(No Model.)

N. OLSON.

SAFETY VENT FOR BEER KEGS.

No. 316,644. Patented Apr. 28, 1885.

Fig. 1.

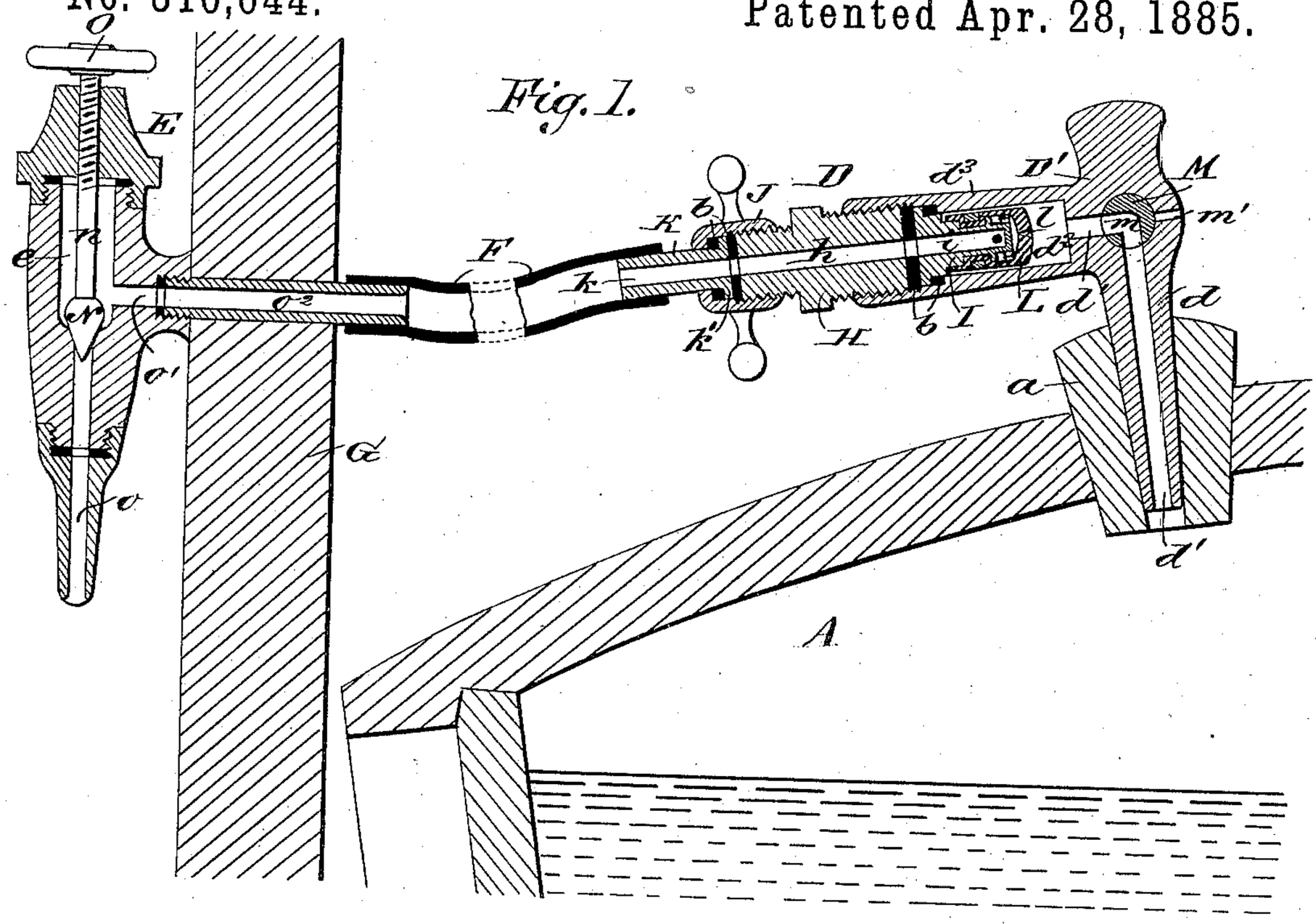

Fig. 4.

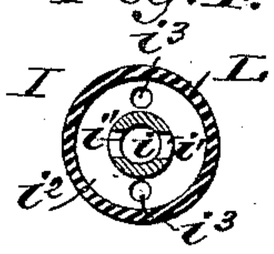

Fig. 2.

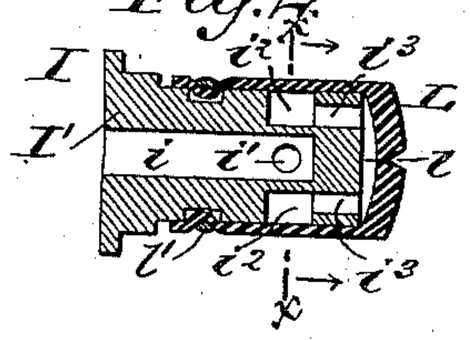

Fig. 3.

