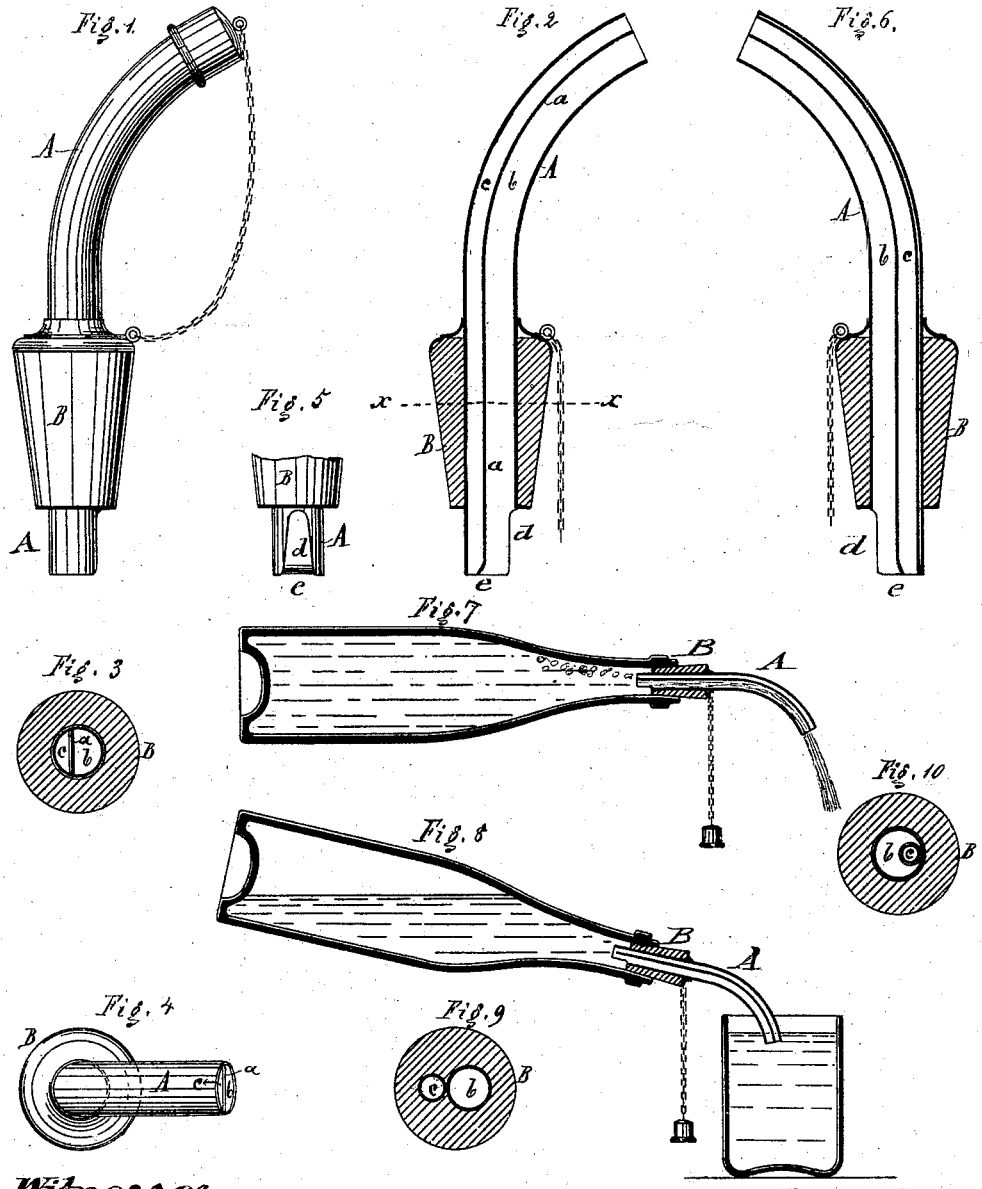
J. LUCKHARDT.

Vent-Spout for Bottles, &c.

No. 217,127. Patented July 1, 1879.



Witnesses:

Carl Karp

Fr. Mayer.

Inventor:

Johannes Luckhardt

by Paul Goepel.

Attorney.

UNITED STATES PATENT OFFICE.

JOHANNES LUCKHARDT, OF BERLIN, GERMANY.

IMPROVEMENT IN VENT-SPOUTS FOR BOTTLES, &c.

Specification forming part of Letters Patent No. **217,127**, dated July 1, 1879; application filed February 1, 1879.

