

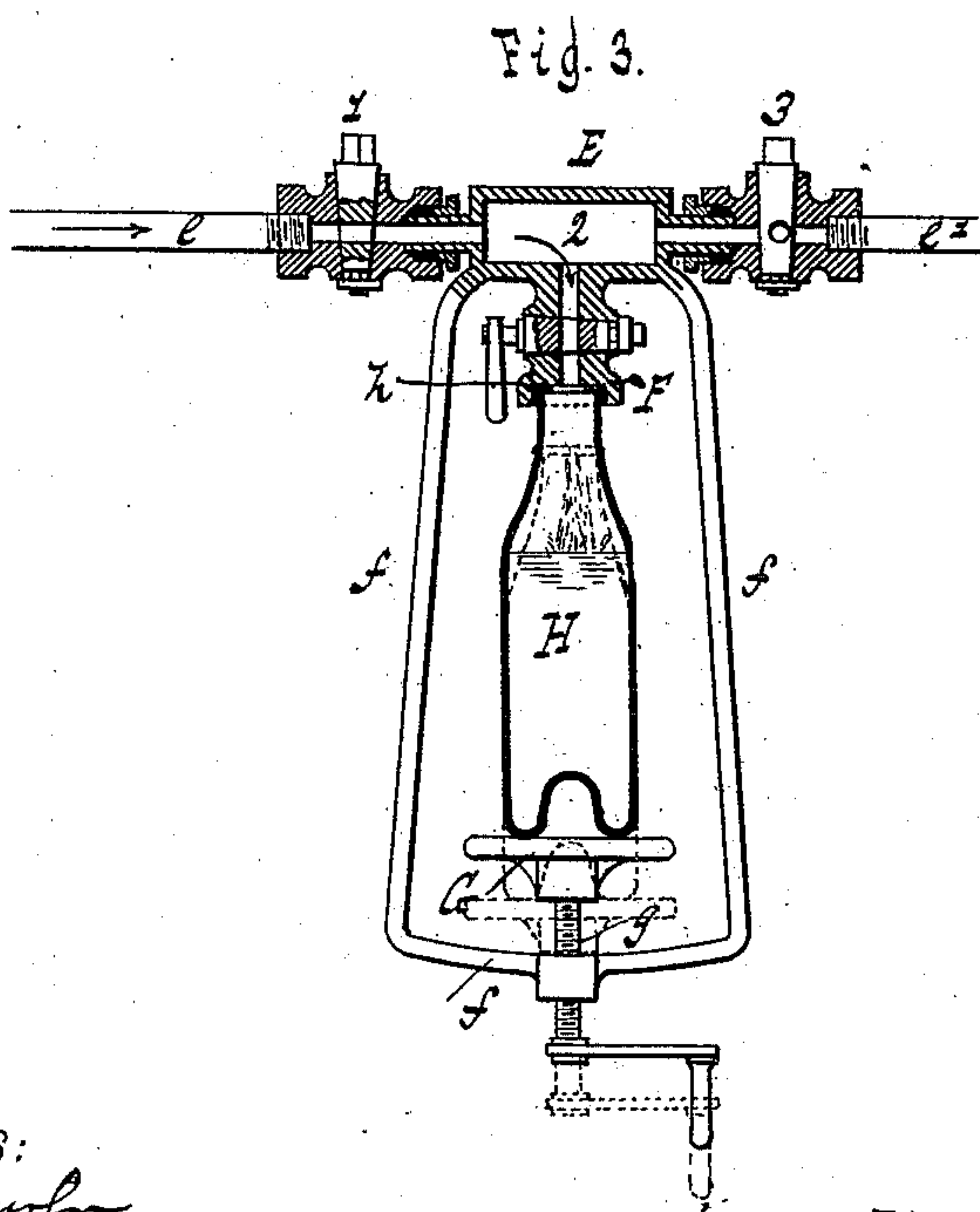
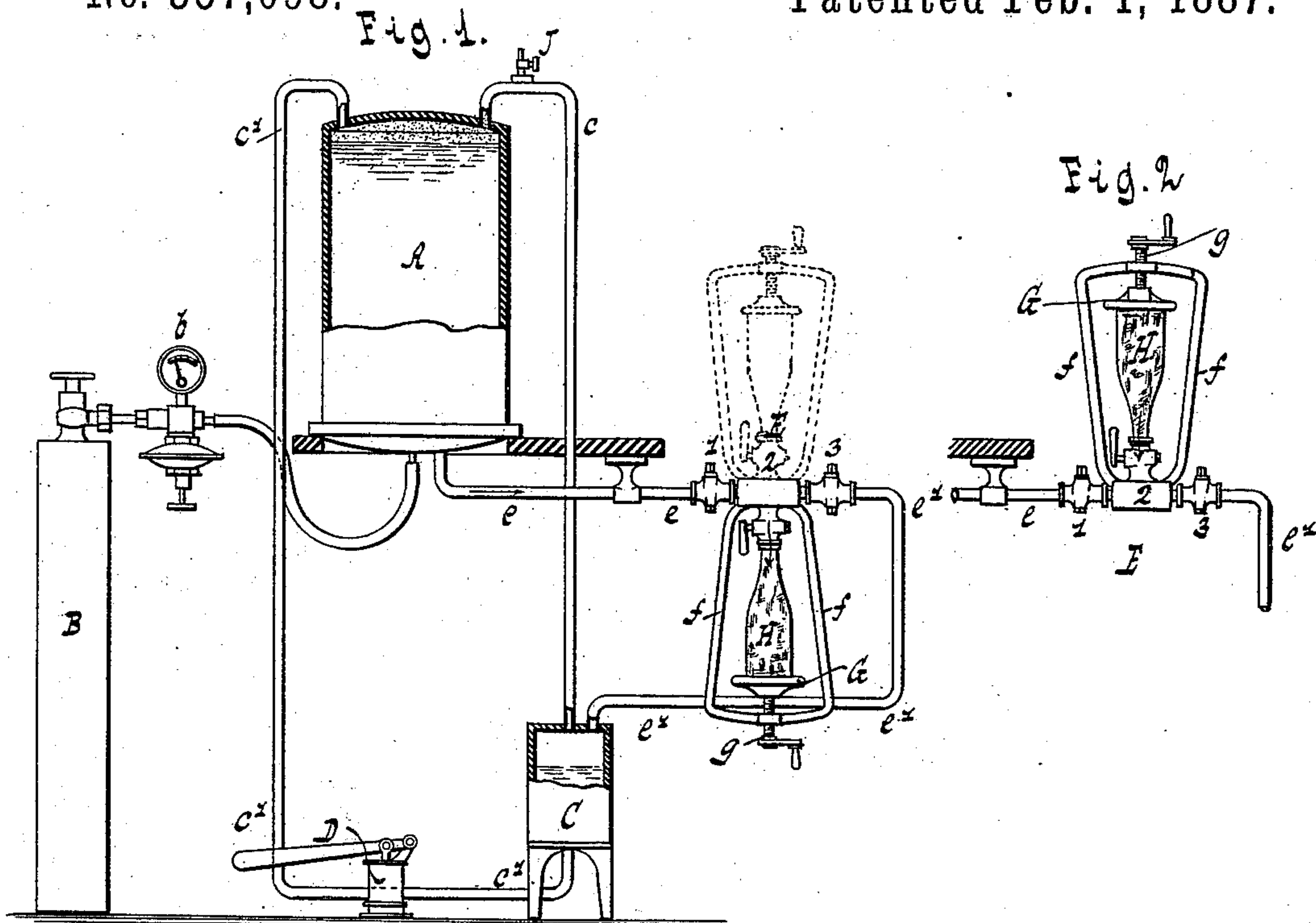
(No Model.)

