

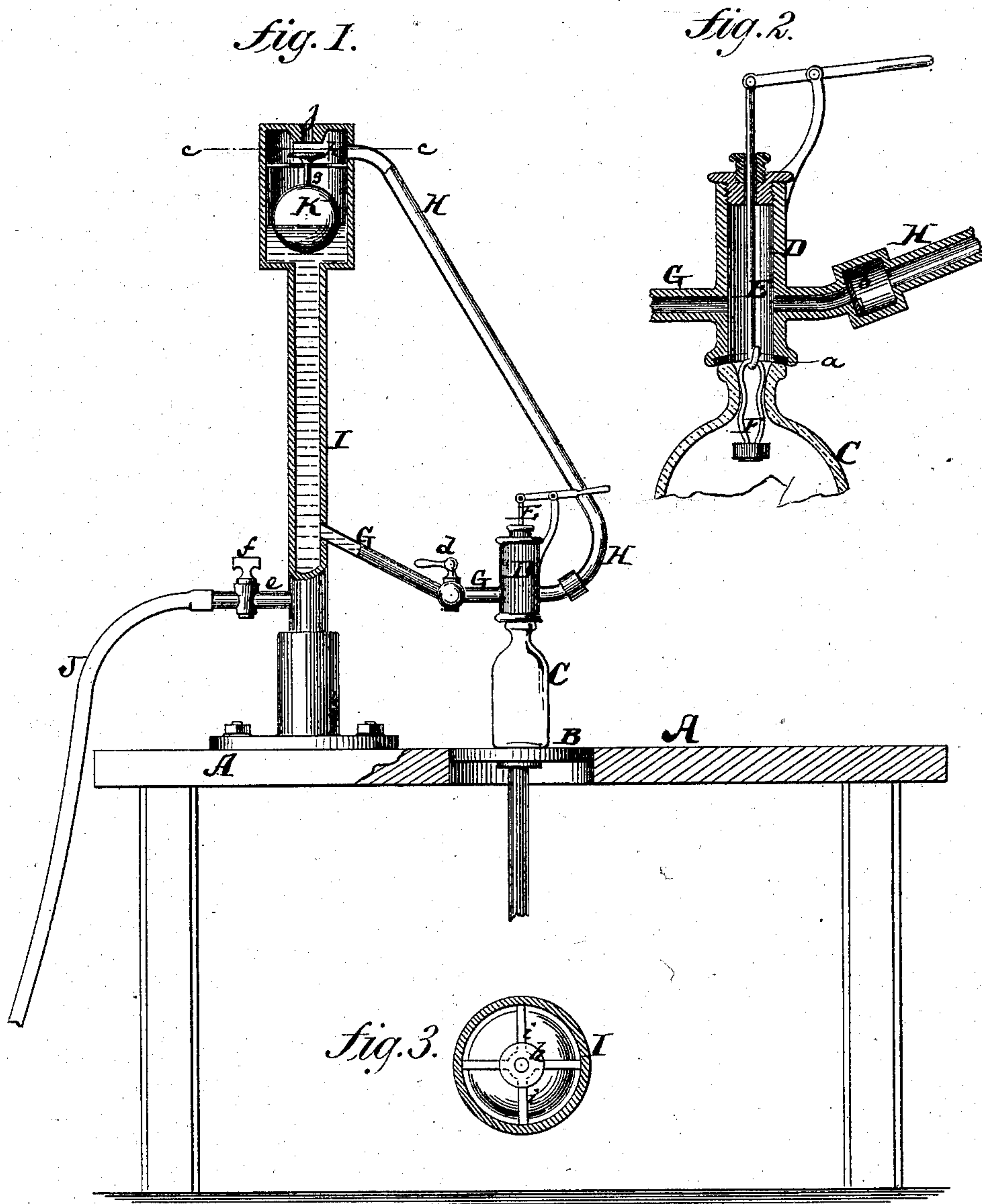
(No Model.)

A. ALBERTSON.

APPARATUS FOR FILLING BOTTLES WITH AERATED BEVERAGES.

No. 282,481.

Patented Aug. 7, 1883.



WITNESSES:
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UNITED STATES PATENT OFFICE.

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APPARATUS FOR FILLING BOTTLES WITH AERATED BEVERAGES.

SPECIFICATION forming part of Letters Patent No. 282,481, dated August 7, 1883.

Application filed December 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBERT ALBERTSON, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improved
5 Apparatus for Filling Bottles with Aerated Beverages, of which the following is a specification.

Figure 1 represents a sectional elevation of my improved apparatus for filling bottles with
10 aerated beverages. Fig. 2 is a detail sectional elevation of the filling-cylinder; Fig. 3, a horizontal section on the line *c c*, Fig. 1.