To all whom it may concern:

Be it known that I, JOHANNES LUCKHARDT, of Berlin, German Empire, have invented an Improved Vent-Spout, of which the following is a specification.

In the accompanying drawings, Figure 1 represents a side view of my improved vent-spout for bottles, oil-cans, and other closed receptacles; Fig. 2, a vertical central section; Fig. 3, a horizontal section on line *x x*, Fig. 2; Fig. 4, a top view, and Fig. 5 an end view, of the lower end of the spout. Fig. 6 is a vertical central section of a modified form of the spout. Figs. 7 and 8 are vertical longitudinal sections of the spout, shown as applied to bottles, so as to illustrate its working; and Figs. 9 and 10 are horizontal sections of the spout, showing modified constructions of the same.

Similar letters of reference indicate corresponding parts.

This invention is intended to furnish for bottles, cans, and closed vessels or receptacles of all kinds an improved vent-spout, by which the contents may be poured out in a quick and even manner without a separate vent device, and without causing the least spurting or the spattering of the contents. The spout admits, furthermore, the filling of vessels up to a certain point without their running over and spilling the contents.

The invention consists of a spout that is arranged with a transverse partition throughout its entire length, forming two separate channels, of different sizes, of which the larger channel serves for the exit of the liquid, while the smaller channel forms the vent-passage for the air. The lower or interior end of the spout has a recess in the outer wall of the exit-channel, for the purpose of facilitating the outward flow of the liquid in the larger channel.

Referring to the drawings, A represents a straight or curved tube of my improved spout, which tube is inserted into a cork, B, and secured thereby into the bottle, can, or other receptacle; or it is applied thereto by means of a screw-cap, or in any other approved manner.

The tube A is divided by a transverse partition, *a*, that extends throughout its entire length, thereby forming two separate channels, *b* and *c*. The partition *a* is, by preference, not placed in the center of the tube A, but somewhat to one side of the axis thereof, so that the channel *b* at one side of the partition is somewhat larger than the channel *c* at the other side of the same. The larger channel, *b*, serves for discharging the liquid, while the smaller channel serves for admitting the air to the inside of the vessel.

The lower or interior end of the tube A is cut out or recessed, as shown at *d* in Figs. 2 and 5, the recess *d* facilitating the passage of the liquid into the larger channel, *b*. The air-channel *c* is contracted at the interior end of the spout by giving the partition *a* a slight inclination, as shown at *e* in Fig. 2.

In place of the channels formed by the partition *a* in the tube A, two separate channels may also be obtained either by an outer or inner air-tube, as shown in Figs. 6, 9, and 10. In the case of the inner tube, *c*, the lower end of the inlet-tube is also slightly contracted by giving one side thereof an inclination or curve, as shown at *e* in Fig. 6, so as to enlarge the egress-aperture of the larger channel.

The working of the spout is clearly illustrated in Fig. 7, in which the bottle or other vessel is shown tilted for pouring out the contents of the same.

It is obvious that when the vessel is tilted the liquid would have a tendency to pass out through both channels; but as one channel is larger it is filled quicker by the liquid, so that the higher column therein exerts a greater pressure, and draws in the air through the smaller channel. The air thus drawn through the smaller channel causes the even and steady outward flow of the liquid through the larger channel, so as to avoid the peculiar spurting and spattering incidental to the pouring out of liquids from the common bottles or receptacles.

The mere employment of a tube without a partition would either prevent the flow entirely or allow it to take place slowly and by sudden spourts, as the air that enters through the spout has to force its way through the liquid. Besides the easy flow of the liquid, owing to the vent through the air-channel, the spout has, furthermore, an additional advantage—namely, that of admitting the instant stopping of the outward flow of the liquid as soon as the level of the poured-out liquid

reaches the discharge-aperture of the spout and closes the air-inlet, as in Fig. 8. This is of special advantage when filling lamp-bowls of non-transparent material, tumblers, or other vessels, as thereby the flowing over of any oil or other liquid is effectually and reliably prevented.

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

The combination, with a stopper or other closing device, B, of an outwardly-curved vent-spout, A, that is divided by a partition, *a*, extending throughout its entire length into a discharge-channel, *b*, and a vent-channel, *c*, the mouth of the vent-channel being in line with the mouth of the discharge-channel, so that when the liquid poured out reaches the level of the mouths they are simultaneously closed and the discharge of the liquid arrested, substantially as set forth.

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

JOH. LUCKHARDT.

Witnesses:

HERMANN KREISMANN,

EDWARD P. MACLEAN.