

12

EUROPEAN PATENT APPLICATION

21 Application number: 83306404.1

51 Int. Cl.³: **B 65 D 5/56**
B 65 D 5/62

22 Date of filing: 21.10.83

30 Priority: 22.10.82 NZ 202266
15.02.83 NZ 203278
12.05.83 NZ 204205
28.07.83 NZ 205072

43 Date of publication of application:
16.05.84 Bulletin 84/20

84 Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

71 Applicant: **TRI-ENGLE SYSTEMS LIMITED**
25 Pembroke Street
Hamilton(NZ)

72 Inventor: **Engle, Raphael Abraham**
12 Chilton Place
Howick Auckland(NZ)

72 Inventor: **Martin, David**
7 Kiwi Avenue
Hamilton(NZ)

72 Inventor: **Cassey, Russell Allan**
19 Ranui Street
Hamilton(NZ)

74 Representative: **Daunton, Derek**
Barlow, Gillett & Percival 94, Market Street
Manchester M1 1PJ(GB)

54 **Packaging elements and methods.**

57 A packaging element (1) formable into a container having at least a base and sides perpendicular to the base which comprises at least one layer of stiff material (3) lined on at least one side with a thin flexible material such as plastics (2,4). The thin flexible layer of material extends about the outer periphery of the stiff material and parts thereof are used as flaps to secure a container formed from the packaging element in an erected condition. Several embodiments of the packaging element are disclosed including elements formable into open containers and containers which include lids.

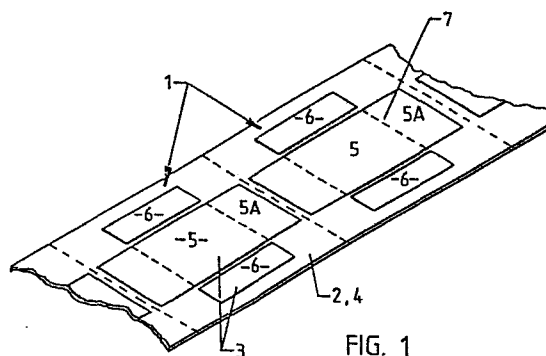


FIG. 1

-1-

PACKAGING ELEMENTS AND METHODS

This invention relates to packaging elements and methods for forming same.

Conventional packaging elements (containers) are generally not fluid impervious, and where there are requirements for liquid and/or gas-tight packaging these have been met in the main by the provision of plastics liners within the containers. If the liners do not totally enclose the contents often the contents are contaminated by contact with the container body. This is particularly so when the elements are used for packing frozen foods. In recent years attempts have been made to produce a packaging element in which a plastics or plasticised liner is formed integrally with the container body. US Patent No: 4,056,221 discloses a packaging element formable into a container which has an integrally formed plastics liner having also an external plastics layer. The liner and external plastics layer totally enclose the stiffening cardboard material and a fluid-tight but open container is formable from the packaging element. As with conventional plain cardboard containers the pre-formed cardboard portion of the element is cut from a single large blank of cardboard with subsequent wastage of materials.

It is an object of the present invention to provide a packaging element and/or container and/or a

-2-

method of forming a container.

5 According to the present invention there is
provided a packaging element for erection into
a container comprising at least one layer of
stiff material lined on at least one side with thin
flexible material said at least one layer of
stiff material being formable into a base, sides
and/or a lid for a container and said thin
flexible material forming a border about the
10 periphery of said stiff material which can be
used as flaps for securing said container
formed from the element in an erected condition
when the sides of the container are perpendicular
to the base thereof.

15 According to a further aspect of the present invention
there is provided a method of manufacturing
a packaging element as aforesaid comprising the
steps of positioning said stiff material between
two layers of plastics and heating the plastics
20 such that the plastics adheres to the stiff material,
and, where plastics to plastics contact is made,
the adjacent layers of plastics are adhered to
one another.

25 Aspects of the present invention will now be
described by way of example only with reference

-3-

to the accompanying drawings in which:

5 Figure 1: is a diagrammatic perspective view
 of a packaging element in manufacture
 and in accordance with one aspect of
 the present invention, and

Figure 2: is a diagrammatic side view of an
 apparatus for manufacturing a packaging
 element in accordance with the present
 invention, and

10 Figure 3: is a plan view of a packaging element
 in accordance with a further possible
 embodiment of the present invention, and

Figures 4,5,6, and 7: are diagrammatic perspective
15 views indicating the manner in which
 the packaging element of Figure 3 can
 be erected into a container, and

Figure 8: is a plan view of a packaging element
 in accordance with a further possible
 embodiment of the present invention, and

20 Figures 9,10 and 11: are diagrammatic perspective
 views showing the manner in which the
 packaging element of Figure 9 may be
 erected into a container, and

-4-

Figure 12: is a plan view of a packaging element in accordance with yet a further form of the present invention, and

5

Figure 13: is a plan view of the packaging element of Figure 12 with flaps thereof upright, and

Figure 14: is a perspective view of the packaging element of Figure 13, and

10

Figure 15: is a top perspective view of the container of Figures 12,13 and 14 with a lid formed from an element in accordance with the embodiment of Figures 22 and 23 of the drawings, and

15

Figure 16: is a plan view of a packaging element in accordance with yet a further possible embodiment of the present invention, and

Figure 17: is a cross-sectional drawing taken at XVII:XVII of Figure 16, and

20

Figure 18: is a plan view of a packaging element in accordance with Figure 17 with the side sections folded under and with folds formed therein, and

-5-

5 Figures 19 and 20: are explanatory cross-sectional drawings respectively of the element of Figure 10 flat and then folded about a seam of the base part thereof, and

Figure 21: is a diagrammatic view of an erected package formed from the elements of Figures 16 through to 20, and

10 Figure 22: is a diagrammatic perspective view of a packaging element in accordance with yet a further possible embodiment of the present invention, and

15 Figure 23: is a diagrammatic perspective view of the packaging element of Figure 13 having the ends folded over and folds formed therein, and

20 Figure 24: is a plan view of a packaging element in accordance with a still further possible embodiment of the present invention, and

Figure 25: is a diagrammatic partial perspective view of the packaging element of Figure 24 shown in a folded condition, and

-6-

Figures 26, 27 and 28: respectively are
diagrammatic cross-sectional and
perspective views of the packaging
element of Figures 24 and 25 folded
and then formed into a container.

5

10

15

With respect to Figures 1 of the drawings a
packaging element generally indicated by arrow 1
and according to the example illustrated
comprises a first layer 2 of plastics, a second
layer of cardboard 3, and a third layer of plastics
material 4. The plastics layers 2 and 4 are
adhered to the stiff material 3 and each other where
there is not contact with the cardboard 3. The
first and third layers 2 and 4, in plastics,
can be co-extruded film comprising a sandwich of
EVA film and LDPE film. The EVA has a low melting
point and is in contact with and adheres to the
cardboard 3 and the other plastics layer.

20

The second layer 3 of stiff material comprises a
centre section 5 and two side sections 6, and
the side sections 6 are spaced from and positioned
at equal distances from the ends of the centre section
5.

25

After manufacture the packaging element can be
formed into a container with a base and sides 6 and
ends formed from extending parts 5A of the
sections 5 (a bend in the cardboard being made
along the broken lines 7) and corners being gusseted
and sealed or otherwise joined.

-7-

As an alternative to the use of co-extruded film the plastics layers 2 and 4 can be single sheets of plastics, adhered to the stiff material by a suitable adhesive. The stiff material forming the centre and side sections may optionally be a unitary member (not shown) with sides 6 foldable about seams.

