



(11) **EP 1 036 015 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
14.03.2007 Bulletin 2007/11

(21) Application number: **98943164.8**

(22) Date of filing: **09.09.1998**

(51) Int Cl.:
B65D 71/42 (2006.01)

(86) International application number:
PCT/SE1998/001607

(87) International publication number:
WO 1999/012826 (18.03.1999 Gazette 1999/11)

(54) **CARRIER FOR BOTTLES, METHOD OF APPLYING SUCH CARRIERS AND APPARATUS FOR CARRYING OUT SUCH METHOD**

FLASCHENTRÄGER, VERFAHREN UND VORRICHTUNG ZUM ANBRINGEN DIESES TRÄGERS
PORTE-BOUEILLES, SON PROCEDE D'UTILISATION, ET APPAREIL PERMETTANT DE METTRE
EN OEUVRE CE PROCEDE

(84) Designated Contracting States:
AT BE CH DE DK FI FR GB LI NL SE
Designated Extension States:
LT LV

(30) Priority: **09.09.1997 SE 9703265**

(43) Date of publication of application:
20.09.2000 Bulletin 2000/38

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EP-A1- 0 271 895 **EP-A1- 0 317 379**
WO-A-97/18993 **FR-A- 1 552 369**
FR-A- 2 138 409 **GB-A- 2 301 079**

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Description

[0001] The present invention relates to a carrier for one or more bottles or the like and set forth in more detail in the preamble of claim 1. The invention also relates to a method of applying such a carrier on bottles or the like according to the preamble of the first method claim as well as a device with one or more carriers according to the first device claim.

[0002] The particular object of the invention is to develop a carrier designed for sets of two or more so called pull-out bottles.

[0003] Carriers or rather packing devices according to the preamble of claim 1 are already known by EP-A1 0 317 379. However, such devices, filled with merchandise, are at least not suitable for one-hand carrying, and the merchandise is supported and carried respectively only on one side, which of course is a substantial drawback and means, that heavy objects, e.g. magnum bottles or the like, can not be considered at all. Thus, this device is designed for light-weight objects, namely yoghurt cups and the like, which are to be inserted into the plane device from above, the lateral fields and the guide flaps connected to these fields being folded upwards and downwards respectively. The lateral fields have no special means designed to improve the shape adjustment to the carried objects and no means, which enhances the security during canying.

[0004] Other carriers are already known according to FR-A-1 552 369 and EP-A-0 271 895. In these two cases plane cardboard blanks are used, provided with inner punching cuts and cuts in connection with holes, designed for a lead-through of bottle tops having capsules, caps or the like. Flaps are obtained by means of the punching cuts and are folded upwards in order to abut with their free end edges against the lower sides of said capsules or the like, in order to support a set of bottles. In addition to said flaps there are provided for such a set through, lateral, upwardly and downwardly respectively folded lists, designed to make the carrier stiffer.

[0005] The lists according to the French document are kept in place only by a manual pressure, directed against the bottle tops and the area below the capsules, but the lists also have a carrying function, which however can be easily annulled e.g. by the fact, that the lists are resilient outwards due to an inherent material elasticity.

[0006] The lists according to said European document are kept in place by shoulders, which are upwardly projecting extensions, which horizontally or laterally abut against said bottle cap but have no carrying function. Since the lists are directed downwards and also enclose the bottle body itself having a larger diameter than the neck, it is difficult to seize such a carrier, at least when the bottles are large, the hand and the fingers respectively having to hold a much larger carrier, there also being a risk, that the carrier is deformed and loses some of its carrying capacity.

[0007] WO-A-97/18993 describes a method of pack-

aging together a series of bottles by means of holder blanks each one of which holds a number of bottles. Flaps on the holder reengage with flanges on the bottles to retain them.

[0008] GB-A-2 301 079, upon which the preamble of claim 1 is based, describes a gripper sleeve for holding a number of bottles formed from a creased sheet material.

[0009] Also, a certain problem with already known carriers of this type and with the methods and the devices used to apply the carriers respectively is the fact, that the carriers are supposed to, in a secure and reliable way, be able to hold and be applied on respectively bottles of different sizes and/or designed in various ways. One phenomenon in this connection is the fact that returnable bottles can be mixed with new bottles, which returnable bottles after several washing processes have shrunk considerably.

[0010] The object of the present invention is to counteract and, as far as possible, eliminate the above-mentioned drawbacks. Also, one object of the invention is to develop the state of the art in this technical field in various respects. A special object is to suggest a carrier, which functions in a reliable way, in which carrier no parts can be detached without intention. The carrier is designed to be able to carry maximal loads and be easy to seize. Also, the carrier is to be amenable to sheet designs, i.e. a sheet is to include a plurality of carriers and this sheet is to, in one step, be applied on a plurality of bottle rows, placed in one or several bags, trays, boxes or the like. Also, in this connection a change to varying bottle row formations is to be feasible in a relatively easy, fast and economic manner.

[0011] These objects are attained according to the present invention by designing a carrier of the type described in the introduction mainly in such a way as is set forth in the characterizing clause of claim 1. Also, said objects are attained by designing a method and a device respectively of the types described in the introduction, mainly in the ways set forth in the characterizing clauses of the corresponding method claim and device claim respectively.

[0012] Additional characterizing features and advantages of the present invention are set forth in the following description, reference being made to the enclosed drawings, which show a preferred but not limiting embodiment of the invention. The drawings show in detail in:

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| Fig. 1 | a perspective view from above of a first embodiment of an already punched plane carrier blank; |
| Fig. 2 | a perspective view of the blank mainly according to Fig. 1, partially in an upwardly folded condition; |
| Fig. 3 | a perspective view of the carrier according to Fig. 2, applied on two bottles in its use position; |
| Figs. 4 and 5 | planar views of a second and a third re- |

respectively embodiment of an already punched plane carrier blank;
 Figs. 6 and 7 planar views from above of carrier blanks, arranged in sheet form in various mutual formations and designed according to any of the figures above; and
 Figs. 8-12 side views from two different directions of an automatic equipment designed to apply carriers and carriers, which are connected to each other in a sheet design, respectively, on top of bottle row formations in successive steps.

[0013] In the drawings a carrier 1 and a carrier blank 1 respectively are shown. The carrier is designed to carry at least two bottles or the like 2, preferably bottles having a neck portion 3, which converges upwards mainly conically and which preferably is limited upwards by a flange 4, above which the bottle is closed by means of a screw cap or the like 5.

[0014] Carrier 1 has three longitudinal fields 6 and 7, which preferably have roughly the same width, namely a central field 6 and a lateral field 7, connected to each one of the longitudinal sides of the central field 6. The carrier is suitably made of corrugated cardboard, the corrugations of the corrugated board extending perpendicularly to said fields. Fields 6 and 7 are separated from each other by grooves, perforations or other types of folding indications 8. Narrow sides 9 of lateral fields 7 are suitably somewhat backwardly inclined in relation to free longitudinal side 10 of the lateral fields, i.e. forms an angle with the latter, which is larger than 90°, e.g. about 120°, to avoid sharp corners within this area. However, said grooves or the like 8 are not continuous but are interrupted within the area of each opening 11, which is arranged in central field 6 to allow a bottle top to be lead through, namely in the shown embodiment cap 5, flange 4 and the uppermost portion of neck portion 3. Each opening 11 is obtained by means of two punching lines 12, which are situated along a circular line in central field 6 or follow other curves and which leave empty a central longitudinal area in the central field, in which a roughly X-shaped portion 13, which is similar to a diametrical section through a biconcave lense, is completely punched out.

[0015] On each side of the completely detached punching cuts these laterally delimit a guide flap 14, which consequently has convex lateral edges 15 up to and all the way from each folding indication 8 respectively and which has a convex free end edge 16. The latter convexity or the like implies, that the guide flaps abut with a maximal length against the top of the bottle cone in this area, by means of which an even safer and stronger retention of the bottles according to the following description is achieved. Guide flaps 14 are positioned in the same plane as the respective lateral fields 7 and follow its movements and vice versa, since these portions form a rigid unit.

[0016] According to a preferred embodiment folding indications 17 can start out from the ends of the punching lines right across, i.e. at right angles, in relation to and through lateral fields 7, in the form as e.g. perforations and such a folding indication 18 can also extend in a parallel direction between indications 17 from the middle or the top of end edge 16 to longitudinal side 10 of the lateral fields or up to the corners of an e.g. flattened U-shaped recess 19, the edges of which are formed by imaginary extensions of the folding indications 17. These recesses are designed to receive some portion of the bottle top, e.g. flange 4 or the lowermost portion of cap 5. Folding indications 8, 17, 18 are suitably arranged solely on and in respectively the main surface of the carrier, which forms its upper and inner side respectively after the application.

[0017] Such a carrier is used in the following manner: Fig. 1 shows a carrier blank, which has already been punched and is completely flat and therefore is easy to pile up, transport and use in a semi or fully automatic application line. In such a carrier lateral fields 7 are folded upwards along folding indications 8 according to Fig. 2, but the guide flaps are turned downwards out of holes 8. This can be quickly and easily done in an application line, the central field being pressed downwards and the lateral fields being moved upwards and inwards towards each other, e.g. until the free longitudinal edges of the lateral fields are close to each other and the lateral fields form an angle with the central field, which is e.g. 50-80°, preferably 70°, in which position the guide flaps on either side of each hole diverge upwards, so that a bottle top can be lead through the respective hole without being hindered by the guide flaps. However, at the end of the lead-through phase a remarkable automatic self-locking will be achieved, since the flange or possibly the cap will abut against those sides of the lateral fields, which face each other and the central field respectively, the lateral fields being slightly bent outwards, until the flange and the cap respectively have passed by the free longitudinal edges of the lateral fields and can be positioned on top of the same and in said recesses respectively. To accomplish this the inherent material elasticity is utilized, since the lateral fields cannot simply be swung outwards again, when the guide flaps abut against the bottle neck portion, which diverges downwards, and consequently tend to press back the lateral fields to a position below the flange or the cap, while said bottle neck portion keep the guide flaps divergent outwards, which is shown in Fig. 3. In connection with these movements and said utilization of the material elasticity or caused by a special previous operation a smaller folding about lines 17 and 18 can also be done, i.e. a slight deformation of the lateral fields and the guide flaps, which follow the bottle top contour, which allows the guide flaps to be swung somewhat further outwards and the lateral fields somewhat further inwards.

[0018] Thus, the carrier position according to Fig. 3 is self-locking and no particular means are required in order

to lock the carrier on a set of bottles.

[0019] The carriers 1 as shown in Figs. 4 and 5 mainly correspond to the embodiments shown in Figs. 1-3. Folding indications 8, 17 and 18 in Figs. 4 and 5 have been depicted as flat and wide grooves, which partially can have punching cuts 22, which penetrate the entire thickness of the blank, in order to additionally facilitate the folding. Folding indications 17 can extend, possibly in a step-wise manner, across the width of the carrier and openings 11 as well as the free edges of guide flaps 14 can be laterally delimited by concave punching cuts 12 and 15 respectively in order to form auxiliary flaps 21, which extend along the width of the entire central field 6. Auxiliary flaps 21 allow a narrower central field, while openings 11 can be moved a longer distance over a bottle top, which e.g. is higher and situated adjacent a bottle top, which is lower, e.g. due to repeated washings. Since the carrier must be pressed downwards a larger distance on the lower bottle top, at the same time a cone cross-section, the area of which is larger, of the higher bottle top is utilized. To accomplish this, or principally in order to meet the requirements irrespectively of the bottle height, the auxiliary flaps can be bent upwards and abut with their inherent elasticity resiliently against the outer side of the bottle top. In Figs. 4 and 5 it is shown, that in the one end portion of central field 6 a recess 23 at the end has been made, which also is shown in Fig. 6, and which reduces the material width in this area and consequently facilitates a separation or which only constitutes e.g. the one half of a guide opening. In Fig. 5 an oblong opening 24 is shown, which is situated in the central portion of the central field, suitably in the longitudinal direction of the carrier. Openings 25 are according to Fig. 4 arranged in the free ends of guide flaps 14 and supplement each other to circular shape or the like. These openings 23-25 can be designed to, temporarily during the preliminary folding and the application respectively, hold guide pins, which are shown in Figs. 8-12.

