

PATENT SPECIFICATION

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(54) CARRIERS FOR CONTAINERS

(71) We, ILLINOIS TOOL WORKS INC., a corporation organized under the laws of the State of Delaware, United States of America, of 8501 West Higgins Road, Chicago, Illinois 60631, United States of America do hereby declare the invention, for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:—

It has heretofore been common practice to market beverage containers and the like in units of six, commonly referred to as six packs. Experience has shown that it is not uncommon for the customer to request a lesser or greater number of cans of beverage than six. For example, a customer may desire to purchase only two or four cans of beverage, or in some instances eight or ten cans. Container receptacles or carriers now generally available have not been designed to satisfy this need. It is therefore one of the important objects of the present invention to provide carriers which are so constructed that varying numbers of containers may be readily separated as a unit from a package.

A carrier according to this invention, for retaining in side-by-side substantially abutting and parallel relation a plurality of containers or the like having peripheral enlargements at one end, comprises a strip of a plastics material, the strip being resiliently deformable, and free to flex, and having a plurality of apertures in it to receive the containers, each aperture being surrounded by a circumferentially continuous portion of the strip, and the apertures, with these portions surrounding them, being in a layout of longitudinal rows and transverse ranks, the strip also including first web sections interconnecting the portions in the longitudinal rows, and second web sections interconnecting the

longitudinal rows of circumferentially continuous portions, there being openings in the first web sections in the form of slots or slits extending transversely of the strip, for rendering the web sections frangible, the openings in certain of the first web sections being of greater length than the openings in the web sections positioned longitudinally therebetween, and these certain web sections being themselves aligned in transverse ranks, so facilitating the ease with which a length of the strip when supporting a plurality of longitudinally and transversely aligned containers may be detached as a unit from the strip.

Preferably, between each of the ranks of first web sections having openings of greater length and the next such rank, there are first web sections on a plurality of transverse alignments, all with openings of lesser length. For example, with two longitudinal rows of apertures, every third pair of first web sections may have the longer openings, while all the other first web sections have the shorter openings.

The accompanying drawings show one example of a carrier embodying the present invention. In these drawings:—

Fig. 1 is a perspective view of a plurality of containers supported by the carrier;

Fig. 2 is a fragmentary plan view of the carrier before the carrier is telescopically associated with a plurality of containers;

Fig. 3 is a plan view of six of the containers and associated carrier illustrated in Fig. 1, with four of the containers supported by a main carrier section and two of the containers supported by a carrier section separated from the main carrier section supporting the four containers; and

Fig. 4 is a plan view similar to Fig. 3 illustrating the manner in which a section of the carrier supporting two containers may be detached as a unit from a six pack.

[Price—32p]

Fig. 1 is a perspective view disclosing a unit 10 of ten containers 12 supported in longitudinal and transverse alignment by a plastics carrier strip 16. The containers 12 are cans, which embody a conventional bead 14 at each extremity thereof. The carrier strip 16 is best illustrated in Fig. 2, which shows the strip before it has been assembled with the containers 12. The strip 16 is formed from a plastics sheet material which is resiliently deformable. The strip 16 has a plurality of container-accommodating apertures 18 which are in a layout of longitudinal rows and transverse ranks.

It will be noted that the portion of the strip material 16 defining each of the apertures 18 is circumferentially continuous and uninterrupted. The peripheral measurement of each aperture is less than the peripheral measurement of the containers 12, so that when the apertured carrier is telescopically associated with the enlarged ends of the containers 12, material adjacent to the apertures is stretched and deformed to form circumferentially continuous lips 20 (Fig. 5) embracing the containers beneath the beads 14 and resiliently gripping the peripheral surfaces of the containers. Reference is made to our British Patent No. 914,202, especially Figures 30 to 33 and 39 to 41, for a more detailed explanation of the functional and structural characteristics of the container-embracing lip 20.

As previously mentioned, six-pack container carriers have been and are still in common use. Experience has shown that in many instances the customer requests containers in greater or lesser amounts than six. To satisfy this requirement, the carrier strip 16 is capable of supporting at least six, eight or ten containers as a single portable unit. First web sections 22 serve to connect the circumferentially continuous lips 20 in longitudinal rows, and second web sections 24 serve to interconnect the rows. Apertures 26 disposed longitudinally of the strip 16 provide finger-accommodating handle means to facilitate transporting of the carrier and containers supported thereby.

