

(No Model.)

A. CONVERT & E. RUEFF.

APPARATUS FOR DISTRIBUTING, &c., LIQUID CARBONIC ACID.

No. 334,351.

Patented Jan. 12, 1886.

Fig. 1.

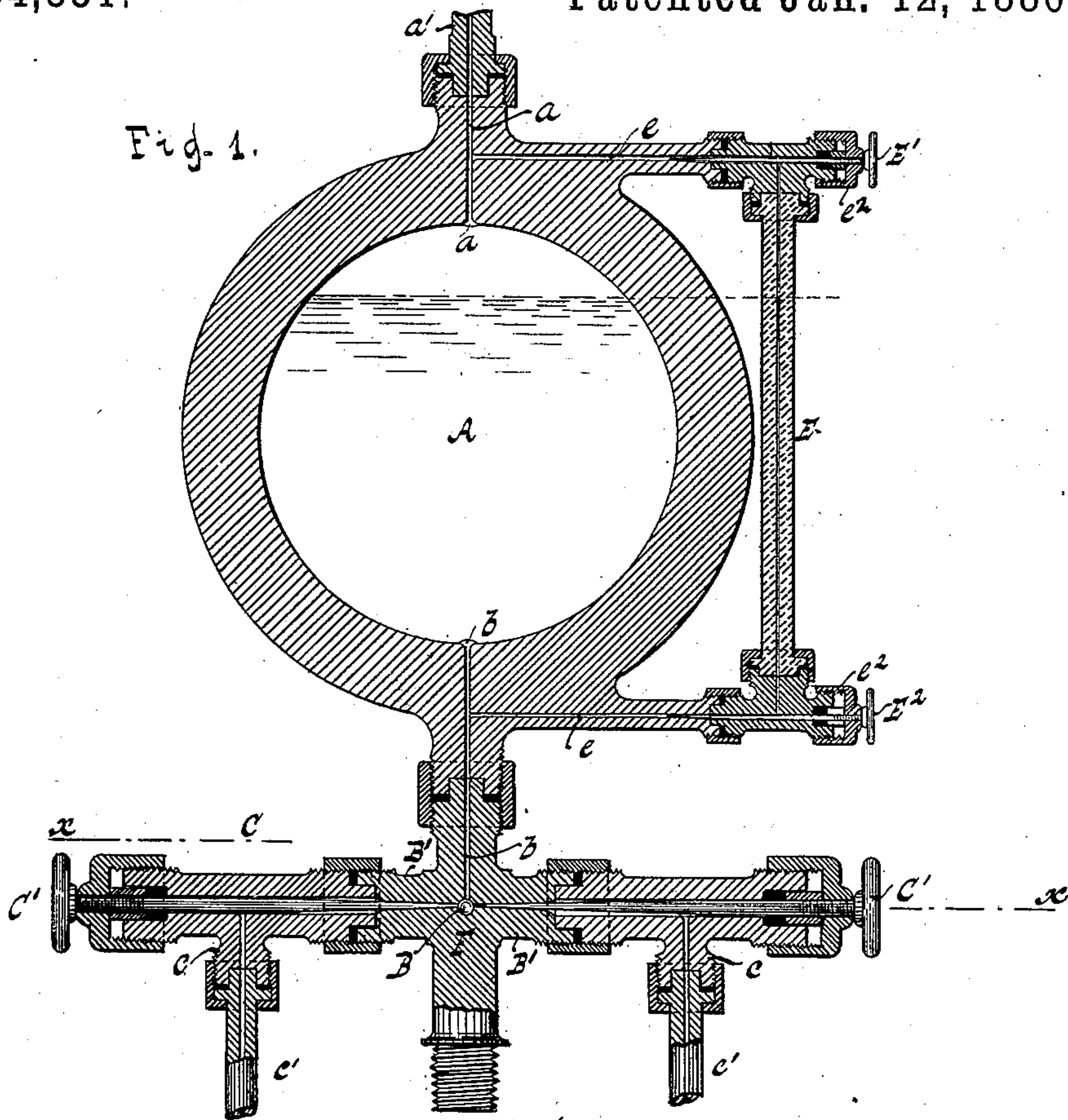
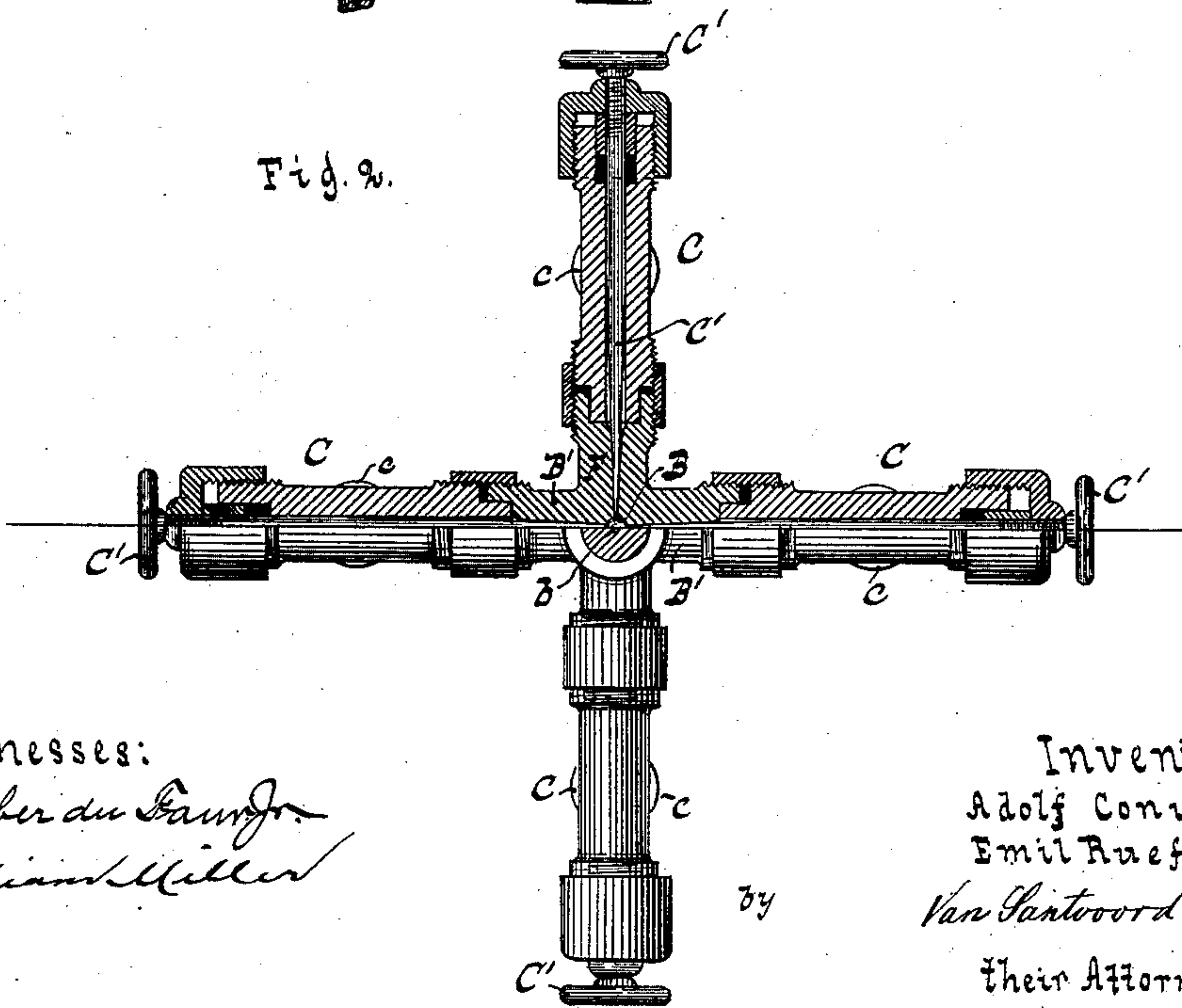


