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[54] **THERAPY PACKAGE**
6 Claims, 5 Drawing Figs.
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 A61f 7/06; F25d 3/08; F28f 7/00
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Beg Digest, 272; 62/530; 126/204, 205, 206, 263;
165/46; 206/47A; 220/20.5; 215/6

ABSTRACT: A therapy package comprised of an envelope of flexible material, the envelope being divided into a pair of separate compartments, one of the compartments containing a dry heating or refrigerating chemical, the other compartment containing a liquid or a gel, there being a flap formed as a part of the envelope and having a passage therethrough and in communication with each of the compartments whereby the compartments may be selectively placed in communication to permit the liquid or gel and the dry chemical to mix and thereby produce a thermal or refrigerating chemical reaction depending upon the chemical used.

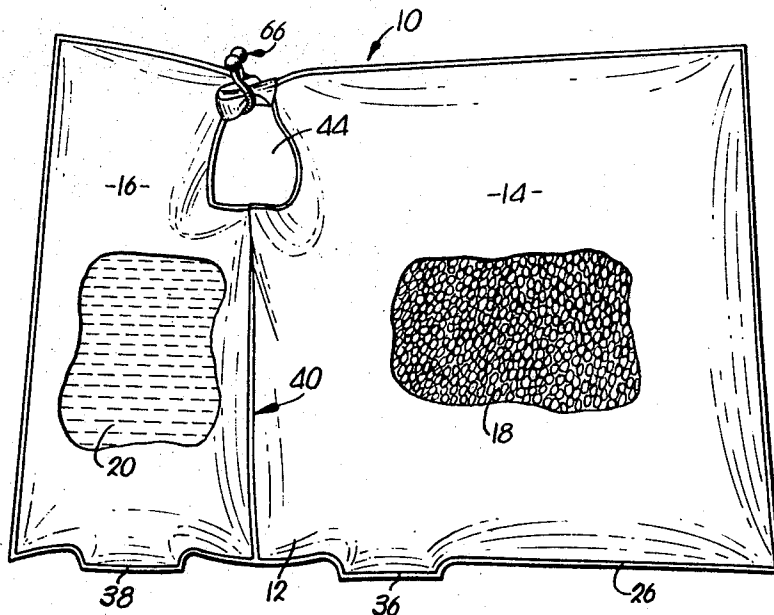


Fig. 1.

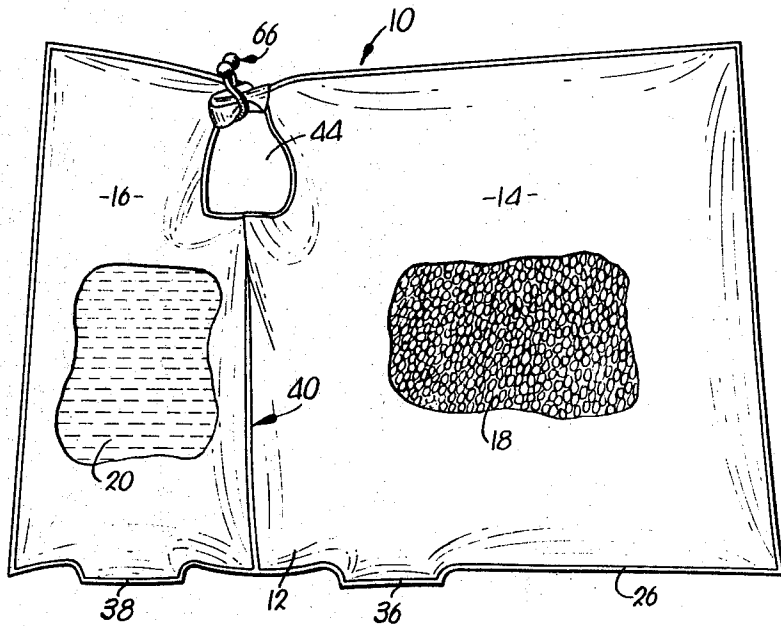


Fig. 4.

