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(54) **Article tray with carrying strap.**

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Description

This invention relates to an article tray for the packaging of a number of containers for storage, transport and eventual display and sale.

It is known, for example, from US—A—3 336 305 to provide a tray in the form of a flat carton with openings in the top into which containers are inserted so that they stand upright on the bottom of the tray and project above the tray. The trays disclosed in US—A—3 336 305 take the form of a sleeve of foldable sheet material, comprising top and bottom walls hingedly joined by a pair of opposite side walls, the sleeve having two rows of reinforcing flaps disposed centrally of the tray and interconnecting the top and bottom walls of the tray. In this construction the tray has a continuous bottom wall and the reinforcing flaps are provided by material struck from the top and side walls of the tray which interrupts the side walls. The present invention seeks to achieve a tray which has two adjacent tubular portions each with a separate bottom panel and which is reinforced to improve the rigidity of the central part of the tray by providing two rows of reinforcing flaps and connecting one row of reinforcing flaps to one base panel and to the second row of reinforcing flaps or alternatively to the other base panel in order to provide two interconnected adjacent tubular portions.

The invention provides a tray for accommodating a plurality of articles which tray is in the form of a sleeve formed from two adjacent tubular parts having a common top wall provided with apertures for receiving at least portions of said articles, side walls, a bottom wall and a series of upstanding flaps connecting together said top wall and bottom wall, means being provided for securing said tubular parts in erected condition, characterised in that each tubular part has a separate bottom panel and is provided with at least one row of apertures, and said connecting flaps are struck solely from said apertures in said top wall and hinged thereto along fold lines remote from said side walls, each of said connecting flaps of the one tubular part being provided with a foot portion secured to the bottom panel of said one tubular part and each of the connecting flaps of the other tubular part being provided with a foot portion connected to the bottom panel of said other tubular part and in that the foot portions of the connecting flaps associated with said other tubular part are secured in overlapping relationship to respective ones of the foot portions of the connecting flaps of said one tubular part.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:—

FIGURE 1 is a plan view of an article being in a collapsed condition suitable for use in the combination according to an aspect of the invention;

FIGURE 2 is a plan view of a lid for cooperation with the tray depicted in Figure 1;

FIGURE 3 is a schematic cross-section of the lid and the tray connected together; and

FIGURE 3a is a cross-sectional view of a central part of a preferred embodiment of the tray.

Referring to the drawings, the tray 10 is made from a foldable sheet material such as paperboard and comprises a rectangular top 12, bottom 14 and a pair of opposite side walls 16 and 18 respectively. The tray 10 is made in the form of a sleeve comprising the top and bottom and two side walls 16, 18. End closure panels (herein referred to as end walls) are each formed from two panels 24, 26 with outer end panel 24 hinged to the top and inner end panel 26 hinged to the bottom. Panel 24 overlaps panel 26 to form a double wall construction at each end of the tray.

The bottom 14 of the tray comprises two panels 28, 30 respectively. Panel 28 is hinged to side wall 16 whereas panel 30 is hinged to side wall 18.

The outer panel 24 has at its free end a pair of locking tabs 32 which lock in apertures (not shown), formed in the bottom wall panels 28, 30 respectively to secure the end walls and thereby hold the sleeve in its tray-like configuration. Possibly, the outer panel 24 is somewhat longer than the space between the opposite side walls 16 and 18 in order to strengthen the corners of the tray and afford better resistance to collapse in a vertical direction.

The top of the tray is formed with two rows of apertures 36, 38 respectively each to receive a container such that the base of each container in row 36 is seated on the bottom panel 28 and each container in row 38 is seated on the bottom panel 30. The top of each container stands proud of the top 12. The containers in question normally comprise injection moulded plastics cuplike bodies having a top flange. At the top of each container is applied a peelable lid, the cup containing, for example, some kind of foodstuff. The top 12 may be formed with two spaced slots 's' each to receive one end of a strap type handle (not shown). The ends of the handle strap may have an 'arrow-head' or like configuration to facilitate locking into the slots 's'.