[0020] Auxiliary flaps 21 lead due to their shape simultaneously to concave lateral edges 15 on guide flaps 14, so that a larger space for the central portion of the carrier is obtained, which is used as a handle for seizing with one hand. Simultaneously a recess 19, which is central in relation to the longitudinal direction, facilitates a gripping also for small hands with less penetration of the free carrier edges into the hand as a result. Projections 20 result on the other hand, in that the free ends of guide flaps 14 extend further downwards on the conical bottle top, which of course constantly increases its protruding downwards. This results in a even safer and longer penetration of the free edges 10 of the lateral fields and projections 20 respectively below flanges 4, the carrying security being enhanced. Thanks to these features and a relatively narrow central field 6 in connection with this the lateral fields are pressed strongly from the outside against the conical bottle top, which due to its rounding presses the lateral fields outwards, which have to yield somewhat by being folded somewhat around folding in-

dications 17 and 18, which thus become somewhat rounded jointly with the guide flaps, which in this way can creep even further into a position around the bottle top below the flaps and additionally guarantee the bond and the carrying security.

[0021] The above-mentioned rounding of the guide flaps also results in a small shortening of the length of the carriers, which intentionally can be used as an instrument designed to guarantee the separation of individual carriers being parts of a sheet 26 and 27 respectively according to Figs. 6 and 7. The holding together of the individual carriers in such a sheet is accomplished by small non-punched bridges between adjacent carriers, which are separated from each other later on in connection with the application.

[0022] It is shown in Figs. 6 and 7, that it is possible to arrange the individual carriers in a sheet in practically arbitrary formations, e.g. corresponding to the bottle row formation in a tray, a box or the like. This substantial advantage with variation possibilities is also a result of the design of the automatic equipment described below, for pre-folding and application.

[0023] This automatic equipment is shown schematically and in an exemplifying way, designed for application of sheets of carriers for two bottles, one for each bottle, in Figs. 8-12 and is designated in its entirety with numerals 28. It comprises a lower mold 29, which suitably comprises several partial molds, which each is designed to receive a carrier blank. Each partial mold comprises in this case a W-shaped body 30 with a central support 31 and supports 32 at its ends. The former have a hole 33 for a temporary support for a guide pin 34, whereas the latter have a hole 35 for a temporary support of a knife 36. All the supports are designed to support central field 6 of the carriers and they have lateral edges in the form of equally long support flanges 37, which protrude one or two centimeters in a practical embodiment above the supports. The upper inner edges of the support flanges can be bevelled inwards in order to facilitate the accompanying of the lateral fields around the support flanges, i.e. the plane during the transition from Fig. 8 to Fig. 9 see the a)-portions. The web between the supports suitably has central, vertical through bores (not shown) in order to fasten the partial molds on a mounting plate (not shown) in the desired formation.

[0024] Above the supports, multiple function devices 38 and 39 are alternately arranged, which are vertically movable upwards and downwards. The devices 38 are designed to press, fold and grip, whereas the devices 39 are designed to press, possibly fold and separate. All the devices suitably are suspended from tube-shaped shafts 40, which with a central section are moved with sliding fit through a lower base plate 41, positioned above the devices, and the upper end of which is threaded into an upper base plate 43. In the shafts, there are guided guide rods 42 projecting from said shafts both upwardly and downwardly. The upper ends of said rods are provided with stop devices 46. Between these and the base plate

43 the guide rods suitably are surrounded by a compression spring (not shown), by means of which the height position of the lower end of the guide rod can be adjusted and/or a soft braking can be done, when the devices are lowered. The base plate 43 is connected to the base plate 41 by means of preferably pneumatic cylinders 44, which are controlled by a control center (not shown).

[0025] Said devices 39 are, like the devices 38, provided with press cushions 45, which are fastened to the lower ends of the guide rods e.g. by screwing and are provided to be pressed against the central field portions situated at the ends. Each cushion is also provided with a transversely arranged knife 36 and is designed to influence the ends of the two central fields, adjacent to each other and belonging to two carriers simultaneously, with its ends abutting each other. Of course, it is possible to arrange guide devices also within the area of the knives or even as knives designed as guide devices, which however normally is not necessary.

[0026] The upper longitudinal edges of cushions 45 are bevels 47, against which folding flaps 48 abut with their lower ends, which flaps are pivotally suspended from the lower end of the body 49 of the carriers, pivoting axels 50 extending in the longitudinal direction of the carriers. The lower inner longitudinal edges of the flaps can also abut, with a certain bevelling, against bevels 47 in order to secure the swinging outwards of the flaps. The contact of the folding flaps against the press cushion can be secured by means of pressure devices (not shown), acting in opposite directions, e.g. compression springs or the like. Above the press cushion 45 a body 49 is provided with a contact surface 51 for the press cushion.

[0027] Within the upper area of body 49 there are grip claws 53, which are suspended on both sides from pivoting axels 52, which extend in the longitudinal direction of the carrier and are influenced by springs in order to be forced outwards with their lower ends, which are at least somewhat bended in directions against each other. Inside the pivoting axels 52 a control block 54 is mounted at the lower end of the tube shaft, situated roughly in the center of the body, vertically seen, which block, when the shaft is lifted to an upper end position, will pivot the upper ends of the grip claws upwards, so that the lower ends of the grip claws will be moved towards each other and abut against the outer side of the folding flaps. To achieve this control block 54 is, within its upper laterally disposed area, provided with downwardly and upwardly inclined bevels 55.

[0028] Such a device works with reference to particularly Figs. 8-12 in the following manner: In Fig. 8 a carrier blank and a sheet 26 respectively, particularly according to Fig. 6, has been positioned on an array and combination of lower molds 29, which correspond to the number of individual blanks. At the same time as one or several devices respectively, 38 and 39 respectively, have been lowered in order to, with their respective cushions, loosely abut against the plane blank and sheet respectively, guide pin 34 of devices 38 has penetrated opening 23,

24 and 25 respectively, whereas knives 36 of devices 39 have cut through the connections between carrier blanks, which are situated adjacent to each other in the longitudinal direction. The folding flaps are folded inwards and the cushions are situated at a distance from the contact surface 51 of the body 49. The grip claws are kept stretched out with their lower ends.

[0029] In the position shown in Fig. 9 cushions 45 have been pressed downwards on supports 31 and 32 and simultaneously folding flaps 48 have been opened up, which has already been indicated by arrows in Fig. 8. This opening up is caused by obliterating the distance between the cushions and contact surfaces 51, which occurs due to the relative displacement between the shafts and the guide rods. In this case all the upper portion of the device is lowered, said relative displacement first of all being accomplished thereby. The cushions with the opened up folding flaps are then, by continued lowering of said upper device portion, pressed downwards between support flanges 37, the free outer/lower longitudinal edges of the folding flaps influencing the folding indications, e.g. penetrating into possibly existing slots, grooves or the like, and making certain, that the folding is done exactly in the folding indications and not beside them. When this folding is initiated, also all connections between adjacent carriers in a sheet in the transversal direction are broken. In this regard, already at the punching of the sheet, longitudinal cuts have been punched out, which are disrupted solely by narrow bridges, which it is easy to break. In the position shown in Fig. 9 the entire central field 6 is kept pressed against the supports 31 and 32, whereas the lateral fields abut against the inner side of the support flanges. Guide flaps 14 have been swung downwards and outwards, at the same time as the lateral fields have been folded upwards, and are now positioned in the recesses between the adjacent supports 31 and 32. The relative displacement between the shafts and the guide rods is shown in the upper portion of Fig. 9.

[0030] In the position shown in Fig. 10 cylinders 44 have pressed upper base plate 43 upwards, whereas the lower base plate 41 remains in its position. This displacement upwards pulls the shafts 40 with control blocks 54 beyond pivoting axels 50 and to the same height as the upper ends of the grip claws 53, which are pressed outwards, the lower claw ends being swung towards each other, hitting the upper portions of the upwardly folded fields 7 and pivoting them with an additional folding about their folding indications in order to finally grab lateral fields 7 onto the outer side of folding flaps 48. In this phase, shown in Fig. 10, the lateral fields are folded in a trapezoid-like way towards each other and the guide flaps also in a trapezoid-like way but away from each other. Since the support flanges only are located along the length of the supports, the guide flaps can project between the supports, which is shown in Fig. 10 a.

[0031] Now either the lower or the upper mold portion can be removed, and then a bottle row formation, which

corresponds to a carrier constellation, can be placed below the upper device portion with the clamped up carriers, which subsequently are lowered and applied to the bottles according to Figs. 11 and 12 and in the way already described, and then new carriers are positioned on the molds and a new cycle can be initiated. After the carrier application cylinders 44 are activated again in order to move the two base plates together to a position shown in Fig. 8, the control block being moved downwards in relation to the body and pivoting axels 50, so that the grip claws are allowed to swing outwards, influenced by said spring device and guide rod 42 and cushion 45 again are removed from contact surface 51.

[0032] In this shown and described embodiment devices 39 are mounted only outside guide flaps 14, e.g. above the central portion of a central field 6 according to Fig. 4, so that these devices do not obstruct the application on bottles, whereas devices 38 are mounted above the end portions of the central fields, which latter devices press these end portions beyond flanges 4 to fold adjacent auxiliary flaps, without any not desirable folding being done. Since the devices 38 and 39 are suspended and consequently stepless pivotable around the tube-shaped shafts, a change in the position orientation in relation to the base plates can easily and quickly be obtained. Also, in these devices a plurality of alternative bore arrays for the shafts can be arranged, which match various formations, e.g. for a sheet 26 or 27.

[0033] The present invention is not limited to the embodiments described above and shown in the enclosed drawings but can be modified within the scope of the invention as defined by the following claims.

Claims

1. A carrier (1) for one or more bottles (2) having flanges at their neck (4) above their closure (5) which comprises a plane blank of cardboard or like sheet material having three longitudinal fields (6, 7), a central field (6) and a lateral field (7), connected via a folding indication (8) to each longitudinal side of said central field (6) having openings (11) formed by punch lines (12) designed as a lead-through for the necks (4) of bottles (2), in which the openings (11) in conjunction with guide flaps (14) project and remain during the punching and are connected to the lateral fields (7) and the stiff units formed from the lateral fields (7) and the guide flaps (14) within the area encompassed by the punching lines (12) so that in the use they project downwardly from the central field (6) and the lateral fields (7) project upwardly in order to abut the flanges (4) in order to support the bottles (2), and the carrier (1) is designed to be applied from above on a single row of bottles (2) having upwardly converging neck sections (3) so that the openings (11) of the central field (6) engage a single bottle row, and whereby every opening in the carrier (1) and

from each lateral field (7) on mutually diametrically opposing sides said guide flaps (14) project and are maintained in their outwardly pressed position by the tops of the bottles (2) which have penetrated the openings (11) to the extend of their closure (5), flange (4) and conical neck (3) whereby the lateral fields (7) are maintained in a self-locking carrying position, **characterized in that** from the ends of the punching lines (12) project first fold indications (17) extending transversal perpendicular to and through the lateral fields (7) and parallelly between said folding indications (17) from the center or top of the edge (16) to longitudinal sides (10) of the lateral fields (7) extends a second folding indication (18) wherein said edge (16) is defined by the ends of punching lines (12).

2. A carrier according to claim 1, **characterized in that** said three fields (6, 7) roughly have the same width and/or in that the carrier (1) is made of cardboard, the cardboard corrugations extending in a transversal direction in relation to the longitudinal extension of the fields and/or **in that** the narrow sides (9) of the lateral fields are slightly inclined backwards up to the free longitudinal side (10) of the lateral fields, i.e. enclose with the same an angle, which is larger than 90°, e.g. roughly 120°, in order to avoid sharp corners within this area.

3. A carrier according to claim 1, **characterized in that** each opening (11) is formed by two, along a circular line or other curves, in the central field (6) situated punching lines (12), which leave a central oblong area free, in which a roughly X-shaped portion (13), similar to a diametrical section through a biconcave lens, has been punched away completely, and/or **in that** on each side of the completely freed punching cuts they are laterally limited by a guide flap (14) with convex lateral edges (15) up to and all the way from respectively each folding indication (8) and/or with a convex free end edge (16).

4. A carrier according to claim 1, **characterized in that** in the longitudinal side (10) of the lateral fields shallow U-shaped recesses (19) are cut away, which are designed to hold the flanges (4) and/or be situated outside them and/or **in that** above the longitudinal side (10) projections (20) extend outwards, designed to, possibly with very shallow recesses, hold the flanges (4).

