

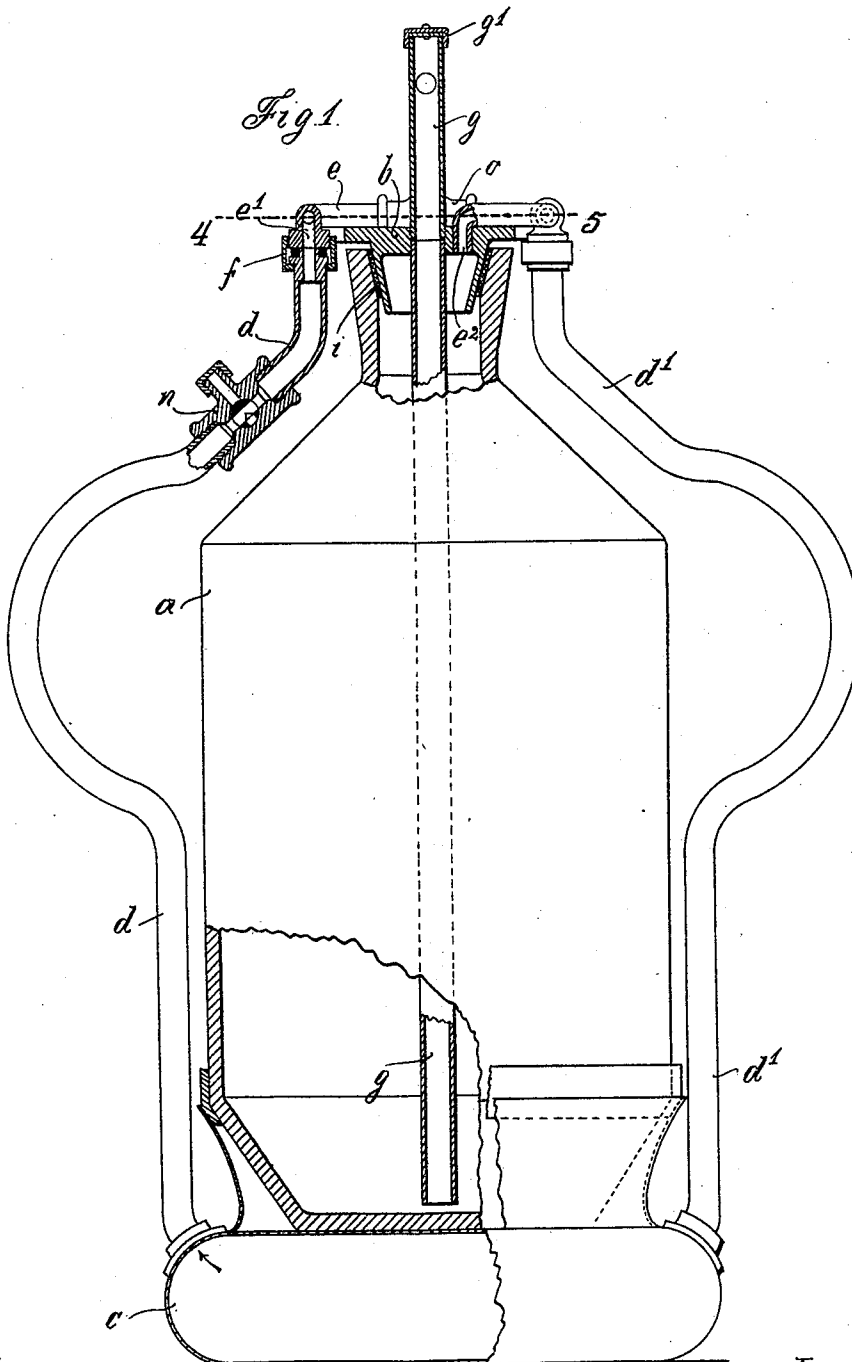
(No Model.)

2 Sheets—Sheet 1.

A. FRIEDEBERG.
MEANS FOR KEEPING LIQUORS UNDER CARBONIC ACID DURING
TRANSPORT.

No. 583,465.

Patented June 1, 1897.



Witnesses:
Emil Kayser
Arthur Walther

Inventor:
Alfred Friedeberg
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Attorney.

