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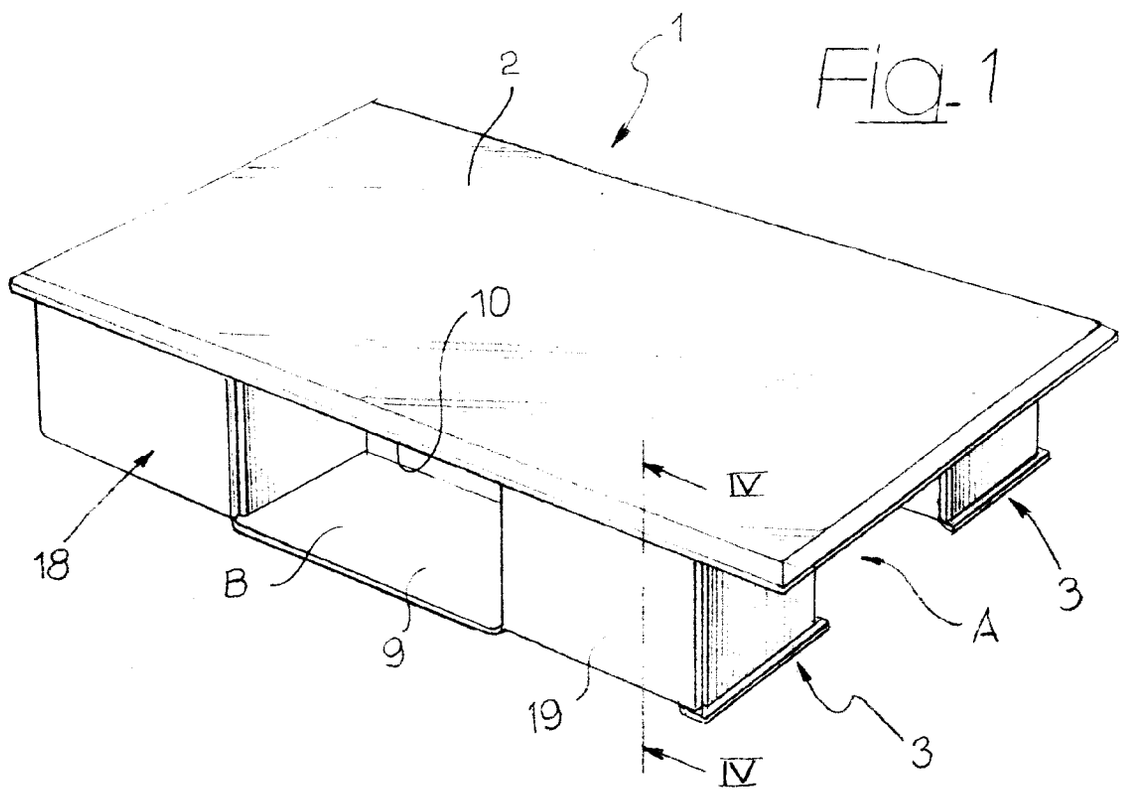
(54) Foot for load pallets, corrugated board boxes and the like

(57) A foot (3) for loading pallets (1), corrugated cardboard boxes and the like, formed by a single corrugated cardboard sheet (4), die-cut and folded so as to integrally define two box-like end portions (18, 19) of parallelepipedal shape which are mutually connected by a pair of intermediate longitudinal bands (9, 10). In use, a pair of these feet (3) delimit two passages (A, B) which are perpendicular to each other and define four ways for selective engagement therethrough of a fork handling system.



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Description

The present invention is related to a foot for loading pallets, corrugated cardboard boxes and the like, formed by a single die-cut and folded corrugated cardboard sheet.

A foot of the above-referenced type in known from Italian utility model application No. TO95U000176 in the name of the same Applicant. This foot has an uninterrupted tubular arrangement, with inner reinforcement baffles and terminal closing wings. This known foot, though extremely simple, sturdy and cheap, has a drawback in that only two opposite ways are available for handling, by means of a conventional fork apparatus, the loading pallet or box equipped with a pair of such foots.

