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EUROPEAN PATENT APPLICATION

21 Application number: **88300141.4**

51 Int. Cl.4: **B 65 D 5/50**

22 Date of filing: **08.01.88**

30 Priority: **08.01.87 GB 8700358**
03.03.87 GB 8704964

43 Date of publication of application:
13.07.88 Bulletin 88/28

64 Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

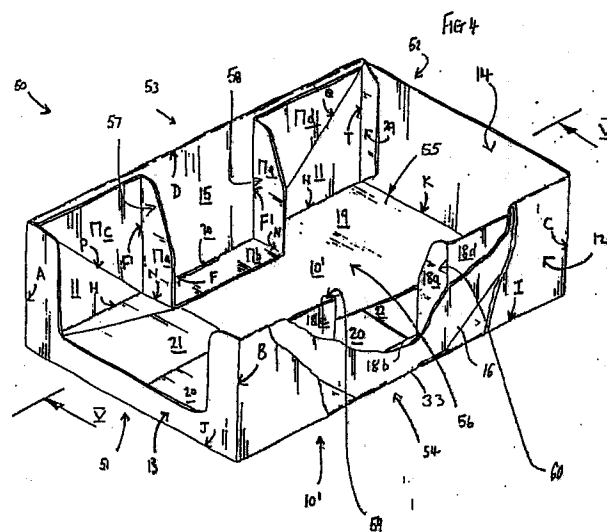
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54 **A carton.**

57 The carton is erected from a blank sheet of material and comprises a base and spaced sides on the base. A plurality of article support members is provided, which support members are formed either by bending them out of an inner side wall or by bending of a panel adjacent the inner side wall. The support members extend for approximately the full height of the side wall.



Description

A CARTON

This invention relates to a carton and is particularly, but not exclusively, concerned with a carton which may be used to store and display products packaged in sachets.

A wide variety of products, such as soup and cake mixes are sold in a shop in rectangular plastic or paper sachets. Conventionally, the sachets are displayed on a shelf in the shop in an open display container such as a carton, box, or tray hereinafter referred to as "a carton". The carton may be made especially for display purposes or, commonly, may be formed from the lower half of the container in which the products were delivered to the shop. Conventional cartons have the disadvantage that as sachets are removed from the carton any remaining sachets tend to slip and lie flat or at a shallow angle on the base of the carton. In that position, they may become obscured from the view of the consumer.

It is known to provide a carton with an internal member on its base which defines support members in the form of small projections against which sachets rest. However, the use of such members is not entirely successful and it is an object of the present invention to provide a carton which mitigates the disadvantages of conventional cartons.

According to the invention there is provided a carton erected from a blank of sheet of material, the carton comprising a base and spaced sides on the base, and an article support member extending into a space defined by the base and sides, the article support member being formed by a carton portion, which is on or adjacent one said side and which is inclined away from the plane of the side.

By providing an article support member which is on or adjacent the side and inclined away from the plane of the side improved support for the article is obtained.

Preferably each side of the carton is formed by adjacent inner and outer panels, the inner panel preferably being connected to an adjacent panel a portion of which is preferably connected to the support member. Such side members provide a double skinned side wall and, in such a case, said portion of the adjacent panel in the erected carton may overlie the base of the carton.

The said portion of the adjacent panel may be connected to the support member by a fold line for example extending at right angles to the side of the carton.

To provide optimum support the article support member may extend upwardly for substantially the full height of said one side. Preferably the support member extends upwardly from said portion of the adjacent panel to a position adjacent an upper edge of the side.

In one embodiment an intermediate gusset portion is connected to the inner side panel of the carton through a first fold line, the support member being formed by a further portion of the adjacent panel connected to the intermediate portion through a second fold line.

According to another aspect of the invention there is provided a carton erected from a blank sheet of material, the carton comprising a base and spaced sides on the base, and an article support member extending into a space defined by the base and sides, the article support member being formed by a carton portion, which is adjacent one said side and which is inclined away from the plane of the side the one side of carton including a panel having an adjacent panel connected thereto which includes a portion which forms the support member.

The side may be formed by said inner and outer side panels and the aforesaid intermediate gusset portion may be connected to the inner side panel of the carton through a first fold line, the support member being formed by a further portion of the adjacent panel connected to the intermediate portion through a second fold line.

The intermediate gusset portion may be triangular, e.g. a right, angled triangle having opposite angles of, say 45°.

The article support member portion may be substantially rectangular and parallel to the inner and outer side panels in the blank.

The adjacent panel may further comprise a second portion adjoining the article support portion and co-linear therewith in the blank for location on the base in the erected carton. The first and second portions may be interconnected through a fold line, which is preferably at 90° to the side of carton.

An article support member may be provided on another side of the carton, preferably on the opposite side and more preferably in a position corresponding to that of the first article support member.

Each side of the carton may have a plurality of article support members. In the preferred embodiment a secondary inner side panel has a pair of article support member portions. In this case, the article support member portions may be interconnected by a common second portion. This is an extremely advantageous form of the invention because the carton can be efficiently erected from a single basic blank. The intermediate portions can be made to lie flat against the side of the carton, which provides support for the respective article support portions through the respective fold line therebetween.

In another embodiment the support member is formed by a portion of the a panel forming one of the carton sides and which is folded out of the plane, of the inner side panel.

According to a further aspect of the invention there is provided a carton erected from a blank of sheet material, the carton comprising a base and spaced sides on the base, and an article support member extending into a space defined by the base and sides, the article support member being formed by a portion of a panel forming one said side and which is folded out of the plane, of the said one side panel.

Preferably each side of the carton is formed by inner and outer panels, each inner panel preferably being connected to an adjacent panel a portion of which is preferably connected to the support member.

Preferably, the portion of the adjacent panel connected to the support member is triangular.

In said further aspect of the invention, a plurality of support members may be provided on said one side.

The article support member may be formed from the inner side panel.

Where the aforesaid adjacent panel is provided on the inner panel, the said portion of the adjacent panel may be connected to the support member by a fold line which extends at 45° to a fold line interconnecting the inner panel and the adjacent panel.

The carton according to any of the immediately preceding paragraphs may include one or more end panels and where inner and outer side panels are provided, the or each end panel may be secured by gusset means to the sides, the gusset means lying between the inner and outside panels. Alternatively the or each end panel may include flaps which are secured to the inner face of each outer panel.

According to yet another aspect of the invention there is provided a blank of sheet material for forming a carton according to any of the immediately preceding paragraphs.

According to a still further aspect of the invention there is provided a blank of sheet material which includes interconnected panels which form a base and side panels, one side panel being connected to a support member which the erected carton is on or adjacent said side and which is inclined inwardly away from the plane of the side.

The side panel is preferably connected to an adjacent panel which includes a portion connected to the support member.

The side panel may comprise in the erected carton an inner of two inner and outer side panels.

The adjacent panel may include a portion defining said support member and a portion which, in the erected carton, is connected to the support member and overlies the base panel.

The side panel may be formed with a cut which enables the support member to fold out of the plane of the side panel into said inclined position during erection of the carton.

The carton blank may comprise two side panels spaced apart by a panel which forms an end panel in the erected carton. Said end panel may be secured to the sides by gusset means which lie between the inner and outer panels in the erected carton.

Alternatively the or each end panel may include flaps which are adhered to the inner surface of each outer side wall panel in the erected carton.

A further end panel may be provided on the blank which may also be secured to the sides by gusset means or flaps in the erected carton.

Cartons in accordance with the invention will now be described by way of example only, with reference to the accompanying drawings, in which:

Fig.1 is a plan view of a blank for forming the carton;

Fig.2 is a perspective view showing the carton in a first partially-erected state with part of one side wall removed for clarity;

Fig.3 is a perspective view showing the carton in a subsequent partially-erected state with one inner side wall opened outwardly for clarity;

Fig.4 is a perspective view of the carton erected with part of one of the side walls broken away for clarity;

Fig.5 is a section of the carton on line V-V in Fig.4 in which sachets are disposed in the carton;

Fig.6 is a plan view of an alternative type of blank for forming the carton;

Fig.7 is a view similar to Fig.4 showing the blank of Fig.6 erected;

Fig.8 is a plan view of a blank for forming another type of carton in accordance with the invention;

Fig.9 is a perspective view of the erected carton of Fig.8;

Fig.10 is an enlarged perspective view of a part of the carton shown in Fig.9;

Fig.11 is a cross-section of the carton part in Fig.10 on line XI-XI in Fig.10; and

Fig.12 is an elevation of the carton shown in Fig.9 showing the position of sachets therein.