5. A carrier according to claim 1, **characterized in that** said folding indications (8, 17, 18) are designed as shallow, wide grooves, which partially have punching cuts (22), which extend in a transversal direction to the thickness of the blank in order to further facilitate the folding and/or **in that** the transversal folding indications (17) extend continuously or stepwise along the width of the carrier blank and/or the open-

ings (11) as well as the free edges of the guide flaps (14) are laterally limited by concave punching cuts (12 and 15 respectively) in order to obtain auxiliary flaps (21), which extend along the entire width of the central field (6) and which allow a narrower central field, while the openings (11) can be moved a longer distance over an e.g. higher bottle top and which are bendable upwards in order to adhere with their inherent elasticity resiliently on the outer side of the bottle top and/or in the one end portion of the central field (6) a, at the end situated, recess (23) is cut out in order to reduce the material width in this area and consequently facilitate a separation or to constitute e.g. the one half of the guide opening and/or **in that** in the central portion of the central field a preferably oblong (in the longitudinal direction of the carrier) guide opening (24) is situated and/or **in that** openings (25) are arranged in the free ends of guide flaps (14), which supplement each other to a circular form or the like, which openings (23-25) are designed to be temporarily used as guide means during the pre-folding and the application respectively and/or **in that** the auxiliary flaps (21) form concave lateral edges (15) of the guide flaps (14) in order to obtain a larger space for the central portion of the carrier, which constitutes a handle to be seized by one hand, and/or **in that** a recess (19) is used, which is central, seen in the longitudinal direction, in order to facilitate the gripping of the applied carrier, and/or **in that** the projections (20) are designed to allow the free ends of the guide flaps (14) to extend further downwards on a conical bottle top and to an even securer and longer penetration of the free edges (10) of the lateral fields and the projections (20) below the flanges (4) respectively and an increase in the carrying security as well as a strong pressing of the lateral fields from outside against the conical bottle top, which due to its rounding is designed to press the lateral fields outwards, which are designed to yield somewhat, since they are folded somewhat along the folding indications (17, 18), which are designed to be used jointly with the guide flaps, which in this way are designed to creep even further inwards around the bottle top below the flange and guarantee the joint and the carrying security even more, also a small shortening of the length of the carrier being obtained in this way, possibly in order to secure the separation of individual carriers, which are united to each other in a sheet (26, 27).

6. A method of applying a carrier (1) according to claim 1 on bottles, which carrier comprises a plane cardboard blank or the like and is designed for several bottles (2), which at the top are limited by a flange (4), above which the bottles are closed by a screw cap or the like (5), and which carrier has three longitudinal fields (6, 7), namely a central field (6) and a lateral field (7), connected to each longitudinal side

of the central field via a folding indication (8), the central field (6) having openings (11), formed by punching lines (12), for a lead-through of portions of the bottles (3-5), in which openings (11) guide flaps (14) project into and remain respectively during the punching, the lateral fields (7) being connected to and with these stiff units forming the guide flaps (14), within the area of which said punching lines (12) are interrupted, and which are allowed, in the use position of the carrier, to project downwards from the central field, whereas the lateral fields (7) are folded upwards in order to abut below the radially projecting flanges (4) in order to support the bottles (2), and a carrier is used, in which the central field (6) has openings (11) for only one bottle row, into which, in the plane carrier blank, in each opening (11) and from each lateral field (7), at mutually diametrically opposite sides said guide flaps (14) project, which are pressed outwards and retained respectively in their upwardly pressed position by the bottle top, which has penetrated from below, with its cap, flange and neck portion (3) in order to keep the lateral fields in a self-locking carrying position, and the carrier is pre-folded to roughly the desired use position and is applied from above on only one row of bottles (2) having an upwardly substantially conically converging neck portion (3), **characterized in that** from the ends of the punching lines (12) in a transversal direction, perpendicularly, to and through the lateral fields (7) first folding indications (17) project in the form of e.g. perforations, and parallelly between said folding indications (17) from the center or the top of the end edge (16) to the longitudinal sides (10) of the lateral fields (7) extends a second folding indication (18), wherein said edge (16) is defined by the ends of the punching lines (12).

7. A device with one or more carriers according to claim 1, which includes means for influencing guide flaps (14) and for pre-folding the carrier (1), or series of carriers, to approximate the use position whereby the necks (4) of the bottles (2), enter the openings (11) which, in conjunction with guide flaps (14) are connected to the lateral fields (7) and the stiff units formed from the lateral fields (7) and the guide flaps (14) within the area encompassed by the punching lines (12) so that in the use position they project downwardly from the central field (6) and the lateral fields (7) project upwardly in order to abut the flanged (4) in order to support the bottles (2), the carrier (1) is designed to be applied from above on a single row of bottles (2) having upwardly converging neck sections (3) so that openings (11) of the central field (6) engage a single bottle row, and whereby every opening in the carrier (1) and from each lateral field (7) on mutually diametrically opposing sides said guide flaps (14) project and are maintained in their outwardly pressed position by the tops of the bottles (2)

which have penetrated the openings (11) to the extent of their closure (5), flange (4) and conical neck (3) whereby the lateral fields (7) are maintained in a self-locking carrying position, **characterized in that** the ends of the punching lines (12) project first fold indications (17) extending transversal perpendicular to and through the lateral fields (7) and parallelly between said first folding indications (17) from the center or top of the edge (16) to longitudinal sides (10) of the lateral fields (7) extends a second folding indication (18) wherein said edge (16) is defined by the ends of punching lines (12).

8. A device according to claim 7, **characterized in that** the device (28) comprises a lower mold (29), which suitably comprises a plurality of partial molds, each one of which is designed to receive a carrier blank, and which comprises a substantially W-shaped body (30) with a central support (31), which has a hole (33) for a temporary holding of a guide pin (34) and supports (32), mounted at the ends, which have a hole (35) for a temporary holding of a knife (36), that all the supports are designed to support the central fields (6) of the carriers, and that they are laterally provided with support flanges (37) with the same length, which project somewhat above the supports, that the upper inner edges of the support flanges preferably are inwardly bevelled in order to facilitate a bringing along of the lateral fields around the support flanges, whereas the web between the supports suitably is provided with central, vertical bores in order to fasten the partial molds onto a mounting plate in the desired formation.

9. A device according to claim 8, **characterized in that** above said supports are mounted vertically upwardly and downwardly movable alternately disposed multiple function devices (38, 39), the one of which (38) being designed to press, fold and grip, whereas the other one (39) is designed to press, possibly fold and separate, that all these devices suitably are suspended in tube-shaped shafts (40), which with a central section can be moved with a sliding fit through a lower base plate (41), disposed above the devices and the upper end of which is threaded into an upper base plate (43), that in the shafts above the same upwardly as well as downwardly moveable guide rods (42) are guided, the upper ends of which are provided with stop devices (46), between which and the upper base plate (43) the guide rods suitably are surrounded by a compression spring, by means of which the height position can be adjusted by the lower end of the guide rod and/or a soft braking can be done, when the devices are lowered, that the upper base plate (43) is connected to the lower one (41) via preferably pneumatic cylinders (44), which are guided by a control center, that said second device (39) is provided with, like said one device (39), at the

lower ends of the guide rods e.g. through threading on, fastened press cushions (45), designed to be pressed against the two portions of the central field, which are disposed at the ends thereof, that each cushion of said second device is provided with a transversally positioned knife (36) and is designed to at the same time influence two ends of the central field, which are adjacent to each other and belong to two carriers, the ends of which are adjacent each other.

10. A device according to claim 9, **characterized in that** the upper longitudinal edges of the cushions (45) are bevels (47), against which folding flaps (48) abut with their lower ends, which flaps are pivotally suspended at the lower end of the body (49) of the devices, the swinging axels (50) extending in the longitudinal direction of the carriers, that the lower inner longitudinal edges of the flaps abut preferably with a certain bevelling against the bevels (47) in order to guarantee the outwardly pivoting of the flaps, that the contact between the folding flaps and the press cushion is designed to be guaranteed by means of compression means, which act against each other, e.g. compression springs, that the body (49) above the press cushion (45) is provided with a contact surface (51) for the press cushion, that within the upper area of the body (49) grip claws (53) are suspended on both sides on swinging axels (52), which extend in the longitudinal direction of the carrier, which grip claws are spring-loaded to be pressed outwards with their lower, at least somewhat, towards each other bent ends, that inside the swinging axels (52) at the lowermost, roughly in the center of the body, seen in the vertical direction, disposed end of the tube shaft a central block (54) is disposed, which, when the shaft is lifted upwards to an upper end position, is designed to pivot the upper ends of the grip claws outwards and move the lower ends of the grip claws in a direction against each other and up to an abutment against the outer side of the folding flaps, and that the control block (54) within this upper lateral area is provided with downwardly and outwardly inclined bevels (55).

Patentansprüche

1. Träger (1) für eine oder mehrere Flaschen (2) mit Flanschen an ihrem Hals (4) oberhalb ihres Verschlusses (5), der einen ebenen Rohling aus Pappe oder ähnlichem Blattmaterial mit drei Längsfeldern (6,7), einem zentralen Feld (6) und einem seitlichen Feld (7), umfasst, verbunden durch eine Faltangabe (8) mit jeder Längsseite des zentralen Felds (6) mit Öffnungen (11) %, die aus Stempellinien (12) gebildet sind, als Durchgang für Hälse (4) von Flaschen (2), wobei die Öffnungen (11) in Verbindung mit Füh-

- rungsklappen (14) vorragen und während des Stan-
 zens bleiben und mit den seitlichen Feldern (7) ver-
 bunden sind, wie auch mit den steifen Einheiten, die
 von den seitlichen Feldern (7) gebildet werden, und
 den Führungsklappen (14) innerhalb des Bereichs
 der Stanzlinien (12), so dass sie beim Gebrauch von
 dem zentralen Feld (6) nach unten ragen und die
 seitlichen Felder (7) nach oben ragen, um an den
 Flanschen (4) anzuschlagen, um die Flasche (2) zu
 stützen, und der Träger (1) soll von oben auf einer
 einzelnen Reihe von Flaschen (2) mit aufwärts kon-
 vergierenden Halsabschnitten (3) angebracht wer-
 den, so dass die Öffnungen (11) des zentralen Fel-
 des (6) in eine einzelne Flaschenreihe eingreifen,
 und wodurch jede Öffnung in dem Träger (1) und
 von jedem seitlichen Feld (7) auf gegenseitig diame-
 tral gegenüberliegenden Seiten besagte Führungs-
 klappen (14) vorragen und von den Spitzen der Fla-
 schen (2) in ihrer nach außen gedrückten Position
 gehalten werden, die (11) in dem Umfang ihrer
 Schließung (5) die Öffnungen, den Flansch (4) und
 den konischen Hals (3) durchdrungen haben, wo-
 durch die seitlichen Felder (7) in einer selbstschlie-
 ßenden Tragposition beibehalten werden, **gekenn-
 zeichnet dadurch, dass** von den Enden der Stanz-
 linien (12) erste Faltangaben (17) vorragen, die sich
 quer senkrecht zu den und durch die seitlichen Fel-
 der (7) erstrecken und sich parallel zwischen besag-
 ten Faltangaben (17) von dem Zentrum oder der
 Spitze der Kante (16) zu den Längsseiten (10) der
 seitlichen Felder (7) eine zweite Faltangabe (18) er-
 streckt, wobei besagte Kante (16) von den Enden
 von Stanzlinien (12) definiert wird.
2. Träger nach Anspruch 1, **gekennzeichnet da-
 durch, dass** die drei Felder (6,7) ungefähr dieselbe
 Breite haben und/oder **dadurch**, dass der Träger (1)
 aus Pappe hergestellt ist, wobei die Pappwellen in
 Querrichtung in Bezug auf die Längsausdehnung
 der Felder verlaufen, und/oder **dadurch**, dass die
 engen Seiten (9) der seitlichen Felder leicht rück-
 wärts bis zur freien Längsseite (10) der seitlichen
 Felder geneigt sind, d. h. mit ihr einen Winkel um-
 fassen, der größer als 90° ist, z.B. ungefähr 120°,
 um scharfe Ecken innerhalb dieses Bereichs zu ver-
 meiden.
3. Träger nach Anspruch 1, **gekennzeichnet da-
 durch, dass** jede Öffnung (11) von zwei entlang ei-
 ner runden Linie oder anderen Kurven in dem zen-
 tralen Feld (6) verlaufenden Stanzlinien (12) gebildet
 wird, die einen zentralen länglichen Bereich frei las-
 sen, in dem ein ungefähr x-förmiges Teilstück (13),
 ähnlich einem diametralen Querschnitt durch eine
 bikonkave Linse, vollständig weggestanzt wurde,
 und/oder **dadurch**, dass sie auf jeder Seite der voll-
 ständig befreiten Stanzschnitte seitlich von einer
 Führungsklappe (14) mit konvexen seitlichen Rän-
- dern (15) bis zu und ganz weg von jeder Faltangabe
 (8) beschränkt werden und/oder mit einer konvexen
 freien Endkante (16).
4. Träger nach Anspruch 1, **gekennzeichnet da-
 durch, dass** in der Längsseite (10) der seitlichen
 Felder flache U-förmige Vertiefungen (19) wegge-
 schnitten sind, die die Flansche (4) halten und/oder
 außerhalb davon liegen und/oder **dadurch**, dass
 oberhalb der Längsseite (10) Vorsprünge (20) nach
 außen verlaufen, die, möglicherweise mit sehr fla-
 chen Vertiefungen, die Flansche (4) halten.
5. Träger nach Anspruch 1, **gekennzeichnet da-
 durch, dass** besagte Faltangaben (8,17,18) flache,
 breite Rillen sind, welche teilweise Stanzschnitte
 (22) haben, die in Querrichtung zu der Stärke des
 Rohlings verlaufen, um noch mehr die Faltung er-
 leichtern, und/oder **dadurch**, dass die querlaufen-
 den Faltangaben (17) fortlaufend oder schrittweise
 entlang der Breite des Rohträgers und/oder der Öff-
 nungen (11) verlaufen sowie die freien Ränder der
 Führungszapfen (14) seitlich von konkaven Stanz-
 schnitten (12 und 15) begrenzt werden, um Hilfsklap-
 pen (21) zu erhalten, die entlang der ganzen Breite
 des zentralen Feldes (6) verlaufen und die ein en-
 gereres zentrales Feld zulassen, während die Öffnun-
 gen (11) eine längeren Strecke über ein z.B. höheres
 Flaschenoberteil bewegt werden können und nach
 oben biegsam sind, um mit ihrer innewohnenden Ela-
 stizität elastisch an der Außenseite des Flaschen-
 oberteils anzuliegen, und/oder **dadurch**, dass in
 dem einen Endstück des zentralen Feldes (6) eine
 am Ende befindliche Vertiefung (23) ausgeschnitten
 ist, um die Materialbreite in diesem Bereich zu redu-
 zieren und folglich eine Trennung erleichtern oder
 um z.B. die eine Hälfte der Führungsöffnung zu bil-
 den, und/oder **dadurch**, dass in dem Mittelteil des
 zentralen Feldes eine vorzugsweise längliche (in
 Längsrichtung des Trägers) Führungsöffnung (24)
 liegt, und/oder **dadurch**, dass Öffnungen (25) in den
 freien Enden von Führungsklappen (14) angebracht
 sind, die einander zu einer runden Form oder Ähn-
 lichem ergänzen, wobei die Öffnungen (23 25) vor-
 übergehend als Führungsmittel während der Vorfal-
 tung und der Anbringung verwendet werden, und/
 oder **dadurch**, dass die Hilfsklappen (21) konkave
 seitliche Ränder (15) der Führungsklappen (14) bil-
 den, um mehr Platz für den Mittelteil des Trägers zu
 erhalten, der einen Griff bildet, der mit einer Hand
 erfasst werden kann, und/oder **dadurch**, dass eine
 Vertiefung (19) benutzt wird, die zentral ist, in Längs-
 richtung gesehen, um das Greifen des angebrachten
 Trägers zu erleichtern, und/oder **dadurch**, dass die
 Vorsprünge (20) es den freien Enden der Führungs-
 klappen (14) gestatten, weiter nach unten auf einem
 konischen Flaschenoberteil zu verlaufen und ein
 noch sichereres und längeres Eindringen der freien