Figure 2 of the drawings illustrates an apparatus for making the packaging elements of Figure 1. The apparatus illustrated comprises a conveyor 8 positioned upstream from a pair of rollers 9 and 10, fed with plastics film 11 from a supply source indicated by arrow 12. The centre spacings of the rollers 9 and 10 can be adjustable to suit the thickness of the packaging element. Stiffening material 13 is placed on the conveyor 8, which stops, receives the stiffening material 13 and then feeds the same between the rollers 9 and 10. The rollers 9 and 10 can be heated by a fluid such as oil such that the plastics adheres to the stiffening material and the adhesive process is further assisted as it passes through pinch rollers 14 (which can be covered with a soft material such as rubber or felt material) downstream of the rollers 9 and 10 which applies pressure to the top and bottom surfaces of the packaging element as it passes between them and a rotating hot or cold knife 15 can be positioned downstream of the

- 8 -

of the rollers 14, such being designed to perforate or cut (see broken line of figure 1) the plastics material to make one element easily separable from the element following. Box-making collection and forming plant at 16 complete the process for forming the packaging elements into a container.

Where a co-extruded film as aforesaid is used the inner layer which may be EVA plastics softened during the manufacturing process and becomes, in effect, an adhesive. The conveyor 8 and the pinch rollers 14 are optional.

Figures 3 to 7 of the drawings illustrate one possible embodiment of a packaging element in accordance with the present invention, the element generally indicated by arrow 17 being formable into a container (generally indicated by arrow 18 and illustrated by Figure 7), said container having a base 19 and sides 20 and a lid section generally indicated by arrow 21. The packaging element comprises a first layer of plastics 22, a second layer of stiff material 23 and a third layer of plastics material 24, said first and third layers 22, 24 being adhered to the stiff material 23 and to one another where they overlap. A border 25, where there is surface contact between the plastics layers is provided about the periphery of the element 17. The stiff material 23 comprises a substantially rectangular base 26 with

- 9 -

flaps 27 foldable with respect to the base 26
and flaps 28 foldable with respect to the flaps 27
such folding being made about seams 29. Each of
the flaps 27 and 28 are provided with gussets 30
5 and 31 and the base 26 is provided with end sections
32, the gussets 30 and 31 and end sections 32
foldable with respect to the flaps 27 and 28
and the base 26 respectively. The gussets 30 are
of a triangular shape defined by seams 33, a long
10 side 34, and short side 35. The gussets 31 are
similarly shaped.

At one end of the packaging element 17 an additional
strip 36 of stiff material is provided such being
foldable about seams 37. In addition to the border
15 25 plastics to plastics contact between the first and
third layers is provided at triangular areas 38
void of the stiff material.

The packaging element 17 of Figure 3 can be erected
into the container 18 of Figure 7 in progressive
20 steps as is illustrated by Figures 4, 5 and 6.
The first step (see Figure 4) is to fold the end
sections 32 and the gussets 30 and 31 into an
upright position with respect to the base 26 and
flaps 27 and 28. The next step in the erection of
25 container 18 is illustrated by Figure 5 which
shows the opposed flaps 27 and 28 being folded
about seam 29 which is common with the base 26
such that gussets 30 overlap the outside end sections
32 of the element, and void areas 38A are accommodated
30 between the gussets 20 and the end sections 32.

- 10 -

5 This later step is further progressed until the
flaps 27 are perpendicular with the base 26
(see Figure 6) and at that point edges 39 of the
boarder 25 overlap and can be adhered together by
blocking, heat sealing or the like. When the sides
of the element are upright (or as part of a process
for achieving this step) an inverted "T" shaped
seal T is made binding together all adjacent
overlying plastics layers. A container ready to receive
10 articles is thus formed, and overlapping and
adjacent edges 39 have been utilised to secure the
container in its erected position. The container
19 can be filled and the ends of the top edges
extended in the direction of the arrows 40.

15 Figure 7 illustrates the manner in which the lid 21
(formed from flaps 28 and gussets 31) can be sealed
by the matching of the strip 36 to border portion
25a as the flaps 28 and gussets 31 lay flat (a natural
consequence of movement of the lid section in direction
20 of arrow 40), and finally the sealed container can
be closed by folding down the flap formed by the
joined border portion 25a and the strips 36, folding
the triangular lid ends 41 formed from gussets 31
downwards in the direction of arrow 42, and fixing
25 the lid ends to the base and/or the ends of the
container. To make it easier to form the step of
Figure 6, that is, the sealing and/or blocking
when the container is ready to receive goods (see
Figure 6) the gusset tips 43 may be trimmed off at

- 11 -

line 31a when the stiff element is fabricated,
and prior to the application of the plastics
layers 22 and 24.

5 The packaging element 17 could have its base 26,
and flaps 27 and 28 formed from separate pieces of
material in a similar manner to the element of
figure 1. By so doing material savings can be made
when the stiff material is pre-cut.

10 Figures 8 through to 11 of the drawings illustrate
one further embodiment of a packaging element in
accordance with the present invention, which is
somewhat similar to that illustrated by Figures
3 through to 7 of the drawings. For that reason
15 equivalent components are denoted by the same
numerals used with respect to the Figures 3 to 7
embodiment. The main difference between the
previously described embodiment is that the
gussets 31 of the Figures 3 to 7 embodiment do not
exist and in fact triangular gussets 44 are provided
20 which are fixed about seam 29 of gussets 30 as
shown. The strip 36 from the previous embodiment is
omitted.

25 The steps in the erection of the element of
Figure 8 into a container are identical to those
described in relation to Figures 4 and 5 of the
Figures 3 to 7 embodiment. However at the
equivalent stage to Figure 6 the overlapping edges 39

- 12 -

5 are sealed or blocked on both outer and inner edges of the container. To close off the lid the gussets 44 are drawn to the flat position as the ends of the lid section are pulled in the direction of arrow 40 and opposed border sections 25B are matched and sealed in the equivalent to the Figure 7 stage previously referred to. The end parts formed from gussets 44 can then be folded down and fixed as previously described.

10 With respect to figures 12 through to 15 of the drawings and in accordance with a further possible embodiment of the present invention there is provided a packaging element generally indicated by
15 arrow 45 comprising a first layer of plastics material 46, a second layer of stiff material 47 and a third layer of plastics material 48 wherein the plastics layers 46 and 48 are adhered to the stiff material 47 and the element 45 can be formed into a container having at least a base 49 and sides 50

20 The first and second layers 46, 48 are wider and longer than the stiff material 47 so that there is a border 51 about the periphery of the stiff material 47 where the plastics is adhered together so that
25 the stiff material is completely enclosed within the plastics material.

- 13 -

As previously described the first and second layers of plastics can be co-extruded film with a layer which makes immediate contact with the stiff material being EVA with a low melting point.

In the particular embodiment illustrated by Figures 12 through to 15, and by way of example, the stiff material can be a cardboard blank which comprises a base 49 with flaps foldable with respect to the base 49 forming sides 50 where at least two opposite flaps 50a have gussets 52 on the ends thereof foldable with respect to the flaps, the arrangement being such that a container can be formed from the blank when the flaps 50 are folded upright and the gussets 52 overlies adjacent flaps 50a and the border section 51a at the ends of the flaps can be folded over and sealed against the adjacent surfaces to secure the flaps 50 in an upright position with respect to the base 49.

In the particular example illustrated the border 51b at the sides can be less than say one centimetre whilst the border 51a at the ends is larger, say five centimetres so that it is foldable with respect to the edges 55 of the adjacent flaps 50.

- 14 -

Whilst the base 49 and the flaps 50 are shown as being integrally formed, these may be formed from separate pieces of material (not shown) from the base 49.

5 With respect to Figure 12 of the drawings the element illustrated can be folded to form the container illustrated by Figures 13, 14 and 15. By way of example the opposite flaps 50A and 50B can be folded into an upright position to be
10 perpendicular with respect to the plane of the base 49 and the gussets 52 lapped over the adjacent surfaces of the flaps 50B and finally border sections 51A are folded downwardly as indicated by the arrows of Figure 15 and sealed against the
15 plastics layers of the outer surface of the flaps 50B thus, a container which is completely fluid-tight(except for its opening) can be formed.

