

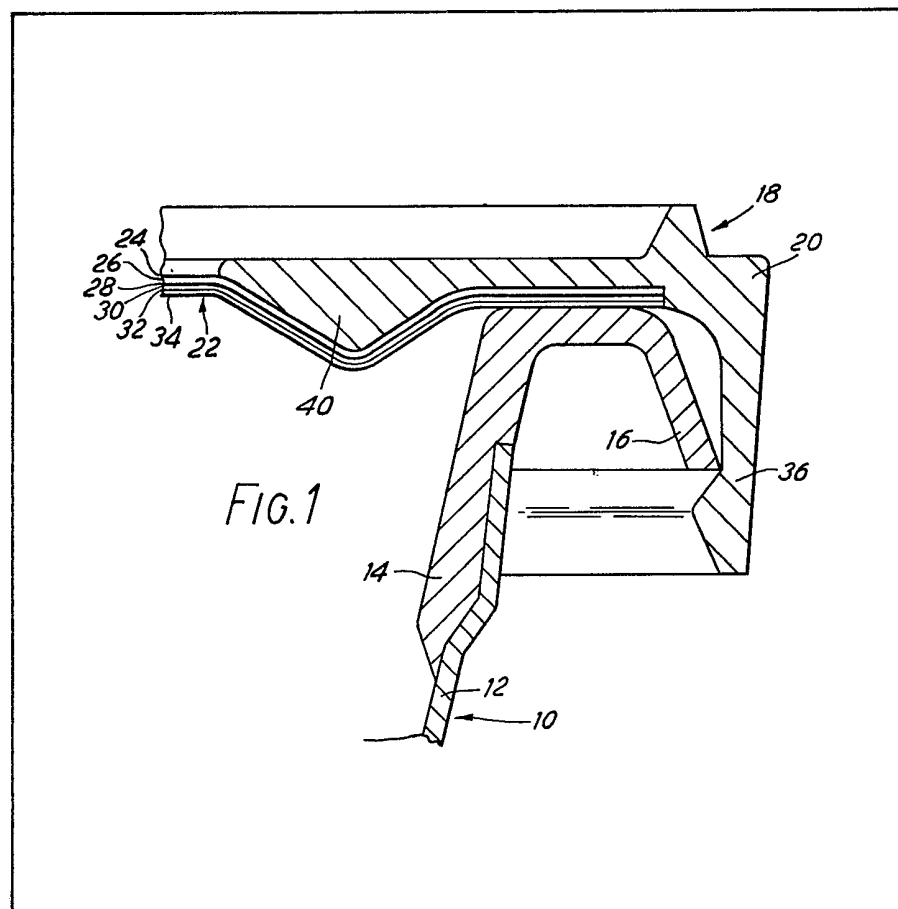
(21) Application No 8015519
(22) Date of filing 9 May 1980
(30) Priority data
(31) 79/17603
(32) 21 May 1979
(33) United Kingdom (GB)
(43) Application published
28 Jan 1981
(51) INT CL³
B65D 51/20 //
B32B 1/00 15/04 15/20
27/32
(52) Domestic classification
B8T 120A 120B 13A HA
B5N 0100 1504 1520
2732
(56) Documents cited
GB 1364243
GB 1153063
GB 1087437
GB 367366
(58) Field of search
B8T
(71) Applicants
DRG (UK) Limited,
1 Redcliffe Street, Bristol
(72) Inventors
Wilfred Lewis Jones
David Stanley Hamblin
(74) Agents
Mewburn Ellis & Co.

