Dec. 13, 1966 J. PELAVIN 3,291,267

FRAME CONSTRUCTION FOR LUGGAGE

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FIG. 3

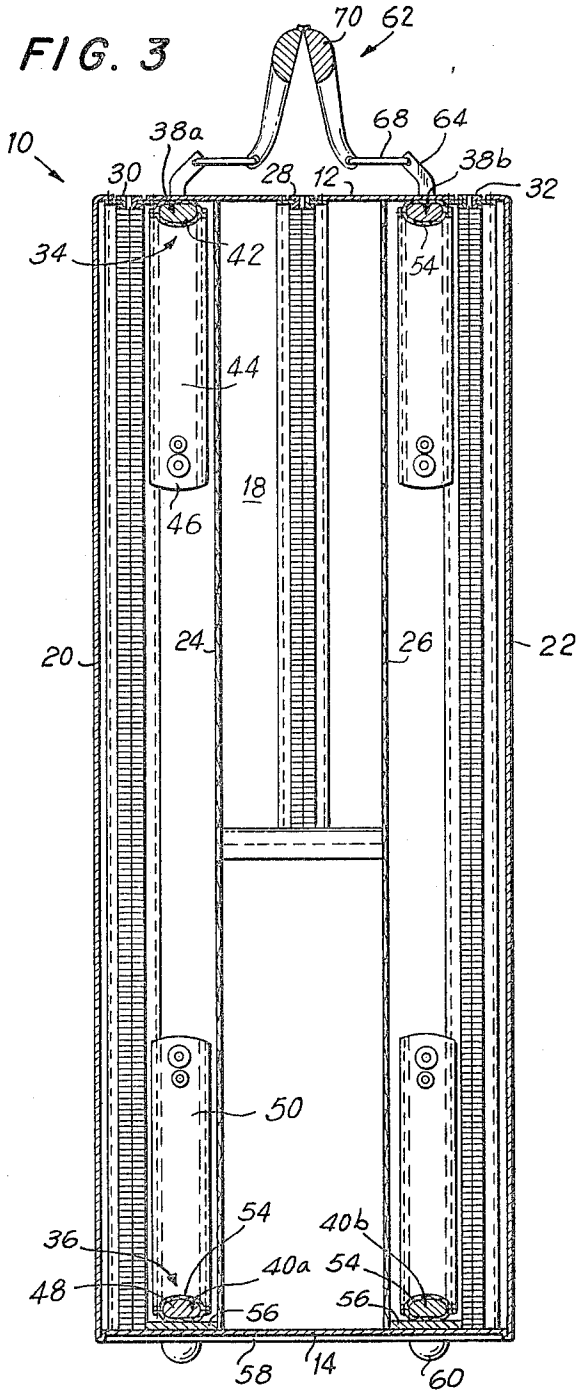


FIG. 1

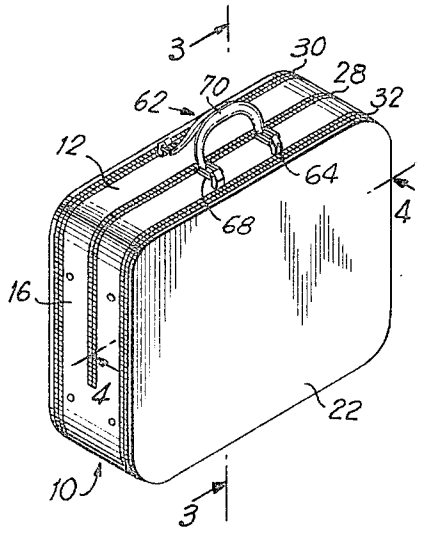
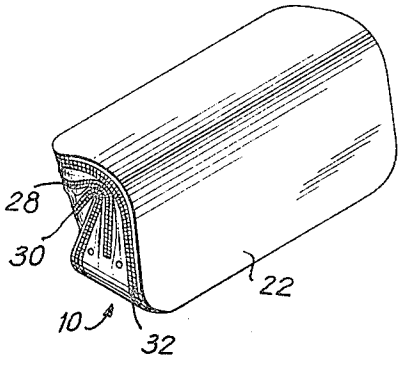


