A self-heating package for pre-cooked foods of the type comprising a container (1) attached to a receptacle (2), both of these (1, 2) being housed within an outer container (3) that is resistant to high temperatures. The receptacle (2) has on its lower side a slitting (21) around an inner striker (22). Said striker (22) has several pins (23) upon which a water bag (5) is arranged, the remaining volume of the receptacle (2) being filled with an exothermal reactive product (6) that is in contact with the water. This product is solid state or powdered calcium oxide, such that when the user presses against the bottom of the receptacle (2) the striker (22) is shifted against the bag (5) until breaking said bag (5), the water then coming into contact with the reactive product (6), and thus causing the container (1) and the food content to be heated.
SELF-HEATING PACKAGE FOR PRE-COOKED FOODS

OBJECT OF THE INVENTION

[0001] The present invention refers to a self-heating package for pre-cooked foods, of the type comprising a container for containing the pre-cooked food that is attached to a receptacle with means for heating the packaged food product.

BACKGROUND OF THE INVENTION

[0002] There are a great number of pre-cooked products or ready-made foods that can be consumed without needing preparation or cooking, such as nuts and dried fruit, products preserved by irradiation or other preservatives. However, most of these products are consumed at room temperature and do not incorporate means for heating them before consumption. Consumption of hot foods is thus not available if the user does not have heating means at his or her disposal, such as some type of oven, a stove or the like.

[0003] As a solution to this drawback there are food products comprising a heating element of chemical origin. Thus, a package or container for preserving pre-cooked foods, for example a tin, has a receptacle attached or coupled to it which contains a reactive chemical product that generates heat and allows heating the container in any situation, such as on an excursion, out camping, or in any other situation in which a conventional kitchen or other heating means are not available. This chemical product is usually a product that readily reacts in contact with water, such as calcium oxide. This reaction is highly exothermal and sometimes violent, so these heating means must be handled with care, not only when the product is being heated, but also during consumption of the pre-cooked dish, since all the elements are very hot.

[0004] Spanish patent of invention P9501942 is known, relating to a package for pre-cooked foods, provided with means for heating the packaged food product in the aforementioned manner. It describes a type of package constructed such that it allows housing a tin that contains the food product and has a container attached containing the reactive product that generates the heat and allows heating the food quickly and without the need for external heating equipment.

[0005] In order to start the heating reaction the user must perforate the inner water bag from outside with an awl, which may cause a leakage of the mixture that is reacting, which leads to a possible burn hazard.

DESCRIPTION OF THE INVENTION

[0006] The self-heating package for pre-cooked foods of the present invention has specific technical features intended for allowing comfortable and safe use in heating the pre-cooked food.

[0007] In fact, the inner side of the receptacle containing the heating means has multiple slitting around a striker. Said striker has an upper edge that has several pins, spears or the like on which a water bag is placed, the rest of the receptacle volume being filled with an exothermal reactive product in contact with the water. This configuration is suitable so that when the user presses against the bottom of the receptacle with his or her fingers, this causes a significant shift of the striker against the water bag. The extension of said slitting or fold facilitates the movement of the striker until it breaks the water bag. The water spills inside the receptacle, coming into contact with the reactive product and thus causing said exothermal reaction which causes the container and the food contained within it to be heated. This entire operation is performed without opening the receptacle, and without a risk of spilling any kind of substance outside.

[0008] The exothermal reactive product used is solid state or powdered calcium oxide. This product allows the water bag to be housed inside it in a stable manner and without the risk of accidental breaking. Furthermore, the product obtained after its use, calcium hydroxide, can be easily disposed of.

[0009] The pre-cooked food container is fixed at its base with the heating means receptacle by means of adhesive. Both elements are in turn mutually joined with an outer container, also by means of an adhesive on its side walls. All this forms a solid and safe assembly. This outer container is formed by treated cardboard that is resistant to the high temperatures that the heating reaction may generate, for example by means of a fire-retarding additive.

