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(54) A LAUNDRY DRYER COMPRISING A HEATER CASING

WÄSCHETROCKNER MIT EINEM HEIZGEHÄUSE

MACHINE À SÉCHER AVEC UNE CARCASSE POUR LE CHAUFFAGE

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Description

[0001] The present invention relates to a laundry dryer comprising a heater casing.

[0002] In laundry dryers, the air used for drying the laundry is required to be heated before entering into the drum in order to perform the drying process effectively. For this purpose, a heater is disposed at the end of the air channel and the air is provided to be heated before entering the drum. In some of the state of the art embodiments, casings are used that protect the heater by being placed over the heater and direct the heated air. The casings are formed by shaping sheet metal plates and have high material and labor costs.

[0003] A laundry dryer with the features of the preamble is known from DE-102008021376.

[0004] In the state of the art German Patent Application No. DE102005023442, a washer dryer is explained that comprises a heating device and a cover which faces the air channel and covers the top and sides of the heater device, with one end being open such as to allow entry of air.

[0005] Another state of the art embodiment is explained in the European Patent Application No. EP1614792. In this embodiment, the laundry dryer comprises heat dissipation plates grasping the heater from below and above and providing the surface area transferring heat to the flowing air to be increased by absorbing the heat generated by the heater.

[0006] In the state of the art Chinese Patent Application No. CN1521301, a laundry dryer is explained having a two piece cover that closes the lower and upper faces of the heater. In this embodiment, one edge of the half of the cover closing the upper face of the heater, is curved.

[0007] The aim of the present invention is the realization of a laundry dryer wherein the cost is lowered by decreasing the use of material.

[0008] The laundry dryer realized in order to attain the aim of the present invention is explicated in the claims.

[0009] In the laundry dryer of the present invention, the gap remaining between the deflector closing the front side of the casing and the side walls is closed from both sides by a first extension extending from the side wall together with a second extension extending from the deflector. The first extension and the second extension, both having substantially triangular shapes, almost completely close the gap between the deflector and the side wall when they are joined. Thus, the casing is completed by closing the gap remaining between the deflector and the side wall. The first extension and the second extension are joined edge by edge and one does not overlap on the other.

[0010] The first extension closes the portion of the gap close to the casing ceiling. A lock is provided at the lower edge of the first extension enabling the first extension to be mounted to the second extension. A housing is provided at the upper edge of the second extension wherein the lock is disposed. Thus, the second extension and the

first extension are attached to one another.

[0011] The second extension closes the portion of the gap close to the cabinet rear wall. A flap is provided at the end of the second extension enabling the second extension to be secured to the cabinet rear wall. Thus, the second extension and thus the casing are secured to the cabinet rear wall. A fixing surface is provided at the end of the deflector extending to the cabinet rear wall. The deflector and thus the casing are secured to the cabinet rear wall by means of the said fixing surface.

[0012] The model embodiments relating to the laundry dryer realized in order to attain the aim of the present invention are illustrated in the attached figures, where:

Figure 1 - is the schematic view of the laundry dryer of the present invention.

Figure 2 - is the schematic view of the cabinet rear wall and the lid.

Figure 3 - is the perspective view of the cabinet rear wall and the casing.

Figure 4 - is the perspective view of the cabinet rear wall and the casing from another angle.

Figure 5 - is the top view of the casing.

Figure 6 - is the perspective view of the casing.

Figure 7 - is the view of the metal plate forming the casing before being folded.

Figure 8 - is the view of the metal plate forming the casing before being folded in the prior art.

[0013] The elements illustrated in the figures are numbered as follows:

1. Laundry dryer
2. Cabinet
3. Drum
4. Lid
5. Heater
6. Casing
7. Side wall
8. Ceiling
9. Deflector
10. Intermediate element
11. First extension
12. Second extension
13. Flap
14. Fixing surface
15. Lock
16. Housing

[0014] The laundry dryer (1) comprises a cabinet (2), a drum (3) disposed inside the cabinet (2), a heater (5) mounted to cabinet (2) rear wall (A), a casing (6) formed by cutting and folding a metal plate, covering over the heater (5) and a lid (4) that covers the heater (5) and partially the cabinet (2) rear wall (A).