Ränder (10) der seitlichen Felder und der Vorsprünge (20) unterhalb der Flansche (4) und eine Erhöhung des Tragsicherheits sowie ein starkes Drücken der seitlichen Felder von außen gegen das konische Flaschenoberteil, das aufgrund seiner Abrundung die seitlichen Felder nach außen drücken soll, die etwas nachgeben, weil sie entlang den Faltungsangaben (17, 18) leicht gefaltet sind, die gestaltet sind, um gemeinsam mit den Führungsklappen verwendet zu werden, die auf diese Weise noch weiter hinein um das Flaschenoberteil herum unterhalb des Flanschs kriechen und die Verbindung und die Tragsicherheit noch besser garantieren, auch eine kleine Verkürzung der Länge des Trägers wird auf diese Weise erhalten, möglicherweise um die Trennung von einzelnen Trägern zu sichern, die miteinander in einem Blatt (26, 27) vereinigt sind.

6. Verfahren zum Anbringen eines Trägers (1) nach Anspruch 1 auf Flaschen, wobei der Träger einen ebenen Papprohling oder Ähnliches umfasst und für mehrere Flaschen (2) gestaltet ist, die an der Spitze von einem Flansch (4) begrenzt sind oberhalb dessen die Flasche von einem Schraubdeckel oder Ähnlichem (5) verschlossen sind, und wobei der Träger drei Längsfelder (6, 7) hat, und zwar ein zentrales Feld (6) und ein seitliches Feld (7), verbunden mit jeder Längsseite des zentralen Feldes durch eine Faltangabe (8), wobei das zentrale Feld (6) Öffnungen (11) aufweist, die durch Stanzlinien (12) gebildet werden, für einen Durchgang von Teilstücken der Flaschen (35), wobei in die Öffnungen (11) Führungsklappen (14) ragen und jeweils während das Stanzens darin verbleiben, wobei die seitlichen Felder (7) mit diesen steifen Einheiten verbunden sind, die die Führungsklappen (14) bilden, innerhalb des Bereichs derer die Stanzlinien (12) unterbrochen sind, und die in der Gebrauchslage des Trägers, von dem zentralen Feld nach unten ragen, während die seitlichen Felder (7) nach oben gefaltet werden, um unterhalb der radial vorstehenden Flansche (4) anzuschlagen, um die Flaschen (2) zu stützen, und ein Träger wird benutzt, wobei das zentrale Feld (6) Öffnungen (11) für nur eine Flaschenreihe hat, in die, in dem ebenen Rohträger, in jeder Öffnung (11) und von jedem seitlichen Feld (7) aus, an einander diametral gegenüberliegenden Seiten, die Führungsklappen (14) ragen, die jeweils in ihrer aufwärts gedrückten Position von dem Flaschenoberteil nach außen gedrückt und zurückgehalten werden, das von unten gekommen ist, mit seiner Kappe, Flansch und Halsteil (3), um die seitlichen Felder in einer selbstschließenden Tragposition zu halten, und der Träger wird ungefähr in die gewünschte Verwendungsposition vorgefaltet und wird auf nur einer Reihe von Flaschen (2) mit einem nach oben hin im wesentlichen konisch konvergierenden Halsteil (3) von oben angebracht, **gekennzeichnet dadurch,**

dass von den Enden der Stanzlinien (12) in Querrichtung, senkrecht, zu und durch die seitlichen Felder (7) erste Faltangaben (17) in Form von z.B. Perforierungen ragen, und parallel zwischen besagten Faltangaben (17) von der Mitte oder Spitze der Abschlusskante (16) zu den Längsseiten (10) der seitlichen Felder (7) sich eine zweite Faltangabe (18) erstreckt, wobei besagte Kante (16) von den Enden der Stanzlinien (12) definiert wird.

7. Vorrichtung mit einem oder mehreren Trägern nach Anspruch 1, mit Mitteln zum Einwirken auf Führungsklappen (14) und zum Vorbiegen des Trägers (1) oder einer Reihe von Trägern, um sie die Gebrauchslage anzunähern, wodurch die Hälse (4) der Flaschen (2) in die Öffnungen (11) eintreten, die, in Verbindung mit Führungsklappen (14), mit den seitlichen Feldern (7) und den starren Einheiten verbunden sind, die von den seitlichen Feldern (7) gebildet werden, und den Führungsklappen (14) innerhalb des Bereichs, der von den Stanzlinien (12) umschlossen wird, so dass sie in der Gebrauchslage von dem zentralen Feld (6) nach unten ragen und die seitlichen Felder (7) nach oben ragen, um an den Flansch (4) anzuschlagen, um die Flaschen (2) zu stützen; der Träger (1) soll auf einer einzelnen Reihe von Flaschen (2) mit aufwärts konvergierenden Halsabschnitten (3) von oben angebracht werden, so dass Öffnungen (11) des zentralen Feldes (6) in eine einzelne Flaschenreihe eingreifen, und wodurch jede Öffnung in dem Träger (1) und von jedem seitlichen Feld (7) auf gegenseitig diametral gegenüberliegenden Seiten besagte Führungsklappen (14) vorragen und in ihrer nach außen gedrückten Position von den Spitzen der Flaschen (2) beibehalten werden, die bis hin zu der Schließung (5), dem Flansch (4) und dem konischen Hals (3) die Öffnungen (11) durchdrungen haben, wodurch die seitlichen Felder (7) in einer selbstschließenden Tragposition gehalten werden, **gekennzeichnet dadurch, dass** die Enden der Stanzlinien (12) erste Faltangaben (17) ragen, die quer senkrecht zu den und durch die seitlichen Felder (7) verlaufen und parallel zwischen besagten ersten Faltangaben (17) von dem Zentrum oder der Spitze der Kante (16) zu den Längsseiten (10) der seitlichen Felder (7) sich eine zweite Faltangabe (18) erstreckt, wobei besagte Kante (16) von den Enden von Stanzlinien (12) definiert wird.
8. Vorrichtung nach Anspruch 7, **gekennzeichnet dadurch, dass** die Vorrichtung (28) eine untere Form (29) umfasst, die zweckmäßigerweise eine Vielzahl von Teilformen umfasst, von denen jede einen Rohträger aufnehmen soll, und die einen im wesentlichen W-förmigen Körper (30) mit einer zentralen Stütze (31) umfasst, der/die ein Loch (33) zum zeitweisen Halten eines Führungsbolzens (34) und von

Stützen (32) aufweist, montiert an die Enden, die ein Loch (35) zum zeitweisen Halten eines Messers (36) aufweisen, dass alle Stützen gestaltet sind, um die zentralen Felder (6) der Träger zu stützen, und dass sie seitlich mit Stützflanschen (37) mit derselben Länge ausgestattet sind, die oberhalb der Stützen etwas vorstehen, dass die oberen inneren Ränder der Stützflansche vorzugsweise nach innen abgekantet sind, um ein Heranbringen der seitlichen Felder um die Stützflansche herum zu erleichtern, während der Steg zwischen den Stützen zweckmäßigerweise zentrale, senkrechte Bohrungen aufweist, um die Teilformen auf eine Montageplatte in der gewünschten Form zu befestigen.

9. Vorrichtung nach Anspruch 8, **gekennzeichnet dadurch, dass** oberhalb besagter Stützen senkrecht auf- und abwärts bewegliche abwechselnd angeordnete Mehrfachunktions-Vorrichtungen (38,39) montiert sind, von denen eine (38) drücken, falten und greifen soll, während die andere (39) drücken, eventuell falten und trennen soll, dass alle diesen Vorrichtungen zweckmäßigerweise in rohrförmigen Wellen (40) aufgehängt sind, die mit einem Mittelabschnitt mit einem Gleitsitz durch eine untere Grundplatte (41) hindurch bewegt werden können, angeordnet oberhalb der Vorrichtungen, und deren oberes Ende in eine obere Grundplatte (43) hineingewunden ist, dass in den Wellen oberhalb davon nach oben und nach unten bewegliche Führungsstangen (42) geführt sind, deren obere Enden mit Haltevorrichtungen (46) ausgestattet sind, zwischen denen und der oberen Grundplatte (43) die Führungsstangen zweckmäßigerweise von einer Druckfeder umschlossen sind, wodurch die Höhenposition des unteren Endes der Führungsstange eingestellt werden kann und/oder ein weiches Bremsen erfolgen kann, wenn die Vorrichtungen abgesenkt werden, dass die obere Grundplatte (43) mit der unteren (41) durch vorzugsweise pneumatische Zylinder (44) verbunden ist, die von einem Steuerungszentrum geführt werden, dass besagte zweite Vorrichtung (39), wie die Vorrichtung (38), an den unteren Enden der Führungsstangen z.B. durch Gewinde befestigten Presskissen (45) ausgestattet ist, die gegen die beiden Teilstücke des zentralen Feldes gedrückt werden, die an deren Enden angeordnet sind, dass jedes Kissen der zweiten Vorrichtung mit einem quer positionierten Messer (36) ausgestattet ist und gleichzeitig zwei Enden des zentralen Feldes beeinflussen soll, die aneinander angrenzen und zwei Trägern angehören, deren Enden aneinander anliegen.
10. Vorrichtung nach Anspruch 9, **gekennzeichnet dadurch, dass** die oberen Längsränder der Kissen (45) Fasen (47) sind, gegen welche Faltenklappen (48) mit ihren unteren Enden anschlagen, wobei die Klappen als Drehpunkt an dem unteren Ende des Kör-

pers (49) der Vorrichtungen aufgehängt sind, wobei die Schwingachsen (50) in Längsrichtung der Träger verlaufen, dass die unteren inneren Längsränder der Klappen vorzugsweise mit einer bestimmten Abkantung gegen die Fasen (47) anschlagen, um das Nach-Außen-Drehen der Klappen zu garantieren, dass der Kontakt zwischen den Faltenklappen und dem Presskissen mittels Komprimierungsmitteln garantiert werden soll, die gegeneinander wirken, z.B. Druckfedern, dass der Körper (49) oberhalb des Presskissens (45) mit einer Berührungsfläche (51) für das Presskissen ausgestattet ist, dass innerhalb des oberen Bereichs des Körpers (49) Griffkrallen (53) auf beiden Seiten auf Schwingachsen (52) aufgehängt sind, die in Längsrichtung des Trägers verlaufen und federbelastet sind, um mit ihren unteren, zumindest leicht zueinander gebogenen Enden nach außen gedrückt zu werden, dass in den Schwingachsen (52) am untersten, ungefähr in der Mitte des Körpers in senkrechter Richtung gesehen, Ende der Rohrwelle ein zentraler Block (54) angeordnet ist, der, wenn die Welle nach oben in eine obere Endposition gehoben wird, die oberen Enden der Griffkrallen nach außen drehen und die unteren Enden der Griffkrallen in einer Richtung gegeneinander und bis zu einem Anschlag gegen die Außenseite der Faltenklappen bewegen soll, und dass der Steuerblock (54) innerhalb dieses oberen seitlichen Bereichs mit nach unten und nach außen geneigten Fasen (55) ausgestattet ist.

