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3,671,270

POPCORN PACKAGE

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FIG. 1

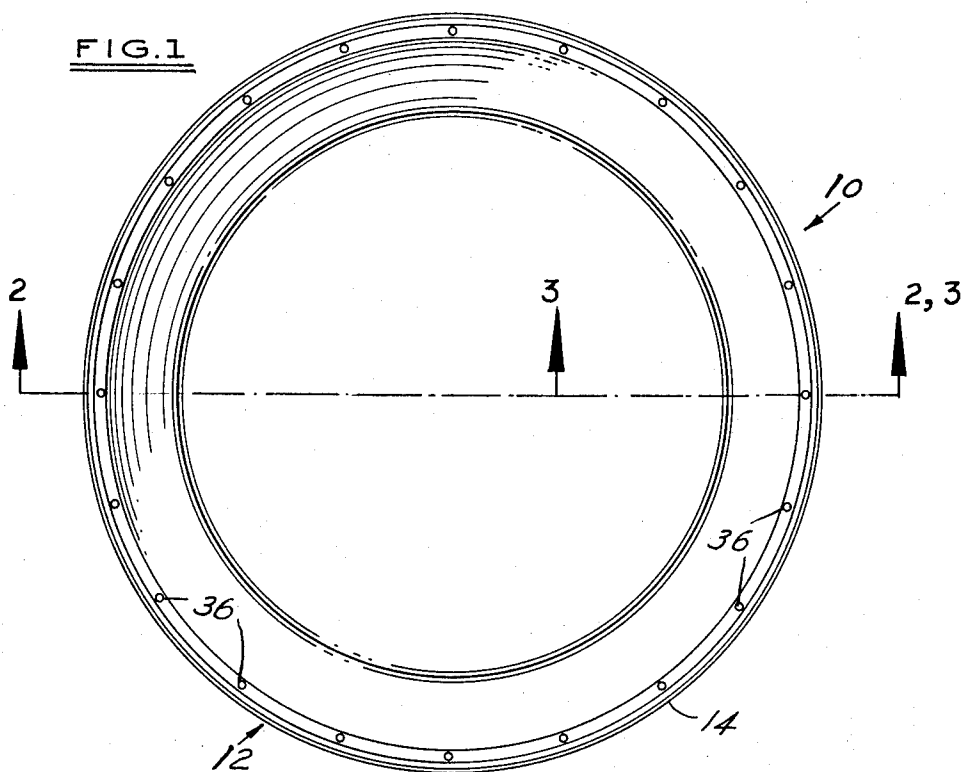


FIG. 2

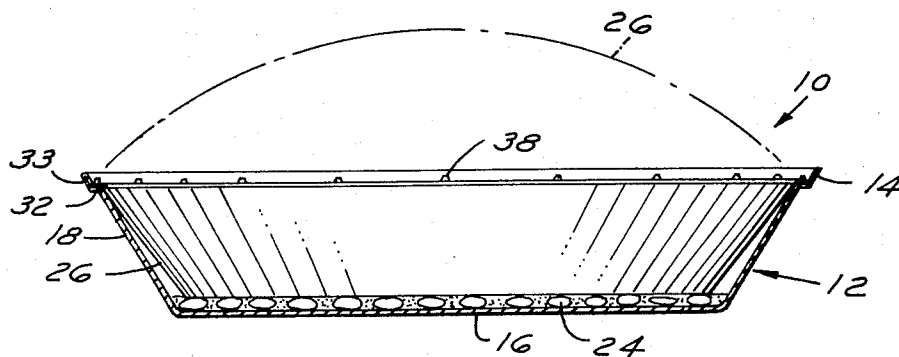
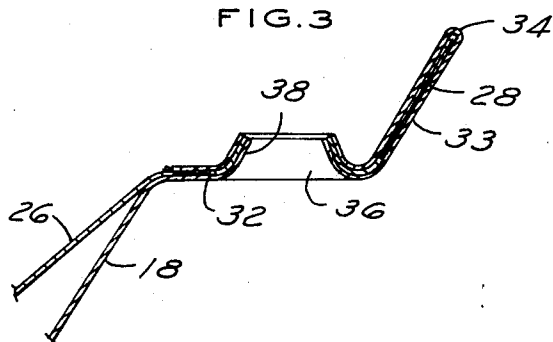