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ADOLF CONVERT AND EMIL RUEFF, OF NEW YORK, N. Y.

APPARATUS FOR DISTRIBUTING, &c., LIQUID CARBONIC ACID.

SPECIFICATION forming part of Letters Patent No. 334,351, dated January 12, 1886.

Application filed October 7, 1885. Serial No. 179,278. (No model.)

To all whom it may concern:

Be it known that we, ADOLF CONVERT and EMIL RUEFF, both citizens of the German Empire, residing at New York, in the county
5 and State of New York, have invented new and useful Improvements in Apparatus for Distributing and Measuring Liquid Carbonic Acid, of which the following is a specification.

This invention relates to apparatus for dis-
10 tributing and measuring definite quantities of liquid carbonic acid to a series of casks containing liquids of different characters; and to which end the invention consists in the combination and arrangement of parts hereinafter
15 described and claimed, and as illustrated by the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of our improved apparatus. Fig. 2 is a horizontal transverse section thereof in the plane $x x$,
20 Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the receiving-chamber of the apparatus, which is preferably cast in the form of a hollow sphere,
25 and is made sufficiently strong to withstand the large pressure to which it is subjected.

B is the distributing-chamber, and C are the faucets.

a , Fig. 1, is an inlet-channel, which leads
30 from the top of the receiving-chamber, and through this channel the liquid carbonic acid is introduced into the receiving-chamber from the main reservoir. In practice the top of the receiving-chamber is formed with a threaded
35 nozzle, and a charging-tube, a' , is coupled thereto, the joint being made air-tight by the use of suitable packing. In this tube is a cock (not shown in the drawings) by means of which the supply of acid to the receiving-
40 chamber can be controlled. The distributing-chamber B is connected with the lower part of the receiving-chamber by a channel, b , and the liquid continually flowing therein is drawn by means of faucets C, radially arranged about
45 said distributing-chamber so that all of the faucets can be operated to fill several vessels at the same time.

