

(No Model.)

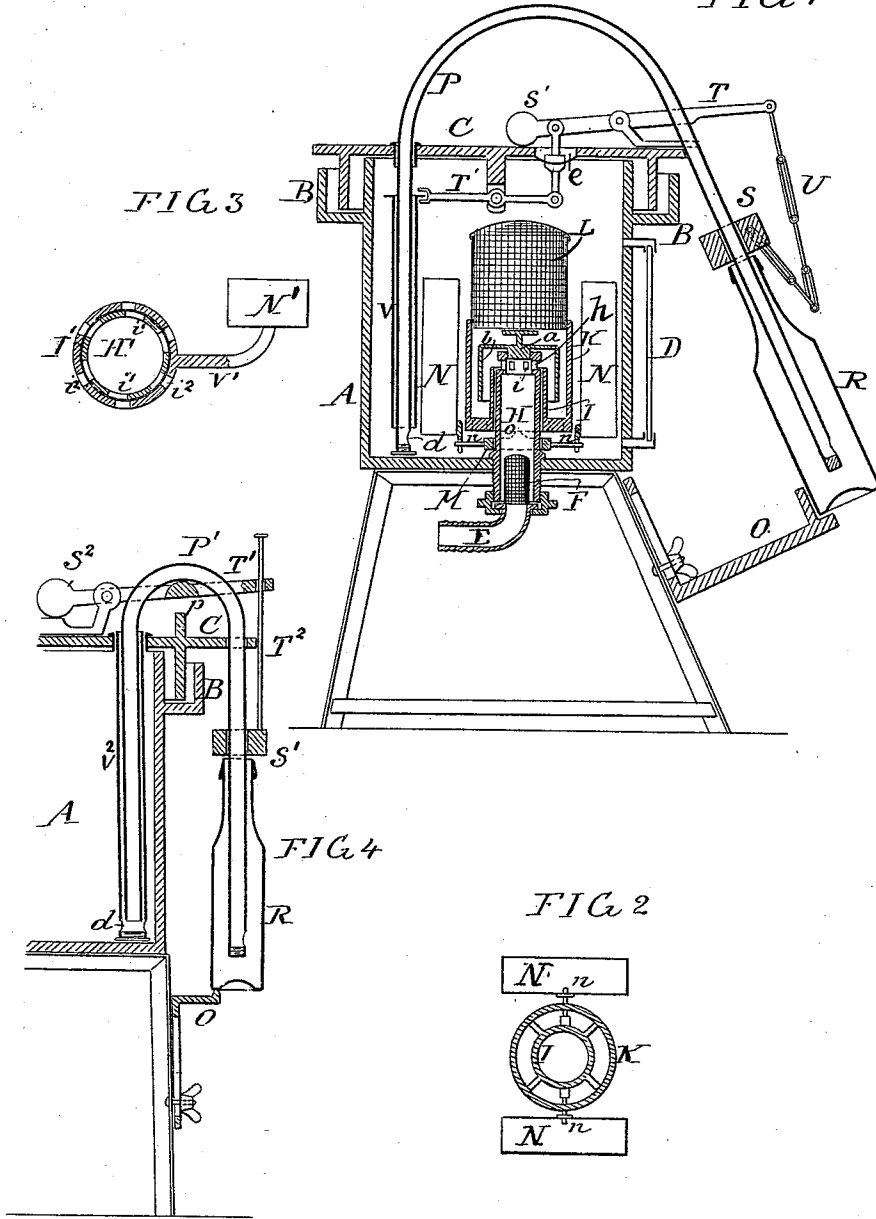
2 Sheets—Sheet 1.

A. A. PINDSTOFTE.  
BOTTLING APPARATUS.

No. 526,086.

Patented Sept. 18, 1894.