The object of the present invention is thus to provide a foot of the type set forth at the beginning which, while maintaining and extremely simple and cheap construction, enables in use doubling the access ways for the forks of handling systems.

According to the invention, this object is achieved essentially by the fact that the corrugated cardboard sheet is provided with fold lines designed to integrally define two box-like end sections having a parallelepipedal shape and a pair of intermediate longitudinal bands which form and mutually connect to each other the upper and the lower walls of said two box-like end sections.

By virtue of this construction, the foot according to the invention makes available two central passages along mutually opposite transverse directions, without negatively affecting either sturdiness of its end box-like sections, or manufacturing simplicity of the foot as a whole.

In order to further enhance resistance under load of the two end box-like sections, the foot according to the invention provides that the front and rear walls of each of these box-like sections are formed each by at least three folded and mutually overlapped wings of said cardboard sheet.

According of a preferred embodiment of the invention, the corrugated cardboard sheet has four longitudinal fold lines which delimit said two longitudinal bands and three pairs of longitudinal half-bands alternated to said longitudinal bands and each formed with a respective pair of transverse band lines designed to define the lateral walls and the front and rear walls of the box-like end sections.

The invention will now be disclosed in detail with reference to the accompanying drawings, purely provided by way of non limiting example, in which:

- figure **1** is a diagrammatic perspective view of a loading pallet provided with a pair of feet according to the invention,
- figure **2** is a perspective upside-down view of figure 1,
- figure **3** depicts the plan sheet forming one of the feet,
- figure **4** is a vertically sectioned and enlarged view along line IV-IV of figure 1,
- figure **5** is a horizontally sectioned and enlarged view along line V-V of figure 1, and
- figure **6** is a longitudinally sectioned view along line VI-VI of figure 5.

Referring initially to figures 1 and 2, reference numeral 1 generally designates a loading pallet essentially comprising a load bearing platform 2 made of corrugated cardboard or any other proper material, provided inferiorly with a pair of rise feet 3 according to the invention, which are spaced apart from each other and are extending over the full length of the bearing platform 2. Between the two feet 3, which may be secured to the bearing platform 2 by bonding or any other equivalent system, a longitudinal passage A is defined providing two access ways, in one and respectively in the opposite direction, for a fork or the like handling system.

Figures 3 through 6 show in detail the construction of one of the feet 3: the following description referred to these figures identically applies also to the other foot.

The foot 3 has a tubular construction obtained starting from a die-cut sheet of corrugated cardboard, whose plan configuration is shown as 4 in figure 3.

The sheet 4, having a generally quadrangular shape, has four longitudinal fold lines 5, 6, 7, 8 which delimit two longitudinal bands 9, 10 and three pairs of longitudinal half-bands 11, 12 alternated to the two bands 9, 10. Each half-band 11, 12 is formed with a respective pair of transverse fold lines defining thereon a central portion 14 and two lateral wings 15.

The longitudinal band 9 has a greater length than the longitudinal band 10, and is also formed with a pair of transverse fold lines 16 defining a pair of end wings 17.

Mounting of the foot 3 starting from the sheet 4 is carried out and follows.

Firstly the wings 15 of the left-side upper half-band 11, with reference to figure 3, are folded perpendicularly to the central part 14 of this half-band 11, and then the central portion 14 is folded perpendicularly to the plane of the band 9, on the side thereof. The lateral wings 15 of the intermediate half-band 11 are then folded against the wings 15 of the former half-band 11. The various elements which are in turn overlapped under mutual contact are permanently fixed to one another by means of a suitable glue or equivalent systems.

Same operation are carried out in the same way in connection with the right-side upper half-band 12 with respect to figure 3, and in connection with the intermediate half-band 12.

Then the band 10 is folded parallely to the band 9 and the central portion 14 of the third half-band 11, i.e. the one depicted at the bottom of the left side in figure 3, is folded over the central portion 14 of the first half-

band 11, and the wings 15 of the third half-band 11 are folded against the respective previously folded wings 15 of the first and second half-bands 11. Same identical steps are carried out in connection with the third half-band 12, i.e. the one depicted at the bottom of the right side in figure 3. Even in this case the various mutually overlapped elements are permanently joined to one another by means of a proper bonding agent or equivalent systems.

