



PATENT SPECIFICATION

(11) S86686

(21) Application No. S2015/0189

(22) Date of Filing of Application: 03/07/2015

(45) Specification Published: 10 August 2016

(51) Int. Cl. (2016.01)
F24B 1/00

(54) Title: Fireback accessory

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Title

Fireback Apparatus

5 **The field of Invention**

The present invention relates to a fireback apparatus that protects and elongates the life of a fireback or firebrick used in a fireplace, solid fuel cookers and stoves.

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Background to Invention

It is commonly known that the back of a fireplace has a fireback.

The main function of a fireback is to protect the wall at the back of a
15 fireplace. Firebacks can absorb heat from a fire. Firebacks may get
damaged and disintegrates. Over time the fireback may need to be
replaced. Firebacks can crumble, crack or break due to being
exposed to high heat. High flame fuel like coal can be extremely
challenging on firebacks and may lessen the lifespan of a fireback,
20 leading to continuous replacing of firebacks after a few years
depending on the quality of the fireback.

When a fireback has been damaged, the fireback needs to be
replaced which can be a time consuming and a costly procedure. If
25 the new fireback is not sealed correctly it may be inefficient. Also an
insertion of a new fireback may not allow a fire to be lit for a period of
up to seven days.

Lime and sand is a common material at the back of a standard
30 fireback. When a fireback has been damaged over time the lime

and sand can also become damaged, leading to a major problem in a fireplace that could have been prevented.

5 Prior art shows that there are cast iron fireback protectors for large open fires when open fires were the main heating source of a house. These fireback protectors only protect the back wall of a fire and not the sides of a fire which are also in direct contact from burning solid fuel and therefore may not be effective at protecting the fire surround/firebox. Prior art fireback protectors are generally not
10 designed for domestic fireplaces.

Stoves may require replacement of firebricks that are in direct contact with burning solid fuel in a fire. Firebricks are normally used to line the walls of the stove to elongate the lifespan of a stove and
15 ensure it works efficiently.

Stove firebricks are continuously exposed to intense heat through direct contact with burning fuel. Many stove manufacturers may offer limited warranty coverage on stove firebricks as they can be
20 regarded as a consumable item. Firebricks can begin to disintegrate and crumble over a period of time and may need to be replaced frequently.

In severe cases where the firebrick has not been replaced the cast iron side panel of the stove may warp or even crack.
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Solid fuel cookers also may require replacement of firebricks. Solid fuel cookers are often the primary heating system in a house and replacement of firebricks may occur every few years. The firebricks may be in direct contact with the burning solid fuel for long periods of
30 time. Cracks are very common in solid fuel cookers firebricks.

As a result a solid fuel cooker or stove may not work efficiently and replacing firebricks can be time consuming and costly to repair.

5 As a result a fireback apparatus that solves the aforementioned problems is desired.

Summary of the Invention

10 The purpose of the invention is a fireback apparatus that protects and elongates firebacks and firebricks in fireplaces, solid fuel cookers or stoves.

The primary function of a fireback is to protect the wall at the back of the fireplace. The present invention comprises of a back wall panel and side wall panels that protect the fireback or firebricks from being
15 in direct contact of burning solid fuel.

The fireback apparatus may sit on top of a grate in a fireplace. The Invention protects the inner walls of the fireplace.

The fireback apparatus comprises mainly of a back wall panel attached to at least two side wall panels.

20 In one embodiment the back wall panel may be higher than the two side wall panels to accommodate flames from an open fire in a fireplace.

In another embodiment the back wall panel and side wall panels may all be equal in height particularly when fitted in a stove or solid
25 fuel cooker.

In a further embodiment the back wall panel may comprise of various thickness. The bottom part may be thicker to provide more protection from direct contact with burning solid fuel.

In one embodiment the back wall panel may be extended upwards and curved at the top to protect the fireplaces fireback from flames from an open fire.

5 In another embodiment the fireback apparatus may comprise of a curved back wall panel and curved side panels to accommodate the heat and flames from an open fire. The curved fireback apparatus may also be aesthetically pleasing.

The fireback apparatus may allow for decoration or marketing information on any wall panels.

10 In the preferred embodiment the wall panels may be constructed as one complete unit, pressed, formed or moulded when constructed to be used in an open fireplace.