Revendications

1. Dispositif de transport (1) pour une ou plusieurs bouteilles (2) possédant des rebords à leur goulot (4) au-dessus de leur capsulage (5), qui comprend une ébauche plane de carton ou d'une matière en feuille analogue possédant trois zones longitudinales (6, 7), une zone centrale (6) et une zone latérale (7) reliée via une indication de pliage (8) à chaque côté longitudinal de ladite zone centrale (6), possédant des ouvertures (11) réalisées via des lignes de perforation (12) conçues pour le passage des goulots (4) des bouteilles (2), des pattes de guidage (14) faisant saillie et subsistant à travers les ouvertures (11) au cours de la perforation et étant reliées aux zones latérales (7) et aux unités rigides formées par les zones latérales (7) et par les pattes de guidage (14) au sein de l'espace délimité par les lignes de perforation (12) de telle sorte que, lors de l'utilisation, elles font saillie vers le bas par rapport à la zone centrale (6) et les zones latérales (7) font saillie vers le haut pour venir se placer en about avec les rebords (4) afin de supporter les bouteilles (2), le dispositif de transport (1) étant conçu pour s'appliquer à partir du haut sur une rangée unique de bouteilles (2) possédant des sections (3) de goulots qui convergent

- vers le haut, si bien que les ouvertures (11) de la zone centrale (6) entrent en contact avec une rangée unique de bouteilles, et par lequel chaque ouverture dans le dispositif de transport (1) et, à partir de chaque zone latérale (7), sur les côtés diamétralement opposés, lesdites pattes de guidage (14) font saillie et sont maintenues dans leur position dans laquelle elles sont pressées vers l'extérieur par les sommets des bouteilles (2) qui ont pénétré dans les ouvertures (11) jusqu'à concurrence de leur capsulage (5), de leur rebord (4) et de leur goulot conique (4), les zones latérales (7) étant maintenues dans une position de transport du type à autoverrouillage, **caractérisé en ce que**, à partir des extrémités des lignes de perforation (12), font saillie des premières indications de pliage (17) s'étendant en direction transversale perpendiculairement aux zones latérales (7) et à travers ces dernières, et, parallèlement entre lesdites indications de pliage (17) depuis le centre au sommet ou le bord (16) jusqu'aux côtés longitudinaux (10) des zones latérales (7), s'étend une deuxième indication de pliage (18), ledit bord (16) étant défini par les extrémités des lignes de perforation (12).
2. Dispositif de transport selon la revendication 1, **caractérisé en ce que** lesdites trois zones (6, 7) possèdent grosso modo la même largeur et/ou **en ce que** le dispositif de transport (1) est réalisé en carton, les ondulations du carton s'étendant en direction transversale par rapport à l'étendue longitudinale des zones et/ou **en ce que** les petits côtés (9) sont légèrement inclinés vers l'arrière jusqu'au côté longitudinal libre (10) des zones latérales, c'est-à-dire forment le même angle qui est supérieur à 90°, en s'élevant par exemple à approximativement 120°, dans le but d'éviter des arêtes vives dans cette zone.
3. Dispositif de transport selon la revendication 1, **caractérisé en ce que** chaque ouverture (11) est formée par deux lignes de perforation (12) disposées dans la zone centrale (6) en s'étendant le long d'une ligne circulaire ou d'autres courbes, qui laissent libre une zone oblongue centrale dans laquelle une portion (13) grosso modo en forme de X, similaire à la section diamétrale d'une lentille biconcave, a été éliminée complètement par perforation, et/ou **en ce que**, de chaque côté des découpes laissées complètement libres par perforation, lesdites ouvertures sont délimitées latéralement par une patte de guidage (14) comportant des bords latéraux convexes (15) jusqu'à chaque indication de pliage (8) et sur toute la distance à partir desdites indications et/ou comportant un bord terminal libre convexe (16).
4. Dispositif de transport selon la revendication 1, **caractérisé en ce que**, dans le côté longitudinal (10) des zones latérales, sont découpés des évidements peu profonds (19) en U, qui sont conçus pour retenir

les rebords (4) et/ou pour être situés à l'extérieur de ces derniers et/ou **en ce que**, au-dessus du côté longitudinal (10), des saillies (20) s'étendent vers l'extérieur, qui sont conçues pour, le cas échéant avec des évidements très peu profonds, retenir les rebords (4).

5. Dispositif de transport selon la revendication 1, **caractérisé en ce que** lesdites indications de pliage (8, 17, 18) sont conçues sous la forme de larges rainures peu profondes qui possèdent en partie des découpes de perforation (22) qui s'étendent en direction transversale par rapport à l'épaisseur de l'ébauche dans le but de faciliter davantage le pliage et/ou **en ce que** les indications de pliage transversales (17) s'étendent en continu ou en discontinu sur la largeur de l'ébauche du dispositif de transport et/ou les ouvertures (11), ainsi que les bords libres des pattes de guidage (14) sont limitées latéralement par des découpes de perforation concaves (12 et 15 respectivement, afin d'obtenir des pattes auxiliaires (21) qui s'étendent sur toute la largeur de la zone centrale (6) et qui permettent d'obtenir une zone centrale plus étroite, tandis que les ouvertures (11) peuvent se déplacer sur une plus grande distance au-dessus par exemple d'un sommet de bouteille plus haute et qui peuvent être pliées vers le haut dans le but d'adhérer avec leur élasticité résiliente inhérente au côté externe du haut de la bouteille et/ou, dans la première portion terminale de la zone centrale (6), un évidement (23), situé à l'extrémité, est découpé dans le but de réduire la largeur de matière dans cette zone et de faciliter ultérieurement une séparation ou de constituer par exemple la moitié de l'ouverture de guidage et/ou **en ce que** dans la portion centrale de la zone centrale est située une ouverture de guidage (24) de préférence oblongue (dans la direction longitudinale du dispositif de transport) et/ou **en ce que** des ouvertures (25) sont arrangées dans les extrémités libres des pattes de guidage (14) qui s'additionnent l'une l'autre pour obtenir une forme circulaire ou analogue, lesdites ouvertures (23-25) étant conçues pour être utilisées provisoirement comme moyen de guidage au cours du pliage préalable et de l'application, respectivement et/ou **en ce que** les pattes auxiliaires (21) forment des bords latéraux concaves (15) des pattes de guidage (14) dans le but d'obtenir un plus grand espace pour la portion centrale du dispositif de transport, qui constitue une poignée qui peut être saisie d'une main, et/ou **en ce que** un évidement (19) est utilisé qui est central, lorsqu'on regarde dans la direction longitudinale, pour faciliter la préhension du dispositif de transport appliqué, et/ou **en ce que** les saillies (20) sont conçues pour permettre aux extrémités libres des pattes de guidage (14) de s'étendre plus bas sur un sommet de bouteille conique et pour obtenir une pénétration encore plus sûre et plus longue des extrémités libres

(10) des zones latérales et des saillies (20) en dessous des rebords (4), respectivement, et une augmentation de la sécurité de transport ainsi qu'une forte compression des zones latérales de l'extérieur sur le sommet conique de la bouteille qui, à cause de son arrondi est conçu pour exercer une pression vers l'extérieur sur les zones latérales qui sont conçues pour fléchir légèrement étant donné qu'elles sont pliées légèrement le long des indications de pliage (17, 18) qui sont conçues pour être utilisées de manière conjointe avec les pattes de guidage qui, de cette manière, sont conçues pour s'enfoncer encore plus vers l'intérieur ou autour du sommet de la bouteille en dessous du rebord et pour garantir une sécurité encore supérieure du joint et du transport, si bien que l'on obtient un léger raccourcissement de la longueur du dispositif de transport de cette manière, le cas échéant pour fixer la séparation de dispositifs de transport individuels qui sont réunis les uns aux autres dans une feuille (26, 27).

6. Procédé d'application d'un dispositif de transport (1) selon la revendication 1, sur des bouteilles, ledit dispositif de transport comprenant une ébauche de carton plane ou analogue étant conçu pour plusieurs bouteilles (2) qui, à leur sommet, sont délimitées par un rebord (4), au-dessus duquel les bouteilles sont fermées par un bouchon à visser ou analogue (5), ledit dispositif de transports possédant trois zones longitudinales (6, 7), plus précisément une zone centrale (6) et une zone latérale (7) reliée via une indication de pliage (8) à chaque côté longitudinal de ladite zone centrale, la zone centrale (6) possédant des ouvertures (11) réalisées via des lignes de perforation (12) pour le guidage de portions des bouteilles (3-5), des pattes de guidage (14) faisant saillie et subsistant respectivement à travers les ouvertures (11) au cours de la perforation, les zones latérales (7) comprenant des unités rigides et étant reliées à ces dernières et formant avec celles-ci les pattes de guidage (14), dans la zone de laquelle les lignes de perforation (12) sont interrompues et sont en mesure, dans la position d'utilisation du dispositif de transport, de faire saillie vers le bas par rapport à la zone centrale (6), tandis que les zones latérales (7) sont repliées vers le haut pour venir se placer en about en dessous des rebords (4) faisant saillie en direction radiale afin de supporter les bouteilles (2), et un dispositif de transport est utilisé, dans lequel la zone centrale (6) possède des ouvertures (11) pour une seule rangée de bouteilles, ouvertures dans lesquelles, dans l'ébauche plane du dispositif de transport, dans chaque ouverture (11) et à partir de chaque zone latérale (7), sur les côtés diamétralement opposés, lesdites pattes de guidage (14) font saillie en étant pressé vers l'extérieur et maintenues respectivement dans leur position dans laquelle elles sont pressées vers le haut par les sommets des

bouteilles qui ont pénétré à partir du bas, avec leurs portions de capsules, de rebord et de goulot (3), dans le but de maintenir les zones latérales (7) dans une position de transport du type à autoverrouillage, le dispositif de transport étant soumis à un pliage préalable pour obtenir grosso modo la position d'utilisation désirée et étant appliqué à partir du haut sur une seule rangée de bouteilles (2) possédant une portion de goulot (3) convergent de manière essentiellement chronique vers le haut, **caractérisé en ce que**, à partir des extrémités des lignes de perforation (12), en direction transversale, perpendiculairement aux zones latérales (7) et à travers ces dernières font saillie des premières indications de pliage (17) sous la forme par exemple de perforations, et, parallèlement entre lesdites indications de pliage (17) depuis le centre ou le sommet du bord terminal (16) jusqu'aux côtés longitudinaux (10) des zones latérales (7), s'étend une deuxième indication de pliage (18), ledit bord (16) étant défini par les extrémités des lignes de perforation (12).

