Oct. 25, 1966 J. M. MOORE ETAL 3,281,010

ARTICLE CARRYING CASE

Filed Aug. 31, 1964

3 Sheets-Sheet 1

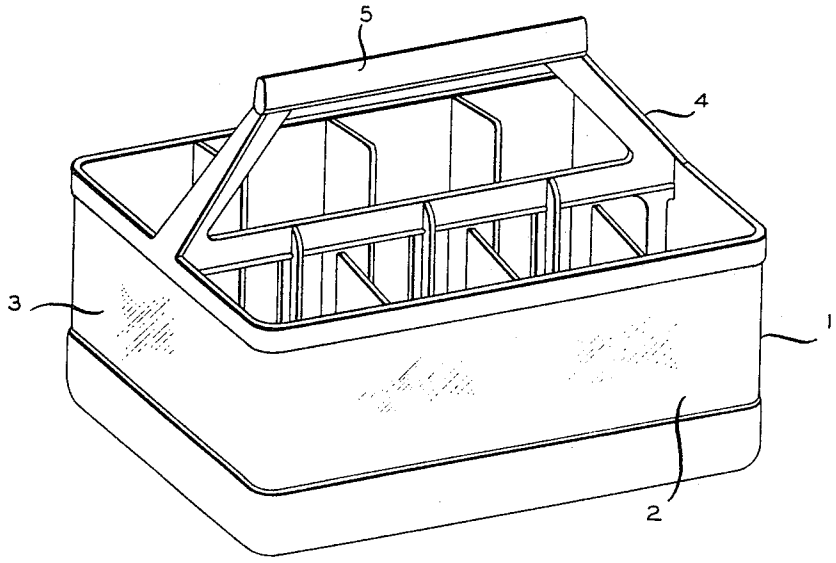


FIG. 1

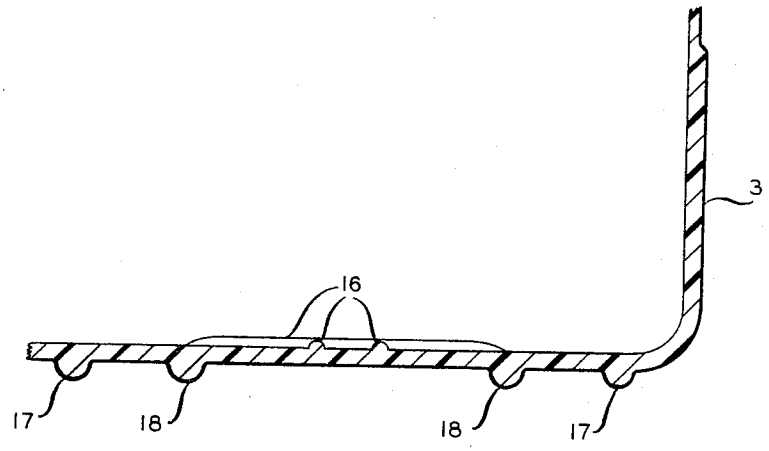


FIG. 6

INVENTORS
J. O. MOTSENBOCKER JR.
R. W. MATTHEWS J. V. SMITH
L. R. ALEXANDER FRED HICKS
D. L. ALEXANDER J. MOORE

BY Young & Quigg ATTORNEYS

Oct. 25, 1966 J. M. MOORE ETAL 3,281,010

ARTICLE CARRYING CASE

Filed Aug. 31, 1964 3 Sheets-Sheet 2

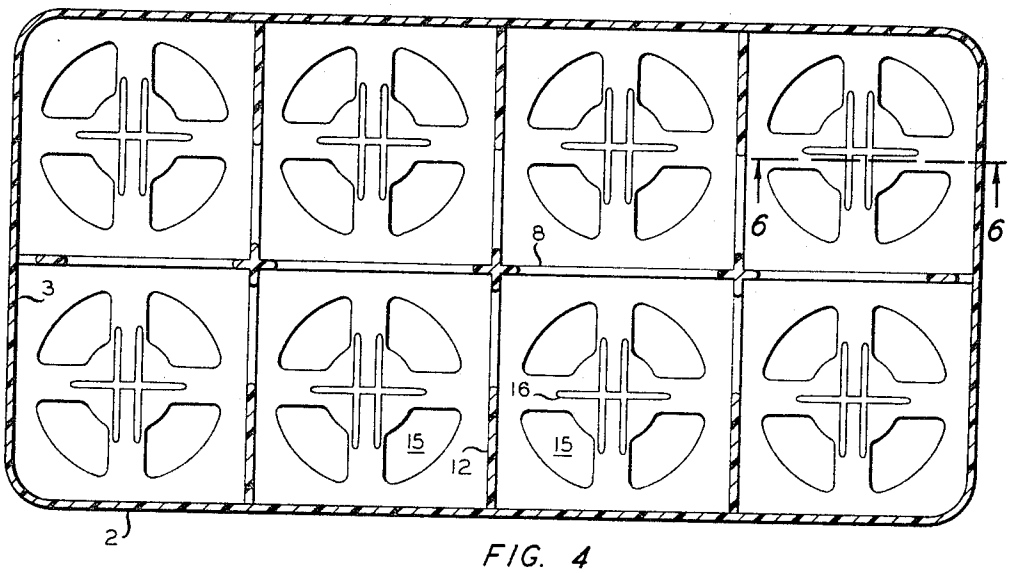


FIG. 4

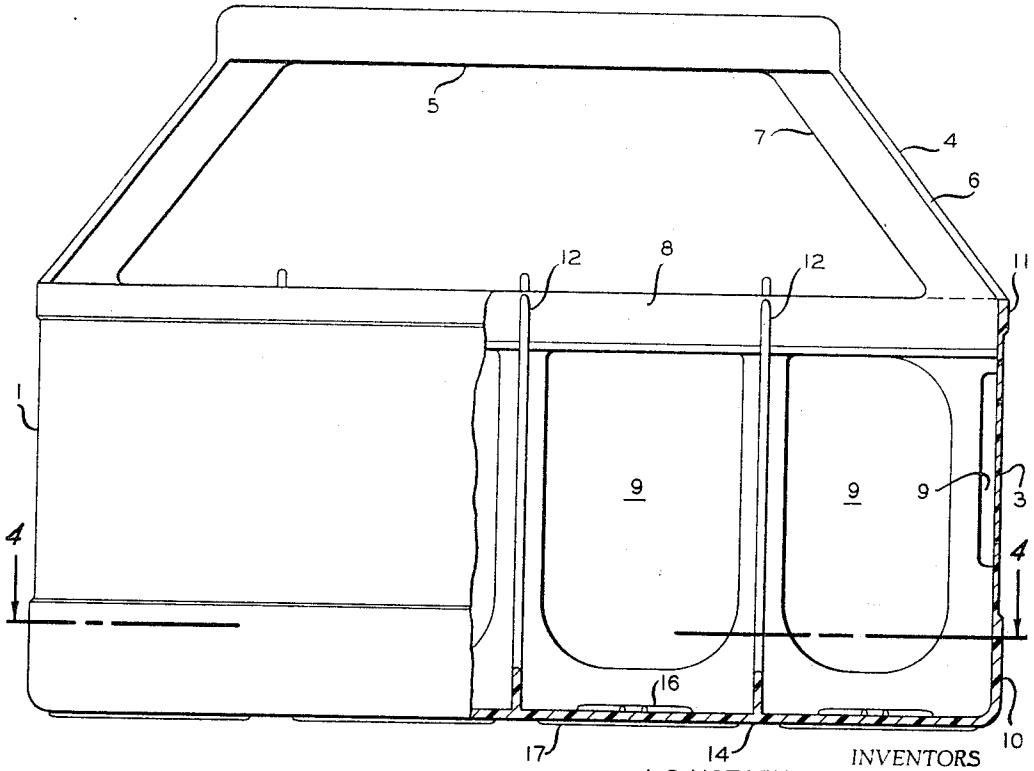


FIG. 2

INVENTORS
J. O. MOTSENBOCKER JR
R. W. MATTHEWS J. V. SMITH
L. R. ALEXANDER FRED HICKS
D. L. ALEXANDER J. M. MOORE

BY Young & Reed ATTORNEYS

Oct. 25, 1966 J. M. MOORE ETAL 3,281,010

ARTICLE CARRYING CASE

Filed Aug. 31, 1964

3 Sheets-Sheet 3

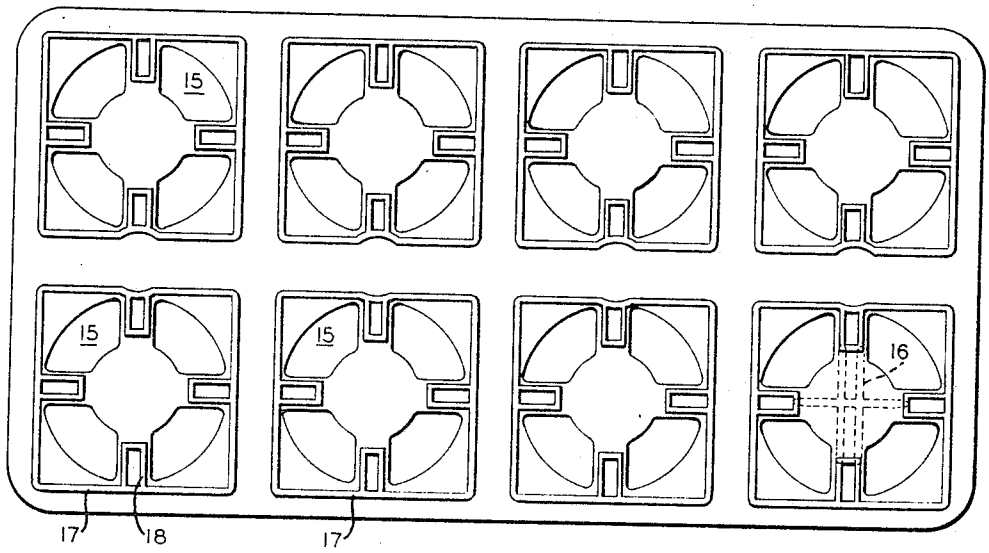


FIG. 5

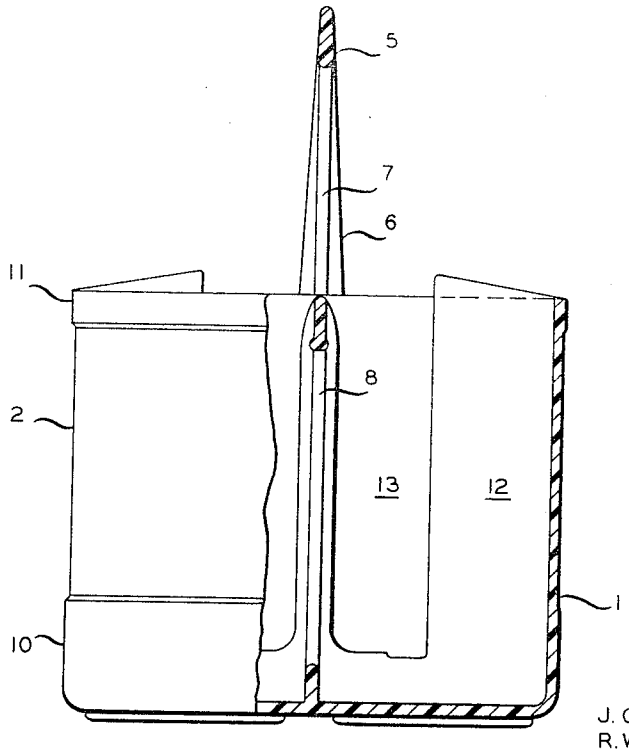


FIG. 3

INVENTORS
J. O. MOTSENBOCKER JR
R. W. MATTHEWS J. V. SMITH
L. R. ALEXANDER FRED HICKS
D. L. ALEXANDER J. M. MOORE

BY

ATTORNEYS