The blank 10 shown in Fig.1 comprises first and second identical, rectangular outer side panels 11, 12 connected at their adjacent ends through fold lines A and B with a first end panel 13. A second end panel 14 of the same length as the first end panel 13, is connected through a fold line C to the opposite end of the second outer side panel 12 to that attached to the first end panel 13. The first end panel has a cut-away portion for access to and viewing of the interior of the erect carton.

The first outer side panel 11 is foldably connected at one side with a trapezium-shaped first, primary, inner side panel 15 through fold line D. Similarly, the second outer side panel 12 is foldably connected at the same side as the first outer side panel with a trapezium-shaped second, primary inner side panel 16 through a fold line E.

The first and second primary, inner side panels 15, 16 are each foldably connected with a secondary inner side panel 17, 18 (constituting said "adjacent panel") along a respective fold line F, G. The pairs of fold lines, D, F and E, G between the respective outer side panels, 11, 12 and the primary inner side panels 15, 16 and the secondary inner side panels 17, 18 and the primary inner side panels 15, 16 are parallel.

The first and second outer side panels 11, 12 on their sides opposite to the primary inner side panels 15, 16 are each joined to an identical first locking panel 19, 20 through a respective fold line H, I; also, the first and second end panels 21, 22 through a respective fold J, K. All the fold lines H, I, J, K, between the side and end panels and the locking panels are co-linear, the fold lines A, B, C between the side and end panels themselves being at 90° to these.

The four locking panels 19, 20, 21, 22, occupying a

position at 90° to the side and end panels with the side panels facing one another and the end panels also facing one another, are interlocked in the erected carton to form a flat base of the carton (see Figs. 2 to 5), in which part of panel 19 overlies panel 22, part of panel 22 overlies panel 20, part of panel 20 overlies panel 21 and part of panel 21 overlies panel 19.

The two locking panels 19, 20 attached to the outer side panels each have a flap 23, 24 connected therewith through a respective fold line L, M. These fold lines which are oriented in the same direction at 45° to the fold lines H, I between the outer side panels 11, 12 and the locking panels 19, 20.

These flaps facilitate interlocking of the locking panels in forming the base of the erected carton.

The two locking panels 19, 20 attached to the outer side panels also include on their long sides an inset edge 25, 26 adjacent a locking portion 27, 28. In the erect carton the locking portion 27 of the first outer side panel 11 overlies the inset edge 26 of the other outer side panel 12 and the locking portion 28 of the second outer side panel 12 overlies the inset edge 25 of the first outer side panel 11, thereby assisting in interlocking the panels of the base (as seen in Fig.2).

The secondary inner side panels 17, 18 each comprise a two first portions 17a, 18a which constitute substantially rectangular, article support members and a substantially rectangular, second portion 17b, 18b therebetween. The pairs of first portions 17a, 18a forming article support members 5, 58, 59, 60 are connected with the respective middle second portion 17b, 18b through respective fold lines N, O, which are at 90° to the fold line between the respective inner and outer side panels 15, 17 and 16, 18 in the blank and 90° to the side panels 15, 16 in the erected carton. The middle second portions 17b, 18b are connected with the inner side panels 15, 16 through the respective fold lines F, G. In the erect carton, the second portions 17b, 18b lie flat on the base of the carton and are secured thereto.

The inner side panels 15, 16 are each connected with the respective first portions 17a, 18a of the secondary inner panels 17, 18 by a triangular, intermediate, gusset panel 17c, 17d, 18c, 18d. In the blank these intermediate panels adjoin each inclined edge of the inner side panels 15, 16 through a first fold line P, Q, R, S at 135° to the fold line between the respective first and second portions of secondary inner side panel 17, 18 and each respective first portion through a second fold line F', G' which is co-linear with the fold line between the respective second portion 17b, 18b and inner side panel 15, 16.

In the erect carton the inner side panel 15, 16 lies against the respective outer side panel and the triangular, intermediate portions 17c, 17d, 18c, 18d are folded onto the inner side panel so that the coterminal first portions or support members 17a, 18a occupy a vertical position, with the second fold line F' between the first portion and intermediate portion also being vertical and the first fold line P, Q, R, S between the respective intermediate portion and inner side panel 15, 16 being at 45° to the

second fold line, as best shown in Fig.4. The article support members 17a, 18a extend from the second portions 17b, 18b to a position adjacent the upper edge of the sides defined by fold lines D, E.

Further features will be mentioned as follows. A flap 29 is glued to the opposite end of the first outer side wall 11 to the second end panel 14 through a fold line T. Slits 30, 31 are cut out of locking panels 19, 20 of the outer side walls 11, 12 adjacent the respective fold lines H, I therebetween to facilitate retention of the side panels 15, 16 in the erect position, panels 32, 33 being formed on the respective middle portions 17b, 18b of the secondary inner side panels 17, 18 adjacent the fold line F, G for location in the respective slits 30, 32 as shown at 33 in Fig.4.

The carton is intended for erection by machine although, of course, it could be erected manually. For the purposes of erection, the flap 29 is glued to the panel 14 and the panels 23, 24 are glued to the undersides of panels 21, 22 respectively with the fold lines L, M extending at 45° to the fold lines J, K respectively. The blank can then be folded substantially flat about fold lines A, C so that the panel 12, 13 overlies part of panel 11 and panel 12 overlies panel 14 and the rest of panel 11. In that position the panels 19, 20 are folded upwardly about lines H, I into a position between the above overlying panels. The upward folding of panels 19, 20 folds panels 23, 24 about lines L, M whereby panels 21, 22 also fold upwardly about lines J, K in a manner similar to panels 19, 20.

The first stage of erection involves opening the blank into a rectangular configuration as in Fig.2. In Figs. 2 to 5 the carton comprises a pair of spaced parallel ends 51, 52 joined by a pair of spaced, parallel sides 53, 54 and a base 55 defining the interior of the carton therebetween in which articles may be stored and displayed. The two ends 51, 52 are each formed by an aforementioned first and second end panels 13, 14. The two sides 53, 54 are each formed by the adjoining primary inner and outer side panels 11, 15 and 12, 16 respectively, the inner side panels 15, 16 being folded downwardly at the fold line D, E with the outer side panel over the inside surface of the outer side panels 11, 12.

The next stage of erection involves folding the side panels 15, 16 inwardly about fold lines D, E (panel 15 being shown folded in that manner in Fig.3) and folding the panels 17c, 17d and 18c, 18d slightly upwardly about fold lines P, Q and R, S respectively.

The final stage of erection involves moving the panels 15, 16 into the Fig.4 position so that they lie against the inside surfaces of the respective adjacent outer side panels 11, 12. Simultaneously, the two intermediate gusset portions 17c, 17d, 18c, 18d, on each side of the carton fold towards the respective primary inner side panels 15, 16 about the diagonal fold lines P, Q, R, S, the two respective first portions 17a, 18a of the secondary inner side panels folding away from panels 15, 16 about fold lines F', G'. This causes the first portions defining article support members indicated at 57, 58, 59, 60 to move into an upright position with the four folds F', G' disposed against the primary inner side panel 15, 16.

these four folds F', G' are now at 45° to the respective fold line between the intermediate gusset portion 17c, 17d, 18c, 18d and primary inner side panel 15, 16 and the four portions 17a, 18a are perpendicular to the respective adjacent side 53, 54 of the carton, the second portions 17b, 18b lying on the base 55 of the carton 50. Since the construction of both sides of the carton is the same, the two article support members 57, 58 on the first side 53 of the carton are in corresponding positions to those 59, 60 on the opposite side 54 of the carton. As the panels 15, 16 reach the Fig.4 position, the panels 32, 33 snap into slits 30, 31 to retain the panels 15, 16 in position. The article support members 57, 58, 59, 60 extend from the second portions 17b 18b to a position adjacent the upper edge of the sides defined by fold lines D, E.

It will be appreciated that assembly of the carton can be achieved extremely efficiently, which is especially advantageous in mass production.

The erected carton 50 is shown in use in Fig.5, storing and displaying in the interior 56 five sachets 61 containing product. The sachets 61 are supported in a substantially upright or slightly tilted position between the two adjacent forward and rearward article support members 57, 58 or 59, 60 on each side of the carton between an article support member 57, 59, 58, 60 and the adjacent end 51, 52 of the carton. When sachets are removed from the carton the remaining sachets are supported by the adjacent support member or members 57, 58 or 59, 60 to prevent them from slipping and lying flat or at a shallow angle on the base 55 of the carton.

