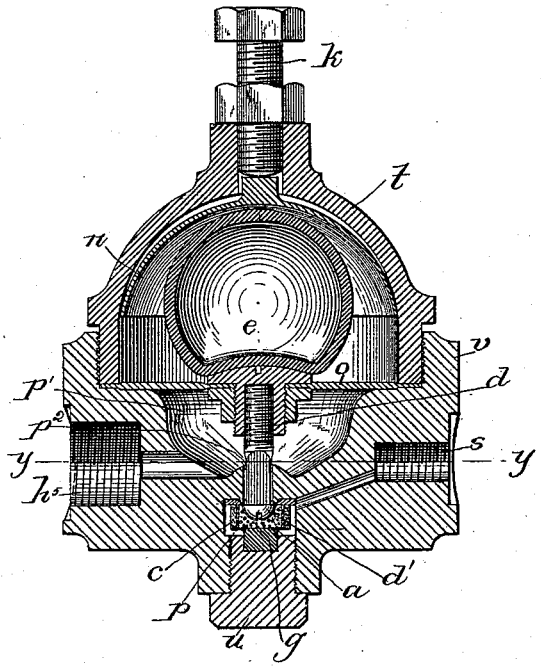
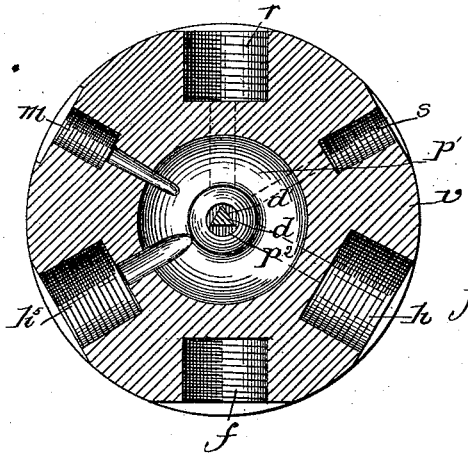


Fig. 4.



to cask h^5 from generator

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UNITED STATES PATENT OFFICE.

FREDERIK CARL CHRISTIAN ISHÖŸ AND HENRIK PERSJEN LINDEROTH,
OF COPENHAGEN, DENMARK.

DEVICE FOR HANDLING FERMENTED LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 490,565, dated January 24, 1893.

Application filed December 4, 1891. Serial No. 414,069. (No model.)

To all whom it may concern:

Be it known that we, FREDERIK CARL CHRISTIAN ISHÖŸ and HENRIK PERSJEN LINDEROTH, subjects of the King of Denmark, residing at Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Handling Fermented Liquids; and we do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our present invention relates to improvements in devices for handling fermented effervescing liquors from barrels or casks.

The object of our invention is to quickly and readily draw off the liquor for use.

Another object of our invention is to always keep the liquor in the barrels at a certain stationary pressure, and to be able to readily increase or diminish this pressure.

A further object of our invention is to provide means whereby the carbonic acid gas will always be kept within the liquid.

In the ordinary manner of drawing liquor, for retailing purposes, the liquor is stored within a cask or barrel, and is kept at a certain degree of compression. When the liquor is wanted for use it is drawn off in any suitable manner. It will be seen that as the liquor is drawn the pressure will also diminish, until when the barrel is nearly empty there will not be sufficient pressure to keep the carbonic acid gas in suspension within the liquor, which will make the remaining liquor nearly worthless. This carbonic acid gas, which constitutes the effervescing property of the liquor, will escape through leaks in the barrel and through the pores of the wood of which the barrel is constructed.

Our invention consists generally of using a cask or barrel of ordinary construction containing liquor and connecting it with a source of carbonic acid gas under pressure, whereby this gas can be admitted at will into the barrel to take the place of that lost through leakage.

Our invention further consists in means whereby the pressure of the carbonic acid gas may be automatically kept uniform.

In order to better understand our invention, attention is called to the accompanying drawings in which:

Figure 1, is a detail view of a portion of our invention, Fig. 2, is a side view of our complete invention, Fig. 3, is a sectional view taken on the lines $x\,x$, of Fig. 1. Fig. 4, is a sectional view taken on the lines $y\,y$, of Fig. 3.

In all of the several views like parts are designated by identical letters and figures of reference.

A barrel or cask y, of liquor is placed at any convenient point, so that its contents may be readily drawn, but it is preferably placed over the bar, as shown in Fig. 2. This cask is placed upon one of its sides so that its contents can be drawn off through faucet or tap 1.

