

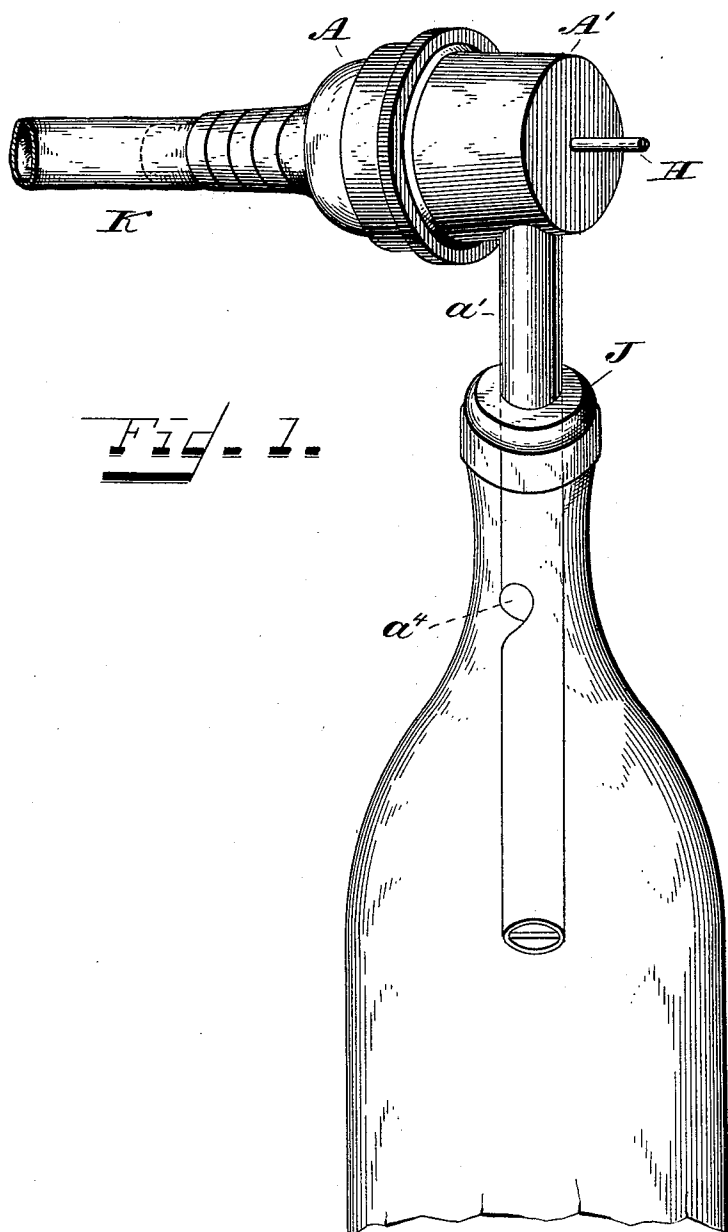
(No Model.)

2 Sheets—Sheet 1.

A. E. BRIGGS.
AUTOMATIC FILLING DEVICE.

No. 520,557.

Patented May 29, 1894.



Witnesses.
J. Thomson Cross
P. W. Sommers.

Inventor:
Arthur E. Briggs
by Geo. B. Robinson
Attorney.

