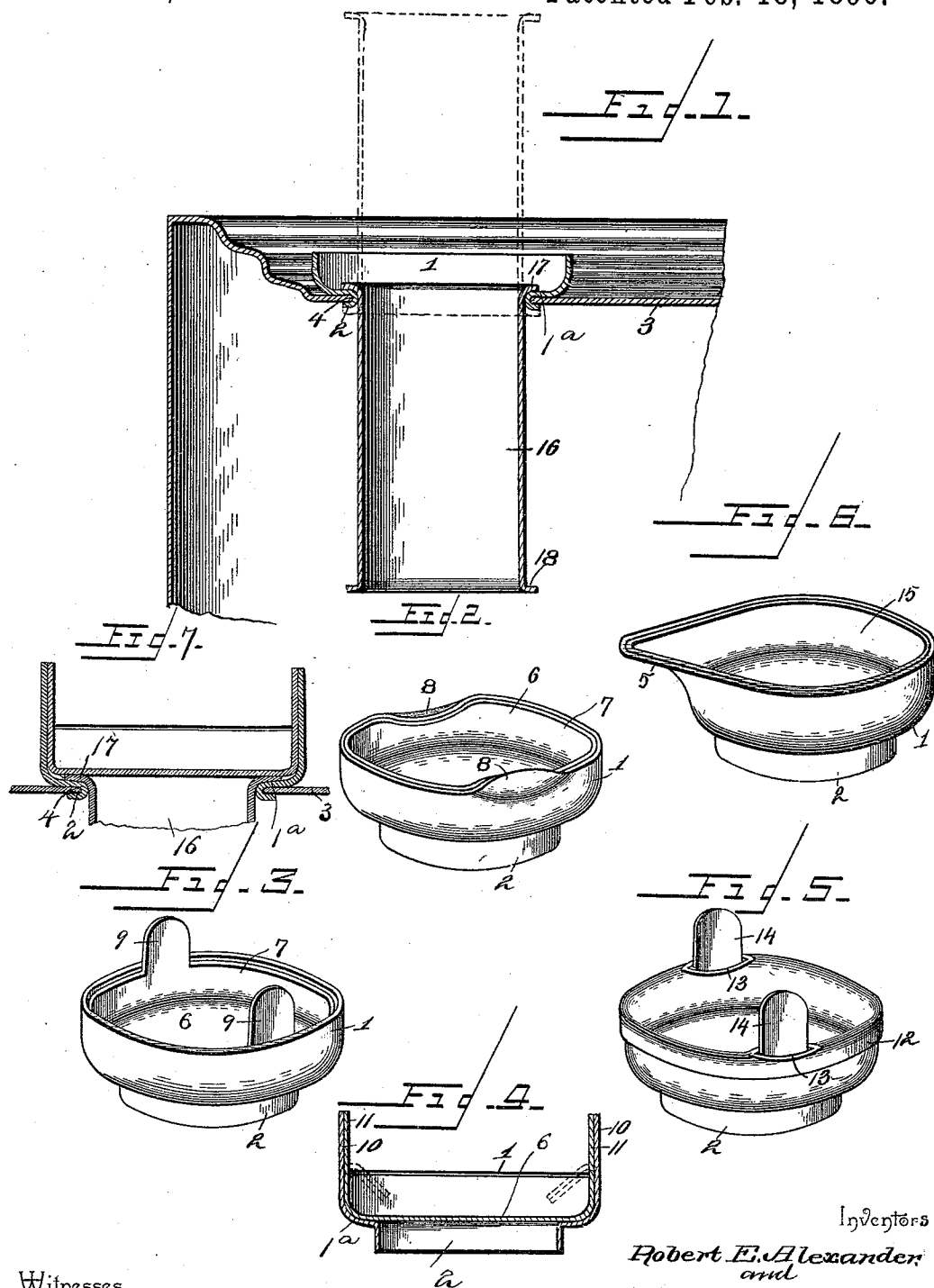


(No Model.)

R. E. & U. D. ALEXANDER.
NOZZLE AND SEAL.

No. 555,032.