Fig. 5.

WITNESSES:

Theo Beyer

C. Sedgwick

INVENTOR:

N. Olson

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

NIELS OLSON, OF PERTH AMBOY, NEW JERSEY.

SAFETY-VENT FOR BEER-KEGS.

SPECIFICATION forming part of Letters Patent No. 316,644, dated April 28, 1885.

Application filed January 29, 1885. (No model.)

To all whom it may concern:

Be it known that I, NIELS OLSON, of Perth Amboy, in the county of Middlesex and State of New Jersey, have invented a new and Improved Safety-Vent for Beer-Kegs, of which the following is a full, clear, and exact description.

My invention relates to safety-vents for kegs or barrels containing beer or other fermented liquids, and has for its object to facilitate the drawing of the liquid from the keg by allowing proper vent to the liquid, and provide for the escape of gases, so as to keep the liquid in a fresh condition and avoid waste of it.

The invention consists in particular constructions and combinations of parts of the vent devices, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation through my improved vent devices with the air-inlet tube broken away. Fig. 2 is an enlarged longitudinal sectional elevation of the plug-valve. Fig. 3 is an inner end view thereof. Fig. 4 is a cross-section through the valve on the line *x x*, Fig. 2; and Fig. 5 is a diagram view illustrating the complete connections for drawing beer from one keg, and an arrangement of air-pressure pipes with two kegs, each having my improved vent devices.

The letter A indicates a beer keg or barrel, provided with the usual vent-plug, *a*, and connected by the pipe B with the faucet or tap C, from which the beer is drawn.

My improved vent consists of the two valved vent devices D E, connected by a rubber or other suitable tube, F. The device D is to be connected with the beer keg or barrel in the cellar or beneath the counter or bar G, and the device E is to be set into the counter or bar G in position to be operated by the attendant who draws the beer from the tap C.

I particularly describe the vent device D as follows: It is made with a right-angularly bent case, D′, provided with a tapering portion or arm, *d*, which is driven into the vent-plug *a* and has a channel, *d′*, which communicates with the interior of the keg A and opens into a larger channel, d^2, in the other arm, d^3, of the case.

Into the open end of the arm d^3 of the case D′ is fitted—by screw-threads preferably—the removable plug H, which serves to hold the air-vent valve I in the channel d^2, and on the outer end of the plug H is fitted—preferably by screw-threads, as shown—the coupling J, in which is held by its inner shoulder, *k′*, the nipple K, to which the air-tube F is attached in any suitable manner. Rubber or other approved packings or washers, *b*, are set between the meeting ends or faces of the parts, to insure air and liquid tight joints. (See Fig. 1.) The parts H I K have longitudinally-ranging central passages through them, as at *h i k*, respectively, which coincide to allow the passage of air from the tube F to the inner end or head of the valve I, which valve is constructed as best shown in Figs. 2, 3, and 4 of the drawings, and as next described.

The letter I′ indicates the body of the vent-valve I, which is apertured lengthwise at *i*, as above stated. The aperture *i* does not extend to the inner end of the valve, but it connects by side passages, *i′*, with a circumferential groove, i^2, from which longitudinally-ranging holes i^3 are made, preferably in positions at right angles or considerably out of line with the passages *i′* and clear through the inner end portion of the body I′ of the valve. A rubber or elastic nipple, L, is fitted over the inner end of the valve-body I′, and, as shown, is held thereto by a band, *l′*, which compresses the material of the nipple into a circumferential groove in the body of the valve. The flexible inner end of the nipple normally bulges out somewhat from the end of the valve-body to open the air-passages i^3, and the nipple L has a slit, *l*, in its end, which will allow air to pass through the passages *i i′* i^2 i^3 to the channels d^2 *d′* and the keg A. The nipple-slit *l* crosses the end of the valve-body between or out of line with the air-passages i^3 i^3, so that the pressure of the beer will act to close the slit *l* and press the end of the nipple L to the solid end of the valve-body, thus making a tighter closure of the plug-valve I, to prevent

the backflow of beer, than is afforded by flat tubular flexible slitted valves of the ordinary construction.

At the angle of the passage *d'* a plug, M, is fitted in case D', and has an angular passage, *m*, which may be connected with both branches of passage *d'*, or with the branch leading directly to the keg and the small passage *m'*, which opens from the outer air into the seat of the plug M.

The vent device E consists of a suitable case, chambered at *e* to receive a valve, N, which has a screw-stem, *n*, fitted in the case, and provided with a hand-wheel, O, to draw back the valve and open a passage, *o*, leading in this instance from the end of the valve-case, and allow the air to pass through a passage, *o'*, opening into chamber *e*, and thence through the tube or nipple connection o^2 to the pipe F and vent device D to the keg A.

