

(No Model.)

C. XANDER & W. THOMAS.

BOTTLE FUNNEL.

No. 388,386.

Patented Aug. 21, 1888.

Fig. 1.

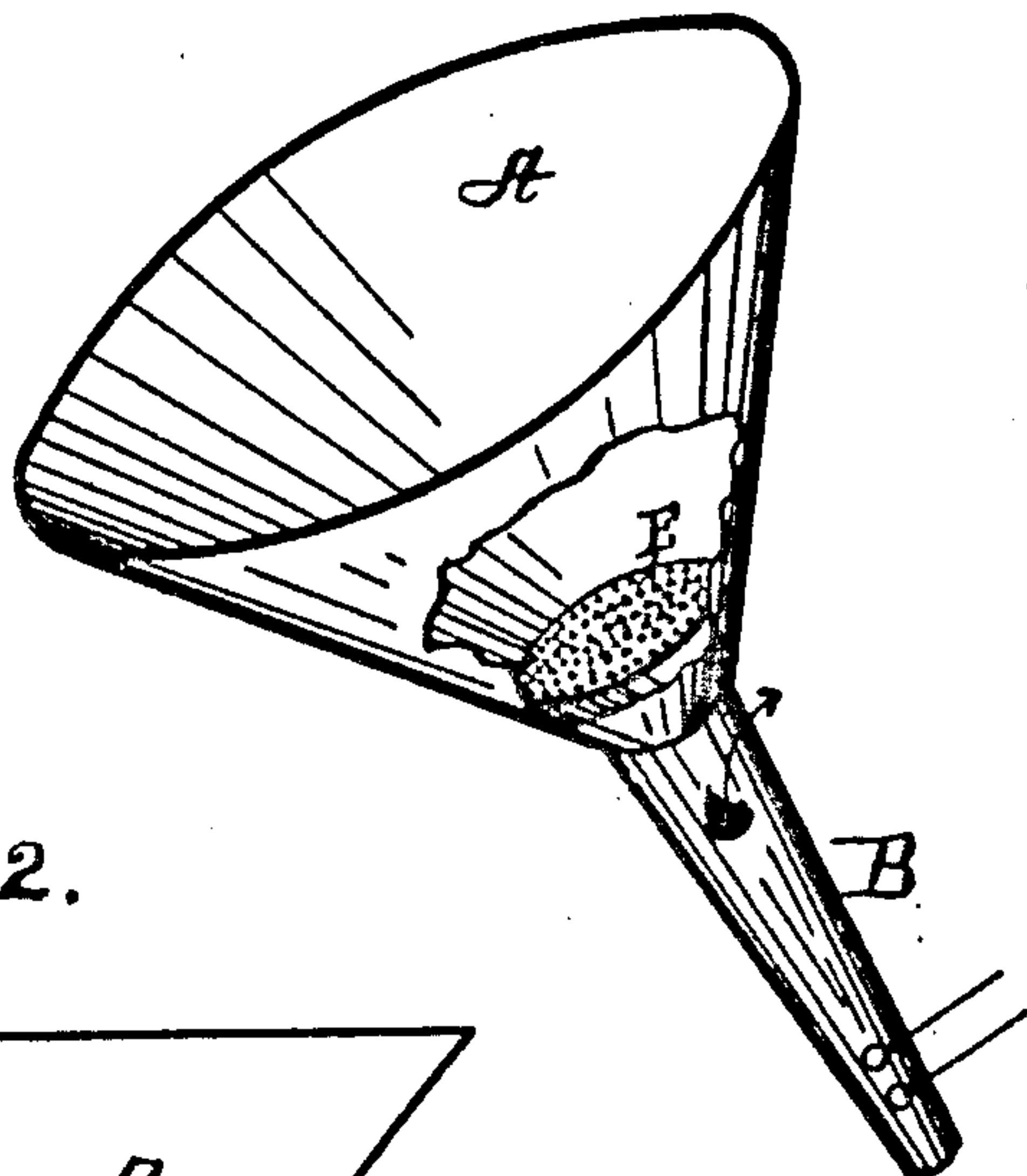


Fig. 2.

