(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 202 923**
A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **86303838.6**

(51) Int. Cl.⁴: **A 61 F 5/44**

(22) Date of filing: **21.05.86**

(30) Priority: **22.05.85 GB 8512884**

(43) Date of publication of application:
26.11.86 Bulletin 86/48

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

(71) Applicant: **Medical-Assist Limited**
Commerce Way
Colchester Essex C02 8HH(GB)

(72) Inventor: **Wallace, Stephen John**
Commerce Way
Colchester Essex C02 8HH(GB)

(72) Inventor: **Wallace, Stuart Ian**
Commerce Way
Colchester Essex C02 8HH(GB)

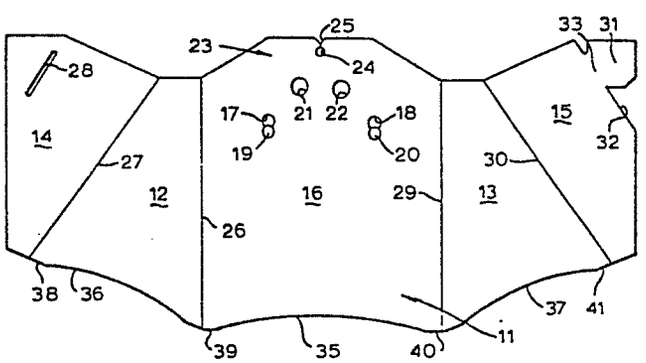
(74) Representative: **Green, Alan James et al,**
Sanderson & Co. 97 High Street
Colchester Essex C01 1TH(GB)

(54) Blank for a body fluid drainage bag hanger stand and a pack comprising the same.

(57) The invention provides a blank suitable for forming into a urinary or like drainage bag hanger stand. The blank is in the form of a substantially rectangular piece of sheet material divided into a plurality of areas by means of fold-lines. The areas thus defined are a substantially rectangular front member and a pair of substantially triangular side members respectively connected by fold-lines to opposite side edges of the front member. In addition, each side member has connected thereto by a fold-line along its edge remote from the front member one of a pair of connectable rear flaps, which together include connectable parts. Also, the front member includes one or more portions constructed or arranged to accommodate a drainage bag or a bag and its associated tubing.

A pack to provide a body fluid drainage system, comprises a blank according to the invention and one or more e.g. seven, body fluid drainage devices.

FIG.1



EP 0 202 923 A2

BLANK FOR A BODY FLUID DRAINAGE BAG HANGER STAND AND A PACK COMPRISING THE SAME

The present invention relates to a blank for a body fluid drainage bag hanger stand and to a pack comprising the same to provide a body fluid drainage system, in particular a urinary drainage system.

Artificial drainage of urine from the bladder is necessary when the natural process for draining the bladder is impaired or interrupted. Thus, for example, natural drainage may be interrupted by pre-operative retention of urine by an enlarged prostate or by post-operative impairment of sphincter function due to surgery of prostatic tissue.

Artificial drainage can be achieved by introducing a tube (a catheter) into the bladder via the urethra. Furthermore, while the catheter may be withdrawn after emptying of the bladder, more often it may be retained and connected to a length of tubing attached to a drainage bag so that urine may be drained continuously. In a post-operative situation, a suitable drainage system is critical to the successful recovery of the patient and, in order to maintain efficient drainage to the bag (usually under gravity), the catheter, tubing and bag must be correctly positioned and correctly maintained in position so that there is no impairment of the flow of urine. If the flow of urine is impaired or shut off, retention of urine in the bladder results, with subsequent retrograde invasion of the urethra and kidneys by bacteria passing out from the bladder.

In such situations, a drainage bag may be suitably suspended at a bedside, along with its attached tubing,

by the use of a hanger disposed at the bedside, which either may be attached to the bed or free-standing on the floor close to the bed. The design of the hanger is crucial in maintaining the drainage bag in an optimum position and in securing the necessary unimpaired gravity flow through the tubing connecting the catheter to the bag.

