United States Patent

Friedman

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[54] **ARTICLE CARRIER WITH LOCKABLE CARRYING HANDLES**

[72] Inventor: **Ira J. Friedman,** 8 Whittier Place, Boston, Mass. 02114

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[21] Appl. No.: **78,785**

[52] **U.S. Cl.** .....**224/45 T,** 150/3, 150/12, 229/54 R

[51] **Int. Cl.** **B65d 71/00**

[58] **Field of Search** .....224/45 T, 47, 49; 229/54 R; 150/12, 3

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[57] **ABSTRACT**

Two molded plastic handle bails having a pair of spaced generally upright legs joined by a horizontal reach are utilized to hand carry articles with the user's hand being placed between the legs and his fingers grasping the reaches. The bails are locked in adjacent juxtaposed position to prevent inadvertent removal of articles. To lock the bails, a snap flange extends transversely from the lower edges of one reach toward and beyond the other reach. The flange terminates with an upwardly extending bead which snappingly engages the exterior face of the other reach adjacent the lower edge thereof. In one embodiment, the bails are secured at their lower ends to the side panels of a plastic tote bag.

In another embodiment, two bails are molded in one piece with their lower ends secured to a channel adapted to captively retain garment hanger hooks to thereby carry articles on garment hangers. A pair of spaced ribs extend upwardly from the channel base and transversely between side walls of the channel. A pair of cantilever flanges extend inwardly toward one another from opposed faces of the bails adjacent the lower end of the bail legs. The wire hook portions of garment hangers are forced against the ribs by the cantilever flanges when the reaches are brought together. A further embodiment includes a garment hanger hook receiving sling molded between the bases of each bail. Vertical ribs projecting from the side walls of the sling engage the wire hook portions of the garment hangers to prevent disengagement of the hook portions of the hangers from the sling.