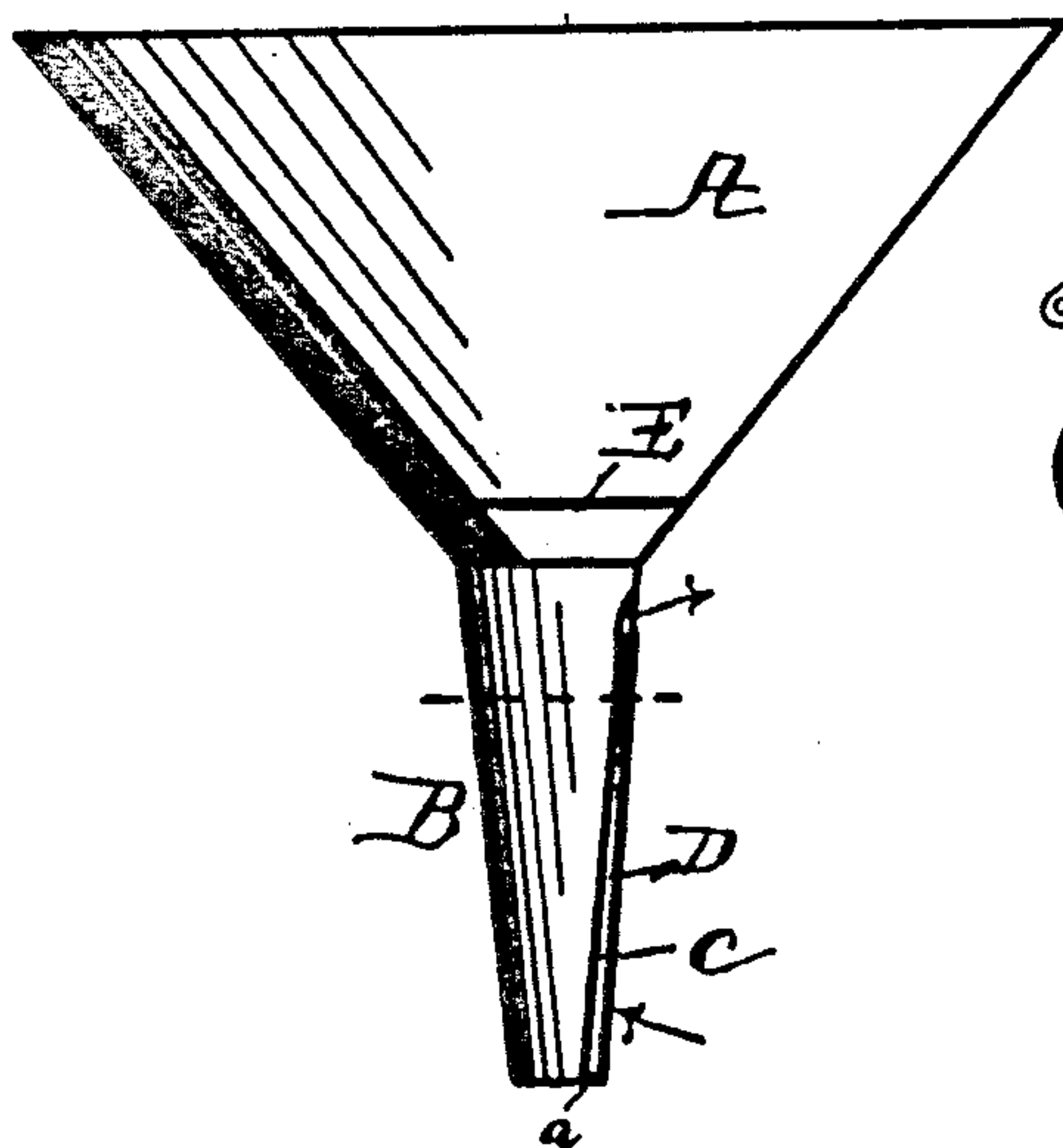


Fig. 5.



Fig. 3.

