

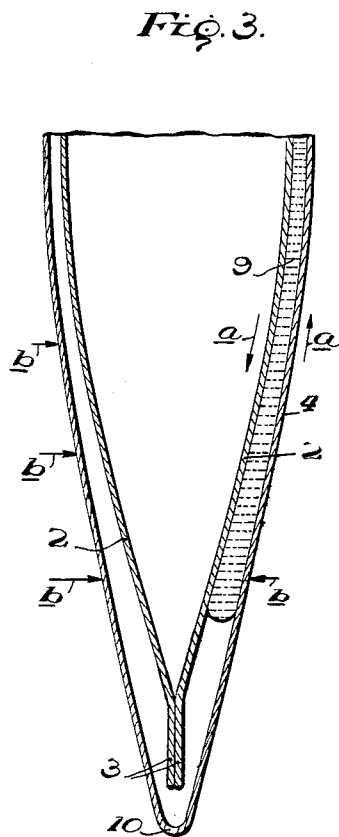
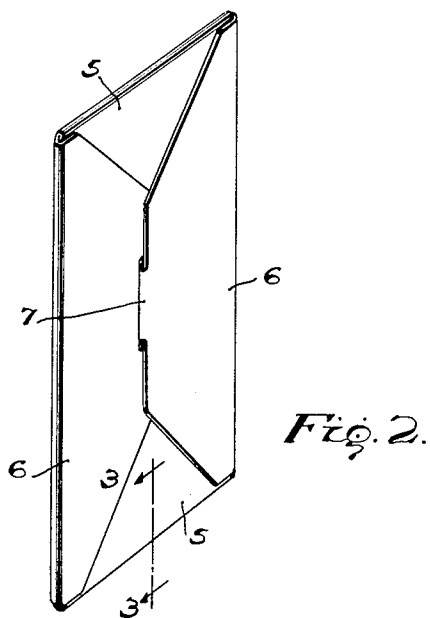
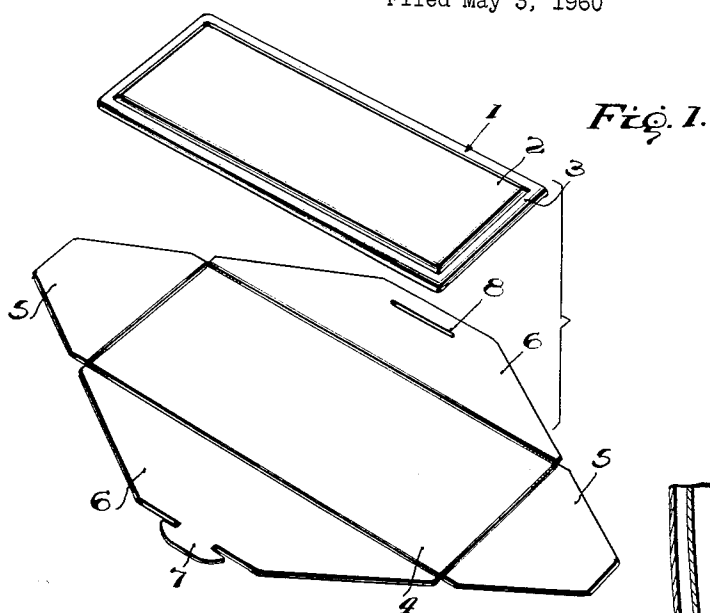
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STRESS-RESISTANT FLEXIBLE FOOD PACKAGE

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STRESS-RESISTANT FLEXIBLE FOOD PACKAGE
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3 Claims. (Cl. 99-171)

(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to the production of sterile packages of thermally processed foods, and has for its primary object to provide an improved package of the paperboard folder type which is more resistant to stress and flexing than conventional packages of this type.

In such prior conventional packages, the weakest point has been found to be in the heat-sealed pouch which is enclosed by an outer envelope. In those packages, if the pouch is subjected to stress by dropping on edge, the contents distend the pouch wall, and subject the heat seal to a peeling stress which often completely disrupts the pouch with a consequent destruction of the goods packaged therein.

It is a specific object of the present invention therefore to so locate and secure the heat-sealed pouch within the outer container or envelope that the circumscribing fin formed on the pouch is protected at all times from stresses and strains ordinarily caused by dropping the package.