Reference will now be made to Figs. 6 and 7 in which components corresponding to components in Figs.1 to 5 carry the same reference numerals and are not described in detail.

In Fig.6 the outer side panels 11, 12 are contained through fold lines H, I to opposite edges of a rectangular one-piece base panel 80, and the first and second end panels 13, 14 are connected through fold lines J, K to the other opposite edges of the base panel 80. The first end panel 13 has end flaps 81, 82 and the second end panel 14 has end flaps 83, 84.

To erect the carton, the end flaps 81-84 have glue applied thereto and are folded upwardly into positions at right angles to their end panels. the end and side panels 11-14 are then folded upwardly at right angles to the base as shown in Fig.7 and the end flaps 81, 83 are glued to the adjacent inside surfaces of side panel 11 and the end flaps 82, 84 are glued to the adjacent inside surfaces of side panel 12.

The first and second primary end panels 15, 16 and the panels 17, 17a, 17b, 17c, 17d and 18, 18a, 18c, 18d are then folded as described with respect to Figs.3 and 5 to form the erected carton as shown in Fig.7.

The end flaps 81-84 are preferably formed such that in the erected carton they are not sandwiched between the side walls 11, 12 and the adjacent primary inner side panels 15, 16.

Sachets containing product are shown in the Fig.7 carton in the manner discussed with respect to Fig.5.

Reference is now made to Figs. 8 to 12.

The blank shown in Fig.8 comprises a base panel 112 which is foldably interconnected with end panels 114 and 116 through fold lines M and N respectively. The base panel 112 is also foldably interconnected with outer side panels 118 and 120 through fold lines P and Q respectively. Slots 130 and 131 are defined on fold line P and Q respectively. The outer panel 118 is interconnected with end panel 114 by a conventionally folding gusset 122, and with end panel 116 by a similar gusset 124. The other panel 120 is interconnected with the end panels 114 and 116 by corresponding gussets 126 and 128 respectively.

The outer side panel 118 is foldably interconnected with an inner side panel 132 through fold line R. The inner side panel 132 is foldably interconnected with an adjacent panel 134 through a fold line S, parallel with the fold line R. Tabs 136 are formed on fold line S, and co-operate with the slots 130 on fold line D in the erected carton.

The opposite outer side panel 120 is foldably interconnected with an inner side panel 133 through fold line T. The inner panel 133 is foldably interconnected with an adjacent panel 135 through a fold line U. Tabs 137 are formed on fold line U and co-operate with slots 131 on fold line Q in the erected carton.

Flaps 140, 142 and 144, which form the aforementioned article support members in the erected carton, comprise a rectangular first portion 140a, 142a and 144a, formed in panel 132, and a triangular second portion 140b, 142b and 144b formed in panel 134, which first and second portions are interconnected through segments of fold line S. The first portions 140a, 142a and 144a are defined by folds 140c, 142c and 144c extending at right angles from fold line S; cuts 140d, 142d, and 144d, parallel to the folds 140c, 142c and 144c; and by cuts 140e, 142e and 144e, parallel with fold line S, connecting the folds 140c, 142c and 144c and the cuts 140d, 142d, 144d.

The second portions 140b, 142b and 144b are defined by the above mentioned segments of fold line S; cuts 140d, 142d and 144d; and by folds 140f, 142f and 144f extending at 45° to fold line S to ends of cuts 140d, 142d and 144d respectively.

Flaps 141, 143 and 145 are formed in a corresponding manner in the opposite panels 133 and 135 and comprise first portions 141a, 143a and 145a; and second portions 141b, 143b and 145b respectively.

The carton erected from the blank, shown in Figs.9 and 10, 11 and 12 comprises the base panel 112 and spaced sides 154, 156, 158 and 160 which define a space 153 therebetween in which articles may be stored and displayed. The sides 154 and 156 are formed by the panels 114 and 116 respectively. The sides 158 and 160 are formed by inner and outer panels 132, 118 and 133, 120 respectively.

Tabs 136 and 137 are retained in slots 130 and 131 respectively to keep the sides 158 and 160 vertical with respect to the base panel 112 and to keep the panels 134 and 135 flat on the base panel 112. Sides 158 and 160 are provided with article support members 140, 142, 144; and 141, 143 and 145

respectively.

Article support member 142, which is shown in detail in Figs.10 and 11 will now be described in detail, the other support members 140, 141, 143, 144 and 145 having corresponding features. Support member 142 comprises the rectangular first portion 142a and the foldably interconnected triangular second portion 142b. The first portion 142a extends, at right angles to the side 158 and base 112, into the space 153 for articles. The second portion 142b overlies the base panel 132.

To erect the carton from the blank, side panels 114, 116, 118 and 120 are folded upwardly about fold lines M, N, P and Q to bring them upright with respect to base panel 112. Simultaneously, gussets 122, 124, 126 and 128 are folded inwardly to lie flat against panel 118. Panels 132 and 133 are then folded into the Fig.1 position about fold lines R and T so that gussets 122, 124, and 126, 128 are sandwiched between the panels 118, 122 and 120, 123 respectively. As panels 132 and 133 are folded in that way, panels 134 and 135 are folded on fold lines S and U until they extend at right angles to panel 132. Simultaneously, the support members 140, 142, 144 and 141, 143, 145 are formed. In the case of support member 142, its second portion 142b is folded out of the plane of panel 134 towards the space 153 on the previously mentioned segment of fold line S, so that it overlies panel 134 and base panel 112 as shown in Figs.9, 10 and 11. This folding action causes the first portion 142a of the support member 142, simultaneously to fold on fold line 142c out of the plane of panel 132 thereby bringing it into a position substantially at right angles to panels 118 and 132. Finally, the panels 136 are located into the slots 130 to hold the carton in erected form.

The erected carton is shown in use in Fig.12 storing and displaying in the area 153 four sachets 170 containing product. The sachets are supported in a substantially upright position by adjacent forward and rearward article support members 143 and 145 respectively. As sachets are removed from the carton, the remaining sachets are supported by the adjacent rearward and forward support members 143, 145 to prevent them from slipping and lying flat, or or at a shallow angle, on the base 112 of the carton.

Claims

1. A carton erected from a blank of sheet material, the carton comprising a base and spaced sides on the base, and an article support member extending into a space defined by the base and sides, characterised in that the article support member is formed by a carton portion, which is on or adjacent one said side and which is inclined away from the plane of the side.

2. A carton according to Claim 1 characterised in that each side of the carton is formed by adjacent inner and outer panels, the inner panel being connected to an adjacent panel a

portion of which is connected to the support member.

3. A carton according to Claim 2 characterised in that said portion of the adjacent panel in the erected carton overlies the base of the carton.

4. A carton according to Claim 2 or 3 characterised in that the said portion of the adjacent panel is connected to the support member by a fold line extending at right angles to the side of the carton.

5. A carton according to any of Claims 2 to 4 characterised in that the support member extends upwardly from said portion of the adjacent panel to a position adjacent on upper edge of the side.

6. A carton according to any of Claims 2 to 5 characterised in that an intermediate gusset portion is connected to the inner side panel of the carton through a first fold line, the support member being formed by a further portion of the adjacent panel connected to the intermediate portion through a second fold line.

7. A carton according to Claim 6 characterised in that the intermediate gusset portion is triangular.

8. A carton according to Claim 6 or 7 characterised in that a second intermediate portion is provided connected to the inner side panel by another first fold line, a further support member being formed by another portion of the adjacent panel connected to the second intermediate portion by another second fold line.

9. A carton according to Claim 6, 7 or 8 characterised in that the or each said intermediate portion is folded against the inner side panel with its support member folded about the associated second fold line so as to be inclined to said inner side panel.

10. A carton according to any of Claims 2 to 5 characterised in that the support member is formed by a portion of the inner side panel which is folded out of the plane of the inner side panel.

11. A carton according to Claim 10 in which the portion of the adjacent panel connected to the support member is triangular.

12. A carton according to Claim 10 or 11 in which a plurality of support members is provided on said one side.

13. A carton according to any preceding Claim characterised in that the construction of the other side of the carton is substantially a mirror image of the construction of said one side whereby support members are provided on both sides of the carton.

