PG Diploma In Patents
NALSAR University of Law, Hyderabad
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Drafting a patent application

Exercise I

The present invention relates to a package saver or device for improving the packaging of soft products which may be damaged in boxes or cartons with relatively large sagging covers.

More particularly, the invention relates to such a package saver which is molded from plastic to have minimal size, weight, and cost and which is suitable for supporting large carton covers such as those used for pizza pies. The molded plastic saver is positioned centrally of the completed pie or other product to support the cover during storage and delivery.

The package saver is useful in connection with the delivery of products which require a package, but whose cost necessarily requires a relatively inexpensive and disposable box or carton. Cartons of this type, and particularly those used to deliver pizza pies or large cakes or pies, comprise boxes with relatively large covers formed of inexpensive board material.

Due to the quality of the board and their large size, there is a tendency of the covers to sag or to be easily depressed at their center portions so that they may damage or mark the pies or cakes during storage or delivery.

Accordingly, an object of the present invention is to provide an easily manufactured, relatively inexpensive, lightweight article which is placed on the pie or cake within the package to support the central portion of the package cover during delivery.

Another object of the present invention is to provide an improved means for protecting articles such as pizza and other pies or cakes from damage during delivery in boxes.

Another object of the present invention is to provide an inexpensive device for protecting pizza and other pies or cakes during delivery.

Other and further objects of the present invention will become apparent upon an understanding of the illustrative embodiments about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