15 In one embodiment the fireback apparatus may have a handle or series of handles to allow ease of fitting and removal from a fireplace.

The dimensions of the fireback apparatus may vary to suit a variety of sizes of fireplaces and fireplace grates.

20 The fireback apparatus may have an added benefit of reflecting heat outwards rather than the heat being absorbed by the back of the fireplace.

The fireback apparatus back wall panel may be corrugated to facilitate an extra function as a radiator and maintain the heat longer. The fire heats the fireback apparatus and may continue to radiate out heat after the fire is out.

25 The fireback apparatus may allow the fireplace to keep clean and prevent the inside of a fireplace from turning black, when used in a new fireplace.

The preferred embodiment may be constructed of a strong material like a metal; mild steel, cast iron, stainless steel or but not limited to a metal.

5 The fireback apparatus may also be placed in a stove and a solid fuel cooker to protect the firebricks in the firebox area.

The fireback apparatus may comprise of two different types for the stove.

10 In one embodiment the fireback apparatus can be placed in a firebox of a stove through the front opening. The fireback apparatus may comprise of separate wall panels, a back wall panel and two side wall panels that may be connected together when inside the stove. The back wall panel of the fireback apparatus may be placed inside first and then the side wall panels are placed inside and connected securely in place.

15 In another embodiment, the top of the stove may be lifted off to allow a one piece constructed fireback apparatus to be placed inside the firebox of a stove. A one piece constructed fireback apparatus may not fit through the front entry door of a stove.

20 The fireback apparatus for a stove can be easily removed for cleaning if required.

The fireback apparatus for a stove may have handles for easy fitting, placement and removal from a stove.

25 The fireback apparatus may elongate the life of the firebricks in a stove and may have the added benefit of retaining and reflecting out more heat.

In a further embodiment the back wall panel of the fireback apparatus may be longer and curved inwards at the top to protect firebricks on the top of the stove.

The fireback apparatus may be also used in a solid fuel cooker. The fireback apparatus may be placed into the firebox of a solid fuel cooker.

5 The fireback apparatus may comprise of three wall panels similar to the apparatus for a stove but modified to fit in a solid fuel range cooker.

The fireback apparatus for a solid fuel cooker may comprise of one pressed, formed or moulded unit or in separate parts that may be inserted singly.

10 The fireback apparatus for a solid fuel cooker may be placed on top of the grate.

Brief description of the drawings

15 These and other characteristics of the invention will be clear from the following description of a preferential form of embodiment, given as a non-restrictive example, with reference to the attached drawing wherein:

20 Fig 1 shows a perspective view according to the present invention in a fireplace.

Fig 2 shows a front perspective view according to the present invention.

Fig 3 shows a side elevation of the present invention.

25 Fig 4 shows a curved wall front perspective view according to the present invention.

Fig 5 shows a curved wall side elevation of the present invention.

Fig 6 shows a perspective view according to the present invention with handles.

5 Fig 7 shows a perspective view according to the present invention for a stove or a solid fuel range cooker.

A detailed description of a preferential embodiment with reference to the attached drawing, Fig 1 shows a perspective view according to
10 the present invention in a fireplace.

According to a first aspect of the invention there is provided a fireback apparatus (1) comprising of; a back wall panel (2), connected to side wall panels (3) which may be angled to suit the requirements of a fireplace or perpendicular side wall panels (6) to
15 suit the requirements of a stove or solid fuel cooker.

The fireback apparatus (1) may protect the fireplaces back and sides by shielding and preventing the burning solid fuel from being in direct contact.

20 The fireback apparatus (1) may vary in size depending on the fireplace requirements.

The back wall panel (2) may be higher than the side wall panels (3) to protect the fireplace from hot flames or stacked up solid fuel at the back of the fireplace.

25 In one embodiment the fireback apparatus (1) may have indentations protruding downwards at the base of the wall panels that may secure the apparatus into the fireplace grate.

Fig 2 illustrates a front perspective view of the fireback apparatus. The back wall panel (2) may be connected to a wall panel at each side (3). The fireback apparatus (1) may be constructed as a one piece pressed, moulded or formed unit.

- 5 The side panel walls (3) may be angled outwards to fit the shape of the open fireplace.

