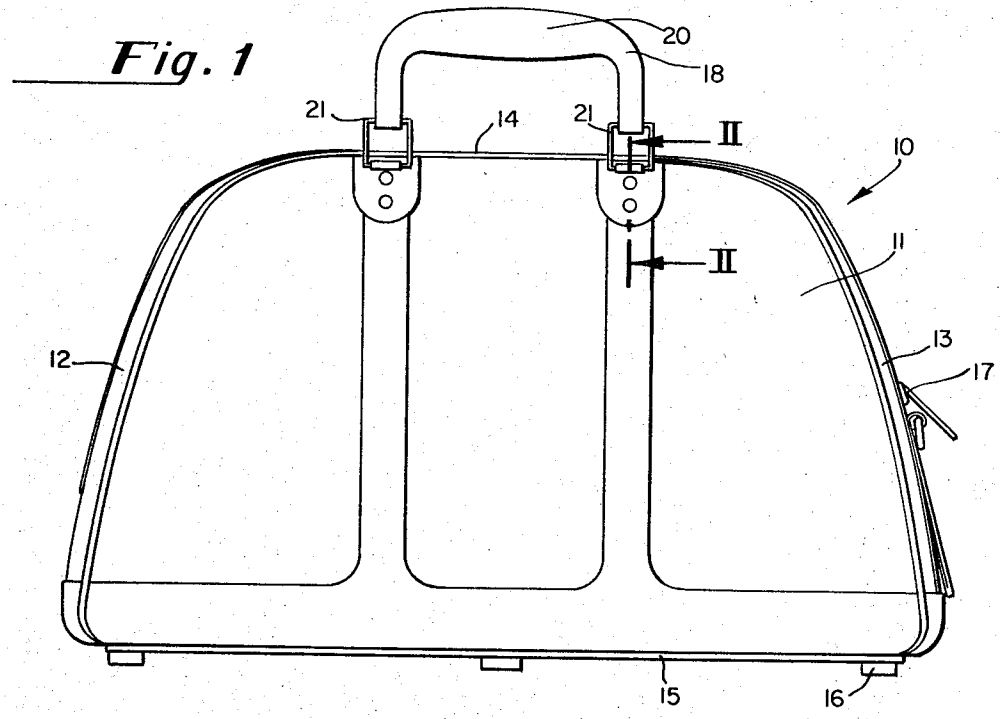
Sept. 29, 1970 M. SCHNEIDER 3,530,962

BAG HANDLE CONNECTION

Filed Aug. 22, 1969

Fig. 1



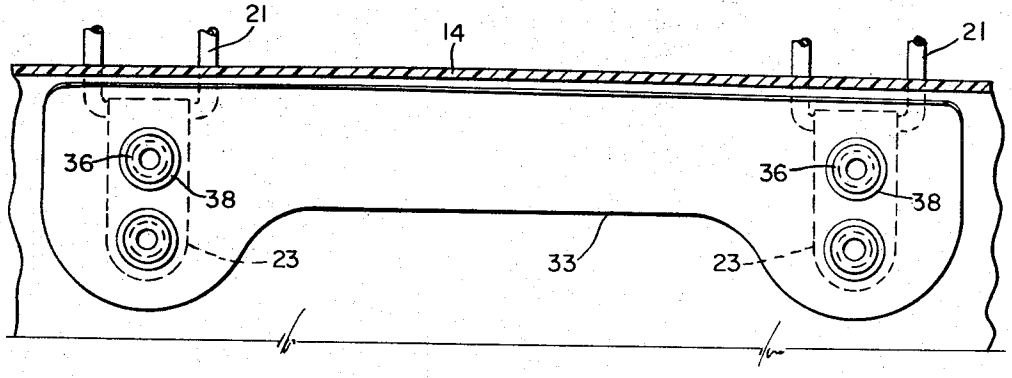


Fig. 3

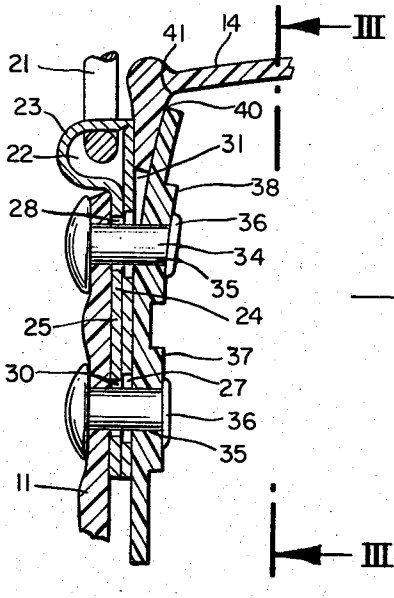


Fig. 2

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BAG HANDLE CONNECTION

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Int. Cl. A45c *13/26*

U.S. Cl. 190—58 9 Claims

ABSTRACT OF THE DISCLOSURE

A bag handle connection is provided which facilitates force distribution of a bag load, during carrying of the bag, and which simplifies and makes more economical the assembly operation attendant to the bag construction.