21 Claims, 22 Drawing Figures

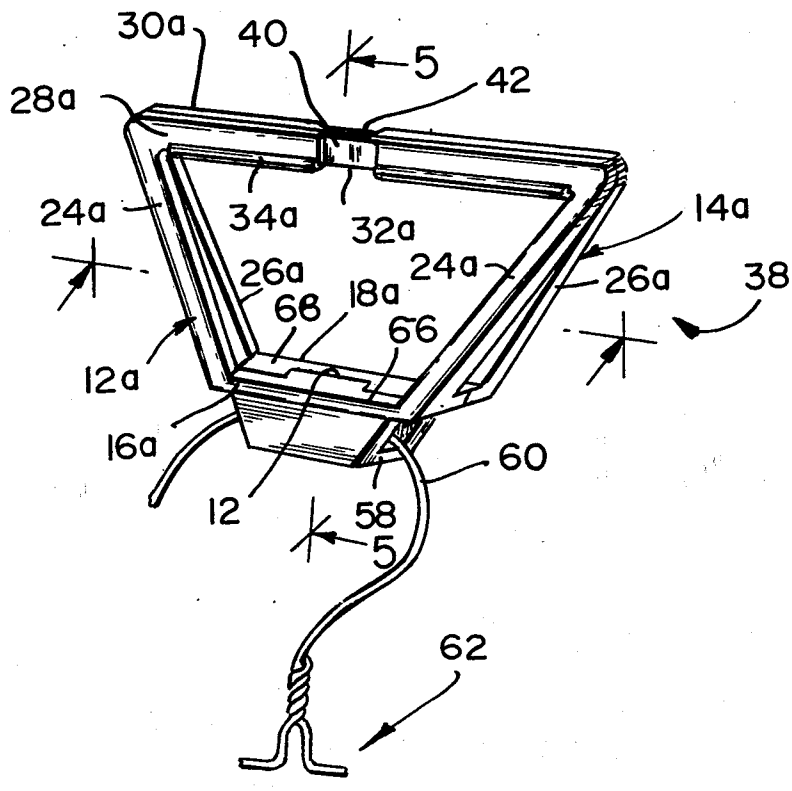

FIG. 1

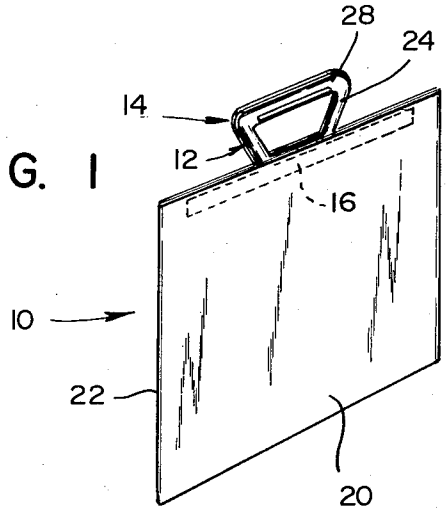

FIG. 3

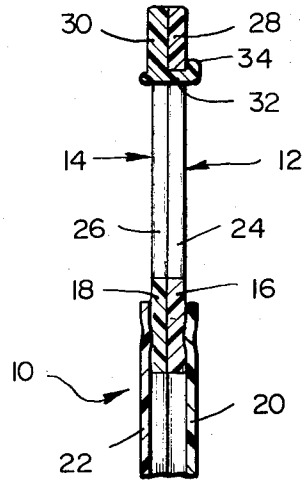

FIG. 2

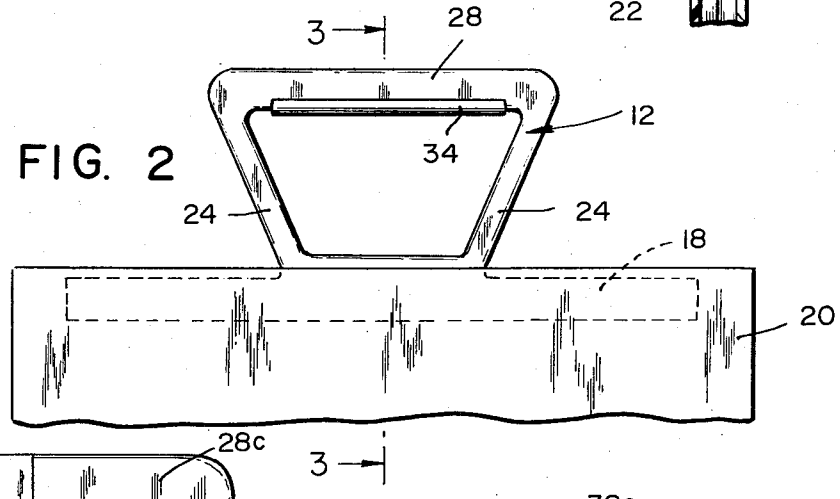

FIG. 21

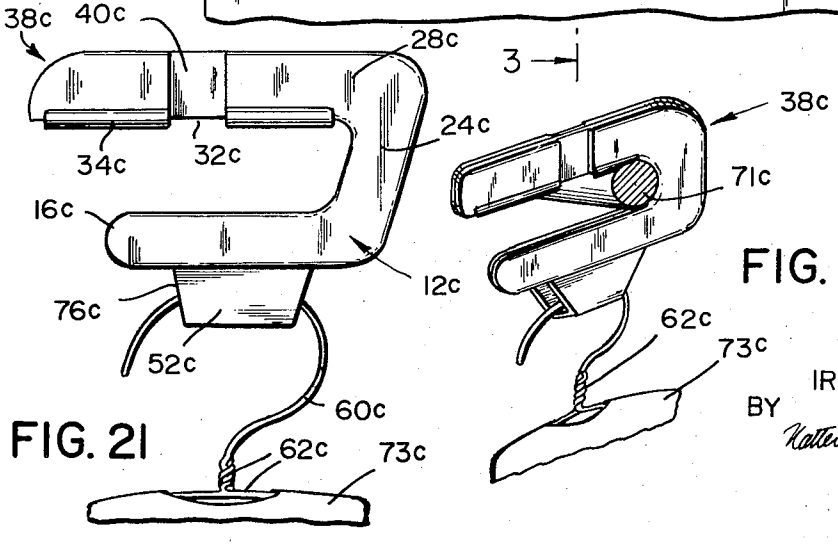

FIG. 22

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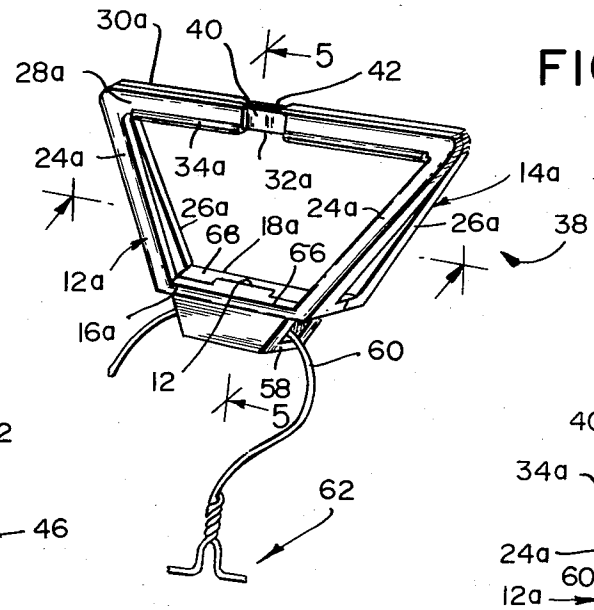
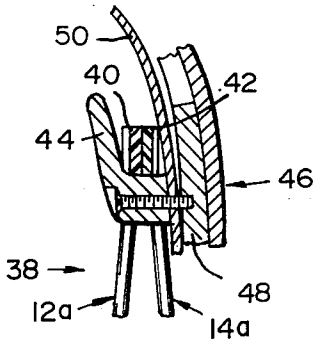


FIG. 4

FIG. 18



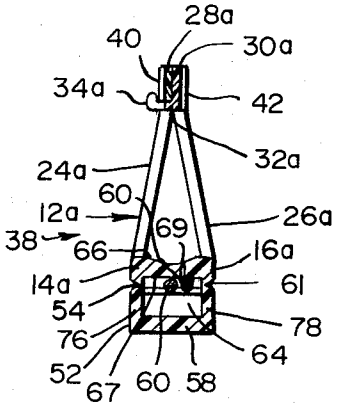


FIG. 5

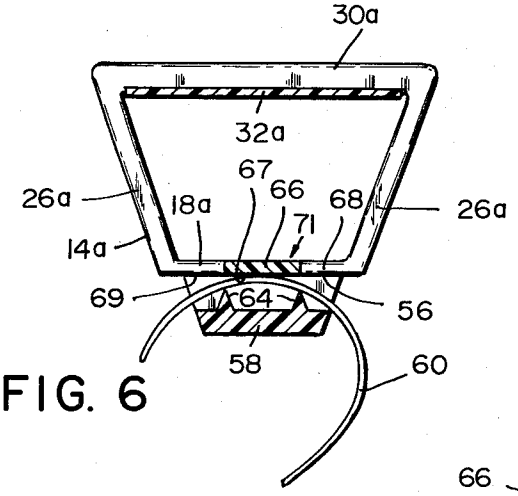


FIG. 6

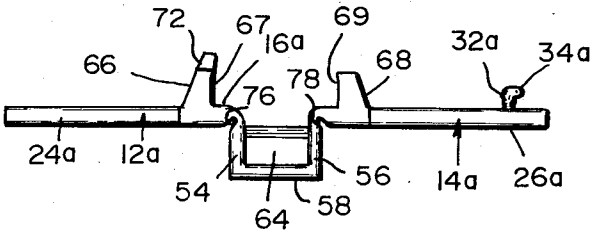


FIG. 7

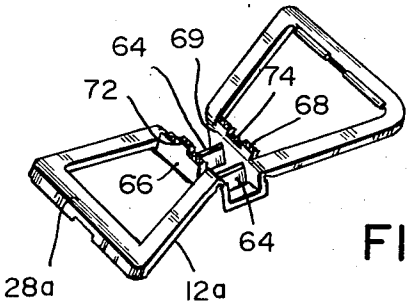


FIG. 8

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FIG. 9

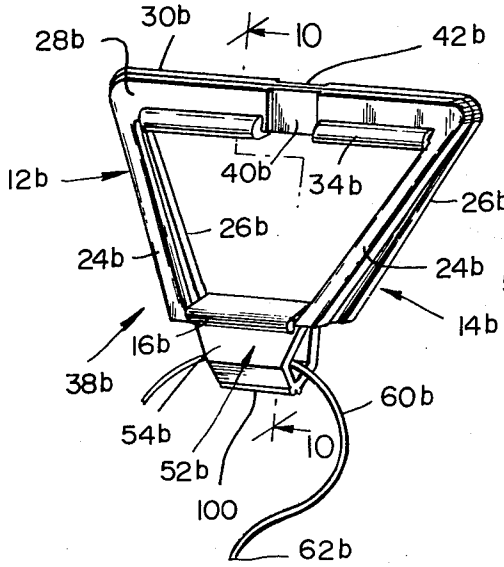
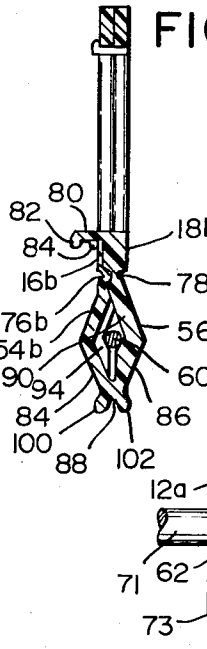


FIG. 10



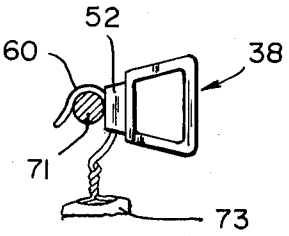


FIG. 20

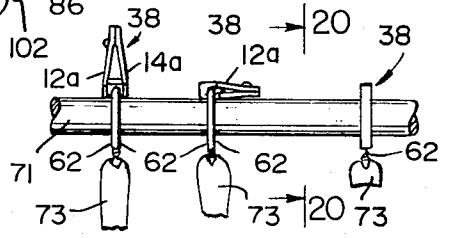
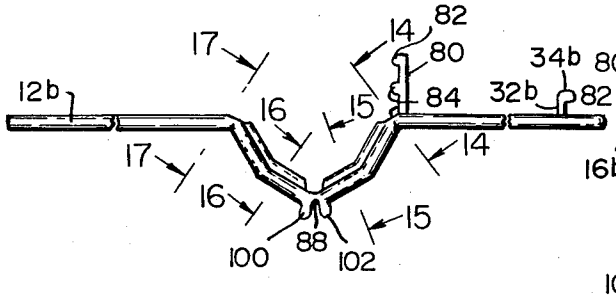


