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(54) **CONTAINER CARRIER**

BEHÄLTERTRÄGER

PORTE-CONTENEURS

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(73) Proprietor: **Illinois Tool Works Inc.**
Glenview, IL 60025 (US)

(72) Inventors:

• **MARCO, Leslie S.**
Glenview, Illinois 60025 (US)

• **OLSEN, Robert C.**

Glenview, Illinois 60025 (US)

(74) Representative: **Jones, Keith William et al**

Murgitroyd & Company

Scotland House

165-169 Scotland Street

Glasgow G5 8PL (GB)

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Description

FIELD OF THE INVENTION

[0001] This invention relates to a container carrier according to the preamble of claim 1.

DESCRIPTION OF PRIOR ART

[0002] Conventional container carriers are often used to unitize a plurality of similarly sized containers, such as cans, bottles, jars and boxes and/or similar containers that require unitization. Flexible plastic ring carriers are one such conventional container carrier.

[0003] Flexible plastic ring carriers having a plurality of container receiving apertures that each engage a corresponding container may be used to unitize groups of four, six, eight, twelve or other suitable groups of containers into a convenient multipackage. Flexible ring carriers may include a handle that extend upwardly from the carrier to enable a consumer to carry the package from the top (called a "top lift carrier") or outwardly from a side of the carrier to enable a consumer to carry the package from the side (called a "side lift carrier").

[0004] Flexible plastic carriers are known, such as those disclosed in European patent publication number EP1004518 A2, comprising a plurality of container receiving openings and a handle. Such flexible plastic carriers are used to unitise a plurality of containers into a package.

[0005] Typically, larger-capacity carriers result in challenges in application to containers in that carriers having more than two rows tend to open in an undesirable sequence and thus cannot be applied at high speeds. In addition, the resulting package tends to sag at the ends when lifted resulting in a sloppy appearance. As such, a need arises for a carrier capable of carrying a large number of containers that permits high speed application and results in an aesthetically pleasing package for the consumer to handle.

SUMMARY OF THE INVENTION

[0006] The present invention is directed to a container carrier for packaging containers according to claim 1. The carrier is suitably configured with a combination of webs and container receiving apertures that permit opening up and generally even, distributed stretching for application to the containers. In the described configuration, the shape and width of the outer three container receiving apertures in end ranks are quite different from the central six container receiving apertures in middle ranks. Such a design overcomes the natural tendency of the central apertures to foreshorten during stretching. The resulting carrier is configured to enable placement over at least three rows of containers to result in a tight, unitized brick-like package.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The above-mentioned and other features and objects of this invention will be better understood from the following detailed description taken in conjunction with the drawings wherein:

Fig. 1 is a side elevational view of a container carrier according to one preferred embodiment of this invention;

Fig. 2 is a side elevational view of a container carrier according to one preferred embodiment of this invention.

Fig. 3 is a side elevational view of a container carrier according to one preferred embodiment of this invention.

Fig. 4 is a side elevational view of a container carrier according to one preferred embodiment of this invention.

Fig. 5 is a top view of a package of containers according to one preferred embodiment of this invention.

DESCRIPTION OF PREFERRED EMBODIMENTS

[0008] Figs. 1-4 show flexible carrier 10 for unitizing six or more containers and a resulting unitized package, shown in one embodiment in Fig. 5. Although Figs. 1-5 illustrate various structures for flexible carrier 10 of the invention, the illustrations are exemplary, and the invention is not limited to the flexible carriers 10 or packages shown for twelve containers.

[0009] Containers are preferably cans, however, bottles or any other commonly unitized container may be used with flexible carrier 10 according to this invention. The containers are preferably, though not necessarily, like-sized within a single flexible carrier 10.

[0010] Each flexible carrier 10 preferably includes a single layer of flexible sheet 20 having a width and length defining therein a plurality of container receiving apertures 25, each for receiving a container. The plurality of container receiving apertures 25 are preferably arranged in at least three longitudinal rows and multiple longitudinal ranks so as to form an array of container receiving apertures 25, such as three rows by four ranks for a twelve container multipackage as shown in Figs. 1 and 2 or three rows by four divisible ranks for a dividable twelve container multipackage as shown in Figs. 3 and 4. Container receiving apertures 25 are preferably elongated in a longitudinal direction of flexible carrier 10.