[0015] The casing (6) is box shaped and comprises two side walls (7), a ceiling (8), a substantially isosceles trapezoid shaped deflector (9) secured to the cabinet (2)

rear wall (A) by extending from the ceiling (8) towards the cabinet (2) rear wall (A) with an inclination and closing the rear face, and intermediate elements (10) each disposed on one side and which close the space between the deflector (9) and the side wall (7).

[0016] In the laundry dryer (1) of the present invention, the intermediate element (10) is composed of two pieces, a first extension (11) fastened to the side wall (7) and a second extension (12) fastened to the deflector (9).

[0017] In the preferred embodiment of the present invention, the first extension (11) is substantially triangle shaped and one edge thereof is adjacent all along the edge of one side wall (7) that is vertical to the ceiling (8) close to the deflector (9). In this embodiment, while the casing (6) is formed, the other edge of the first extension (11) is secured to the edge of the deflector (9) close to the side wall (7) and thus partially closes the gap remaining between the side wall (7) and the deflector (9).

[0018] Again in the preferred embodiment of the present invention, the second extension (12) is substantially triangle shaped and one edge thereof is adjacent to the end of the deflector (9) close to the cabinet (2) rear wall (A). In this embodiment, while the casing (6) is formed, the other edge of the second extension (12) is secured to the first extension (11) and the portion of the gap remaining between the side wall (7) and the deflector (9) that is not closed by the first extension (11) is closed by the second extension (12).

[0019] The casing (6) is provided to become more durable by closing the gap remaining between the side wall (7) and the deflector (9) by joining the first extension (11) fastened to the side wall (7) edge by edge with the second extension (12) fastened to the deflector (9) such that they do not overlap one another.

[0020] In an embodiment of the present invention, the second extension (12) comprises a flap (13) enabling the second extension (12) to be secured to the cabinet (2) rear wall (A) from its free edge close to the cabinet (2) rear wall (A).

[0021] The flap (13) that provides the first extension (11) and the second extension (12), closing the gap remaining between the side wall (7) and the deflector (9), to be secured to the cabinet (2) rear wall (A) being disposed on the second extension (12) fastened to the deflector (9) and not on the first extension (11) fastened to the side wall (7) enables the metal plate needed in the production of the casing (6) to be smaller ($L2 < L1$). Accordingly, the production of the element with the same function is made possible by consuming less material.

[0022] In an embodiment of the present invention, the casing (6) comprises a fixing surface (14) disposed at the end of the deflector (9) extending to the cabinet (2) rear wall (A) and which provides the deflector (9) to be secured to the cabinet (2) rear wall (A).

[0023] In the preferred embodiment of the present invention, the first extension (11) and the second extension (12) comprise a lock (15) and housing (16) pair that provide the first extension (11) and the second extension

(12) to be secured to each other from their edges facing each other. Thus, the first extension (11) and the second extension (12) are provided to be secured to each other easily.

[0024] It is to be understood that the present invention is not limited by the embodiments disclosed above and a person skilled in the art can easily introduce different embodiments. These should be considered within the scope of the protection postulated by the claims of the present invention.

Claims

1. A laundry dryer (1) comprising

- a cabinet (2),
- a drum (3) disposed inside the cabinet (2),
- a heater (5) mounted on the cabinet (2) rear wall (A),
- a casing (6) covering over the heater (5), formed by cutting and folding a metal plate, which comprises two side walls (7) covering the side surfaces thereof, a ceiling (8) covering the top surface thereof, a substantially isosceles trapezoid shaped deflector (9) secured to the cabinet (2) rear wall (A) by extending from the ceiling (8) towards the cabinet (2) rear wall (A) with an inclination and closing the rear face thereof, and intermediate elements (10) each disposed on one side and which close the space remaining between the deflector (9) and the side wall (7),

characterized by

- an intermediate element (10) that is composed of two pieces, a first extension (11) fastened to the side wall (7) and a second extension (12) fastened to the deflector (9).