Lastly the terminal wings 17 of the band 9 are folded, overlapped and fixed one against the previously overlapped three outer wings 15 of the three half-bands 11, and the other against the three previously overlapped outer wings 15 of the three half-bands 12.

At the end of the above steps, the foot 3 takes the assembled configuration shown in figures 1 and 2, with two box-like end sections 18, 19 having a generally parallelepipedal shape, spaced apart from each other and integrally connected to each other by the two longitudinal bands 9, 10, of which one forms the lower walls and the other forms the upper walls of the two box-like sections 18, 19, i.e. the whole base wall and the whole top wall of the foot 3.

Between the two box-like end sections 18, 19 a wide transverse passage B is thus defined which, in the fixed condition of the foot 3 to the bearing platform 2, defines with the corresponding passage B of the other foot 3 a second pair of ways, oriented transversally of the passage A, for engagement of a fork or the like handling system.

As it is apparent from figures 4 through 6, the opposite lateral walls of each box-like section 18, 19 are defined by the central portions 14 of the half-bands 11, 12, respectively, while the corresponding end walls are defined by the wings 15 of the same half-bands 11, 12, respectively. Accordingly, these end walls have a three-overlapped-element structure with the further addition for the outer end wall, i.e. the one arranged at the side of each box-like section 18, 19 opposite to the respective passage B, of a further fourth element formed by the corresponding terminal wing 17 of the band 9. This ensures a remarkable stiffness and strength of the two box-like end sections 18, 19 and, as a consequence, of the foot 3 as a whole.

It is to be pointed out that, while application to a loading pallet 1 has been disclosed in the above, the foot 3 according to the invention can be equally usefully and advantageously associated to the bottom wall of a corrugated cardboard box or the like.

Naturally the details of construction and the embodiments may be widely varied with respect to what has been disclosed and illustrated, without thereby departing from the scope of the present invention, such as defined in the appended claims.

Claims

1. Foot (3) for loading pallets (1), corrugated cardboard boxes and the like, formed by a single die-cut and folded cardboard sheet (4), characterized in that said corrugated cardboard sheet (4) is provided with fold lines (5, 6, 7, 8 13, 16) designed to integrally define two box-like end sections (18, 19) having a parallelepipedal shape and a pair of intermediate longitudinal bands (9, 10) which form and mutually connect to each other the upper and the lower walls of said two box-like end sections (18, 19).

2. Foot according to claim 1, characterized in that the front and rear walls of each of said two box-like end sections (18, 19) are each formed by at least three folded and overlapped wings (15) of said cardboard sheet (4).

3. Foot according to claim 2, characterized in that said corrugated cardboard sheet (4) is provided with four longitudinal fold lines (5, 6, 7, 8) delimiting said two longitudinal bands (9, 10) and three pairs of longitudinal half-bands (11, 12) alternated to said longitudinal bands (9, 10) and each formed with a respective pair of transverse fold lines (13) designed to define the lateral walls (14) and said front and rear walls (15) of said two box-like end sections (18, 19).

4. Foot according to claim 3, characterized in that one of said two longitudinal bands (9, 10) is provided with a pair of transverse fold lines (16) defining a pair of terminal wings (17) each designed to form a fourth wing overlapping said three overlapped wings (15) of the front wall of one respective box-like end section (18, 19).