[0011] The resulting configuration includes at least two middle transverse ranks 40 through a middle area of the carrier and exactly two end transverse ranks 45 on each opposite end of the carrier 10. Each rank preferably includes three container receiving apertures 25 (one for each row in the carrier 10). Of these three container receiving apertures 25 per rank, there are two outer apertures 27 and one center aperture 29 formed therebetween.

tween.

[0012] As shown in Figs. 1-4, three parallel rows of container receiving apertures 25 are preferably formed within flexible sheet 20. As such, one row of container receiving apertures 25 is preferably formed along each side of the carrier 10 and one intermediate row is formed therebetween. Container receiving apertures 25 are preferably formed in a geometry that results in a uniform application of the carrier 10 to containers to produce a tight unitization of containers within flexible carrier 10. Such a result is difficult when carrier 10 is engaged with three rows of container receiving apertures 25 over three rows of containers as described herein.

[0013] In particular, one or more jaws engage with an edge of the container receiving apertures 25 in outer rows and stretch the carrier open so as to apply the carrier to individual containers. When an intermediate row is formed between the outer rows, the jaws cannot directly engage container receiving apertures in that row which results in inadequate stretching of the container receiving apertures in that row and/or misapplication of the carrier to the plurality of containers. The subject invention is configured to enable that the container receiving apertures 25 in that intermediate row to adequately stretch and engage the associated containers resulting in a desired package shown in Fig. 5.

[0014] As described above, container carrier 10 according to a preferred embodiment of the invention includes a series of interconnecting webs 30 that define the plurality of container receiving apertures 25. Webs 30 are stretchable around container during application and recoverable around container following application. Specifically, as described, center webs 32 are located between middle transverse ranks and are wider than outer webs 36 located between middle ranks and end transverse ranks.

[0015] As shown in Figs. 1 and 2, each center aperture 29 in middle transverse ranks 40 is longer than each outer aperture 27 in middle transverse ranks 40. For example, center apertures 29 in end transverse ranks 45 are wider than outer apertures 27 in end transverse ranks 45. Further, as shown in Figs. 1-4, the center aperture 29 in end transverse ranks 45 preferably tapers wider to an outer extremity of the container carrier 10 and outer apertures 27 in end transverse ranks 45 taper narrower to an outer extremity of the container carrier 10. Partially as a result, center apertures 29 in the end ranks 45 preferably include a different configuration than center apertures 29 in the middle ranks 40.

[0016] In addition, according to one embodiment the center apertures 29 in the end ranks 45 are longitudinally asymmetric while the center apertures in the middle ranks 40 are longitudinally symmetric. Also, according to one embodiment, outer apertures 27 in end transverse ranks 45 are longer than outer apertures 36 in middle transverse ranks 40. The particular arrangement of apertures described enables the carrier 10 uniformly open up and stretch for application to containers despite hav-

ing three rows of container receiving apertures 25.

[0017] As shown in Fig. 1, a handle 50 extends from a longitudinal edge of carrier 10. Handle 50 may comprise one or more elongated apertures positioned along the outer periphery of handle 50 or may comprise a similar configuration that provides an ample area for a consumer to grasp by inserting his hand through and still maintain the purpose and integrity of package. As shown in Figs. 3 and 4, a pair of secondary handles 55 may be positioned along a longitudinal edge of the carrier 10 opposite the edge of the handle 50. As shown in Figs. 3 and 4, one or both of the handle 50 and/or the secondary handles 55 may be divisible along a line of weakness. In this manner, the package may be configured as a twelve pack or a six pack or any similar combination depending on the number of container receiving openings 25 and the configuration of the handles 50, 55 employed.

[0018] As shown in the figures, the container carrier 10 may further include asymmetric dividing apertures 70 positioned between middle ranks 40 and end ranks 45 of container receiving apertures. According to one preferred embodiment, a dividing aperture 75 positioned between middle ranks 40 of container receiving apertures 25 is center offset though symmetrical along a transverse direction of the carrier 10.