14. A carton blank for use in forming a carton according to any preceding Claim.

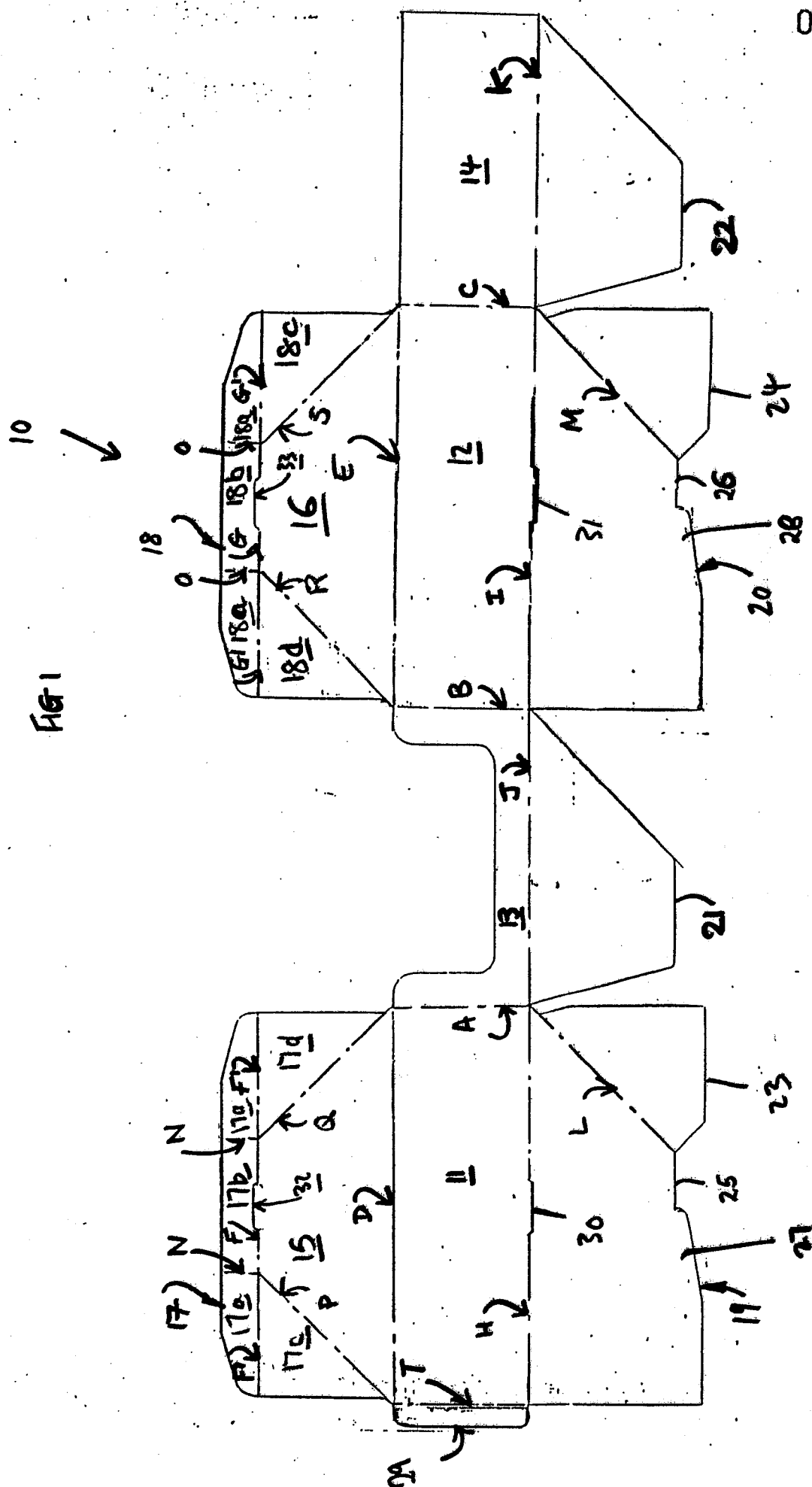


FIG 2

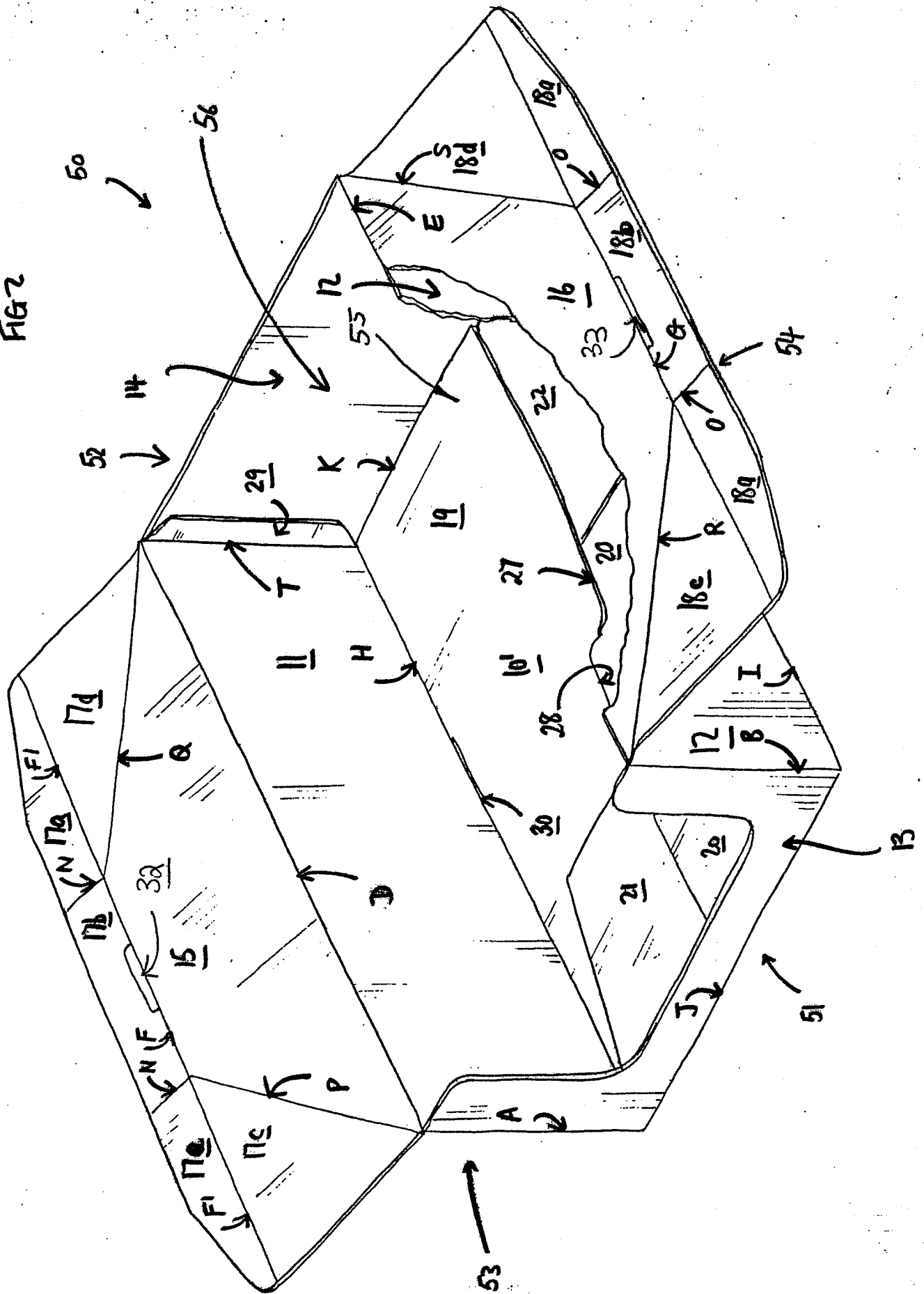