FIG. 3



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POPCORN PACKAGE

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5 Claims

ABSTRACT OF THE DISCLOSURE

The popcorn package includes an open-topped relatively shallow pan which has an annular flange. A transparent plastic cover extends across and into the pan. The cover has substantially the same relatively shallow outline as the pan. This permits nesting of a plurality of popcorn packages for storage purposes. A charge of popcorn kernels and cooking oil is confined between the pan and the cover. The cover is outwardly flexible upon heating of the charge to pop the corn. The flange includes a bent over edge portion which clampingly engages the marginal peripheral edge of the flexible cover. A plurality of spaced apart staked portions in the flange, which puncture both the flange and the marginal edge of the cover, positively hold the cover in place and provide a restricted fluid passage for pressure release during heating of the charge to pop the popcorn kernels.

BACKGROUND OF THE INVENTION

Popcorn packages of the general type herein disclosed have become increasingly popular in recent years. Such popcorn packages include a disposable shallow pan fabricated of metal foil which serves as a cooking implement for application of heat to pop a charge of popcorn kernels, cooking oil and seasoning. A flexible transparent plastic cover is provided to overlie the charge and seal the charge into the pan during storage of the packages. When the kernels are to be popped, the heat involved in the cooking action causes generation of vapors which, in turn, cause the flexible cover to balloon outwardly thus providing a space to receive the popped corn.

Such disposable packages are widely used in public places such as taverns, restaurants and amusement centers as a means for providing fresh popcorn to customers. One of the advantages of the present construction resides in the fact that a number of the packages may be nested together prior to use to thus form a compact storage unit. The basic construction is illustrated in Pat. No. 3,425,845, issued Feb. 4, 1969. A machine for popping the corn on a commercial scale is illustrated in Pat. No. 3,359,886.

One problem which has been encountered with prior popcorn packages of this type has been in providing means for positively fastening the flexible cover to the pan. Previous designs have involved a method for clamping a marginal edge of the cover to the pan by means of a crimped-over flange. It has been found that in some instances the cover has been separated from the pan during the popping action as a result of the pressure of vapors generated by the heat used in popping the corn. Another problem has been to provide means to relieve the vapor pressure during popping to prevent rupture of the flexible cover. In accordance with the present invention, means are provided to positively engage the flexible cover and to simultaneously provide a restricted fluid passage for pressure relief during the popping of the kernels of corn.

SUMMARY OF THE INVENTION

The popcorn package comprises an open-topped relatively shallow pan fabricated of a semi-rigid self-supporting metallic sheet material. The pan has an annular flange. A cover of flexible sheet material extends across and into

the pan and has substantially the same relatively shallow outline as the pan to thereby permit nesting of a plurality of the packages. A charge of popcorn kernels and cooking oils is confined between the pan and the cover. The cover is outwardly flexible upon heating of the charge. The flange comprises a first generally radially outwardly extending wall portion and a second overlying reversely bent wall portion. The marginal peripheral edge portion of the cover is clamped between said portions. A plurality of spaced apart staked portions are provided in the flange puncturing both the flange and the marginal edge of the cover to positively hold the cover and provide a restricted fluid passage for pressure relief during heating of the charge to pop the popcorn kernels.

In the drawing:

FIG. 1 is a top plan view of one embodiment of the popcorn package of the present invention;

FIG. 2 is a sectional view taken substantially along the line 2—2 of FIG. 1 looking in the direction of the arrows; and

FIG. 3 is a sectional view on an enlarged scale taken substantially along the line 3—3 of FIG. 1 looking in the direction of the arrows.

The popcorn package 10 comprises an open-topped relatively shallow pan 12 which has an annular flange 14 which extends around the mouth of the pan. The pan is fabricated of a flexible metallic sheet material such as aluminum foil. The gauge of the foil is sufficient so that the pan is sufficiently rigid to be self-supporting and so that the bottom wall 16 will not burn out when subjected to heat for the purpose of popping corn.

The sidewalls 18 of the pan flare outwardly from the bottom wall 16. The flange 14 extends generally radially outwardly from the side walls. The flange 14 comprises a first outwardly bent wall portion and an intumed wall portion which overlies the first portion.

A charge of popcorn kernels 24, preferably a single layer, is provided in the bottom of the pan. Hydrogenated vegetable cooking oil and popcorn seasoning complete the charge.