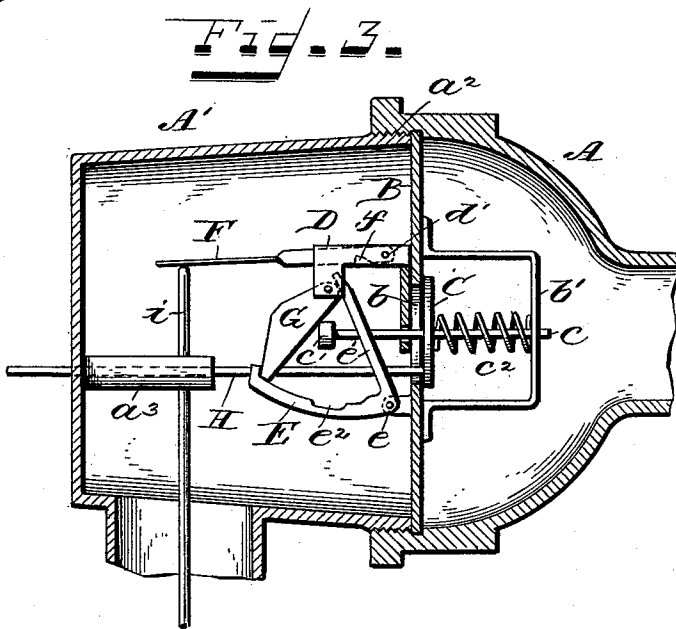
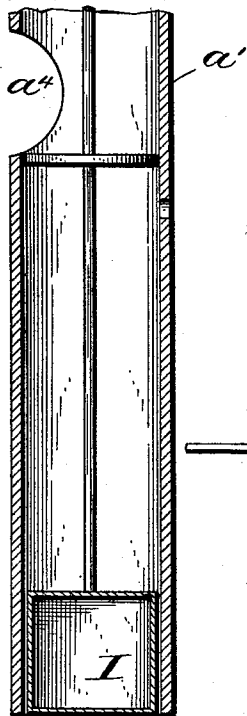
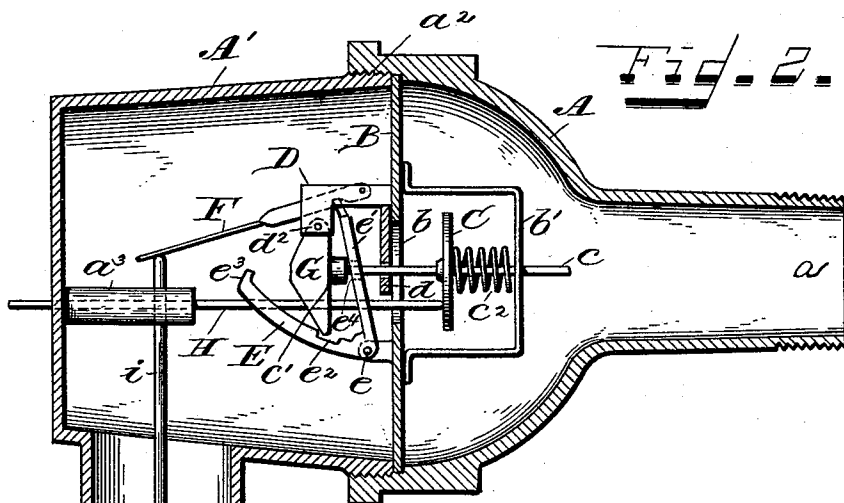
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UNITED STATES PATENT OFFICE.

ARTHUR E. BRIGGS, OF BOND HILL, OHIO, ASSIGNOR TO OLIVIA M. BRIGGS,
OF SAME PLACE.

AUTOMATIC FILLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 520,557, dated May 29, 1894.

Application filed June 29, 1893. Serial No. 479,177. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR E. BRIGGS, a citizen of the United States of America, residing at Bond Hill, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Automatic Filling Devices, of which the following is a specification.

My invention relates to apparatus for filling liquid receptacles, and the object is to provide mechanism which will automatically cut off the flow of the liquid when the receiving vessel is filled to the required limit, and it consists in the parts and combination and arrangement of parts hereinafter described and claimed.

In the drawings: Figure 1 is a perspective view of my improved filling device as used for filling bottles. Fig. 2 is a side view, partly in section, showing the cut-off valve open. Fig. 3 is a like view showing the valve closed.

The valve casing consists of sections A and A', one of which is provided with an inlet aperture *a* and the other with a discharge spout *a'*. The spout is provided with a lateral opening *a'* for the discharge of the liquid. The section A has an internal annular shoulder *a*² forming a seat for a partition B, and the portion above the shoulder is threaded to receive a threaded rim on the section A'. The partition B is provided with an aperture *b* for the passage of the liquid, the flow of which is controlled by a valve C, mounted on a valve stem *c* taking through the aperture and having its bearings in a bracket *b'* in front of the partition and in an arm *d* depending from a bracket D secured to the back of the partition.

E is an escapement pivoted at *e* and having an arm *e'* adapted to engage a notch *f* in the lever F, pivoted at *d'* to the bracket D and normally holding the escapement in a raised position.

G is a gravitating pawl pivoted to a depending arm *d*² adapted to engage with a notch *e*² in the escapement and limited in its swing when released by a lug *e*³.

H is a push pin mounted in a bearing *a*³ in the wall of the casing and bearing against the valve C.

I is a float serving as a piston adapted to

reciprocate in the lower end of the discharge spout, provided with a piston-rod *i* extending up into the valve casing and guided therein by the bearing block *a*³ and adapted to raise the lever F.

The valve stem *c* takes through a slot *e*⁴ in the arm *e'*. Its inner end takes against the pawl G and is provided with an enlargement or collar *c'* adapted to engage with and actuate the arm *e'*. The valve C is normally held to its seat by a spring *c*².