FIG. 19

FIG. 13



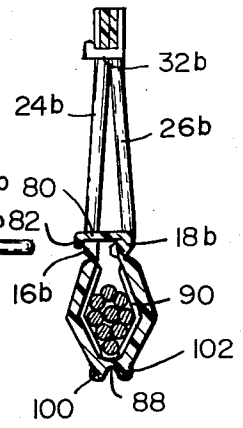


FIG. 11

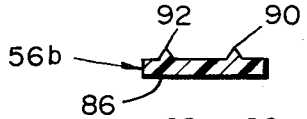


FIG. 14

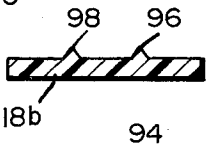


FIG. 15

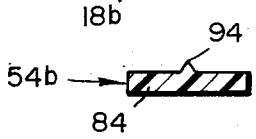


FIG. 16

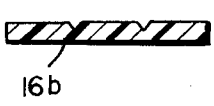


FIG. 17

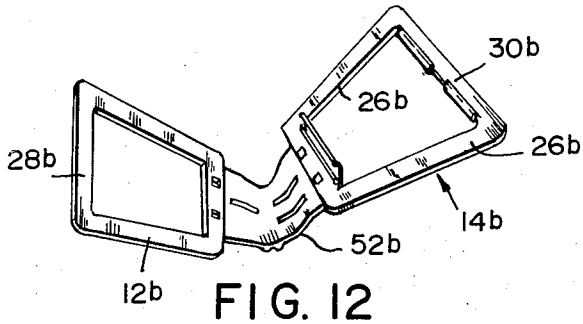


FIG. 12

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ARTICLE CARRIER WITH LOCKABLE CARRYING HANDLES

BACKGROUND OF THE INVENTION

1. Field of the Invention

Carriers for the hand carrying or articles with means for preventing disengagement of articles carried.

2. Brief Description of the Prior Art

Many devices have been heretofore known for use in facilitating the hand carrying of articles. Where the articles were relatively small, a widely used article carrying device was a shopping or tote bag. These bags included one or more handles or bails projecting above the upper edge of each side panel of the bag. When the user inserted his hand between the legs of the handles and grasped the bights with his fingers, he not only carried the bag, but brought the bails together thereby forming a constriction at the mouth of the bag. The extent of mouth constriction usually depended upon the stiffness, size and shape of the handles.

Among the commonly used tote or shopping bags were the prevalent plastic walled bags, formed or opposed panels of plastic, e.g. polyvinyl chloride, polyethylene, polypropylene, etc., film. The panels were usually seamed and sealed together only along abutting registered edges with some edges formed by a fold line in a single film. The top edges of the panels were not joined thereby forming a bag having an open mouth. To provide a carrying handle for the tote bag, relatively thick resilient molded bails of compatible plastic, e.g. polyvinyl chloride, polyethylene, polypropylene etc. were joined to each panel adjacent the top edge thereof. Usually one of the handles included a plurality of projecting pins which were received within mating sockets in the other handle to releasably secure the handles in juxtaposed registered position to thereby close the mouth of the bag.

Among the disadvantages encountered with these prior tote bags was the fact that when the articles carried within the bag were of any appreciable weight, the upper portions or bights of the handles which were engaged by the user's fingers had a tendency to exert excessive pressure due to the limited area of weight distribution. This tendency was accentuated when the handles were not in juxtaposition because the handles were not locked together, then the upper portion or bight of each individual handle would individually bear its respective portion of the total carried weight through a narrow ridge supported by only a small area of the user's fingers.

The problem of carried article weight distribution rendering the hand carrying of relatively light articles difficult was also prevalent with common clothes hangers. Clothes hangers generally include either a wire, wood or molded plastic frame and a curved wire hook member adapted to engage a closet rod. Unfortunately, the hook member was relatively thin, e.g. 3/32 inch diameter, and when one attempted to carry one or several garments by lifting and carrying the hanger from the hook portion of one or more hangers, a great discomfort was experienced. The discomfort became even more accentuated as the carrying time increased.

A further disadvantage encountered with the use of hangers to carry garments especially when receiving garments from a dry cleaning establishment was that when several articles were cleaned and received at one

time, not only was the weight of the articles difficult to support while hand carrying the hangers, due to the concentrated areas of load weight distribution, but, since dry cleaning establishments usually use one wire frame hanger for each garment, several wire frame hangers had to be simultaneously carried and a large number of wire hangers, e.g. five or more, were generally tied together at their hook portions and not capable of being suspended from the post generally provided at the headliner of an automobile adjacent the rear side windows thereof. Thus, it was often necessary to lie the garments down and or fold them after they have been cleaned and pressed thereby wrinkling and possibly soiling the freshly cleaned garments because it was impractical to separate the few hangers which could be suspended from the post.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an article carrier having two lockable handle bails of the general character described which, however, is so constructed that it is not subject to any of the foregoing disadvantages.

More specifically it is an object of the present invention to provide an article carrier of the general character described which includes two interengageable handle bails which may be locked together with great facility, thereby precluding inadvertent or unauthorized removal of articles carried.

A further object of the present invention is to provide an article carrier of the general character described which includes to interengageable handle bails and which provides a single, broad, load distributing surface engageable by the user's fingers while articles are being carried.

Another object of the present invention is to provide an article carrier of the general character described wherein a snap flange interconnects two handle bails while simultaneously providing a uniform load distributing surface whereby the weight of the articles carried may be evenly borne.

A further object of the present invention is to provide an article carrier of the general character described including carrying handle bails wherein the bails are interlocked by a flange which extends from one bail toward and underlying a portion of the other and which is normally grasped by the user's fingers when articles are carried thereby evenly distributing the weight of the articles.

It is a further object of the present invention to provide an article carrier of the general character described which includes two handle bails secured at their lower ends to a garment hanger hook carrying section and with the handles having a locking load distributing flange to secure the handles in juxtaposition.

Yet another object of the present invention is to provide a carrying device of the general character described which includes means engaging the wire hook portion of a garment hanger at discreet spaced zones therealong to thereby prevent removal of the hanger from the device.

Still another object of the present invention is to provide a carrying device of the general character described which includes means extending beneath a pair of handle bails and engaging the wire hook portion

of a garment hanger to exert at spaced discreet zones radially outward and inward forces alternately along the arc of the hook portion to thereby prevent disengagement of the hangers.

It is another object of the present invention to provide a carrying device of the general character described which includes means exerting compressive forces against the opposite sides of wire hook portions of garment hangers to prevent removal of the hangers from the device.

Yet another object of the present invention is to provide a carrying device of the general character described which is capable of easily carrying either one or more garment hangers without inadvertent disengagement of the hangers from the device.

A further object of the present invention is to provide a garment hanger carrying device of the general character described which is adapted to carry either a single or a plurality of garment hangers yet is capable of being easily carried in a suspended position from a post projecting from the headliner of a vehicle to thereby suspend garments on the hangers.

