(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 191 230**
**A2**

# (12) EUROPEAN PATENT APPLICATION

(21) Application number: **85308884.7**

(22) Date of filing: **05.12.85**

(51) Int. Cl.⁴: **B 65 D 5/74**

(30) Priority: **05.12.84 ZA 849456**

(43) Date of publication of application: **20.08.86**
**Bulletin 86/34**

(84) Designated Contracting States: **DE FR GB IT NL**

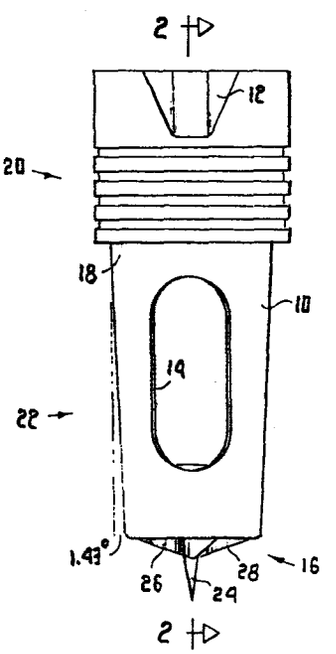
(71) Applicant: **TRADEFIN LIMITED, Pollet House The Pollet, St. Peter Port Guernsey Channel Islands (GB)**

(72) Inventor: **Karstel, Christopher John, 22 Pineside Road Cowieshill, Pinetown Natal (ZA)**
Inventor: **Davel, Hendrik, 26 Ridge Road, New Germany Natal (ZA)**

(74) Representative: **Lee, Philip Graham et al, MARKS & CLERK 57/60 Lincoln's Inn Fields, London WC2A 3LS (GB)**

## (54) Pouring spout.

(57) A pouring spout for decanting liquids from cardboard and like containers including a tubular body (10) which is circular in cross-section with at least a portion (22) of the length of the body tapering towards one end, means (16) on the smaller of the two body ends for cutting a hole into a container as it is rotated against the container and an aperture (14) in the body (10) through which liquid in the container may enter the body (10) when a predetermined length (22) of the body (10) is pressed into the hole in the container.




EP 0 191 230 A2

# "POURING SPOUT"

This invention relates to a pouring spout for decanting liquids from cardboard and the like containers.

Conventional plasticised cardboard containers for milk, fruit juices and the like generally have folded top closures which need to be clipped or torn at a corner to form an opening from which the liquid in the container is poured. The plasticised cardboard is tough, particularly where folded, and therefore difficult to cut and more so to tear. Because of this, spillage often occurs while the deformable container is being opened due to hand pressure on the container. Additionally, a clean pour is seldom obtained from the above containers which are opened as described.

It is the object of this invention to provide a pouring spout for liquid containers of the above type.

A pouring spout for decanting liquids from cardboard and like containers according to the invention has a tubular body which is circular in cross-section and tapers from one end to the other, means on the smaller of the two body ends for cutting a hole into a container as it is rotated against the container and an aperture in the body through which liquid in the container may enter the body when a predetermined length of the body is pressed into the hole in the container.

Preferably the angle of taper of the body is between 1° and 2°.

Further according to the invention, the body includes a shoulder in its length to limit the length of the body which may be pressed into a container.

Still further according to the invention, the larger of the two body ends carries an outwardly projecting pouring lip.

In a preferred form of the invention the container cutting means is at least one cutting formation on the smaller end of the body.

The smaller end of the body may carry a spike which is located on the body axis and projects from the body. Conveniently the or each cutting formation is a blade which is preferably made from a non-corrosive metal such as stainless steel and is located on the periphery of the body.

The pouring spout may include a removable closure member for the larger end of the body. The closure member is conveniently cup-shaped and includes a socket which is dimensioned to fit over and fractionally engage the smaller end of the body to protect the cutting means when the pouring spout is not in use.

An embodiment of the invention is now described by way of example only with reference to the accompanying drawings in which:

Figure 1 is a front elevation of the pouring spout of the invention;

Figure 2 is a side elevation of the Figure 1 spout shown sectioned on the line 2-2 in Figure 1; and

Figure 3 is a plan view of the Figure 1 pouring spout.

The pouring spout of the invention is made from a non toxic plastics material and as shown in the drawings has a tapered body 10 which includes a pouring lip 12 at its larger upper end, two apertures 14 and a cutting arrangement indicated generally at 16.