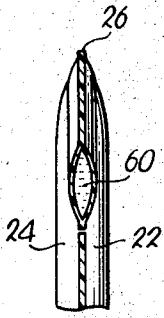


Fig. 2.

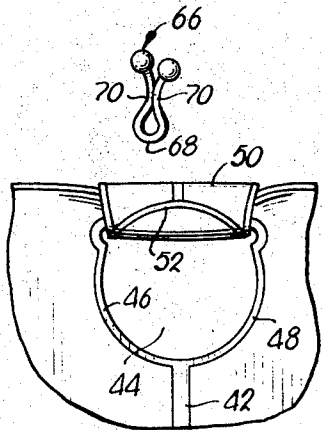


Fig. 5.

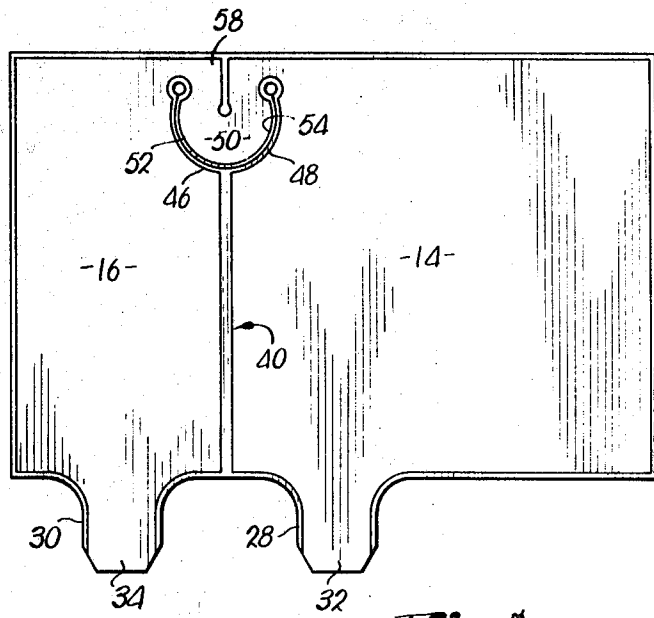
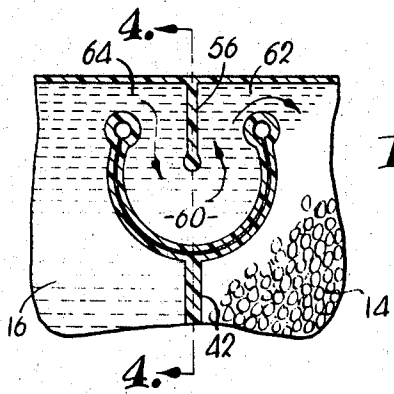


Fig. 3.



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THERAPY PACKAGE

It is the primary object of this invention to provide, in a package for receiving materials to be mixed, a flexible envelope formed from plastic or the like, the envelope being sealed about its peripheral edges and having a line of seal thereacross to define a pair of compartments, one of the compartments receiving a liquid or gel, the other compartment receiving a dry chemical, there being means for placing the compartments into selective communication whereby the liquid or gel and the chemical may be intermixed to thereby alter the temperature of the mixture within the package whereby said package may be used as either a hot or a cold therapy pack.

Another important aim of this invention is the provision of a flap disposed between the two compartments, the flap being formed as a part of the envelope and having a passage therethrough, the passage being in communication with each of the compartments when the flap is in an unfolded condition.

It is another important object to provide, adjacent the flexible flap, a stretch of the package about which the flap may be folded to thereby close said passage and prevent communication between the compartments as when the therapy package is being shipped, stored, or handled, there being a clip provided for retaining said flap in a folded condition about said stretch.