Other objects of the invention in part will be obvious and in part will be pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangements of parts which will be exemplified in the carrying devices hereinafter described, and of which the scope of application will be indicated in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings in which are shown some of the various possible embodiments of the invention,

FIG. **1** is a front perspective view of a plastic walled tote bag constructed in accordance with and embodying the invention and including opposed side panels and with a handle bail secured to each of the side panels of the bag;

FIG. **2** is an enlarged fragmentary front view of the upper portion of the tote bag illustrated in FIG. **1** and more clearly showing one of the bails which is formed with upwardly extending legs joined at their tops by a horizontal reach and with a snap flange extending from the other bail toward and beyond the exterior face of the one reach;

FIG. **3** is a sectional view taken substantially along the line **3—3** of FIG. **2** and more clearly illustrating the engagement between the snap flange and the reach of the one bail to secure the bails in juxtaposition thereby closing the mouth of the bag;

FIG. **4** is a perspective view of another embodiment of the invention wherein the bails are secured at their lower edge to a channel which receives garment hanger hooks to carry one or more garment hangers;

FIG. **5** is a sectional view taken substantially along the line **5—5** of FIG. **4** and illustrating a snap flange extending between the reaches of the bails and a rib extending upwardly from the base of the channel and engaging a wire hook portion of a garment hanger between the rib and a pair of cantilever flanges which extend inwardly toward one another from the inner faces of the bails to enclose the channel;

FIG. **6** is a sectional view taken substantially along the line **6—6** of FIG. **4** and more clearly illustrating the engagement between the wire hook portion of a garment hanger and the channel wherein two spaced ribs project upwardly from the base of the channel to engage the concave surface of the hook portion and the hook portion is engaged along its convex surface at a point spaced from the ribs by one of the cantilever flanges extending from the face of one bail;

FIG. **7** is an end view of the garment hanger carrying device illustrated in FIG. **4** in its as molded position wherein the bails lie in a horizontal plane and diverge outwardly from side walls of the channel;

FIG. **8** is a perspective view of the garment hanger carrying device in its as molded position and further illustrating a roughened surface and tongue-and-groove configuration of the abutting surfaces of the cantilever flanges which serve to substantially unitarily join the two cantilever flanges when the bails are brought together;

FIG. **9** is a perspective view of another embodiment of the invention wherein the bails are also part of a garment hanger carrying device but with the bails joined at their lower ends to a sling adapted to receive the wire hook portions of garment hangers;

FIG. **10** is a sectional view taken substantially along the line **10—10** of FIG. **9** and further illustrating the engagement of a wire hook portion of a single hanger with the sling and showing the hook portion securely held therein by projecting vertical ribs which extend from opposed walls of the sling; additionally illustrated is a two position snap flange interconnecting the faces of the bails to provide a garment hanger hook locking position wherein the bails are optionally locked with their bases in abutting relationship as well as in an alternate spaced position;

FIG. **11** is a sectional view through the garment hanger carrying device similar to that of FIG. **10** but wherein the hook portions of several garment hangers are carried within the sling and the snap flange joining the bases of the bails is in its alternate position wherein the bails are spaced apart adjacent their bases;

FIG. **12** is a perspective view of the garment hanger carrying device illustrated in FIG. **9** in its as molded position;

FIG. **13** is an end view of the garment hanger carrying device as shown in FIG. **12**;

FIGS. **14, 15, 16** and **17** are sectional views through the garment hanger carrying device taken substantially along the lines **14—14, 15—15, 16—16** and **17—17** respectively, of FIG. **13**;

FIG. **18** is a fragmentary sectional view taken through a portion of the roof section of an automobile and showing an upwardly extending post mounted to the automobile roof and with the bails of a garment hanger carrying device suspended from the post;

FIG. **19** is a fragmentary elevational view of groups of garment hangers, the hooks of which are engaged in the embodiment of FIGS. **4–8** and suspended from a closet rod and showing the various positions the carrying device may assume without being separated from the hooks of the hangers;

FIG. **20** is a fragmentary sectional view taken substantially along the line **20—20** of FIG. **19**;

FIG. **21** is an elevational view of a further embodiment similar to the embodiment of FIGS. **4–8** but wherein each bail is mutilated by the removal of one leg so that the carrier may be slipped over a closet rod; and

FIG. 22 is a sectional view through a closet rod and showing the manner in which the mutilated bail carrier engages a closet rod while carrying a garment hanger.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now in detail to the drawings, the reference number **10** denotes a tote bag (FIGS. 1–3) including a pair of lockable handle bails **12, 14** constructed in accordance with and embodying the invention. Each bail **12, 14** is formed with a flat elongate bar **16, 18** respectively at the base thereof. The bar **16, 18** not only functions as a base for the bails, but additionally serves to secure the bails to the tote bag **10** as will be subsequently described.

It will be noted that the tote bag **10** is constructed with a pair of registered panels **20, 22**. The panels are formed of conventional plastic film, e.g. polypropylene, polyethylene, etc. and with the mating side edges thereof electronically seamed. The base of the bag may be formed as a fold in a single film or may optionally be electronically seamed if each panel is formed of a single film. The upper edge of each panel is not joined to the corresponding edge of the opposite panel to thereby provide a mouth rendering the interior of the bag accessible. It should be understood, however, that the specific panel construction of the plastic film tote bag **10** may vary, e.g. the tote bag may include a gusset bottom and/or gusset sides, either or both side edges of the bag may be formed as fold lines in a single plastic film, etc.

The handle ails **12, 14** are molded of a plastic compatible to bails plastic film, e.g. polypropylene, polyethylene, etc. and are secured to the interior surfaces of the respective panels **20,22** adjacent the upper edge of each panel. Optionally, the bails may be secured to their respective panels at the exterior surfaces of the panels. To secure the bails, the abutting surfaces of each panel **20, 22** and the respective bail bar **16, 18** are electronically welded or heat fused. It will be observed that the bars **16, 18** are of a length greater than one-half the width of a panel, thereby providing a strong support for any articles carried in the tote bag **10**, evenly distributing the weight of the articles along substantially the entire width of each panel to inhibit tearing of the panel. The length of the bars **16, 18** and their inherent resiliency assure that the mouth of the bag **10** is effectively sealed when the bails **12, 14** are brought into juxtaposition.

The bails **12, 14** are generally planar and each includes a pair of spaced generally upright legs **24, 26** respectively. The legs **24, 26** are symmetrically positioned along their respective bars **16, 18** and diverge upwardly and outwardly so that at the upper ends thereof a space sufficient to allow a user's hand to pass therebetween is provided. Joining the upper ends of each pair of legs **24, 26** is a generally horizontal reach **28, 30** respectively. The reaches **28, 30** extend parallel to the bars **16, 18** and provide a finger and/or palm engageable surface for lifting and carrying the tote bag **10**.

In accordance with the invention, the bails **12, 14** are provided with a novel interlocking mechanism which permits the bails to be interlocked in juxtaposed relationship thereby preventing access to the interior of the tote bag **10** through the bag mouth. From an examination of FIG. **3** it will be observed that the lower edge of the reach **30** extends below the lower edge of the reach **28**. A flange **32** projects laterally in a horizontal plane from the lower edge of the reach **30** toward the reach **28**. When the bails **12, 14** are brought together with the reaches **28, 30** in abutting contact, the flange extends beneath the lower edge of the reach **28** and beyond the outer face thereof.

The distal edge of the reach **32** includes an upwardly extending bead **34** which engages the outer face of the reach **28** adjacent the lower edge thereof. The engagement between the bead **34** and the lower edge of the reach **28** is such that the reach **28** is captively engaged in abutting relationship with the reach **30** thereby maintaining the bars **16, 18** of the bails **12,14** in substantially juxtaposed relationship and securing a closure of the mouth of the bag **10**.

In order to separate the reaches **12, 14** to open the bag mouth, the bail **12** may be lifted slightly so that the lower edge of the reach **28** is at an elevation above the upper edge of the bead **34**, whereupon the reaches may be pulled apart to separate the bars **16, 18** of the bails and gain access to the interior of the bag **10**. To relock the mouth of the bag, the bails are brought together in approximate registry and the bail **12** is forced against the bail **14**. The lower edge of the reach **28** will then engage the curved upper surface of the bead **34** and the flange **32** will flex downwardly slightly to permit the reach **28** to be brought into abutting contact with the reach **30**, whereupon the flange **32** will snap upwardly to lockingly retain the bails in juxtaposed relationship. Optionally, the bails **12, 14** may be brought together with the bail **12** initially at a slightly higher elevation with the bail **14**. It will be noted from an observation of FIG. **2** that since the lengths of the flange **32** and bead **34** are slightly less than the distance between the upper ends of the legs **24**, it is possible to bring the bails **12, 14** into abutting relationship and then to slide the bail **12** downwardly until the bails are in registry whereupon the lower edge of the reach **28** will be engaged by the bead **32**.