In one embodiment the back wall panel (2) may be thicker in width than the side panel walls (3) offering more protection to the back of the fireplace.

- 10 In another embodiment the back wall panel (2) may comprise of different material thickness. The bottom part may comprise a thicker material as it may be in direct contact with the hot burning solid fuel and provide greater protection to the back of the fireplace. The top part of the back panel wall(2) may be thinner as it may not be in
15 direct contact with hot burning fuel but protect the fireplace from the fires flames.

- In a further embodiment the fireback apparatus (1) may be slightly smaller than an open fireplace and may allow a smaller compact fire to be lit in a larger grate and as a result it may require less burning
20 fuel.

In one embodiment the back wall panel (2) and side wall panels (3) may allow for decorative art or marketing information.

The fireback apparatus (1) may have an extra benefit of being aesthetically pleasing and clean in a fireplace when the fire is not lit.

- 25 Fig 3 illustrates a side elevation of the fireback apparatus (1).

The side panel walls (3) may vary in length to suit an open fireplace.

Fig 4 illustrates a curved front perspective of the fireback apparatus (1). The back panel wall (2) may be curved upwards to protect the

fireplace from any high flames from an open fire. The side panel walls (3) may also be curved to offer more protection from the flames of a fire.

5 In one embodiment the back wall panel (2) may be curved and the side wall panels (3) may not be curved.

In another embodiment the back wall panel (2) may not be curved but the side wall panels may be curved (3).

In a further embodiment the back wall panel (2) may be longer and angled outward to fit in to a fireplace.

10 Fig 5 illustrates a side elevation of the curved side wall panels (3). The fireback apparatus (1) may be heavy and may comprise of handles for ease of fitting and removal. The fireback apparatus (1) may have a handle (4a) cut out in the side wall panels (3).

15 In one embodiment an outward indentation may be attached to the inner side wall panels to allow easy lift up and removal of the apparatus from the open fire.

In another embodiment handles may be formed or pressed out into the side wall panels (3).

20 In a further embodiment the top of the back wall panel (2) may have a cut out area for a handle.

In a further embodiment the back wall panel (2) may further comprise of a perforation to allow an insert of a lifting device like a fireplace poker for ease of fitting or removal of the fireback apparatus (1).

25 Illustrated in Fig 6 the fireback apparatus (1) may have two handles (4b) at the top of the side wall panels (3) attached to the back wall panel (2). The size of the handles may vary in size depending on the overall size of the fireback apparatus (1) and weight.

In one embodiment the fireback apparatus (1) may comprise of a corrugated back wall panel (2). The corrugated back wall panel may retain heat from the open fire and reflect heat out in to a room after the fire has expired.

- 5 The fireback apparatus (1) may be constructed of a suitable material to withstand burning heat like a mild steel metal but not limited to metal.

The fireback apparatus (1) may have a smooth surface finish for ease of cleaning.

- 10 Fig 7 illustrates the fireback apparatus (1) suitable for a stove or solid fuel cooker.

The fireback apparatus (1) suitable for a stove or solid fuel cooker may comprise of single wall panels that are connected together when inside the firebox or as an one piece moulded, pressed,

- 15 formed unit.

The fireback apparatus (1) can be placed in a stove or solid fuel cooker through a front door/solid fuel access area. The fireback apparatus (1) may not fit through the front door as a single one piece unit and therefore the fireback apparatus (1) may comprise of single
20 wall panels that connect together when inside a stove or solid fuel cooker.

The back wall panel (6) may be placed first into the back of the stoves' firebox. The back wall panel (6) may have perforation or indentation areas (10) that may allow the side wall panels (7) to
25 connect into.

The side wall panels (7) may be placed inside the side of the stove or solid fuel cooker. The side wall panels for a stove or a solid fuel cooker may be perpendicular to the back wall panel (6) and not angled like the apparatus suited for a fireplace.

The side wall panels (7) may have a connection bar (9) to secure them to the back wall panel (6). Fig 7 illustrates the fireback apparatus (1) may have four connecting bars (9) placed into four perforations (10) on the back wall panel (6). The amount of
5 connection bars (9) can vary depending on the size required for the fireback apparatus (1) and is not limited to four.