United States Patent Office 3,281,010 Patented Oct. 25, 1966

3,281,010

ARTICLE CARRYING CASE

John M. Moore and James O. Motsenbocker, Jr., Bartlesville, Robert W. Matthews, Dewey, and Doyle L. Alexander, Fred Hicks, Lloyd R. Alexander, and James V. Smith, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,225
12 Claims. (Cl. 220—102)

This invention relates to article carriers. In one of its aspects, it relates to a one piece molded article carrier having a reinforced bottom with an underside and an upper side, the underside having rectangular formations formed from ridges of thickened material dividing the underside of the bottom into a series of spaced apart rectangular shapes, said ridges forming at least one smaller rectangular shape within said rectangular formation, said smaller rectangular formation extending a portion of the distance from the midpoint of the side of said rectangular formation to the center of said rectangular formation. In a more specific aspect, the upperside of the bottom has raised ribs making a cross configuration, said configuration being positioned in the center portion of an area formed by said rectangular formation on said underside. In a still more specific aspect, the cross configuration overlaps an area defined by said smaller rectangular shapes. In another of its aspects, the invention relates to a one piece integrally molded article carrying case having a bottom, two end walls, two side walls, a center partition parallel to said side walls, and a handle comprising two T-shaped supports extending from the midpoint of said two end walls, said T-shaped supports consisting of a member extending from and being integrally connected to an end wall, and a member parallel to said side walls extending from and being integrally connected with said center partition, said members being integrally formed and substantially perpendicular to one another, a handle portion connecting said T-shaped members at the upper portion thereof, said handle portion being composed of thicker material than said T-shaped supports and being solid in cross section.