(54) Container lid, and package and packaging method using same

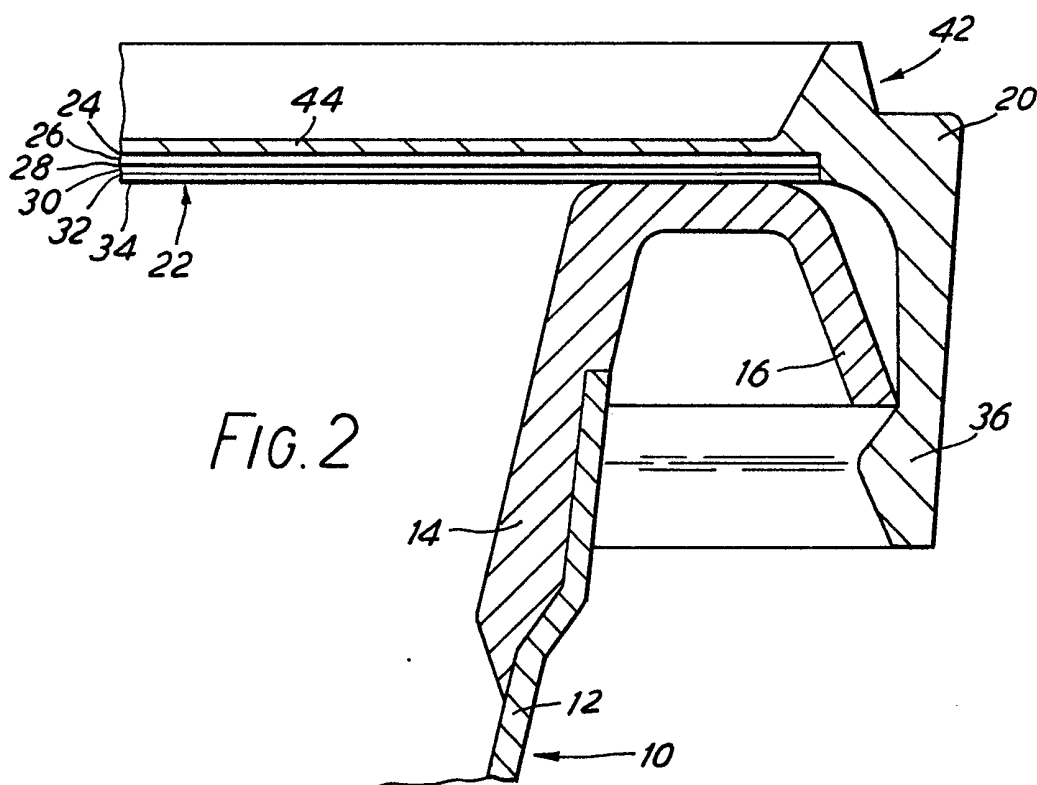
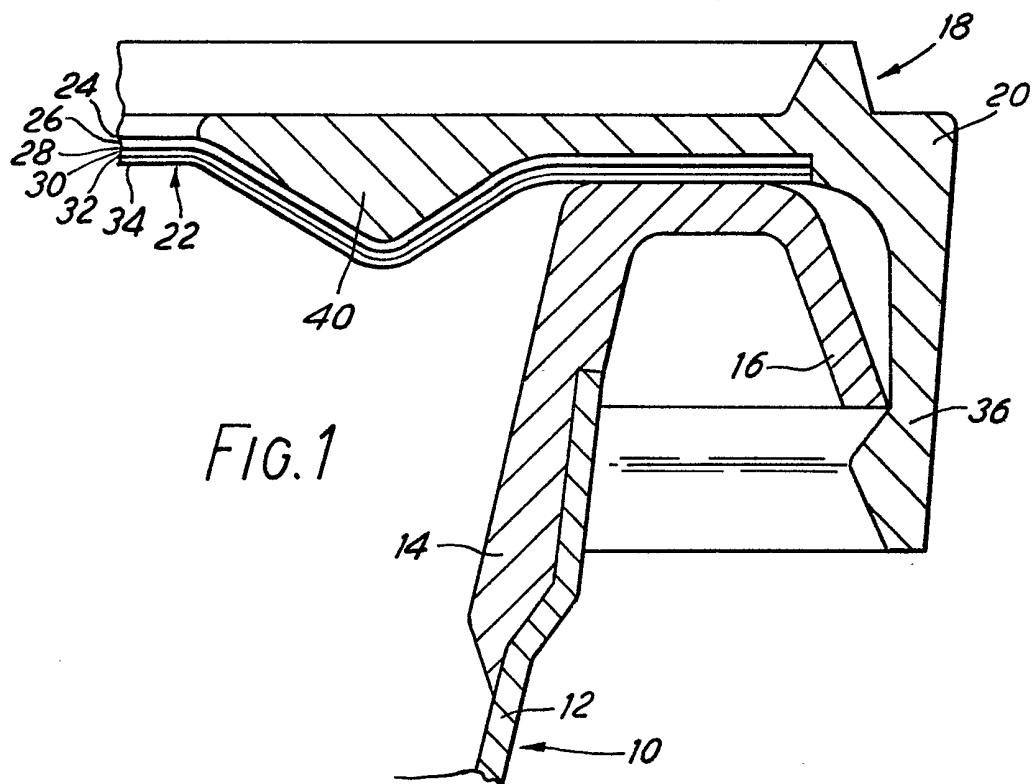
(57) A container lid 18 has an injection moulded plastics rim 20 which is a snap- or screw-fit on a container body 10. The lid 18 also includes a panel 22 of sheet material secured to the rim 20 during the injection moulding process. The panel 22 has a bottom layer 34 of polyethylene, laminated by means of a layer 32 of wax, lacquer or low tack adhesive to an upper portion

comprising an aluminium layer 30 and a printed cardboard sheet 26 coated on both sides with layers 24, 28 of polyethylene.