In order to prevent bowing of the central region of the top and to bring together bottom panels 28, 30 portions of the material from the apertures 36 and 38 are left hinged to the top to provide two series of connecting flaps 40, 42. As best seen in Figures 3 and 3a, each of flaps 40 is folded downwardly to an aperture 36 and secured to the bottom panel 28 by means of a foot portion 40a and maintains the correct spacing between the top and the bottom 14. Each of the flaps 40a also is formed with a foot portion 42a and the feet portions 40a, 42a of connecting flaps 40, 42 respectively are secured together. Thus each foot portion 30, 40a is secured to bottom wall panel 28 and each foot portion 42a is secured to the exposed undersurface of the foot portion 40a. A part of the upper (internal) surface of bottom wall panel 30 is then secured to the undersurface of the foot portion 42a as shown. Preferably, the bottom wall panel 30 has its free longitudinal edge scalloped so as to form a series of taps each for attachment to a respective foot portion 42a. It is

envisaged also that each foot portion 42a may be secured directly to the bottom wall panel 28 rather than attached thereto by way of foot portion 40a. Thus the bottom panels 28, 30 are hinged to the top of the tray by means of connecting flaps 40, 42 respectively.

A plan view of a lid 44 suitable for use with the tray 10 is shown in Figure 2 of the drawings. The lid is optional however and normally would not be needed with a carrying handle. The lid also is formed from a foldable sheet material such as paperboard and comprises a rectangular centre panel 46 and a pair of side panels 48, 50 hinged to opposed side edges of the central panel 46 along longitudinal fold lines 52, 54 respectively.

The central panel 46 of the lid is formed with two rows of apertures 56, 58 respectively. The lid 44 and the rows of apertures 56, 58 is sized and arranged such that when the lid is placed into position over the top of the tray 10 each of the apertures 56 and 58 is located in register with one of the containers.

In order to load the tray and complete the package, first the tray 10 is erected. This is achieved by applying an inward force at the junction between side walls 16, 18 and bottom wall panels 28, 30 respectively in the direction of arrows 'A' (Figure 1). Thus the inner longitudinal edges of the base panels 28 and 30 are moved towards one another so that the connecting flaps in each of the rows 40 and 42 are hinged into an upright position at which time the locking apertures 34 formed in the bottom wall panels 28 and 30 are positioned for cooperation with the locking tabs 32. Hence the tray can be seen to comprise a pair of adjacent tubular parts P1, P2, each comprising a portion of the tray top 12, a side wall (16 or 18), a bottom panel (28 or 30) and one series of connecting flaps (40 or 42). The inner end panel 26 at each end of the tray is then folded upwardly whereafter the outer end panel 24 at each end of the tray is folded downwardly into overlapping relationship with the inner end panels and the locking tabs 32 driven into the cooperating locking apertures 34 in known manner. The tray is then fully erected and held in its tray like configuration.

In this condition, the tray may be loaded by suitable means so that a container is received in each of the apertures of rows 36 and 38. The handle strap may then be applied by inserting each of its ends into respective ones of the slots 's'.

Alternatively, the lid 44 may then be fitted to the tray by causing the side panels 48 and 50 to be folded downwardly about fold lines 52 and 54 and the centre panel 46 brought into overlying relationship with the tops of the loaded containers.

As shown in Figure 2 of the drawings, each of the side panels 48 and 50 is provided with a pair of spaced locking tabs 60 adapted for cooperation in locking apertures 62 provided in the side walls 16 and 18 of the tray 10. The locking tabs 60 are merely shown schematically and may be suitably shaped (for example, similar to the locking tabs 32) for locking cooperation in the locking aperture 62. Once the locking tabs 60 have been received within the corresponding locking apertures in the tray, the tray is completed as shown in Figures 3 and 3a of the drawings and ready for shipment.

