

S. B. GOFF.
BOTTLE FILLER.

APPLICATION FILED JULY 11, 1907. RENEWED APR. 24, 1909.

924,344.

Patented June 8, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

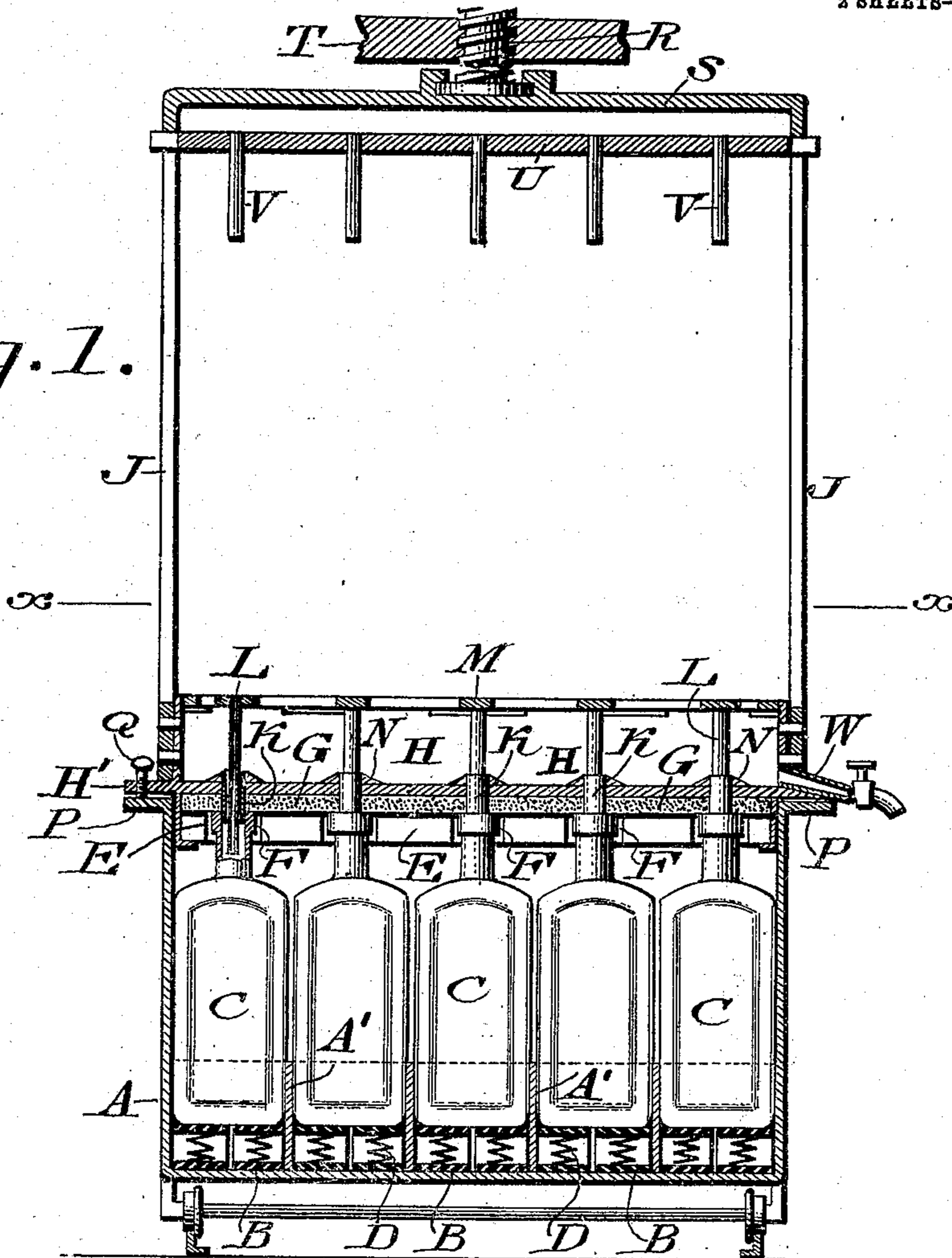
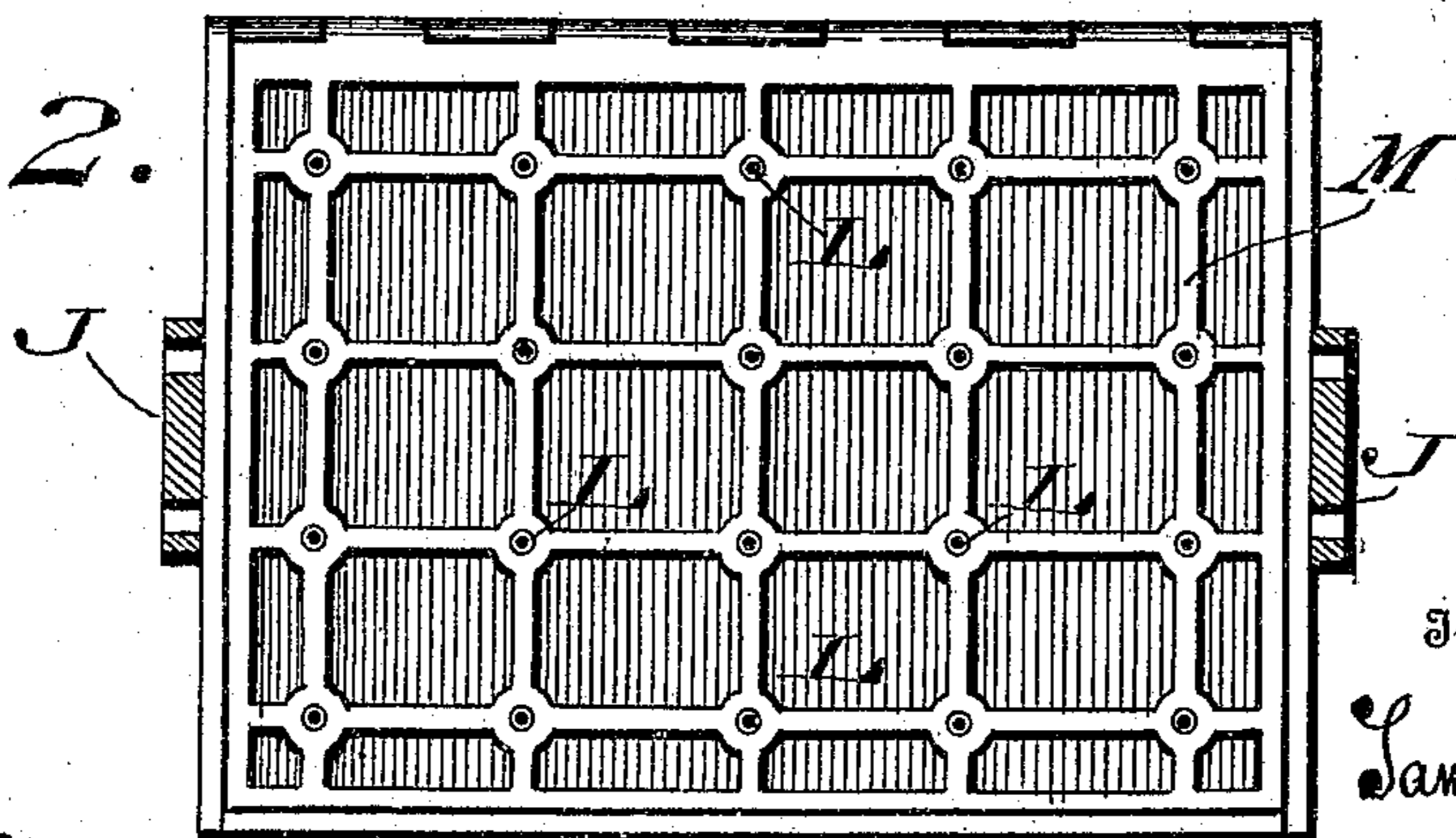


Fig. 2.