[0019] The configuration of the carrier 10 described above includes a combination of webs and container receiving apertures that permit opening up and even stretching for application to the containers. In the described configuration, the shape and width of the outer three container receiving apertures in end ranks are quite different from the central six container receiving apertures in middle ranks. Also, the design of the center row container receiving apertures is different from the design of the outer row container receiving apertures. Such a design overcomes the natural tendency of the central apertures to foreshorten during stretching.

[0020] A package 100 resulting from flexible carrier 10 includes a plurality of unitized containers such as shown in Fig. 5. Flexible carriers 10 are generally applied to containers by stretching flexible sheet 20 surrounding container receiving apertures 25 around container, and requiring the stretched carrier 10 to recover, thereby providing a tight engagement.

[0021] While in the foregoing specification this invention has been described in relation to certain preferred embodiments thereof, and many details have been set forth for purpose of illustration, it will be apparent to those skilled in the art that flexible carrier 10 and package 100 susceptible to additional embodiments and that certain of the details described herein can be varied considerably without departing from the basic principles of the invention and limited only by the following claims.

Claims

1. A container carrier (10) for unitizing a plurality of con-

tainers comprising:

- a flexible web (30) forming a plurality of container receiving apertures (25) arranged in at least three longitudinal rows and at least four transverse ranks **characterized in that** a centre aperture (29) in at least two middle transverse ranks (40) is longer than an outer aperture (27) in the at least two middle transverse ranks (40) and wherein the center aperture (29) in end transverse ranks (45) is wider than the outer aperture (27) in end transverse ranks (45).
2. The container carrier of Claim 1 wherein the center aperture (29) in end transverse ranks (45) tapers wider to an outer extremity of the container carrier (10) and outer apertures (27) in end transverse ranks (45) taper narrower to an outer extremity of the container carrier (10).
 3. The container carrier of Claim 1 further comprising a handle (50) positioned along one longitudinal edge of the flexible web (30).
 4. The container carrier of Claim 1 wherein center apertures (29) in the end ranks (45) are shaped differently than center apertures (29) in the at least two middle ranks (40).
 5. The container carrier of Claim 1 comprising three rows of container receiving apertures (25).
 6. The container carrier of Claim 5 comprising four ranks of container receiving aperture (25).
 7. The container carrier of Claim 1 wherein center apertures (29) in the end ranks (45) are longitudinally asymmetric.
 8. The container carrier of Claim 1 wherein center apertures (29) in the at least two middle ranks (40) are longitudinally symmetric.
 9. The container carrier of Claim 1 further comprising asymmetric dividing apertures (70) positioned between the at least two middle ranks (40) and end ranks (45) of container receiving apertures (25).
 10. The container carrier of Claim 1 wherein a dividing aperture (75) positioned between the at least two middle ranks (40) of container receiving apertures (25) is center offset.
 11. The container carrier of Claim 1 wherein outer apertures (27) in end transverse ranks (45) are longer than outer apertures (27) in the at least two middle transverse ranks (40).

12. The container carrier of Claim 1 wherein a center web (32) between the at least two middle transverse ranks (40) is wider than an outer web (36) between middle (40) and end (45) transverse ranks.