7. Dispositif comprenant un ou plusieurs dispositifs de transport selon la revendication 1, qui englobe des moyens pour influencer des pattes de guidage (14) et pour obtenir un pliage préalable du dispositif de transport (1) ou d'une série de dispositifs de transport, pour obtenir approximativement la position d'utilisation par laquelle les goulots (4) des bouteilles (2) pénètrent dans les ouvertures (11) qui, conjointement avec les pattes de guidage (14) sont reliées aux zones latérales (7) et aux unités rigides formées par les zones latérales (7) et par les pattes de guidage (14) au sein de la zone délimitée par les lignes de perforation (12) si bien que, dans la position d'utilisation, elles font saillie vers le bas par rapport à la zone centrale (6) et les zones latérales (7) font saillie vers le haut pour venir se disposer en about avec le rebord (4) dans le but de supporter les bouteilles (2), le dispositif de transport (1) étant conçu pour venir s'appliquer à partir du haut sur une rangée unique de bouteilles (2) possédant des sections de goulots (3) convergent vers le haut, de telle sorte que les ouvertures (11) des zones centrales (6) entrent en contact avec une seule rangée de bouteilles, et par lequel, dans chaque ouverture pratiquée dans le dispositif de transport (1) et à partir de chaque zone latérale (7) sur les côtés diamétralement opposés, lesdites pattes de guidage (14) font saillie et sont maintenues dans leur position comprimée vers l'extérieur par les sommets des bouteilles (2) qui ont pénétré à travers les ouvertures (11) sur une distance correspondant à leur capsulage (5), leur bride et leur goulot conique (3), les zones latérales (7) étant maintenues dans une position de transport du type à autoverrouillage, **caractérisé en ce que** les extrémités des lignes de perforation (12) font saillie au-delà de premières indications de pliage (17) s'étendant

dant en direction transversale perpendiculairement aux zones latérales (7) et à travers ces dernières et, parallèlement entre lesdites premières indications de pliage (17) à partir du centre ou du sommet du bord (16) jusqu'aux côtés longitudinaux (10) des zones latérales (7), s'étend une deuxième indication de pliage (18), ledit bord (16) étant défini par les extrémités des lignes de perforation (12).

8. Dispositif selon la revendication 7, **caractérisé en ce que** le dispositif (28) comprend un moule inférieur (29) qui comprend de manière appropriée plusieurs moules partiels, chacun étant conçu pour recevoir une ébauche de dispositif de transport, et qui comprend un corps (30) essentiellement en forme de W comportant un support central (31) qui possède un trou (33) pour le maintien temporaire d'une broche de guidage (34) et de supports (32) montés aux extrémités, qui possèdent un trou (35) pour le maintien temporaire d'une lame (36), **en ce que** tous les supports sont conçus pour supporter les zones centrales (6) des dispositifs de transport, et **en ce qu'ils** sont munis latéralement de brides de support (37) de même longueur, qui font saillie légèrement au-dessus des supports, **en ce que** les bords internes supérieurs des brides de support sont de préférence chanfreinés vers l'intérieur pour faciliter le placement des zones latérales autour des brides de support, tandis que la nervure entre les supports est munie de manière appropriée d'alésages verticaux centraux afin de fixer les moules partiels sur une plaque de montage dans la configuration désirée.
9. Dispositif selon la revendication 8, **caractérisé en ce que**, au-dessus desdits supports, sont montés des dispositifs multifonctionnels (38, 39) aptes à se mouvoir en direction verticale vers le haut et vers le bas en alternance, l'un (38) desdits dispositifs étant conçu pour comprimer, plier et saisir, tandis que l'autre (39) est conçu pour comprimer, le cas échéant plier et séparer, **en ce que** tous ces dispositifs sont suspendus de manière appropriée dans des arbres de forme tubulaire (40) avec lesquels une section centrale peut se déplacer via un ajustage par glissement à travers une plaque de base inférieure (41) disposée au-dessus des dispositifs et dont l'extrémité supérieure est vissée dans une plaque de base supérieure (43), **en ce que**, dans les arbres, sont guidés, au-dessus de ces derniers, des tiges de guidage (42) aptes à se mouvoir en direction ascendante et en direction descendante, dont les extrémités supérieures sont munies de dispositifs d'arrêt (46) entre lesquels et la plaque de base supérieure (43) les tiges de guidage sont entourées de manière appropriée par des ressorts de compression au moyen desquels on peut régler une position en hauteur via l'extrémité inférieure des tiges de guidage et/ou on peut obtenir un freinage modéré lorsque les

dispositifs sont abaissés, **en ce que** la plaque de base supérieure (43) est reliée à la plaque de base inférieure (41) via de préférence des cylindres pneumatiques (44) qui sont guidés par un centre de commande, **en ce que** ledit deuxième dispositif (39) est muni, au même titre que ledit premier dispositif (39), aux extrémités inférieures des tiges de guidage, par exemple par vissage sur ces dernières, de rembourrages de compression fixés (45) conçus pour être comprimés contre les deux portions de la zone centrale qui sont disposées aux extrémités de cette dernière, **en ce que** chaque rembourrage dudit deuxième dispositif est muni d'une lame (36) disposée en position transversale et est conçue pour influencer en même temps deux extrémités de la zone centrale qui sont adjacentes l'une à l'autre et qui appartiennent à deux dispositifs de transport dont les extrémités sont adjacentes l'une à l'autre.

10. Dispositif selon la revendication 9, **caractérisé en ce que** les bords longitudinaux supérieurs des rembourrages (45) sont chanfreinés (47), bords contre lesquels des pattes de pliage (48) viennent se disposer en about avec leurs extrémités inférieures, les axes de pivotement (50) s'étendant dans la direction longitudinale des dispositifs de transport, **en ce que** les bords longitudinaux internes inférieurs des pattes viennent se disposer en about de préférence avec un certain chanfrein contre les chanfreins (47) dans le but de garantir le pivotement des pattes vers l'extérieur, **en ce que** le contact entre les pattes de pliage et le rembourrage de compression est conçu pour être garanti à l'aide de moyens de compression qui agissent l'un contre l'autre, par exemple des ressorts de compression, **en ce que** le corps (49) au-dessus du rembourrage de compression (45) est muni d'une surface de contact (51) pour le rembourrage de compression, **en ce que**, au sein de la zone supérieure du corps 49, des pinces de serrage (53) sont suspendues des deux côtés des axes de pivotement (52) qui s'étendent dans la direction longitudinale du dispositif de transport, lesdites pinces de serrage étant chargées par ressort pour être comprimées vers l'extérieur avec leur extrémité inférieure pliée l'une vers l'autre, au moins dans une certaine mesure, **en ce que**, à l'intérieur des axes de pivotement 52, à l'extrémité la plus basse de l'arbre tubulaire, disposée grosso modo au centre du corps, lorsqu'on regarde en direction verticale, est disposé un bloc central (54) qui, lorsque l'arbre est soulevé jusqu'à une position terminale supérieure, est conçu pour faire pivoter les extrémités supérieures des pinces de serrage vers l'extérieur et pour déplacer les extrémités inférieures des pinces de serrage l'une vers l'autre jusqu'à venir buter contre le côté externe des pattes de pliage, et **en ce que** le bloc de commande (54) au sein de cette zone latérale supérieure est muni de chanfreins (55) inclinés vers le bas et l'extérieur.

Fig 1

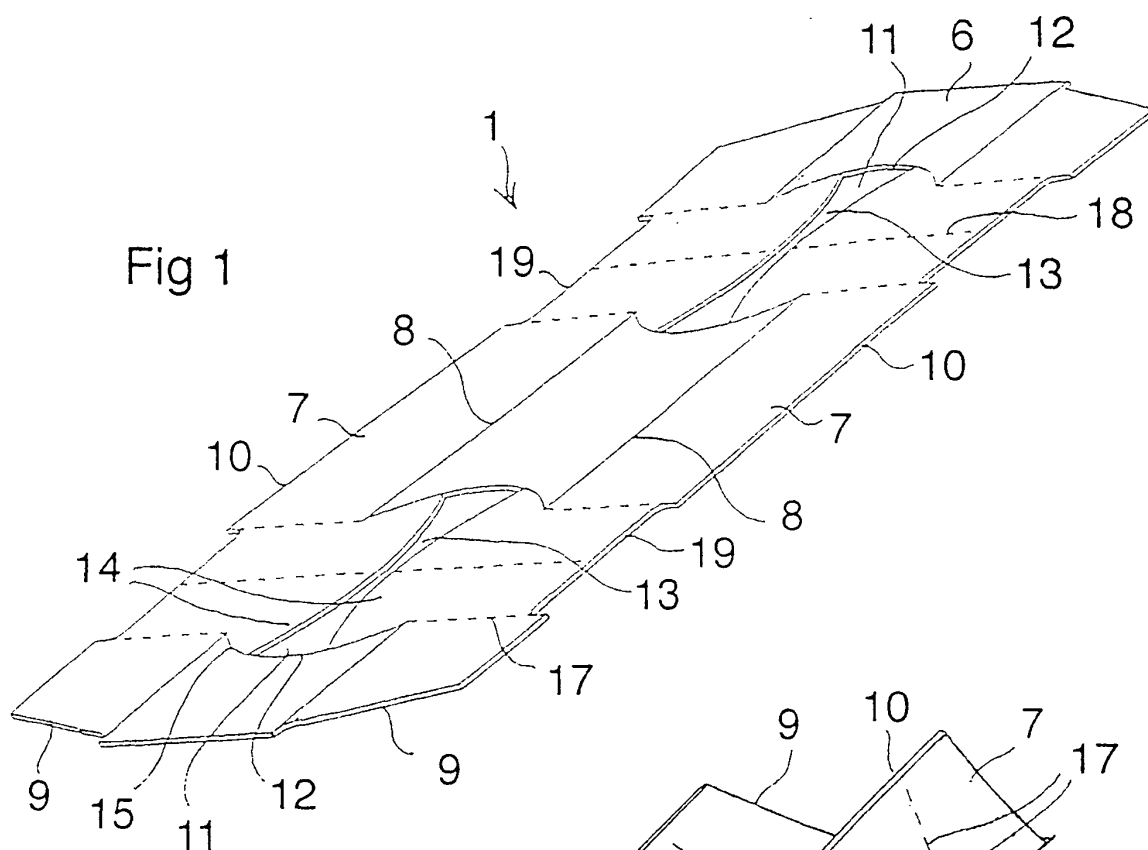
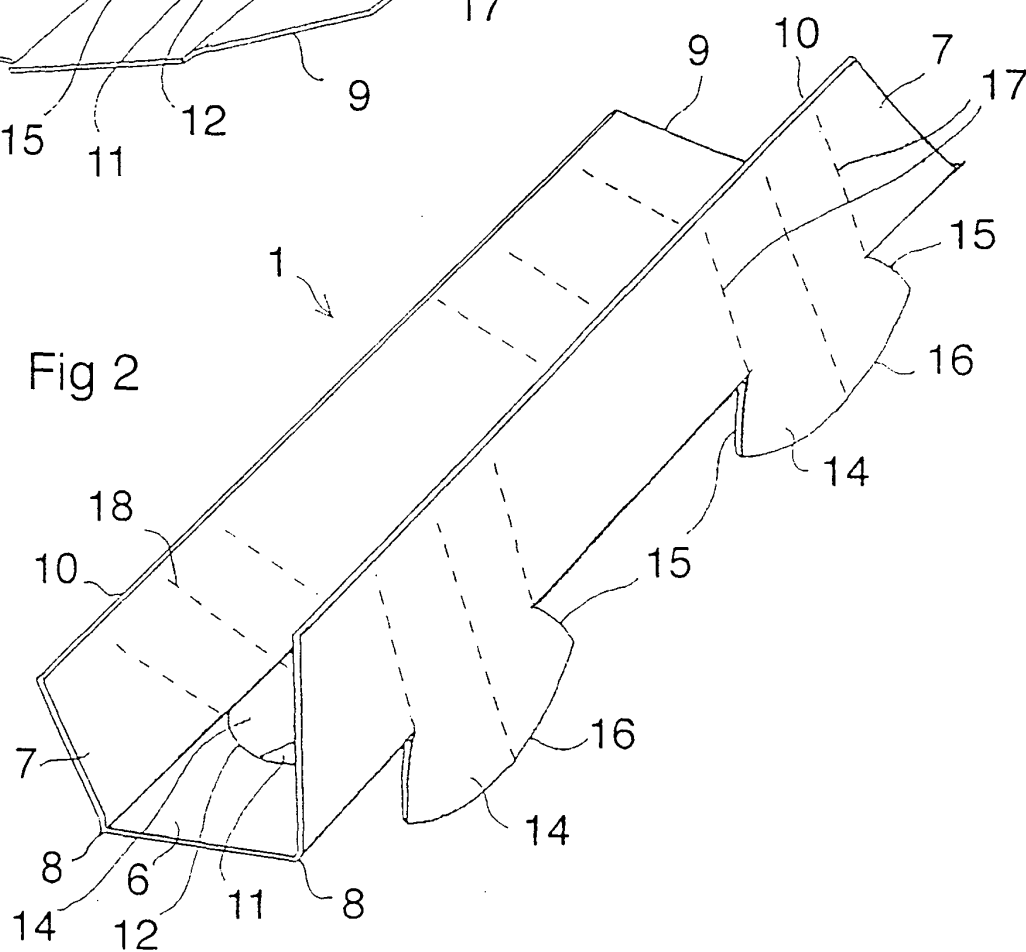