In a commonly employed system, the drainage bag and associated tubing are held on a metal wire hanger frame which may be chromium plated or plastics coated. The metal wire may be soft steel, hardened steel or stainless steel, and metal frames by their nature and shape generally comprise a number of welded or otherwise joined elements. Plastics frames are also available, but are usually integral with the drainage bag.

Metal frames have the advantage of strength and durability and, for particular applications, such strength is vital for the rigorous use to which the frames are to be subjected. For example, in a post-operative situation when the patient is ambulant during the day, the drainage bag frame may constantly be moved from a bedside to a chair, perhaps around a ward, and back again to the bedside at night or during daytime sleep periods. Thus, stress on the frame can be constant and inevitable.

However, the disadvantages of metal hanger frames are that they require cleaning, maintenance and repair. Also, they are awkward for nursing, and inconvenient for storage when not in use. Furthermore, in the home (community care) the disadvantages of metal frames are more pronounced than when the frames are used in hospital.

In co-pending Application No. 85-30-1059.3 (Publication No. 0 153 180) there is described and claimed a body fluid drainage device and system. The disposable drainage device of that earlier invention

comprises a length of flexible tubing having one end sealed within an opening in a drainage bag closed except for the opening accommodating the flexible tubing. The opposite end of the tubing has a connector suitable for connection to the outlet of a leg drainage bag so that urine can be drained from a patient's leg bag when the patient is in bed at night, and the tubing has a length e.g. of about 3 feet (91.4 cm), which can provide an overall drainage path from a leg bag attached to a patient in bed to the closed drainage bag positioned outside the bed and below the patient which does not include any loops below the uppermost edge of the drainage bag. The device of the earlier invention, because it is not connected directly to the bladder, can be packaged in an unsterilised manner. Also, it can form part of a system comprising a leg bag, a drainage device according to that invention, and a floor stand or hanger for the drainage bag. Further, that device and system are especially suitable for use in the home.

However, it is particularly in such home situations where metal frames are especially disadvantageous and can tend to obviate the advantages of the device of the earlier invention. Accordingly, this invention is concerned to provide a hanger floor stand for a urinary or like drainage bag, particularly suitable for use in the home, and especially suitable for use at night with the device of the earlier invention, which can be stored flat and which, because it is specifically intended for short term and relatively non-rigorous use, and then for disposal, avoids the need for cleaning, maintenance and/or repair.

Thus, in accordance with the above, the invention provides a blank suitable for forming into a body fluid drainage bag hanger stand, which blank is in the form of a substantially rectangular piece of sheet material divided into a plurality of areas by means of fold-

lines, the areas thus defined comprising a substantially rectangular front member and a pair of side members having opposed sides converging as they extend towards that edge of the blank which will be the top of the stand in use, preferably substantially triangular side members, the side members being respectively connected by fold-lines to opposite side edges of the front member, each side member having connected thereto by a fold-line along its edge remote from the front member one of a pair of connectable rear flaps, which together include connectable parts, preferably male and female connectable parts, and the front member including one or more portions constructed or arranged to accommodate a drainage bag or a bag and its associated tubing.

The blank of the invention may be formed from any sheet material in which fold-lines may be formed e.g. by embossing or by partially cutting through the material, or which is otherwise foldable, and which at the same time is sufficiently rigid to provide a stable stand when assembled from the blank. Preferably also, the sheet material is a printable sheet material, and more preferably the sheet material comprises cardboard or a plastics sheet material. Alternatively, the sheet material may comprise a hollow board material.

In the blank of the invention, the front member preferably comprises a body portion of essentially square configuration. Preferably also, the body portion of the front member includes extending from the edge thereof which is to be uppermost in use an edge portion including means to accommodate tubing associated with a drainage bag. Such means may comprise a hole or slot or the like, for example, cut out of or through the edge portion.