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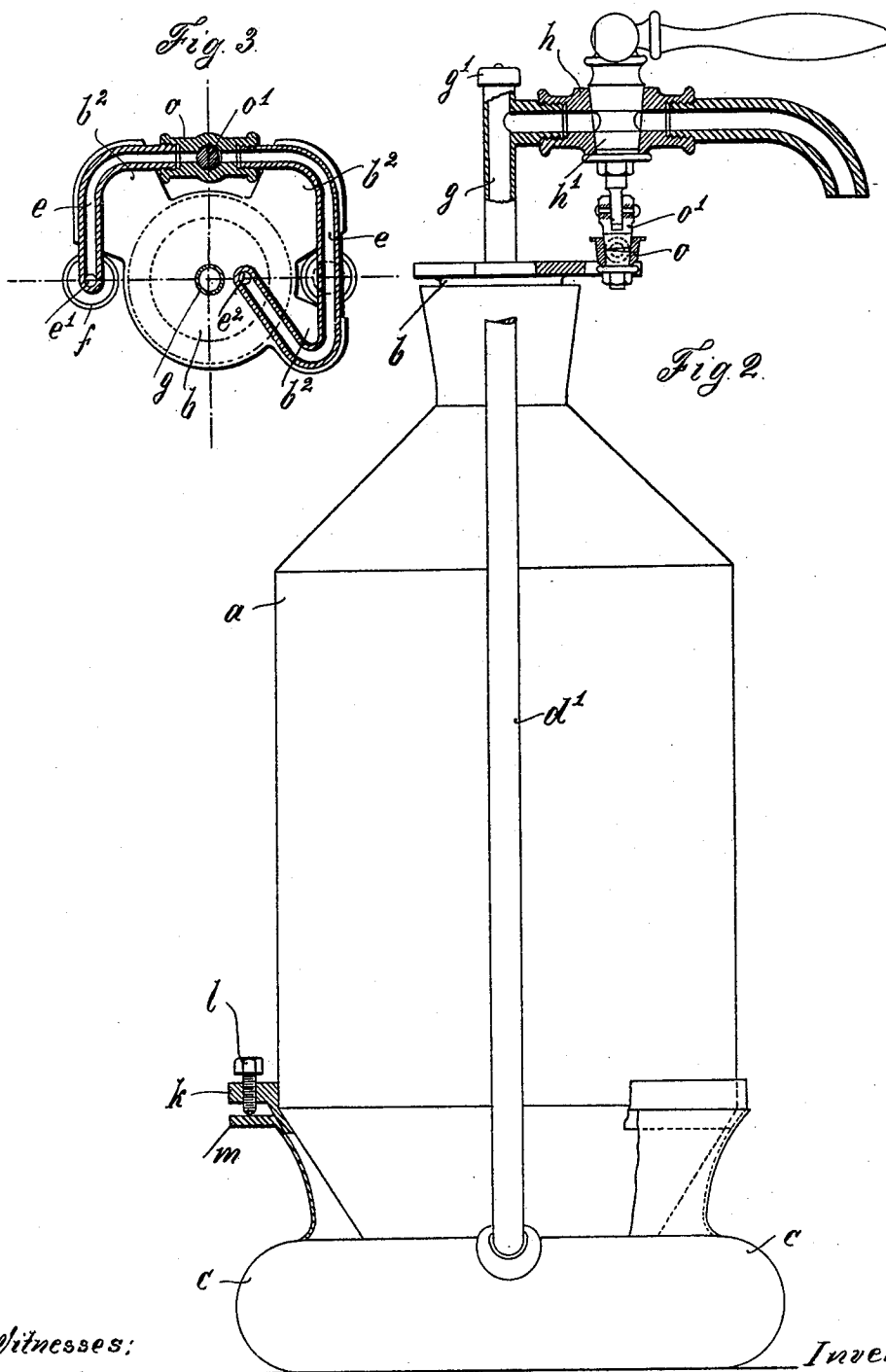
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UNITED STATES PATENT OFFICE.

ALFRED FRIEDEBERG, OF BERLIN, GERMANY.

MEANS FOR KEEPING LIQUORS UNDER CARBONIC ACID DURING TRANSPORT.

SPECIFICATION forming part of Letters Patent No. 583,465, dated June 1, 1897.

Application filed June 15, 1896. Serial No. 595,700. (No model.)

To all whom it may concern:

Be it known that I, ALFRED FRIEDEBERG, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in the Means for Keeping Liquors Under Carbonic Acid During Transport and Storage, of which the following is an exact specification.

