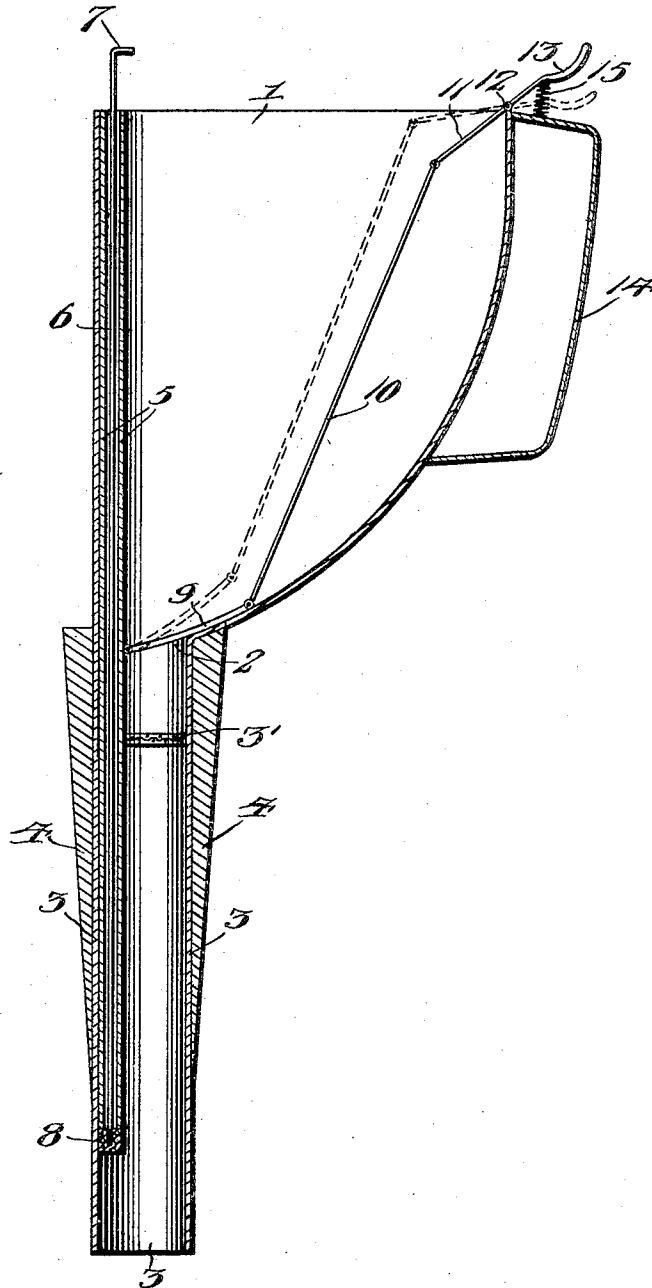


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P. EPPERSON.
FUNNEL.

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FUNNEL.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PERRIN EPPERSON, a citizen of the United States, residing at Belt, in the county of Cascade and State of Montana, have invented new and useful Improvements in Funnels, of which the following is a specification.

This invention relates to an improvement in funnels, the object of the invention being to provide a funnel having means for automatically preventing overflow and waste of liquid from a receptacle being filled and also to retain all surplus liquid in the funnel, so that the funnel may be transferred from one receptacle to another without exhaust and waste of the surplusage.

The preferred embodiment of the invention is illustrated in the accompanying drawing, which shows a central vertical section of a funnel provided with my improvements.

The numeral 1 in the drawing denotes the body of the funnel, which may be of any preferred size and form and is provided with the usual outlet 2 and a tubular stem 3, projecting downwardly therefrom and communicating at its upper end with said outlet. This stem is adapted to fit within the mouth of the container or receptacle to be filled and is provided with a surrounding tapered sleeve or stopper 4 to form a fluid-tight connection therewith. If desired, the stem 3 may be provided with a strainer 3' below the outlet-opening 2.

Extending downwardly through the body and stem is an air-tube 5, which serves as an air-vent. This tube 5 is preferably placed at one side of the outlet 2 and stem 3, or eccentrically therein, and terminates at its upper end flush with the upper edge of the body 1 of the funnel and at its lower end within the stem 3 and a short distance above the lower end thereof. A rod or stem 6 projects through and is free to reciprocate in the tube 5 and is provided at its upper end with a head 7 to limit its downward movement and at its lower end with a float-valve 8 to seat against the lower end of the tube 5. Said rod or stem 6 is of greater length than the tube, so that normally the rod will gravitate downward until its head 7 abuts against the upper end of the tube 5 and the lower end of the rod projects below the lower end of the tube, thus moving the valve 8 out of engagement and leaving the tube 5 open for the ex-

haust of air from the receptacle to be filled. The head 7 may be of any preferred character to serve as a stop to limit the downward movement of the rod and is either perforated or of such form as to permit free exhaust of air through the upper end of the tube.

Controlling the outlet 2 is a pivoted valve 9, which is attached at its free end or edge by link 10 to a controlling-lever 11, the latter being fulcrumed, as at 12, to the upper end of the body 1 and provided with an outwardly-projecting finger or thumb piece 13. The finger or thumb piece 13 lies above a handle 14, suitably secured to the body, and between this handle and the finger or thumb piece 13 is an expansion-spring 15, which projects said finger-piece upward, and thereby forces the link 10 downward to force the valve 9 to closed position.

In the operation of the device the stem 3 is inserted within the neck of a bottle or other receptacle and the valve 9 held open by a downward depression of the finger-piece 13 of the lever. The liquid with which the bottle is to be filled is then introduced thereinto through the funnel. When the receptacle is filled to the desired point, the valve 8 will float upward on the surface of the liquid and close the lower end of the tube 5, thus preventing the further outflow of air from the receptacle and the consequent further induction of liquid. The valve 8 on closing forces the rod 6 upward, thereby indicating that the receptacle has been filled to the desired point. The valve 9 may then be closed, or liquid may be further introduced until the funnel is filled and the valve then closed. The closing of the valve will permit the funnel to be detached from the receptacle and transferred to another receptacle which is to be filled without loss of the surplus liquid contained within the stem 3 below the valve, as said stem will be sealed, owing to both valves 8 and 9 being closed, thus preventing the surplusage from flowing out of the stem. Upon the transfer of the funnel to the second receptacle the valve 9 is again opened, thus permitting the liquid to flow into said receptacle and the valve 8 to drop downward. By thus constructing and arranging the valves the flow of liquid from the funnel-body to the stem may be controlled conveniently and a large number of receptacles filled within a comparatively short period, as after one re-

ceptacle has been filled the operator may continue to introduce liquid into the funnel until the latter is full without danger of loss of the liquid, so that upon transferring the funnel
5 to another receptacle the liquid already contained in the funnel may be discharged thereinto to facilitate the operation of filling.

Having thus described the invention, what is claimed as new is—

- 10 A funnel comprising a body provided with a handle and having a discharge-outlet and a stem communicating therewith, a vent-tube extending through said outlet and into the

body and stem, an automatic valve governing said tube, a pivoted valve controlling the
15 discharge-outlet, a lever pivoted to the body, a link connecting said lever with the pivoted valve, and a spring disposed between the handle and lever and acting on the latter and normally holding the pivoted valve closed. 20

In testimony whereof I affix my signature in presence of two witnesses.

PERRIN EPPERSON.

Witnesses:

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