

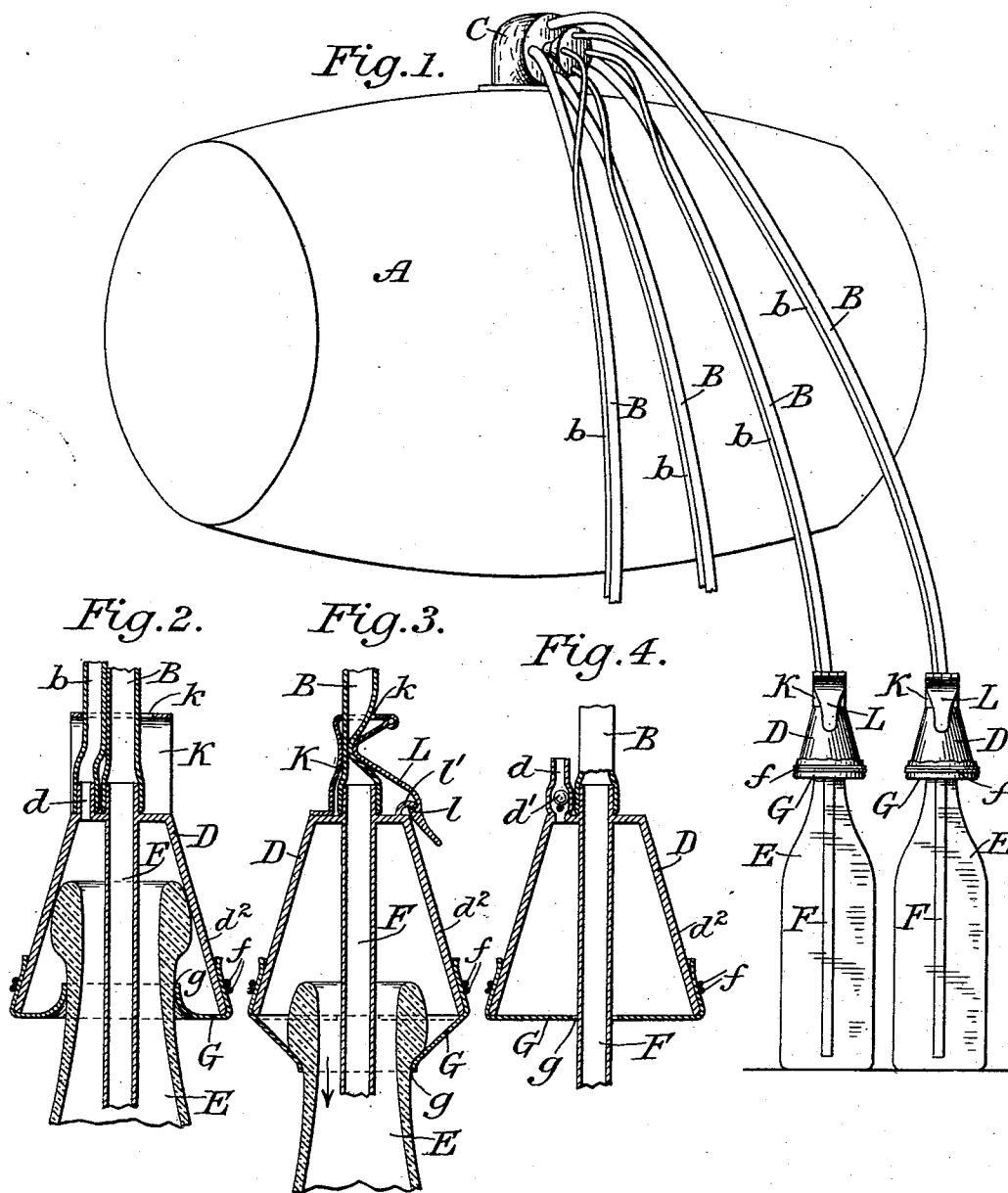
(No Model.)

2 Sheets—Sheet 1.

M. E. DONALLY.
BOTTLING APPARATUS.

No. 569,180.

Patented Oct. 13, 1896.



Attest:
A. N. Jesbera.
A. Hilder

Inventor:
Melvin E. Donally
by *William B. Greeley*
Atty.

(No Model.)

2 Sheets—Sheet 2.

M. E. DONALLY.
BOTTLING APPARATUS.

No. 569,180.

Patented Oct. 13, 1896.

