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H. E. JOHNSON

3,288,178

SPOUT

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2 Sheets-Sheet 1

Fig. 1

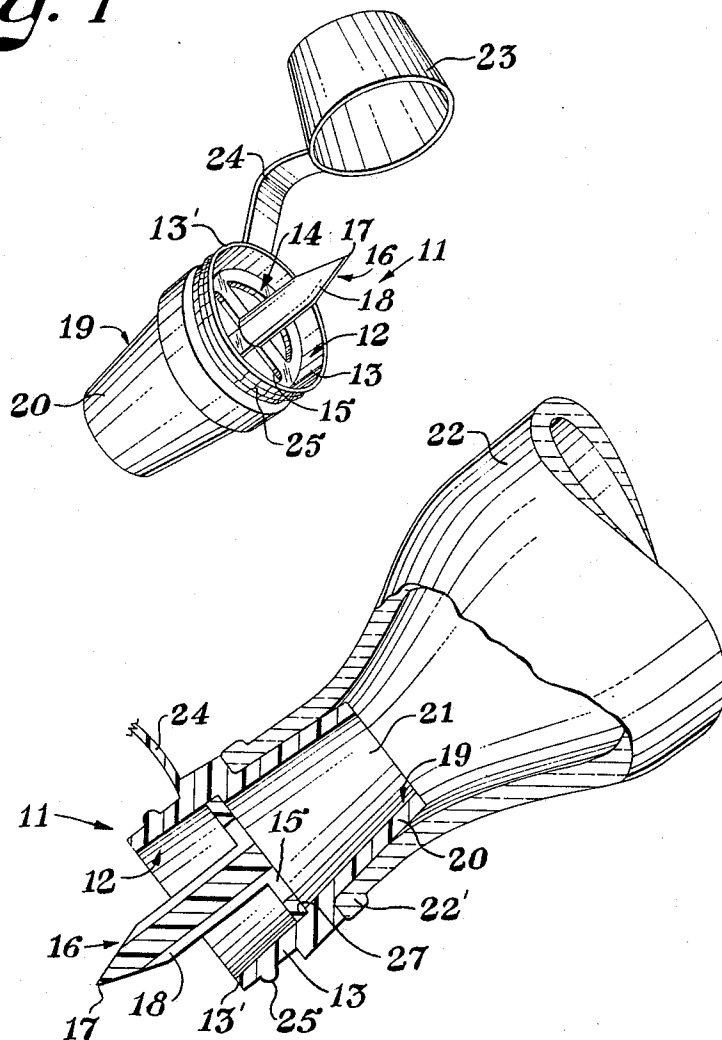


Fig. 3

INVENTOR

Hjalmar E. Johnson

BY *Merlin B. Davley*
AGENT

Nov. 29, 1966

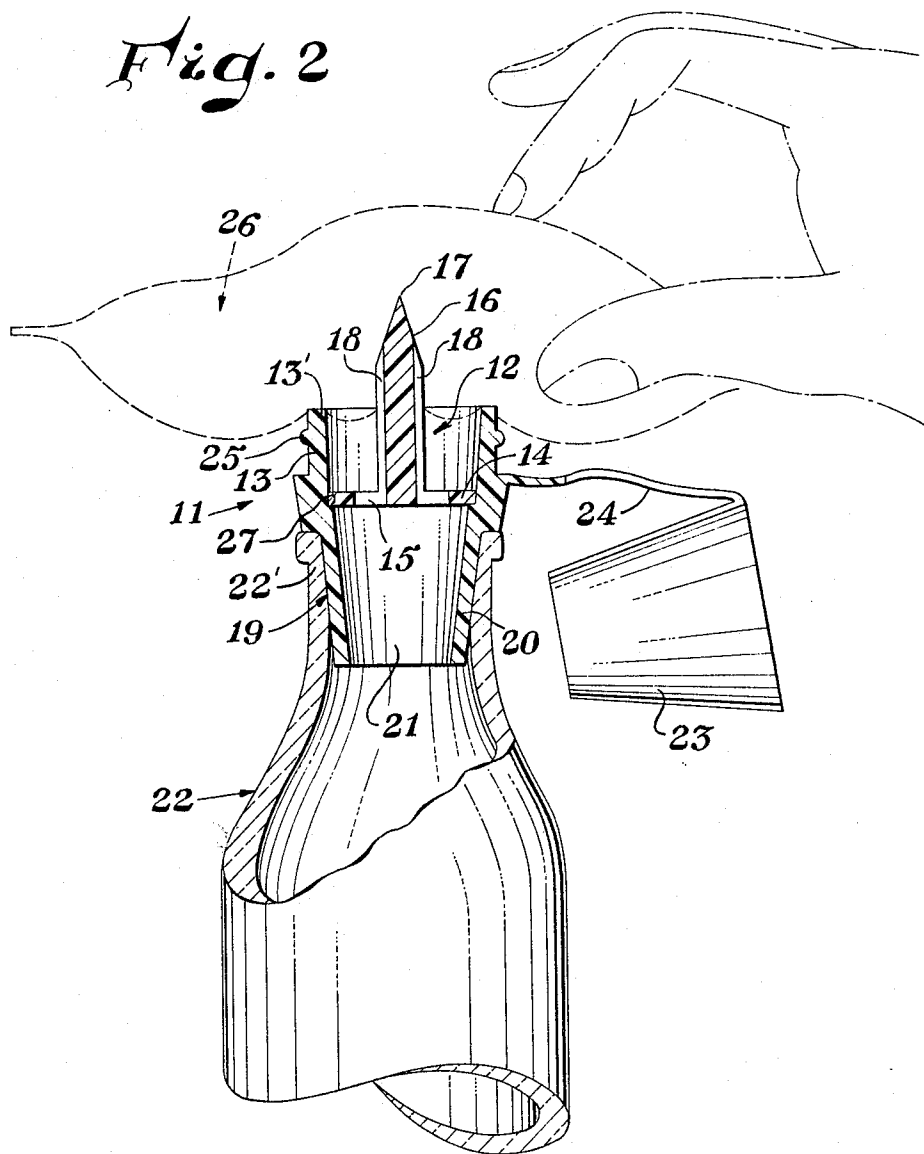
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INVENTOR.