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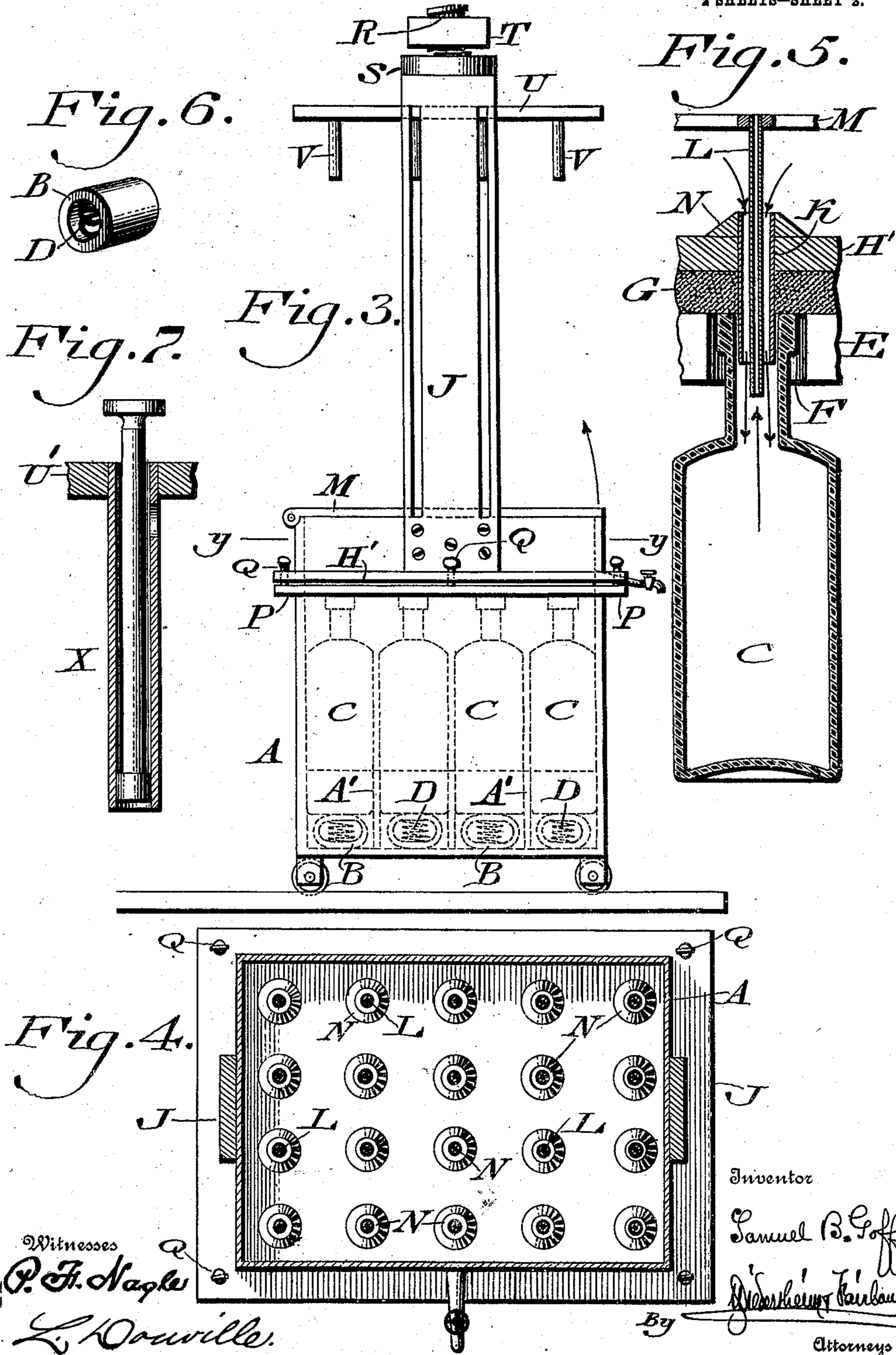
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UNITED STATES PATENT OFFICE.