The operation is as follows: When a keg, A, has been emptied, the pipe B will be disconnected from it, and the coupling J will be unscrewed from plug H to disconnect the pipe F. The vent-case D' will then be taken from the emptied removed keg, and will be connected by its tapered arm *d'* with a full keg, which then will be placed in the ice-box directly beneath the ice-rack P, and the draft-pipe B and coupling J will be connected, respectively, with the bung-hole of the keg and the plug H, and the valve-plug M may be turned to connect passages *d' m'*, to allow excess of gases to escape from the keg, and the plug M will then be turned back to connect the interior of the keg A with the vent-case chamber d^2, in which the air-valve I is placed. It is evident that when the valve N is opened occasionally the air will pass freely through the vent device E, pipe F, nipple K, plug H, and the sinuous passages *i i' i² i³*, and the slit *l* of the valve I, and the passages d^2 *d'* into the keg A, and that the beer cannot pass from the keg beyond the valve I, as the pressure of the beer on the elastic nipple L will close its end slit, *l*, and press it against the valve-body I', to effectually close the valve, as hereinbefore described. When the keg A is placed so that the outlet from the keg at the pipe B is above the tap C, the beer may be drawn by its own pressure or gravity and the pressure of the gases generated by it, and the valve N will be opened occasionally to give sufficient vent to the liquid.

Fig. 5 illustrates the application of my vent device to a couple of kegs, A A', whose beer-outlets are below the tap C. In this case the air-pressure pipe R, which connects at its top with any ordinary pressure device used for this purpose, has branch pipes *r r*, which lead up to and are connected by a suitable nipple with the end of the vent device E of each keg, so as to communicate with the vent-passage *o'*, which is closed by the valve N, and the other passage, *o*, of the vent device E communicates with a vent-tube, F, which is attached to vent E, and leads down to the nipple K or coupling J of the vent device D, which is attached to the keg, from which the draft-tube B leads upward to the tap C, fixed in the bar or counter near the vent device E. It is evident that the valve N may be opened more or less at any time, to allow the pressure from pipes R *r*, through the vent E and pipe F to the keg, to force the liquid up through the pipe B to the tap C, and at night the valve N will be left fully open to leave the full pressure on the beer, and when valve N is again closed, when the beer is to be drawn, the valve M in vent D may be set to let any excess of pressure escape from the keg through passages *d' m'*, and be again turned to connect passages *d' d²*, as in Fig. 1, and the beer will then draw easily. The valve S, which is fitted in pipe F, may be closed at any time before uncoupling the vent device D from an emptied keg to transfer it to a full keg, so that the closed valve will prevent escape of the air passing from pipe R, should the valve N be inadvertently left open. By this method any number of kegs may be on tap at once, and the beer cannot work over from one keg to another, so that the beer will be kept in good condition and may be drawn off without waste.

It is evident that by making the vent device so its main portion D' may be disconnected from the coupling J said part D' may be driven into the keg when its vent-plug stands outside of the edge of ice-rack P, and when the keg is pushed back the coupling J may be screwed or attached to plug H; hence the ice-rack may be set low down near the kegs, or so as just to clear the vent D, to keep the beer cooler, which cannot be done when room must be given between the kegs and the ice for driving vent devices into the kegs by a hammer or mallet. The nipple K may of course be formed in one piece with the coupling J, in which case the nipple will turn in the pipe F when the coupling is detached from the plug H, as will be readily understood.

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

1. A safety-vent for beer-kegs, consisting of the vent devices D E and an air-pipe, F, said vent device E having a valve to admit air to pipe F, and the vent device D made with a case, D', having passage *d'* and chamber d^2, and provided with a valve, I, and a retaining-plug, H, apertured at *h*, and said valve I having a sinuous air-passage, *i i' i² i³*, and the elastic nipple L, provided with an end slit, *l*, and the detachable coupling J, substantially as herein set forth.

2. In safety-vents for beer-kegs, the vent device D, made with air-passages *d' m'*, a valve-plug, M, provided with a passage, *m*, a valve, I, provided with a sinuous air-passage, and an elastic nipple having an end slit, *l*, and a plug, H, holding valve I in place, and adapted to receive the air-pipe coupling, substantially as herein set forth.

3. In safety-vents for beer-kegs, the valve

I of vent device D, made with a sinuous air-passage, $i\ i'\ i^2\ i^3$, and with an elastic nipple, L, having an end slit, *l*, substantially as herein set forth.

4. In safety-vents for beer-kegs, the valve I of vent device D, made with a sinuous air-passage, $i\ i'\ i^2\ i^3$, and with an elastic nipple, L, having an end slit, *l*, which is set out of line with the apertures i^3, so that the slit shall close against the solid part of the end of the valve, substantially as herein set forth.

NIELS OLSON.

Witnesses:
CHR. KROGH,
AUGUST HEMLIKE.