A flexible cover 26 extends across the pan 12 and downwardly into the pan. The cover has substantially the same relatively shallow outline as the pan. The cover 26 is preferably fabricated of a transparent plastic material such as cellophane. The cellophane has sufficient thickness to withstand the relatively high pressures involved in popping the corn.

As will be noted in FIG. 3, the marginal peripheral portion 28 of the cover 26 is received between the walls of the flange 14. The portion 28 comprises reversely bent edge portions to form two layers for added strength. As will be noted, the flange 14 includes a radially outwardly extending portion 32 and contiguous therewith an upwardly and radially outwardly extending rim 33. The marginal edge of the cover 26 extends all of the way into the flange and terminates at the bend 34 of the rim portion 33.

The marginal edge of the cellophane is frictionally held by the crimping action of the flange 14 and the wedging action of the upturned rim portion 33. Additionally, means are provided to positively hold the marginal edge of the cover 26. A plurality of staked openings 36 are provided in spaced apart relationship around the flange portion 32. In a representative embodiment, twenty of the openings 36 are provided around the entire periphery of the pan 12. The openings 36 may be formed by a suitable punching tool. As will be noted, the staked openings 36 include upwardly extending wall portions 38 which, in cross-section, have a conical configuration. These wall portions may be directed downwardly or at some other angle than that illustrated.

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In use of the popcorn package 10, heat is applied to the bottom wall 16. This heat initially causes the oil to boil with a portion thereof vaporizing. The pressure created by the evaporation of the oil causes the cover 26 to balloon upwardly as illustrated in dotted lines. This upward ballooning provides space for popping of the corn.

Excess pressure is relieved via gaseous escape passages which exist between adjacent staked openings 36. Although the flange 14 is crimped over the marginal edge of the cover 26, the crimping pressure is not sufficient to result in a fluid-tight seal at the relatively high pressures encountered during popping of the corn. Consequently, the excess pressure is relieved by escape of gas through the flange. The escape passage is concentrated around the openings 36. As will be appreciated from the FIG. 3 showing, the passageway for gas via the route of the openings 36 is quite short as compared to passage under the cover to the outer portion of the flange and then back over the top of the cover.

During the popping action, the cover 26 will not come loose from the flange 14 because of the positive holding action of the staked openings 36. Tearing of the material adjacent the openings is prevented by the amount of material of the cover clamped into the upwardly and outwardly extending rim portion 32 and the double thickness thereof.

After the cover 26 has been ballooned upwardly as shown in FIG. 2, the corn begins to pop. The popping action is continued until all of the corn is popped. The amount of the charge placed in the package 10 is sufficient to completely fill the package with the popped corn being somewhat compacted. After the kernels have been popped, the package is removed from the heat source. The cover 26 may be perforated by means of a sharp instrument such as a knife and torn away to permit eating of the popped corn.

What I claim as my invention is:

1. A popcorn package comprising an open-topped relatively shallow pan fabricated of semi-rigid self-supporting metallic sheet material, said pan having an annular flange, an expandible cover of flexible sheet material extending across and into the pan and having substantially the same relatively shallow outline as the pan, a charge of popcorn kernels and cooking oil is confined between the pan

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and cover, said cover being outwardly flexible upon heating of the charge, said flange comprising a first generally radially outwardly extending portion and a second overlying reversely bent portion, the marginal peripheral edge portion of the cover being crimped between said portions, and a plurality of spaced apart staked portions in the flange puncturing both the flange and the marginal edge of the cover to additionally frictionally hold the cover and provide a restricted fluid passage for pressure relief during heating of the charge to pop the popcorn kernels, said staked portions each comprising a wall structure projecting outwardly from the plane of the flange and defining a hollow member.

2. A popcorn package as defined in claim 1, further characterized in that the wall structure of said staked portions defines a generally conical member.

3. A popcorn package as defined in claim 1, further characterized in that said flange comprises a first radially outwardly extending section and a second rim section extending therefrom and bent at an angle thereto, said staked portions being provided in said first section.

4. A popcorn package as defined in claim 3 further characterized in that said staked portions projecting outwardly from the same side of said first flange section as the second rim flange section is bent away from.

5. A popcorn package as defined in claim 4, further characterized in that said staked portions have a generally conical shape.

References Cited

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99—171 C; 229—3.5 MF, DIG 14