20 It will be appreciated by those skilled in the art that the gussets 52 may be attached to any of the flaps of the blank, not just to the side flaps in the rectangular container illustrated and furthermore that when the blank is erected to form the container it is optional to have the
25 gussets on the inside of the flaps 50 and the border section 51A sealed also against the inside of the flaps.

It is to be appreciated that the element 45 of

-15-

Figures 12 to 15 could include further flaps (not shown) formable into integrally fixed lids for a container. Such further flaps could be attached to the flaps 50A or 50B. In a further modification to the embodiment of Figure 12 the gussets 52 may be eliminated, such that the basic element is substantially the same as that illustrated and described in relation to Figure 1. Again, the flaps 50A and gussets 52 could be made from separate pieces of stiff material.

Having erected the container of Figures 12, 13 and 14 a lid formed from an element similarly constructed (see Figures 22 and 23) can be placed on the container after it has been filled with articles (such as cut means or the like) and then the lid can be taped to the container using a tap 56 which is capable of providing a moisture and air-tight seal. The element of Figures 12, 13 and 14 and/or the lid of Figure 15 can be provided with a cut-out portion 57 cut from the stiff material 47 forming the base of the lid and where the plastics layers are transparent a window is formed so that the contents of the container can be viewed. Alternatiely, the lid may be a plastics lid and may be fabricated or moulded from a separate sheet of stiff material.

When the packaging element is erected as described the plastics area X between gussets 52 and the flaps 50B is easily accommodated behind the gussets.

-16-

Further possible embodiments of the present invention are illustrated by Figures 16 through to 21 and 24 through to 28 of the drawings and in accordance therewith and the present invention a packaging element can comprise a first layer of plastics material 60, a second layer of stiff material generally indicated by arrow 61 and a third layer of plastics material 62. The plastics layers 60 and 62 are adhered to the stiff material 61 and the stiff material is shaped such that a container at least having a base and sides can be formed from the packaging element.

Referring specifically to the packaging element illustrated by Figures 16 through to 21 of the drawings the stiff material 61 can comprise a base 63, end parts 64 and side parts 65 substantially in a rectangular configuration. A unitary element is formed when the plastics layers 60 and 62 are adhered to the stiff material 61 and where the stiff material is absent such as at the sections 66 the plastics layer 60 is adhered to the plastics layer 62 such being indicated by the shading in the drawing.

The stiff material 61 comprising a base, end and side parts can be formed from one sheet of cardboard with seams as shown or alternatively and as illustrated the stiff material is provided with separate pieces comprising conjoined side and end parts 64 and 65 and a separate base part 63 with

-17-

a consequential seam formed between the separate pieces. When the plastics is adhered to the stiff material there is provided a sealed border around the periphery of the elements such that the stiff material is completely enclosed within the plastics material. Figure 17 of the drawings is an enlarged cross-section at XVII:XVII of Figure 16 with both the plastics layers being shown in exaggerated size for clarity.

The element of Figure 16 can begin to be formed into a container having a base and sides when the ends and side parts 64 and 65 are folded under the base part 63, and fold lines are formed by the creation of 45 degree seams 67 or blocking at 67A where the adjacent plastics layers 60 and 62 are joined together. From the condition illustrated by Figures 18, 19 and 20 the container can be formed by opening out the side and end parts and folding the base about a seam 68 to form a container having a base and sides as illustrated by Figure 21.

When the element is formed into a container the meeting of the edges 69 of the end parts 64 can be secured together by a tape and/or the adjacent layers of the plastics material can be adhered together by the formation of seals.

-18-

5 In a further alternative to the example
illustrated by Figures 16 through to 21 the
stiff material forming the base part 63
can be eliminated such that in the end, the
container is formed having a stiff material
forming sides and ends only. In such a case
and/or as an alternative to securing the
container at its erected position with the tape
and/or sealing as described the edges 73 of the
10 plastics material (see Figure 18) can be sealed
together after the seams 67 are formed or
blocking is carried out (the sealing for the
edges 72 being preceded by folding down as
illustrated by Figure 20 or by blanking) as
15 has been explained in relation to Figure 18.

Figures 22 and 23 of the drawings illustrate by
way of example a method by which the lid for the
container of Figures 16 through to 21 or another
container can be manufactured. The lid can
20 comprise a base part 73 of stiff material
and side parts 74 and end parts 75 of stiff
material sandwiched between the two layers of
plastics 76,77 leaving void sections at the
corners 78 of the edges 79 where the plastics is
25 adhered to the plastics. The side and/or end
parts 74,75 can be formed as part of the base 73
having seams between the base and sides or

-19-

ends or alternatively as illustrated the base
sides and ends can all be formed from pieces of stiff
material. From the element illustrated by
Figure 22 the end part 75 can be folded over as
5 shown by Figure 23 and a fold seal 80 made
at 45 degrees joining adjacent layers of
plastics material. After that step the lid can be
erected by folding outwardly and upwardly the sides
and the end parts with taping at the corners being
10 optional. In a modification to the example illustrated
(not shown) stiff material can be left out of the
base 73 the plastics layers being joined together
to form said base part.

15 With respect to Figure 24 through to 28 of the
drawings these illustrate a further possible
embodiment of a packaging element in accordance with
the present invention such comprising as before a
first layer of plastics 60, a second layer of
stiff material generally indicated by arrow 61
20 and a third layer of plastics material 62 wherein
the plastics layers are adhered to the stiff material
and the stiff material is provided in a form which
includes the base and sides for a container.

25 In the example illustrated the stiff material
provides a base 81, sides and ends 82,83 respectively,
and optionally a lid section 84. The base 81 and
the sides and ends 82,83 and the lid sections 84 can

-20-

be separate although it would be appreciated by those skilled in the art that the sections can be formed from the one section having seams (not shown) dividing them. As with the
5 previous example the folds are formed by the provision of seams 85 at approximately 45 degrees or by blanking and the seams 85 or the blanking (not shown) can be formed or carried out when the element of Figure 24 is folded into the configuration
10 illustrated by Figure 25.

After the seaming (or blanking) operations have been completed the packaging element is erected by manipulation of the element as illustrated by
15 Figures 26 of the drawings and to facilitate such manipulation the base part 81 can be provided with an elongate seam or join 86.

With respect to Figure 26 of the drawings the blank is manipulated as shown folded flat and ends 88 are sealed together to form the container of Figures
20 28 by opening the ends of the container flaps in the direction of the arrows of Figure 27 a container as shown in Figure 28 can be formed which can be sealed along the edges 89 thus sealing the interiors of the container. Triangular overhanging parts
25 90 can then be folded over and sealed (or otherwise fixed) to the sides of the container.

Depending on the use to which the container is to be put to there are several alternative modifications

-21-

or completion steps which can be carried out.

For example if the stiff lid is not required, the stiff material 84 can be left out of the lid of the container.

5 Whilst it has been known in the art to package
 food in cardboard containers lined with
 plastics (to prevent the cardboard from contaminating
 the food) and to make the containers lined with
10 plastics these are not completely hygienic. Such
 containers lined with plastics have edges at
 which the cardboard is exposed. In contrast, the
 present invention provides a container which has
 no exposed areas of cardboard. Additionally, and
 in accordance with aspects of the present invention
15 a cardboard container can be formed with no flaps
 or joining strips in the cardboard material.

 Containers in accordance with aspects of the present
 invention are substantially tamper-proof particularly
 if a tape such as EVA tape which is sealable against
20 the outer edges of the container and/or lid is
 used. A glue tape may also be used.

 Because plastics is a fluid impervious material
 containers of the present invention are liquid
 impervious and can be made gas impervious by using
25 a gas impervious material and one of the layers of
 a co-extrusion laminate. Examples of suitable
 gas impervious materials are nylon, aluminium or
 PVDC.

-22-

5 Whilst the containers described can be
conveniently made using co-extruded plastics
it would be appreciated from the foregoing
that a more suitable general description would
be that the container walls are multi-laminates
and optionally co-extrusions can be used.