Patentansprüche

1. Behälterträger (10) zum Zusammenfassen einer Vielzahl von Behältern, umfassend:

eine flexible Bahn (30), die eine Vielzahl von behälteraufnehmenden Öffnungen (25) bildet, die in mindestens drei längsgerichteten Zeilen und mindestens vier quer verlaufenden Reihen angeordnet sind, **dadurch gekennzeichnet, dass** eine zentrale Öffnung (29) in mindestens zwei mittleren quer verlaufenden Reihen (40) länger als eine äußere Öffnung (27) in den mindestens zwei mittleren quer verlaufenden Reihen (40) ist, und wobei die zentrale Öffnung (29) in endständigen quer verlaufenden Reihen (45) breiter als die äußere Öffnung (27) in endständigen quer verlaufenden Reihen (45) ist.
2. Behälterträger nach Anspruch 1, wobei die zentrale Öffnung (29) in endständigen quer verlaufenden Reihen (45) zu einer äußeren Extremität des Behälterträgers (10) hin breiter wird und äußere Öffnungen (27) in endständigen quer verlaufenden Reihen (45) zu einer äußeren Extremität des Behälterträgers (10) hin schmaler werden.
3. Behälterträger nach Anspruch 1, ferner umfassend einen Griff (50), der entlang eines längsgerichteten Randes der flexiblen Bahn (30) positioniert ist.
4. Behälterträger nach Anspruch 1, wobei zentrale Öffnungen (29) in den endständigen Reihen (45) anders geformt sind als zentrale Öffnungen (29) in den mindestens zwei mittleren Reihen (40).
5. Behälterträger nach Anspruch 1, der drei Zeilen von behälteraufnehmenden Öffnungen (25) umfasst.
6. Behälterträger nach Anspruch 5, der vier Reihen von behälteraufnehmenden Öffnungen (25) umfasst.
7. Behälterträger nach Anspruch 1, wobei zentrale Öffnungen (29) in den endständigen Reihen (45) in Längsrichtung asymmetrisch sind.
8. Behälterträger nach Anspruch 1, wobei zentrale Öffnungen (29) in den mindestens zwei mittleren Reihen (40) in Längsrichtung symmetrisch sind.
9. Behälterträger nach Anspruch 1, ferner umfassend asymmetrische Teilungsöffnungen (70), die zwi-

schen den mindestens zwei mittleren Reihen (40) und endständigen Reihen (45) der behälteraufnehmenden Öffnungen (25) positioniert sind.

10. Behälterträger nach Anspruch 1, wobei eine zwischen den mindestens zwei mittleren Reihen (40) der behälteraufnehmenden Öffnungen (25) positionierte Teilungsöffnung (75) von der Mitte versetzt ist.
11. Behälterträger nach Anspruch 1, wobei äußere Öffnungen (27) in den endständigen quer verlaufenden Reihen (45) länger als äußere Öffnungen (27) in den mindestens zwei mittleren quer verlaufenden Reihen (40) sind.
12. Behälterträger nach Anspruch 1, wobei eine zentrale Bahn (32) zwischen den mindestens zwei mittleren quer verlaufenden Reihen (40) breiter als eine äußere Bahn (36) zwischen mittleren (40) und endständigen (45) quer verlaufenden Reihen ist.

Revendications

1. Porte-conteneurs (10) pour unifier une pluralité de conteneurs, comprenant:

une bande souple (30) qui forme une pluralité d'ouvertures de réception de conteneur (25) agencées en au moins trois rangées longitudinales et en au moins quatre rangs transversaux, **caractérisé en ce qu'une** ouverture centrale (29) dans au moins deux rangs transversaux intermédiaires (40) est plus longue qu'une ouverture extérieure (27) dans lesdits au moins deux rangs transversaux intermédiaires (40) et dans lequel l'ouverture centrale (29) dans des rangs transversaux d'extrémité (45) est plus large que l'ouverture extérieure (27) dans des rangs transversaux d'extrémité (45).

2. Porte-conteneurs selon la revendication 1, dans lequel l'ouverture centrale (29) dans des rangs transversaux d'extrémité (45) s'élargit davantage à une extrémité extérieure du porte-conteneurs (10) et des ouvertures extérieures (27) dans des rangs transversaux d'extrémité (45) se rétrécissent davantage à une extrémité extérieure du porte-conteneurs (10).
3. Porte-conteneurs selon la revendication 1, comprenant en outre une poignée (50) qui est positionnée le long d'un bord longitudinal de la bande souple (30).
4. Porte-conteneurs selon la revendication 1, dans lequel des ouvertures centrales (29) dans des rangs d'extrémité (45) sont configurées différemment des ouvertures centrales (29) dans lesdits au moins deux rangs intermédiaires (40).