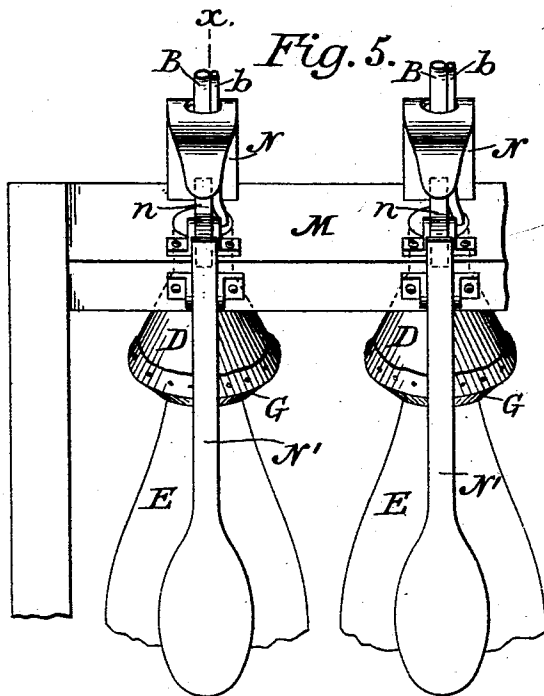


Fig. 5.

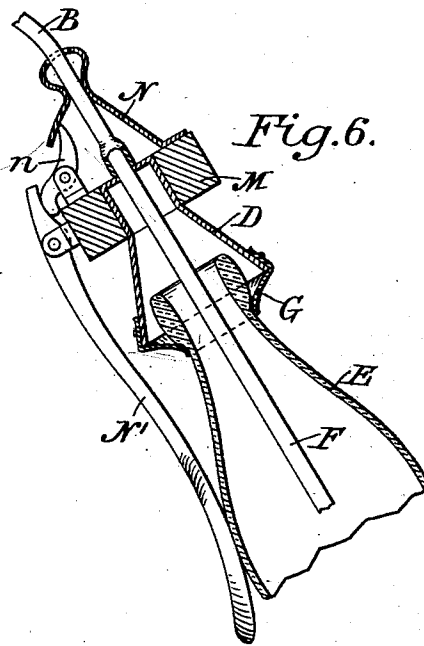


Fig. 6.

Fig. 7.

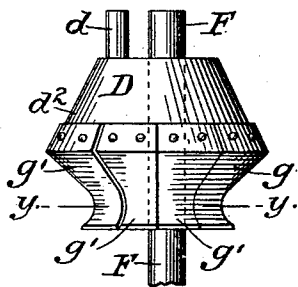


Fig. 8.

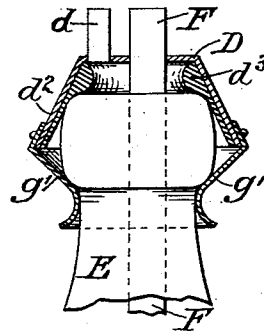
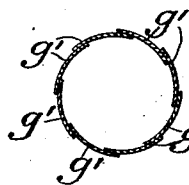


Fig. 9.



Attest:
A. N. Jespersen.
A. L. Hader

Inventor:
Melvin E. Donally
by William B. Greeley
Atty.

UNITED STATES PATENT OFFICE.

MELVIN E. DONALLY, OF NEW YORK, N. Y.

BOTTLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 569,180, dated October 13, 1896.

Application filed June 8, 1893. Serial No. 476,907. (No model.)

To all whom it may concern:

Be it known that I, MELVIN E. DONALLY, a citizen of the Dominion of Canada, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Bottling Apparatus; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to the bottling of liquids, such as beer, by hand, that is to say, when manipulation of each bottle by the attendant is required. As the operation is usually conducted, each bottling-tube is compressed by the operator to stop the flow of the liquid as he withdraws the end or nozzle of the tube from one bottle and prepares to insert it in another, and while the operator is transferring tubes from bottles already filled to empty bottles the liquid is flowing through other tubes which will at once require attention. If the operator is negligent or for any reason is unable to stop the flow into certain bottles at the proper time, such bottles will be filled to overflowing and more or less liquid will be wasted. Moreover, as the operator's nerves and muscles become wearied by almost ceaseless repetitions of the same act, it will frequently happen that he will fail to shut off the flow of liquid completely through the tubes which he is transferring, with the result that considerable waste is occasioned.