FIG 3

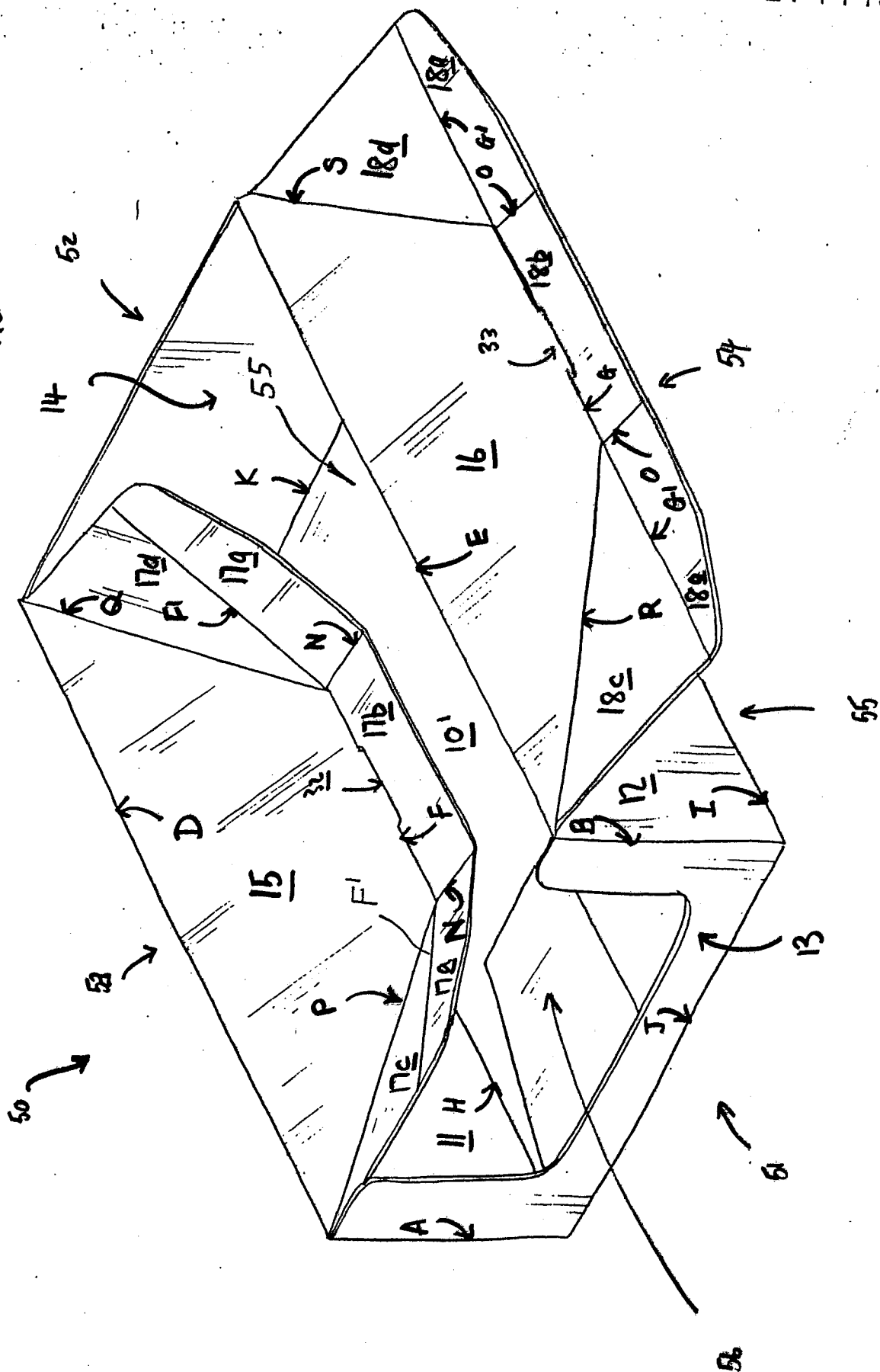


FIG 4

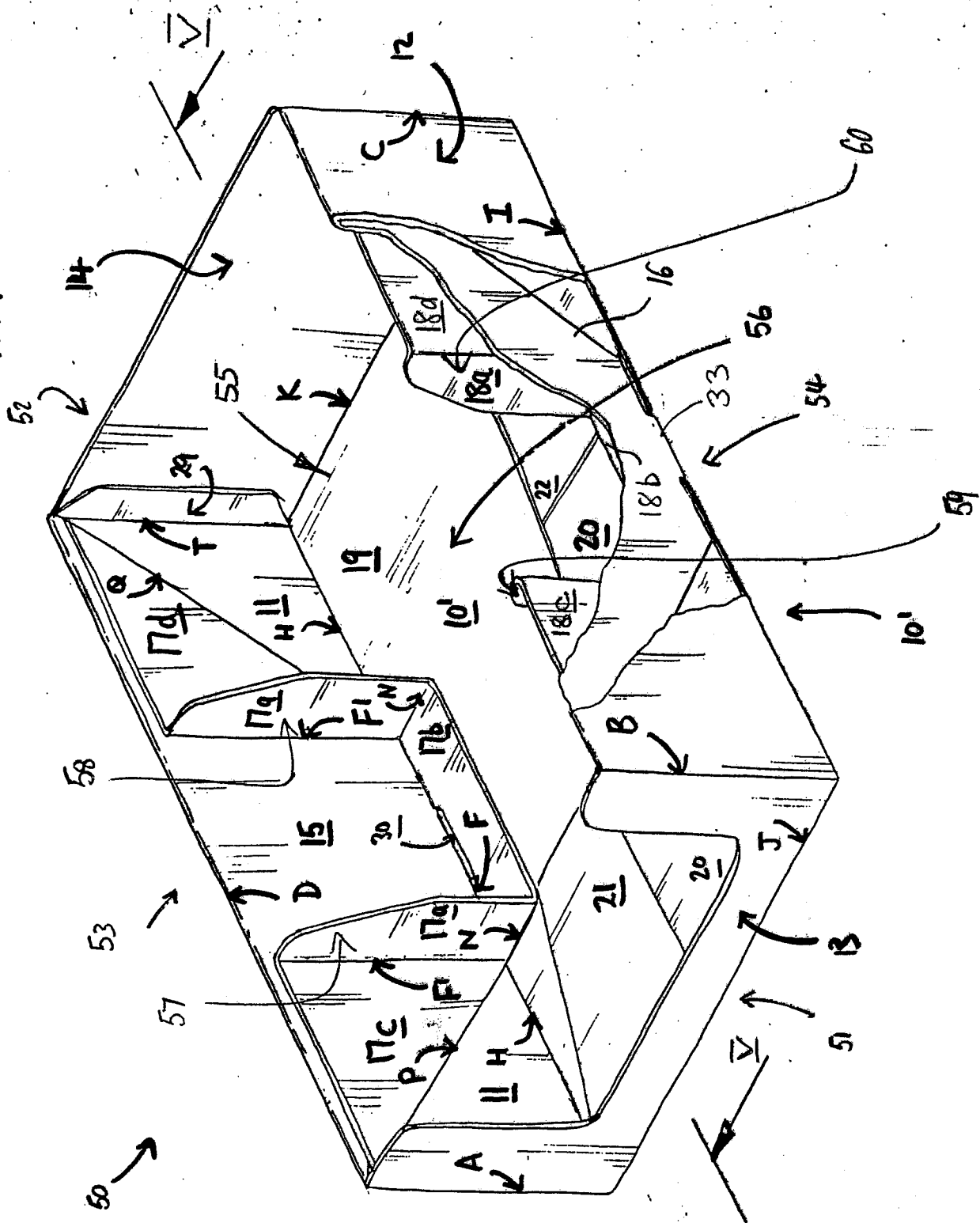
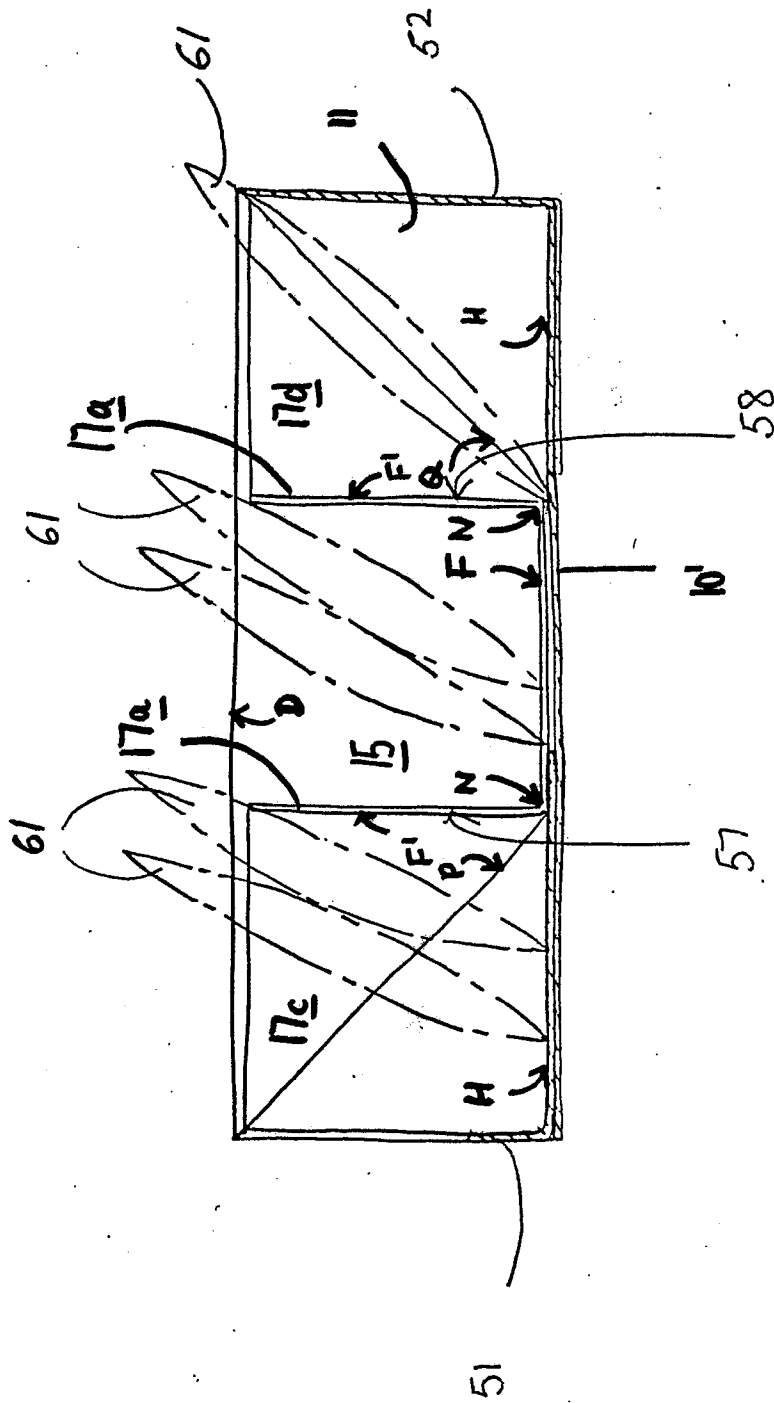