2. A laundry dryer (1) as in Claim 1, **characterized by.**

- a first extension (11) that is substantially triangle shaped and with one edge adjacent all along the edge of one side wall (7) that is vertical to the ceiling (8) close to the deflector (9) and the other edge secured to the edge of the deflector (9) close to the side wall (7) and thus partially closing the gap remaining between the side wall (7) and the deflector (9) and
- a second extension (12) that is again substantially triangle shaped and with one edge adjacent to the end of the deflector (9) close to the cabinet (2) rear wall (A) and the other edge secured to the first extension (11) and closing the portion of the gap remaining between the side wall (7) and the deflector (9) that is not closed by the

first extension (11).

3. A laundry dryer (1) as in Claim 1 or 2, **characterized by** the second extension (12) comprising a flap (13) providing the second extension (12) to be secured to the cabinet (2) rear wall (A) from its free edge that is close to the cabinet (2) rear wall (A).
4. A laundry dryer (1) as in any one of the above Claims, **characterized by** the casing (6) comprising a fixing surface (14) disposed at the end of the deflector (9) extending to the cabinet (2) rear wall (A) and which provides the deflector (9) to be secured to the cabinet (2) rear wall (A).
5. A laundry dryer (1) as in any one of the above Claims, **characterized by** the first extension (11) and the second extension (12) comprising a lock (15) and housing (16) pair providing the first extension (11) and the second extension (12) to be secured to each other from their edges facing each other.

Patentansprüche

1. Wäschetrockner (1), umfassend

- ein Gehäuse (2),
- eine Trommel (3), die im Inneren des Gehäuses (2) angeordnet ist,
- eine Heizeinrichtung (5), die an der Rückwand (A) des Gehäuses (2) angebracht ist,
- eine Ummantelung (6), die die Heizeinrichtung (5) abdeckt und durch Schneiden und Falzen einer Metallplatte gebildet ist und zwei Seitenwände (7), die ihre Seitenflächen abdecken, eine Decke (8), die ihre Oberseite abdeckt, einen im Wesentlichen gleichschenkligen trapezförmigen Deflektor (9), der an der Rückwand (A) des Gehäuses (2) gesichert ist, indem er sich mit einer Neigung von der Decke (8) zur Rückwand (A) des Gehäuses (2) erstreckt und deren Rückseite schließt, und Zwischenelemente (10) umfasst, die jeweils an einer Seite angeordnet sind und den zwischen dem Deflektor (9) und der Seitenwand (7) verbleibenden Zwischenraum schließen, **gekennzeichnet durch**
- ein Zwischenelement (10), das aus zwei Teilen, einer ersten Verlängerung (11), die an der Seitenwand (7) befestigt ist, und einer zweiten Verlängerung (12), die an dem Deflektor (9) befestigt ist, gebildet ist.

2. Wäschetrockner (1) nach Anspruch 1, **gekennzeichnet durch**

- eine erste Verlängerung (11), die im Wesentlichen dreieckförmig ist und deren eine Kante

entlang der gesamten Kante benachbart zur Kante einer Seitenwand (7) ist, die in der Nähe des Deflektors (9) vertikal zur Decke (8) ist, und deren andere Kante an der Kante des Deflektors (9) in der Nähe der Seitenwand (7) gesichert ist und **dadurch** den Spalt, der zwischen der Seitenwand (7) und dem Deflektor (9) vorhanden ist, teilweise schließt, und

- eine zweite Verlängerung (12), im ebenfalls im Wesentlichen dreieckförmig ist und deren eine Kante zu dem Ende des Deflektors (9) in der Nähe der Rückwand (A) des Gehäuses (2) benachbart ist und deren andere Kante an der ersten Verlängerung (11) gesichert ist und den verbleibenden Teil des Spalts zwischen der Seitenwand (7) und dem Deflektor (9) schließt, der nicht **durch** die erste Verlängerung (11) geschlossen wird.

3. Wäschetrockner (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die zweite Verlängerung (12) eine Lasche (13) umfasst, die dafür sorgt, dass die zweite Verlängerung (12) an ihrer freien Kante, die nah an der Rückwand (A) des Gehäuses (2) ist, an der Rückwand (A) des Gehäuses (2) gesichert ist.