Patented Feb. 18, 1896.



Witnesses

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NOZZLE AND SEAL.

SPECIFICATION forming part of Letters Patent No. 555,032, dated February 18, 1896.

Application filed March 11, 1895. Serial No. 541,305. (No model.)

To all whom it may concern:

Be it known that we, ROBERT E. ALEXANDER and URBANA D. ALEXANDER, citizens of the United States, residing at Cannonsburg, in the county of Washington and State of Pennsylvania, have invented a new and useful Nozzle and Seal, of which the following is a specification.

This invention relates to nozzles and seals for cans or packages containing dry or liquid matter; and the object of the improvement is the provision of a nozzle which can be cheaply manufactured and attached to a can or vessel, and which will preserve a tight joint.

In order to secure the full advantages of the present invention it is essential that both the nozzle and the cap or seal be formed of sheet metal, which is struck up into the required form, the nozzle having a neck portion and an enlarged body portion, the said neck portion passing through an opening in the vessel, can, or package and being clinched so as to comprise the edge portion of the opening between the enlarged body portion and the upset or outwardly-bent neck portion. The cap or seal may be forced into the outer portion of the nozzle and held therein by friction or by positive means, either by denting the sides of the nozzle or by the provision of locking extensions on either the cap or the nozzle, or on both.

Referring to the accompanying drawings for a more complete explanation of the invention, Figure 1 is a detail view in section showing the application of the invention to a can, the cap or seal being removed, and illustrating the operation of the pouring-tube by the dotted lines. Fig. 2 is a detail view showing the cap in place and held in position by denting the sides of the nozzle. Fig. 3 is a detail view showing the cap provided with locking extensions. Fig. 4 is a detail view showing both the cap and the nozzle having locking extensions. Fig. 5 shows a form in which the cap is flanged to embrace the edge of the nozzle, the latter having locking extensions to pass through slits in the edge portion of the cap to secure the latter in place. Fig. 6 shows a spouted nozzle and a cap or seal of corresponding shape. Fig. 7 is a detail view showing the cap closing the end of the pouring-tube.

Similar reference-numerals will designate corresponding parts in the several views.

The vital feature of the invention is a nozzle having an enlarged body portion 1, a base 1^a and a neck portion 2, the latter being adapted to be passed through an opening in the can, vessel, or package to which the improvement is to be attached, and having its edge portion bent outwardly and clinched so as to embrace the edge portion of the opening between the body portion 1 and the outwardly-bent portion of the neck 2. This is shown most clearly in Fig. 1. In this figure, 3 represents the top of a can or vessel to which the invention is applied. An opening 4 is formed in the said top 3 in any desired manner, and the nozzle is attached thereto by passing its neck portion 2 through the opening and upsetting or clinching the projecting portion of the neck so as to embrace the edge portion of the top 3 bordering upon the opening 4.

The particular formation and outline of the nozzle are not essential to the essence of the invention and will be dependent upon the particular use for which the can or vessel is designed. As generally constructed, the nozzle will be circular in outline; but for some uses it may be elongated and so fashioned as to provide a spout 5, as shown in Fig. 6. This spout may be taken advantage of as a convenient means for pouring liquids from cans or vessels provided with nozzles constructed in accordance with the present invention.

The cap or seal 6 is constructed to fit in the enlarged portion 1 of the nozzle, and its edge 7 is slightly flared, so as to obtain a close joint when the cap is pressed within the outer portion of the nozzle. For ordinary purposes the cap will be retained in place by the frictional contact between its flanged edge 7 and the corresponding portion of the nozzle; but where it is desired to guard the cap from accidental displacement the edge portions of the body may be dented or bent inward, as shown at 8 in Fig. 2, or the cap may be provided with locking extensions 9, which are adapted to be bent over the edge of the body 1, as shown in Fig. 3, or both the cap and the body of the nozzle may be formed with locking extensions 10 and 11, which are caused to register and bend inward, as shown in Fig. 4.