At any convenient point adjacent to the aforesaid cask is a device, which, for lack of a better term, we will call the equalizing device. This device will now be described: It consists of a body v, in the form of a short or contracted cylinder opened at both ends. One of these ends is closed by means of a bell-shaped cap or cover t; and the other by means of a screw plug u, dividing the body v, into two spaces or chambers p, and p'. The space p we will designate as high pressure chamber, and the space p' as the low pressure chamber. Opening into the high pressure chamber are the openings h, s and r; and into low pressure chamber, are the openings h^5 and m. The two chambers p and p', communicate with each other by means of the opening or passage p^2. Within the chamber p', is a diaphragm o, secured in place by means of the bell-shape cover t, being screwed down upon its edges. This diaphragm o, divides the low pressure chamber p', into two parts. In the upper or forward part is a hollow rubber ball e, secured to the diaphragm o. Upon this ball presses a collar n, which is in turn forced against the ball e, by the adjusting screw k. The head of the screw passes out through the cover t, and terminates in a nut or bolt head, to which a wrench can be applied, although, any suitable form of handle might advantageously be employed. Screwed into the bottom of the diaphragm o, is a screw d, which passes through the passage p^2, into the chamber p. This passage p^2, is of such a size as

to admit the body of the screw d, only, thereby allowing the head d' to serve the purpose of a valve connecting the passage p' with the chamber p.

Within the chamber p, and surrounding the mouth of the passage p^2, is a coarse metallic screen or sieve a, which serves as a backing to a finer strainer c of woolen cloth or similar textile fabric to serve the purpose of a filter. Above the body v, is a spherical reservoir r', provided at its top with a pressure gage m'. It is preferred to make this reservoir of an ornamental nature, such as of polished brass or copper &c. A safety valve s', is placed within the opening s, and an ordinary form of faucet or cock, is placed in both of the openings, h and h'. A pressure gage m^2 of a construction similar to m' connects with the opening m. A base f, is screwed into the body v, of the device, and serves to support the same.

At any convenient point is placed a suitable carbonic acid gas generator w, that illustrated in the drawings, being known as the "Matthews" generator, but we desire it explicitly understood that we do not limit ourselves in any way to that form of generator shown. This generator is connected with the equalizing device through a suitable tube by means of a cock or faucet h, Fig. 1.

The operation of our improved device, is as follows:—Carbonic acid is first formed in any well known manner and forced into the high pressure chamber p, (Fig. 3); the gas then enters the low pressure chamber by way of the passage p^2, and is effectually cleansed of impurities by means of the woolen fabric c, contained within said chamber p and passes through the opening 3', into the barrel or cask in use through the bung hole x. The gas is allowed to flow uninterruptedly, in this way until the desired degree of pressure is ascertained by means of the gage m^2. The screw k, is now screwed outward until the pressure of the gas upon the diaphragm o, over comes the elasticity of the rubber ball e, when the valve d will be closed. The gas is allowed to flow into the reservoir r', to any desired degree of pressure, which can be ascertained by means of the gage m', when the cock h, can be closed, stopping the flow of gas into the equalizing device. Now as the liquor is drawn from the barrel the gas will enter from the low pressure chamber to take the place of the liquor drawn off. As the pressure gradually falls from within the low pressure chamber, the elasticity of the ball e, becomes greater, than the pressure of the gas within the low pressure chamber, thus opening the valve d, by means of the diaphragm o, and allowing more gas to enter.

Having now described our invention what we claim as new therein, and desire to secure by Letters Patent, is as follows:—

1. In an improved device for impregnating liquors with carbonate acid gas, consisting of a high pressure chamber, connected with a low pressure chamber by means of a passage; a valve within the passage; a flexible diaphragm within the low pressure chamber; an elastic sphere pressing against said diaphragm and means substantially as described for regulating the pressure upon the said elastic sphere, substantially as and for the purposes described.

2. An improved device for impregnating liquor with carbonate acid gas, consisting of a high pressure chamber provided with a suitable strainer, and communicating with a low pressure chamber by a suitable passage; a valve within said passage and a diaphragm within said low pressure chamber and connected with the aforesaid valve, substantially as and for the purposes described.

3. An improved device for impregnating liquor with carbonate acid gas, consisting of a high pressure chamber communicating with a low pressure chamber by means of a passage; a valve within said passage and secured to one side of the diaphragm; an elastic sphere secured to the opposite side of the diaphragm and a hood or similar device adjacent to the opposite side of the sphere, and an adjusting screw for varying the pressure on the aforesaid elastic sphere, substantially as and for the purposes described.

This specification signed and witnessed the 8th day of September, 1891.

FREDERIK CARL CHRISTIAN ISHÖY.
HENRIK PERSJEN LINDEROTH.

Witnesses:
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