

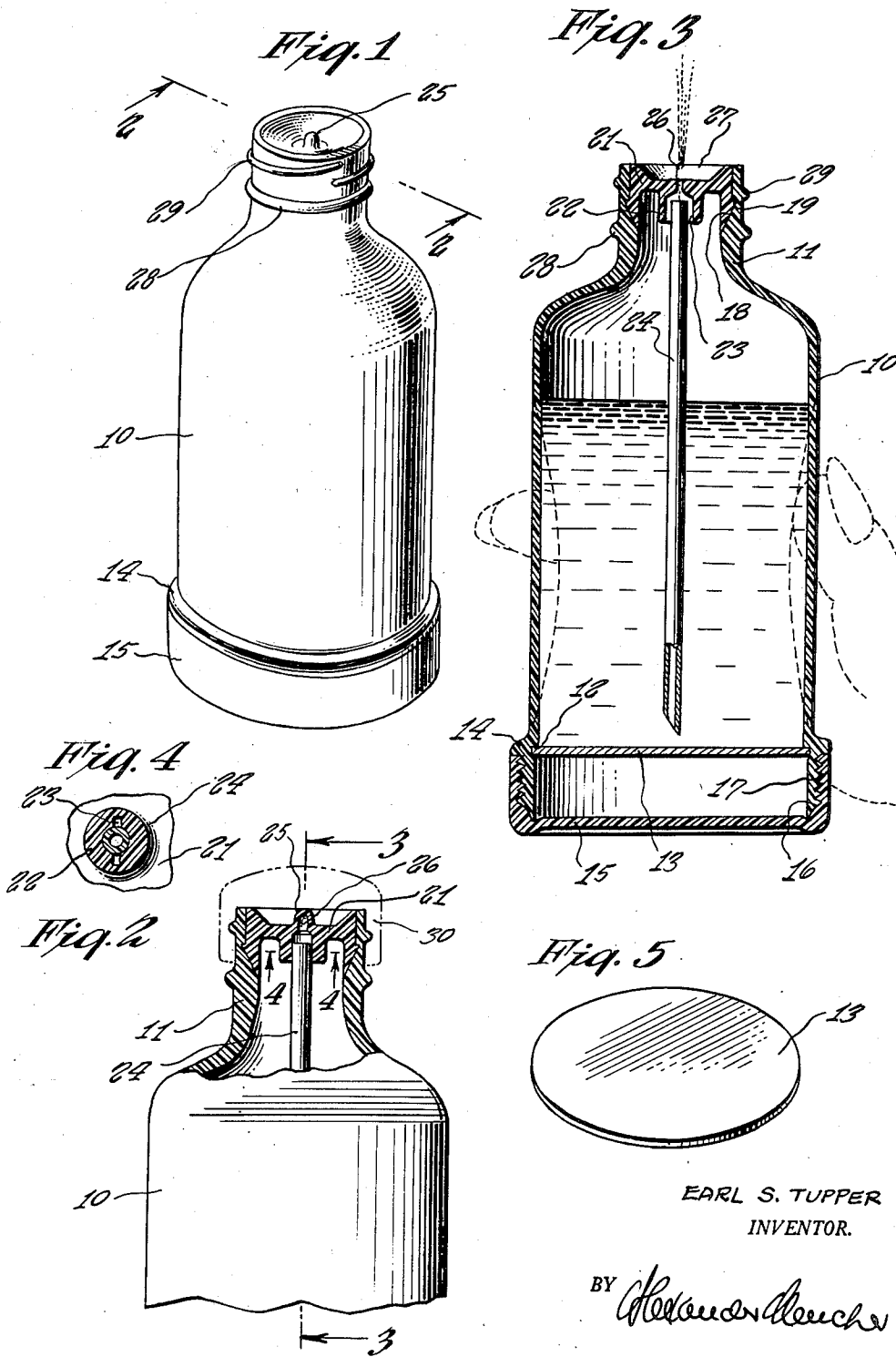
Dec. 18, 1951

E. S. TUPPER

2,578,907

ATOMIZER CASE

Filed Nov. 26, 1948



UNITED STATES PATENT OFFICE

2,578,907

ATOMIZER CASE

Earl S. Tupper, Upton, Mass.

Application November 26, 1948, Serial No. 62,207

1 Claim. (Cl. 299—90)

1

This invention relates to atomizers and more particularly to the construction of the casing and the nozzle end thereof.

It is an object of the present invention to provide an atomizer wherein the container for the liquid serves as a medium for effecting the atomizing action and wherein the nozzle is formed of soft and puncturable material which can be punctured upon the purchase of the atomizer with the liquid therein in order that the container can be worked to spray its contents and wherein means is provided at the bottom of the container to maintain the shape of the same at that location.