The recessed portions 64 in each of the side walls 48, 50 of the lid are produced due to the staggered configuration of the locking tabs 60 when the lid 44 is struck from a web of paperboard material. This arrangement reduces the amount of material wastage. The lid assists in the retention of the containers within the tray in that the outermost edges of the apertures 55 and 58 in the lid engage beneath a peripheral portion of each container flange.

Furthermore, as best appreciated from Figure 3a of the drawings, the two part construction of the tray base i.e. tubular portions P1 and P2 provides an elongated tunnel 'T' between the rows of connecting flaps 40 and 42 respectively. This tunnel 'T' facilitates good circulation of a coolant between the rows of containers so that the contents of the containers may be maintained in a chilled condition.

A number of modifications to the tray within the scope of the invention are envisaged, each of which may incorporate the carrying strap.

In the constuction of the preferred embodiment, it may be necessary to shift the position of the locking tabs 32 and the associated apertures (see e.g. Figure 1) outwardly away from one another closer to side walls of the tray.

It is also envisaged that small tabs may be struck from the top of the tray adjacent the side walls thereof and brought into an upstanding position to enable a series of trays to be stacked one on the other with a small space therebetween to facilitate the flow of coolant.

It is also not necessary for the apertures in rows 56 and 58 of the lid to have their outer edges which engage the flanges struck from portions of the side walls 48 and 50. It is envisaged, for example, that the apertures in rows 56 and 58 may be located wholly within the central panel 46 and separate apertures to receive the flange portions of the containers struck from the side panels 48 and 50 in the vicinity of longitudinal fold lines 52 and 54.

Claims

1. A tray for accommodating a plurality of articles, which tray is in the form of a sleeve formed from two adjacent tubular parts (P1, P2) having a common top wall provided with apertures for receiving at least portions of said articles, side walls (16, 18), a bottom wall (28, 30) and a series of upstanding flaps (40, 42) connecting together said top wall and bottom wall, means (32, 34) being provided for securing said tubular parts in erected condition, characterised in that each tubular part (P1, P2) has a separate bottom panel (28, 30) and is provided with at least one row of apertures, and said connecting flaps are struck solely from said apertures in said top wall

and hinged thereto along fold lines remote from said side walls, each of said connecting flaps (40) of the one tubular part (P1) being provided with a foot portion (40A) secured to the bottom panel (28) of said one tubular part (P1) and each of the connecting flaps (42) of the other tubular part (P2) being provided with a foot portion (42A) connected to the bottom panel (30) of said other tubular part (P2) and in that the foot portions (42A) of the connecting flaps associated with said other tubular part (P2) are secured in overlapping relationship to respective ones of the foot portions (40A) of the connecting flaps (40) of said one tubular part (P1).

2. A tray according to claim 1, further characterized in that said securing means comprises spaced locking tabs (32) carried by an end wall panel (24) attached to said top and co-operating locking apertures (34) provided in said bottom (14).

3. A tray according to claim 2, further characterized in that a locking aperture (34) is formed in each of said bottom panels (28, 30).

4. A tray according to any of the preceding claims, further characterized in that the series of connecting flaps of each tubular portion define between them a tunnel ('T') extending longitudinally of the tray.

5. A tray according to any of the preceding claims, further characterized in that a detachable lid (44) is secured to the tray, said lid having a centre panel (46) overlying the tops of the containers when present in the tray.

6. A tray according to claim 5, further characterized in that said lid includes side panels (48, 50) hinged to said central panel, each of the side panels including locking tabs (60) which co-operate with locking apertures (62) provided in the side walls (16, 18) of the tray to secure the lid to the tray.