In addition, the front member preferably includes in a portion thereof which is to be uppermost in use at least one pair of holes or slots to

accommodate drainage bag hanger studs. Furthermore, the front member preferably includes one or a plurality, e.g. a pair, of through-apertures to permit accommodation of one or more fingers. In that manner a stand assembled from the blank can be easily held so that it can be moved or otherwise manoevered.

Preferably also, in the blank of the invention, the connectable parts of the rear flaps comprise a tongue extending from an edge of one flap most remote from the side member to which it is connected and an elongated slot within a portion e.g. adjacent an edge, of the other flap remote from the side member to which it is connected.

More preferably, the rear flaps, their connectable parts, the side members, and the front member, together with their associated fold-lines, are arranged such that a stand assembled from the blank is essentially shaped as a tetrahedron. In addition, or alternatively, it is preferred that the rear flaps, the side members, and the front member, together with their associated fold-lines, are arranged such that a stand assembled from the blank has a front face inclined towards the rear of the stand. Thus, in a most preferred embodiment, for example, as more specifically described below, the side members and rear flaps together have edges leading away from the edge of the front member which is to be lowermost in use which in plan are swept back from that edge. Also, most preferably the rear flaps have edges leading away from the edge of their adjacent side member which is to be uppermost in use which in plan are swept forward of that edge.

Furthermore, in the blank of the invention it is preferred that the edge of the front member and/or the edges of the side members which are to be lowermost in use should include a cut-away or like recessed portion,

preferably curved, so as to provide in a stand assembled therefrom feet at the corners of the stand. In that manner, weight on the stand can be distributed as loadings on each corner, and also any uneveness in the surface which is to carry the stand can be accommodated, thus minimising any tendency for the stand to tilt in use. Also, the rear flaps may be positioned so that their lowermost corner is spaced upwards and away from the rearmost lower corner of the adjacent side member.

In addition, the invention includes a pack to provide a body fluid drainage system, which pack comprises a blank according to the invention and one or more body fluid drainage devices. Such a pack preferably comprises one said blank and seven said devices, and in the pack the devices are preferably as described in Application No. 85-30-1059.3 (Publication No. 0 153 180).

Thus, the body fluid drainage device or devices in the pack of the invention preferably each comprise a length of flexible tubing having one end sealed within an opening in a drainage bag closed except for the opening accommodating the flexible tubing, and having at its opposite end a connector suitable for connection to the outlet of a leg drainage bag, the tubing having a length which can provide an overall drainage path from a leg bag attached to a patient in bed to the closed drainage bag positioned outside the bed and below the patient which does not include any loops below the uppermost edge of the bag. Furthermore, the pack preferably includes at least one pair of bag hanging studs or the like, which preferably are positioned in their holes or slots in the blank.

The invention also includes a body fluid drainage system, which system comprises a stand assembled from a blank according to the invention and having a body fluid drainage bag hung thereon.

Thus, the invention provides through the use of a blank as described herein a hanger stand suitable for use with a urinary drainage or like body fluid drainage device, which can be formed or folded flat and which when assembled as a stand can provide a suitable and stable support for such a device. Furthermore, when the blank is formed of a preferred material as described above which can provide one or more printable surfaces, it can carry printed use instructions and/or product identity markings.

In addition, by virtue of the simple and relatively cheap (yet at the same time relatively robust) construction of the blank, it can be used by a patient for a period of up to about 7 days, after which it can be discarded. Thus, the stand may be used in a community care situation for (say) a 7-day period or in a hospital for the same period, or for shorter periods in situations where there is an acute infection hazard, for example, in the treatment of hepatitis or AIDS. Especially in the case where the blank is formed from a cardboard material, the blank when discarded may easily be destroyed by burning to eliminate any contamination hazard from the used stand.