A bottom connection panel (8) may be used when the fireback apparatus (1) is not a one piece construction. The bottom connection panel (8) may be placed inside the stove or solid fuel
10 cooker. The bottom panel (8) may provide a side wall panel holder (11). The side wall panel holder (11) may hold the side wall panels (7) upright in the firebox.

In one embodiment the fireback apparatus (1) may further comprise of a frame that goes into a firebox first and the back wall panel (6)
15 and side wall panels (7) fit into. The frame may securely hold the wall panels upright in the firebox.

The fireback apparatus (1) wall panels may be connected together in a stove or solid fuel cooker securely by any secure means.

In a further embodiment the top of the back wall panel (6) may
20 extend inwards and protect the top of a stove that may be in direct contact with burning flames from the stoves' fire.

The fireback apparatus (1) wall panel sizes may vary to suit the requirements and dimensions of a stove or solid fuel cooker.

In another embodiment the wall panels can vary in different
25 thickness to provide more protection to the firebox in a stove or solid fuel cooker.

The fireback apparatus (1) for a stove or solid fuel cooker wall panels can comprise of various thickness.

In one embodiment the back wall panel (6) may be thicker than the side wall panels (7) to protect the back of the firebox.

In another embodiment the fireback apparatus (1) wall panel thickness may vary in a solid fuel cooker if the fire heats water or an oven the wall panel may be thinner.

In a further embodiment the fireback apparatus (1) for a solid fuel cooker may comprise of a one side or one back wall panel.

The fireback apparatus (1) for a stove or solid fuel cooker may have perforations, or indentations on the back panel wall (6) or side panel wall (7) to form a handle or grip for ease of fitting and removal.

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Claims

1. A fireback apparatus (1) comprising of;
5 a back wall panel (2), connected to side wall panels (3)
 which may be angled to suit the requirements of a
 fireplace or perpendicular side wall panels (6) to suit
 the requirements of a stove or solid fuel cooker.

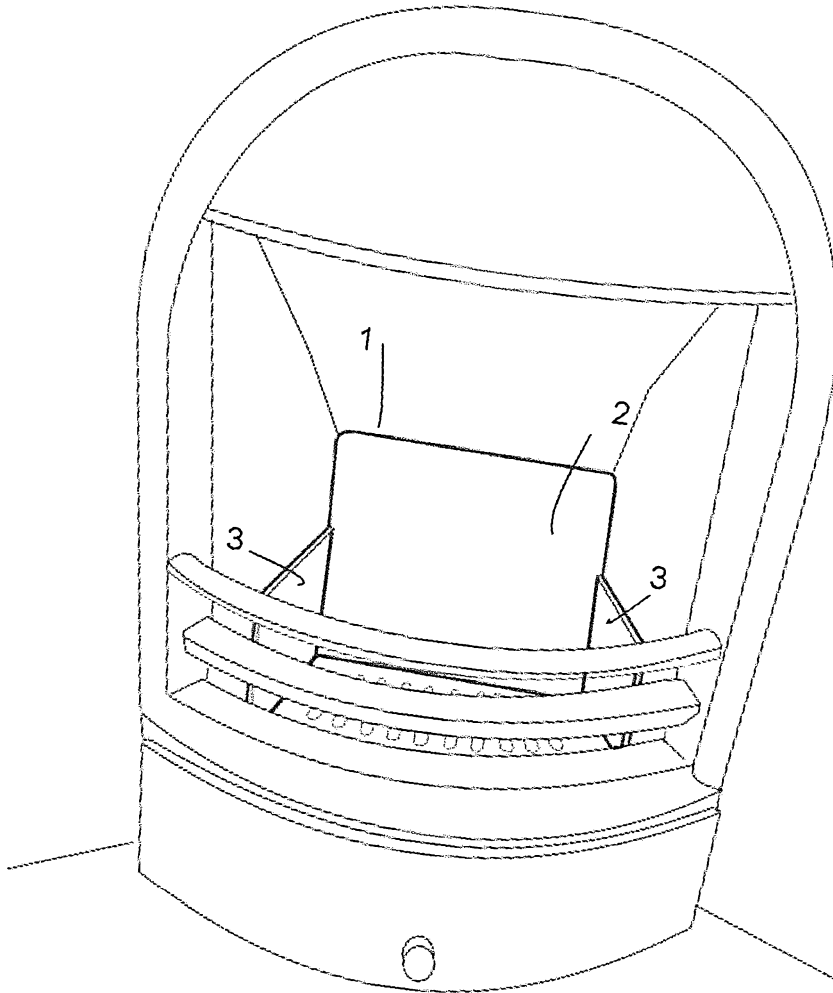
- 10 2. A fireback apparatus (1) according to claim 1 further
 comprising of a handle or handles located on the said back
 wall panel (2) or said side wall panels (3) for ease of fitting
 and removal from a fireplace.