If it is desired to only provide a snap fit to interlock the bails, the length of the flange **32** and bead **34** may be increased so that the bails **12, 14** may not be placed in abutting contact unless they are in registry. If it were then attempted to place the bails in abutting contact when the reach **28** is at a higher elevation than the reach **30**, the bead **34** would not pass between the legs **24**. If such alternate structure is utilized, it will be necessary to separate the bails by forcing them apart and deflecting the flange **32** downwardly.

Another attribute of the flange **32** is the fact that it provides a broad flat surface which is engaged by the user's fingers or palm when the tote bag **10** is hand carried. If the contents of the bag **10** are not evenly distributed, the tendency of one of the reaches to bear down with greater force than that applied by the other reach is virtually eliminated. This is because not only are the bails interlocked, but only a single, broad, relatively flat surface is engaged by the user's fingers or palm to support the weight of the articles carried in the bag which was transmitted through the bag panels **20, 22**.

Thus there is provided a tote bag article carrier having a pair of locking handle bails which achieves some

of the objects of the invention and is well suited to meet the conditions of practical use.

A further embodiment of the invention is illustrated in FIGS. 4–8 wherein a pair of locking bails form part of a garment hanger carrying device **38**. The bails **12***a*, **14***a* are formed of unitary molded construction with the carrying device and the entire carrying deice **38** is preferably injection molded in one piece of polypropylene for reasons to be hereinafter described although other suitable thermoplastics may be utilized alternatively.

The bails **12***a*, **14***a* are somewhat similar in construction to the bails **12**, **14** previously described and each includes a generally horizontal base **16***a*, **18***a* from the opposite ends of which a pair of upwardly extending outwardly diverging legs **24***a*, **26***a* extend. The upper ends of each pair of legs **24***a*, **26***a* are joined by a reach **28***a*, **30***a*, respectively. The basic configuration of the legs and reaches of the device of this embodiment are similar to the correspondingly numbered elements (without the letter *a*) of the bails **12** and **14** previously described.

A flange **32***a* projects from the bail **14***a* in an identical manner as the flange **32** projected from the reach **30** and a bear **34***a* similar to the bead **34** is formed at the distal edge of the flange. The flange **32***a* and bear **34***a* serve to interlock the two bails **12***a*, **14***a* in similar manner as that previously described with respect to the bails **12** and **14**.

The reaches **28***a* and **30***a* differ in construction from the reaches **28**, **30** previously described, however, due to the fact that a central zone **40**, **42** respectively, is formed wherein each reach is decreased in cross sectional thickness (see FIGS. **4** and **5**). The zones **40**,**42** are formed by decreasing the thickness of the outer face of each reach but the opposed interfaces of the abutting reaches (FIG. **5**) **28***a*, **30***a* remain substantially planar. Additionally, the portion of the flange **32***a* and bead **42***a* in the region of the zone **40**, **42** are substantially cut away (see FIGS. **5** and **8**).

The central zones **40**, **42** are provided to facilitate the suspension of the carrying device **38** on a conventional garment post **44** (see FIG. **18**) which is mounted within a roof section **46** of an automobile having a headliner **50**. It will be observed from FIG. **18** that the clear space provided between the post **44** and the headliner will be sufficient to accomodate the reaches **28***a*, **30***a* at the central cones **40**, **42**.

The garment hanger carrying deice **38** includes a garment hanger hook engaging section positioned beneath the bails **12***a*, **14***a* and which is molded in one piece construction with the bails. This hook engaging section is formed as a channel **52** having upright generally parallel side walls **54**, **56** which extend downwardly from the bases **16***a*, **18***a* respectively of the bails **12***a*, **14***a*. The channel **52** additionally includes a flat horizontal bottom wall **58** which joins the side walls **54**, **56**.

It will be appreciated that the channel **52** is open ended and of a length shorter than that of the bases **16***a*, **18***a* yet sufficient to accomodate a segment of the wire hook portion **60** of a garment hanger **62**. The wire hook portion is accommodated within the channel **52** in any several possible positions for storage purposes (FIGS. **19** and **20**) as will be subsequently described.

A locking means which prevents removal of the hangers **62** without first spreading the bails to separate the reaches thereof is included with the channel **52**. For this purpose, a pair of spaced generally wedge shaped ribs **64** extend across the bottom wall **58** and interconnect the side walls **54**,**56**. The ribs **64** engage the arcuately curved wire hook portion **60** at spaced zones along the concave side thereof (see FIG. **6**).

In order to prevent the garment hanger **62** from becoming dislodged from the channel **52**, an additional hook engaging member is provided which bears down on the convex upper surface portion of the hook **60**. The wire hanger hook engaging member is formed by two cantilever flanger **66**, **68** which project inwardly from the bases **16***a*, **18***a* respectively. The undersurface of the cantilever flanges are substantially perpendicular to the plane of the respective bails **122**, **14a** and when the reaches of the bails are locked together, the undersurfaces **67**, **69** are substantially parallel to the bottom wall **58**.

FIGS. **5** and **6** illustrate the engagement between a hook portion **60**, the spaced ribs **64** and the undersurface of a cantilever flange **66**. It will be observed that the convex surface of the hook portion **60** (to the left as viewed in FIG. **5**) exerts a counterclockwise moment on the cantilever flange **66**. To reinforce the cantilever flanges against bending in response to such moments, each cantilever flange is thickened along its upper surface at the juncture between the cantilever flange **66**, **68** and the bail base **16a**, **18a** respectively.

In order to assure proper contact between a cantilever flange and a wire hook portion **60** at or near the juncture line of the cantilever flanges, the flange **66** includes an outwardly projecting central tongue **72** which is received within a mating notch **74** of the flange **68** (see FIGS. **4** and **8**).

It may also be observed that a convex upper surface of the hook portion **60** adjacent the longitudinal axis of the channel (FIG. **5**) will be contacted by the undersurface **67** of the tongue **72** of the flange **66**. If the aforementioned convex upper surface flexes the flange **66**, contact will also be between the undersurface **69** of the flange **68** at the ends of the notch **74**.

If hangers are used which include a hook formed of a straight horizontal upper portion bent at the opposite ends (not shown), engagement between the upper surface of the hook and the undersurface of the cantilever flanges will be substantially over the entire length of the abutting hook and flange surfaces.

Additionally, at the contact zones between the ribs **64** and the undersurfaces of the hook portions **60**, the ribs **64** are deflected downwardly. This downward deflection is illustrated in FIG. **5**. The ribs **64** will resume their original shape when the hook portions **60** are removed due to the resilient memory characteristics of the thermoplastic material of which the carrying device is molded.

The downward deflection of the ribs **64** when a hook portion **60** is in contact therewith contributes to the adaptability of the carrying device **38** to receive and carry a single hanger **62** or a plurality of hangers in side by side relation along the span of the ribs **64**.

A single wire hook portion will cause a flexing of the upper edge of each rib **64** only in a region surrounding the hook portion. Thus, the upper edge of each rib **64**

extends upwardly around the wire hook portion which becomes somewhat recessed in the ribs. This engagement prevents the hook portions from slipping out of the channel **52**. Additionally, the cantilever flanges serve to increase the downward pressure on the ribs **64** at the points of contact with the hook portions, thus assuring a tight engagement.