10 It is to be appreciated from the foregoing that
a container can be formed having a hygienic
non-fibrous surface of for example plastics
material in a simple yet effective manner which
will allow for example meat to be packed in an
atmosphere free of cardboard fibres as the
containers can be formed a substantial distance or
indeed in a different factory to the place where
15 they are filled. At the filling station all
cardboard is contained within the first
and third layers and therefor the risk of
cardboard fibres being present in the
atmosphere or otherwise coming into contact with
20 meat products is substantially reduced.

25 Further advantages of the containers of the
present invention are that the blanks can be
pre-printed and a lighter-weight, less rigid
cardboard can be used and even re-cycled
cardboard could be used.

At least for some embodiments of the present
invention fold lines are eliminated and these

-23-

are thought to be the case of problems at removal and thawing when containers are used to store food under refrigeration.

5 Whilst containers/cartons of the present invention are ideally suited for storage and cartage of foods (frozen, chilled or otherwise) it is to be appreciated that the containers may be used for any purpose whatsoever.

10 Several examples of the present invention have been described herein where the stiff material is provided with separate pieces or as a unitary member. Although this system has advantages it should be appreciated that the stiff material
15 can be optionally provided in separate pieces, or as a unitary member with the various portions of stiff material foldable about a seam formed therein.

20 It is to be appreciated that the flexible layers of material although most likely to be from plastics may be from other materials, such as sheet foil or the like.

25 Aspects of the present invention have been described by way of example only and it will be appreciated that modifications and additions thereto may be made without departing from the scope of the present invention as defined in the appended claims.

-24-

CLAIMS:

1. A packaging element for erection into a container comprising at least one layer of stiff material lined on at least one side with a thin flexible material said at least one layer of stiff material being formable into a base, sides and/or a lid for a container and said thin flexible material forming a border about the periphery of said stiff material which can be used as flaps for securing said container formed from the element in an erected condition when the sides of the container are perpendicular to the base thereof.
2. A packaging element as claimed in claim 1 comprising a first layer of stiff material, and a third layer of plastics film material, said first and third layers being adhered to the stiff material and to one another where they overlap such that there is surface to surface contact between the plastics layers at least about the periphery of the stiff material, and the stiff material is hermetically and hygenically sealed within the plastics.
3. A packaging element as claimed in claim 2 wherein the second layer is a cardboard blank having at least an elongate centre section capable of being folded at each end and side sections disposed to the side of the centre section, the arrangement being such that a cdntre part of the centre section

-25-

can form the base of a container erected from the element, and the ends of the centre section and the side sections can form sides of an erected container with said border being utilised to secure the container in its erected position.

4. A packaging element as claimed in claim 3 wherein the stiff material is a cardboard blank comprising a base with flaps on opposite edges thereof foldable with respect to the base wherein at least two opposite flaps have gussets on opposite ends therefor which are foldable with respect to said flaps, the arrangement being such that a container can be formed from the element when the flaps are folded upright, the gussets overlies the adjacent flaps and the border at the ends of the flap can be folded over and sealed against adjacent surfaces to secure the flaps in an upright position with respect to the base.
5. A packaging element as claimed in any one of claims 2 to 4 wherein folds in the element are created by seaming or blocking adjacent layers of surface material of the element prior to erection of the element into a container.
6. A packaging element as claimed in any one of claims 3 to 6 wherein the centre section and the side sections are separate complementary pieces of stiff material.

-26-

7. A packaging element as claimed in any one of claims 2 to 6 wherein the first and third layers of plastics material are co-extruded films.
8. A method of manufacturing a packaging element as aforesaid comprising the steps of positioning said stiff material between two layers of plastics and heating the plastics such that the plastics adheres to the stiff material, and, where the plastics to plastics contact is made, the adjacent layers of plastics are adhered to one another.
9. A method as claimed in claim 8 wherein the plastics material comprises layers of co-extruded plastics.
10. A method as claimed in claim 8 or 9 including the further step of creating folds in the element by seaming or blocking adjacent layers of surface material of the element to create erectable sides for a carton to be formed from the element, folding the blank, and erecting the blank to form a package having at least a base and sides.
11. A method as claimed in claim 10 including the further step of sealing the upper edges of the sides of the container formed from the blank to form a completely fluid-tight package.