4. Wäschetrockner (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Ummantelung (6) eine Befestigungsfläche (14) umfasst, die an dem Ende des Deflektors (9) angeordnet ist, das sich zur Rückwand (A) des Gehäuses (2) erstreckt, und die dafür sorgt, dass der Deflektor (9) an der Rückwand (A) des Gehäuses (2) gesichert ist.

5. Wäschetrockner (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die erste Verlängerung (11) und die zweite Verlängerung (12) ein Paar aus Verriegelung (15) und Aufnahme (16) umfassen, das dafür sorgt, dass die erste Verlängerung (11) und die zweite Verlängerung (12) an ihren einander zugewandten Kanten aneinander gesichert sind.

Revendications

1. Un sèche-linge (1) comprenant :

- une enveloppe (2),
- un tambour (3) disposé dans l'enveloppe (2),
- un dispositif de chauffage (5) monté sur la paroi arrière (A) de l'enveloppe (2),
- un revêtement (6) qui couvre le dispositif de chauffage (5), qui est formé en coupant et pliant une plaque métal, qui comprend deux parois latérales (7) couvrant les surfaces latérales de ce-

lui-ci, un plafond (8) recouvrant la surface supérieure de celui-ci, un déflecteur (9) sensiblement en forme d'un trapèze isocèle fixé à la paroi arrière (A) de l'enveloppe (2) en s'étendant à partir du plafond (8) vers la paroi arrière (A) de l'enveloppe (2) avec une inclinaison et fermant la surface arrière de celui-ci, et des éléments intermédiaires (10), chacun disposé sur un côté et ferme l'espace restant entre le déflecteur (9) et la paroi latérale (7),

caractérisé par

- un élément intermédiaire (10) qui est composé de deux pièces, une première extension (11) fixée à la paroi latérale (7) et une seconde extension (12) fixée au déflecteur (9).

à partir de leurs bords faisant face l'un à l'autre.

2. Un sèche-linge (1) selon la Revendication 1, caractérisé par

- une première extension (11) qui est sensiblement en forme de triangle, dont un bord est adjacent le long du bord d'une paroi latérale (7) qui est perpendiculaire au plafond (8) à proximité du déflecteur (9) et l'autre bord est fixé au bord du déflecteur (9) à proximité de la paroi latérale (7) et donc partiellement fermant l'espace restant entre la paroi latérale (7) et le déflecteur (9) et

- une seconde extension (12) qui est à nouveau sensiblement en forme de triangle, dont un bord est adjacent à l'extrémité du déflecteur (9) à proximité de la paroi arrière (A) de l'enveloppe (2) et l'autre bord est fixé à la première extension (11) et fermant l'espace restant entre la paroi latérale (7) et le déflecteur (9) qui n'est pas fermé par la première extension (11).

3. Un sèche-linge (1) selon la Revendication 1 ou 2, caractérisé par la seconde extension (12) comprenant un rabat (13) permettant la fixation de la seconde extension (12) à la paroi arrière (A) de l'enveloppe (2) à partir de son bord libre qui est proche de la paroi arrière (A) de l'enveloppe (2).

4. Un sèche-linge (1) selon l'une quelconque des revendications précédentes, caractérisé par le revêtement (6) comprenant une surface de fixation (14) arrangée à l'extrémité du déflecteur (9) s'étendant vers la paroi arrière (A) de l'enveloppe (2) et qui permet la fixation du déflecteur (9) à la paroi arrière (A) de l'enveloppe (2).

5. Un sèche-linge (1) selon l'une quelconque des revendications précédentes, caractérisé par la première extension (11) et la seconde extension (12) comprenant une paire de verrou (15) et logement (16) qui permet la fixation de la première extension (11) et de la seconde extension (12) l'une à l'autre