The vessels, bottles, or jars for keeping liquors, especially beer, under carbonic acid during transport and store, which have come in vogue of late, are possessed with a number of drawbacks that greatly diminish the value of the thing. It is, for instance, not favorable to attach the carbonic-acid reservoir to the cover or lid of the vessel, and to let said reservoir reach down into the interior of the vessel, or into the neck of the same, respectively, in that said reservoir in that case can be but small, and the carbonic acid must therefore be under a comparatively high tension or pressure. This necessitates the use of a reduction-valve, which not only greatly increases the price of the apparatus, but also makes it undesirably complicated, and is, moreover, very liable to get out of order. Furthermore, in case the metal reservoir containing the carbonic acid is to be hindered from coming in contact with the beer there is requisite a vessel, bottle, or jar of unnecessary size, which of course makes the handling of the vessel difficult. Finally, cleaning the vessel and filling the same can be effected only after a rather extended dismounting of the various parts, which cannot by any means be considered as advantageous for the continuous good working of the apparatus. The abovesaid drawbacks, as well as some other ones of less importance, are done away with by the improved arrangements hereinafter described. The main particularities of said arrangements consist, first, in a carbonic-acid reservoir of considerably larger size than employed hitherto being situated below the vessel, bottle, or jar, and special outer pipes connecting said large reservoir with the fittings arranged upon the cover or lid or stopper of the vessel. Said connecting-pipes are preferably arranged diametrically opposite, one to the other, and are curved so as to form handles, so that a special protecting-basket

with a handle or handles may be dispensed with. The two pipes just mentioned (one of which may, in fact, be replaced by a solid rod or bar, as one pipe proper is sufficient for establishing the communication between the carbonic-acid reservoir and the interior of the vessel) are at their upper ends connected with a horizontal tube that is arranged upon the cover or stopper of the vessel, bottle, or jar in such a manner that the connection between said pipes may quickly and easily be interrupted at any desired moment. Said horizontal pipe contains, instead of a reduction-valve, a specially-constructed cock that is rigidly connected with the main cock for letting out the beer. If, therefore, this main cock is operated, the other cock (for the carbonic acid) is operated too, and is opened and closed always together with the said main cock.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the different views, and in which—

Figure 1 is a side view of my improved apparatus, a portion of the upper part and a portion of the lower part being in section. Fig. 2 is another side view of my apparatus, the latter being seen at right angles to the former view; and Fig. 3 is a horizontal section taken on line 4 5 of Fig. 1.

Referring to said figures, *a* is the vessel or jar, and *b* the stopper of the same.

c is the carbonic-acid reservoir, which is arranged below the vessel *a*. Two pipes *d d'*, arranged one diametrically opposite to the other, extend upward from said reservoir *c*, but only one of said pipes *d* is in proper inner connection with *c*.

The stopper *b* is at its upper end broadened or enlarged so as to form a sort of cover or lid, and this latter is furnished with a few horizontal projections *b²*, serving as supports for a bent horizontal pipe *e*. One end *e'* of this pipe is connected to the pipe *d* aforementioned, whereas the other end *e²* of said pipe *e* terminates into the stopper *b*. The connection at *e'* is effected by means of a screw-cap *f*, and a similar connection is made between the upper end of the other vertical pipe *d'* with that portion of the pipe *e* which is situated diametrically opposite to the end *e'* of

the latter. Said connection between the pipes d' and e is such a one that the carbonic-acid gas is not allowed to pass from the reservoir c through the pipe d' into the pipe e , and I wish to call attention to the fact that the pipe d' may well be replaced by a solid rod or bar.

It is to be seen from the above that, first, the carbonic-acid reservoir c may possess a comparatively large size, and that consequently the carbonic-acid gas may possess but a slight tension. This slight tension affords the possibility of dispensing with a special reduction-valve, as has already been mentioned in the preamble. Second, the special arrangement and connection of the pipes d , d' , and e affords the possibility of connecting the bottle or jar with the whole of the fittings simultaneously with establishing the connection between said pipes, and therefore any other special means for connecting the jar with the fittings may be entirely dispensed with.

The stopper b holds the rising pipe g , the upper end of which is closed by a screw-cap g' . The rising pipe g carries shortly below said screw-cap a cock h , the plug h' of which is of special construction, in that said plug is provided with a circumferential groove instead of with a bore. Said groove does not extend around the whole circumference of the plug, but is interrupted or broken by a suitably-arranged portion of the plug lying flush with the other or main portion of the latter.