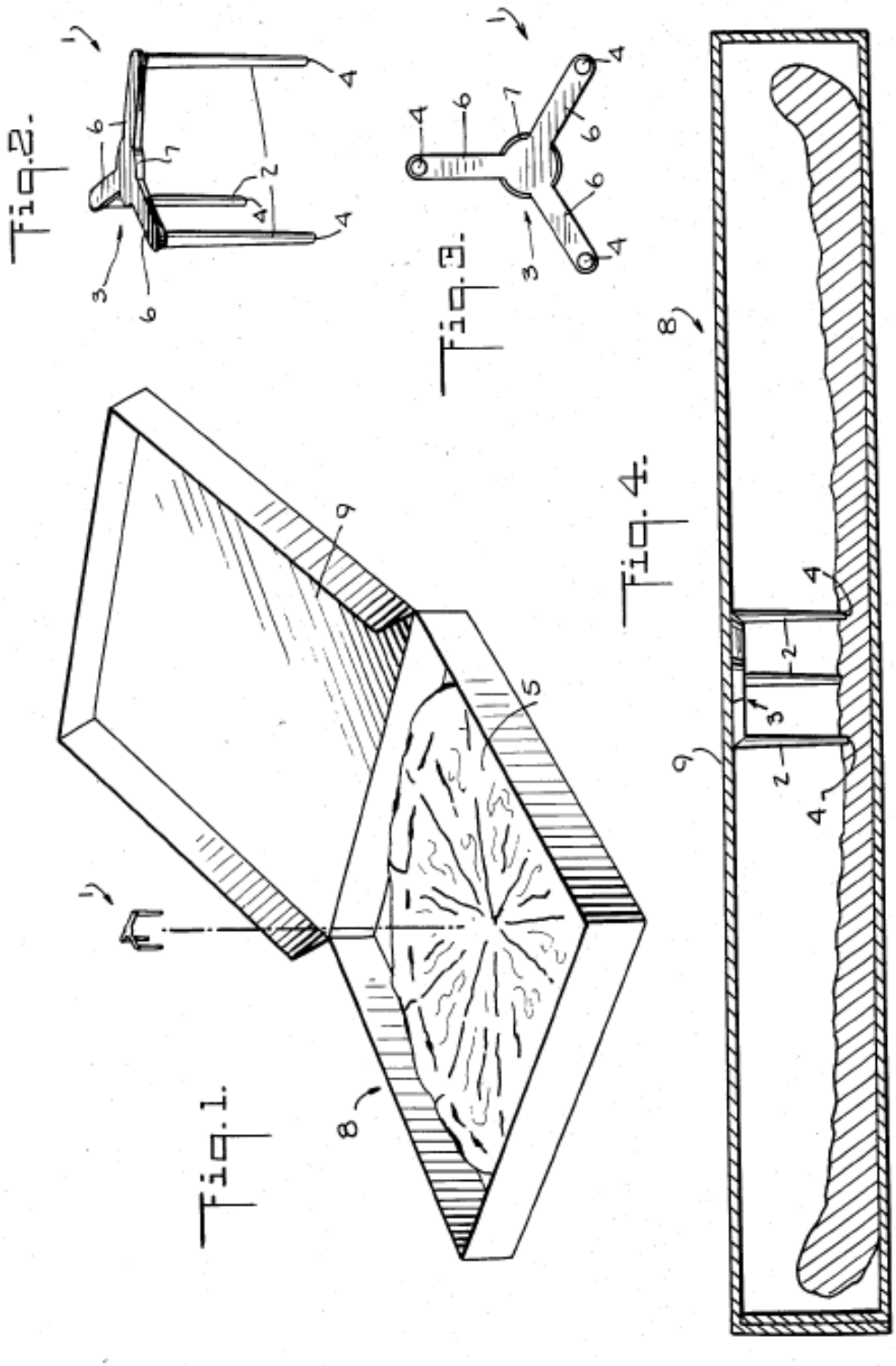

FIG. 1 is a perspective view illustrating the package saver being used with a typical pizza pie delivery box.

FIG. 2 is a perspective view of a package saver in accordance with the invention.

FIG. 3 is a top plan view of the package saver of FIG. 2.

FIG. 4 is a vertical sectional view of a typical pizza box with the package or pizza saver in position.

A temperature resistant molded plastic device is described for use in boxes or packages such as pizza boxes where there is a tendency of large cover portions to sag downwardly to damage the soft pizza or other packaged products. In use, the saver is positioned near the center of the package to support the box cover for protecting the contents.

In order to provide a lightweight and inexpensive device for the purpose discussed above, the saver is preferably molded as a unitary device from one of the plastics which is heat resistant such as the thermo set plastics and which will resist temperatures of as high as about 500^{o}F.

In its preferred form, as illustrated, the saver 1 has spaced vertical legs 2 connected to a cover support 3. The lower portions of the legs 4 have a minimal cross section to minimize any marking of to the protected article 5 and they are also made thin for minimizing the volume of plastic required. The cover support 3 of the saver 1 also preferably has a minimum volume by consisting of a spoke-like arrangement of radially oriented leg supports 6 molded to extend from a central portion 7.

This construction of portion support 3 provides a suitable broad and stable support for box 8 cover 9 which is of minimal volume and thus has minimal cost. A disposable saver 1 is provided which may be used in the boxes or cartons without damage to the packaged pizza pie or other product.

Exercise II

Overtime Band-Aid™. type bandages have had a dry or dry antiseptic coating infused into the gauze. The drawback is when a person with a wound places dry bandages on it, sweating between the gauze and the wound naturally occurs to a degree, depending on the severity of the said wound. Making it not as comfortable or as effective fighting infection.

The new invention consists of a well-known prior art Band-Aid™. type bandage. FIG. 1 (2) Its is a flat piece of latex with a newly invented flat pouch filled with an antiseptic gel, Aloe-Vera or a prescription medicine as prescribed by a Doctor according to the FDA'S rules and regulations permitted by law and or equivalent. The size of the said bandage is not limited to the size of a band-Aid.TM. and can be much larger to treat burn victims.

FIG. 2 (4) A thin layer of vinyl, latex or equivalent is adhered to the top of the pouch, The pouch is filled with antiseptic gel, Aloe-Vera or a prescription medication or equivalent.

The pull tab sticks out of one of the ends of the gauze as seen in FIG. 1 (4). The gauze ends are not adhered to the bandage for the purpose of allowing the pull tab and the adhesive thin layer covering the gel pouch to be removed.

The gauze lies on top of the thin adhesive layer with pull tab that is adhered to the gel pouch. FIG. 2 (3).

The wax type paper or equivalent FIG. 4 (6) protects the bandage and the outer transparent plastic cover FIG. (5) helps keep germs out and prevents any spillage of gel, furthermore the plastic cover will allow the bandages to float in case of the bandages were dropped in water or otherwise.

There is a need for an antiseptic gel type Band-Aid™. instead of the well-known dry antiseptic types of bandages and other dry bandages. For instance a person burns their finger, the present invention simply has a pull tab that when pulled removes an adhered layer which protects the gel pouch. The gel pouch contains antiseptic gel, Aloe Vera or medication requiring a prescription.

The gel pouch then oozes the antiseptic gel or medication to the gauze pad immediately providing soothing pain relief. Rather then a dry bandage laying on top of the wound waiting for the antiseptic gauze to moisten.