Figure 1

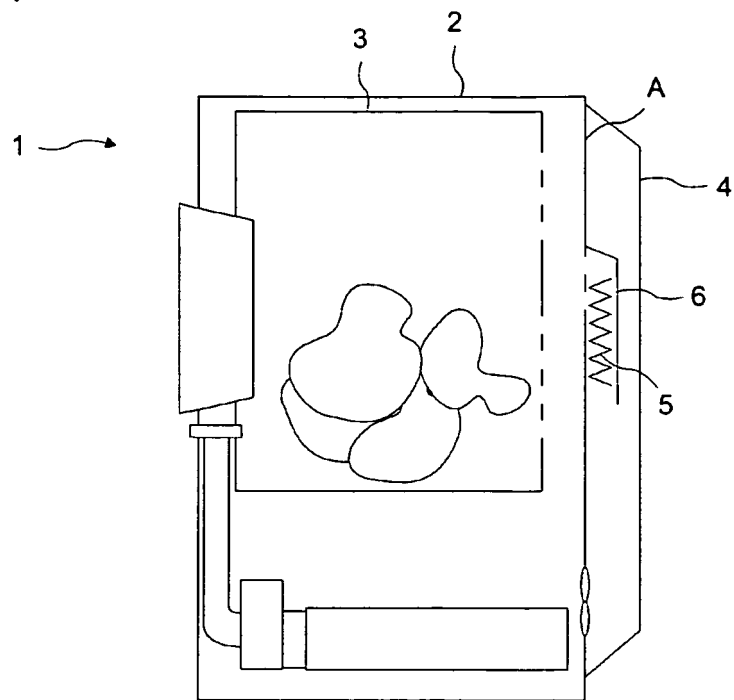


Figure 2

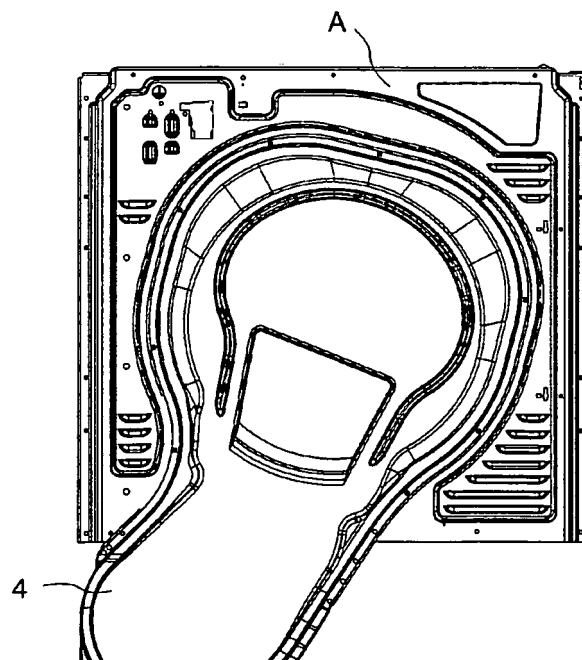


Figure 3

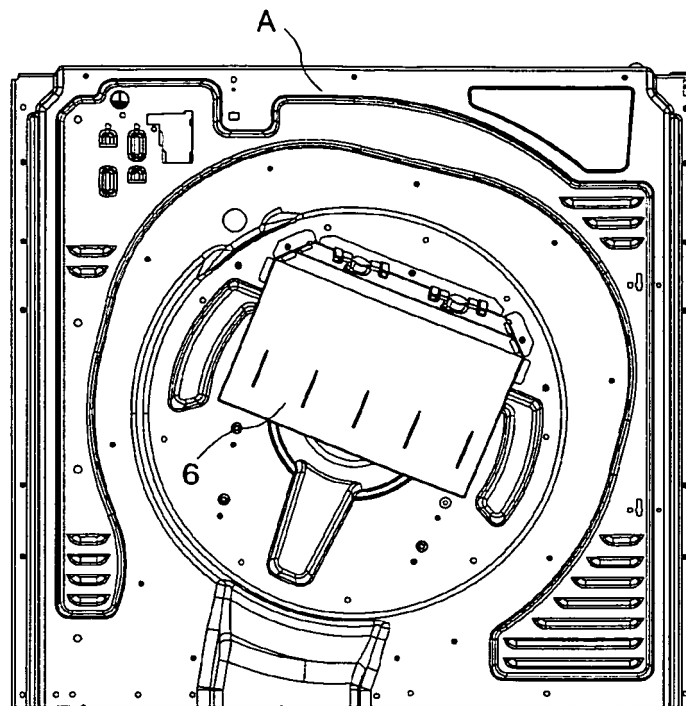


Figure 4