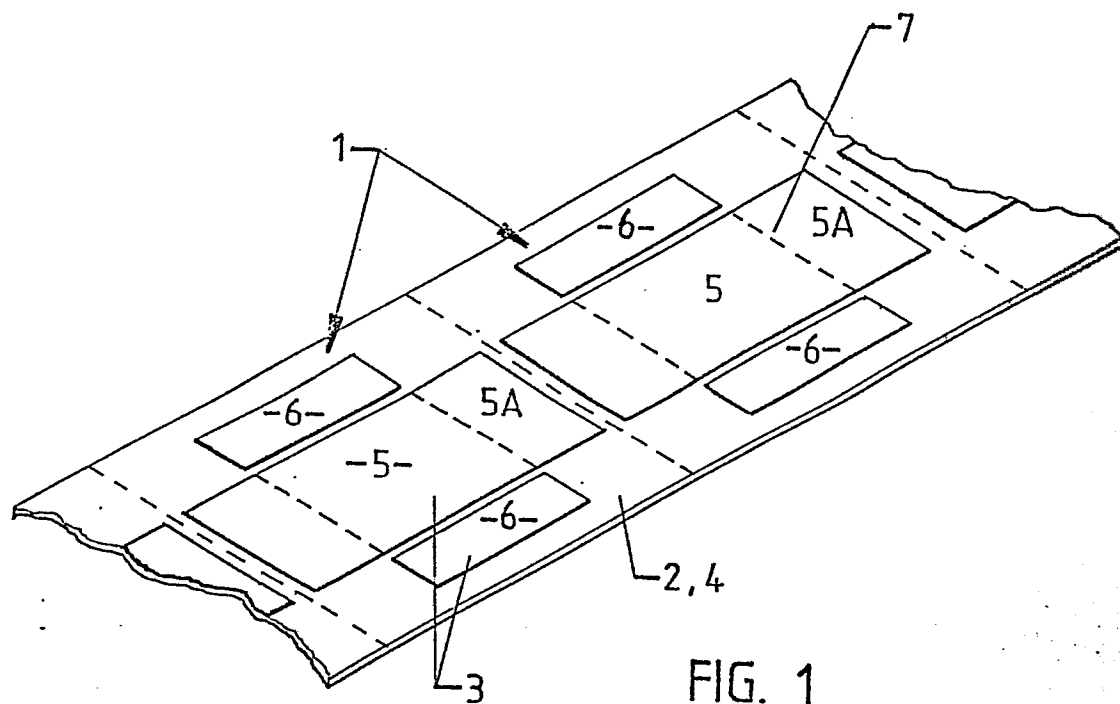


FIG. 1

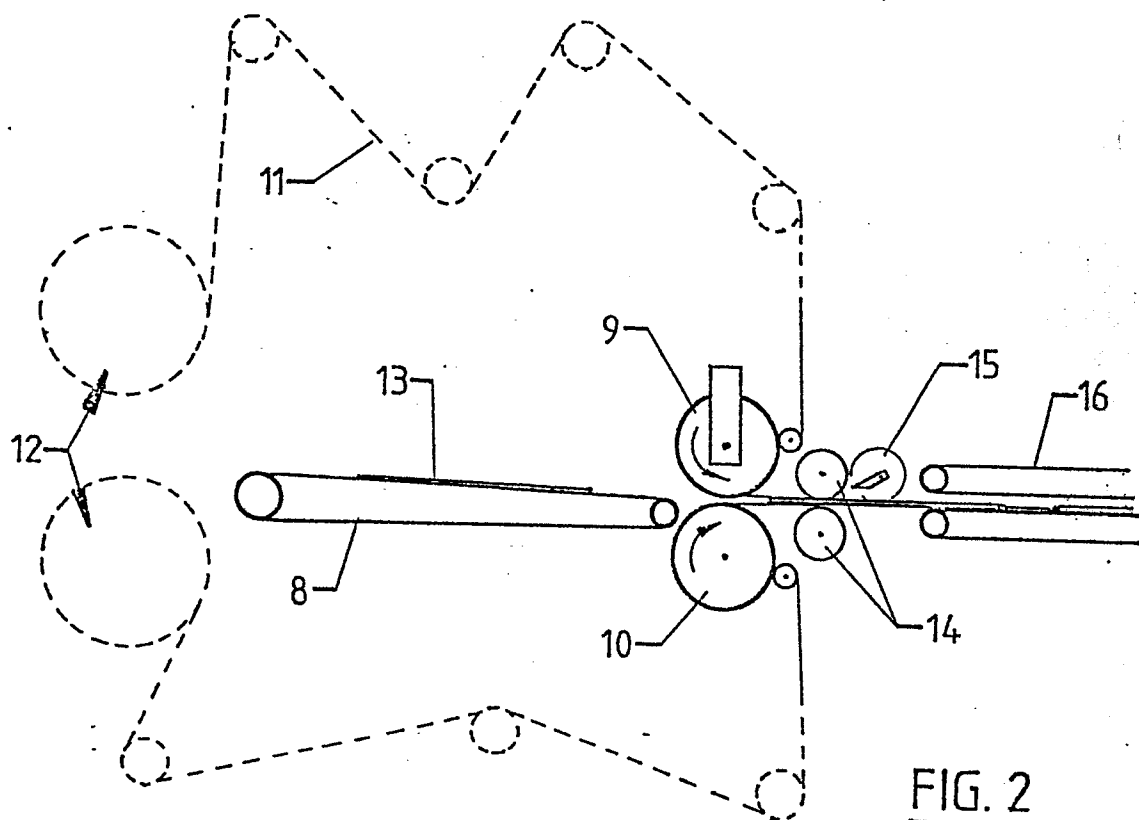
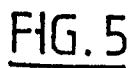
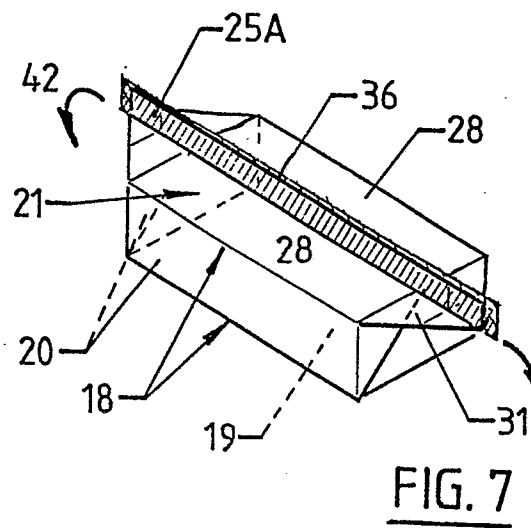
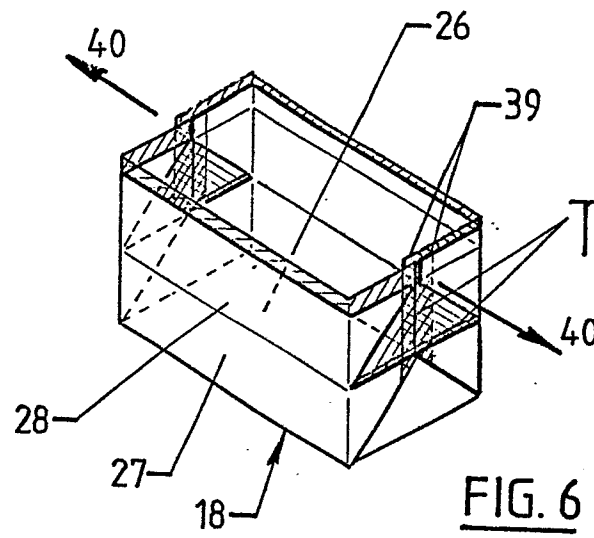
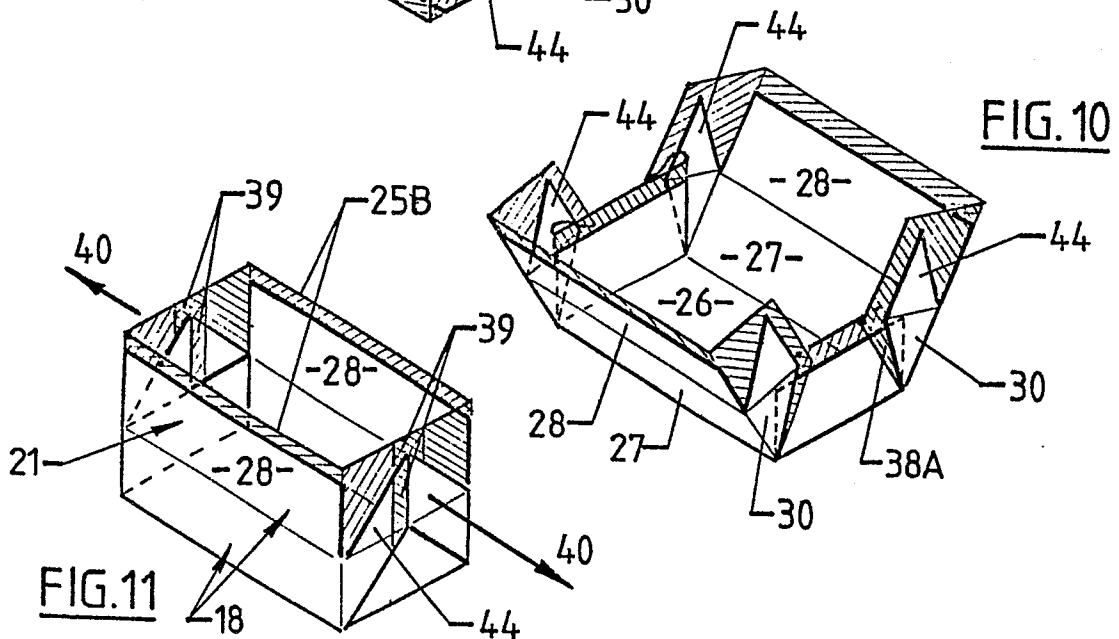
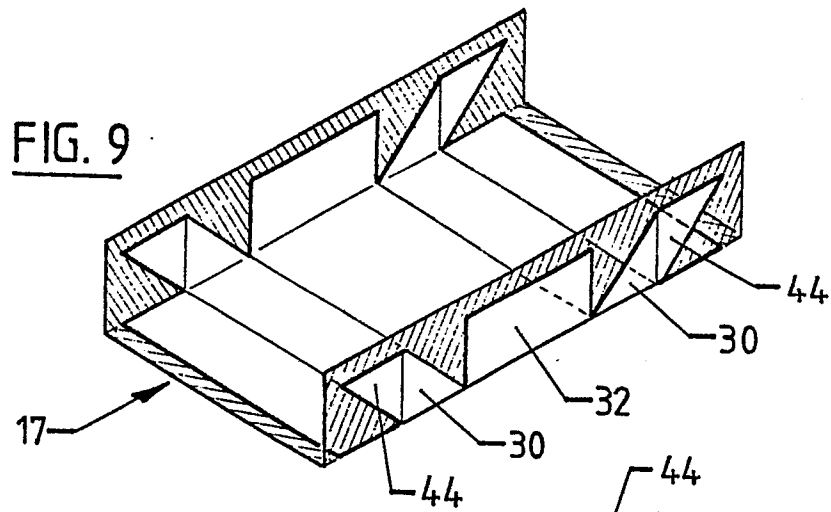
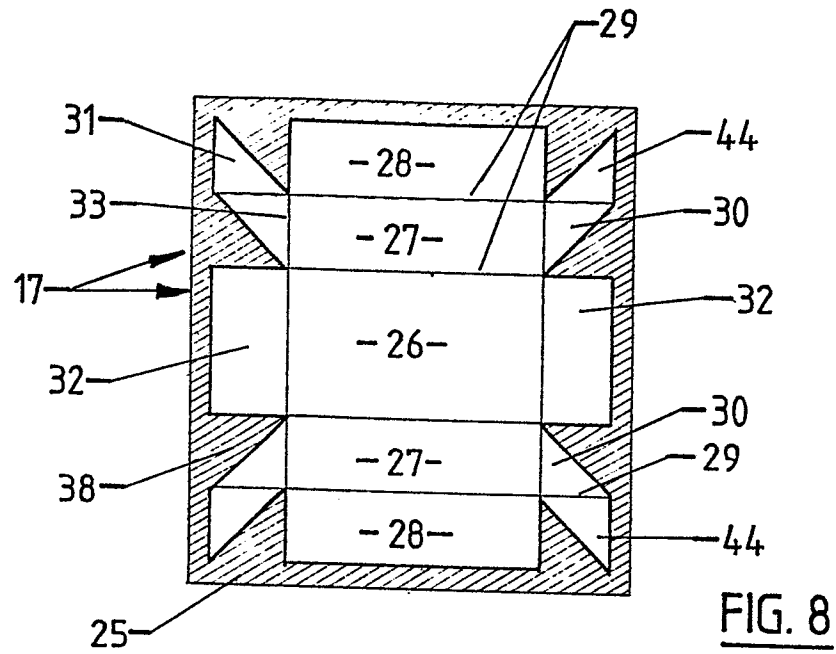
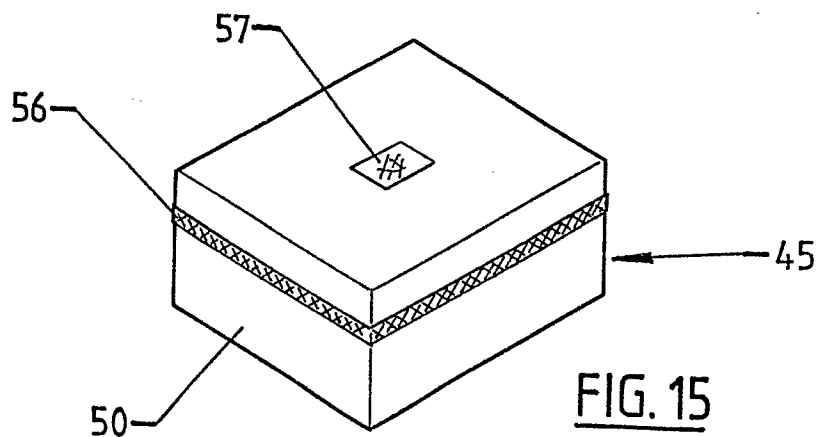
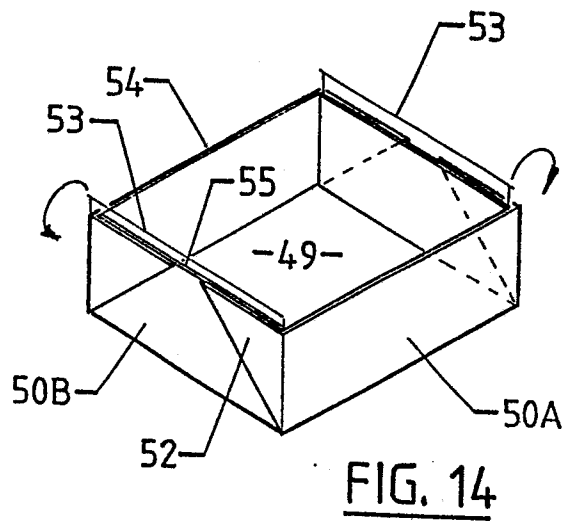
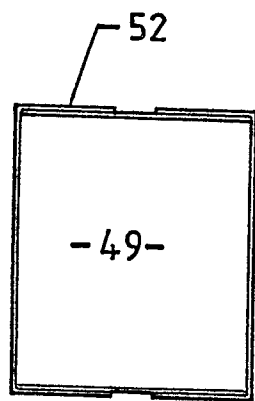
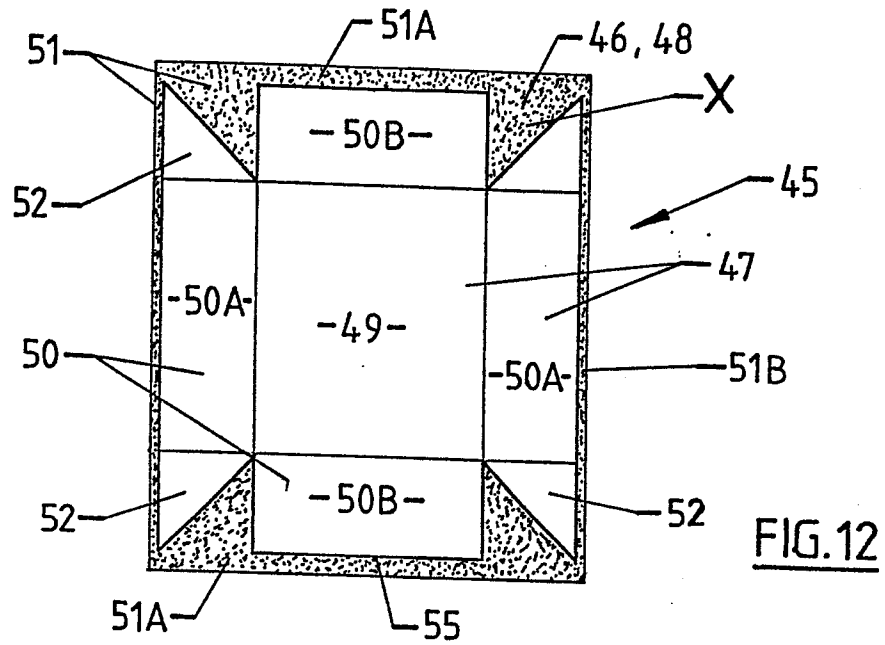