SAMUEL B. GOFF, OF CAMDEN, NEW JERSEY.

BOTTLE-FILLER.

No. 924,344.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed July 11, 1907, Serial No. 383,177. Renewed April 24, 1909. Serial No. 492,064.

To all whom it may concern:

Be it known that I, SAMUEL B. GOFF, a citizen of the United States, residing in the city and county of Camden, State of New Jersey, have invented a new and useful Bottle-Filler, of which the following is a specification.

My invention consists of a device for filling bottles, embodying means for sustaining the bottles independently of each other, cushions on which the bottles will be resiliently supported, means for forming fluid-tight joints at the mouths of the bottles during the filling operation, means for preventing sediment and foreign matters in the fluid from entering the bottles, means for removing the surplus fluid from the mouths of the bottles, means for uniformly leveling the fluid in the bottles, and details of construction, as will be hereinafter set forth.

For the purpose of explaining my invention, the accompanying drawing illustrates a satisfactory reduction of the same to practice, but the important instrumentalities thereof may be varied, and so it is to be understood that the invention is not limited to the specific arrangement and organization shown and described.

Figure 1 represents a vertical section of a bottle filler embodying my invention. Fig. 2 represents a horizontal section on line $x-x$, Fig. 1. Fig. 3 represents a side elevation thereof. Fig. 4 represents a horizontal section on line $y-y$, Fig. 3. Fig. 5 represents a vertical section of a detached portion on an enlarged scale. Fig. 6 represents a perspective view of the cushions employed. Fig. 7 represents a vertical section of a member to be hereinafter referred to.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings:—A designates a bottle case, on the bottom of which are supported the cushions B, imposed on which are the bottles C to be filled, said cushions being composed of pieces of rubber or other resilient tubing placed side-wise and con-

taining metallic or other springs D, said cushions preventing fracture of the bottles when subjected to downward pressure applied to the mouths thereof, as will be hereinafter referred to.

On the bottom of the bottle case are partitions A' forming compartments in which the bottles may be received, so as to separate one from the other.

Sustained on the top of said bottle case, is the bar E, which has openings F, to receive the necks of the bottles C, as guides for the latter.

G designates a mat composed of a piece of moss, sponge or other resilient material, which is placed upon the mouths of the bottles C.

H designates the supply tank, whose bottom H' is connected with the lower end of the frame J, and has depending from it the filling tubes K, which pass through the piece G and enter the necks of the bottles C, it being noticed that said tubes K contain within them the air discharging tubes L, which are of less diameter than the former, so that air from the bottles may readily escape through said tubes L, as most clearly shown in Fig. 5.

The tubes L depend from the open plate or lid M of the tank H, which latter is connected with the movable frame J, it being noticed that the fluid intended to fill the bottles is poured into the tank H through the openings in the plate M, and from thence flows through the tubes K, and so reaches and enters the bottles.

On the plate H surrounding the tops of the tubes K are the collars N, which are preferably of conical form and serve to elevate the place of entrance of the fluid into the tubes K, and permit sediment and foreign matter to settle on the bottom, thus lessening the liability of the same to enter the bottle through said tubes K.

The bottom H' of the tank H, when in its lowest position, is primarily above the top rim P of the bottle case A, so that it may be lowered, so as to compress the mat G against

the mouths of the bottles, and thus close the joints of said ports, preventing leaking of the bottles at their mouths.

In order to adjust the pressure of mat G on the bottles, the bottom H' of the tank H has fitted thereto the screws Q, which are adapted to bear against the upper face of the rim P of the bottle case A, and so limit the descent of said tank, the effect of which is evident.

The rising and lowering motions of the frame J, and consequently of the tank H, are accomplished by the screw R, which is swiveled to the top plate S of said frame J and fitted in a stationarily supported beam or bar T.

U designates a follower, which is freely mounted on the frame J, so as to be capable of vertical motions thereon, and has pins or plungers V depending therefrom, the same being in alinement with the tubes K, and consequently with the interior of the necks of the bottles below the same.