The object of the invention is to provide a device that will effectually prevent waste in the ways just noted, and will thereby be of great value to bottlers who, by reason of lack of space or of insufficient business for a machine or on account of the cost of a machine, do not use a bottling-machine in their business. To this end I provide for each bottling-tube a stopper which will prevent the escape of liquid from the bottle around the tube, and an elastic holder attached to the stopper or tube and adapted to engage the neck or mouth of the bottle to hold the tube and stopper in place even after the bottle has been completely filled. The stopper may take a variety of forms within the scope of my invention, it being essential merely that it shall fit snugly around the tube in order to prevent the escape

of liquid between itself and the tube. It may itself, by contact with the bottle-mouth, prevent the flow of liquid therefrom, or it may cover the mouth of the bottle loosely, like a cap, while the clamp or holder before referred to may have a continuous bearing upon the bottle-neck and so retain any liquid that may flow between the cap and the bottle-mouth.

As a further feature of the invention I provide means whereby a clip or other valve, which is used to permit or prevent the flow of liquid through the tube, may be opened automatically when the tube and bottle are brought together.

In the accompanying drawings, Figure 1 is a perspective view of a barrel with a series of filling-tubes, two of which are shown as equipped with one form of my improved device and applied to bottles. Fig. 2 is a vertical central section of one form of the improved device, showing also portions of a bottle and the filling and vent tubes. Fig. 3 is a vertical central section on a plane at right angles to that represented in Fig. 2. Fig. 4 is a vertical central section similar to Fig. 2, but without the bottle and showing a valve in the vent-tube. Fig. 5 is a rear view of a portion of a frame having a series of tubes, stoppers, and holders fixed thereto and to which the bottles may be applied, an automatic valve-operating arrangement being also shown. Fig. 6 is a vertical central section on the line *xx* of Fig. 5. Fig. 7 is a side elevation of a modified form of the stopper and holder. Fig. 8 is a vertical central section of the construction shown in Fig. 7, with the upper part of a bottle shown in elevation. Fig. 9 is a horizontal section of the line *yy* of Fig. 7.

In Fig. 1 of the drawings I have represented at A a cask or barrel from which the liquid to be bottled is drawn, a series of bottling or filling tubes B, and a corresponding series of gas-return tubes *b*, said tubes having independent connections with the cask or barrel and each pair, composed of a single filling-tube and a single gas-tube, being adapted to be applied to a bottle to be filled.

It will be understood that in the arrangement represented the filling-tubes B pass through the bung C and enter the liquid in the barrel, the tube thus forming a siphon

to conduct the liquid from the barrel to the bottle. The gas-return tubes *b b* do not extend either into the bottle or into the liquid in the barrel, but serve to conduct the displaced air or gas from the bottles to the barrel.

Although I prefer to use the arrangement just described, it will be apparent that the gas-return tubes may be dispensed with and the filling-tubes connected to the supply cask or reservoir in any desired manner without affecting the mode of use of my improved device.

Before proceeding to describe in detail the different forms shown in the several figures it may be stated generally that each filling-tube is connected to or passes through a perforated stopper or cap which is adapted to cover the mouth of the bottle and to prevent the escape of the liquid between itself and the tube, and that a yielding clamp or holder is attached to or carried by the stopper and serves to hold the tube and stopper in place in relation to the bottle after they have been brought together.

In the construction represented in Figs. 2 and 3 the stopper is formed as a cap *D*, which is adapted to cover the mouth of the bottle *E*, and has fixed thereto or formed therewith a rigid tube *F*, which is adapted to enter the bottle and forms an extension and virtually a part of the filling-tube *B*. The cap may have a nipple *d*, which is adapted for connection with the gas-return tube. In case the gas-return tube is not employed I prefer to enlarge the nipple, as shown in Fig. 4, and to place therein a float-valve *d'*, which shall be upborne by the liquid when the bottle and the space between its mouth and the cap *D* are filled with liquid, and shall thereby prevent the escape of the liquid through the nipple. The cap is also provided with an extension or skirt *d²*, which is by preference substantially rigid and unyielding and is adapted to extend below the enlargement of the bottle-mouth and at that point to bear a yielding and elastic diaphragm *G*, having a central aperture *g*, which will stretch or expand when the tube and cap are applied to the bottle sufficiently to permit the mouth of the bottle to pass through it into the cap or stopper, and will thereby retain the latter in place, even when the bottle has been filled completely and its pressure tends to force the cap away from the bottle-mouth, the diaphragm forming an envelop which closes tightly about the neck of the bottle and prevents the escape of liquid. At the same time the operator can readily disengage the stopper and the diaphragm from the bottle. The diaphragm *G* is normally flat, as represented in Fig. 4, but when applied to the bottle the portions around the central aperture turn up and remain in the position shown in Fig. 2, in which the pressure of such liquid as may escape between the bottle-mouth and the cap or stopper will have a tendency to make the joint tighter between the bottle-neck and the

encircling diaphragm. As the tube and stopper are withdrawn from the bottle the encircling diaphragm will assume the position represented in Fig. 3 and will form a funnel to return into the bottle such liquid as may be contained within the inclosed space, thereby filling the bottle again to compensate for the withdrawal of the filling-tube or its extension. The diaphragm may be secured upon the cap or its extension by any convenient means, as by being wrapped with cord or wire *f*.