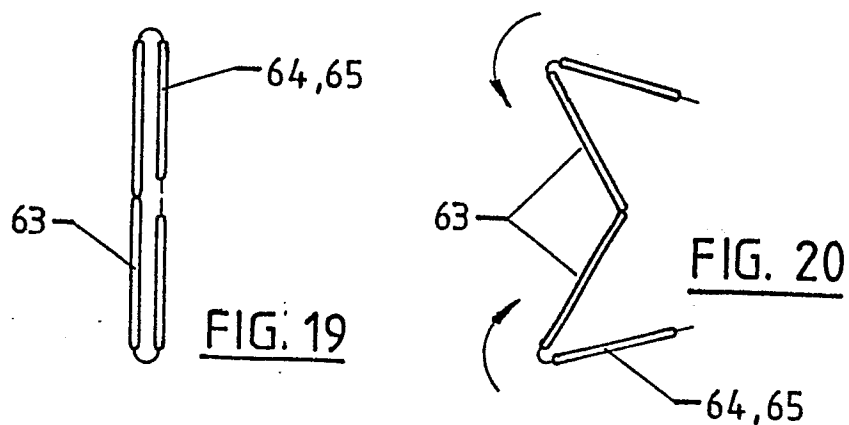
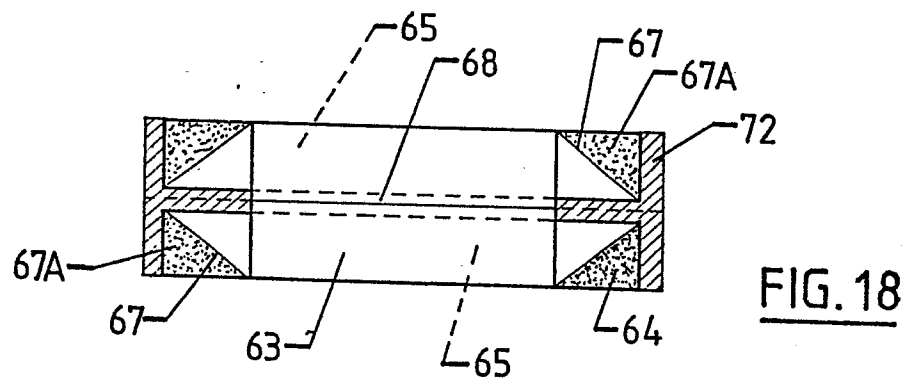
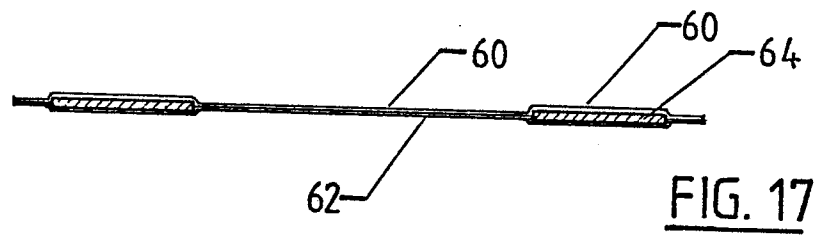
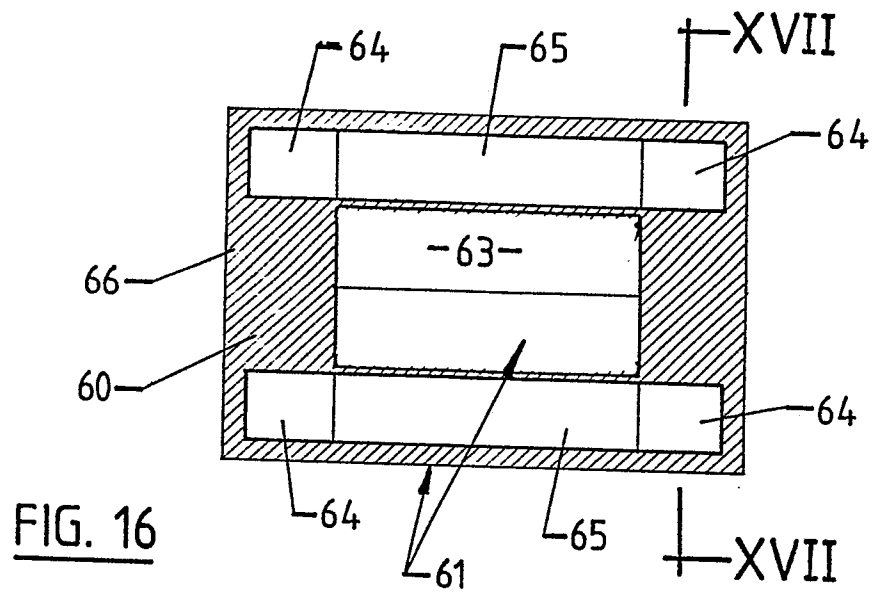
FIG. 2

