

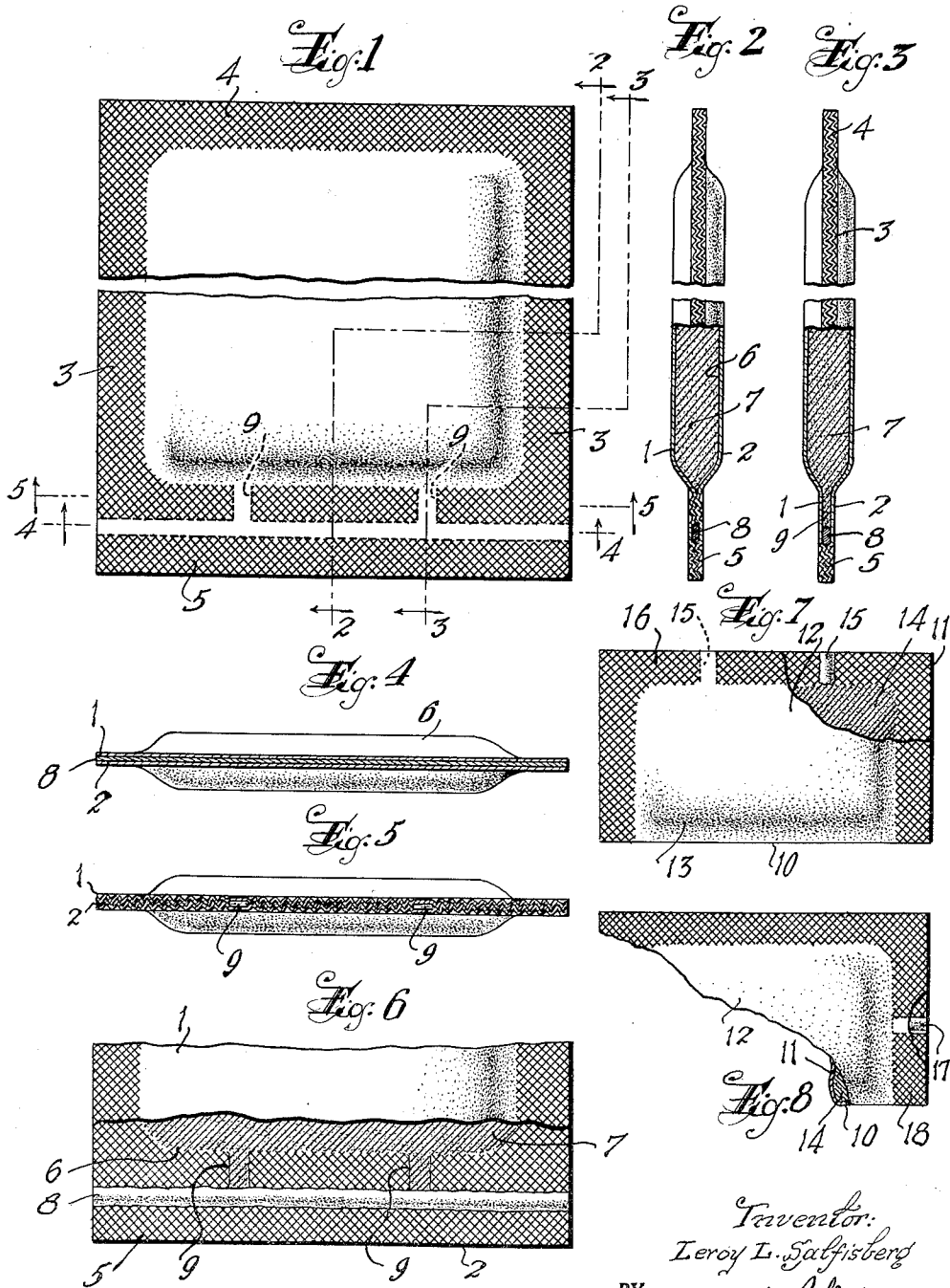
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L. L. SALFISBERG

2,595,708

VENTED PACKAGE

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Inventor:  
Leroy L. Salfisberg  
BY *Harry B. Hook*  
Attorney.

## UNITED STATES PATENT OFFICE

2,595,708

## VENTED PACKAGE

Leroy L. Salfisberg, South Orange, N. J.; Herman G. Kopald and Lloyd I. Volckening, executors of said Leroy Salfisberg, deceased, assignors to Ivers-Lee Company, Newark, N. J., a corporation of Delaware

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1 Claim. (Cl. 206—46)

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This invention relates in general to packages for substances from which gas may be produced as the result of partial deterioration or chemical action of the substance in the package, and a prime object of the invention is to provide such a package which shall embody a novel and improved construction to permit escape of such gases so as to reduce the possibility of bursting of the package as the result of accumulation of gas pressure. More particularly, the invention contemplates packages of the type comprising opposed layers of thin, flexible packaging material, such as cellophane, rubber hydrochloride, metal foil, paper, and the like, that are sealed together in zones forming and bounding a compartment between the layers in which the substance is confined.

Another object is to provide a package of this character which shall be so constructed that gas may be freely vented from the compartment containing the packaged substance, but escape of the substance itself shall be positively prevented and ingress of air into the compartment shall be restricted.

