(No Model.)

# P. ANDERS.

## FUNNEL.

No. 596,972. Patented Jan. 11, 1898.

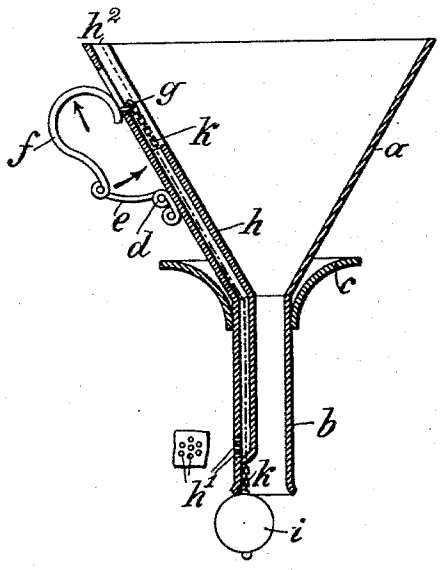
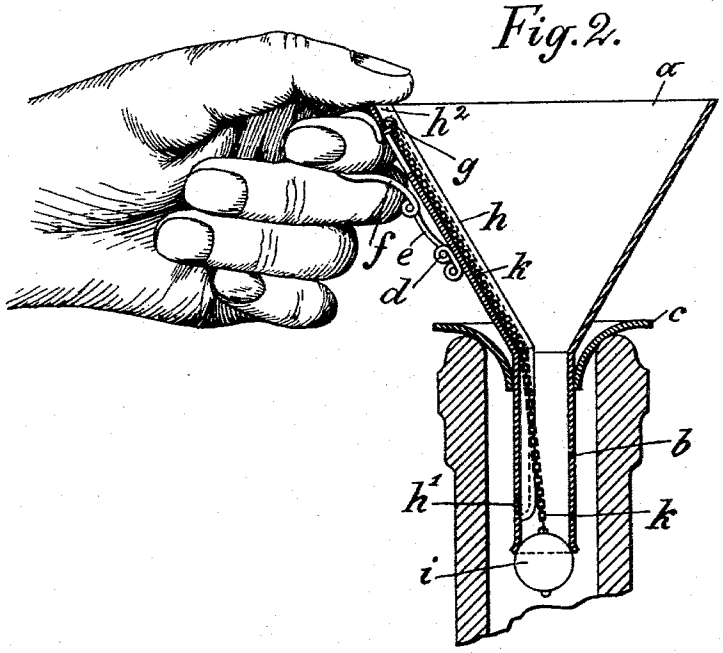



Fig. 1.

Fig. 2.




Witnesses:
H. W. Bormann.
Frank Malsch

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

PAUL ANDERS, OF BÄRSDORF, GERMANY.

## FUNNEL.

SPECIFICATION forming part of Letters Patent No. 596,972, dated January 11, 1898.

Application filed July 21, 1897. Serial No. 645,632. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL ANDERS, a subject of the King of Prussia, Emperor of Germany, and a resident of Bärsdorf, near Hansdorf, district of Waldenburg, Silesia, Germany, have invented certain new and useful Improvements Relating to Funnels, of which the following is a full and clear specification.

My invention relates to funnels of the kind in which the rising liquid stops the outlet for the displaced air, thus automatically preventing overflow.

The present invention is an attachment for funnels of the kind which is intended to prevent any running out or loss of the liquid remaining in the funnel after the filled bottle has been removed.

The invention is illustrated in the accompanying drawings.

Figures 1 and 2 are axial longitudinal sections, Fig. 1 showing the position of the parts when the funnel is ready for use and Fig. 2 showing the position of the parts when the funnel is to be taken out of the bottle.

On the inside of the funnel *a* and on the same side as the handle is a tube *h* open at both ends, one end opening at $h^2$ at the upper edge of the funnel *a* and the other end opening at *h'* at the side of the inlet-tube *b* of the funnel. The opening at *h'* is closed by means of a strainer, while the upper opening $h^2$ is left free.

The handle of the funnel consists of the fixed part, to which is hinged or pivoted at *d* a connecting-link *e*, the free end of which is hinged or pivoted to the movable part of the handles, the part *f* being bent in the shape of the letter **S** and adjustable along the side of the funnel. The part *f* is furnished with a hook *g*, which passes through a slot in the side of the funnel and serves as a guide for the movable part *f* of the handle. On this hook *g* the end ring of a chain *k* can be hooked, this chain carrying at its lower end a ball *i* for closing the lower opening at the inlet-pipe *b*. An india-rubber ring *c*, of conical, spherical, or similar shape, is pushed over the cylindrical inlet-pipe. This ring *c* effects an air-tight closure when the funnel is placed in the neck of the bottle, even when the latter is not of rounded shape.

The management and mode of operation of the new funnel are as follows: The funnel is put into the neck of the bottle in the ordinary way, whereupon the several movable parts assume the positions as in Fig. 1. The liquid is then poured in, and the air displaced by the inflowing liquid escapes from the bottle through the tube *h*, entering at *h'* and passing through *h h* upward and reaching the open air through the outlet $h^2$. As soon as the liquid has risen in the bottle above the opening *h'* the liquid ceases running out of the funnel into the bottle, while the air under pressure can no longer escape. The liquid, in consequence of the communication between the spaces, rises in the pipe *h* just as high as it is in the funnel. If now the funnel is to be lifted out, the movable upper part *f* of the handle should be seized by the forefinger, Fig. 2, and the opening $h^2$ closed with the thumb of the same hand, while at the same time the forefinger should be moved upward to rest against the thumb. Thereby the part *f* of the handle is moved in the direction of the arrow, Fig. 1, and the opening of the inlet-tube *h* is closed by the ball *i* being drawn upward onto the same.

During the lifting out of the funnel and the placing of the same in the vessel used for filling no liquid can run away and be lost either out of the funnel or out of the tube *h*.

Glutinous liquids often cause the ball *i* to stick. In order that when the funnel is further used the ball may be loosened, the last named is provided underneath with a ring or hook which can be taken hold of by means of a small wire hook.

When the funnel is to be cleaned, the chain *k* is taken off the hook *g* and the ball *i*, together with the chain *k*, drawn out from below, so that the several parts can each be easily and thoroughly cleaned.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

A funnel for preventing any discharge after removal of the filled bottle, consisting of the three-part handle arranged or attached to the funnel *a*, the upper and **S**-shaped part *f*, being connected by means of a link *e* with the fixed part *d* of the funnel *a*, and furnished with a hook *g* passing through and movable

in a slot in the side of the funnel, said hook carrying a chain *k* to the other end of which is attached a ball *i* serving as a valve to close the lower opening of the inlet-tube *b* of the funnel, and of the tube *h* for carrying the displaced air out of the bottle, said tube having an inlet *h'* on the side of the inlet-tube *b* and an inlet $h^2$ on the edge or border of the funnel *a* near to the movable part *f* of the handle, substantially as described and illustrated in the accompanying drawings.

Signed at Breslau, Germany, this 6th day of July, 1897.

PAUL ANDERS.

Witnesses:
PAUL LUBE,
PAUL RÜPPRICH.