Patentansprüche

1. Tray zum Aufnehmen einer Anzahl von Gegenständen, das in Form einer Umhüllung aus zwei banachbarten röhrenförmigen Abschnitten (P1, P2) gebildet ist, mit einer gemeinsamen Oberwand, die mit Öffnungen zum Aufnehmen von mindestens Teilbereichen der Gegenstände versehen ist, Seitenwänden (16, 18), einer Bodenwand (28, 30) und einer Anzahl hochstehender Laschen (40, 42), die Oberwand und die Bodenwand miteinander verbinden, wobei Befestigungsmittel (32, 34) vergesehen sind, um die röhrenförmigen Abschnitte in aufgerichteter Stellung zu halten, dadurch gekennzeichnet, daß jeder röhrenförmige Abschnitt (P1, P2) ein getrenntes Bodenpaneel (28, 30) aufweist und mit wenigstens einer Reihe von Öffnungen versehen ist, und die Verbindungslaschen allein aus den Öffnungen in der Oberwand freigestanzt und in diesen entlang von Faltlinien angelenkt sind, die von den Seitenwänden beabstandet sind, jede der Verbindungslaschen (40) des einen röhrenförmigen Abschnittes (P1) mit einem Fußabschnitt (40A) versehen ist, der an dem Bodenpaneel (28) dieses einen röhrenförmigen Abschnittes (P1) befestigt ist, und jede der Verbindungslaschen (42) des anderen röhrenförmigen Abschnittes (P2) mit einem Fußabschnitt (42A) versehen ist, der mit dem Bodenpaneel (30) des anderen röhrenförmigen Abschnittes (P2) verbunden ist, und daß Fußabschnitte (42A) der Verbindungslaschen, die dem anderen röhrenförmigen Abschnitt (P2) zugeordnet sind, in überlappender Beziehung an den jeweils entsprechenden Fußabschnitten (40A) der Verbindungslaschen (40) des einen röhrenförmigen Abschnittes (P1) befestigt sind.

2. Tray nach Anspruch 1, dadurch gekennzeichnet, daß die Befestigungsmittel beabstandete Verschlußlaschen (32) aufweisen, die durch ein Stirnwandpaneel (24) getragen werden, das an der Oberwand angebracht ist, und entsprechende Verschlußöffnungen (34), die im Boden (14) vergesehen sind.

3. Tray nach Anspruch 2, dadurch gekennzeichnet, daß eine Verschlußöffnung (34) in jedem der Bodenpaneele (28, 30) angeordnet ist.

4. Tray nach irgendeinem der vorangegangenen Ansprüche, dadurch gekennzeichnet, daß die Folgen von Verbindungslaschen jebes röhrenförmigen Abschnittes zwischen sich einen Tunnel (T) begrenzen, der sich in Längsrichtung des Trays erstreckt.

5. Tray nach irgendeinem der vorangegangenen Ansprüche, dadurch gekennzeichnet, daß an dem Tray ein abnehmbarer Deckel (44) befestigt ist, der ein Mittelpaneel (46) aufweist, das auf den Deckeln der Behälter liegt, wenn diese in dem Tray vorhanden sind.

6. Tray nach Anspruch 5, dadurch gekennzeichnet, daß der Deckel am Mittelpaneel angelenkte Seitenpaneele (48, 50) aufweist, von denen jedes Verschlußlaschen (60) aufweist, die mit Verschlußöffnungen (62) zusammenwirken, die in den Seitenwänden (16, 18) des Trays vergesehen sind, um den Deckel am Tray zu befestigen.

Revendications

1. Plateau de rangement ou de conditionnement d'une pluralité d'articles constitué sous forme d'un manchon composé de deux parties tubulaires (P1, P2) contigües, comportant une paroi de dessus commune pourvue d'ouertures adaptées pour recevoir au moins une partie des articles, des parois latérales (16, 18), une paroi de fond (28, 20) et une série de volets dressés (40, 42) reliant ensemble les parois de dessus et de fond, des moyens (32, 34) étant prévus pour fixer les deux parties tubulaires en position dressée, ce plateau étant caractérisé par le fait que chaque partie tubulaire (P1, P2) est pourvue d'un panneau de fond séparé (28, 30) et comporte au moins une rangée d'ouvertures, et que les volets de liaison sont sous forme de parties saillant seulement des ouvertures de la paroi de dessus et sont articulées par charnière sur celle-ci le long de lignes de pliage écartées des parois latérales, chacun des volets de liaison (40) de l'une (P1) des deux