Fig. 5 shows a construction in which the cap is provided with a depending flange 12 to embrace the edge portion of the nozzle-body and which has slits 13 near its peripheral edge to receive locking extensions 14 of the nozzle, which extensions are adapted to be bent in either direction, so as to extend over the cap or its depending flange 12, as desired. These several locking extensions are adapted to be bent by the hand or by means of a suitable instrument, and can be straightened and bent a number of times without breaking, as the material from which the nozzles and the seals are formed is sufficiently tough to admit of the nozzles being used a number of times without being rendered unfit for service.

In the form of nozzle shown in Fig. 6 the cap 15, specially provided therefor, may conform to the outline of the upper edge of the nozzle—that is, present an elongated appearance—or it may be circular in form to correspond to the body portion of the nozzle, that part of the cap coming opposite the spout 5 being constructed so as to secure a close joint.

A pouring-tube 16 will be provided in connection with the nozzle, and it may be seamless or formed of sheet metal bent in cylindrical form and having its meeting edges united by any well-known form of joint. This pouring-tube obtains a close fit within the nozzle, so as to prevent the escape of liquid between it and the opposing edge portion of the nozzle. Outer flanges 17 and 18 are formed at the respective ends of the tube 16 and are adapted to limit the inner and outer movements thereof. When the tube 16 is not required for use it occupies a position within the can or vessel and is supported by its flange 17 resting upon the nozzle.

When it is required to pour the contents from a can or package, the tube 16 is drawn out, being limited in its outward movement by the flange 18 engaging with the inner end of the nozzle. The two positions of the tube 16 are illustrated by the full and the dotted lines in Fig. 1.

The tube 16 is of uniform diameter throughout its length. Hence it can be moved outward one inch, an inch and a half, or to any required distance, and will maintain a close joint with the nozzle at all adjustments. When the tube is at the limit of its inner movement it is closed by the cap, whose imperforate end touches the upper end of the tube and prevents the escape of the liquid contents of the can or package into the nozzle. This is shown in Fig. 7.

The cap is pressed within the nozzle, and is limited in its movement by coming in contact with the base 1^a between the body 1 and the neck 2. By having the imperforate end of the cap resting upon the base 1^a the neck 2 is closed, and the liquid contents of the package cannot find their way between the cap and the body and cement them together.

This is obvious from the construction shown in Fig. 4.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. The combination with a can, vessel or package having an opening for the attachment therewith of a nozzle, and a nozzle comprising an outer enlarged portion having substantially parallel walls a base portion and a neck, the latter passing through the said opening and being clinched upon that portion of the can surrounding the opening, of a cap comprising an imperforate end and a rim and pressed within the enlarged portion of the nozzle to close the same and limited in its inward movement by said base portion of the neck, substantially as set forth.

2. The herein shown and described nozzle for cans, vessels, packages, &c., comprising an outer enlarged portion having substantially parallel walls, a base portion and a neck, in combination with a cap comprising an imperforate end and a rim and forced into the enlarged portion of the nozzle, the imperforate end of the cap touching the base of the neck and the rim hugging the inner walls of the said enlarged portion of the nozzle, and individual locking extensions forming an integral portion of either the cap or the nozzle and adapted to be bent in either direction, substantially as described for the purpose set forth.

3. The combination with a nozzle having locking extensions, of a cap having a depending flange to embrace the edge portion of the said nozzle, and provided with slits for the passage of the said locking extensions, substantially as and for the purpose set forth.

4. The combination with a can, vessel or package having an opening for the attachment therewith of a nozzle, and a nozzle comprising an outer enlarged portion, a base portion and a neck, the latter being fitted into the said opening, of a pouring-tube of uniform size throughout its length and adapted to move within the nozzle and maintain a close joint therewith at all stages of its adjustment, and formed at its ends with outwardly-extending flanges which limit the movements of the said tube, and a cap fitted within the nozzle and against the end of the pouring-tube and closing each, substantially in the manner set forth.

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

ROBERT E. ALEXANDER.
URBANA D. ALEXANDER.

Witnesses:

THOS. J. CROSSAN,
FRANK A. SCHMIDT.