The invention will now be described more specifically and by way of example only with reference to the accompanying drawings in which:

Figure 1 is a plan view of one form of blank in accordance with the invention;

Figure 2 is a perspective view from the front and to one side of the blank of Figure 1 assembled as a stand;

Figure 3 is a perspective view from the rear and to the other side of the blank of Figure 1 assembled as a stand; and

Figure 4 is a perspective view as in Figure 2 showing a drainage device positioned hanging on the assembled stand.

Referring to Figure 1, that shows a blank comprising a front member generally designated by the numeral 11, side members 12 and 13, and rear flaps 14 and 15. The front member 11 comprises an essentially square body portion 16 which includes a pair of keyhole slots 17 and 18, within which can be accommodated drainage bag hanger studs 19 and 20 (as shown), the studs preferably being held in position by, for example, adhesive tape applied to the rear of the slots (not shown). The body portion also includes a pair of finger holes 21 and 22, and at one edge an extending portion 23 having in its apex a hole 24 to accommodate drainage bag tubing, access to the hole being provided via a Y-shaped cut or slit 25.

The body portion 16 at its lefthand edge is connected by a fold-line 26 to a side member 12 having a substantially triangular configuration. The side member 12, in turn at its lefthand edge (most remote from the front member), is connected by a fold-line 27 to a rear flap 14, and the flap 14 includes a slot 28.

At its righthand edge, the body portion 16 is connected by a fold-line 29 to a side member 13. The

side member 13, again in turn at its righthand edge (most remote from the front member), is connected to a flap 15 by a fold-line 30. The flap 15 includes a tongue 31 extending from its edge 32, the tongue being connected to that edge via a narrower neck portion 33.

Along the bottom edge of the blank, the edges of the front member 11 and the edges of the side members 12 and 13 which are to be lowermost in use include cut-away portions 35, 36 and 37 respectively. Those cut-away portions are inward of fold-lines 27 and 30, and to either side of fold-lines 26 and 29 (as shown) so as to provide in a stand assembled from the blank feet 38 to 41 at each corner of the stand.

In use, the blank is assembled by folding each of the side members 12 and 13 along their respective fold-lines 26 and 29 so that the side members project to the rear of the body portion 16. The rear flaps 14 and 15 are then folded towards each other along their respective fold-lines 27 and 30, and the tongue 31 is inserted in slot 28 to connect together the rear flaps, and to lock the tongue 31 in slot 28 at its neck portion 33.

The blank when assembled as a stand has a configuration essentially as shown in Figures 2 to 4. Furthermore, the stand can be used as a hanger for a urinary drainage bag by inserting studs 19 and 20 in keyhole slots 17 and 18 (if not already so inserted), after which (as shown in Figure 4) a bag 44 can be hung on those studs via holes 45 and 46 in an upper portion 47 of the bag. Furthermore, tubing 48 extending from the bag can pass through hole 24 to be held in a tangle-free condition having first been positioned in the hole via cut 25. In that manner there is formed a body fluid drainage system as shown in Figure 4.

As will be appreciated from the foregoing specific description, the present invention provides,

specifically by employing a cardboard blank to form a stand of tetrahedron configuration, a stand which is stable, which is able to fold-up flat, which is lightweight, which has printable surfaces, and which is sufficiently low-priced for short term use. Furthermore, while the surface of the cardboard needs to be water-repellant, it is not necessary to be waterproof, because of the short term of use. The tetrahedron design provides a convenient shape for the location of a drainage bag and the upper hole 24 can secure the drainage tube in an upright position. Also, because the stand can fold flat, the stand is easily stored and packaged, and may be packed for use on journeys and on holiday.