FIG 1



Witnesses  
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

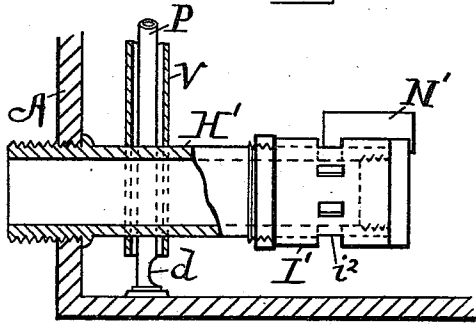
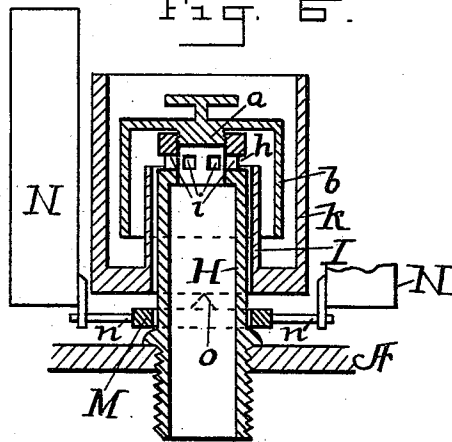


Fig. 6.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

ANDERS ANDERSEN PINDSTOFTE, OF COPENHAGEN, DENMARK.

## BOTTLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 526,086, dated September 18, 1894.

Application filed December 23, 1893. Serial No. 494,515. (No model.)

*To all whom it may concern:*

Be it known that I, ANDERS ANDERSEN PINDSTOFTE, a subject of the King of Denmark, residing at Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Bottling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a bottling apparatus, characterized more especially by the particular float valve employed which operates equally well irrespective of the amount of pressure in the receptacle of the apparatus, and furthermore by the outlet opening of the automatic filling mechanism.

In the accompanying drawings, Figure 1, shows a vertical section of the apparatus. Fig. 2, shows the outer cylinder seen from above. Fig. 3, shows in transverse section a modification of the float valve, and Fig. 4, in vertical section a modification of the mechanism for closing the outlet. Fig. 5, is a detail illustrating the modification of Fig. 3 more fully, and Fig. 6, is a detail showing some of the parts of Fig. 1 on a larger scale for greater clearness.

The apparatus comprises in part a receptacle A, with an hydraulic joint B, for the cover C, and a water gage D. The inlet pipe E to this receptacle is connected with the vertical cylinder H secured in the bottom of the receptacle and contains a strainer F of wire gauze which is designed to retain the sediment. The cylinder H is turned true and smooth on the outside and provided with an annular recess *h*, at the upper end having symmetrically arranged outlet openings *i*. By this recess the pressure is to be equalized on all sides when the valve operates. At its top the cylinder H is closed by a plug *a*, provided with a handle and adapted to be unscrewed when the valve is to be cleaned. The plug is connected with a downwardly extending hood *b*, which prevents the liquid as it passes through the openings *i*, from spurting up into the receptacle A and being changed to foam. The fixed cylinder H, is surrounded by a movable valve cylinder I, connected below by ra-

dial arms with the cylinder K having a cover L of wire gauze.

The cover L serves as a foam condenser. Below the cylinder I, is a ring M surrounding cylinder H and adapted to slide up and down freely. Said ring is provided with two pins *n*, which by means of two diametrically opposite points *o*, of its upper side supports the cylinder I and cylinder K when in their lowest position. The pins *n* on the ring engage with holes in the float N, in such manner that the connection between the float and the ring and between this ring and the base of the valve cylinder I, may be as free as practicable so that all oblique pressures may be avoided.

The liquid passing out below from between the cylinders I, and K, flows through the siphon tube P provided near its lower end with the outlet opening *d*, to the vessel R to be filled, the bottom of which rests upon a table O during the filling operation. When the filled vessel R is removed the weight S adapted to slide up and down upon the outer portion of the siphon tube will slide down and act by means of the chain U upon the lever T connected to said weight by said chain in such a manner that the lever T' connected therewith and arranged inside the receptacle A, is likewise actuated. For the sake of insuring tightness the connection between the levers T and T' is effected by a membrane *e*, arranged in the cover of the receptacle. By this means the tube V fitted to move outside the inner end of the siphon tube, and the flange of which is embraced by the forked end of the lever T', is moved downward and closes the inlet opening *d* of the siphon tube to stop the flow of liquid while changing the vessels R. When the weight S is again slid upon the siphon tube by putting upon the latter a vessel to be filled the counter-weight S' arranged on the lever T will bring the closing mechanism again to the position shown in Fig. 1, and thereby open the outlet opening *d*.