CROSS-REFERENCE TO RELATED APPLICATIONS

This is a continuation-in-part of my co-pending application Ser. No. 769,313, filed Oct. 21, 1968.

BACKGROUND OF THE INVENTION

In bag handle constructions of the prior art, most particularly with respect to utility bags, gym bags, and the like, it has become commonplace to have two handles disposed on opposite sides of a bag which would be of the type which would normally be top-opening, such handles being connected by links to upper sidewall portions of the bag, the links being connected by straps, brackets or the like and being riveted, or otherwise secured through the bag sidewall, to a washer, backing board or other suitable member which would prevent the head of the rivet which is inside the bag from "pulling-through" the bag sidewall. In some instances large washers have been used, but in most instances fiber board behind small washers has been utilized. The fiber board has been advantageous in certain respects in that it allows sufficient resiliency and bending for force distribution. However, such fiber board is not sufficiently hard to prevent the overturned rivet end inside the bag from "pulling-through" the fiber board, and thus it has been necessary to utilize washers beneath the overturned rivet ends, such washers being of generally hard construction, such as steel or the like, to distribute the bag carrying forces over a greater area of the fiber board, which in turn facilitates the distribution of such forces over the bag upper sidewall portion.

The use of such fiber board constructions has been subject to limitations, particularly when the bag is used as a gym bag or the like, wherein the bag will frequently be used to hold wet articles, such as bathing suits and the like, in that the fiber board may become damp and thus the washers may even be pulled through the soft wet fiber board. Furthermore, fiber board does not retain resiliency, and after becoming wet several times, does not provide the desired force distribution. A further disadvantage of these prior art techniques is that steel washers must generally be used; as aforesaid, such steel washers requiring a separate assembly operation, which increases the assembly time and expense.

SUMMARY OF THE INVENTION

Accordingly, the present invention is directed toward obviating the above and other problems, particularly by providing a novel bag handle connection utilizing a novel backing board which has the necessary characteristics and flexibility, resiliency, and facilitates force distribution, but which is sufficiently hard to prevent the passage

of overturned rivet heads, or other connection members therethrough.

It is an object of this invention to provide a novel bag handle connection, utilizing a thermoplastic backing board, which is free of washers between the enlarged head of its connection member inside the bag.

It is another object of this invention to provide a novel, more sturdy bag embodying the construction required in the object recited immediately above.

It is a further object of this invention to provide a novel bag handle connection utilizing a plastic backing board having an upper edge which facilitates load-carrying at a juncture of a bag sidewall and a bag top wall.

It is yet another object of this invention to provide a novel bag handle construction and bags utilizing the same, wherein the bag handle backing board is flexible, resilient, but sufficiently hard to prevent ready permanent deformation under load.

IN THE DRAWINGS

FIG. 1 is a side elevational view of a bag in accordance with this invention.

FIG. 2 is an enlarged fragmentary transverse sectional view of a bag handle connection, taken generally along the line II—II of FIG. 1, wherein the construction of the backing board of the bag of FIG. 1 is illustrated.

FIG. 3 is a fragmentary sectional view taken through a portion of a bag of FIG. 2, along the line III—III of FIG. 2, wherein the backing board is illustrated in elevation, as viewed from within the bag.

Referring now to the drawings in detail, reference is first made to FIG. 1, wherein there is illustrated a bag, generaly designated by the numeral **10** having side walls **11**, end walls **12** and **13**, a top wall **14**, a bottom wall **15**, integrally molded feet **16**, a zipper type closure **17** extending through portions of the end walls **12** and **13** and the top wall **14**, connecting opposite halves thereof, and a bag handle portion **18**.

The bag **10** will principally be roto-cast, from a vinyl material, substantially completely as an integral unit, having the zipper portion **17** and handle portion **18** connected thereto by means of later operations.

The handle portion **18** includes an inverted U-shaped member **20**, connected to each side wall **11** of the bag, although one handle **20** only is illustrated, for purposes of simplicity. At the lower ends of the handle **20**, as viewed in FIG. 1, links **21** are provdied, of metal wire construction or the like, with the links **21** having lower end portions thereof secured within loops **22** or brackets **23** The brackets **23** may be constructed of any desired flexible material, or may be constructed of bent sheet metal or the like. Thus the brackets **23** will have the loop portion **22**, which terminates at its ends in vertically disposed legs **24** and **25**, having respective holes or bores **26**, **27** and **28**, **30** therein. The legs **24** and **25** of the brackets **23** are disposed inwardly of the bag sidewalls **11**, through slits **31** in the bag sidewalls **11**. Thus, the outer surface of the bracket leg **25** is disposed against the inner surface of the bag sidewall **11**.