5. Porte-conteneurs selon la revendication 1, comprenant trois rangées d'ouvertures de réception de conteneur (25).

6. Porte-conteneurs selon la revendication 5, comprenant quatre rangs d'ouvertures de réception de conteneur (25).
7. Porte-conteneurs selon la revendication 1, dans lequel des ouvertures centrales (29) dans des rangs d'extrémité (45) sont longitudinalement asymétriques.
8. Porte-conteneurs selon la revendication 1, dans lequel des ouvertures centrales (29) dans lesdits au moins deux rangs intermédiaires (40) sont longitudinalement symétriques.
9. Porte-conteneurs selon la revendication 1, comprenant en outre des ouvertures de division asymétriques (70) qui sont positionnées entre lesdits au moins deux rangs intermédiaires (45) d'ouvertures de réception de conteneur (25).

10. Porte-conteneurs selon la revendication 1, dans lequel une ouverture de division (75) positionnée entre lesdits au moins deux rangs intermédiaires (40) d'ouvertures de réception de conteneur (25) est décalée par rapport au centre.
11. Porte-conteneurs selon la revendication 1, dans lequel des ouvertures extérieures (27) dans des rangs transversaux d'extrémité (45) sont plus longues que des ouvertures extérieures (27) dans lesdits au moins deux rangs transversaux intermédiaires (40).
12. Porte-conteneurs selon la revendication 1, dans lequel une bande centrale (32) entre lesdits au moins deux rangs transversaux intermédiaires (40) est plus large qu'une bande extérieure (36) entre des rangs transversaux intermédiaires (40) et d'extrémité (45).