Hjalmar E. Johnson

BY *Merlin B. Davey*
AGENT

1

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Hjalmar Eduardo Johnson, Buenos Aires, Argentina, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

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5 Claims. (Cl. 141—330)

The present invention relates to an article of manufacture, and more particularly relates to a spout which may be employed to transfer liquid products from plastic containers to bottles or other shaped containers, and may be adapted to serve as a stopper for such shaped containers.

Plastic containers, e.g., "sachets," are often employed as containers for liquids of various kinds. Under certain circumstances, the produce must be totally withdrawn from the container and consequently, in case it is corrosive or otherwise undesirable for skin contact, i.e. when it is concentrated bleach, it is necessary to take careful precautions in handling the said "sachets." Such care is not always successful, however, as the "sachets" are made of various plastics which have different strength characteristics which makes the opening thereof difficult. It is often necessary to use a pair of scissors or other cutting instrument to effect the opening of the "sachet".

There is a further disadvantage when the product is only partially consumed and it becomes necessary to keep the remainder in storage for future use. In such cases, it is customary to pour the product into a jar or some other container which is made of some rigid material provided with a suitable stopper. It will be apparent that a funnel may be required to carry out this operation efficiently, and such funnel is not always at hand. Attempts were made to obviate this inconvenience by providing "sachets" having closure means in order to make the transference of products unnecessary. But in practice such products were in general inefficient and consequently they have not been definitely adopted.

It is therefore seen that the problem has not yet been solved and it is evident that a solution of this problem would induce a more widespread acceptance and use of plastic containers such as "sachets."

The spout of this invention is formed in such a way that it reduces the necessity of the user handling the "sachets" or other plastic container in order to open them, as well as also to empty them into a more apt container for their storage. In order to fulfill this double operation, it is only necessary to take hold of the "sachets" and without any undue risk of touching the contents of said "sachet," press it lightly against the spout. Under these circumstances, and in view of the particular formation of the spout, an orifice will be produced in one of the walls of the "sachets," through which contents thereof will flow towards the inside of the final container and with a greatly reduced risk of spilling. Upon completion of the transfer of liquid from the plastic container to the rigid container, the spout of this invention may then serve as a stopper for the rigid container.

In its essential characteristics the spout of this invention comprises a tubular element having an upper and lower portion and enclosing a perforated base which is transversely disposed within said tubular element between said upper and lower portions. A punch projects from the base and extends past the upper edge of the tubular element. The punch is advantageously formed of a body of rigid material, and has a pointed end. On its exterior surface, the punch has at least one channel which extends from its base to near its pointed end. The lower portion of the spout advantageously forms a hollow insertion nozzle which is adapted to fit into the mouth of

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a rigid container. This nozzle is opened in its free end and is in communication with the upper portion of the spout through the perforated base. The assembly includes, if desired, a closing cap adapted to sealingly fit the upper edge of the upper portion of the tubular element.

The invention will be further understood by reference to the attached drawings in which:

FIG. 1 illustrates a general perspective view of one embodiment of the invention.