parties tubulaires étant pourvu d'une partie de pied (40A) fixée directement au panneau de fond (28) de cette partie tubulaire (P1), et chacun des volets (42) de liaison de l'autre partie tubulaire (P2) étant pourvu également d'une partie de pied (42A) reliée au panneau de fond (30) de cette partie tubulaire (P2), les dites parties de pied (42A) des volets de liaison de cette dernière partie tubulaire (P2) étant fixées en chevauchement sur les parties de pied (40A) correspondantes des volets de liaison (40) de la partie tubulaire (P1).

2. Plateau selon la revendication 1, caractérisé par le fait que les moyens de fixation sont constitués par des pattes de verrouillage (32) espacées et portées par un panneau (24) de paroi d'extrémité relié à la paroi de dessus du plateau, ces pattes (32) étant situées de manière à se verrouiller dans des ouvertures (34) prévues dans la paroi de fond (14).

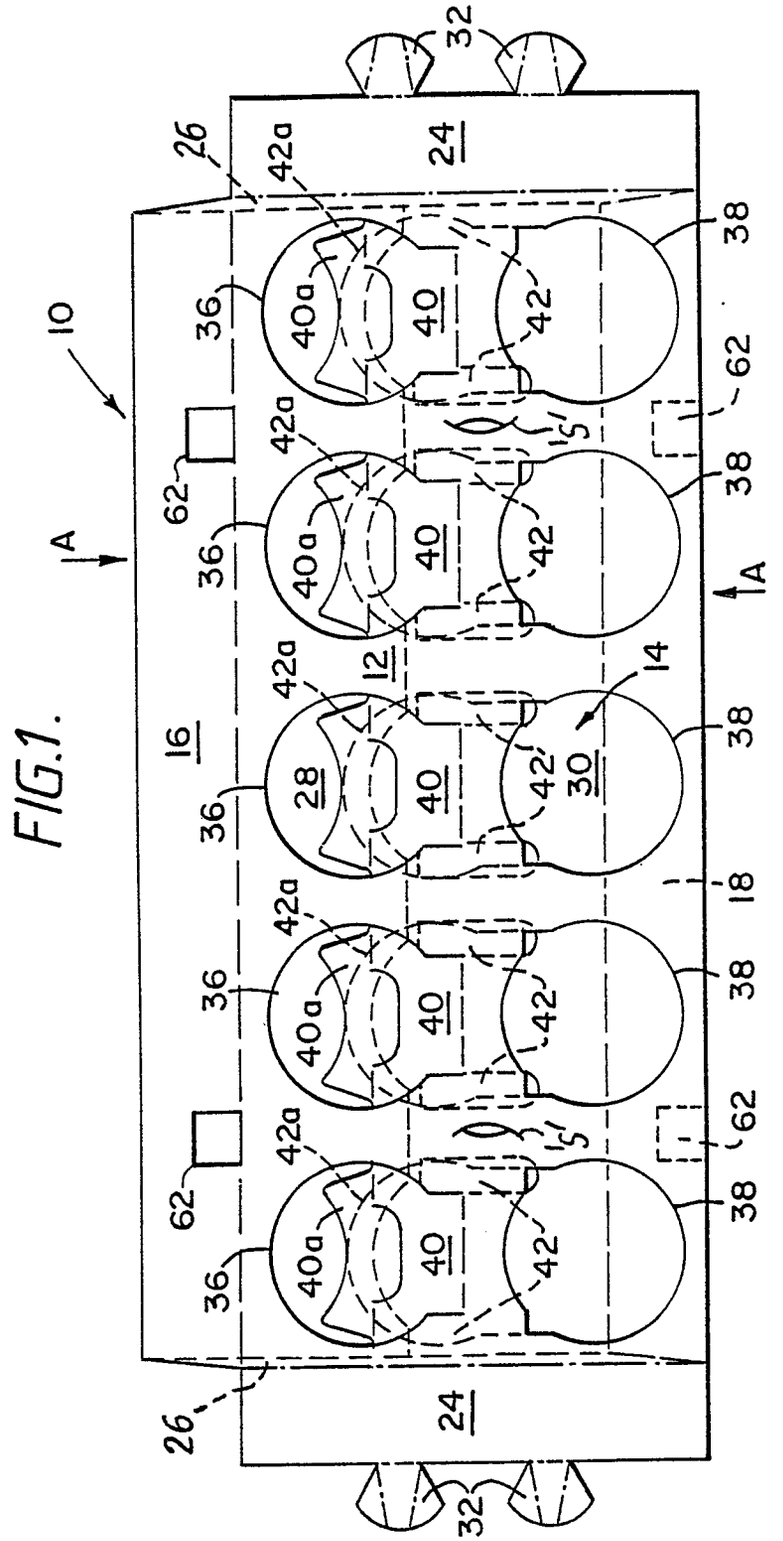
3. Plateau selon la revendication 2, caractérisé par le fait qu'une ouverture de verrouillage (34) est située dans chacun des panneaux (28, 30) constituant la paroi de fond (14).