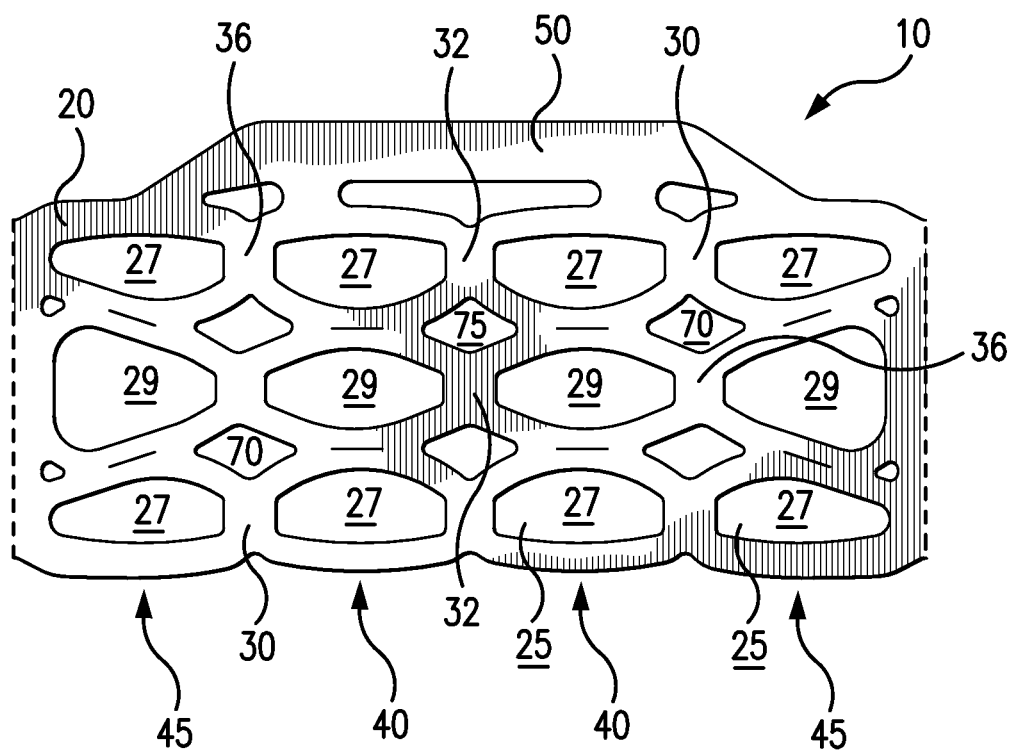


FIG. 1

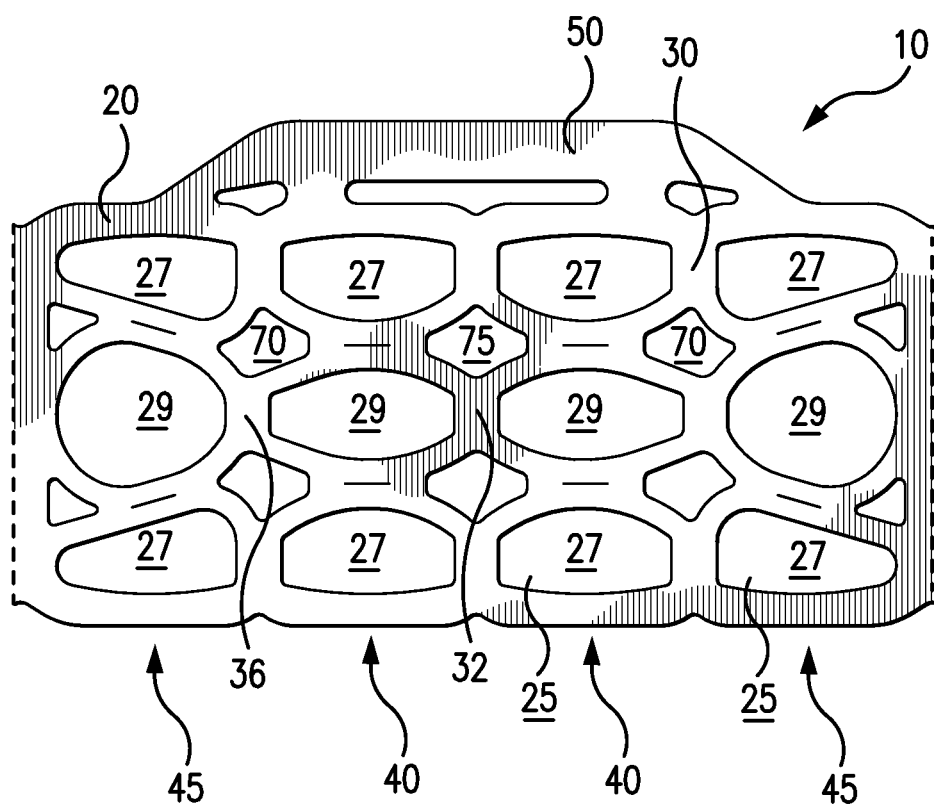