Fig. 1

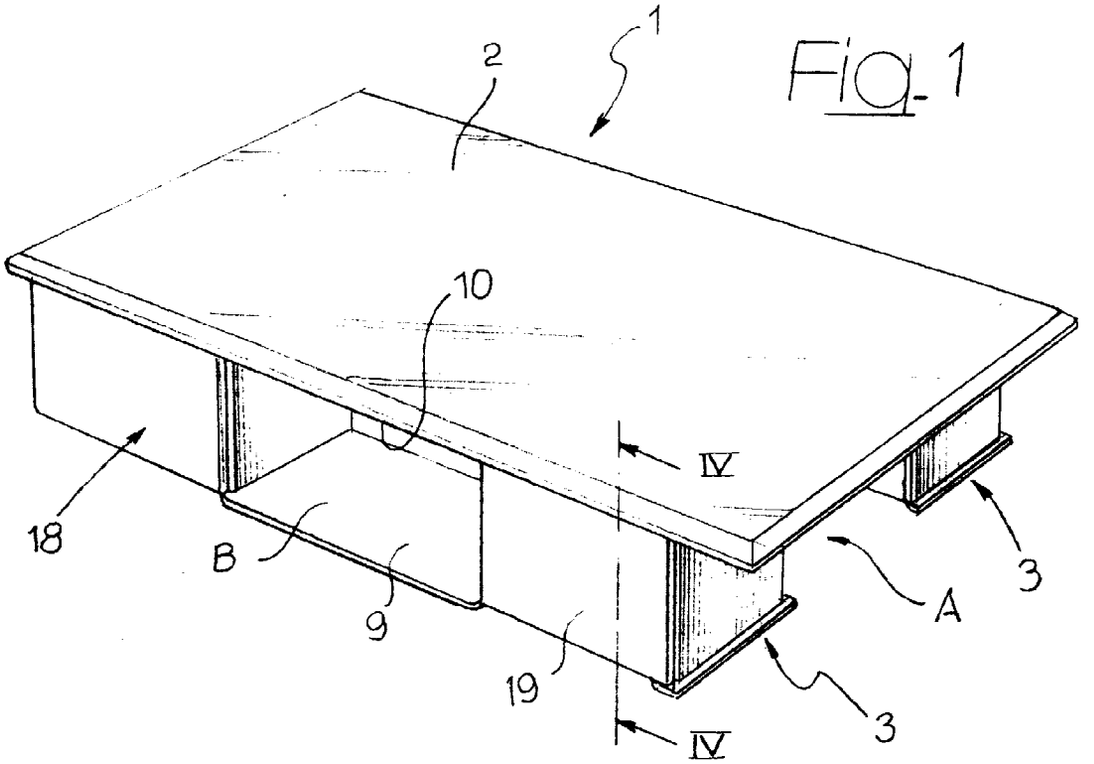
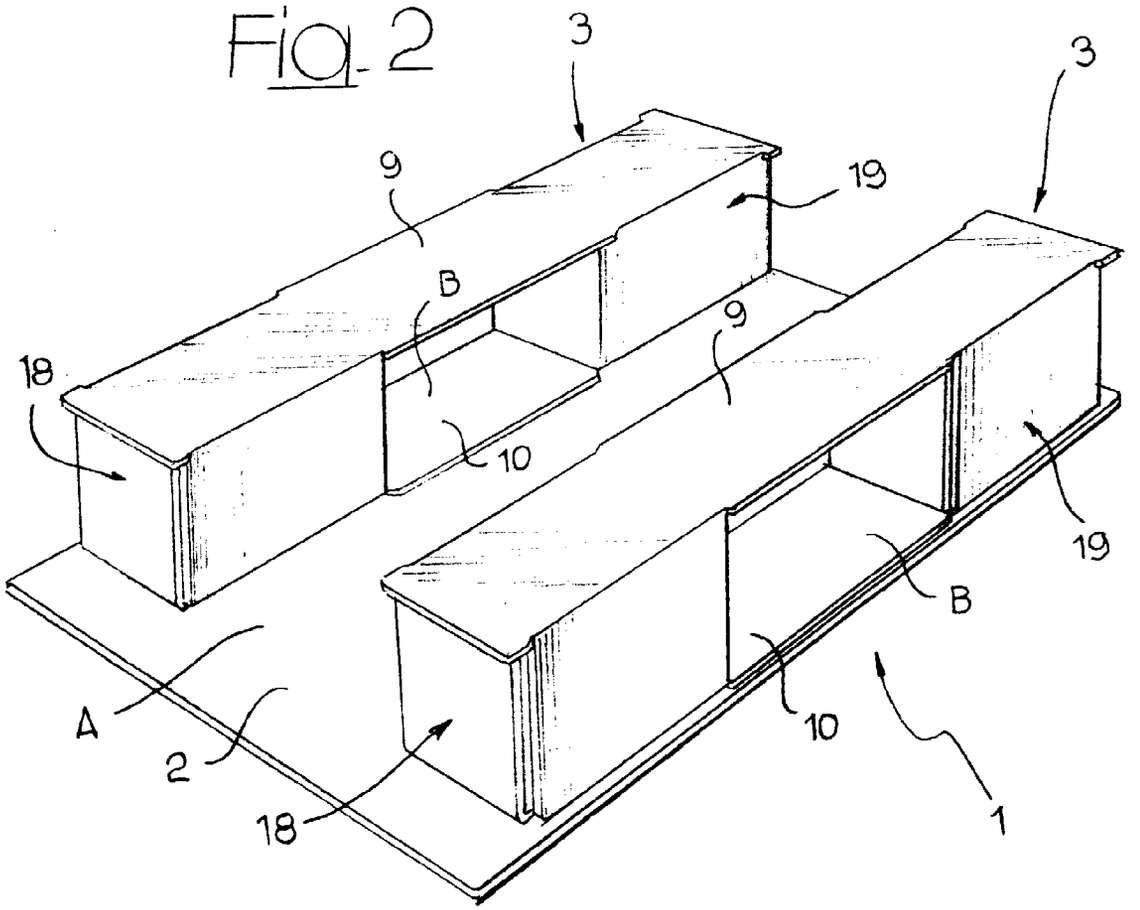