FIG. 2 illustrates a cross-section of one embodiment of the spout of this invention, when it is seated in operating position in the mouth of a rigid container and in operative relationship with a "sachet," and

FIG. 3 is a view showing the spout, fulfilling the function of pouring from a rigid container.

In the figures the same numbers indicate equivalent or corresponding portions or elements.

Referring now to the drawings, it may be seen that reference numeral 11 indicates the spout which essentially comprises an upper cup or portion 12 defined by a surrounding wall 13 and a base 14 which is perforated, such as is indicated with reference numeral 15.

A punch 16 is formed of a protuberance of rigid material and has a pointed end 17 which projects from the center of base 14 and has grooves 18 on its external wall. These grooves are directed along the longitudinal axis of the punch 16 and project from its base up to practically the vertex of the pointed end 17. Another important feature is that said pointed end 17 extends beyond the upper edge 13' of the aforementioned surrounding wall 13. From the base 14, the spout 11 extends along a lower portion or insertion nozzle 19 which is simply formed by an annular wall 20 which defines a central hollow space 21.

On inserting said nozzle 19 in the throat 22' of a container 22, the article of this invention serves to act as either a filling or pouring spout, as desired, with the liquid to be transferred passing through perforations 15 in base 14.

The spout is adapted to serve as a stopper with a closing cap 23 which by means of a flexible tongue 24, may, and advantageously does, form an inseparable part of the spout. A ring or annular protuberance 25 is advantageously positioned on the exterior portion of wall 13, to secure the closure of the closing cap 23.

From what has hereinabove been described and from the drawings, the functional behaviour of the proposed spout will be very easy to understand. In this respect, on referring to FIG. 2, it may be noted that on pressing a sachet 26 against spout 11, the point 17 will perforate the exterior wall of the sachet making a hole through which the contents will flow, and which will be guided towards the upper cup 12 of the stopper 11 and through the openings 15 in base 14, and then, directly towards the interior of the container 22.

At this point, grooves 18 of punch 16 fulfill an important part, due to the fact that these permit that the liquid be directed directly towards the openings 15 without any spilling.

Once the contents of the sachet 26 have been put into another container, said sachet may be taken away from punch 16 to which it was spiked, and consequently, container 22 may be closed hermetically by means of an adequate movement imparted to closing cap 23, and in the event that it should be desirable to consume part of the product housed in the interior of the container, it will only be necessary to incline its position, such as is illustrated in FIG. 3, in order that the contents may easily flow through openings 15, and as such spout 11 will be converted in a practical pourer.

In this way, direct contact with the contents will have been avoided, and the fulfilling of what up to now has been a difficult task will have been made easy and quick.

Preferably base 14 and punch 16, will form an integral and inseparable unit made of a material which is more resistant than that employed to make cup 12 and nozzle 19, which, preferably, are more elastic and form part of an independent body from the first mentioned. As a consequence, and in order that there should be a correct interrelationship, the spout is advantageously provided with an offset portion or shoulder 27, on which perforated base 14 will rest and to which it may be conveniently fixed by an adhesive or other means, e.g. pressure fitting.

The plastic bags or "sachets" which may be advantageously opened and emptied by the spout of this invention may contain concentrated non-carbonated beverages, concentrated garden chemicals, liquid fertilizers or pesticides, paint colorants, concentrated juices, liquid food concentrates, infant feeding formulas, concentrated household chemicals, liquid soaps, detergents, syrups, tomato paste and the like.

Various modifications may be made in the present invention without departing from the spirit or scope thereof and it is understood that I limit myself only as defined in the appended claims.

I claim:

1. A spout comprising a tubular element having an upper and lower portion, said upper portion having an upper edge; a perforated base, said base being transversely disposed within said tubular element between said upper

and lower portions; and a pointed punch, said punch having a length and width and an exterior surface and being affixed to and projecting from said base to a point beyond said upper portion, said punch having at least one groove which extends lengthwise on the exterior surface thereof from said base to near the pointed end of said punch, said lower portion being adapted to fit in the mouth of a rigid container and said spout including a closing cap capable of pressure matching the upper edge of the upper portion of said spout.

2. Spout of claim 1 wherein the cap is attached to the upper portion thereof by a flexible hinge.

3. Spout of claim 1 wherein the punch and perforated base form an integral unit.

4. Spout of claim 1 having an interior annular ring against which the perforated base is fitted.

5. Spout of claim 1 which is composed of an organic thermoplastic polymeric material.

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LAVERNE D. GEIGER, *Primary Examiner*.

H. BELL, *Assistant Examiner*.