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EASY OPENING BLISTER PACK

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FIG. 1

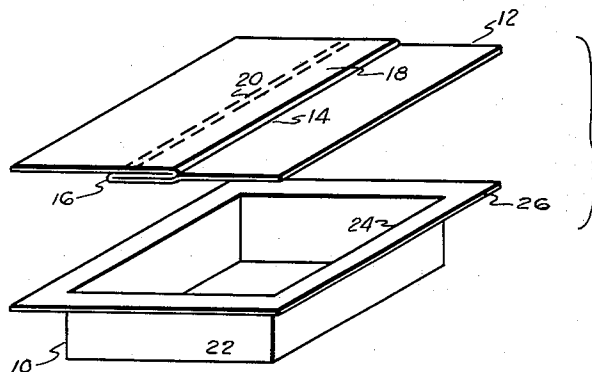


FIG. 2

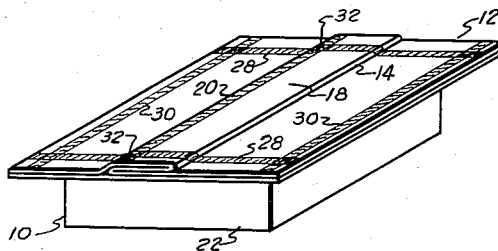
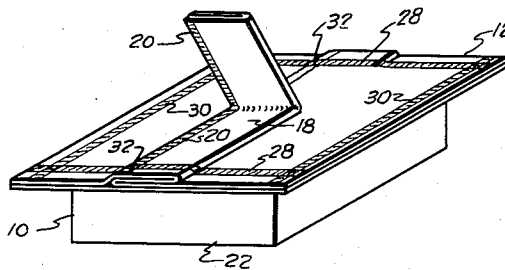


FIG. 3



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1 Claim. (Cl. 206—56)

It is an object of this invention to provide a package of the blister type which may be hermetically sealed, which nevertheless may be opened easily by a simple manual manipulation.

It is a further object of this invention to provide a package as aforesaid which is cheap and easy to produce, particularly in small quantities.

The above and other objects will be made clear from the following detailed description taken in connection with the annexed drawings in which:

Figure 1 is an "exploded" perspective view showing the blister portion and the lid prior to sealing of the package;

Figure 2 is a view similar to Figure 1 showing the parts assembled in sealed condition; and

Figure 3 is a view similar to Figure 1 but showing the lid partly opened in accordance with the invention.

While, in this country, packaging of all types runs into astronomical volume, there is, nevertheless a constant demand, in each type, for relatively small individual "runs." This is occasioned by the need for sampling, market tests, consumer reaction tests, pilot operations, etc. The blister pack, as a type is familiar, as is the tear string or strip as a means for easy opening. For small runs manual and semiautomatic operating techniques are now well developed. The addition of tear strings or strips to this type of package is not so well developed so far as small runs are concerned, and heretofore has been almost prohibitively costly.

The present invention is concerned with obtaining the effect of a tear strip without, however, actually using such a strip. This permits the market or other testing of easy opening blister packages without resort to the relatively costly tear strip.

Referring now to Figure 1, there is shown a blister 10 and a lid 12. The lid 12 comprises a sheet, preferably of homogeneous plastic material. Such a sheet is preferred because its homogeneity gives rise to certain tear characteristics which are desirable from the standpoint of the present invention. Within certain limits of caliper and tear strength, however, a two side coated or fully impregnated fibrous sheet may be used, provided, of course, that it is heat-sealable and the same thing applies, of course, to laminations of plastic and fibrous sheets. The sheet is folded along a line 14 and also along a line 16 to form a fin 18 lying substantially in the plane of the sheet. A line of heat seal 20 is then formed across the sheet above the fold line 16. Within the area of the seal 20 there are three plies of material and all three are sealed together. This latter statement will be true of all truly homogeneous films if the seal 20 is made with the fin 18 folded as shown in Figure 1. It will not be true in the case of some coatings and laminations in which opposite sides of the lid 12 have different sealing characteristics. A typical case is one in which one side of the sheet 12 will seal to itself, but not to the other side. In such cases the fin 18 should be formed normal to the plane of the lid 12 and the seal 20 made while in this

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condition. In such a case the seal 20 may extend the full width of the fin 18. The fin is then folded to the condition shown in Figure 1.