Article carriers such as pop bottle carriers have been made from thermoplastic material. These thermoplastic article carriers are attractive, inexpensive, and can be easily formed. One problem which has been encountered by manufacturers is that of finding an article carrier which is functional, uses the least material and hence is the least expensive, and possesses the required strength characteristics. It has now been discovered that an improved article carrier can be produced by providing a strengthened bottom with thin ridges forming rectangular configurations on the underside and thin ridges forming cross-like configurations on the upperside, and an improved handle with T-shaped supports extending from the midpoint of the end walls.

It is therefore an object of this invention to produce a light weight carrying case. It is a further object of this invention to provide a one piece integrally molded article carrying case with a reinforced bottom and an improved handle. It is a further object of this invention to produce a functional carrying case of low cost and high strength.

Other aspects, objects, and the several advantages of the invention are apparent from a study of the foregoing disclosure, the drawings, and the appended claims.

According to the invention, there is provided a one piece molded article carrying case for articles such as pop bottles and the like. The carrying case according to the invention has a basket like structure with an open top and cells for positioning articles. The bottom of

the carrier has means for positioning the articles in the respective cells of the carrier and means for strengthening the bottom portion of the carrier. The handle of the carrier is composed of T-shaped members extending upwardly from the ends of the carrier and joining a handle portion at the uppermost portion of the members. The invention can be best understood by reference to the accompanying drawings which show an embodiment of the invention.

FIGURE 1 is a perspective view of one embodiment of the invention. FIGURE 2 is a side view showing a partial cut-away of the side to reveal the center partition structure. FIGURE 3 is an end view of the carrier having a partial cut-away showing lateral partition structure. FIGURE 4 is a sectional view taken through line 4—4 on FIGURE 2, showing the inside bottom view. FIGURE 5 is a bottom view looking upward on FIGURE 2, showing the underside of the bottom. FIGURE 6 is a cross section through line 6—6 of FIGURE 4, showing the contour of the carrier bottom.

Referring now to the drawings, in particular FIGURES 1–3, an article carrying case **1**, having lateral sides **2** and end portions **3** has a handle with sloping T-shaped supports **4** and handle grip **5**. A T-shaped support **4** is composed of a member **6** which is integrally connected to an end portion **3** and extends upward therefrom. Member **6** is tapered from the lower part to the upper part. Member **7** extends upwardly from center partition **8** and is substantially perpendicular to member **6**. The T-shaped members are joined at the top by handle grip **5** which is thicker in cross section than the T-shaped members. Grip **5** is rounded at the lower and upper portions for ease in gripping, and is tapered from the bottom to the top portion, generally continuing the taper of T-shaped supports **4**. Grip **5** can have ridges or corrugations or a leather like texture (not shown) to aid in gripping the handle or can be plain as shown in the drawings. The T-shaped members provide rigidity for the handle in the critical area, i.e. mainly that area where the T-shaped member joins the top portion of the carrier basket. Partition **8** runs the length of the carrier body being integrally connected to the bottom **14** and end walls **3** at a point midway between the lateral walls **2**. A cut out area **9** in partition **8** reduces the weight and mass of the carrier while leaving the requisite strength in the top and bottom portions thereof. The side walls and end walls are strengthened by continuous bands of thickened material **10** and **11**. This provides the necessary strength around the top and bottom portions of the carrier. Partitions **12** extend a portion of the distance across the top of the carrier and across the bottom **14** being integrally connected thereto, providing a cell-like structure for the articles. A portion of the partition **12** indicated by numeral **13** is removed to decrease the mass without sacrificing the function of the partition. In this embodiment of the invention, three partitions are shown making an eight bottle carrier. It is within the scope of the invention to provide a carrier having two partitions, one partition, or more partitions to make a four bottle, six bottle, or even ten or twelve bottle carrier.