As will be appreciated also, the invention is not limited to the foregoing specific details. Thus, variations may be made in the shape of the blank provided it preferably can be used to form a stand essentially shaped as a tetrahedron as shown. For example, the rear flaps may be positioned so that their lowermost corner is spaced upwards and away from the rearmost lower corner of the adjacent side member. Also, the cut-away portions in the bottom edges of the side members and/or the front member may be omitted, the keyhole slots may be replaced by other slots or simple holes to accommodate studs as shown or other like means for suspending the drainage bag, and the studs may be fixed e.g. by force-fitting, in the holes or the like. In addition, the fold-lines may be partial cuts in the blank sheet material, or embossed lines or the like.

CLAIMS

1. A blank suitable for forming into a body fluid drainage bag hanger stand, which blank is in the form of a substantially rectangular piece of sheet material, preferably comprising cardboard or a plastics sheet material, divided into a plurality of areas by means of fold-lines, the areas thus defined comprising a substantially rectangular front member and a pair of side members having opposed sides converging as they extend towards that edge of the blank which will be the top of the stand in use, the side members being respectively connected by fold-lines to opposite side edges of the front member, each side member having connected thereto by a fold-line along its edge remote from the front member one of a pair of connectable rear flaps, which together include connectable parts, and the front member including one or more portions constructed or arranged to accommodate a drainage bag or a bag and its associated tubing.

2. A blank according to claim 1, wherein the side members are substantially triangular.

3. A blank according to claim 1 or claim 2, wherein the front member comprises a body portion of essentially square configuration.

4. A blank according to any one of the preceding claims, wherein the body portion of the front member includes extending from the edge thereof which is to be uppermost in use an edge portion including means to accommodate tubing associated with a drainage bag.

5. A blank according to any one of the preceding claims, wherein the front member includes in a portion thereof which is to be uppermost in use at least one pair of holes or slots to accommodate drainage bag hanger studs and/or the front member includes one or a

plurality of through-apertures to permit accommodation of one or more fingers.

6. A blank according to any one of the preceding claims, wherein the connectable parts of the rear flaps comprise a tongue extending from an edge of one flap most remote from the side member to which it is connected and an elongated slot within a portion of the other flap remote from the side member to which it is connected.

7. A blank according to any one of the preceding claims, wherein the rear flaps, their connectable parts, the side members, and the front member, together with their associated fold-lines, are arranged such that a stand assembled from the blank is essentially shaped as a tetrahedron.

8. A blank according to any one of the preceding claims, wherein the rear flaps, the side members, and the front member, together with their associated fold-lines, are arranged such that a stand assembled from the blank has a front face inclined towards the rear of the stand.

9. A blank according to any one of the preceding claims, wherein the side members and rear flaps together have edges leading away from the edge of the front member which is to be lowermost in use which in plan are swept back from that edge and/or the rear flaps have edges leading away from the edge of their adjacent side member which is to be uppermost in use which in plan are swept forward of that edge.

10. A blank according to any one of the preceding claims, wherein the edge of the front member and/or the edges of the side members which are to be lowermost in use include a cut-away or like recessed portion so as to provide in a stand assembled therefrom feet at the corners of the stand.

11. A pack to provide a body fluid drainage system,

wherein the pack comprises a blank according to any one of the preceding claims and one or more body fluid drainage devices, preferably one said blank and seven said devices.

12. A pack according to claim 11, wherein the body fluid drainage device or devices each comprise a length of flexible tubing having one end sealed within an opening in a drainage bag closed except for the opening accommodating the flexible tubing, and having at its opposite end a connector suitable for connection to the outlet of a leg drainage bag, the tubing having a length which can provide an overall drainage path from a leg bag attached to a patient in bed to the closed drainage bag positioned outside the bed and below the patient which does not include any loops below the uppermost edge of the bag.