Fig. 2



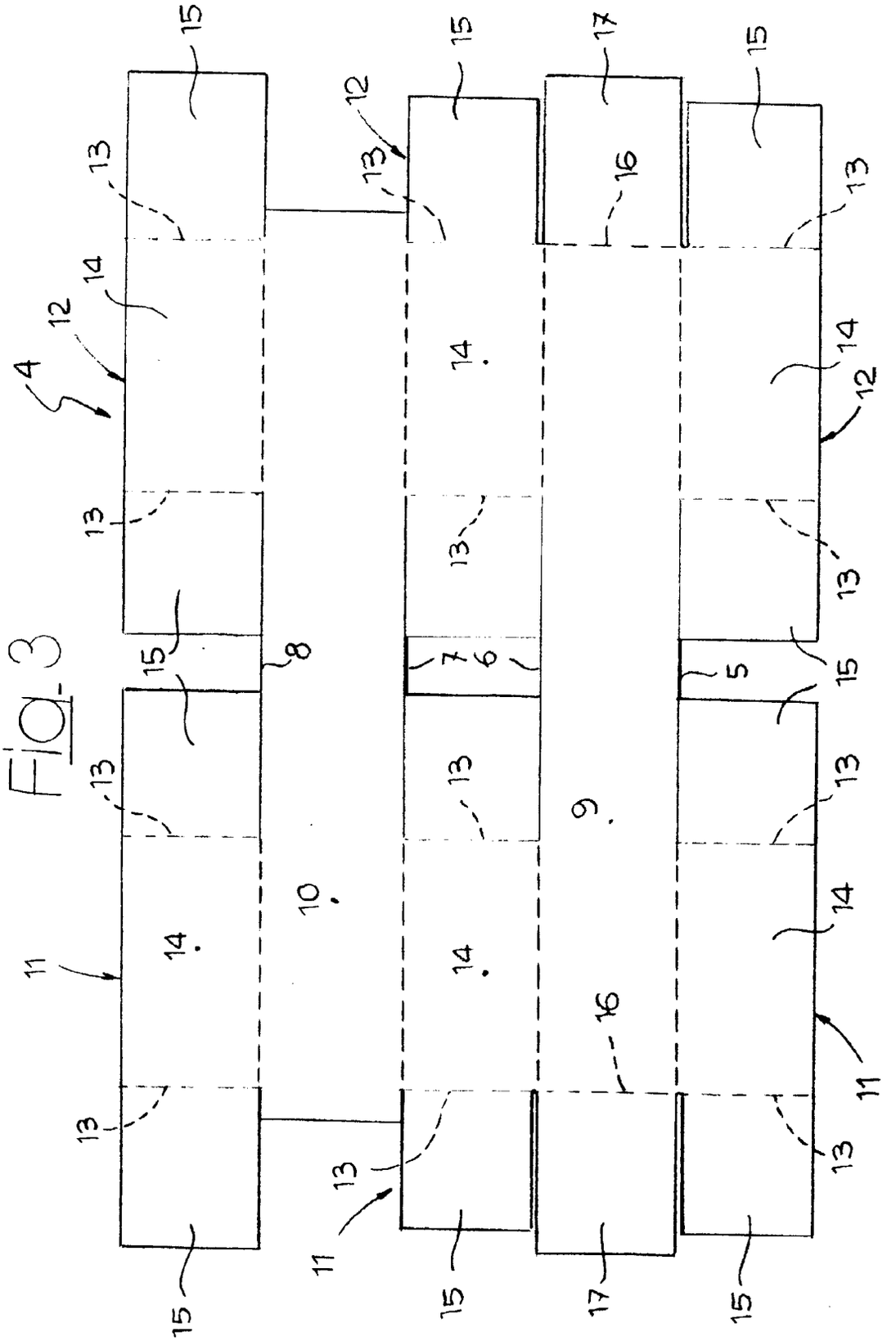


FIG. 3

Fig. 4