The apparatus operates as follows: The liquid entering through E flows through the cylinder H and the outlet openings *i* below the hood *b*, and thence downward between the cylinders I and K into the receptacle A, while any foam which may have been produced passes upward outside the hood *b* to the foam

condenser L and thence into the receptacle. According as the level of the liquid in the receptacle A is higher or lower the valve cylinder I will close more or less the outlet openings *i*, the latter being completely closed when the level of the liquid reaches a height causing the valve to entirely close said openings *i*. It may here be stated again that this float valve operates equally well, irrespective of the amount or pressure in the receptacle A wherein there is more or less pressure of confined air or gas. From the receptacle A the liquid as before mentioned, is caused to pass through the siphon tube P.

15 In the modification shown in Figs. 3 and 5, the cylinder H' is horizontal and provided with outlet openings *i'* while the valve cylinder I' surrounding this cylinder, and also provided with outlet openings *i''* corresponding to the outlet openings in the valve cylinder, is caused to open and close the passage by a slight rotatory motion for which it is connected by an arm *v'* with the float N'. When the liquid in the receptacle rises the float will move upward and thereby cause the cylinder I' to turn round the cylinder H thereby closing the outlet openings *i'* more and more until these are entirely closed when the level of the liquid reaches a sufficient height.

30 In the modification of the closing mechanism shown in Fig. 4, the siphon tube P' is movable and inserted in the fixed tube V<sup>2</sup> provided with outlet openings *d*. The weight S' is here connected with the lever T' by a rod T<sup>2</sup> fitted to slide in an aperture of the said lever. When the vessel R is put upon the siphon tube the weight S' is pushed upward and a counter-weight S<sup>2</sup> then moves the lever T' to the position indicated in Fig. 4, in which the arm *p* arranged on the lever raises the siphon tube to such an extent that the inner end of the same uncovers the outlet openings *d*. When the vessel is removed the weight S' sinks and the siphon tube being now deprived of support moves downward and closes the outlet openings *d*. This latter arrangement has the advantage that the siphon tube may be taken out and cleaned.

50 In conclusion it may be observed that this apparatus can be employed not only for bottles but for any desired vessel.

I claim—

1. In bottling apparatus, the combination

with the liquid receptacle, of the inlet cylinder extending into said receptacle and having inlet passages for the liquid, a tubular valve surrounding said cylinder, and the float controlling the valve to regulate the inlet of the liquid substantially as described. 55

2. In bottling apparatus, the combination with the liquid receptacle of the inlet cylinder extending into said receptacle, the froth separating cover located above the inlet openings, and the hood and cylinder directing the liquid away from the froth separator substantially as described. 60 65

3. In bottling apparatus, the combination with the liquid receptacle, of the inlet cylinder extending into said receptacle, the float valve coacting therewith and controlling the inlet of the liquid, the froth separating cover located above the inlet openings for the liquid, and the hood and cylinder directing the liquid away from the froth separator substantially as described. 70 75

4. In bottling apparatus, the combination with the liquid receptacle, of the siphon bottle filling tube, the tube for automatically opening and closing the outlet opening into said bottle filling tube, the gravitating weight on the outer portion of said filling tube subject to be lifted by the bottles applied to be filled, and the gravitating lever connected with said weight and adapted to open and close said outlet according as the weight is lifted or let fall respectively substantially as described. 80 85

5. In bottling apparatus, the combination with the liquid receptacle of the siphon bottle filling tube, the tube for automatically opening and closing the outlet opening into said bottle filling tube, the gravitating weight on the outer portion of said filling tube subject to be lifted by the bottles applied to be filled, and the gravitating lever connected to said weight and opening and closing tube, and adapted to open and close said outlet according as the weight is lifted or let fall respectively substantially as described. 90 95

In testimony whereof I affix my name in the presence of two witnesses. 100

ANDERS ANDERSEN PINDSTOFTE.

Witnesses:

VIGGO CONSTANTIN EBERTH,  
LAURITZ WILHELM MELSERY.