Other objects of this invention will become apparent from the following specification and accompanying drawing, wherein:

FIG. 1 is a plan view of the therapy package in a filled condition, the flap being folded to prevent communication between the compartments, portions being broken away to illustrate the respective contents of the compartment;

FIG. 2 is an enlarged, fragmentary, side elevational view of the flap area of the package showing the flap in a folded condition and illustrating a clip member for retaining said flap in said condition;

FIG. 3 is a sectional view comparable to FIG. 2 but showing the flap in an unfolded condition thereby presenting the passage between the compartments;

FIG. 4 is a sectional view taken along line 4-4 of FIG. 3; and

FIG. 5 is a plan view of the therapy package prior to being filled and finally sealed.

The therapy package 10 is in the form of an envelope 12, preferably formed from a suitable plastic material which is flexible in nature, the envelope being divided into two compartments 14 and 16, one of said compartments 14 being filled with a dry chemical 18, the other compartment 16 being filled with a liquid or gel 20. It is the aim of this invention to provide a therapy package which will receive therein suitable chemicals which, when retained out of contact with one another, will produce no reaction and may be safely handled, stored or shipped but, when brought into contact with one another and intermixed, will produce a chemical reaction which either reduces or raises the temperature of the resulting solution, depending upon the chemicals used.

A refrigerating or thermal reaction may be produced by a wide variety of chemicals which react desirably when intermixed, the ones specifically mentioned herein being for purposes of illustration only. Once a hot or cold therapy package has been created by intermixing the chemicals, the same may be used in several various manners to treat athletic injuries or in other therapeutic methods or treatments.

The envelope 12 is formed from a pair of sheets of plastic material 22 and 24, each having an identical initial plan configuration whereby the sheets 22 and 24 may be superimposed in exact overlying relationship and then sealed about the peripheral edges 26 thereof to create a closed envelope.

However, prior to finally sealing the envelope 12 into the condition shown in FIG. 1, it is desirable to fill the compartments thereof and for this purpose there is provided a filling neck 28 for compartment 14 and a filling neck 30 for compartment 16 whereby the contents of the respective compartments may be introduced thereinto. To permit such filling the

sealed edge 26 is interrupted at two points 32 and 34 to present access openings in necks 28 and 30 respectively to thereby permit insertion of the contents 18 and 20 into their respective compartments 14 and 16.

Once the compartments 14 and 16 have been filled, the necks 28 and 30 are sealed off as at 36 and 38 whereby the seal about the peripheral edge of the envelope 12 is continuous, it being contemplated that such seal will be in the nature of a heat seal which may be utilized due to the plastic nature of the sheets 22 and 24 from which the envelope 12 is formed.

A wide line of seal 40 extends substantially across the sheets 22 and 24 to thereby seal the same together, to define the respective compartments 14 and 16 and to prevent communication between the compartments along seal line 40. If desired, two lines such as 40 could be used to insure against leakage and prevent any possibility of condensation in compartment 14. One portion 42 of line of seal 40 extends from the edge of envelope 12 adjacent the necks 28 and 30 inwardly toward the opposite edge of the envelope 12. Portion 42 of line of seal 40 defines, at its innermost end, an aperture 44, segments of said portion 42 of line of seal 40 extending about said aperture 44 as at 46 and 48.

A flap 50 is formed as a part of the envelope 12 and is of the same flexible material as said envelope, the flap 50 having the same configuration as aperture 44 and being received therein when flap 50 is in an unfolded condition. The edges of sheets 22 and 24, as the same define flap 50, are sealed together along the free edge 52 of the flap as by a U-shaped line of seal 54, said line of seal 54 joining with segments 46 and 48 to provide a complete seal about the edge of the aperture 44 and the free edge 52 of the flap 50.

The other portion 56 of line of seal 40 extends inwardly from the opposite edge of envelope 12 from portion 42 and is in aligned relationship thereto, said other portion 56 traversing a stretch 58 of the package which is adjacent said aperture 44, said other portion 56 cooperating with sealed edge 54 to define a passage 60 through the flap 50, said passage being substantially U-shaped in configuration and having one end 62 thereof in communication with compartment 14, and the other end 64 in communication with compartment 16.