In FIG. **7** the carrying device **38** is illustrated in its as molded position showing the bails **12***a*, **14***a* substantially coplanar and with the bail bases **16***a*, **18***a* interconnected to the side walls **54**, **56** by a thinned area forming a living hinge **76**, **78** respectively. Because living hinges are utilized, it is desirable to mold the carrying device of polypropylene which is known for its exceptional flex life, although other plastics are also suitable.

In FIG. **8** a perspective illustration of the carrying device **38** is shown wherein the bails **12***a*, **14***a* are in a position suitable for the insertion or removal of a wire hook **60**. In this position, the user's hand grasps a bail with his thumb over the reach **28***a* and with his fingers outstretched and extending beneath the bottom wall **58** of the channel **52**. To prevent slipping, the undersurface of the bottom wall **58** is roughened. In this position, the wire hook portions of hangers are then placed within the channel **52** so that the ribs **64** engage spaced hook portions on the concave surface thereof.

Subsequently the reaches **28***a*, **30***a* of the bails **12***a*, **14***a* are brought together and interlocked utilizing the locking flange **32***a* and bead **34***a*. This locked position is illustrated in FIG. **5**. It will be observed that the bases **16***a*, **18***a* of the bails are spaced apart by the two cantilever flanges **66**, **68**. As previously discussed, the cantilever flanges **66**, **68** bear down against a central convex surface of the wire hook portion **60** spaced between the ribs **64**. The force exerted on the wire hook portions **60** by the cantilever flanges **66**, **68** force the wire hook portions **60** against the ribs **64** as does the weight of garments carried on the hangers **62** and tends to tightly lock the wire hook portions **60** between the ribs **64** and the cantilever flanges.

The cantilever flanges **66**, **68** further provide a closure for the channel, preventing removal of hook portions **60**. This is of importance not only when all of the hook portions **60** are in contact with the ribs but also when the hook portions are stacked or bunched atop one another.

To provide a unitary effective moment distribution between the cantilever flanges **66**, **68** when the bails **12***a*, **14***a* are locked together, the distal edges of each cantilever flange are roughened so that when the distal edges of opposed flanges abut one another, i.e. the bails are in a closed position, separation of the compression flanges is impeded.

Thus it will be seen that one may easily carry either a single or several garments on garment hangers **62** by utilizing the carrying device **38** to thereby alleviate strain and pressure on the user's hand and that it is a simple matter to merely slip the hook portion **60** of a hanger **62** into the channel **52** so that the hook portion rests on the ribs **64** and then to close the bails **12**a, **14**a by pivoting them about the living hinges **76**, **78** and snapping the reaches **28***a*, **30***a* of the bails into a locked abutting position.

With one or several hanger hook portions **60** positioned and captively retained within the channel **52**, a user may conveniently lift all of the hangers simultaneously by grasping the reaches **28***a*, **30***a*. With hangers hand carried in the device **38**, it is extremely difficult to dislodge a hanger hook portion from the channel even if the garments are subject to careless or rough handling, e.g. slung over the user's shoulder, etc. Additionally, the provision of the central zones **40**, **42** readily renders the garments free of creases and wrinkles by permitting all of the hangers to be simultaneously suspended from a post mounted on the automobile roof.

A further feature of the garment carrying device **38** is the relative ease with which the garment hangers may be suspended from a closet support rod without disengaging the device. This is of importance not only when receiving garments from a cleaning establishment but also when traveling because the carrier, i.e. airline, railroad, etc. usually provides a support rod for garments carried on hangers.

Illustrated in FIG. **19** are three possible positions which the device **38** may assume when hangers **62** carrying garments in a clothing bag **73** are suspended from a support rod **71**. The position of the device **38** illustrated to the left in FIG. **19** is substantially upright and in the same position as when the hangers **62** are being carried utilizing the device **38**. It will be appreciated that the length of the channel **52** is short enough so as not to present any interference to rod engagement.

The device **38** is shown in the center of FIG. **19** in a horizontal position which is useful when the support rod **71** is positioned close to an overhead obstruction such as a shelf. To so position the device **38**, the user need only pivot the device in a clockwise (as shown in FIG. **19**) direction about an axis passing substantially through the intersection of the hook portions **60** and the ribs **64**.

A further optional position of the device **38** is shown to the right in FIG. **19** and is also illustrated in FIG. **20**. This position is also desirable when minimal clearance is provided above the support rod **71**. To move the device to this position, the bails are grasped in one hand and the hanger frames in the other, then the device is slid down the hook portions **60** and toward the hanger frames. It will be appreciated that the hook portions are still tightly wedged in the channel **52** and the hangers may be positioned on or removed from the support rod **71** while only holding the device **38**.

A further embodiment of the invention is illustrated in FIGS. **9** through **17**. In this embodiment, a garment hanger carrying device **38***b* is formed with a pair of bails **12***b*, **14***b* similar in construction to the bails **12***a*, **14***a*. The bails **12***b*, **14***b* include bases **16***b*, **18***b* respectively and a pair of upwardly outwardly diverging legs **24***b*, **26***b* respectively. A reach **28***b*, **30***b* identical in construction to the reach **28***a*, **30***a* is provided to interconnect each pair of legs. The reach **28***b*, **30***b* includes a recessed central zone **40***b*, **42***b* identical to the central zones **40**, **42**. Additionally provided is a flange **32***b* having a bead **34***b* at the distal edge thereof. The flange **32***b* is identical in construction and function to the flange **32**.

This embodiment is distinguished, however, from the previous embodiment **38** in several aspects. Among the

distinguishing features is the fact that the upper edge of the base **16***b* is at a lower elevation than the upper edge of the base **18***b* and a flange **80** extends laterally from the side face of the base **18***b* adjacent the upper edge thereof toward and over the upper edge of the base **16***b*. The flange **80** is similar to the flange **32***b* and terminates with a downturned bead **82** at the distal edge thereof. The bead **82** of the flange **80** is spaced from the base **18***b* a distance greater than the thickness of the base **16***b* which the flange **80** overlies and, when the base **16***b* is restrained by the bead **82**, it is restrained in a position spaced apart from the base **18***b* (see FIG. **11**). This position is well suited for the carrying of a number of hangers **62***b* by the hook portions **60***b* thereof in a sling suspended beneath the bails, the details of which will be subsequently described.

If a single or few hangers **62***b* are to be carried, the flange **80** includes a second downturned bead **84** extending from the undersurface of the flange **80** and lying parallel to yet spaced from the bead **82**. If the bases **16***b*,**18***b* are pressed together until the opposed faces are adjacent one another, bead **82** first snaps over the upper edge of the base **16***b*, subsequently the bead **84** snaps over and lockingly retains the base **16***b* in substantially abutting contact with the opposite face of the base **18***b* (see FIG. **10**).

This embodiment is also distinguished from the previous embodiment of the carrying device **38** in that the channel **52** is replaced by a sling **52***b* which is suspended beneath and connected at each of its side panels to the base of each bail. The sling **52***b* is adapted to receive hook portions **60***b* of hangers **62***b* so that garments supported from hangers may be carried. The sling **52***b* is molded in one piece with the bails **12***b*, **14***b* and includes two downwardly extending generally outwardly diverging side panels **54***b*, **56***b*. The sling is suspended from the bases of the bails by a pair of living hinges **76***b*, **78***b* so that the bails may be pivoted with respect to the sling in order to facilitate insertion of or removal of wire hook portions **60***b* from the sling in a manner to be described.

Each side panel **54***b*, **56***b* diverges outwardly and downwardly from the bail to a resilient fold line from which a converging portion **84**, **86** extends. The inwardly converging portions **84**, **86** terminate at a living hinge **88**. All of the living hinges **76***b*, **78***b* and **88** are formed by thinning the mating elements at the juncture line of the respective elements all of which are molded in one piece.