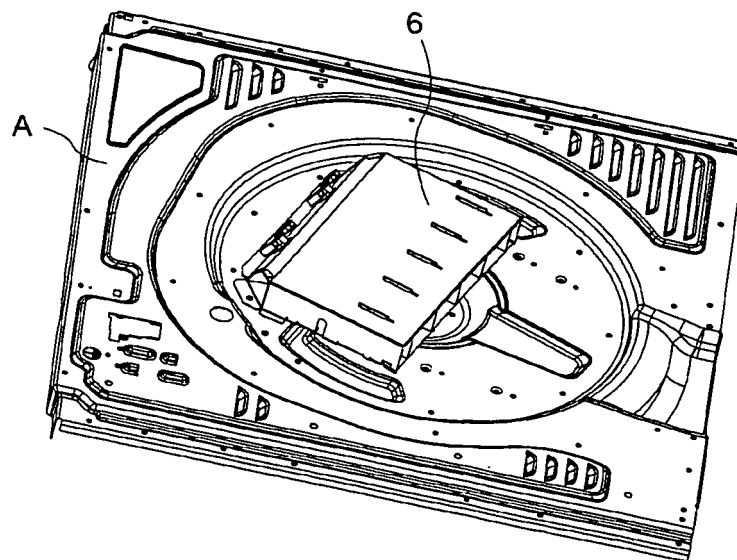


Figure 5

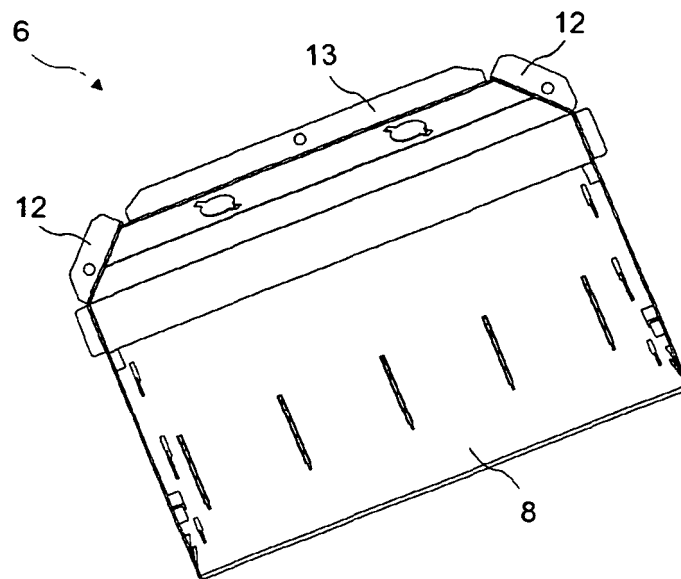


Figure 6

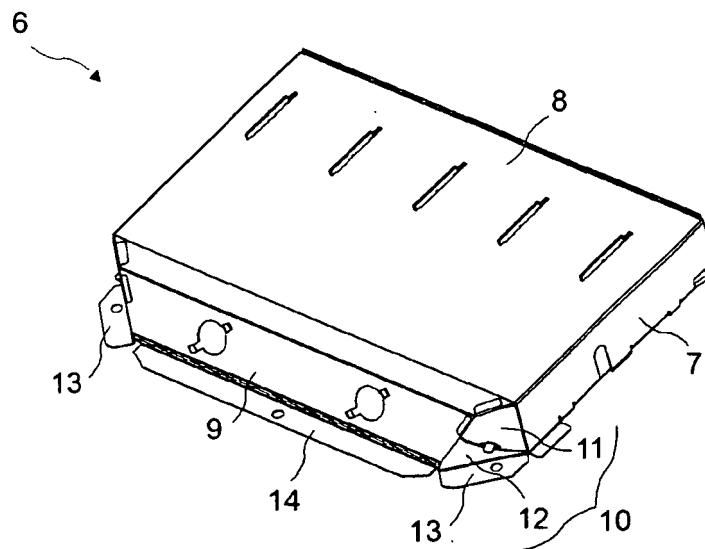


Figure 7

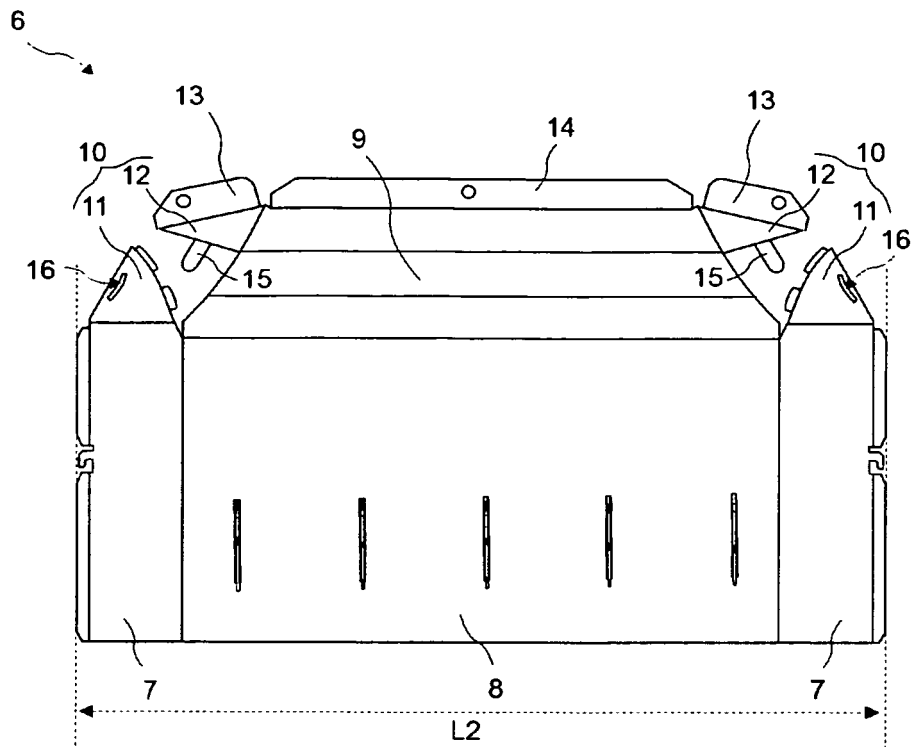