FIG.1

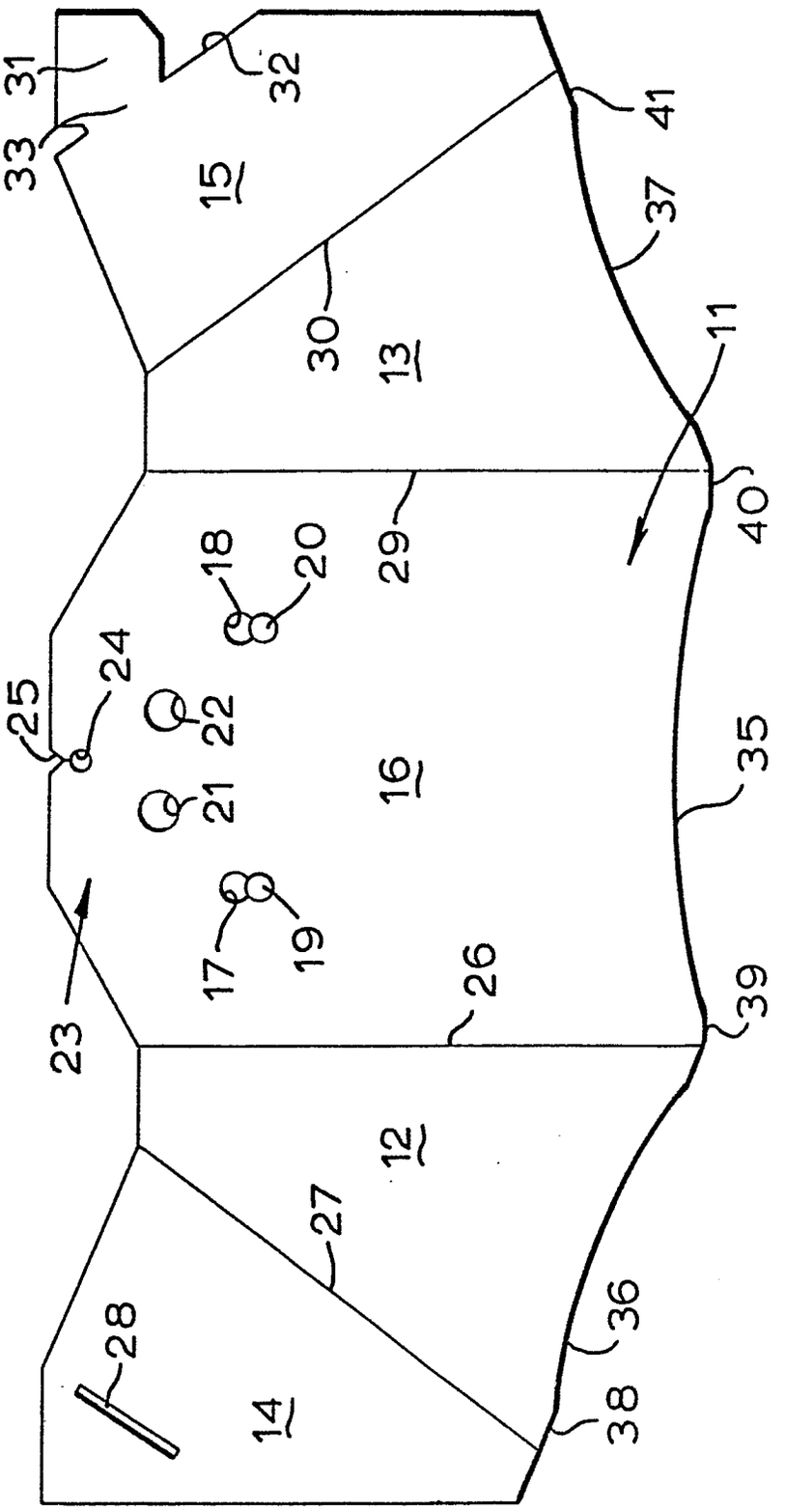