The object of this invention is to produce an apparatus for filling bottles with soda-water or other aerated liquids under pressure,
15 which apparatus shall keep the pressure of the liquid substantially regular and balance it automatically as against the pressure of air that is discharged from the bottles that are
20 filled.

The invention consists, principally, in combining with the ordinary or suitable filling-cylinder and with the liquid-supply pipe leading thereto a hollow stand-pipe which communicates also with the air-discharge pipe that
25 extends from the filling-cylinder, and has a self-acting float-valve, all as hereinafter more fully described.

In the accompanying drawings, the letter A
30 represents the table of the filling-machine or a suitable frame-work.

B is that part of the table or mechanism which is adapted to support the bottle C to be filled.

35 D is the filling-cylinder, which may be constructed as usual—that is to say, with a packing-ring, *a*, at the lower end for the mouth of the bottle to butt against, and with a suitable rod, E, or device for lifting the stopper F,
40 which is contained in the bottle, against its seat as soon as the bottle has been filled. The cylinder D communicates with the liquid-supply pipe G and with the air-discharge pipe H. This air-discharge pipe has a valve, *b*, (see
45 Fig. 2,) which opens outward—that is to say, away from the filling-cylinder D—and the pipe G has or may have a cock, *d*, which can be opened and closed at pleasure. The liquid-supply pipe G extends from the cylinder D to

a stand-pipe, I, which connects by a tubular
50 projection, *e*, having a cock, *f*, with the pipe J, that leads to the fountain or vessel from which the liquid is to be taken. The stand-pipe I contains in its upper preferably enlarged part a float, K, which has an upward-
55 ly-extending stem, *g*, on which is a valve-disk, *h*. The stem *g* is guided in suitable guide-strips or cross-bars, *i*, so that the motion of the float K and its valve *h* will be substantially vertical.

Above the valve-disk *h* there is an air or gas discharge vent, *j*, in the stand-pipe I. The air-pipe H leads into the upper part of the otherwise closed stand-pipe I or the enlargement thereof, as shown.
60

The operation of this mechanism is as follows: After the pipe J has been coupled to the supply fountain or vessel the cock *f* is opened and the liquid allowed to flow into the stand-pipe I and into so much of the pipe G as is
65 not closed by the cock *d*. The liquid, being under pressure, will ascend in the pipe I to such a height as to float the ball K and lift the valve *h* against the orifice *j*, closing the latter. Whatever surplus air there remained in the stand-
70 pipe will be crowded into the pipe H and to an extent compressed therein, but will be kept from entering the cylinder D by the valve *b*. As soon as an empty bottle is pressed against the packing *a* in the position shown in Fig. 2,
75 its stopper F lowered, and the cock *d* opened, the aerated liquid will rush into the filling-cylinder D, thence into the bottle C, filling the same, and crowding the air that was contained in the bottle out past the valve *b* into the pipe
80 H. This operation will be continued from time to time. Whenever a bottle is filled the attendant closes the cock *d*, removes the filled bottle, first closing the stopper thereof by lifting the hook E, and then inserts a new bottle,
85 opens the cock *d*, causes the bottle to be filled, and so on. By this operation it is clear the pressure of air in the pipe H will gradually increase until it attains such a degree as will enable it to force the float K downward suffi-
90 cient to open the orifice *j*. Instantly the surplus air will escape through said orifice, and almost as rapidly will the liquid in the stand-

pipe relieved from the excess of pressure rise in the stand-pipe and lift the float K up again, so as to close said orifice *j*, and thus from time to time, as the pressure of air increases in the pipe H sufficiently to force the float down, will, by that very effort, the pressure be relieved by the momentary opening of the valve *h*.

Instead of using the cock *d*, the apparatus can also be operated without having such a cock, provided there is a valve at or near the bottom of the filling-cylinder D adapted to be lifted by the bottle that is put beneath the filling-cylinder, so that whenever a bottle is put there communication between it and the pipe G will at once be established, and as soon as the filled bottle is removed the lower opening of the filling-cylinder will then be closed by the said self-acting valve. In that case—that is to say, where the cock *d* is omitted—the automatic character of this apparatus will be the more apparent, because communication

between the pipes G and H through the filling-cylinder D will always exist, and yet the pressure in the pipe H will normally not exceed that in the pipe G, since, should the pressure in the pipe H exceed that which is in the pipe G, the valve *h* will be opened and the excess instantly blown off.

I claim—

1. The liquid-supply pipe, combined with the filling-cylinder, air-discharge pipe, and with the stand-pipe I, having float K and valve *h*, and air-outlet *j*, for operation in filling aerated liquids, substantially as described.

2. The combination of the pipe G, stand-pipe I, float K, valve *h*, pipe H, and filling-cylinder D, with the cock *d* and valve *b*, substantially as described.

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Witnesses:

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