F. A. REIHLEN.

APPARATUS FOR PREPARING AND BOTTLING EFFERVESCENT LIQUIDS.

No. 357,098.

Patented Feb. 1, 1887.



WITNESSES:
Attest du Faufre
William Miller

INVENTOR
Friedrich A. Reihlen.
BY
Van Santvoord & Hauff
his ATTORNEYS

UNITED STATES PATENT OFFICE.

FRIEDRICH ADOLF REIHLEN, OF STUTTGART, WÜRTEMBERG, GERMANY.

APPARATUS FOR PREPARING AND BOTTLING EFFERVESCENT LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 357,098, dated February 1, 1887.

Application filed November 18, 1886. Serial No. 219,297. (No model.) Patented in Luxemburg October 11, 1886, No. 746.

To all whom it may concern:

Be it known that I, FRIEDRICH ADOLF REIHLEN, a subject of the King of Würtemberg, residing at Stuttgart, in the Kingdom of Würtemberg, in the German Empire, have invented new and useful Improvements in Apparatus for Preparing and Bottling Effervescent Liquids, (for which I have obtained a patent in Luxemburg, No. 746, October 11, 1886,) of which the following is a specification.

My invention relates to an improved apparatus for preparing and bottling effervescent liquids, the object of my invention being to provide means for carrying on the preparation and bottling of such liquids uninterruptedly and with great rapidity.

The invention consists in the novel construction and combination of parts, hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 represents a sectional elevation of the apparatus. Fig. 2 is a side elevation of the device used in bottling. Fig. 3 is a vertical section of the same on a larger scale than the preceding figures.