Referring now to FIGURES 4, 5 and 6, bottom **14** is divided into a number of compartments delineated by the side walls **2**, the end walls **3**, partition **8** and partitions **12**. Each cell has cut out portions **15** and raised ridges **16**. In this embodiment of the invention, the raised ridges **16** are shown having one ridge parallel to the side walls of the container and two ridges parallel to the end walls of the container. It is within the scope of the invention to provide two raised ridges parallel to the side walls of the container and one or two raised ridges parallel to the end walls of the container. The raised ridges strengthen the

central portion of each cell as well as position the bottles which are placed in the cells. The underside of the carrier has a series of rectangular formations **17** which are formed from thin ridges of thickened material such as those forming crosses **16**. Each rectangular configuration **17** is positioned beneath a cell wherein an article is placed and each cell has a rectangular configuration **17** beneath it. Small rectangular formations **18** stem from a midpoint of a side of rectangular configurations **17** and project inwards toward the center. These raised ridges strengthen the bottom of the container. As can be seen from FIGURES 5 and 6, raised ridges **16** on the inner side of the bottom overlap an area defined by the rectangular formations **18**. It can also be seen from FIGURES 5 and 6 that when carriers are stacked with other similar carriers which are filled, the tops of bottles from another similar carrier will be positioned in the central portion of each rectangular formation **17**. Thus, while the ridges provide for increased strengthening of the bottom, they also provide for positioning bottles or other similar articles which are placed in each cell and position the tops of bottles in similar filled carriers when in stacked relationship.

The article carriers can be made from any suitable thermoplastic material such as polyethylene, polypropylene, polybutene-1, and copolymers thereof, polystyrene, polyvinylchloride and the like. In a preferred embodiment of the invention, the carriers are made from high density polyethylene such as that described and claimed in U.S. Patent 2,825,721, granted to Messrs. Hogan and Banks.

It is obvious that it is within the scope of the invention to provide a bottle carrier with positions for four bottles, six bottles, eight bottles, ten bottles, or twelve or more bottles. The eight bottle carrier has been shown for convenience.

The carrying case can be made in different ways. The preferred method is by injection molding.

It is within the scope of the invention to reverse the configuration on the upper side and the under side of the bottom. In other words, the ridges of thickened material can be positioned on the upper side of the bottom of the carrier and the raised ribs making a cross configuration can be positioned on the under side of the bottom. Further, a rectangular formation of thickened material need not be identical within each compartment. There can be variations in configuration from section to section of each carrier. Similarly, the carrier bottom can have alternating sections of raised configurations on the upper side and rectangular configurations on the under side in combination with sections having raised cross configurations on the under side and rectangular configurations on the upper side. In short, the carrier bottom can have a checkerboard configuration, having on the upper side alternating sections of cross configurations and rectangular configurations.

The preferred form of the invention embodies a carrier bottom with a cut out section **15** as shown in the drawings. Each section of the carrier need not have a cut out section. For example, the carrier bottom can contain raised or thinned portions having the general annular shape as shown in the drawings. Further, the cut out shape **15** can be rectangular, round or any desired shape.

The cross configuration **16** need not be parallel to the sides of the carrier as shown in the drawings. The cross configurations may be positioned so as to make an angle with the sides of the carrier.

Reasonable variation and modification are possible within the scope of the foregoing disclosure, the drawing and the claims to the invention, the essence of which is that there is provided a one piece molded article carrier having a reinforced bottom comprising on one side at least one section having thin ridges forming rectangular shapes, each rectangular shape having at least one smaller rectangular formation extending from the midpoint of the

side in towards the center, on the other side thereof at least one section having thin ridges forming a cross-like configuration being positioned in the center of an area defined by the rectangular shapes and overlapping an area defined by said smaller rectangular configurations, and an improved handle having T-shaped supports extending from the end portions of the carrier upwardly and joining a thickened solid handle portion, each T-shaped member consisting of a section which extends from and is integrally connected to the end portions of the carrier, and a section which is parallel to the side portions of the carrier, being integrally connected with a central partition and being integrally connected with and substantially perpendicular to said section which extends from and is integrally connected to said end portion.

We claim:

1. An integral one piece article carrier comprising two end walls, two side walls, a bottom having an underside and an upperside, one of said underside and said upperside comprising at least one section having a plurality of rectangular shaped formations formed from ridges of thickened material, each rectangular shaped formation having at least one smaller rectangular shaped formation within said rectangular shaped formation extending a portion of the distance from a side of said rectangular shaped formation to the center thereof.