The body 10 is divided along its length into upper and lower sections 20 and 22 by a shoulder 18. The smaller end of the body is plugged, as shown in Figure 2, with the bases of the apertures 14 being positioned adjacent the upper level of the plug.

The cutting arrangement 16 consists of a spike 24 which is located on the body axis to project from the plugged end of the body and two blades 26 and 28.

The blades 26 and 28 are made from a non-corrosive metal such as mild steel, are arcuate, as seen in Figure 3, and are partially embedded in the body material as close to the periphery of the smaller end of the body as practicable. The leading edge of each blade, assuming clockwise rotation of the body 10 on its axis, is inclined at an angle of about 45° as is seen on the blade 26 in Figure 1.

In use, the spike 24 is pressed into the cardboard of a liquid container at a high level until the blades 26 and 28 come into pressure contact with the material of the container. The body 10 is then rotated, preferably but not necessarily in a clockwise direction about its axis while applying pressure to it in an axial direction to cause the blades to cut a disc from the container wall. The lower section 22 of the body is now pressed through the opening so created until the shoulder 18 abuts the outside of the container. As the container is now tilted for pouring, with the pouring spout lip 12 suitably directed, liquid enters the pouring spout body, if not already in the body, through the apertures 14 and flows from the body over the lip 12.

An important feature of the pouring spout of the invention is the angle of taper of the body section 22. Experiments have shown that an angle of taper of between 1° and 2° is suitable and an angle of 1.43° is ideal for firmly wedging the spout in the container opening which is cut by the blades 26 and 28 and to provide a leak free seal against the shoulder 18. A greater angle of taper tends to distort and even tear the edges of the container opening to cause leakage between the container opening and the pouring spout shoulder. A smaller angle of taper results in poor lodging of the pouring spout in the opening.

To minimize pouring problems which may be caused by negative pressure in the container as the liquid is decanted from the spout, the opposite upper end of the container to that at which the spout is to be located could be pierced by the spike 24 prior to location of the spout to enable air to enter the container during pouring.

As an added feature, the pouring spout of the invention includes a closure member 30 which is shown only in Figure 2. The closure member is cup-shaped with the outer wall of its base portion being tapered frictionally to wedge into the upper end of the body passage as shown in the drawing to seal the container for storage. The mouth or socket portion 32 of the closure member is dimensioned frictionally to engage over the lower end of the body 10 to protect the blades and spike of the cutting arrangement 16 when the pouring spout is not in use.

CLAIMS

1. A pouring spout for decanting liquids from cardboard and like containers characterised in that the pouring spout includes a tubular body (10) which is circular in cross-section with at least a portion (22) of the length of the body (10) tapering towards one end, means (16) on the smaller of the two body ends for cutting a hole into a container as it is rotated against the container and an aperture (14) in the body (10) through which liquid in the container may enter the body (10) when a predetermined length (22) of the body (10) is pressed into the hole in the container.

2. A pouring spout as claimed in Claim 1 characterised in that the body (10) includes a shoulder (18) in its length to limit the length (22) of the body (10) which may be pressed into a container.

3. A pouring spout as claimed in Claim 1 or Claim 2 characterised in that the larger of the two body ends carries an outwardly projecting pouring lip (12).

4. A pouring spout as claimed in any of Claims 1 to 3 characterised in that the container cutting means (16) is at least one cutting formation (26, 28) on the smaller end of the body (10).

5. A pouring spout as claimed in Claim 4 characterised in that the smaller end of the body carries an axially located spike (24) which projects from the body (10).

6. A pouring spout as claimed in Claim 5 characterised in that the cutting formation is at least one blade (26, 28) which is fixed to and projects from the periphery of the body (10) at its smaller end.

7. A pouring spout as claimed in Claim 6 characterised in that it includes two diametrically opposed metal cutting blades (26, 28).

8. A pouring spout as claimed in any of the preceding claims characterised in that the smaller end of the body is closed.

9. A pouring spout as claimed in any of the preceding claims characterised in that the angle of taper of the body (10) is between 1° and 2°.

10. A pouring spout as claimed in any one of the preceding claims characterised in that it includes a removable closure member (30) for the larger end of the body (10).

11. A pouring spout as claimed in Claim 10 characterised in that the closure member (30) is cup-shaped and includes

a socket (32) which is dimensioned to fit over and frictionally engage the smaller end of the body to protect the cutting means (16) when the pouring spout is not in use.