Another cock o is inserted into the carbonic-acid pipe e , and the plug o' of said second cock is rigidly connected with the plug h' of the cock h , so as to be able to be operated—i. e., opened and closed—together with said first cock. The cock o serves not only for establishing and interrupting the connection between the two portions of the pipe e , but serves also as a substitute for the reduction-valve formerly required. This function of the cock in question results from the particular configuration of the plug o' , in that the circumferential groove of the same (which forms a substitute for a bore) decreases in width from its end to its commencement in such a manner that said commencement passes finally entirely over into the mantle-surface of the plug. This is distinctly to be seen in Fig. 2, and it is further to be seen from Fig. 3 that said groove of the plug o' extends not wholly around the mantle-surface of this plug.

If the cock o is opened, the carbonic acid passes first through the narrowest section of the groove of the plug, and this section increases together with the progressing turning or opening of the cock. The flow of the carbonic acid from the reservoir to the bottle or jar may therefore be regulated perfectly at will, and the flow ceases at the same moment in which the cock h is closed.

In order to obtain a tight connection between the jar a and the stopper b , there is not only arranged a special tightening-ring i between the stopper b and the adjacent portion

of the neck of the jar a , but the whole apparatus is, moreover, furnished with a special device permitting of moving the jar against the stopper. Said device consists of a metal ring k ; Fig. 2, that encompasses the lower portion of the jar or bottle a . The ring k carries some screws l , that rest upon suitably-arranged supports or brackets m , extending upward from the reservoir c . The ring k may therefore be raised together with the bottle or jar a by turning the screws l in the direction of the hands of a clock, and the bottle a is thereby pressed against the stopper b , which is retained in its former position from reservoir c by the mediation of the pipes d and d' .

The carbonic-acid pipe d is furnished with a three-way cock n , that serves for filling the bottle a with beer, as well as for filling the reservoir c with carbonic acid. This is performed in the following manner:

Suppose all the parts afore described be in their proper or final connection. The cocks h and o are fully opened, so that the widest section of the circumferential groove of the plug o' is interposed between the two portions of the horizontal pipe e . The plug of the three-way cock n is now adjusted in such a manner that the upper portion of the pipe d communicates with the outer air, and thereafter the beer-supply pipe (not shown) is introduced so far as to cover the inner end of the cock h . The beer is now allowed to stream through the pipe g into the jar a , and the air displaced by the beer is allowed to escape at e^2 through the first portion of the pipe e , the circumferential groove of the plug o' , the second portion of the pipe e , the upper portion of the pipe d , and through the cock n . After the bottle h has been properly filled the cocks h and o are closed, and the cock n is adjusted in such a way that the lower portion of the pipe d or the reservoir c respectively communicates with the outer air. The cock n is then connected to a carbonic-acid cylinder, and reservoir c is filled with the requisite quantity of said gas, whereafter the plug of the cock n is turned in such a way that the two portions of the pipe d are set in due connection. The carbonic-acid cylinder is then removed from the apparatus, and the latter is now fit for use.

Having thus fully described the nature of my invention, what I desire to secure by Letters Patent of the United States is—

1. The combination with a vessel adapted to receive a liquor, of a reservoir adapted to receive carbonic acid, and arranged below said vessel; fittings for connecting the interior of the latter with the inlets and outlets for the liquor and the carbonic acid, and a pipe connection or pipe connections between said fittings and said reservoir; said pipe or pipes being bent so as to form a handle or handles, for the purpose as described.

2. The combination with a vessel adapted to receive a liquor, of a reservoir adapted to receive carbonic acid, and arranged below

said vessel; a horizontal pipe arranged upon the stopper of said vessel; a vertical pipe or pipes extending from said reservoir up to said horizontal pipe; means for detachably connecting said pipes, and fittings for connecting the interior of the vessel with the inlets and outlets for the liquor and the carbonic acid, for the purpose as described.

3. The combination with a vessel adapted to receive a liquor, of a reservoir adapted to receive carbonic acid, and arranged below said vessel; a horizontal pipe arranged upon the stopper of said vessel; a vertical pipe or pipes extending from said reservoir up to said horizontal pipe; means for detachably con-

necting said pipes; a ring taking around the lower portion of the said vessel; screws adapted to raise said ring together with the vessel against the stopper of the latter; a support or supports for said screws; and fittings for connecting the interior of the vessel with the inlets and outlets for the liquor and the carbonic acid, for the purpose as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALFRED FRIEDEBERG.

Witnesses:

W. HAUPT,

HENRY HASPER.