A method and system for using a newly invented Band-Aid™. type of bandage utilizing a small Gel-Pouch beneath the gauze. When the vinyl or equivalent adhesive's bottom pull-tab is removed, an antiseptic gel, Aloe Vera, or equivalents or prescription medication prescribed according to FDA rules and regulations pertaining to such products, such as for certain wounds of a more serious nature; is removed the gel oozes out through the holes from the gel pouch and onto the gauze providing a cool and soothing relief almost immediately. It also adds healing power and provides a non-stick surface on the gauze pad. This method is not just intended to be a great Band-Aid™. type bandage but can come in larger packages for burn victims. A transparent cover encases each bandage to prevent any medicine leakage and also makes it float and waterproof if gotten wet by any means.

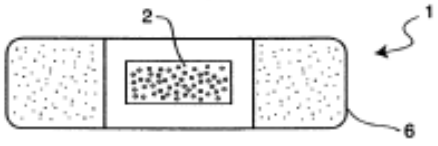

FIG. 1

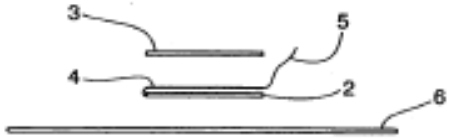

FIG. 3

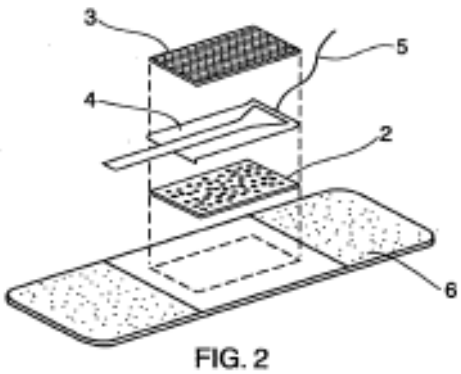

FIG. 2

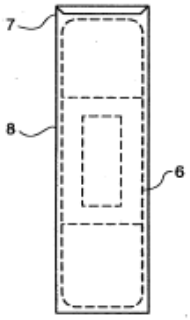

FIG. 4

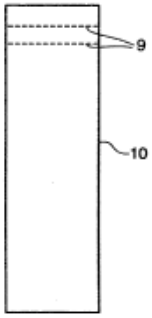

FIG. 5

FIG. 1 (1) Illustrates a method for constructing a Band-Aid™. Type bandage.
FIG. 1 (1) depicts the top view of the bandage, (6) shows the air holes in the latex or equivalent; (for people allergic to latex).
FIG. 1 (2) illustrates the antiseptic gel pouch and the holes that allow the medicine to ooze onto the gauze pad which is above the antiseptic gel pouch.

FIG. 2 (2) Illustrates the antiseptic gel pouch, Aloe-Vera or medicine requiring a prescription.
FIG. 2 (3) Illustrates the gauze pad.
FIG. 2 (4) Illustrates the pull tab which when removed releases the said antiseptic gel onto the gauze pad.
FIG. 2 (5) Illustrates the pull tab.
FIG. 2 (6) Illustrates the air holes in the latex or non-latex adhesive portions.

FIG. 3 (2) Illustrates the side view of the adhesive layer which protects the gel pouch containing the antiseptic gel.
FIG. 3 (4) Illustrates side view of the pull tab for the thin adhesive layer covering the gel pouch.
FIG. 3 (3) Illustrates the side view of thee gauze pad.
FIG. 3 (5) Illustrates the side view of the pull tab.

FIG. 4 (6) Illustrates the front view of the bandage's interior package.
FIG. 4 (7) Illustrates the front view of the interiors bandage adhesive tab that pulls apart the bandages package.
FIG. 4 (8) Illustrates the outer bandages package made of wax type paper or equivalent.

FIG. 5 (9) Illustrates the two perforations on the transparent cover which when pulled opens the cover which protects the original bandage package.
FIG. 5 (10) Illustrates transparent cover made of plastic or equivalent

The newly created Band-Aid™. type bandage which utilizes a flat but small pouch filled with antiseptic gel, Aloe-Vera or other medication.

For more serious wounds a prescription medication prescribed by a Certified Physician could be used in the gel pouch, according to the rules of the FDA. Some of the more serious disease could be diabetes, Aid's and other skin disorders, which can limit the dry antiseptic Band-Aid™. substantially.

If a band-aid type "Gel Pouch" requires a prescription due to the medicine in the bandages for a more serious disease such as diabetes, aid's or other skin disorders including burn victims that require a prescription for the "Gel" used in the bandage and can be varied according to the skin disorder including burn victims that will require a must larger "Gel Pouch" bandage. This patent is not intended to limit the newly invented Gel Pouch" to a small band-aid type but also a much larger version capable of handling large burn victims of Adults.