It will be observed that unlike the carrying device **38**, the carrying device **38***b* of this embodiment is not designed to engage the wire hook portions **60***b* of garment hangers **62***b* with ribs whose axes extend perpendicular to the vertical planes of the garment hanger hook portions. The carrying device **38***b* is shaped to engage the wire hook portions substantially along a vertical plane, i.e. the plane of each hook portion, on opposite sides of the wire hook portion.

Although the carrying device **38***b* of this embodiment and the carrying device **38** both accommodate one or a number of hangers, the instant embodiment provides for carrying either a single hanger **62***b* or several hangers in a sling. The carrying device **38***b* accommodates a single hanger **62***b;* a few hangers **62***b* (with the flange **80** securing the bases **16***b*, **18***b* in abutment with the bead **84**); or a number of hangers as illustrated in FIG. **11** (with the flange **80** engaging the base **16**b at the bead **82** so that the bases **16***b*, **18***b* are spaced apart). To assure that a tight engagement is made between the side panels **54***b*, **56***b* of the sling **52***b* and the hook portions of the hangers, the side panel **56***b* includes a pair of ribs **90**, **92** which lie in a generally vertical plane and are of wedge shaped transverse cross-section. From an observation of FIGS. **10**, **11** and **14–17**, it will be seen that the ribs **90**, **92** extend from the inner face of the side panel **56***b* a uniform distance throughout their length including the inwardly directed portion **86**.

Furthermore, the side panel **54***b* includes a similar rib **94** which lies in a generally vertical plane spaced between the planes of the ribs **90**, **92**.

The rib **94** extends between the living hinges **76***b* and **88**, while the ribs **90**, **92** extend between the living hinges **78***b* and **88**. A further pair of ribs **96**, **98** lie in the planes of the ribs **90**, **92** and project from the inner face of the base **18***b*. These ribs serve to engage hanger hook portions (not shown) which may extend between the bases **16***b*, **18***b* when the bases are spaced apart. The opposed face of the base **16***b* is suitably notched to receive the ribs **96**, **98** when the bases **16***b*, **18***b* abut one another.

In FIG. **10** the carrying device **38***b* is shown carrying a single hook portion **60***b* between the side panels **54***b*, **56***b*. The flange **80** is shown in a position wherein the bases **16***b*, **18***b* are abutting one another and the ribs **96**, **98** are seated within the receiving notches of the base **16**b. The abutting bases **16***b*, **18***b* thus form a top closure for the sling **52***b*. It will also be observed that the ribs **90**, **92** **96**, **98** and **94** flex somewhat to resiliently receive the wire hook portion **60***b* and tightly retain and engage the hook portion **60***b* within the sling.

In FIG. **11** the carrying device **38***b* is shown carrying a plurality of hangers by the wire hook portion **60**b thereof. It will be noted that the flange **80** is shown in a position wherein the bead **82** engages the base **16***b* so that the sling is in a more open,accommodating,position wherein it may receive a greater number of wire hook portions than possible previously, i.e. when the base **16***b* was locked by the bead **84**. The flange thus provides a top closure for the sling **52***b*.

In FIG. **12** the carrying device **38***b* is shown in its as molded position which additionally is a desirable position for insertion and/or removal of the wire hook portions **60***b* of garment hangers. The garment hangers are inserted and removed in substantially the same manner as that previously described with respect to the carrying device **38** of the previous embodiment.

It should be noted, however, that a pair of abutment stops **100**, **102** are provided adjacent the living hinge **88**. The abutment stops serve to prevent the opening or flexing of the side panels beyond the position substantially illustrated in FIG. **13**. This assures that the side panels **54***b*, **56***b* will always be in an upwardly extending position to prevent the wire hook portions from slipping out of the sling **52***b* while the hangers are seated in the sling and before placing the bails in juxtaposition.

After the desired number of wire hook portions **60***b* are placed between the side panels **54***b*, **56***b*, the bails

12*b*, 14*b* are brought together and the flanges 32*b*, 80 are snapped into a locking position. The bead 34*b* will engage the reach 38*b* of the bail 12*b* and either the bead 82 or the bead 84 of the flange 80 will engage the base 16*b* of the bail 12*b*. The choice of bead engagement, i.e. either 82 or 84 will depend upon the quantity of hangers which are being carried and, it is desirable to place the bases 16*b*, 18*b* in juxtaposition, i.e. with the bead 84 engaging the base 16*b*, if at all possible.

Thus a fully adjustable garment hanger carrier is provided which assures not only a substantially flat support surface to facilitate carrying of garments on hangers but additionally provides a carrying bail having locking means at both the upper and lower ends thereof with the lower end locking means being adjustable to achieve an adjustable closure for a sling mounted beneath and connecting the bails.

A further embodiment of the invention is illustrated in FIGS. 21 and 22. In this embodiment, a garment carrying device 38*c* is illustrated. The carrying device 38*c* is similar to the carrying device 38 previously described and includes a channel 52*c* positioned beneath a pair of mutilated bails 12*c*, 14*c*.

The bails 12*c*, 14*c* are similar to the bails 12*a*, 14*a*, however each bail includes only one leg 24*c*, 26*c* respectively. The opposite leg of each bail is omitted in order to provide an opening whereby the carrier 38*c* may be suspended from a closet rod 71*c*. The bails are thus shaped similar to the letter "C". In other aspects the bails 12*c*, 14*c* are substantially the same as the bails 12*a*, 14*a* previously described, and include a locking flange 32*c* having a bead 34*c* which secures the reaches 28*c*, 30*c* in abutting contact.

In order to provide sufficient strength for the mutilated bails so that garments may be easily carried, the legs 24*c*, 26*c* are thickened and widened as compared to the legs 24*a*, 34*a*. Additionally, optional reinforcing ribs (not shown) may be provided along the outer and inner periphery of the bails.

The bails 12*c*, 14*c* lock together and spread apart substantially in the same manner as the bails previously described with respect to the carrying device 38. A unique feature of this embodiment is the fact that in addition to the three previously described manners of suspending the hangers from a closet support rod without disengaging the carrier, a fourth manner, substantially illustrated in FIG. 22 is available.

Because the space between the bases 16*c*, 18*c* and the reaches 28*c*, 30*c* is slightly larger than the diameter of a closet rod 71*c*, the carrying device 38*c* may be slipped over the rod 71*c* with the bases 16*c*, 18*c* substantially beneath the rod 71*c* and with the reaches above the rod to suspend the hangers 62*c* from the closet rod without disengaging the carrying device 38*c* from the hanger. To suspend carried hangers having garments in bags 73*c*, the carrier 38*c* with hangers engaged in the channel 52*c* is slid over the rod 71c until the rod 71*c* abuts the leg 24*c* at which point it will be observed that the carrying device 38*c* will assume a tilted position if allowed to hang freely with the center of gravity of the garments carried on the hangers 62*c* lying within a vertical plane including the axis of the closet rod 71*c*. In this position, the weight of the garments tends to maintain engagement between the carryingdevice 38*c* and the closet rod 71*c*.

It will be appreciated that the garment hanger carrying devices 38, 38*b* and 38*c* all carry garment hangers by receiving the hook portions thereof within a hook engaging section positioned beneath the bails. Furthermore, the plane of each hook portion,lies substantially between the bails and side walls or panels of the hook engaging section.

The garment hanger carriers described are designed to be utilized to carry hangers having wire hook portions the size and shape of which are of no critical significance. Therefore, the hook portions may be coplanar, concave and convex surfaces or may include angularly bent straight portions, etc.