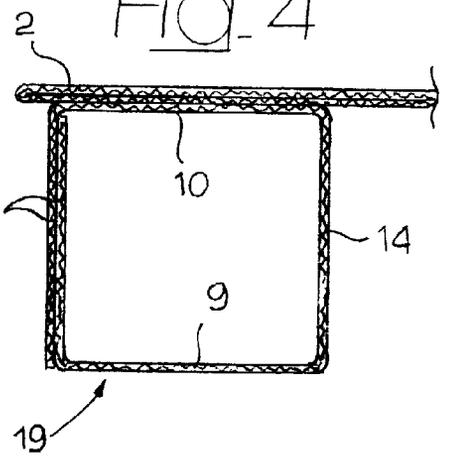


Fig. 5

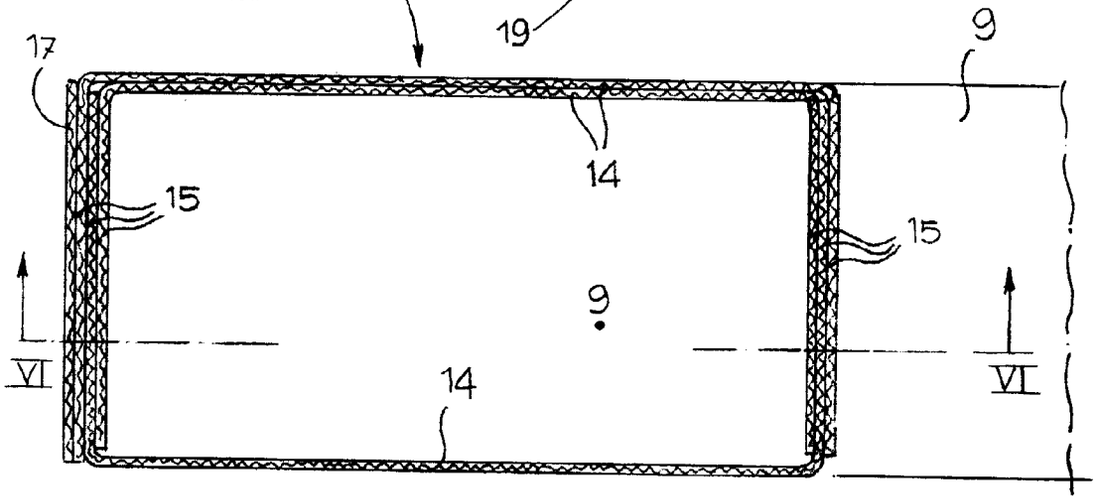


Fig. 6