Thus, when the flap 50 is in an unfolded condition, as shown for instance in FIGS. 3, 4 and 5, liquid or gel from compartment 16 is permitted to flow into compartment 14 and intermix with the dry chemical to thereby produce the chemical reaction which is desired. However, to prevent such intercommunication between the compartments, the flap 50, being of a flexible nature, may be lifted from its position within aperture 44 and folded or wrapped about stretch 58 to thereby effectively close off passage 60 and prevent communication between the compartments. FIG. 2 shows the flap 50 in its folded condition about the stretch 58 and it will be appreciated that, during shipping, storage or handling of the package 10, flap 50 will be in the folded condition to thereby prevent communication between the compartments.

To insure that flap 50 is retained in such a folded condition when such is desired, a clip 66 is provided which has a bight portion 68 and a pair of grasping resilient legs 70, the clip 66 being slipped over the thicknesses of material presented by the folded flap 50 and the stretch 58 about which said flap 50 is folded to thereby effectively grasp said material between the legs 70 of the clip and close off passage 60. As is apparent, flap 50 may be retained in a folded condition in several other suitable manners.

When it is desired to utilize therapy package 10, the clip 66 is removed, the flap 50 is unfolded from about stretch 58 and placed in a flat condition within aperture 44 thereby permitting liquid or gel to flow from compartment 16 through passage 60 and into compartment 14, it being noted that compartment 14 is the larger of the two whereby to permit intermixing of the liquid and the dry chemical within said compartment 14 and thus produce the desired chemical reaction. The package may then be utilized in applying the same to an athletic injury as by placing the package about the injured

area, this being possible due to the flexible nature of the material from which the envelope 12 is formed.

Thus, there is presented a therapy package which is easily and economically fabricated from low cost materials; which may be quickly and easily filled with the desired contents; may be effectively sealed during shipping, handling or storing to prevent intermixing of the materials; and yet which may be readily and quickly utilized merely by removing the clip and opening the passage between the compartments to effect the desired chemical reaction. To create a refrigerating reaction the use of a liquid such as water, either alone or with a suitable chemical added to produce a flowable gel, in compartment 16, and a dry chemical, such as ammonium nitrate, in compartment 14 as been found satisfactory. To create a thermal reaction, making a heat pack, compartment 16 may be filled with water or a gel and compartment 14 with urea, iron filings or calcium chloride. Use of a gel tends to prevent evaporation of the water or other liquid through the plastic from which the therapy package 10 is formed.

I claim:

1. A therapy package comprising:

an envelope of flexible material, said envelope being divided into a pair of compartments, one of said compartments containing a dry chemical, the other of said compartments containing a liquid; and means for selectively placing said compartments in communication whereby the contents of the respective compartments may be mixed, said means including a flap formed as a part of the envelope and disposed between said compartments, said flap having a passage formed therein, said passage being in communication with each of said com-

partments, said flap being of the same material as said envelope whereby the flap may be folded to thereby close said passage, there being an aperture defined by said envelope and receiving the flap when the latter is unfolded, the configuration of said aperture corresponding to that of the flap.

2. A therapy package as set forth in claim 1, there being a stretch of said envelope adjacent said aperture, said flap being folded about said stretch to close said passage.

3. A therapy package as set forth in claim 2, there being a clip retaining said flap in a folded condition about said stretch to thereby insure closure of said passage when the contents of said compartments are not to be mixed.

4. A therapy package as set forth in claim 3, there being a filling neck for each of said compartments, said necks being formed as a part of said envelope.

5. A therapy package as set forth in claim 4, said envelope being defined by a pair of sheets of plastic material of identical plan configuration, said sheets being sealed together about the peripheral edges thereof, there being a line of seal extending substantially across said sheets to define said compartments, said aperture being interposed in one portion of said line of seal, said one portion of the line of seal extending about the edge of said aperture, the other portion of said line of seal traversing said stretch and a portion of said flap.

6. Therapy package as set forth in claim 5, said sheets forming said flap, the free edge of said flap being sealed, said free edge and said other portion of said line of seal cooperating to define said passage.

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