Other objects, advantages and results of the invention will be brought out by the following description in conjunction with the accompanying drawing, in which

Figure 1 is a top plan view of a package embodying my invention;

Figure 2 is a partial edge elevational view and transverse sectional view, taken approximately on the plane of the line 2—2 of Figure 1;

Figure 3 is a similar view, taken approximately on the plane of the line 3—3 of Figure 1;

Figure 4 is a transverse vertical sectional view, approximately on the plane of the line 4—4 of Figure 1;

Figure 5 is a view similar to Figure 4, on the plane of the line 5—5 of Figure 1;

Figure 6 is a fragmentary plan view of the package as shown in Figure 1, with a portion of the uppermost layer of packaging material removed;

Figure 7 is a top plan view of a modified form of package constructed in accordance with the invention, with a portion of the upper layer of packaging material removed, and

Figure 8 is a similar view of another modification of the package, with portions broken away and with a portion of the upper layer of packaging material removed.

Specifically describing the embodiment of the invention illustrated in Figures 1-6, inclusive, the package comprises two opposed walls formed of

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rectangular layers or sheets 1 and 2 of suitable packaging material, for example, cellophane or metal foil, that are sealed together in longitudinal side zones 3 and transverse zones 4 and 5 to form and bound a compartment 6 between the layers for the packaged substance 7 which may be, for example, a powder from which gases may emanate within the compartment. The layers may be sealed together in any suitable manner, for example, thermoplastically or by means of an adhesive, or the layers may be formed of heat-fusible material such as rubber hydrochloride which will permit the sheets to be fused together upon application of heat and pressure.

In accordance with the invention, means is provided for permitting the escape or venting of excess gas from the compartment 6, and as shown in Figures 1-6, inclusive, this means comprises porous material 8 sealed between the layers in one or more of the sealed zones and having a portion thereof exposed to the gases in the compartment so that the latter may escape through the pores in the material into the atmosphere. More particularly, the porous material may be a strip or cord extending lengthwise of one of the sealed zones, for example, the zone 5, with its ends exposed to the atmosphere at the side edges of the package between the layers, with the intermediate portions of the strip exposed to the gases through passages 9 that lead from the compartment to the strip. These passages may be conveniently formed by leaving portions of the layers 1 and 2 unsealed.

With this construction, it will be observed that the gases may freely flow through the passages 9 to the venting material 8, thence through the pores of the latter and out of the ends thereof at the edges of the package. At the same time, the porous material 8 will restrict the ingress of air or foreign material into the compartment through said porous material and the passages 9, and, of course, will prevent the escape of the substance itself from the compartment.

Various porous materials may be utilized, but a satisfactory material is ordinary cotton string or wick.

A modification of the invention is shown in Figure 7, where the package comprises a single rectangular sheet of packaging material folded upon itself, as indicated at 10, to provide two superposed layers 11 and 12 that are sealed together along the three margins in substantially the same manner as hereinbefore described in connection with the package of Figure 1, so that said three margins and the fold 10 from the

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boundaries of the compartment 13 for the packaged material 14. In this form of the invention, also, the vent is somewhat different, and is shown as comprising two pieces of porous material 15 sealed in the longitudinal or side sealed zone 16 with its ends exposed respectively to the gas in the compartment 13 and to the atmosphere at the longitudinal edge of the package between the layers.

Figure 8 shows a similar type of package but with the venting element 17, that may be identical with the elements 15, disposed in the transverse or end sealed zone 18. In both of the packages of Figures 7 and 8, it will be observed that the gases from the compartment may easily escape directly from the compartment through the venting elements 15, and the latter will prevent escape of the packaged substance itself and also restrict the ingress of air or foreign material into the compartment.

While I have shown and described the invention as embodied in a certain type of package and have disclosed certain specific forms of venting means, it will be understood by those skilled in the art that the invention may be used in connection with other types of packages and that other venting elements may be utilized, all within the spirit and scope of the invention.

Having thus described the invention, what I claim is:

A vented package comprising two opposed approximately flat layers of flexible packaging material providing a commodity-containing compartment between them one margin of which is formed by a sealing flange consisting of the marginal portions of said layers extending beyond the compartment and in approximately a common plane therewith, said marginal portions

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being heat sealed together in flat super-posed relation and providing between them a vent passage communicating with and extending from said compartment through an edge of said sealing flange, and a porous gas-conducting substance in said vent passage and with one portion exposed to the interior of said compartment and another portion exposed to the atmosphere at said edge of the sealing flange whereby to permit the escape of gases from the compartment through the pores of said gas-conducting substance to the atmosphere and restrict ingress of foreign matter into said compartment, said sealing flanges having two spaced and parallel edges and said vent passage having a portion extending throughout the length of said sealing flange and exposed at each end to the atmosphere at one of said parallel edges, said passages having another portion leading from the first-mentioned portion to and communicating with said compartment, and said porous gas-conducting substance comprising a strip of material extending throughout the length of the first-mentioned portion of said passage and exposed to the atmosphere at said parallel edges of said sealing flange.

LEROY L. SALFISBERG.

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