(No Model.)

C. BARUS.

APPARATUS FOR CARBONATING BEER.

No. 523,450. Patented July 24, 1894.

Fig. 1.

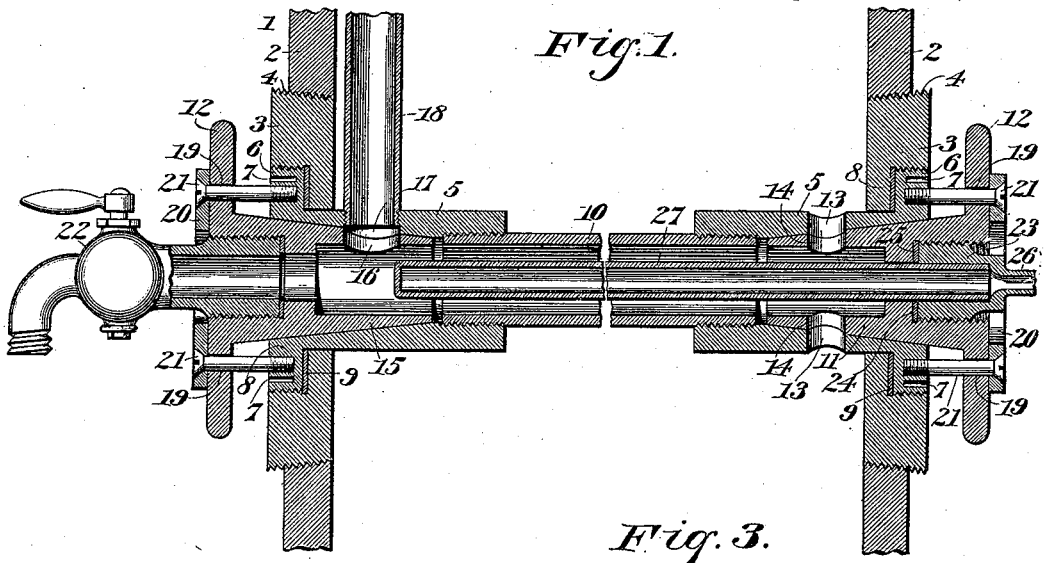

Fig. 3.

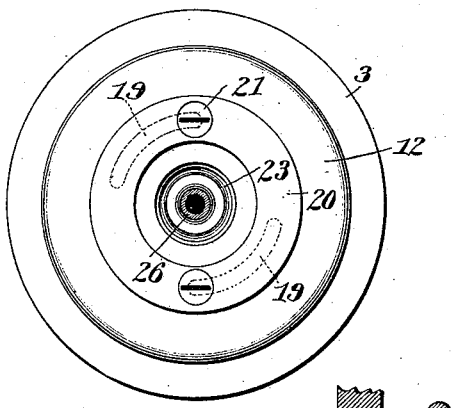

Fig. 2.

Witnesses;
J. M. Wilhurow
G. T. Myers

Inventor,
Carl Barus,
By Joseph Freudenthal & Sons
Attorneys

UNITED STATES PATENT OFFICE.

CARL BARUS, OF WASHINGTON, DISTRICT OF COLUMBIA.

APPARATUS FOR CARBONATING BEER.

SPECIFICATION forming part of Letters Patent No. 523,450, dated July 24, 1894.

Application filed April 20, 1893. Serial No. 471,093. (No model.)

To all whom it may concern:

Be it known that I, CARL BARUS, of Washington, in the District of Columbia, have invented a certain new and useful Improvement in Apparatus for Carbonating Beer, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce an improved apparatus for impregnating beer or the like with carbonic acid gas.

In the accompanying drawings, in which I illustrate a preferable form of embodiment of my invention, so far as relates to the apparatus for carrying out my process, Figure 1 is a central vertical longitudinal section of my apparatus as applied in use. Fig. 2 is a similar view, showing a modification of the same. Fig. 3 illustrates one end of my apparatus designed to show the means for securely attaching the plug to its socket.

Referring to the figures on the drawings: 1 indicates a strong receptacle, as for example a beer keg, provided with heads 2.

3 indicates an annular bushing secured, as by screw threads 4, into the head of the keg. A similar bushing is preferably introduced in each head of the keg directly opposite each other.

5 indicates a socket preferably having an annular head 6, with holes 7 therein which, by a suitable instrument, may be screwed into the bushing 4. The opening in the bushing made to receive the socket is preferably provided with an annular ledge 8 between which and the head 6 of the socket is preferably introduced a packing ring 9. The bushings are preferably united by a pipe 10 extending through the keg and screwing, at its opposite ends, respectively, into the bushings. By this means a connection between the two sockets is made which is able to resist any pressure from within that the keg can resist.

11 indicates a tapered plug fitting exactly into the socket 5. It is preferably provided with an annular head 12 by which it may be rotated within the socket.