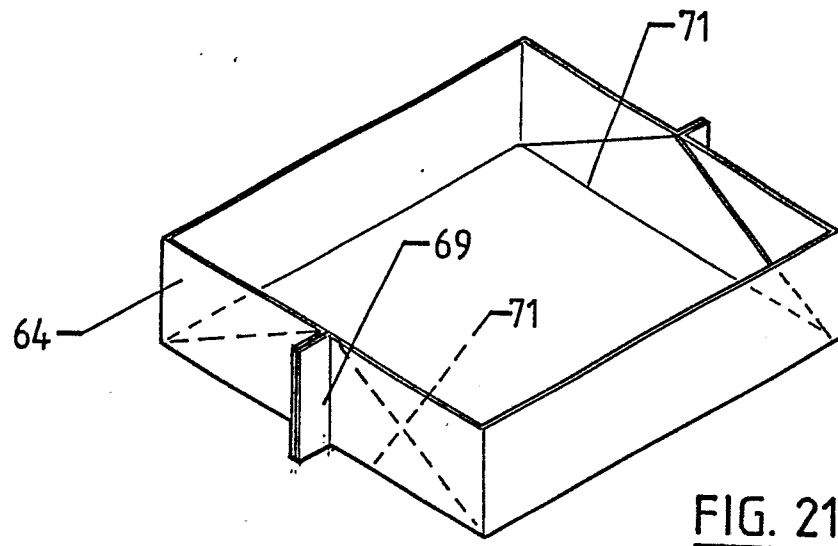
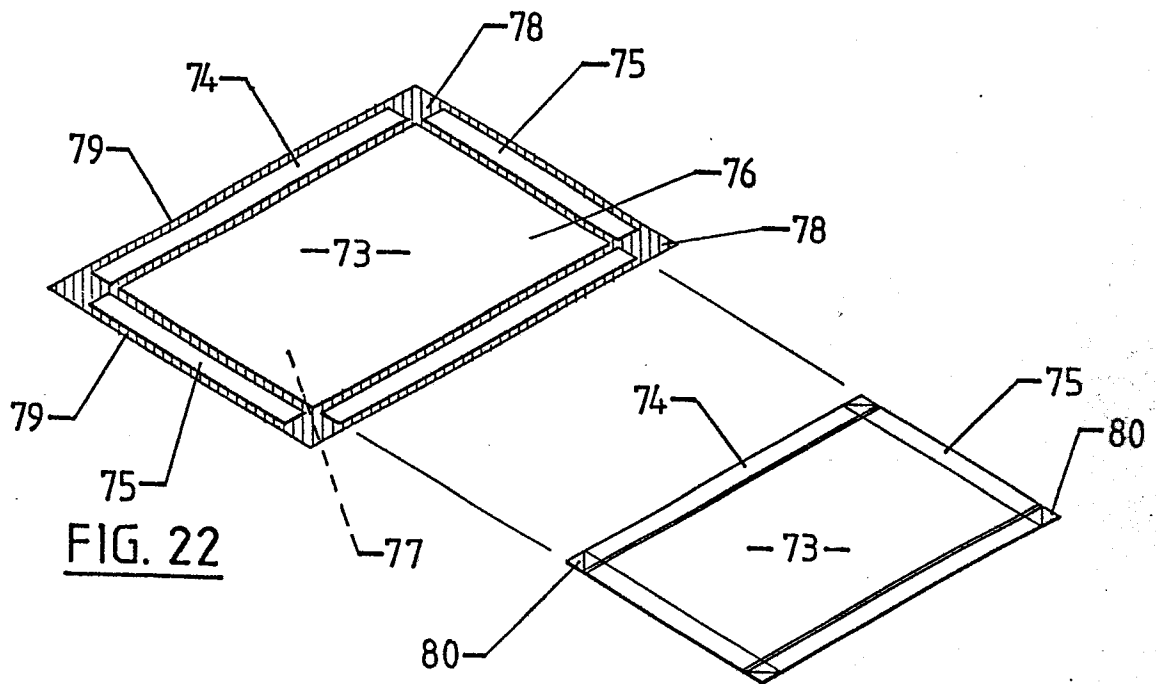