In use the panel 22 closes the mouth of the container 10 and the polyethylene layer 34 is sealed to the container rim 14 e.g. by high frequency induction heating utilising aluminium layer 30. When the lid is removed, the layer 34 separates from the upper portion of the panel 22 which can subsequently be ruptured or peeled from the container rim.



1/1



SPECIFICATION

Container lid, and package and packaging method using same

This invention relates to the field of packaging, and more particularly to lids for containers.

Glass jars and containers have been hermetically sealed using two components, a screw-on or snap-on lid and a wad comprising a lining and a membrane. In use, the wad is placed within the lid and held in position by means of a flange. The lid, together with the wad, is positioned on the container and heat is applied, either directly or by high-frequency heating, to seal the wad to the container. The act of unscrewing the lid breaks the bond between the membrane and the lining, the lining being left in the lid and the membrane being left adhered, usually in a peelable fashion, to the mouth of the container.

One form of snap-on lid, known as KEPAK (Registered Trade Mark), comprises a peripheral injection moulded plastics rim moulded onto a printed cardboard sheet. The cardboard sheet is provided with a pre-bowing effect to hold the lid structure relatively flat after the rim has been moulded thereto.

According to one aspect of the present invention there is provided a lid for a container comprising a panel of sheet material for covering the mouth of a container body, and a plastics portion secured thereto, the plastics portion comprising a rim having moulded formations for engaging the rim of the container body to retain the lid on the body, the sheet material being a laminate the bottom layer of which is separable, alone or with one or more other layers, from the rest of the sheet material so that it can be sealed to the rim of the container body when the lid is first fitted thereto and remain so when the lid is subsequently removed.

Another aspect of the present invention provides a method of packaging goods which comprises placing them in a container body, fitting thereto a lid as described above, and sealing the bottom layer of the sheet material of the lid panel to the rim of the container body.

Another aspect of the present invention provides a package comprising a container body with contents therein and closed by a lid as described above, said bottom layer of the sheet material of the lid panel being sealed to the rim of the container body.

The lowermost layer of the sheet material of the lid is preferably plastics so that it can be welded to the rim of a container body of similar or compatible plastics material. The sheet material preferably includes a metal layer, e.g. aluminium, so that the seal with the body can be effected by induction heating of the metal layer.

The plastics portion preferably overlaps the marginal portion of the top surface of the panel leaving the entire bottom surface of the panel free from attachment directly to the plastics portion. It may cover substantially the entire top surface of the

panel, preferably being transparent where it covers the panel so that printing on the panel can be seen.

In order that the invention may be more clearly understood, two embodiments will now be described with reference to the accompanying drawings, in which:

Fig. 1 is a cross-sectional side view through a top corner portion of a container with a first lid, and

Fig. 2 is a corresponding view with a second lid.

Referring to the drawings, the container body 10 can be of any conventional construction, for example injection moulded or thermoformed from plastics material. However in the example illustrated it shows a container body having side walls 12 of cardboard secured to an injection moulded plastics skeleton framework, the rim 14 of which is shown in the drawing. The rim is provided with an out-turned downwardly opening channel formation 16 to provide engagement for a snap-on lid 18. The lid comprises an injection moulded plastics rim 20 surrounding a panel 22 of sheet material. As with the body, the panel is secured to the plastics rim during the injection moulding process by placing it in the mould before injecting the plastics material. The sheet material of the lid panel 22 is a laminate comprising a top layer 24 of polyethylene applied to a sheet 26 of cardboard, a layer 28 of polyethylene applied to the undersurface of the cardboard, and then a layer 30 of aluminium, followed by a layer 32 of wax, lacquer or low tack adhesive to which is applied a lowermost layer 34 of polyethylene. Thus, the laminate comprises an upper portion consisting of the cardboard coated on both sides with polyethylene, and a layer of aluminium, and a lower portion of polyethylene, the two portions being temporarily secured together by the wax, lacquer or low-tack adhesive. Alternatively, the layer 32 could be omitted entirely and the two portions rolled heavily together, which will give them sufficient cohesion during the subsequent processing, which includes sheeting, printing, cutting and creasing, and inserting into an injection moulding machine for incorporating with the rim. The rim of the lid is suitably of low density polyethylene, which welds to the top polyethylene layer 24 during the injection moulding, thereby securing the top portion of the panel 22 to the rim. However, the rim of plastics material does not extend onto the surface of the bottom portion of the panel. The cardboard layer 26 can be printed.