In the form of the device shown in Figs. 7, 8, and 9 the encircling diaphragm having a central aperture is formed of a series of overlapping elastic plates *g' g'*, which may be riveted or otherwise secured to the skirt *d²* of the cap or stopper *D*, and, being formed of stiffer material than that employed for the diaphragm shown in Figs. 2, 3, and 4, may be given a suitable shape which will permit the bottle-neck to be readily entered and withdrawn, and so that they may closely encircle the neck of the bottle below the enlargement near the mouth. Since these elastic plates are mainly for the purpose of holding the tube and stopper in place and cannot be depended upon to make a tight joint which will entirely prevent the escape of the liquid, I prefer to line the upper portion of the cap with a suitable packing *d³*, such as rubber, which will make a tight joint between the bottle-mouth and the cap.

It will be observed that, as the diaphragm or yielding envelop is supported by the substantially rigid and flaring skirt, the bottle can be introduced by a simple direct movement in the line of its axis and the proper connection established with certainty.

As bottling is commonly practiced, the operator compresses the filling-tube with his fingers, and the result is that there is more or less leakage and waste. I therefore prefer to support on or with the cap or stopper a clip, which may be shifted readily by the operator to compress or release the tube or may be actuated automatically when the tube and bottle are brought together. One form of this clip is shown in Figs. 2 and 3 as composed of a bent plate *K*, which is fixed directly to the cap or stopper *D* and has an opening, as at *k*, to receive the tube or tubes. To the end of the plate is hinged a second bent plate *L*, which has a lip *l* to engage a hook *l'*, fixed on the cap *D*. The hinged plate *L* can be conveniently operated by the thumb of the hand as it grasps the tube and stopper, either to compress the tube or to be disengaged from the hook *l'* to release the tube. If constructed substantially as represented in Fig. 3, the plate *L* will be disengaged from the hook *l'* by the slight shock in applying the stopper and tube to the bottle. As stated above, and as represented in Figs. 5 and 6, the clip may be actuated without the special attention of the operator. As shown in said figures, several stoppers may be sup-

ported in a fixed frame, (represented at M,) and to each stopper, or near it, so as to occupy a fixed relation therewith, is secured a spring-clip N, which normally compresses the tube.
5 The free end of the clip might be extended to form a movable arm which shall be shifted by the bottle as it is applied to the tube and stopper, or, as represented, the movable arm N' may be separately pivoted upon the stopper or frame and may act upon the clip through an intermediate latch-piece n.

I have shown and described herein certain convenient and practical forms in which my invention may be embodied; but it will be understood that I do not intend to limit my invention to the exact form shown or to any other, as many different forms which embody my invention will readily suggest themselves.

I claim as my invention—

20 1. The combination with a bottle-tube, of a stopper encircling said tube and adapted to close the mouth of the bottle around the tube and having a substantially rigid skirt, and a yielding envelop carried by said skirt and adapted to be slipped upon the outside of the neck or mouth of bottle as the tube is inserted therein and to close tightly about the same.

30 2. The combination with a bottling-tube, of a stopper and a yielding diaphragm having a single aperture to receive the neck of a bot-

tle and adapted to encircle the same and to prevent the escape of liquid from the bottle.

3. The combination with a bottling-tube, of a cap secured to the tube and having an extended skirt, and an elastic diaphragm secured to said skirt and having a central aperture to receive the neck of a bottle. 35

4. The combination with a bottling-tube, of a cap encircling said tube, a clip to compress said tube supported in fixed relation to said cap, and a yielding arm to operate said clip and adapted to be moved to open the clip by contact with the bottle when the bottle and cap are brought together. 40 45

5. The combination with a bottling-tube, a gas-return tube and a bung having independent connections for said tube, of a stopper fitting both tubes and adapted to close the mouth of the bottle around the tube and having a substantially rigid skirt, and a yielding envelop carried by said skirt and adapted to be slipped upon the outside of the neck or mouth of the bottle as the tubes are inserted therein and to close tightly about the same. 50 55

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MELVIN E. DONALLY.

Witnesses:

A. N. JESBERA,

A. WIDDER.