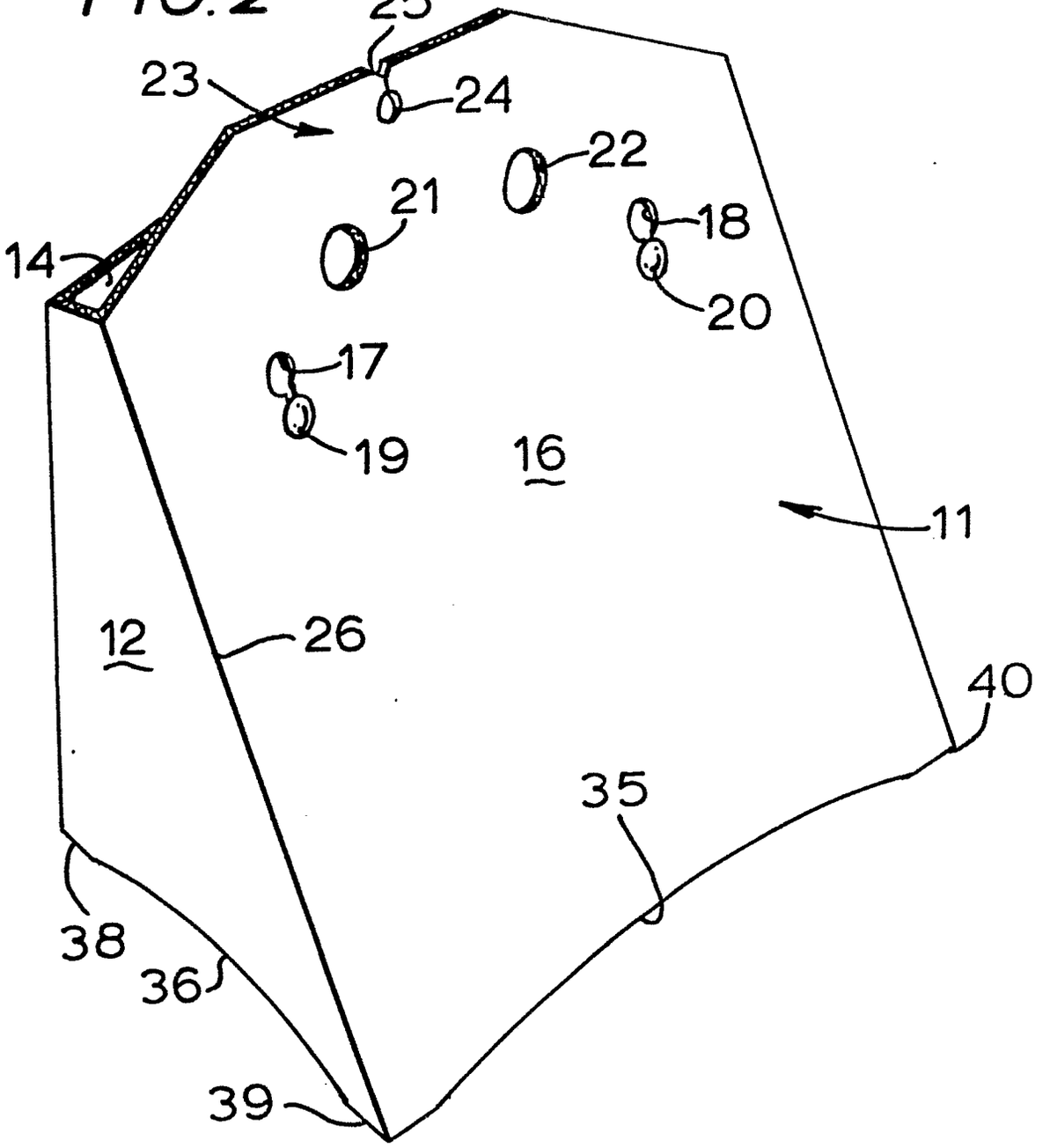