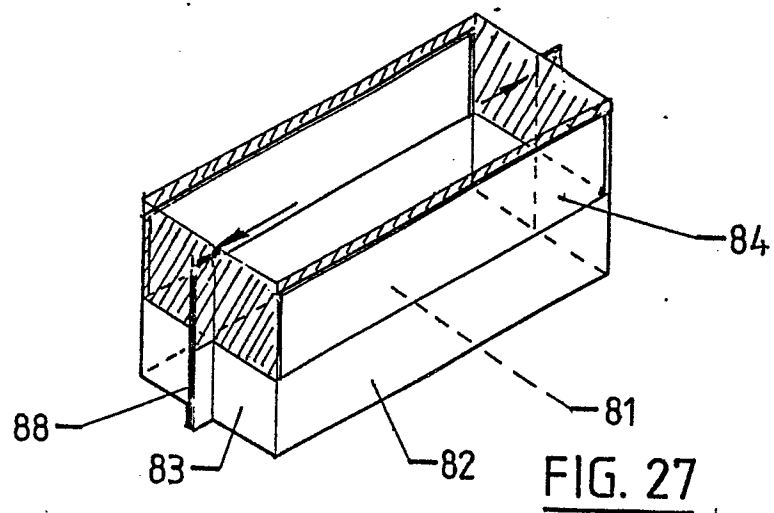
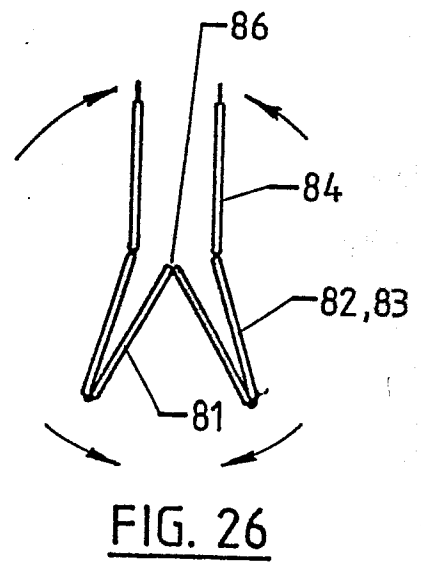
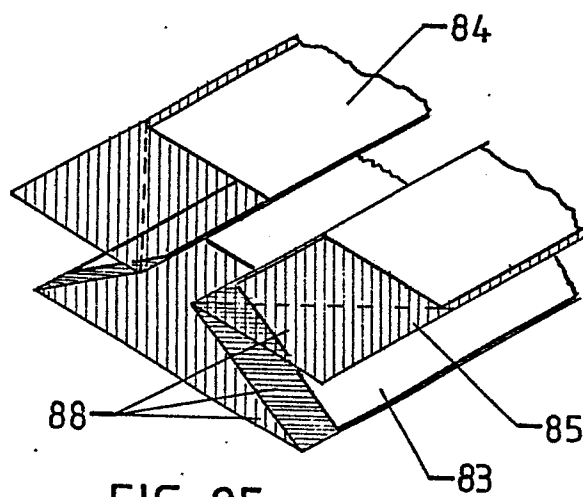
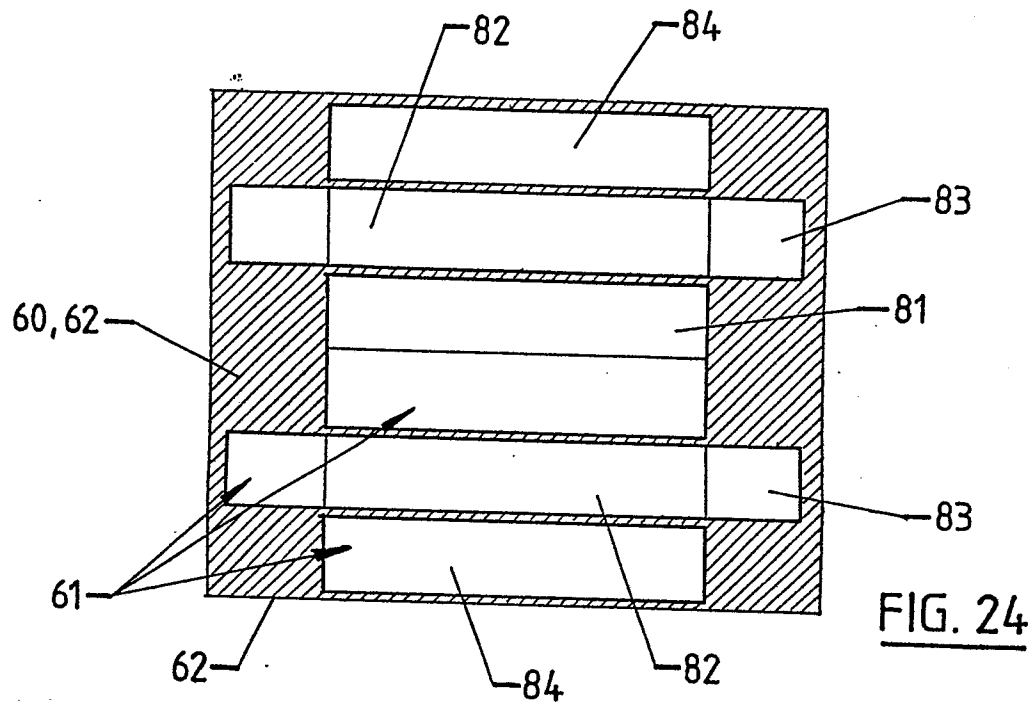


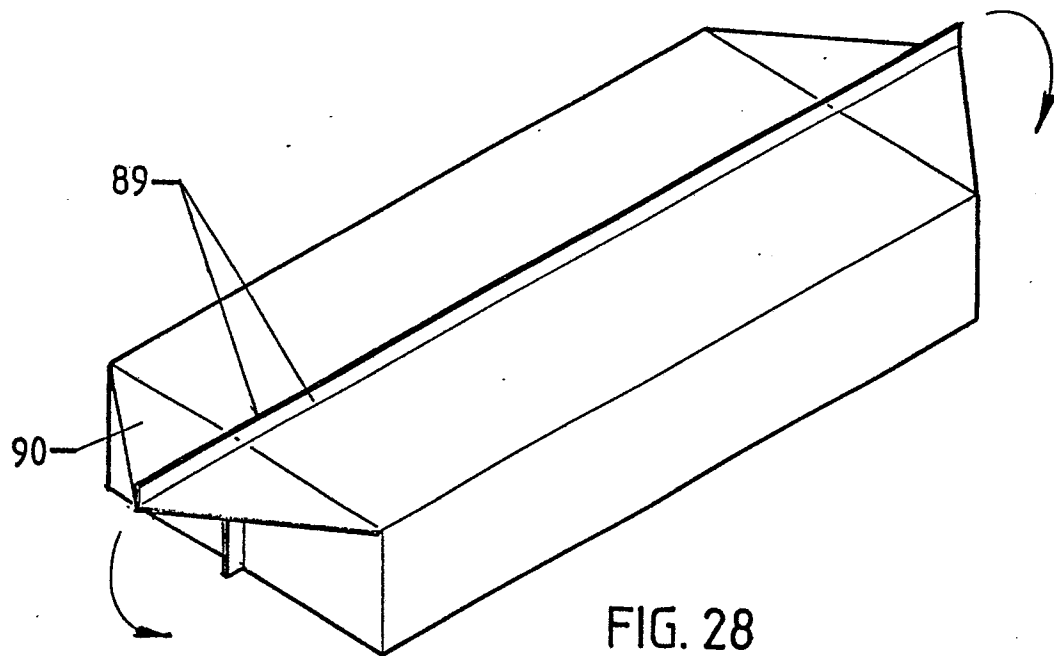






FIG. 21FIG. 22FIG. 23







European Patent
Office

EUROPEAN SEARCH REPORT

0108537

Application number

EP 83 30 6404

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. *)
X	FR-A-2 221 350 (CHRISTENSSONS MASKINER & PATENTER AB) * Figures 9,10; claims 9,14 *	1-3, 5, 8, 11	B 65 D 5/56 B 65 D 5/62
X	--- US-A-4 082 216 (J.W. CLARKE) * Figures 1,5; column 1, lines 48-54 *	1, 2, 8	
X	--- US-A-2 613 025 (W.A. RINGLER) * Column 2, lines 14-24; column 2, lines 31-36; column 3, lines 12-20 *	1, 2, 8	
A	--- FR-A-2 239 341 (AB ZIRISTOR) * Claim 1; page 4, lines 31-35; figure 2 *	1, 2	
A	--- US-A-3 073 216 (T.N. GAUNT) * Column 1, lines 61-72 *	1	TECHNICAL FIELDS SEARCHED (Int. Cl. *) B 65 D
A, D	--- US-A-4 056 221 (L.-E. PILTZ) -----		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18-01-1984	Examiner BERRINGTON N.M.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			