Fig 2



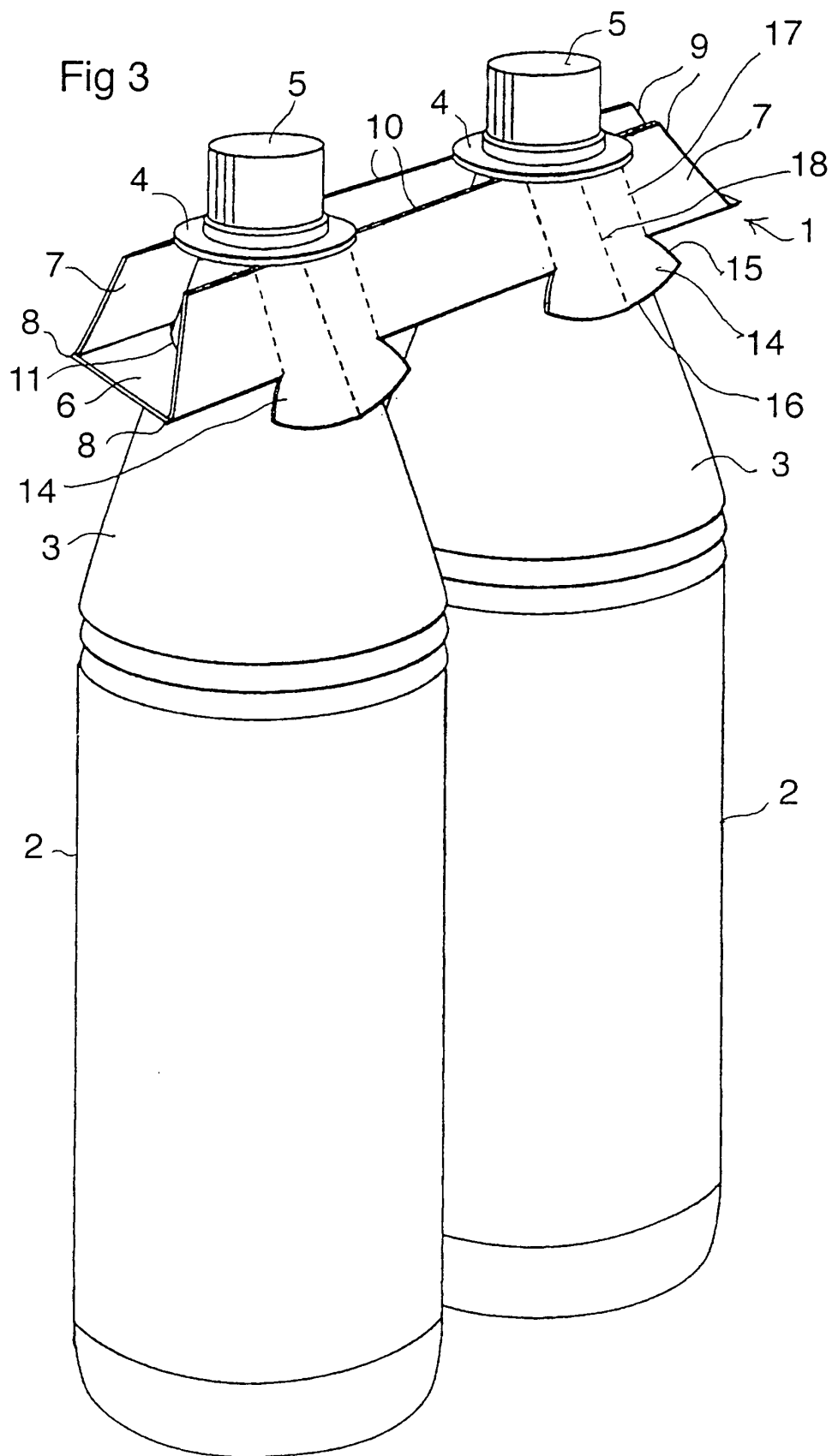


Fig 4

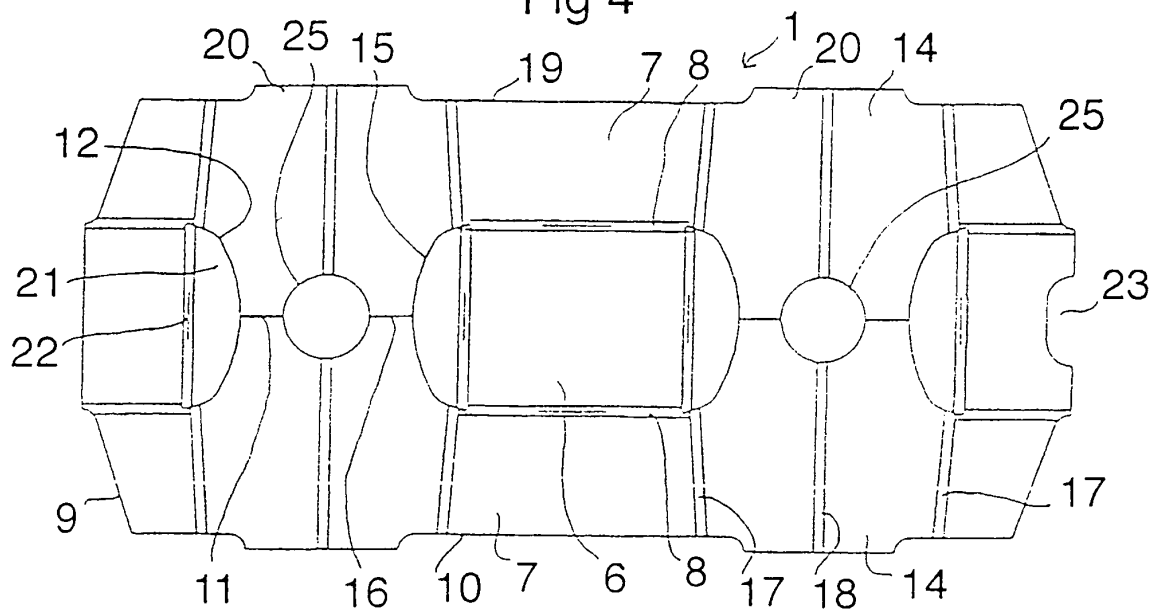


Fig 5

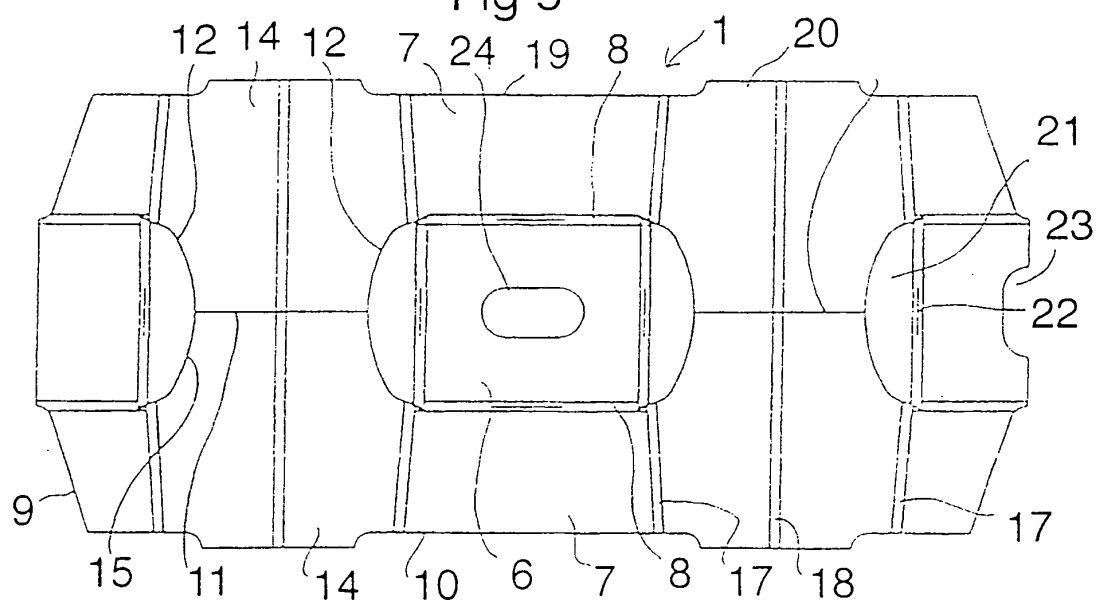


Fig 6

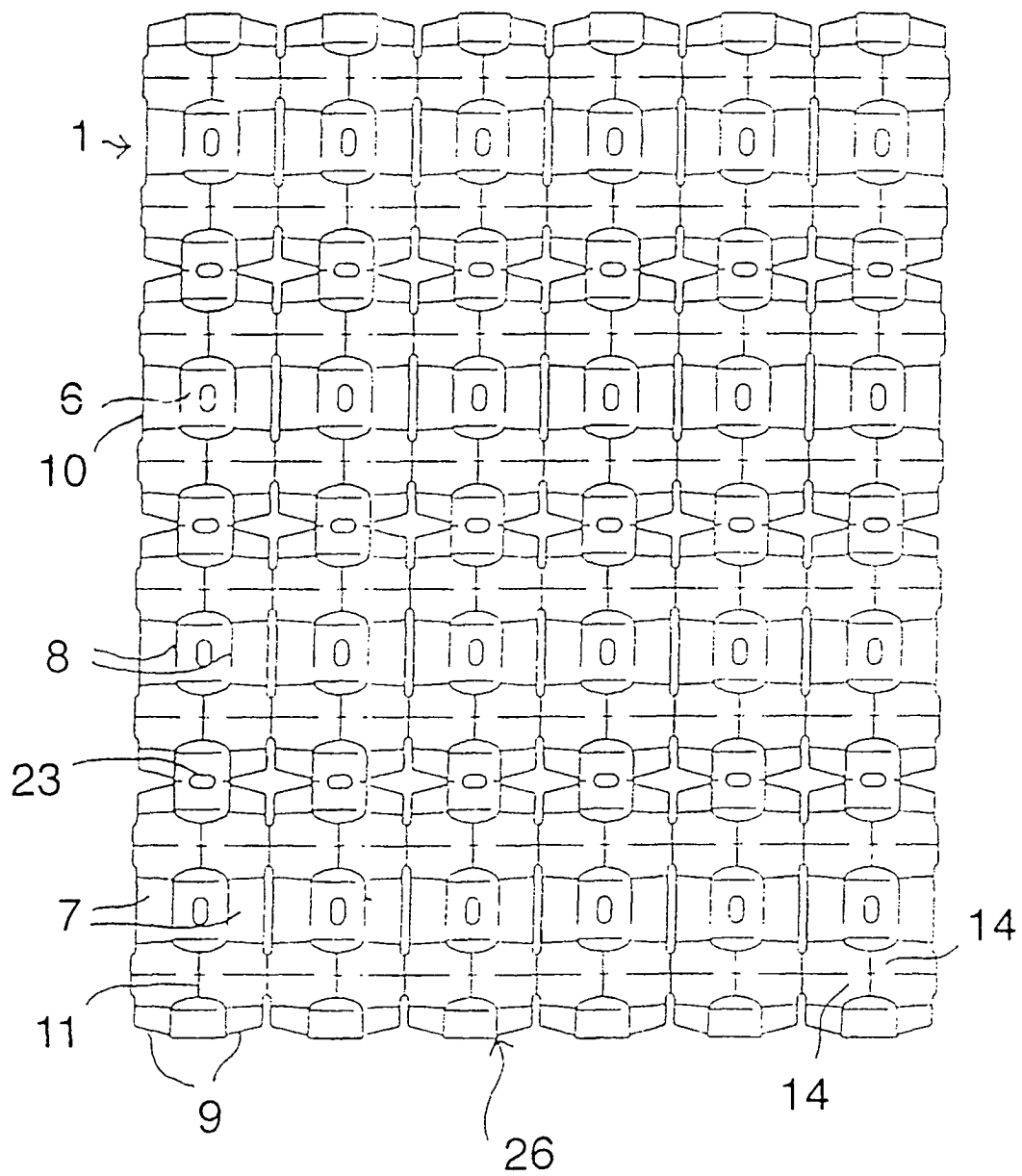