To use simply pull off the transparent cover which has two perforations on the top of the said bandage. This will allow the bandage to float if near the water or if capsized in a boat or prevent gel from leaking from one bandage to the next.

Then the person simply tears apart the band-aid type bandage package that protects the bandage.

The package that protects the bandage is adhered by adhesive on the left and right sides of the said bandage .

Preferably the final step is take a hold of the pull tab with your thumb and index finger and pull.

By pulling the bandages tab and releasing the antiseptic gel or equivalent.

After the pulling of the tab, the gel inside of the pouch moves onto the gauze very quickly, allowing almost immediate pain relief and begins the healing process promptly.

Exercise III

The invention relates to a biodegradable chewing gum comprising one or more conventional chewing gum components and as gum base at least one biodegradable polymer selected from the group of polyesters and polycarbonates.It is possible to replace the conventional, non-degradable elastomers that are used in the gum base of chewing gum by biodegradable polymers. In combination with other biodegradable additives, a chewing gum is thus obtained whose organic components are biodegradable after use.

Accordingly, the invention primarily relates to a biodegradable chewing gum comprising as gum base at least one biodegradable polymer selected from the group of polyesters and polycarbonates. More particularly, the invention relates to a biodegradable, i.e. degradable in the environment, chewing gum comprising one or more conventional chewing gum components and, included in the gum base, at least one polymer having a glass transition temperature of 37°C. at a maximum, which polymer contains chemically unstable bonds in the polymer chain.

Such chemically unstable bonds are preferably broken down under the influence of light or hydrolytically into components that are preferably water-soluble and non-toxic.

It is known that chewing gum can give rise to a certain extent of environmental pollution inasmuch as it is very difficult to remove, if it can be removed at all, after use. It has already been proposed to replace a number of components of the chewing gum by components that are either taken up by the user during chewing or have a less poor biodegradability than the components conventionally used. EP-A 566,174, for example, discloses the use of a conventional elastomer in combination with a wholly or partly hardened oil. It is true that in the use of this formulation the poorly degradable paraffin can be replaced by another component, but the problems involved in the use of conventional, often synthetic elastomers remain.

According to a preferred embodiment of the invention, the biodegradable chewing gum comprises one or more conventional chewing gum components and as gum base at least one polyester having a glass transition temperature of 37°C. at a maximum. Such a polyester is more particularly based on the polymerisation product of one or more cyclic esters, such as lactide, glycolide, trimethylene carbonate, δ-valerolactone, β-propiolactone and ε-caprolactone. Such polyesters can for instance be used in the form of block copolymers or as mixtures of two or more homo- and/or copolymers.

It is preferred to use a gum base which is based on a copolymer or a block or graft copolymer of a lactide and one or more other cyclic esters, such as glycolide, trimethylene carbonate, δ-valerolactone, β-propiolactone and ε-caprolactone, or a mixture of two or more polymers, with at least one of the polymers containing lactide. In this preferred embodiment, it is preferred to use systems which contain at least 50% by weight of lactide units, more particularly at least 80%, based on the total of the polymers.

The preparation of such polymers for use as gum base can be effected in conventional manner, for instance by ring-opening polymerisation in the presence of suitable catalysts. These catalysts can be based on compounds of transition metals, which are preferred to have the GRAS status (generally recognised as safe).

Surprisingly, it has been found hat with such biodegradable polymers a chewing gum can be obtained which has a structure and chewing characteristics comparable to those of chewing gum based on conventional, non-degradable elastomers. It has moreover been found that the adhesion of such a chewing gum to other materials, and more particularly to stone and smooth surfaces, is comparatively slight. This means that such a chewing gum can be removed from stones and the like with much less effort.

Optionally, the chewing gum according to the invention contains, in addition to the biodegradable elastomer component already described, one or more other biodegradable gum base components, together forming a water-insoluble, chewable gum base. Further, the chewing gum generally contains a water-soluble part and a water-insoluble flavour component. These last two components are generally taken up in the mouth during chewing, with the water-insoluble flavour component diffusing from the gum base along with the water-soluble component.

The suitable supplementary gum base components are, for instance, the components described in the above-mentioned European patent application 566,174, such as a fully hardened stearine fraction. The gum base can moreover contain yet other, biodegradable components, such as emulsifiers and gum base solvents. Suitable as emulsifiers are, for instance, lecithin and fatty acid monoglycerides, diglycerides and triglycerides.