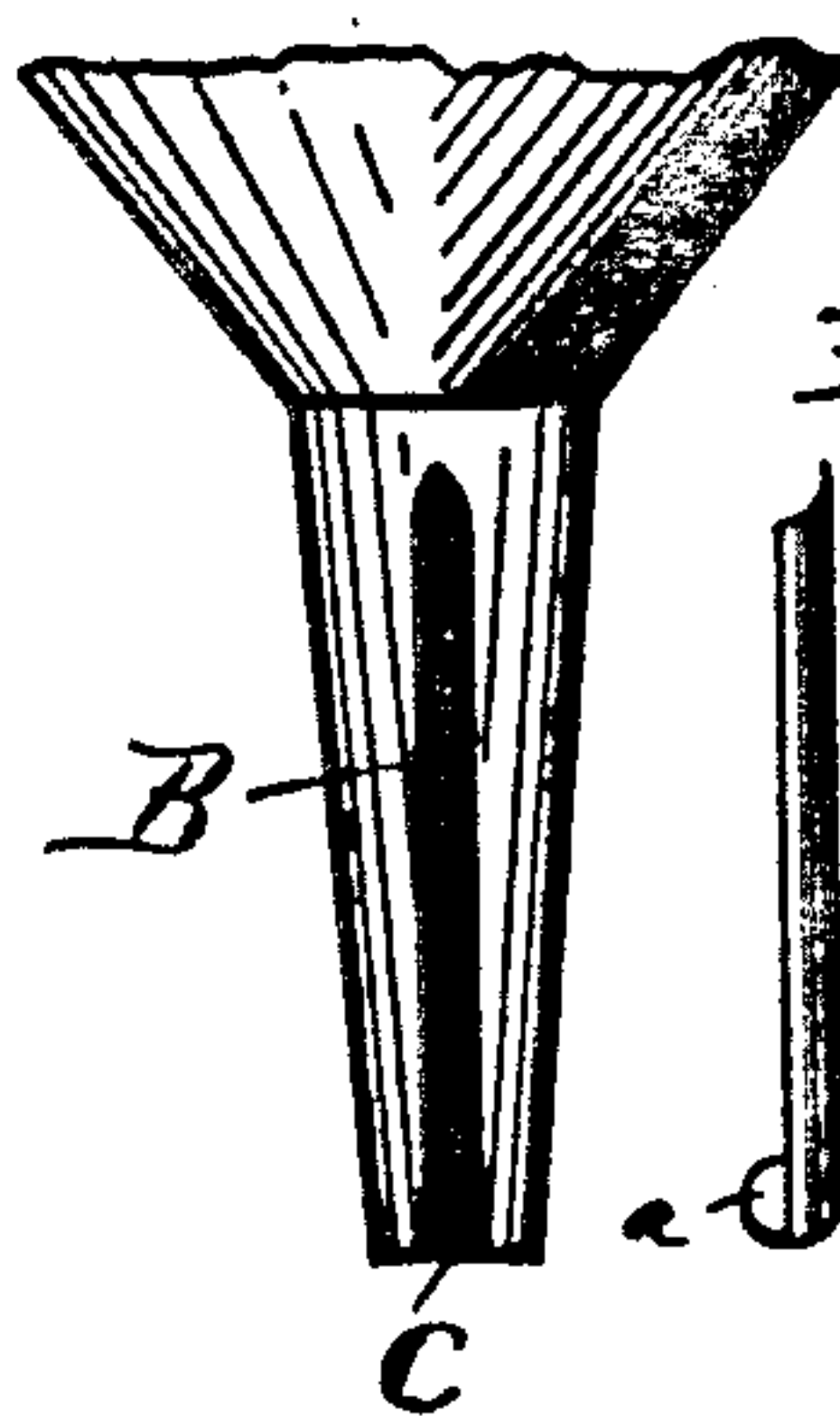


Fig. 4.



Witnesses,

E. B. Duff,
C. W. Merle.

Inventor,

Chris Xander,
William Thomas.

By their Attorney

E. B. Duff

UNITED STATES PATENT OFFICE.

CHRISTIAN XANDER AND WILLIAM THOMAS, OF WASHINGTON, DISTRICT OF COLUMBIA.

BOTTLE-FUNNEL.

SPECIFICATION forming part of Letters Patent No. 388,386, dated August 21, 1888.

Application filed June 14, 1888. Serial No. 277,120. (No model.)