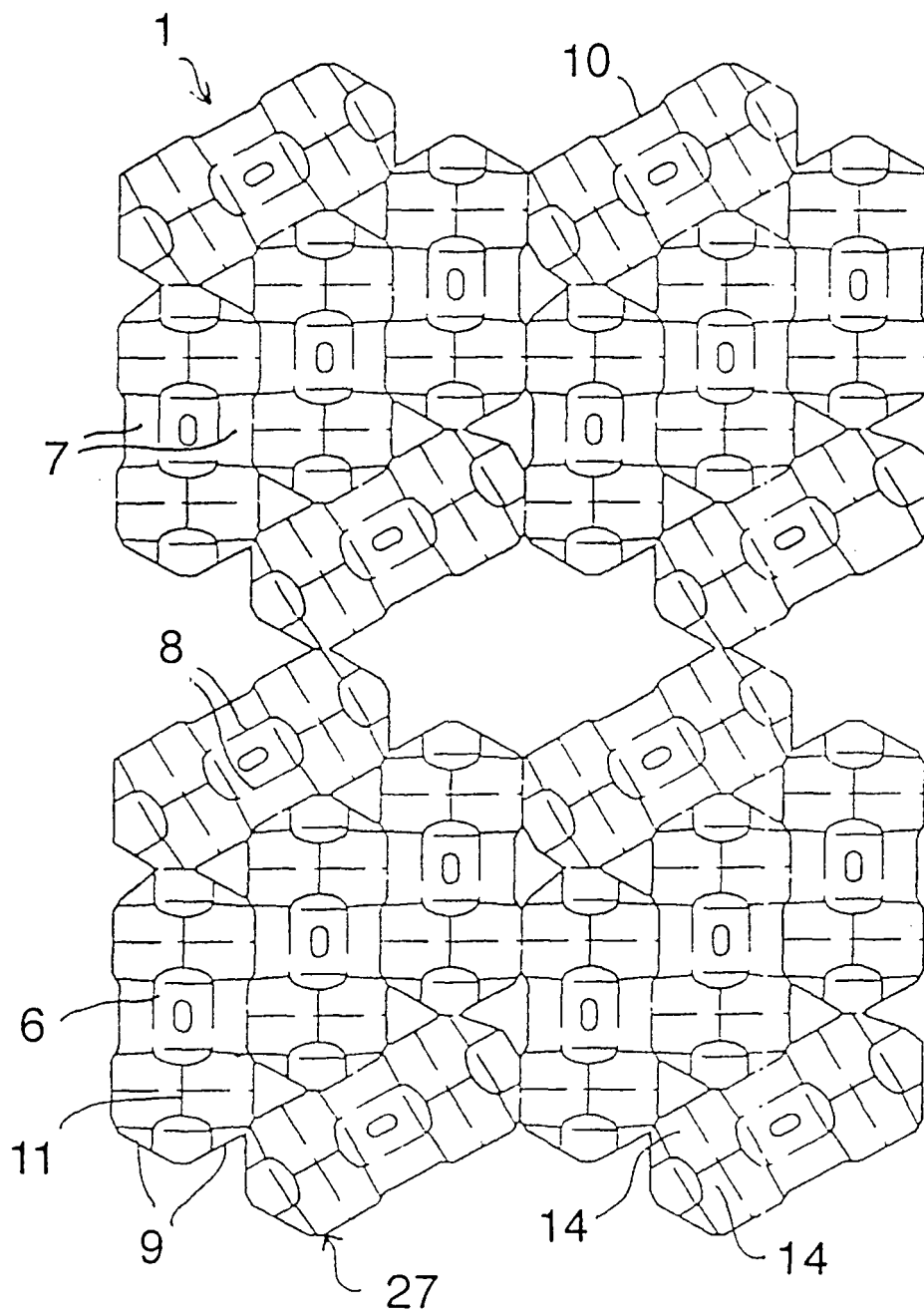
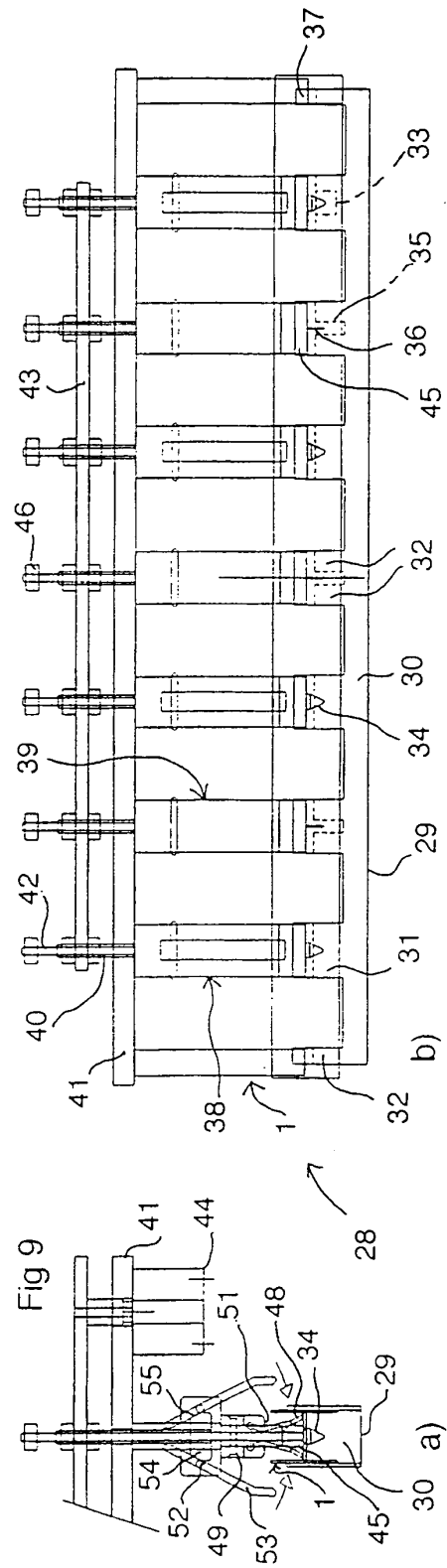
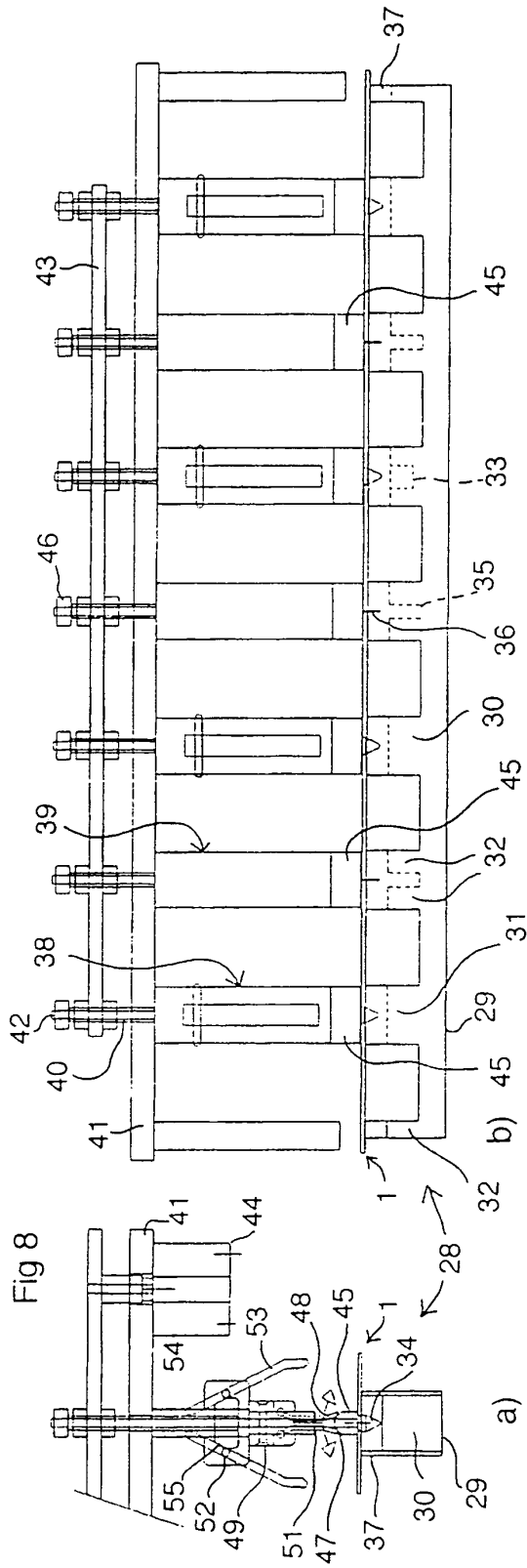


Fig 7





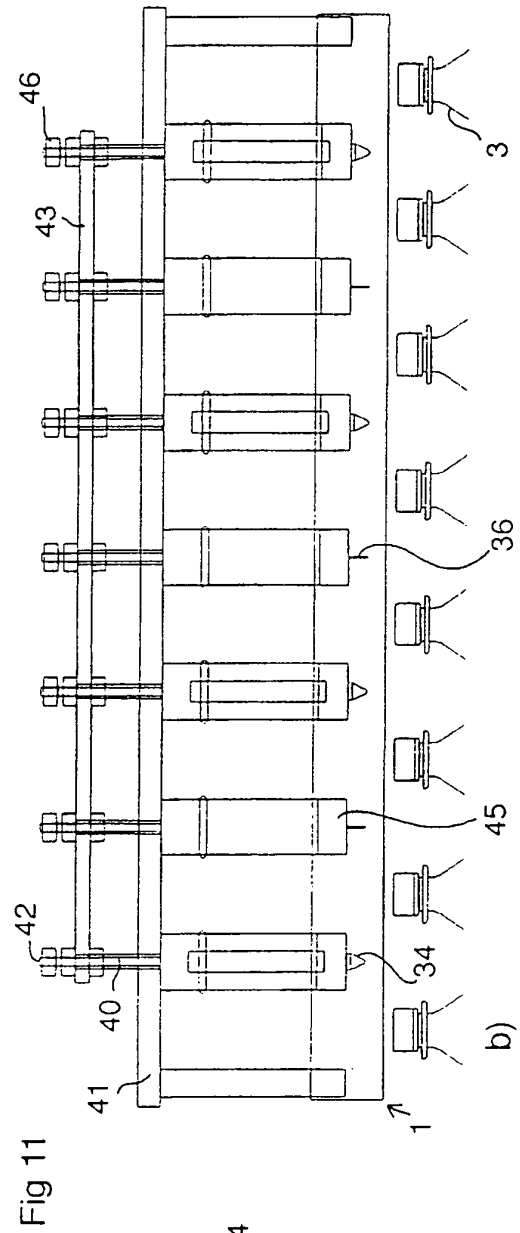
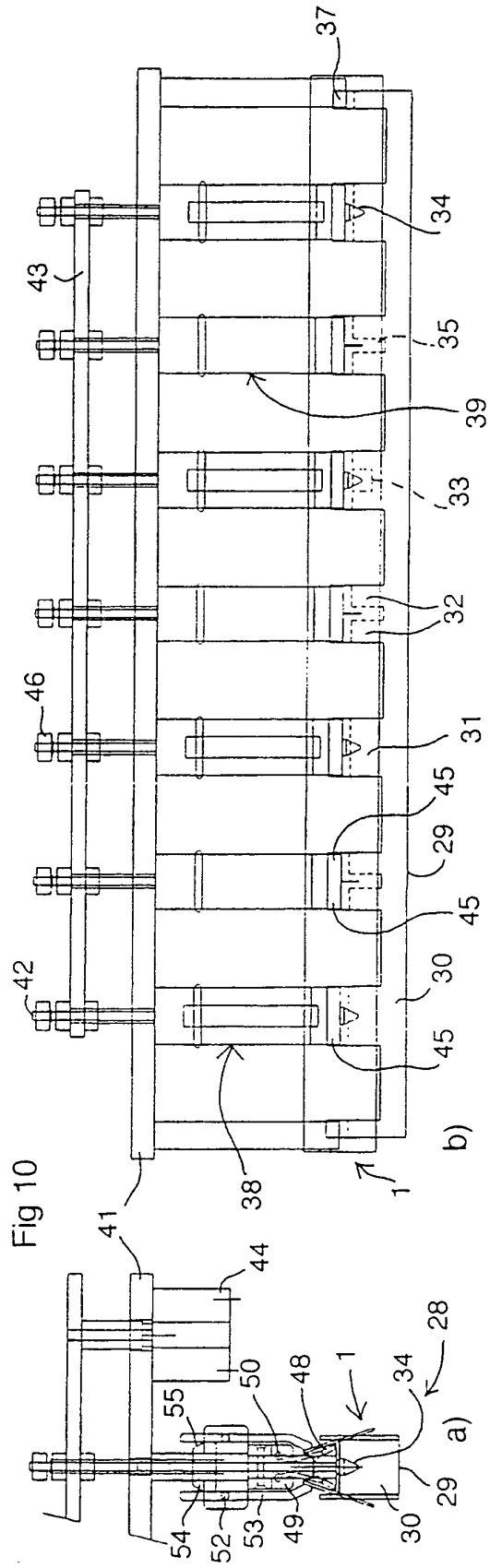


Fig 12