[0010] The container comprises an insulating outer package in which the assembly formed by the food product container, the heating means receptacle and the outer integrating container are housed. This package preferably has a parallelepiped shape and has on its upper side a weakened contour for opening a top cover for accessing the pre-cooked food container. The lower side of the package has in turn a window defined by a second weakened contour which configures an access for pressing the striker preferably by the action of the thumbs. Thus, in order to initiate the heating process it is first necessary to open the window and exert pressure through an opening in the outer package, said activation being thus safe against possible accidental activations. Once the product is hot the receptacle is insulated from contact with the exterior by means of the package itself. This outer package may have on its visible surfaces the desired indications of the pre-cooked product contained within it, instructions and other patterns.

FIG. 1 shows a cross-sectional view of the package.
FIG. 2 shows an upper perspective view of the package.
FIG. 3 shows a lower perspective view of the package.

PREFERRED EMBODIMENT OF THE INVENTION

[0015] As can be seen in the aforementioned figures the package comprises a container (1) containing a pre-cooked food that is attached on its lower side by means of an
adhesive to a receptacle (2) in which the heating means are housed. These two containers (1, 2) are housed inside an outer container (3) by means of pasting its lateral sides with adhesive, forming a joint unit. The aforementioned elements (1, 2, 3) are housed in an outer package (4) that has the desired indications for the pre-cooked food contained within it, instructions or patterns.

0016 The container (1) is preferably a tin and has easy-opening means for accessing the pre-cooked food on its upper side.

0017 The receptacle (2) is in turn preferably formed by aluminum and has at the bottom or on its lower side a multiple slitting (21) around an inner striker (22). This striker (22) has an upper edge with several pins (23), spears or similar elements, there being above these a water bag (5) and the remaining volume being filled with an exothermal reactive product (6) that is in contact with the water. This reactive product (6) is preferably solid state or powdered calcium oxide, in order to accommodate the water bag (5) without damaging it.

0018 The outer container (3) is formed by treated cardboard that is resistant to moderate and high temperatures and has curved cavities on its lower surface in order to allow activating the striker (22) easily.

0019 The outer package (4) allows insulating the hot inner elements (1, 2, 3) for easy holding and handling. This package (4) has a preferably parallelepiped shape and has a weakened contour (41) on its upper side for opening an upper cover (42) for accessing the container (1). The package (4) has in turn on its lower side a weakened contour (43) that defines a lower window (44) opposed to the area in which the striker (22) is located, so that said striker (22) can be pressed after having removed the access window (44) and thus being able to start the heating reaction.

0020 Having sufficiently described the nature of the invention, as well as a preferred embodiment thereof, it is stated for all intents and purposes that the materials, shape, size and arrangement of the described elements may be modified, provided that this does not imply an alteration of the essential features of the invention claimed below.

1. A self-heating package for pre-cooked foods of the type comprising a container (1) for the pre-cooked food attached to a receptacle (2) with means for heating the packaged food product, both of these (1, 2) being housed within an outer container (3) that is resistant to moderately high temperatures, characterised in that the lower side of the receptacle (2) has a multiple slitting (21) around an inner striker (22), said striker (22) configuring an upper edge having several pins (23), spears or the like upon which a water bag (5) is arranged, the remaining volume of the receptacle (2) being filled with an exothermal reactive product (6) that is in contact with the water, this configuration being operatively suitable so that when the user presses against the bottom of the receptacle (2) with his or her fingers, this causes a significant shift of the striker (22) against the water bag (5), facilitated due to the extension of said slitting (21), until breaking the water bag (5), the water then coming into contact with the reactive product (6), and thus causing said exothermal reaction that causes the container (1) and the food content to be heated.

2. A container according to claim 1, characterised in that the exothermal reactive product (6) is solid state or powdered calcium oxide.

3. A container according to claim 1, characterised in that the container (1) is fixed at its base by means of adhesive to the receptacle (2) for the heating means, both of these (1, 2) being mutually joined to the outer container (3), also by means of an adhesive on its side walls.

4. A container according to claim 1, characterised in that the outer container (3) is made of treated cardboard.

5. A container according to claim 1, characterised in that it comprises an outer insulating package (4) in which the assembly formed by the food product container (1), the heating means receptacle (2) and the outer integrating container (3) are housed, this package (4) having a weakened contour (41) for opening an upper cover (42) for accessing the container (1) and a lower window (44) defined by a second weakened contour (43) that configures an access for pressing down the striker (22).

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