Thus it will be seen that there are provided carrying devices which achieve the objects of the invention and which are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the present invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein described or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described the invention there is claimed as new and desired to be secured by Letters Patent:

1. A unitary carrier suitable for the hand carrying of either a single or a plurality of garments on hangers having planar hooks, the carrier comprising a pair of bails, each bail including a reach, a base, means interconnecting the reach and the base, the carrier further including garment hanger hook engaging means, pivotal means interconnecting the base of each bail and the hook engaging means, the carrier being formed of one piece molded thermoplastic construction with the pivotal means including a living hinge having a pivotal axis substantially parallel to the length of the respective base, each bail being operably pivotable about its respective living hinge from a first position wherein the reaches are spaced apart for insertion or removal of garment hanger hooks in the hook engaging means to a second position wherein the reaches are substantially juxtaposed, means for the selective securement of the bails to inhibit the removal of hooks, the securement means including a stiff yet resilient flange, the flange extending from one reach laterally beyond and beneath the other reach when the bails are in their second position, the securement means further including a locking member, the locking member projecting from the flange and engaging the other reach when the bails are pivoted to said second position, the flange providing a substantially broad weight load distributing surface whereby garments may be easily and securely carried by grasping the juxtaposed reaches and lifting the bails when in their second position.

2. A unitary carrier constructed in accordance with claim 1 wherein the hook engaging means includes means restraining free movement of the hangers relative to the carrier, the restraining means including a plurality of spaced ribs extending from the hook engaging means and abutting the hanger hook.

3. A unitary carrier constructed in accordance with claim 1 wherein means to inhibit dislodgement of the hangers from the carrier is provided, the inhibiting means including a cantilever flange projecting from one of the bases toward the other base and providing an upper closure for the hook engaging means.

4. A unitary carrier constructed in accordance with claim 3 wherein a pair of cantilever flanges are provided, each cantilever flange projecting from the base of one bail.

5. A unitary carrier constructed in accordance with claim 3 wherein means restraining free movement of hangers relative to the carrier is provided, the restraining means including a plurality of spaced ribs projecting from the hook engaging means and abutting the hanger hook.

6. A unitary carrier constructed in accordance with claim 1 wherein the garment hanger hook engaging means includes a channel, the channel having a bottom wall and two upright substantially parallel side walls projecting therefrom, the living hinge joining each of the side walls and a base of a corresponding bail, the bottom wall being of a length receivable within the concave undersurface of a garment hanger hook whereby the garment hanger hook may be confined between the side walls of the channel.

7. A unitary carrier constructed in accordance with claim 6 wherein a pair of spaced ribs are provided, each of said ribs projecting upwardly from the bottom wall of the channel and extending generally transversely of the length of the bottom wall, the ribs engaging the hooks at the undersurfaces thereof, the weight of garments carried by the garment hangers causing the ribs to resiliently deflect around the hooks whereby one or more garment hangers may be carried by the carrier with the hook of each hanger being received within a deflected portion of each rib.

8. A unitary carrier constructed in accordance with claim 7 wherein means to inhibit dislodgement of the hangers from the carrier is provided, the inhibiting means including a cantilever flange projecting from one of the bases toward the other base and providing an upper closure for the channel whereby the hanger hooks are confined within the channel.

9. A unitary carrier constructed in accordance with claim 8 wherein two cantilever flanges are provided, one of the cantilever flanges projecting from each of the bails.

10. A unitary carrier constructed in accordance with claim 1 wherein the hook engaging means comprises a sling, the sling having a pair of side panels, means hingedly securing the side panels at their lower ends, each of the side panels being joined to one of the bails by the pivotal means whereby garments on hangers may be carried with the hooks of the hangers seated in the sling between the side panels thereof.

11. A unitary carrier constructed in accordance with claim 10 wherein ribs are provided, the ribs extending substantially in vertical planes, at least one rib projecting from one side panel toward the other side panel and at least one rib projecting from the other side panel toward the one side panel, the ribs captively retaining the hooks when the bails are in juxtaposition.

12. A unitary carrier constructed in accordance with claim 1 wherein the base of each bail extends substantially parallel to and is spaced below the reach, and the means interconnecting the reach and the base at least one leg extending downwardly from the reach of the base of each.

13. A carrier suitable for the hand carrying of either a single or a plurality of garments on hangers, said carrier comprising a pair of bails, each bail including a hand engageable reach, a base, garment hanger hook engaging means adapted to support garment hangers having planar hooks, pivotal means joining each bail and the hook engaging means, the hook engaging means interconnecting the bails, the two pivotal means being joined to each bail adjacent the base thereof, means for the selective securement of the bails to inhibit removal of hooks from the hook engaging means, each bail being operably pivotable about its respective pivotal means from a first position wherein the reaches are spaced apart for insertion or removal of garment hanger hooks in the hook engaging means to a second position wherein the reaches are substantially juxtaposed, the securement means including means interlocking the bails when in said second position, the hook engaging means including means restraining free movement of the hangers relative to the carrier, the restraining means comprising a plurality of spaced apart ribs engaging a hanger hook with the plane of each hook lying substantially between the bails whereby a garment on a hanger may be securely hand carried.

14. A carrier constructed in accordance with claim 13 wherein the hook engaging means comprises a channel, the channel including a bottom wall and two upright substantially parallel side walls projecting therefrom, each of the side walls being joined to one of the bails, the bottom wall being of a length receivable within the undersurface of a hook whereby the garment hanger hooks may be engaged between the side walls of the channel with the plane of each hook lying substantially parallel to the planes of the side walls.

15. A carrier constructed in accordance with claim 14 wherein the ribs project upwardly from the bottom wall of the channel and extends generally transversely the length of the bottom wall and between the side walls, the ribs engaging the hooks at the undersurfaces thereof, the weight of the garments carried by the garment hangers causing the ribs to resiliently deflect around the hooks whereby one or more garment hangers may be carried by the carrier with the hook of each hanger being received within a downwardly deflected portion of each rib.

16. A carrier constructed in accordance with claim 15 wherein a cantilever flange is provided, the cantilever flange projecting from the base of one of the bails toward the base of the other bail, the cantilever flange lying substantially within a plane perpendicular to the side walls when the bails are in juxtaposition to provide an upper closure for the channel, whereby the hanger hooks are confined within the channel when the bails are in juxtaposition.

17. A carrier constructed in accordance with claim 13 wherein the hanger supporting means comprises a sling, the sling having a pair of side panels, means hingedly securing the side panels at their lower ends, each of the side panels being joined to one of the bails, whereby garment hangers may be carried by the carrying device with the hook portions of the hangers seated in the sling between the side panels thereof.

18. A carrier constructed in accordance with claim 17 wherein, the ribs extend substantially in vertical planes, at least one rib projecting from one side panel toward the other side panel and at least one rib projecting from the other side panel toward the one side panel.

19. A carrier constructed in accordance with claim 17 wherein the base of each bail extends substantially parallel to and is spaced below the reach and the means interconnecting the reach and the bail includes, at least one leg extending downwardly from the reach to the base of each bail, a flange, the flange extending from one base laterally beyond and above the other base and a locking member projecting from the one base flange and engaging the other base when the bails are in juxtaposition.

20. A carrier constructed in accordance with claim 19 wherein the one base flange includes a pair of spaced locking members, one of the locking members engaging the other base when the bases are in abutting contact to thereby tightly constrict the sling for accommodating the hooks of one or a few hangers, the other locking member engaging the other base when the bases are spaced apart to thereby provide a sling closure such that the sling is capable of accommodating the hooks of several hangers whereby one or many garment hangers may be carried.

21. A carrier constructed in accordance with claim 16 wherein two cantilever flanges are provided, one of the cantilever flanges projecting from each of the bails.

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