After filling the container 10, the lid, the rim of which is provided with a conventional suitably profiled depending skirt 36, is snap-fitted onto the container, as shown in the drawing. This brings the lowermost polyethylene layer 34 into contact with the top of the container body rim 14, which is suitably of high density polyethylene. Then, high frequency induction heating is applied through to the aluminium foil layer 30, which causes the lowermost polyethylene layer 34 to adhere to the polyethylene container body rim 14. Subsequently, when the lid is removed from the container body, the top portion of the panel 22 detaches from the bottom portion, the

latter remaining sealed to the rim of the container body, so that the contents remain sealed in the container body. When it is desired to gain access to the contents, the bottom portion remaining on the container body can be ruptured, cut-away or peeled off, depending upon the strength of the seal between the lowermost polyethylene layer 34 and the rim of the container. If desired, a lacquer layer may be provided on the undersurface of the polyethylene layer 34, or on the rim of the container body, so as to reduce the adhesion between the layer 34 and the rim 14, so that it can be peeled off when necessary. However, the adhesion must be sufficiently strong so that when the lid is first removed the two layers of the panel 22 separate rather than the lower layer separating from the rim of the container body. The aluminium foil layer also provides the lid with a moisture vapour resistant barrier which could be omitted, particularly if the contents do not require that extent of barrier quality. In that case, the sealing to the container body rim can be effected by ultrasonic welding. Instead of aluminium, a paper layer can be provided if desired. This is a cheaper substrate than aluminium, and is more easily printed.

The rim 20 of the lid 18 has a thickened internal margin 40, which reinforces the lid against bowing caused by unequal shrinking of the cardboard layer 26 with and across the grain.

Fig. 2 shows an alternative lid 42 fitted to the container body 10. Many parts are the same as in Fig. 1 and their description need not be repeated. However, the plastics material of the rim 20 extends as a thin layer 44 to cover the entire top surface of the panel 22. The layer 44 is made so thin as to be transparent, so that the printing on the cardboard layer is still visible. With this embodiment, the thickened region 40 is not necessary.

In place of a snap-fitting, in either of the above embodiments the depending skirt 36 can be a screw-fit on the rim 14 of the container body. Also, the rim 20 can be thermoformed instead of injection moulded.

It is particularly advantageous that the metal layer 30 should be in the upper portion of the laminated panel 22, which remains with the lid when the container is opened. After the lowermost layer has been removed in order to remove some of the contents of the container, the lid can be replaced and the barrier qualities of the metal foil will continue to give protection to the remaining contents.

CLAIMS

1. A lid for a container, comprising a panel of sheet material for covering the mouth of a container body, and a plastics portion secured thereto, the plastics portion comprising a rim having moulded formations for engaging the rim of the container body to retain the lid on the body, the sheet material being a laminate the bottom layer of which is separable, alone or with one or more other layers, from the rest of the sheet material so that it can be sealed to the rim of the container body when the lid is first fitted thereto and remain so when the lid is subsequently removed.
2. A lid according to claim 1 wherein the plastics

portion is injection moulded and is secured to the panel of sheet material during the injection moulding process.

3. A lid according to claim 1 or claim 2 wherein the lowermost layer of the sheet material is plastics.
4. A lid according to any one of the preceding claims wherein the panel of sheet material includes a metal layer.
5. A lid according to claim 4 wherein the metal layer is aluminium.
6. A lid according to claim 4 or claim 5 wherein the metal layer is not part of the bottom layer, so that it does not remain on the container body when the lid is removed.
7. A lid according to any one of the preceding claims wherein the plastics portion overlaps the marginal portion of the top surface of the panel leaving the entire bottom surface of the panel free from attachment directly to the plastics portion.
8. A lid according to any one of the preceding claims wherein the plastics portion covers substantially the entire top surface of the panel.
9. A lid according to claim 8 wherein the plastics portion is transparent where it covers the panel so that printing on the panel can be seen.
10. A lid substantially as described herein with reference to Fig. 1 or Fig. 2 of the accompanying drawings.
11. A method of packaging goods which comprises placing the goods in a container body, fitting thereto a lid according to any one of the preceding claims, and sealing the bottom layer of the sheet material of the panel of the lid to the rim of the container body.
12. A package comprising a container body with contents therein and closed by a lid according to any one of claims 1 to 10, the bottom layer of the sheet material of the panel of the lid being sealed to the rim of the container body.

Printed for Her Majesty's Stationery Office by The Tweeddale Press Ltd., Berwick-upon-Tweed, 1980.
Published at the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.