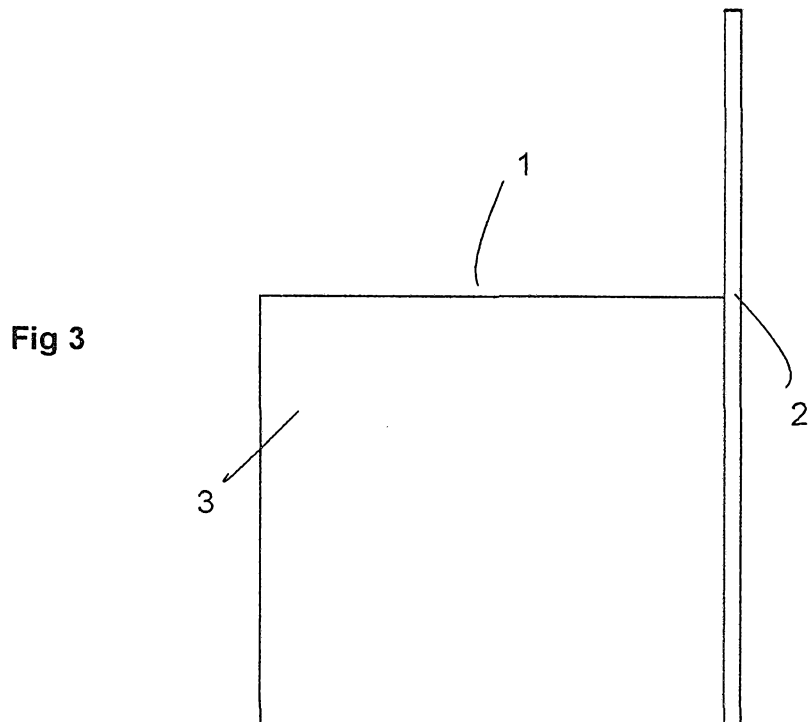
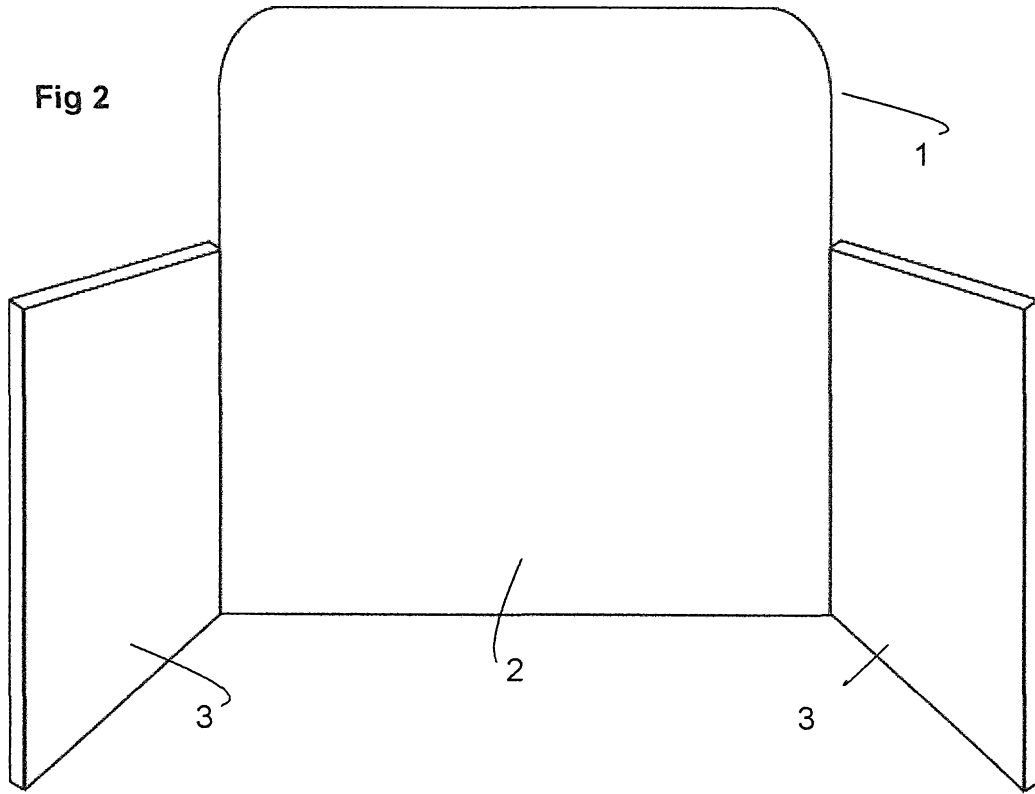
- 15 3. A fireback apparatus (1) according to claim 1 and 2 wherein
 the said back (2) and said side wall panels (3) may vary in
 different lengths, heights and thickness to offer more
 protection when in direct contact with burning solid fuel.