4. Plateau selon l'une quelconque des revendications 1 à 3, caractérisé par le fait que les deux rangées de volets de liaison (40, 42) des parties tubulaires (P1, P2) définissent entre elles une forme de tunnel (T) s'étendant longitudinalement dans la partie médiane du plateau.

5. Plateau selon l'une quelconque des revendications 1 à 4, caractérisé par le fait qu'un couvercle amovible (44) est fixé sur le dessus du plateau, ce couvercle comportant un panneau central (46) qui recouvre le dessus des recipients lorsqu'il est monté sur le plateau.

6. Plateau selon la revendication 5, caractérisé par le fait que le couvercle amovible (44) comporte des panneaux latéraux (48, 50) encadrant le panneau central (46) et articulés par charnière sur celui-ci, chacun de ces panneaux latéraux étant pourvu de pattes de verrouillage (60) qui sont adaptées pour s'engager dans des ouvertures de verrouillage (62) prévues dans les parois latérales (16, 18) du plateau fixer ce couvercle sur ce dernier.

FIG.1.



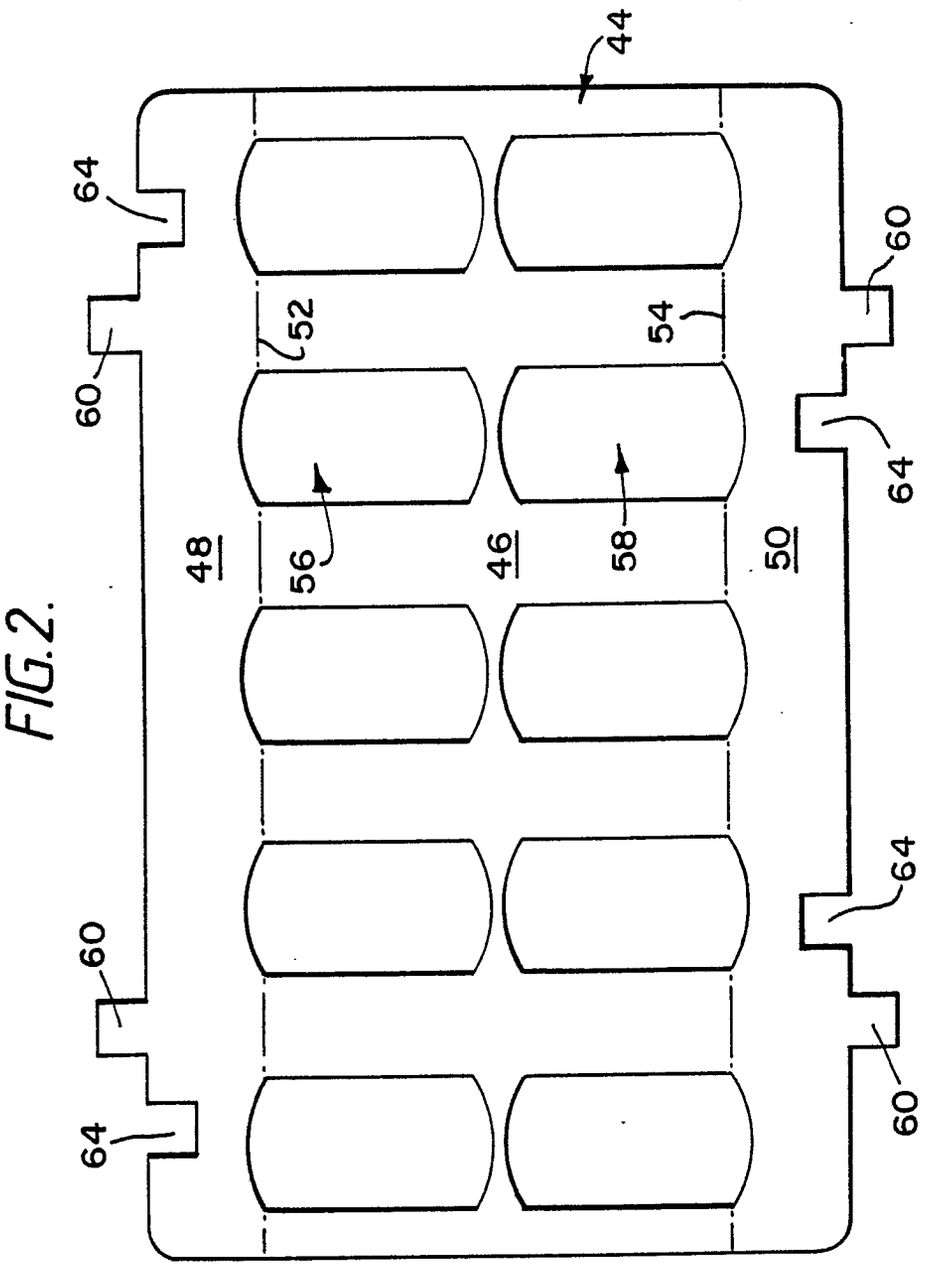


FIG.2.

FIG.3.

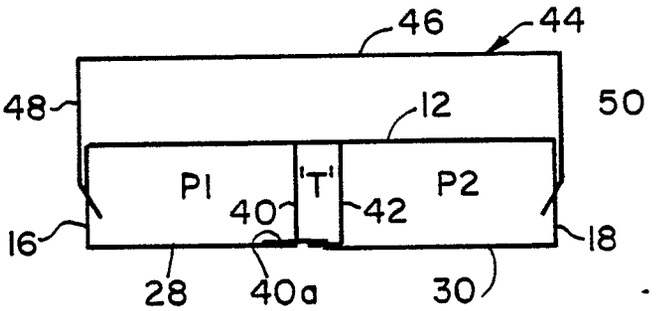
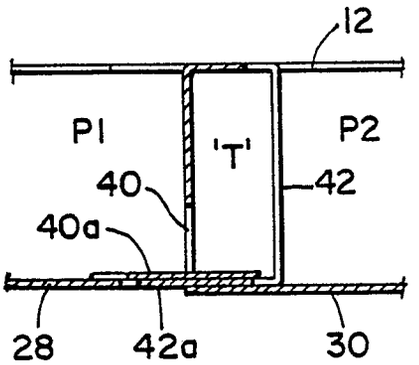

46
44
48
12
50
P1
'T'
P2
40
42
16
18
28
40a
30

FIG.3a.


12
P1
'T'
P2
40
42
40a
28
42a
30