FIG 5



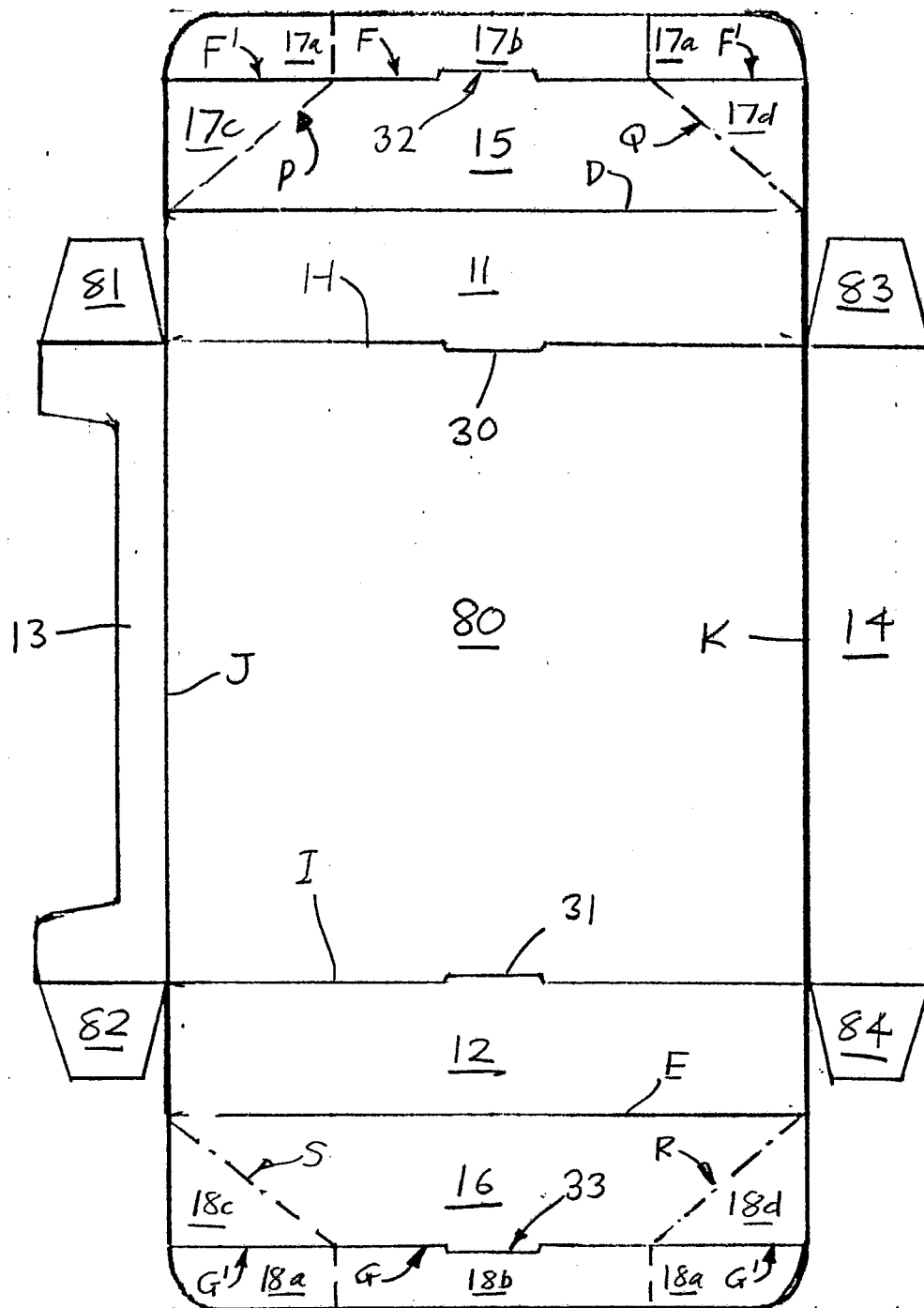


FIG 6

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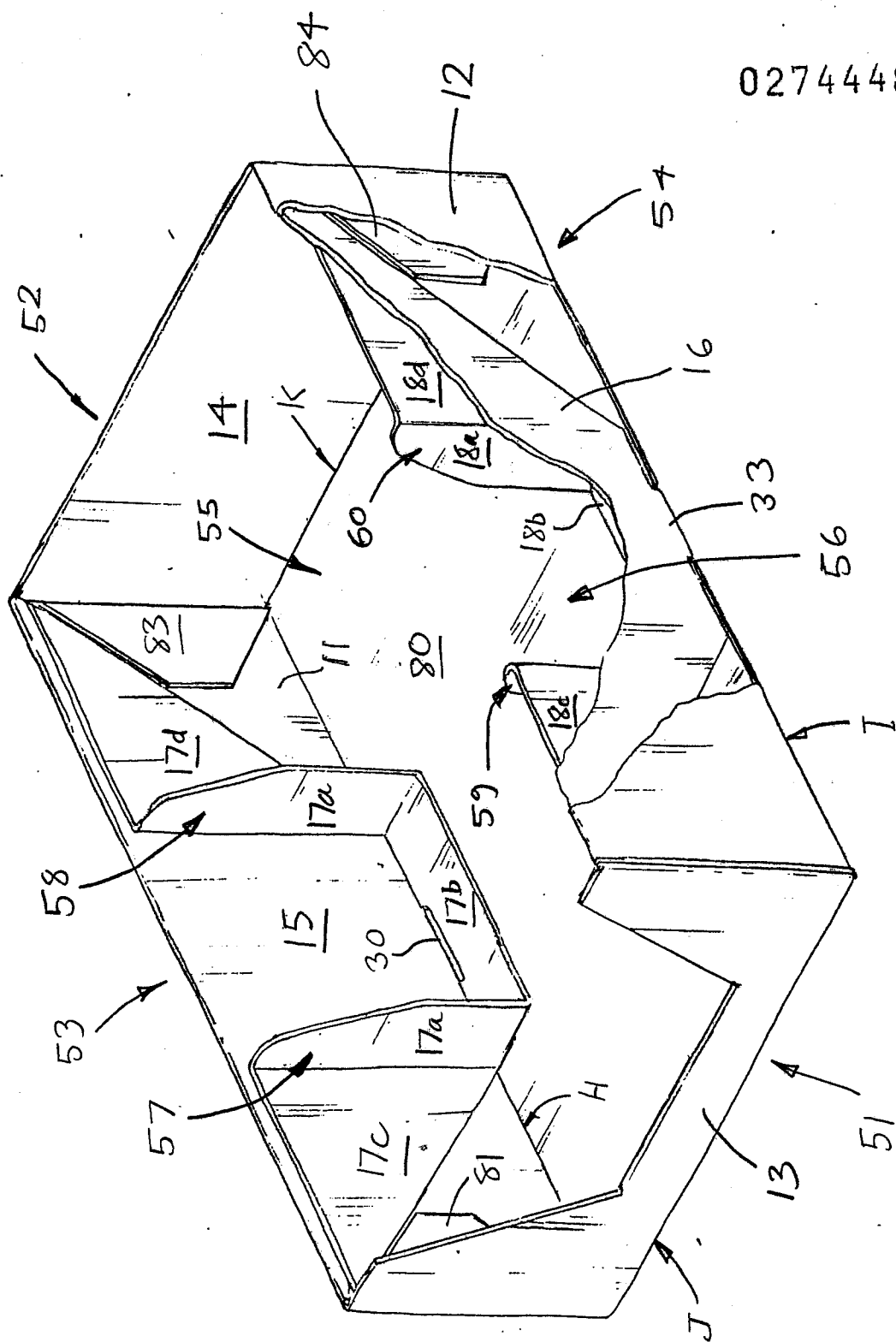
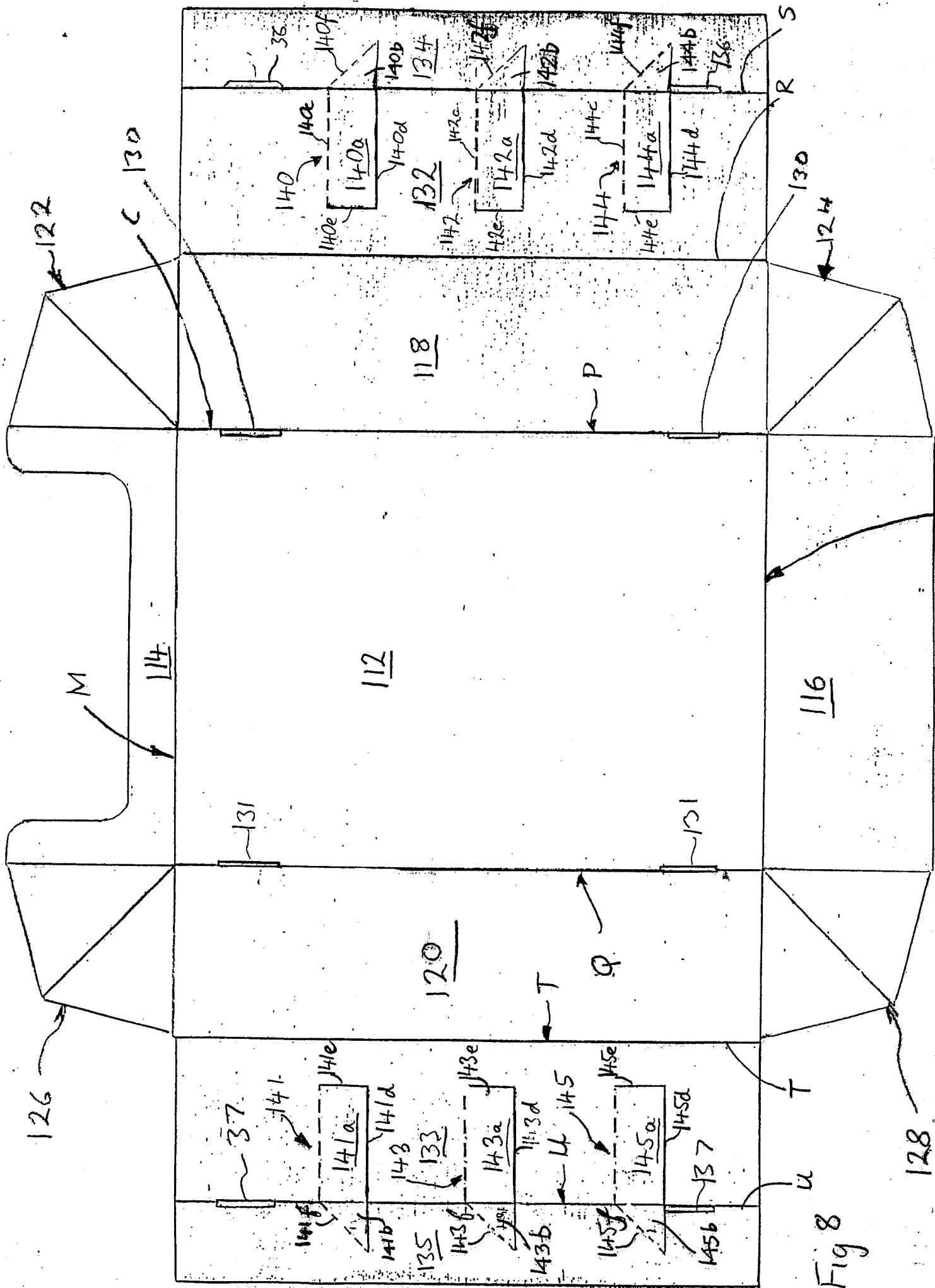