31
32
33
41
15
37
30
13
11
29
40
18
20
24
25
22
21
16
35
17
19
26
39
23
12
27
36
28
14
38

FIG. 2



0202923

FIG. 3

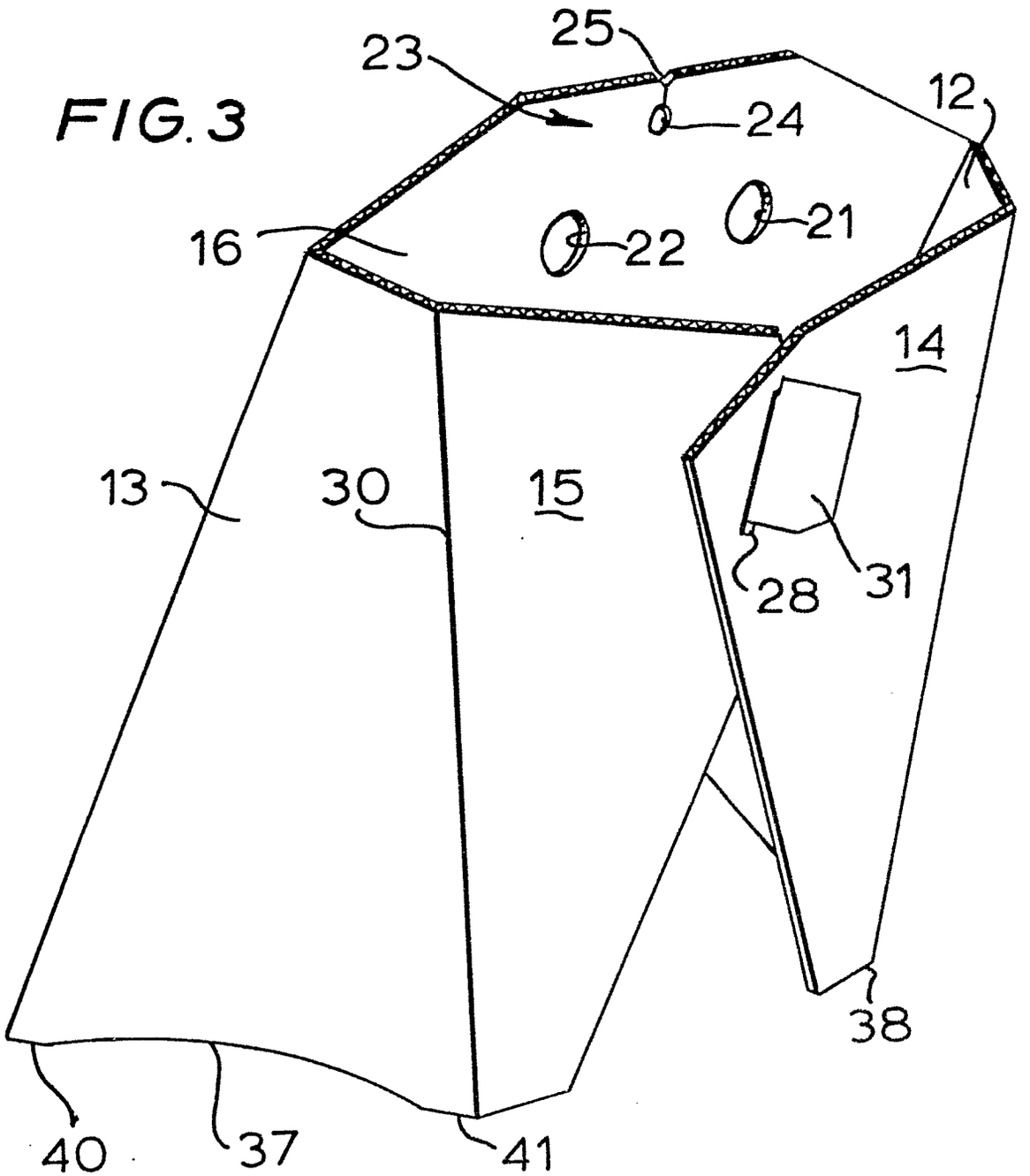


FIG. 4