When the parts are in position shown in Fig. 1, the fluid flows through tubes K and fills the bottles, the displaced air escaping through the tubes L. Then the fluid remaining in the bottom of the tank H is permitted to escape through the spout or pigot W.

The plate M, which is hinged to the frame J, is now raised and placed in vertical position at the side of said frame, the tubes L following said plate, and so are withdrawn from the tubes K. The follower U is then lowered, when the pins V enter the necks of the bottles, and force the surplus fluid from the latter, so that the bottles may be properly corked thereafter, the surplus rising through the tubes K and reëntering the bottom of the tank H, from whence it may escape through the spout W.

The frame J is then elevated, when the parts carried by the same are lifted clear of the mouths of the bottles, when the latter are accessible, they then being removed, after which they may be replaced by empty bottles to be subjected to the filling operation.

Should the bottles be filled to too-great extent, I place the filled bottles beneath pumps X, the same being sustained on the follower U', which latter is lowered and the barrels of said pumps inserted in the mouths of the bottles and the pumps operated, so as to withdraw a sufficient quantity of fluid from the over-filled bottles, the effect of which is evident. These pumps may be operated in any well known way, and perform the same function as the pins V.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a bottle filler, means for applying

pressure to the mouths of bottles, a bottle case and a cushion therein formed of a pliable tubular piece in position to directly engage the bottoms of the bottles, and a spring contained in said tubular piece.

2. In a bottle filler, a bottle case having a series of partitions therein forming separated chambers for the bottles to be filled, and an independent cushion in each of said chambers between said partitions and each consisting of a pliable tubular piece in position to directly engage the bottom of the bottle and a spring contained in said tubular piece.

3. In a bottle filler, a bottle case, a tank having its bottom above the bottle case, a bar at the top of said bottle case and adapted to receive the mouths of the bottles, and a mat of resilient material interposed between said bottom and bar.

4. In a bottle filler, a tank, means for reciprocating said tank, filling tubes depending from the bottom of said tank, a partitioned bottle case adapted to contain bottles to be filled, a guide for the necks of the bottles, means adapted to elevate the bottom of the tank at the inlet end of said tube and a mat of resilient material interposed between said guide and the bottom of said tank and resting upon the mouths of the bottles.

5. In a bottle filler, a bottle case, a mat of resilient material thereon adapted to contact with the mouth of a bottle in said bottle case, a filling tank the bottom of which is adapted to engage said mat to compress the same, and means for imparting motion to said tank.

6. In a bottle filler, a bottle case, a mat of resilient material thereon adapted to contact with the mouth of a bottle in said bottle case, a filling tank the bottom of which is adapted to engage said mat to compress the same, means for imparting motion to said tank, and means for limiting the descent of said tank.

7. In a bottle filler, a bottle receiving case, a filling tank, a frame, an open plate movably mounted thereon, a mat of resilient material adapted to contact with the mouths of bottles in said case and tubes depending from said plate adapted to enter the mouths of bottles and remove the surplus fluid therein and return it into said tank.

8. In a bottle filler, a bottle receiving case, a filling tank above the same, a tube depending from the bottom of said tank, a pivotally mounted plate above said bottom, tubes depending from said plate, and a supplemental follower having depending pins adapted to occupy the position of the tubes of the plate when said plate is thrown into a vertical position.

9. In a bottle filler, a bottle receiving case, a guiding bar adapted to receive the necks of bottles, a mat on said bar, a filling tank the bottom of which rests on said mat, a perforated plate above said tank, filling tubes

adapted to pass through said bottom and
mat into the mouths of the bottles, air-dis-
charging tubes on said plate adapted to enter
said filling tubes, and means for causing said
5 tank to compress said mat.

10. In a bottle filler, a bottle receiving
case, a tubular member adapted to enter a
bottle, an open frame, a tube depending
therefrom adapted to enter said tubular

member and a reciprocating member carry- 10
ing means adapted to enter the first-named
tubular member after the other tubular
member has been removed therefrom.

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Witnesses:

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