2. An integral one piece article carrier comprising two end walls, two side walls, a bottom having an underside and an upperside, one of said underside and said upperside comprising at least one section having a plurality of rectangular shaped formations formed from ridges of thickened material, the other of said underside and said upperside of said bottom containing at least one section having formed ribs making a cross configuration, said ribs being positioned in the central portion of an area formed by said rectangular shaped formation on said underside.

3. An integral one piece article carrier comprising two end walls, two side walls, a bottom having an underside and an upperside, one of said underside and said upperside comprising at least one section having a plurality of rectangular shaped formations formed from ridges of thickened material, a partition extending between said two end walls integrally joined therewith, and at least one partition between two side walls integrally joined therewith, said partition extending from said bottom to the top of said side walls, and a handle, said handle comprising two T-shaped supports each extending from the midpoint of one of said end walls, said T-shaped member having a first section parallel to said side walls extending upwardly from said partition between said end walls and a second section extending upwardly from said end wall to which it is attached and decreasing in width from end wall projection to upper portion thereof, said sections being substantially perpendicular to each other.

4. An article carrier according to claim **1** wherein said other side comprises at least one section having raised ribs making a cross configuration, said configuration being positioned in the central portion of an area formed by said rectangular shaped formations.

5. An article carrier according to claim **4** wherein said cross configuration overlaps an area defined by said smaller rectangular shaped formations.

6. An article carrier according to claim **3** wherein said handle comprises a handle grip connecting said T-shaped supports at the uppermost portion thereof.

7. An article carrying case according to claim **6** wherein said handle grip is made of thicker material than said T-shaped support and is solid in cross section.

8. A one piece integrally molded thermoplastic article carrying case comprising two end walls, two side walls, a bottom, a plurality of partitions integrally connected with said side walls, end walls, and bottom to form article compartments, and a handle comprising two T-shaped supports each extending upwardly from the midpoint of one of said end walls, said T-shaped member having a

first section extending upwardly from said end wall being integrally attached therewith, decreasing in width from said end wall projection to the upper portion thereof, and having a second section substantially parallel to said side walls, said first section and said second section being substantially perpendicular and being integrally connected to form said T-shaped support.

9. A one piece molded thermoplastic article carrying case according to claim **8** wherein said handle comprises a handle grip connecting said T-shaped supports at the uppermost portion thereof.

10. A one piece molded thermoplastic article carrying case according to claim **9** wherein said handle grip is made of thicker material than said T-shaped supports and is solid in cross section.

11. A one piece thermoplastic integrally molded article carrying case comprising two end walls and two side walls, a bottom, the underside of which is composed of at least two rectangular formations made from ridges of thickened material dividing said underside into a series of spaced apart rectangular formations, ridges forming at least one smaller rectangular shape within each of said rectangular formations extending a portion of the distance from a side of said rectangular formation to the center of said rectangular formation, the upperside of said bottom having raised ribs making a double cross configuration, being positioned in a central portion of an area formed by said rectangular formation on said underside, said double cross formation overlapping an area defined by said smaller rectangular shape and adapted to position articles, a partition between said end walls extending from the bottom to the top of said end walls and being integrally joined therewith, at least one partition between said side walls extending from the bottom to the top of said side walls and being integrally connected therewith and being integrally connected with said bottom, a handle comprising two T-shaped supports composed of a first section and a second section, the two sections being substantially perpendicular to one another, said T-shaped support extending from two end walls, said first section extending upwardly from the midpoint of said end wall and integrally formed therewith, and decreasing in width from said end extension to the upper portion of said handle, said second section being parallel to said side wall, a handle grip of thicker material than said T-shaped supports and being substantially solid in cross section, said handle grip connecting said T-shaped supports at the uppermost portion thereof.

12. A one piece article carrying case according to claim **11** wherein there are four smaller rectangles within each of said rectangular formations, each of said rectangles extending inwardly from the midpoint of a side of said rectangular formations.

References Cited by the Examiner

UNITED STATES PATENTS

Re. 25,707	1/1965	De Chelbor	220—102
2,804,234	8/1957	Lachance	220—116
3,055,542	9/1962	Russo	220—104
3,131,829	5/1964	Masser	220—102
3,178,052	4/1965	Bromley	220—102

GEORGE O. RALSTON, *Primary Examiner.*