Similar letters indicate corresponding parts. In the drawings, the letter A, Fig. 1, designates a reservoir into which is introduced the liquid to be carbonated. This carbonation may be accomplished, as shown in Fig. 1, by connecting said reservoir with a flask, B, containing carbonic-acid gas. Any desired constant pressure can be obtained within the reservoir by means of a pressure-regulating valve, such as *b*, located in the pipe to the reservoir. If desired, however, the liquid can be carbonated directly in the reservoir by the use of a pure ferment placed within the same.

The reservoir A is connected by pipes *c* *c'*, leading from its top, with a receiver, C, the pipe *c* permitting carbonic-acid gas to freely enter the receiver. Through the pipe *c'* the liquid which collects in the receiver is forced into the reservoir by means of a pump or other forcing device, D, connected with said pipe. E is a bottling device, which is connected with the bottom of the reservoir A by a pipe, *e*.

This bottling device consists of three cocks, 1, 2, and 3, all communicating with each other, the cock 1 being connected with the reservoir

through the pipe *e*, and the cock 3 with the top of the receiver by a pipe, *e'*. The cock 2 is supported on hollow trunnions in the cocks 1 and 3, so that it can be freely rotated, its axis being in line with the said cocks, and it is provided with a lateral branch or spout, F. From the body of said cock 2 extends a bracket or frame, *f*, which is drilled and tapped to receive a screw, *g*, on the end of which rests and is secured a plate or support, G, upon which the bottle H is placed. By adjusting the screw the bottle H can be forced air-tight against a shoulder, *h*, Fig. 3, on the spout F, said spout entering the mouth of the bottle.

The operation of the apparatus and the process of bottling are as follows: The reservoir A having been previously filled with the liquid to be bottled, the said liquid is carbonated by either of the means hereinbefore described, and at the beginning of such carbonation an air-cock, J, in the pipe *c* is opened for a short time to allow the escape of air from the apparatus. The bottle, being previously filled with liquid of the same kind as that contained in the reservoir, but not carbonated, is placed upon the plate or support G and brought into communication with the spout F. The frame, together with the bottle, is then turned half a revolution to the position shown in Fig. 2, whereby the bottle is inverted. The cocks 2 and 3 are now opened, and the liquid contained in the bottle flows into the receiver C through the pipe *e'*, and as this receiver contains carbonic-acid gas under pressure, owing to its communication with the reservoir A, carbonic-acid gas enters the bottle through the pipe and fills the bottle with the gradual displacement of the liquid. After all the liquid in the bottle has completely escaped into the receiver and the bottle is filled with gas, the cock-frame and bottle are reversed, so as to occupy the position shown in Fig. 1, the bottle then being upright. Cock 3 is now closed, and cock 1, Fig. 3, is opened, the result of which is, that the effervescent liquid from the reservoir enters the bottle through pipe *e*, and the carbonic acid in the bottle is displaced and passes through pipe *e* back into the reservoir. When the bottle is filled, the cocks 1 and 2 are closed and the filled bottle is removed from the cock-frame and locked. The liquid

collecting in the receiver C is conveyed from time to time to the reservoir A by means of the pump previously described, so that the operation of filling can be continued uninterruptedly, since as much liquid is returned to the reservoir as is removed.

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

1. The combination of the carbonating-reservoir A, the receiver C, the pipe *c*, connecting the reservoir and receiver, the pipe *e*, leading from the reservoir, the pipes *e e'*, leading, respectively, from the reservoir and receiver, the cock 2, interposed between the pipes *e e'*, and the cocks 1 and 3, connected with the latter pipes at opposite sides, respectively, of the cock 2, substantially as described.

2. The combination of the carbonating-reservoir A, the receiver C, the pipe *c*, connecting the reservoir and receiver, the pipes *e e'*, leading, respectively, from the reservoir and receiver, the two cocks 1 and 3, connected, respectively, with the pipes *e e'*, the cock 2, interposed between and having a swiveled connection with said two cocks to rotate axially, a frame, *f*, secured to and rotatable with the swiveled cock, and an adjustable bottle-support, *G*, carried by said frame, substantially as described.

3. The combination, with the carbonating-reservoir and the receiver communicating therewith, of the cocks 1 and 3, the cock 2, communicating with the cocks 1 and 3 and having a lateral spout, *F*, the hollow trunnions of said cock having bearings in the cocks 1 and 3, the frame *f*, the adjustable bottle-support, and the pipe-connections of said cocks with the reservoir and receiver, substantially as shown and described.

4. The combination, with the carbonating-reservoir and the receiver communicating therewith, of the cocks 1 and 3, the cock 2, communicating with said cocks and having a pivotal connection, the pipe-connections of said cocks with the reservoir and receiver, the pipe *c'*, and a pump connected to said pipe for conveying the liquid collecting in the receiver to the reservoir, substantially as shown and described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

FRIEDRICH ADOLF REIHLEN. [L. S.]

Witnesses:

EUGEN RITTER,

WILHELM STARGER.