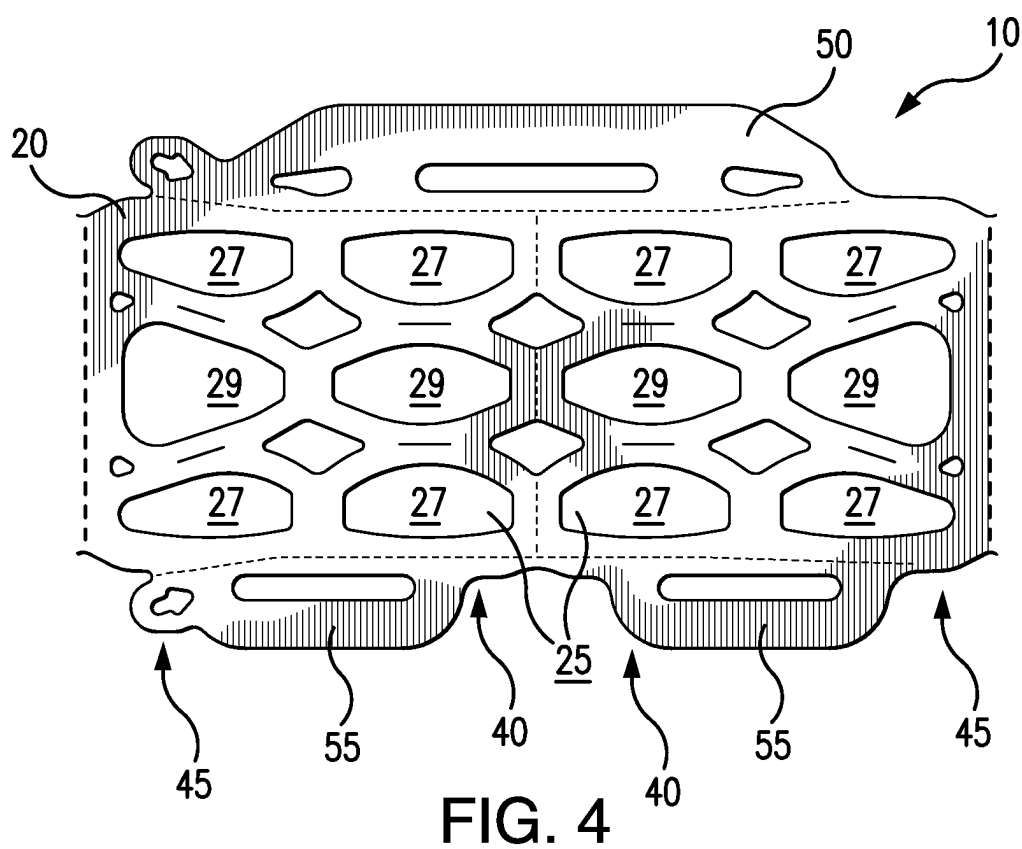
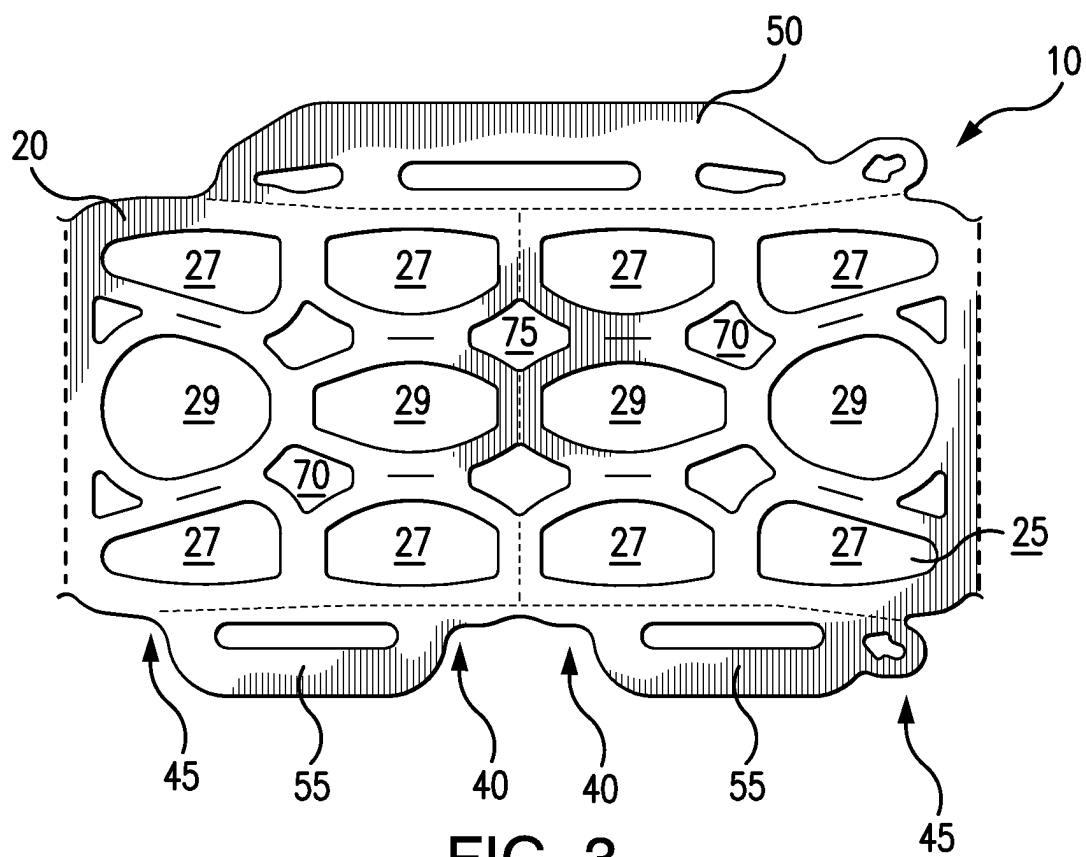