To all whom it may concern:

Be it known that we, CHRISTIAN XANDER and WILLIAM THOMAS, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Bottle-Funnels; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to the class known as "hair bottle-funnels."

It has for its object the filling of bottles and other vessels without the defect usual of the vent or escape of air interfering with the liquid as it enters the bottle.

Heretofore funnels have been made with corrugations, serrations, or indentations on their periphery, and some have been made with tubes running centrally through, and others have tubes at their sides running the entire length of the funnel; but the tube projects and interferes with the funnel setting steadily in the bottle, while the corrugations flatten and choke up. Others have been made with concentric tubes, which are objectionable as very costly, and they also lessen the capacity of the bottle to receive the liquid in its full flow, which is very essential to economy in time. We are perfectly aware of all these constructions and of their defects, and hence lay no claim to them. Therefore to avoid the defects now existing in funnels and to produce a funnel that will fully produce the best and economic results are further objects of our invention.

To these ends our invention consists in forming a funnel of the shape of an inverted cone, its stem or shank to be made with an indentation extending longitudinally along its side. This indentation is covered by soldering or otherwise securing an independent piece of metal over it, thus forming a tube-vent, all of which will hereinafter more fully appear.

In the drawings the same letters will indicate like parts in the several figures.

Figure 1 is a perspective view showing our complete funnel, a part being broken away to show the strainer. Fig. 2 is a vertical section

of the funnel. Fig. 3 shows the shank of the funnel with the indentation; Fig. 4, the piece or shank that forms the vent-tube, and Fig. 5 a cross-section on the line *xx* of Fig. 1.

A is the upper portion of the funnel, and B the shank.

C is the indentation formed in the shank by any well-known means, and D is the blank to cover the groove or indentation C. The blank D is formed with a toe-piece, *a*, which covers the bottom of the tube and prevents contact with the liquid. This blank D is also provided with escape ports or apertures for the displaced air within the bottle. The vent-tube is open at the top of the shank B, which portion is always outside of the neck of the bottle, so that air entering the port escapes through and from the top of the vent-tube, thus entirely escaping contact with the liquid.

A long experience has demonstrated that if liquid passes down into the vessel in contact with the escaping air the operation of filling is defective for the reason that two forces in contact are passing in opposite directions. This is even so if the air escapes near the entry of the fluid into a separated tube, for in passing up it carries the fluid with it, and thus chokes the escape, and bubbling is the result. Furthermore, it requires great care to prevent the tube from choking up with dirt, as it is well known store dust when saturated with liquid forms a scale, and thus stops up the tube.

With our invention the vent-tube is entirely independent of the liquid-conduit, so that no contact whatever takes place. Thus while the liquid is passing down the air is passing up, the air entering the ports some distance from where the liquid discharges, and in this manner the liquid has free flow while the air has free escape, perfect operation being the result.

We locate within the body of the funnel a screen, E, which has a twofold object. One is to strengthen and stay the funnel and the other is to intercept and trap any foreign substances that may be in the liquid from entering the vessel.

It is evident several modifications of the contour of the tube may be made without departing from the spirit of our invention; but it must be understood that in any modification the air must enter the vent-tube above the

discharge of the liquid and escape outside of the neck of the vessel.

It will be readily seen that funnels of various sizes may be made to suit vessels of different sizes, the vent-tube to be made in proportion.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

10 The combination, in a funnel for filling vessels, provided at its shank with a vent-tube formed by indenting the shank longitudinally

and covering said indentation with a piece of metal provided with air-induction apertures, the top of the tube forming the exit for the air, substantially as set forth. 15

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

CHRISTIAN XANDER.
WILLIAM THOMAS.

Witnesses:

OWEN E. DUFFY,
E. C. DUFFY.

It is hereby certified that in Letters Patent No. 388,386, issued August 21, 1888, upon the application of Christian Xander and William Thomas, of Washington, District of Columbia, for an improvement in "Bottle Funnels," an error appears in the printed specification requiring correction as follows: In line 14, page 1, the word "hair" should be stricken out; and that the Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 11th day of September, A. D. 1888.

[SEAL.]

D. L. HAWKINS,

Assistant Secretary of the Interior.

Countersigned:

R. B. VANCE.

Acting Commissioner of Patents.