J is a stop adjustable along the discharge spout and adapted to hold the latter at any desired elevation in the bottle or other vessel to be filled. The form shown is an elastic band.

K is a flexible tube adapted to serve as a siphon.

The operation is as follows: When the liquid is to be withdrawn, the inlet aperture is connected with the tube K, which is preferably flexible, and the latter is inserted into the cask or other vessel from which the liquid is to be withdrawn; the valve C is opened by means of the push pin H; the pawl G, which has been held up by the valve stem, is released and drops; the arm *e'* is forced inward by the collar on the valve stem thereby raising the escapement E. When the arm *e'* reaches the notch *f* in lever F the escapement is in its locking position and the lever drops, thereby locking the arm *e'* in position. A vacuum is then formed by sucking the air from the casing, the valve is closed and the discharge tube inserted in the vessel to be filled. The valve is again opened by means of the push pin allowing the liquid to flow. As the liquid in the receiving vessel approaches the desired limit it lifts the float I and thereby raises the piston rod *i* which lifts the lever F and releases the arm *e'*. The escapement then drops thereby releasing pawl G and the valve is closed by the action of the spring *c*². The piston float may be made to operate at any predetermined point by adjusting the collar J on the spout and thereby regulating the depth to which the spout extends into the vessel.

What I claim is—

1. In a filling device, the combination of a valve casing; a valve seated therein; means

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for opening the valve; a pawl adapted to hold the valve in its open position; an escapement adapted to engage and lock the pawl; a lever adapted to lock the escapement in position
5 for holding the pawl, and mechanism driven by the liquid for releasing the lever, substantially as and for the purpose specified.

2. In a filling device, the combination of a valve casing; a valve therein yieldingly held
10 to its seat; a push-pin projecting through the casing and adapted to bear against the face of the valve whereby the valve may be operated; mechanism in the valve casing for locking the valve in its open position, and means
15 for releasing the locking mechanism, substantially as and for the purpose specified.

3. In a filling device, the combination of a valve casing; a valve therein yieldingly held to its seat; a valve stem; a push-pin for actuating the valve; a pawl for locking the valve
20 stem normally held out of engagement thereby; an escapement adapted to be thrown into engagement with the pawl by the movement of the valve stem; a lever adapted to lock the
25 escapement in position for holding the pawl against the pressure of the valve stem, and means for releasing the locking mechanism, substantially as and for the purpose specified.

4. In a filling device, the combination of a valve casing; a valve yieldingly held to its seat; a discharge spout extending from the valve casing; a push-pin projecting through
30 the casing and adapted to bear against the face of the valve whereby the valve may be opened; mechanism consisting of a pawl, escapement and lever for locking the valve in its open position; a float in the discharge
35 spout and mechanism actuated thereby for releasing the locking mechanism, substantially as and for the purpose specified.

5. In a filling device, the combination of a valve casing; a valve therein yieldingly held to its seat; a valve stem; a push-pin for actuating the valve; a pawl for locking the valve
45 stem normally held out of engagement there-

by; an escapement adapted to be thrown into engagement with the pawl by the movement of the valve stem as the valve opens; a lever adapted to lock the escapement in position
50 for holding the pawl against the pressure of the valve stem; a discharge spout; a float adapted to reciprocate therein, and a rod extending from the float adapted to actuate the lever and disengage the escapement, substantially as and for the purpose specified. 55

6. In a filling device, the combination of a valve casing; a valve therein yieldingly held to its seat; a valve stem; a push-pin for actuating the valve; a pawl for locking the valve
60 stem normally held out of engagement thereby; an escapement adapted to be thrown into engagement with the pawl by the movement of the valve stem as the valve opens; a lever adapted to lock the escapement in position
65 for holding the pawl against the pressure of the valve stem; a discharge spout; a lateral opening therein; a float adapted to reciprocate in the spout, and a rod extending from the float adapted to actuate the lever and disengage the escapement, substantially as
70 and for the purpose specified.

7. In a filling device; the combination of a valve casing composed of sections A, A'; a partition B therein provided with an aperture b; a valve C for closing the aperture provided with a valve stem c having a collar c';
75 a spring c² for normally holding the valve to its seat; a push-pin H for actuating the valve; a pawl G for locking the valve stem; an escapement provided with an arm e' for locking the pawl; a lever F for locking the
80 escapement; a discharge spout a'; a float I adapted to reciprocate therein; a rod i connected to the float and adapted to actuate lever F, substantially as and for the purpose
85 specified.

ARTHUR E. BRIGGS.

Witnesses:

JAMES N. RAMSEY,

B. W. SOMMERS.