Other objects of the present invention are to provide an atomizer wherein the walls of the container are operable to effect the atomizing action, which is of simple construction, inexpensive, easy to assemble, adapted to be sealed for shipment, easy to place into operation, durable, compact and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a perspective view of the atomizer constructed according to the features of the present invention.

Fig. 2 is a sectional view, in elevation, taken on line 2—2 of Fig. 1.

Fig. 3 is a sectional view, in elevation, taken on line 3—3 of Fig. 2 and with the nozzle broken away to render the container operable as an atomizer.

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 2.

Fig. 5 is a perspective view of a rigid plate which is provided in the bottom of the container to maintain the shape of the same.

Referring now to the figures, 10 represents a container of bottle shape having a neck portion 11 and formed of resilient flexible material such that upon being depressed, the container will take on its original shape with the release of the finger. One material which has been found to be suitable for this purpose is poly-ethylene. Other similar plastic material will be suitable.

The bottom of the container is provided with a shoulder portion 12 on its interior wall suitable for receiving and retaining a rigid disk 13 adapted to withhold the contents of the container and to maintain the shape of the bottom of the container as the container is squeezed. On the exterior of the container is another shoulder 14

2

against which is brought the end face of an internally threaded cover 15 which has a sealing face 16 engageable with the lower face of a depending threaded portion 17 on the bottom of the container. Accordingly, through the sealing face 16 and the shoulder 14 a double seal is effected. The bottom cover 15 provides a base or rest on which the container may be set when not in use.

The neck portion 11 is formed internally with a long seat 18 and a shoulder 19 for receiving and retaining a nozzle 21 having a complementary seat and shoulder. The shoulder 19 prevents the easy withdrawal of the nozzle and the extension of the nozzle from the container as the container is operated to place pressure in back of the nozzle.

The nozzle has a central sleeve portion 22 which is grooved at 23 at the opposite sides of the same and internally thereof to permit the outward flow of air from the container as it is being operated and at the same time to permit the inward flow of air to maintain an air pressure over the top of the contents of the container. Fitted into the sleeve portion 22 is a conductor pipe 24 which depends into the liquid contents to a location near the bottom of the same so that liquid will be taken from the bottom and projected upwardly.

The nozzle 21 as initially supplied with the container, is provided with a closing tip 25 which must be severed in order that the liquid can be dispensed through orifice 26 communicating with opening in the sleeve portion 22. The tip 25 is shown in place in Fig. 2, but it may be removed as shown in Fig. 3 in order to permit the atomizing action.

The top of the nozzle 21 has a depression 27 for retaining any liquid and with the nipple 25 cut down flush, such liquid as is received by the upper end of the nozzle will drain back into the container.

On the exterior neck portion 11 is a circular flange 28 and a single turn thread 29. When the container has once been opened and is not in use, a cap 30 having a cooperating internal groove may be seated upon the thread flange 29 and retained thereby.

It should now be apparent that there has been provided an atomizer wherein the container itself is used for effecting the atomizing action and whereby the nozzle may be provided on the neck portion when the container with the contents is shipped and wherein there is provided a nipple to maintain the contents within the container during transport and wherein by a simple oper-

3

ation of removing nipple 25, the container can be adapted for use. By a simple squeeze of the container itself a spray of the contents is extended through orifice 26 of the nozzle. The nozzle is so designed that it is positively retained in the neck portion and will not be readily released therefrom as a result of pressure being brought upon the interior of the neck portion and upon the inner face of the nozzle.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

I claim:

A nozzle insertable in an atomizer having a resilient and compressible body with a closed lower end and an atomizing tube terminating short of said end, said nozzle being made of flexible material and having an orifice and puncturable closure means for initially closing said orifice, said nozzle having a centrally apertured depending sleeve portion in communication with said orifice and adapted to grip the upper end of said tube, said sleeve portion having groove means on its inner wall for delivering air to the upper end of said tube within the sleeve portion from the interior of said atomizer body to said orifice, whereby upon puncturing said orifice closure means, compression of said atomizer body

4

will force air through said passages and through said orifice and dispense the contents of said container by atomizing action.

EARL S. TUPPER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
427,256	Eggers	May 6, 1890
443,545	Rowland	Dec. 30, 1890
506,355	Zwietusch	Oct. 10, 1893
547,225	McLaughlin	Oct. 1, 1895
553,765	Ruppolt	Jan. 28, 1896
630,277	Weitling	Aug. 1, 1899
639,024	Eggers	Dec. 12, 1899
675,180	Waldman	May 28, 1901
790,318	Sams	May 23, 1905
911,646	Cook et al.	Feb. 9, 1909
1,104,607	Berger	July 21, 1914
1,328,937	Wilbur	Jan. 27, 1920
1,655,678	Dormont	Jan. 10, 1928
1,739,288	Brown	Dec. 10, 1929
2,408,058	Gallagher	Sept. 24, 1946

FOREIGN PATENTS

Number	Country	Date
263,699	Great Britain	Jan. 6, 1927