Other objects and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings, in which,

FIGURE 1 is an exploded perspective view of a heat-sealed package about to be assembled;

FIGURE 2 is a perspective view of the complete package of pouch and envelope; and

FIGURE 3 is an enlarged fragmentary sectional view taken on the line 3—3 of FIGURE 2, and showing the manner of spacing the fin of the heat-sealed pouch from the walls and the edges and corners of the outer envelope.

Referring to the drawings in greater detail and by reference numerals, the inner pouch which receives the goods to be packaged, such as thermally processed foods, is indicated generally by the numeral 1 and is comprised of two sheets 2 arranged face to face and heat sealed together to provide a circumscribing fin 3, thereby hermetically sealing this portion of the package. The sheets 2 which comprise the pouch may be formed of flexible material such as regenerated cellulose ("Cellophane"), metallic foil, rubber hydrochloride ("Pliofilm"), etc.

The pouch as thus prepared is enclosed in flexible envelope of somewhat stiffer paperboard, cardboard, or the like and comprises a bottom portion 4, end flaps 5, and side flaps 6, one of the latter being formed with a tongue 7 adapted to be received in a slit 8 formed in the other side flap. The base portion 4 of the envelope is of slightly greater area than the area of the pouch 1, and, as shown in FIG. 3, the main portion of the pouch is secured to the bottom portion 4 of the envelope by adhesive 9, although it is to be understood that the pouch may be otherwise connected to the bottom portion of the envelope as by heat and pressure, or the like.

It is to be particularly noted in enlarged FIGURE 3 that the fin 3 circumscribing the pouch 1 has its edge completely spaced away from the inner edge 10 of the envelope, and that it is also spaced laterally of the pack-

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age from both the top and bottom of the envelope which encloses the pouch. As hereinafter pointed out, the critical area of a pouch of this type insofar as resistance to mechanical abuse is concerned is the area between the pouch wall and the heat seal. If the seal can be maintained in rigid condition or, at least, held against excessive flexing, the resistance of the pouch to mechanical abuse will be considerably improved. In this connection, attention is directed to the arrows "a" and "b" of FIG-
5 URE 3. If the package should be dropped, some of the force caused by the dropping will be transferred to a shear stress between the pouch and the bottom portion of the folder, as indicated by the vertical arrows "a—a," of FIG. 3, and the arrows "b—b," indicates how the pouch walls are restrained and thereby limit distention which would otherwise cause a peeling stress to be applied to the heat seal. Thus, the fin 3 is protected from stresses in both directions.

From the foregoing description taken in connection
20 with the attached drawings, it will be apparent to those skilled in the art that I have devised an exceedingly simple and inexpensive modification of the sterile packages of the prior art by merely enlarging the size of the envelope to an area slightly greater than the area of the
25 pouch contained therein, and that by securely attaching the main portion of the pouch to the bottom wall of the envelope, the heat-sealed fin circumscribing the pouch is protected from all stresses which would ordinarily cause disruption of the seal, with a consequent destruction
30 of the goods packaged in the container.

In accordance with the patent statutes, I have described what I now consider to be the preferred form of the invention, but inasmuch as various minor changes may be made in structural details without departing from
35 the spirit of the invention, it is intended that all such changes be included within the scope of the appended claims.

I claim:

1. A stress-resistant food package comprising an inner
40 pouch formed of two face-to-face flexible rectangular flat sheets of heat-sealable material, said sheets being heat-sealed at their edges to provide a circumscribing rectangular fin and to hermetically seal the contents of said package, and an outer envelope of stiffer material than
45 said sheets, said stiffer material having substantially the flexibility characteristics of paperboard, said envelope having a rectangular bottom portion of the shape of said pouch but slightly larger in area, and flaps for enclosing said pouch; one of said pouch-forming flexible sheets being
50 secured to the bottom portion of said envelope along a bonded surface but terminating short of said fin, so as to leave said fin free and spaced from the inner edges of said envelope: whereby said fin is protected by said bonding against excessive flexing and against rupture when
55 said package is subjected to stress.

2. A stress-resistant food package according to claim 1, wherein said outer envelope is cardboard.

3. A stress-resistant food package according to claim 1, wherein said heat-sealable material is metallic foil.

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