- 20 4. A fireback apparatus (1) according to claim 1 - 3 wherein the
 said back wall panel (2) and said side wall panel (3) may be
 constructed as single units that can be connected securely by
25 any suitable device where necessary, like a connection bar
 (9), wall panels perforation (10), a bottom connection panel
 (8), a base frame or any suitable secure method.

- 30 5. A fireback apparatus (1) according to claim 1 – 4 wherein the
 said back wall panel (2) may be corrugated to retain and
 reflect out heat from the open fire.

Fig 1





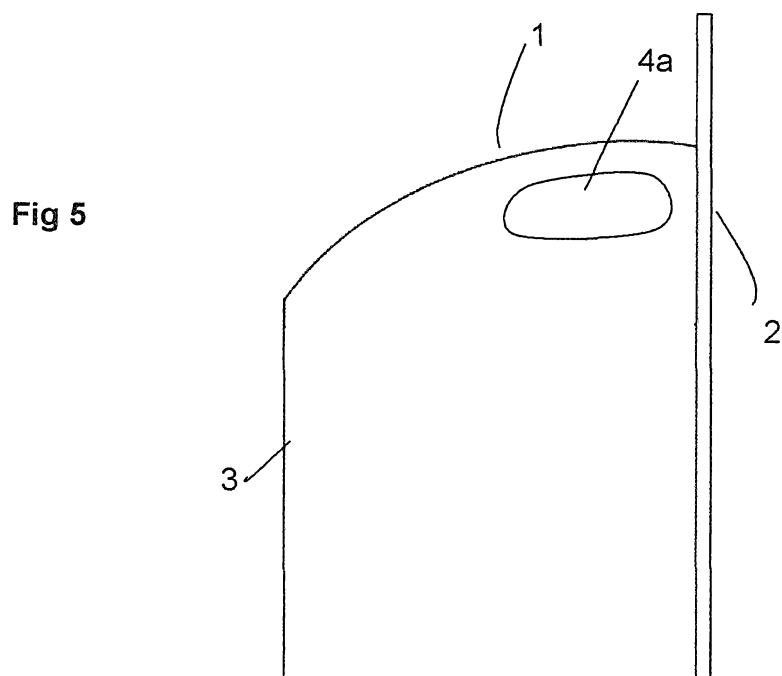
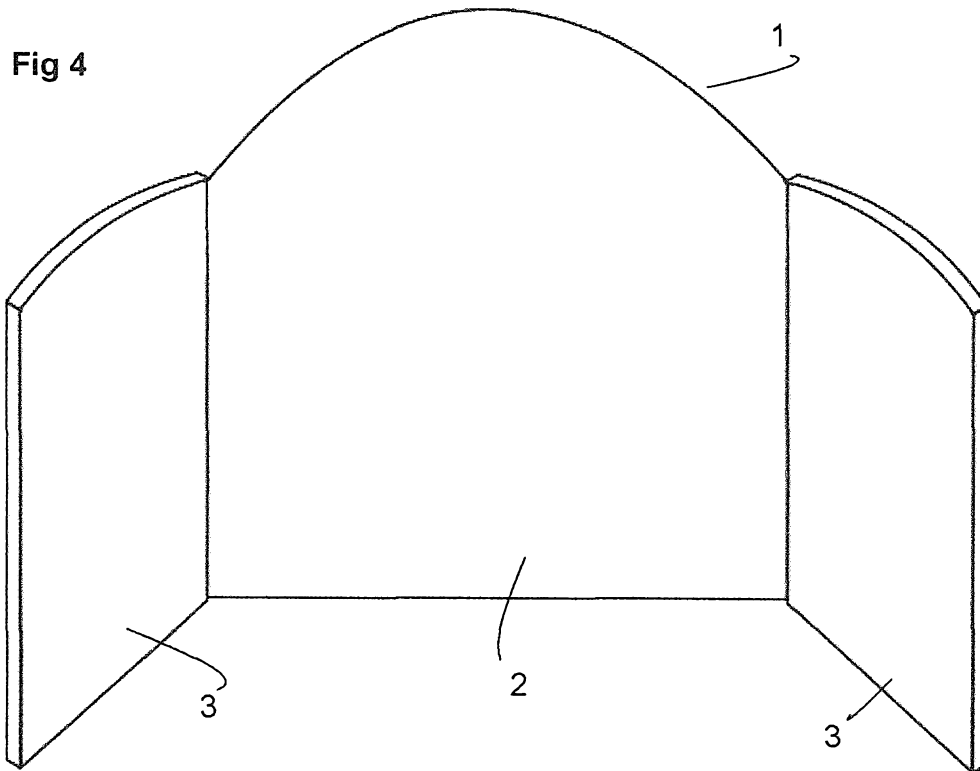