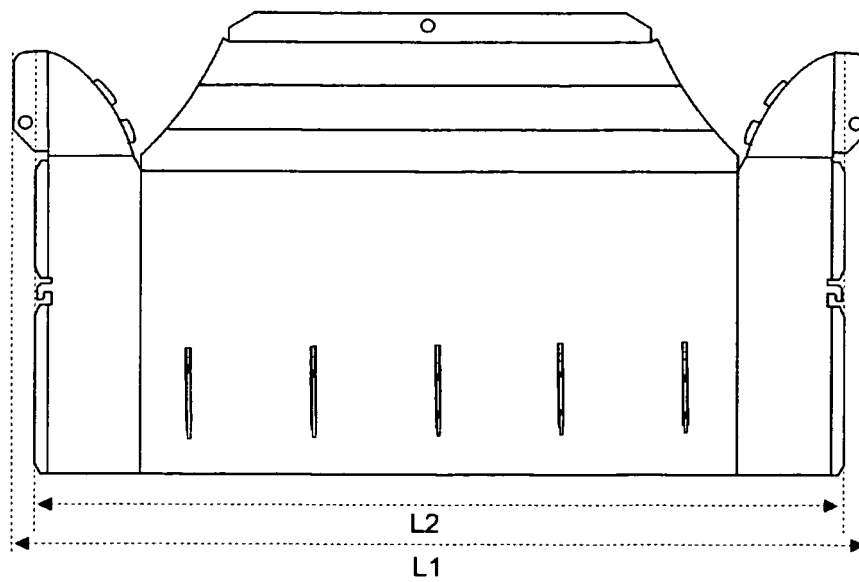


Figure 8

PRIOR ART



REFERENCES CITED IN THE DESCRIPTION

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