0191230

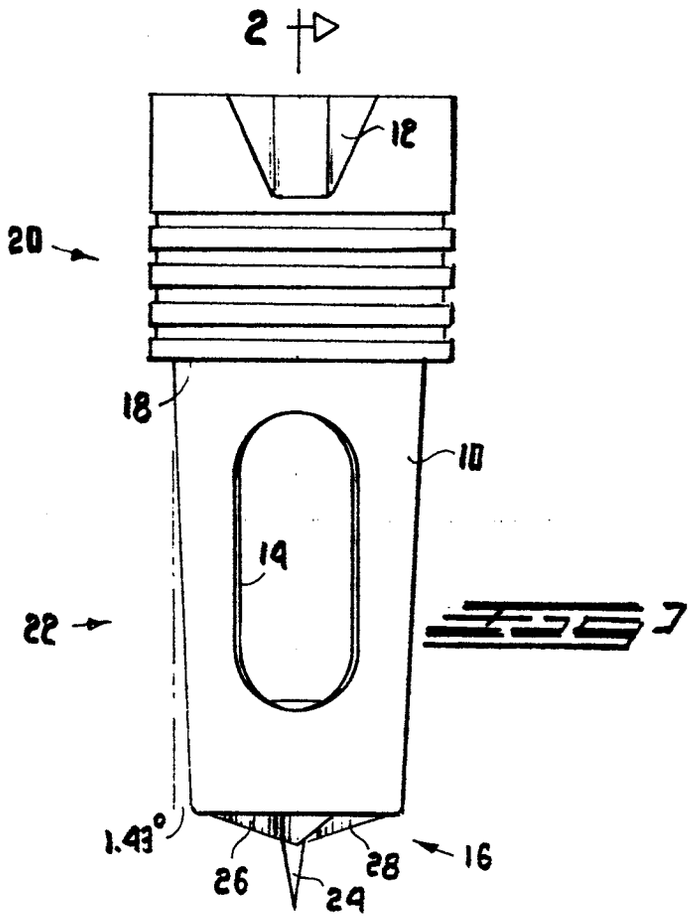



FIG 1

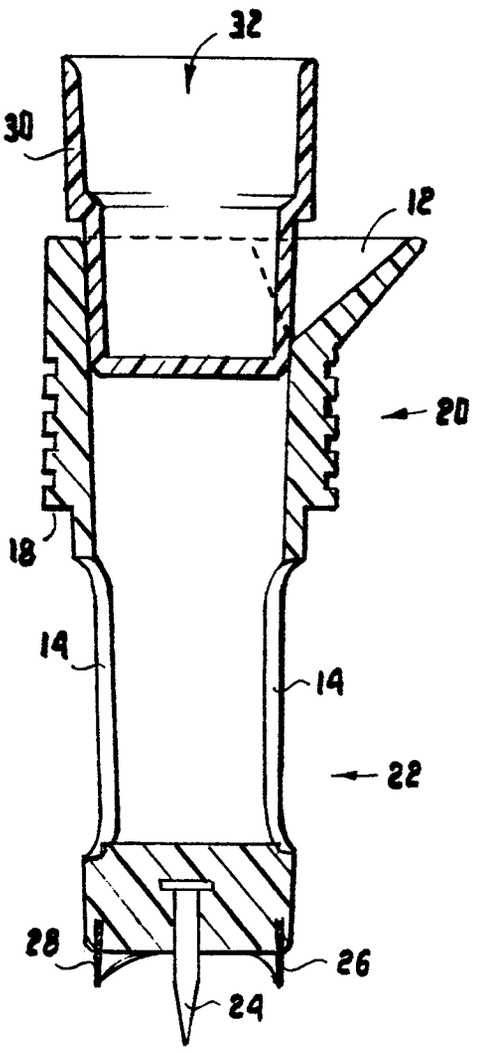



FIG 2

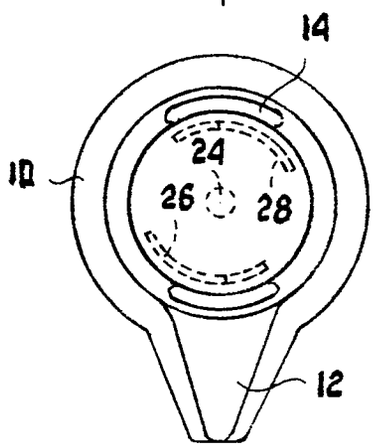



FIG 3