The blister 10 usually is formed by conventional molding operations from a sheet of plastic and has the usual body portion 22, the mouth 24 of which is surrounded by the conventional integral flange 26. The lid 12 after the folding and sealing operations above described, has its edges substantially coextensive with the outer edge of the flange 26.

After placing the contents in the body portion 22 of the blister 10, the lid 12 is placed thereover with its edges substantially coincident with those of the flanges 26. A pair of parallel heat seals 28 and another pair of parallel heat seals 30 are then applied, all lying within the area of the flange 26. The seals 28 intersect the seal 20 previously formed in the lid 12 at points 32. In practice, the various seals heretofore mentioned usually will be approximately $\frac{1}{8}$ " wide, though this width by no means is critical. The points 32, therefore, actually are areas approximately $\frac{1}{8}$ " square and within this area there is a merger of four thicknesses of material. As previously noted, in the lid 12 and within the area of the seal 20, there is a merger of three thicknesses of material. There have thus been provided prearranged and juxtaposed areas of differential strength. The package is opened in the manner shown in Figure 3. The fin 18 is grasped adjacent its intersection with one of the seals 28 and is pulled upwardly. It will be understood that within the area of intersection of the fin 18 and the seals 28 there is also a merger of four plies of material, while the fin 18 itself represents only two unmerged plies. The tendency, therefore, is for the two unmerged plies to tear across the inner edge of the seal 28. When the tear encounters the seal 20, the tendency is for the tear to progress across the seal 20. The reason for this is believed to be that in the then position of the parts, the two plies of the fin 18 are being loaded substantially in tension normal to the plane of the lid 12, whereas the resistance of the seal 20 is in shear, in which plastics notoriously are weaker than in tension. Moreover, the point 32 has four ply strength as opposed to the three ply strength of the seal 20. Once, however, the tear has proceeded across the seal 20, the seal 20 becomes part of the fin 18 and further tearing has only one ply resistance. The tendency, therefore, is for the tear to progress along the seal 20 to its intersection with the opposite seal 28, thus opening the package along a straight transverse line.

The tearing characteristics of plastic films notoriously are not accurately predictable. In opening tear strip packages there is no guarantee that the tear initiated by the strip will follow precisely the margin of the strip. Usually it does but frequently it does not. This is true of the present invention which does, however, afford a package opening means in which the tear is just as easy to initiate and just as much controlled for completion as is the applied strip, without the need, however, or the elaborate manufacturing control means which make the tear strip too costly for small run operation.

I claim:

An impervious package comprising: a blister portion molded from a sheet of plastic material having an initially uniform caliper, said blister portion having an outwardly extending planar flange around its entire periphery; a lid formed by a sheet of plastic material, of uniform caliper throughout its area, said lid having its margins heat-sealed to the flange of said blister portion, said heat-seal being spaced inwardly from the edges of the lid, said lid having formed therein a double fold extending transverse one dimension of said blister portion, one margin of said double fold being heat-sealed to itself throughout its transverse extent to provide a line relatively greater

in strength as compared to the immediately adjacent portions of said lid, the said heat-seal traversing the double fold adjacent to but spaced inwardly from each end thereof to provide at said extremities, areas of greater strength than that of said heat-sealed double fold and of the untreated material of said lid, thereby providing a tear tape for the package.

References Cited in the file of this patent

UNITED STATES PATENTS

651,692	Belknap	June 12, 1900
2,721,550	Banff	Oct. 25, 1955
2,736,656	Marshall	Feb. 28, 1956
2,760,630	Lakso	Aug. 28, 1956