FIG. 2



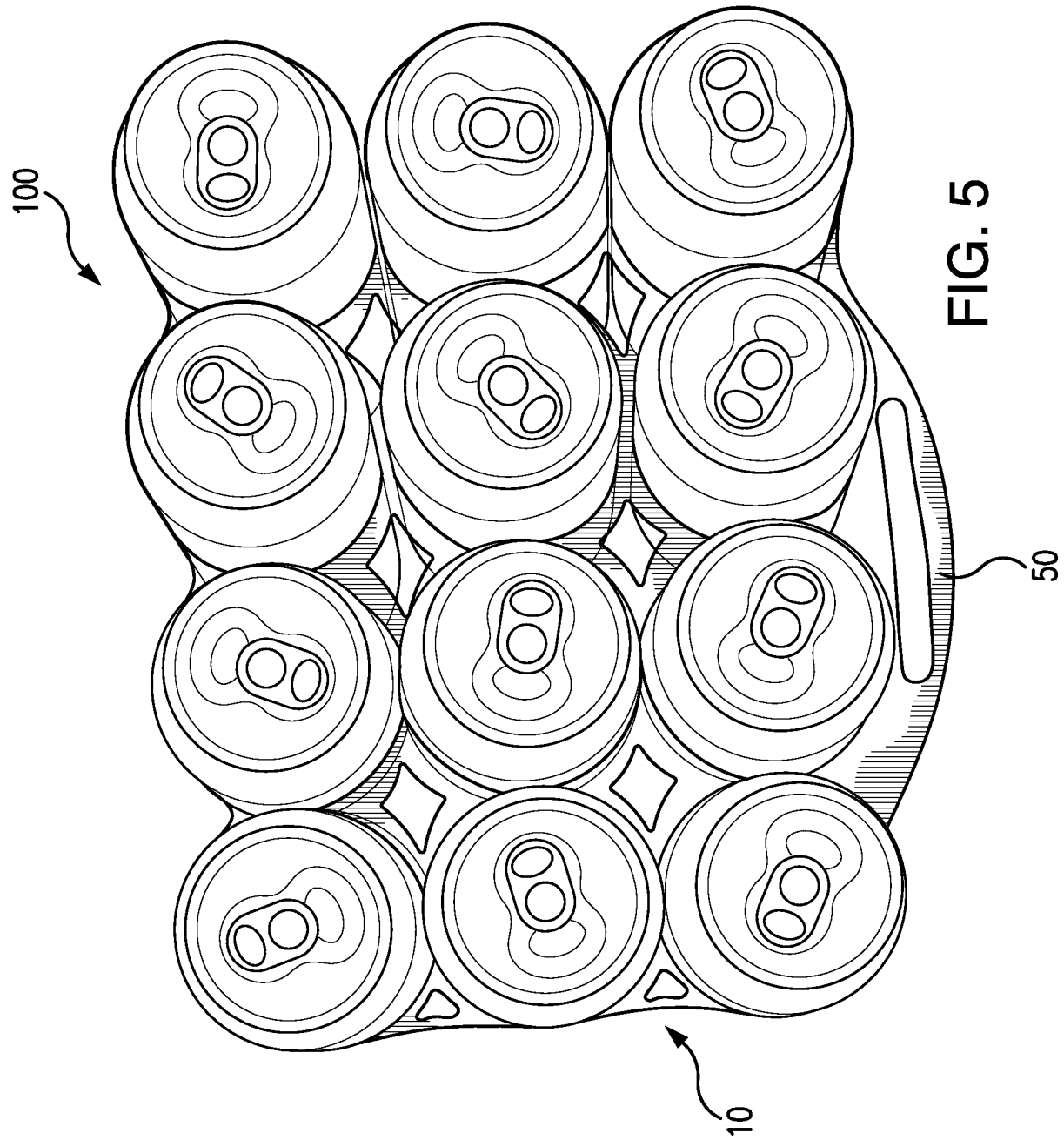


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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