FIG 7



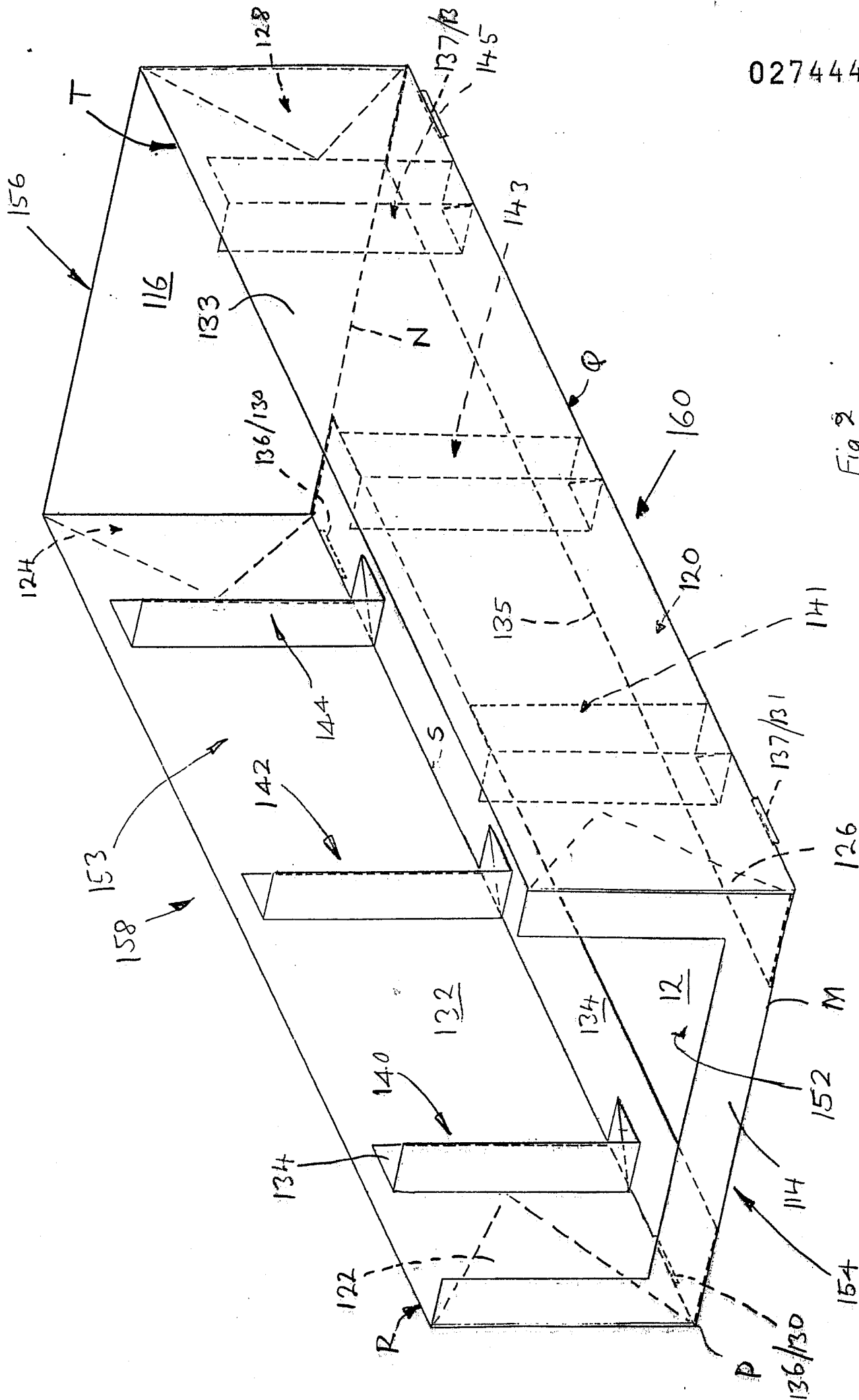
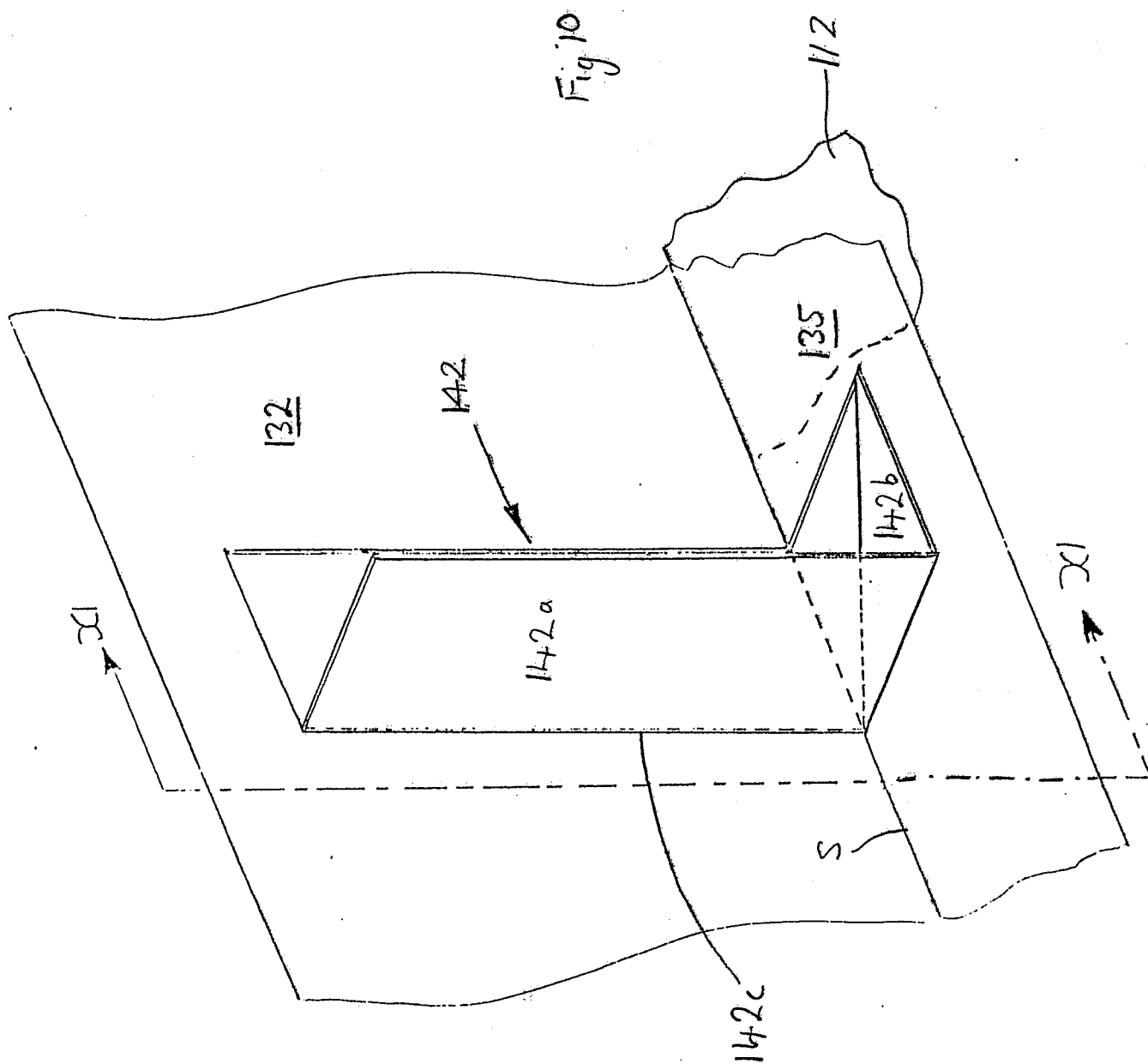


Fig 2



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158 →

18

142a

153

116

142

S

-142a

135

136/30

P

112

Fig 11

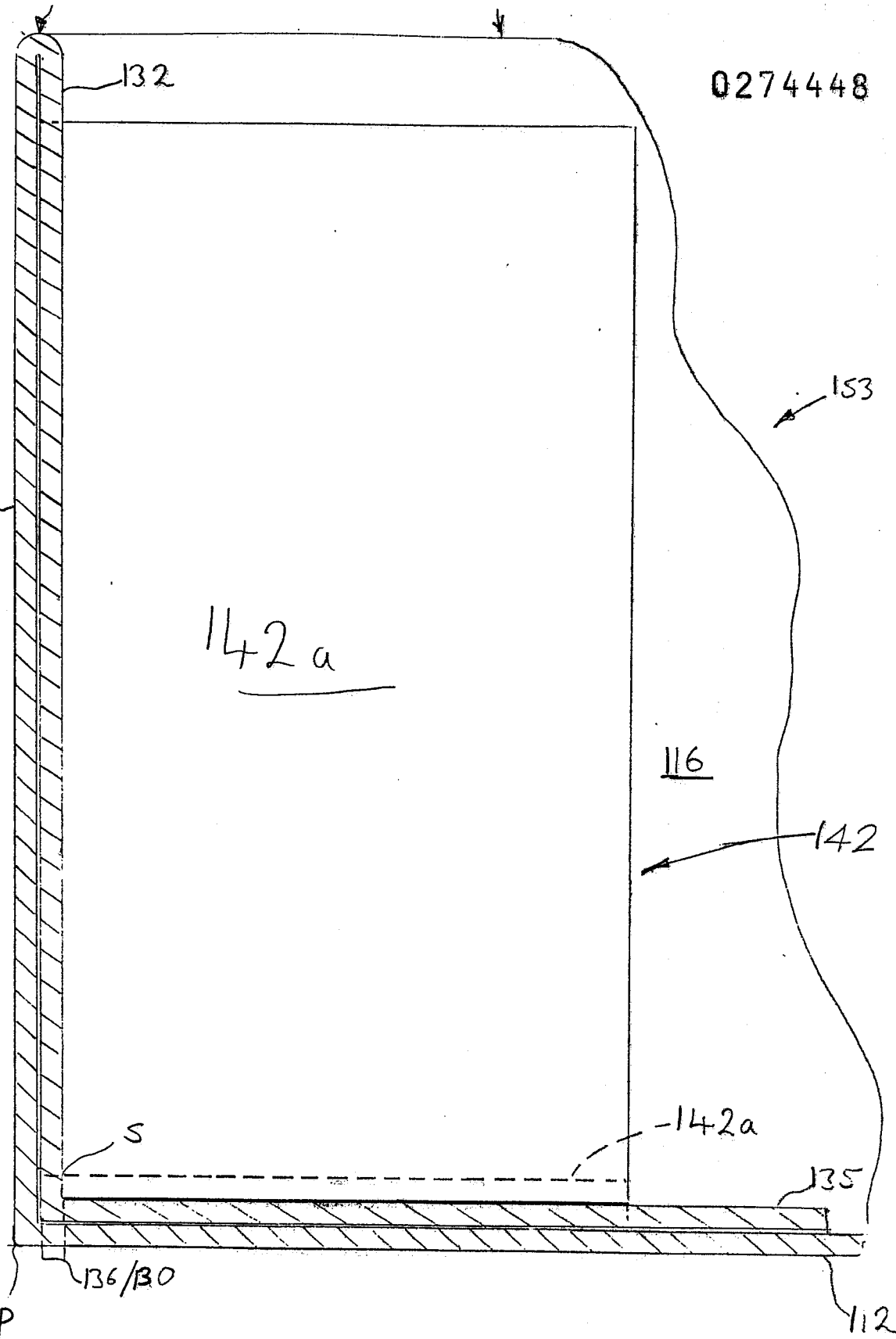


Fig. 12