Fig 6

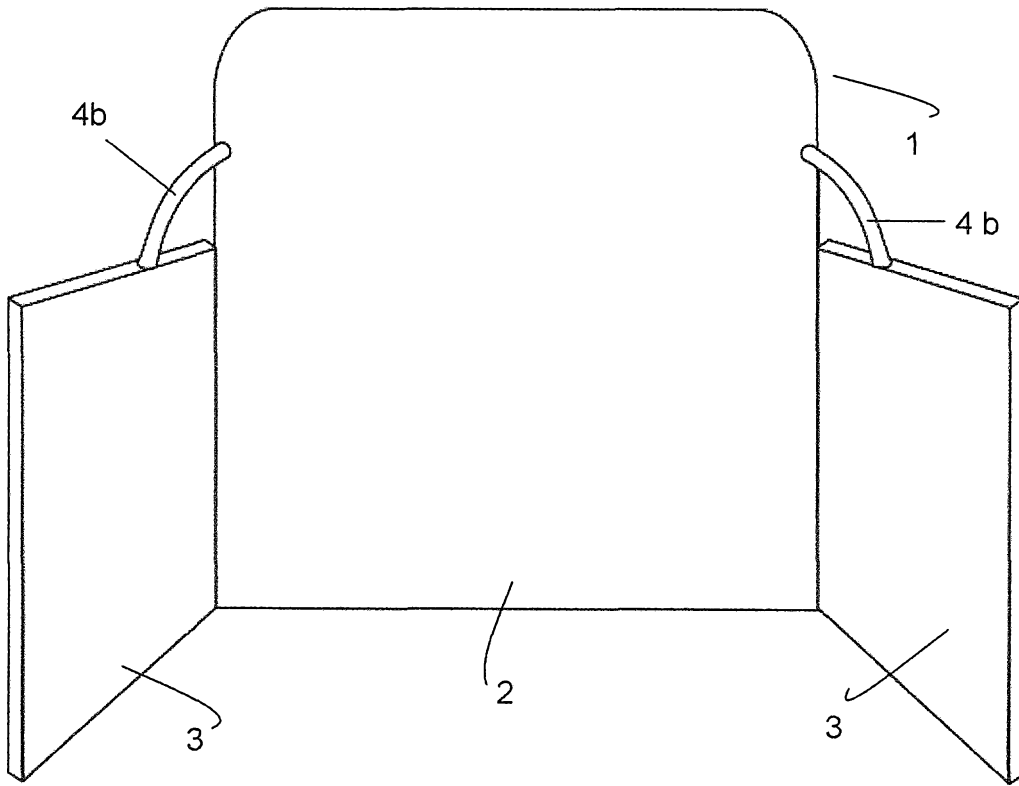


Fig 7