To indicate the level of the liquid acid in the receiving-chamber, we employ a strong
50 tube, E, Fig. 1, of glass or other transparent material, which is connected at its top and

bottom with the receiving-chamber by channels $e e'$.

Carbonic acid in its liquid state and at ordinary temperature exerts a pressure of about
55 seventy atmospheres, and it is therefore necessary that an apparatus for receiving and discharging this liquid must possess not only the requisite strength, but, in order that said apparatus may deliver minute quantities of
60 the acid at a time or continuously, it is necessary that valves of a peculiar construction should be employed. As a precautionary measure in case the glass level-gage E should be
65 ruptured by the large pressure to which it is subjected, conical pin-valves $E' E^2$ are located in the channels $e e'$, leading to said gage, and suitable valve-seats therefor are formed in the
nozzles of the shell of the receiving-chamber. These pin-valves $E' E^2$ are screw-threaded at
70 one end, the said threads engaging nuts formed in the screw-caps e^2 , which latter also serve to keep the necessary packing in place.

The distributing-chamber B, previously mentioned, is formed in a separate piece, F, which
75 latter is coupled to a nozzle projecting from the shell of the receiving-chamber, and is provided with a series of radiating-nozzles, B' , to which are coupled the faucets C. These faucets C have threaded nozzles c , extending down-
80 wardly therefrom, and to these can be attached tubes c' , Fig. 1, which lead to the vessels or receivers to be charged with the acid. In order that small quantities can be discharged
85 continuously or intermittently, conical pin-valves C' are fitted in the shell of the faucet, and have suitable conical seats formed in the distributing-chamber shell.

To indicate the actual quantity of acid contained in the receiving-chamber, the glass tube
90 is properly graduated. One advantage of our apparatus is that the quantity of carbonic acid present in the receiving-chamber can be observed with the eye, so that the exact quantity of acid in said chamber is always known to the
95 operator.

The use of the conical pin-valves allows very small quantities of the acid to be drawn either
intermittently or continuously with great cer-
tainty, and the operation is thereby rendered
100 less dangerous than when large quantities are intermittently discharged from the receiver,

By the use of the distributing-chamber and its radiating discharge-orifices the liquid acid can be transferred to several receivers at one time from a single receiving-chamber, and our
 5 apparatus can be used with great advantage for impregnating water or other liquids with carbonic-acid gas, since a very small quantity of liquid carbonic acid is sufficient to produce the requisite effervescence in a comparatively
 10 large quantity of liquid.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the liquid carbonic-acid receiving-chamber A, provided with an
 15 upper channel, *a*, for connecting with a reservoir containing the liquid carbonic acid, and having the lower channel, *b*, the distributing-chamber B, connected with the lower channel of the receiving-chamber and receiving the
 20 liquid carbonic acid from the latter, and a series of faucets radiating around the distributing-chamber, for discharging the liquid carbonic acid from the latter into a series of vessels to be supplied, substantially as described.
2. The combination of the liquid carbonic-
 25 acid receiving-chamber A, provided with an upper channel, *a*, for connecting with a reservoir containing the liquid carbonic acid, and having the lower channel, *b*, the level-gage E, having communication at its ends, respect-
 30 ively, with the upper and lower channels of the receiving-chamber, a distributing-chamber, B, connected with the lower channel of the receiving-chamber and receiving the li-
 35 quid carbonic acid from the latter, and a series of discharge-openings radiating from the dis-

tributing-chamber, for discharging the liquid carbonic acid therefrom into a series of vessels, substantially as described.

3. The combination of the liquid carbonic-
 40 acid receiving-chamber A, having the upper channel, *a*, for connecting with a reservoir containing the liquid carbonic acid, and provided with the lower channel, *b*, the distrib-
 45 uting-chamber B, connected with the lower channel of the receiving-chamber and receiving the carbonic acid from the latter, a series of discharge-openings radiating from the distrib-
 50 uting-chamber, and a longitudinally-adjustable pin-valve, *C'*, one for each discharge-
 opening, all of said valves seating in the distrib-
 55 uting-chamber, substantially as described.

4. The combination of the receiving-cham-
 60 ber A, having the upper receiving-channel, *a*, and discharge-channel *b*, with the distributing-
 65 chamber consisting of several parts, the distrib-
 uting-chamber formed of a separate part, to which are attached separate discharge-
 openings, and valves connected with the dis-
 70 charge-openings for discharging the liquid
 carbonic acid into a series of vessels, and valves
 for controlling the several discharge-openings,
 substantially as described.

In testimony whereof we have hereunto set
 our hands and seals in the presence of two sub-
 75 scribing witnesses.

ADOLF CONVERT. [L. S.]
 EMIL RUEFF. [L. S.]

Witnesses:

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 E. F. KASTENHUBER.