13 indicates apertures in one of the sockets and 14 indicates apertures in the plug 11. The apertures in the socket and plug 11 are preferably more than one in number and are located so that they may be brought, as shown in Fig. 1, to register exactly, but which, when the plug is turned about one quarter of a revolution, are brought opposite the respective walls of the socket and the plug, effecting a tight joint between the parts.

15 indicates a plug similar in all respects to the plug 11, except that instead of being provided with two apertures it is provided with a single aperture 16 that is adapted to register with an aperture 17 in its socket. The plug is adapted, in like manner, to make a close joint with its socket. As illustrated, the apertures 13 and 14 open directly into the keg, but the apertures 16 and 17 communicate with the pipe 18 leading into the upper end of the keg. As shown in Figs. 1 and 3 of the drawings, this pipe 18 is within the keg. In the drawings it is illustrated as outside of the keg. In the latter instance the pipe may be made transparent to serve as a liquid gage to show the amount of beer in the keg and to show also whether too much or too little gas is being used. When the pipe is located inside of the keg it is necessary to employ a separate gage. For securing the plugs firmly within their sockets, I prefer to provide curved slots 19 in the heads of the plugs and an annular plate 20 secured by bolts 21, passing through the curved slots and screwing into the heads of the sockets. In this manner the plug, while free to turn in the manner above described, is perfectly secure in its socket. The sockets, as above explained, are immovably fixed within the heads of the keg.

Screwed into the plug 15 is a spigot 22 or in general a hose coupling designed to draw beer from the interior of the pipe 10, when it shall have been, in the manner hereinafter described, carbonated.

In the plug 11 I employ an end piece or reducer 23 that is firmly screwed into the end of the plug and against an annular shoulder 24. A packing ring 25 is preferably employed between the end of the reducer and the shoulder to form between the two a tight joint.

26 indicates a pipe preferably made integral with the reducer and communicating with a source of supply of carbonic acid, or other gas, not illustrated.

27 indicates a minutely porous tube, as for example a tube made of unglazed porcelain,

or baked clay which is closed at its free end and is firmly united at its open end to the reducer. For this purpose, the open end of the porous tube is preferably introduced into a recess in the end of the reducer and is securely cemented in place.

In operation, gas under desired pressure is introduced into the porous tube 27, which is immersed in the liquid to be carbonated. The tube is surrounded by a thin sheet of the liquid entering through the apertures 13 and 14. The gas slowly transpiring through the pores of the tube carbonates the liquid, in which condition, as above suggested, it may be drawn from the spigot 22. The excessive gas is allowed to pass up through the pipe 18 into the upper part of the keg, whence the excessive accumulation may be withdrawn, if desired, as by means of a cock, or the like, not illustrated.

The apparatus is rather better adapted for continuous operation, beer being constantly forced into the keg 1 by a special pipe (not shown) and in like measure constantly withdrawn from the keg through the spigot 22. I do not, however, confine myself to the details of construction herein shown and described, but reserve to myself the right to vary, change or modify them at will within the scope of my invention.

What I claim is—

1. In an apparatus for carbonating liquids, the combination with a receptacle, of a porous body therein adapted to receive gas under pressure, a superimposed conduit through which liquid is adapted to circulate, and means for regulating the circulation through said conduit, substantially as specified.

2. In an apparatus for carbonating liquids, the combination with a receptacle, of a conduit therein communicating with the exterior thereof and apertured at one end, a pipe within said receptacle communicating the opposite end of said conduit with the receptacle above the contained liquid, and a porous body within said conduit adapted to receive gas under pressure, substantially as specified.

3. In apparatus for carbonating liquids, the combination with a socket and pipe, of a plug adapted to fit the socket, openings in the socket and in the plug, a porous body open at one end and closed at the other, and an end piece tightly united to the open end of the porous body and adapted to fit in the plug, substantially as set forth.

4. In apparatus for carbonating liquids, the combination with a socket and plug and openings in the socket, of curved slots in the head of the plug, an annulus outside of the plug, and screws passing through the slots in the head of the plug and securing the annulus in place, substantially as specified.

5. In apparatus for carbonating liquids, the combination with sockets adapted to be secured in opposite ends of a keg, and a pipe adapted to unite the same, of a plug in each of the sockets, a spigot in one plug, and an end piece securely carrying a porous body, closed at its free end, substantially as and for the purpose specified.

6. In apparatus for carbonating liquids, the combination with a pair of sockets, a connecting pipe and plugs, of a spigot in one plug, a pipe leading therefrom and adapted to be connected to the upper part of a receptacle, of an end piece and hollow porous body fitted in the other plug, substantially as and for the purpose specified.

7. In an apparatus for carbonating liquids, the combination with a receptacle, of a conduit provided with inlet apertures contiguous to one end of said receptacle, and communicating with the exterior of the opposite end and a porous body adapted to receive gas under pressure projecting into the conduit beyond the apertures whereby the liquid is forced to circulate around said porous body when drawn off, substantially as specified.

In testimony of all which I have hereunto subscribed my name.

CARL BARUS.

Witnesses:
J. FRED. KELLEY,
JOSEPH L. ATKINS.