The gum base may further include fillers, such as calcium carbonate, magnesium carbonate, talc, tricalcium phosphate and the like, as well as mixtures thereof. The amount of filler is generally 10 to 15% of the gum base. If desired, the gum base can also contain antioxidants, which must naturally be food-approved. Suitable antioxidants include butylhydroxide anisol and butylhydroxide toluene. Suitable amounts of antioxidant are between 0.01 and 0.1% by weight, based on the gum base.

The water-soluble component of the chewing gum, which is preferably 5 to 95% of the chewing gum and more particularly 10 to 50% by weight, comprises, for instance, plasticizer, sweeteners and combinations thereof. The plasticizers, or softeners, are added to the chewing gum in order to improve the chewability and mouthfeel of the gum. Plasticizers or softeners generally account for 0.5 to 15% by weight of the chewing gum. Examples are glycerin, lecithin and combinations thereof. The water-soluble component also contains, for instance, sorbitol, hydrogenated starch hydrolysates, cane sugar syrup and combinations thereof, as well as saccharide containing components conventionally used in chewing gum, inter alia sucrose, dextrose, maltose, dextrin, dried invert sugar, fructose, levulose, galactose, and the like, alone or in combination. Sugar-free sweeteners comprise components that contain sweetening characteristics but are free of the known sugars, and comprise, for instance, sugar alcohols, such as sorbitol, mannitol, xylitol, hydrogenated starch hydrolysates, maltitol, as well as the known sweeteners aspartame, sucrose, acesulfame and saccharide, either alone or in combination.

The chewing gum can further contain an amount of flavouring agent, which is preferably between 0.1% and 10% by weight of the chewing gum. Suitable flavouring agents are generally the known food approved flavours, such as oils of plants and fruits, such as citrus oil, fruit extracts, peppermint oil, clove oil, aniseed oil and the like. It is also possible to add artificial flavour.

Additional ingredients, such as colouring agents and medicinal components, as well as mouth conditioners, can also be added to the chewing gum.

Generally, the chewing gum according to the invention is manufactured by successively adding the various chewing gum ingredients to a suitable mixer. After the ingredients have been thoroughly mixed, the mixture is discharged from the mixer and brought into the desired form, for instance by rolling and slicing, extruding or pelleting. In general, the ingredients are first mixed by melting the gum base which is added to a rotating mixer. The base can also be melted in the mixer itself. Colouring agents are preferably added at this time. A plasticizer is then brought into the mixer together with the sweetener and a part of the filler. The optional further required components can be added next. After mixing has been completed, the chewing gum is taken from the mixer and brought into the desired form.

Experiment 1
An amorphous, non-crystallizable copolymer of 80 mol. % L-lactide and 20 mol. % D-lactide was prepared by ring-opening polymerisation in the melt, in the presence of 0.1% by weight tin octoate as catalyst. To this polymer was added an amount of 20% by weight of ε-caprolactone, where after, under nitrogen and with continuous mechanical stirring, the mixture was heated to 150°C. To the homogeneous mixture, again 0.1% by weight tin octoate as catalyst was added, where after the polymerisation was completed.
The obtained polymer had a glass transition temperature (DSC, heating rate 10°C./min) of 15.degree.. During chewing the polymeric material provided a chew feel strongly resembling that of conventional chewing gum. The degradation products of this copolymer are L-lactic acid, D-lactic acid and ω-hydroxyhexanoic acid, all non-toxic and water-soluble compounds. On the basis of this polymer, a chewing gum was prepared using conventional additions and methods.

Experiment 2
On the basis of the copolymer of Experiment 1 as gum base, a number of types of chewing gum having the following compositions are prepared.
64% by weight sugars and sweeteners (sorbitol, xylitol and saccharine), 1% by weight aroma and 35% by weight gum base, and emulsifier.
40% by weight sugar, 2% by weight aroma and 58% by weight gum base, and emulsifier.
35% by weight sugar, 3% by weight aroma and 62% by weight gum base, and emulsifier.

Experiment 3
An amorphous, non-crystallizable copolymer of 25 mol. % L-lactide, 25 mol. % D-lactide and 50 mol. % ε-caprolactone was prepared by ring-opening polymerisation in the melt, in the presence of 0.1% by weight tin octoate as catalyst.
The obtained polymer has a glass transition temperature (DSC, heating rate 10°C./min) of -10°C.

To the polymer formed, under nitrogen, 40% by weight of sorbitol and an effective amount of emulsifier were added and mechanically mixed. During chewing the polymeric material provided a chew feel strongly resembling that of a conventional chewing gum.

Experiment 4
Experiment 3 was repeated, except that instead of sorbitol 20% by weight of glycerol was added.