A backing board **33** is provided, disposed inwardly of each bag sidewall **11**, connecting the brackets **23** on each side of the bag side wall **11**, by means of rivets or like connection members **34**, which extend through holes in bag side walls **11**, through the bracket holes **26**, **27**, **28** and **30**, and through bores or holes **35** in the backing boards **33**, and have overturned or otherwise enlarged inner ends or heads **36**, for engaging against inside surface portions **37** of the backing boards **33**. If desired, the backing boards **33** may have protruding portions **38** against which the overturned heads **36** of the rivets **34** engage, to simulate washer constructions, but such is not absolutely necessary, in that the backing boards **33** may

be of completely flat construction, as would be apparent in cross-section as viewed in FIG. 2, if the protrusions **38** were omitted.

However, the backing boards **33** are of integral plastic construction, whether they have the protrusion **38** or not, and may, for example, be 1/16 inch in thickness, or the like, if desired. By utilizing thermoplastic, such as nylon or the functional equivalent, the backing boards **33** would be sufficiently flexible to bend under load somewhat as the bag sidewalls would bend upon lifting the bag by means of the handle portions **18**, when the bag is filled with a substance that would comprise a normal load, such that the backing boards **33** would facilitate force distribution across the entire bag side wall, in order to obviate any tearing or ripping that may otherwise have been caused by localized force concentrations. Also, by the use of a flexible thermoplastic material for the backing boards **33**, the backing boards are sufficiently resilient to have complete recovery even under abnormal loads, in order that they will return to their original position when the lifting load as applied through the handles **18** is discontinued. Still further, by the use of thermoplastic materials of the character described, the surface qualities of the backing boards **33** render them to be sufficiently hard that overturned head portions of rivets such as those **36** of the rivets **34** will not tear or otherwise pull through the backing board holes **35**, under normal or even abnormal load conditions.

Another novel feature of this invention resides in the use of backing boards **33** the upper edges **40** of which are located at the junctures **41** of bag upper walls **14** and side walls **11**, such that a portion of the load applied through the handles **18** is distributed directly to the bag junctures **41**, thereby even further reducing the forces applied to the portions of the bag side wall immediately surrounding the rivets **34**.

The backing boards **33** are also integrally molded, and therefore, if it is desired to utilize protrusions **38** as mentioned above, the same may be molded integrally therewith, for even further force absorption and distribution of forces transmitted thereto through the overturned heads **36** of the rivets **34**.

In the mass production of bags of the type described above, tremendous advantages reside from the reduction of manufacturing costs, and therefore, inventions of the type which produce unique advantages along with the reduction of manufacturing costs, such as the reduction of assembly costs, are highly beneficial. In making such bags, a minimum of hand assembly operations is most desirable. Therefore, the elimination of the prior necessity of utilizing steel washers inside the overturned rivet heads **36** is highly beneficial. Even further, this invention allows bags to be longer lasting than many prior art types of bags, in that it does not employ a fiber board which has previously been thought necessary as the backing board, because of its bendability and ability to conform to variations in bag conformation under load, because the thermoplastic backing board employed in accordance with this invention will not become soft under heavy moisture conditions, and therefore will not suffer an attendant loss in resiliency and evenutually permit tearing-through of an overturned rivet head **36**.

It will be apparent from all the foregoing that many

modifications may be made in the details of construction and assembly of the structure of the invention discussed herein, all within the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. A handle construction for a utility bag, or the like, comprising a flexible bag wall, a handle end portion, a backing board disposed inside the bag with a surface against the flexible wall thereof, means extending through said bag flexible wall and backing board connecting the handle end portion with said backing board, said connecting means having an enlarged head portion in engagement with a surface portion of said backing board remote from the surface of the backing board that is disposed against the flexible bag wall, said backing board being of thermoplastic material that is sufficiently hard to prevent said head portion of said connection means from pulling through said backing board under usual utility bag load, and the material of said backing board being sufficiently resiliently flexible to permit conformation with the adjacent flexible wall of the bag under load, with the juncture of said enlarged head portion of said connection means and said backing board being free of separate washers.

2. The structure of claim **1**, wherein there are at least two said connection members, with said backing board being resiliently flexible between said connection members.

3. The structure of claim **2** wherein said flexible bag wall is a side wall and wherein a juncture of a bag top wall with said bag side wall is provided and wherein an upper edge of said backing board between said connection members is in engagement throughout its length with said juncture.

4. The structure of claim **2**, wherein the handle has a link at each end thereof, with each link being carried by a bracket which forms the end portion of each handle end, with each bracket having portions secured between said flexible wall and said backing board by said connection means passing therethrough.

5. The structure of claim **4**, wherein there are two said handles, disposed on opposite side walls of a bag, each connected by a bracket and connection means to a backing board, and wherein said side walls are both flexible.

6. The structure of claim **5**, wherein said side walls are substantially vertical.

7. The structure of claim **6**, wherein the side walls are connected by a top wall at junctures, and wherein the two backing boards have upper edges in engagement with said junctures.

8. The structure of claim **1**, wherein said backing board is of nylon construction.

9. The structure of claim **1**, wherein each backing board has four said connection means.

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