Particular attention is now directed to the manner in which the carrier strip may be severed to provide container-carrying units of different sizes. For purposes of illustration, the conventional six-pack portion of the unit 10 is included within a bracket A, Fig. 1. Likewise, in Fig. 2, the corresponding length of the strip 16 is included within the bracket A. Those of the web sections 22 which are at each extremity of the strip length A have transversely aligned openings in the form of slots or slits 28. These openings 28 traverse

a substantial portion of the web section in which they are formed. Thus, the opposite extremities of each opening 28 are closely adjacent to the opposed margins of its respective web section 22. The remaining web sections 22, positioned intermediate the above-mentioned openings 28, have openings 30 of lesser length. It will be noted that the inner extremity of each of the openings 30 is at a substantial distance from the inner margin of its respective web section 22, while the outer extremity of the opening 30 is immediately adjacent to the outer margin of the web section.

The presence of the above-mentioned openings 28 and 30 renders their complementary web sections 22 sufficiently frangible to enable the detachment of one unit with respect to another unit. Since each of the web sections 22 has transversely aligned openings, combined carrier and container units of varying sizes may be detached from the strip. In view of the fact that customers often request a six-pack unit, the openings 28 are considerably longer than openings 30, thereby materially increasing the frangibility of the web, to facilitate the ease with which a carrier strip may be separated into six-pack units by direct tension. In order not to impair the required strength of the web sections 22 connecting the intermediate pair of container carrier sections with the oppositely disposed outer pairs of container carrier sections, the length of the openings 30 is considerably less. However, the length of the openings 30 is sufficient to permit manual separation of a unit of two or a unit of four, as illustrated in Fig. 3, by simply twisting the unit with respect to the remainder and exerting a greater separation force. If, however, a customer has obtained a larger pack, e.g. of eight containers, then, as shown in Fig. 4, a two-container unit may be detached from a six-pack unit.

With the above-described container carrier arrangement, wherein all of the longitudinally linking web sections are provided with transverse openings, the ease with which the customer's requirements may be satisfied is greatly facilitated. Likewise, by providing openings of increased length at the opposite extremities of three pairs of longitudinally connected container-embracing lips, it is possible to supply six-pack units without the potential hazard of unintentional separation from the strip of individual containers supported thereby. In practice, as illustrated for example in our British Patent No. 974,619, apertured strip stock may be fed from a supply roll and automatically assembled with containers. Hence, a carrier according to the present invention may be telescopically assembled with a predetermined number of containers

and may thereafter be separated into sections, each carrying a predetermined and varying number of containers. Thus, the assembled carrier and containers may be retained as a single package under all normal conditions of handling and transport, and yet be easily broken down by the purchaser or store clerk into units of selected numbers of pairs of containers.

WHAT WE CLAIM IS:—

1. A carrier for retaining in side-by-side substantially abutting and parallel relation a plurality of containers or the like having peripheral enlargements at one end, comprising a strip of a plastics material, the strip being resiliently deformable, and free to flex, and having a plurality of apertures in it to receive the containers, each aperture being surrounded by a circumferentially continuous portion of the strip, and the apertures, with these portions surrounding them, being in a layout of longitudinal rows and transverse ranks, the strip also including first web sections interconnecting the portions in the longitudinal rows, and second web sections interconnecting the longitudinal rows of circumferentially continuous portions, there being openings in the first web sections in the form of slots or slits extending transversely of the strip, for rendering the web sections frangible, the openings in certain of the first web sections being of greater length than the openings in the web sections positioned longitudinally therebetween, and these certain web sections being themselves aligned in transverse ranks, so facilitating the ease with which a

length of the strip when supporting a plurality of longitudinally and transversely aligned containers may be detached as a unit from the strip.

2. A carrier as set forth in claim 1, wherein between each of the ranks of first web sections having openings of greater length and the next such rank, there are first web sections on a plurality of transverse alignments, all with openings of lesser length.

3. A carrier as set forth in claim 1 or claim 2, in which the opposite extremities of each of the openings of greater length are closely adjacent to the opposed margins of its respective web section.

4. A carrier as set forth in any of claims 1 to 3, in which there are two longitudinal rows, and the inner extremity of each of the openings of lesser length is at a substantial distance from the inner margin of its respective web section, while the outer extremity of the opening is immediately adjacent to the outer margin of the web section.

5. A carrier as set forth in any of claims 1 to 4, incorporating handle means for transporting a plurality of supported containers.

6. A carrier as set forth in claim 1, substantially as described with reference to the accompanying drawings.

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