FIG. 2



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FIG. 4

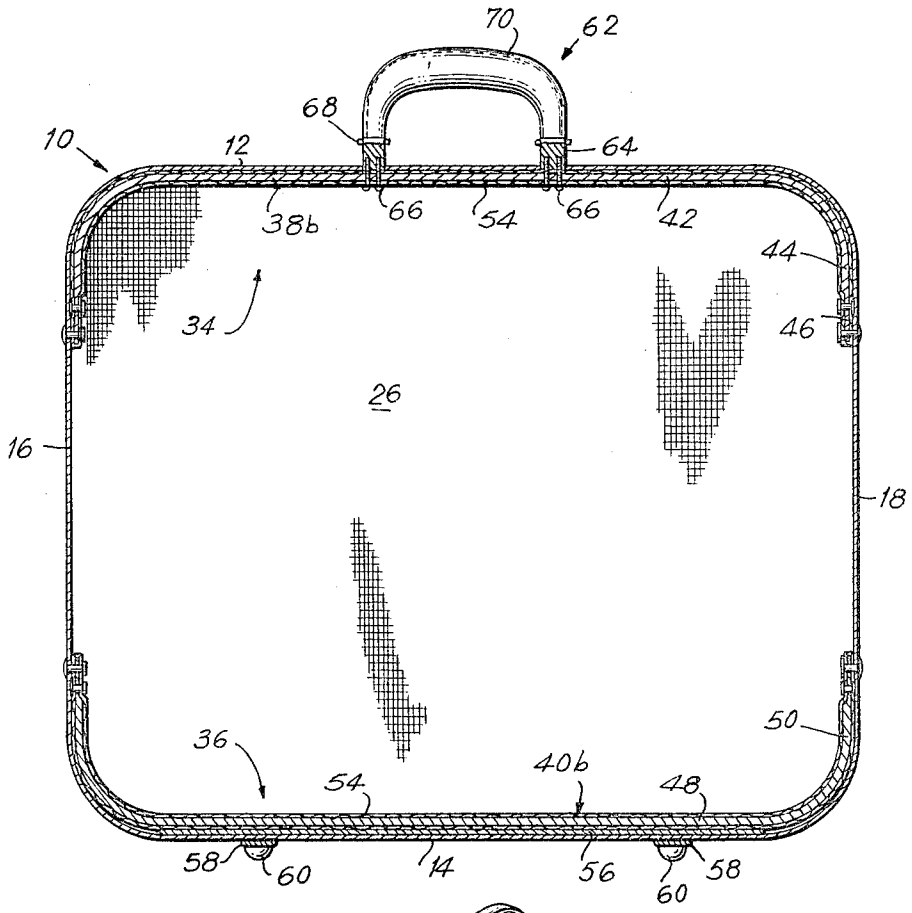
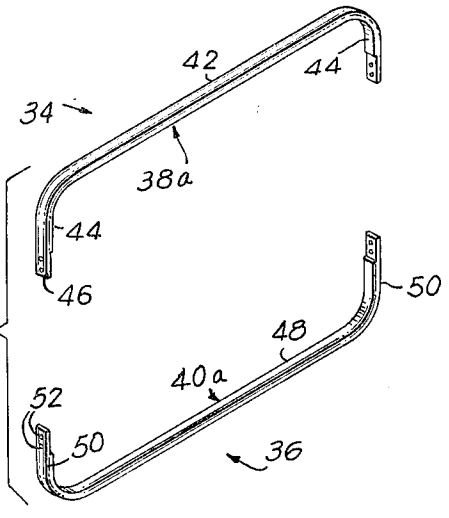


FIG. 5



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FRAME CONSTRUCTION FOR LUGGAGE

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14 Claims. (Cl. 190—49)

The present invention relates to articles of luggage.

More particularly, the present invention relates to articles of luggage such as suitcases which are used for traveling purposes in order to store articles of clothing as well as other personal articles.

As is well known such articles of luggage are not always carried about by their owners. When traveling on board vehicles, such as buses, trains, airplanes, or other conveyances, these articles of luggage are stored with other articles of luggage in compartments of the conveyances where the articles of luggage are subjected to considerable stress, and in addition the articles of luggage are subjected to considerable stress when they are handled by the personnel who takes care of the storing and retrieving of the articles of luggage while they are being conveyed to a given destination. As a result, relatively rigid articles of luggage become dented or permanently fractured or bent so that their useful life is greatly reduced and in addition their article-carrying capacity is greatly diminished. Of course, a certain amount of rigid inflexibility is desirable for an article of luggage so that the articles stored therein will be capable of being maintained in a good condition. An article of luggage which has the easy yieldability of a pillow, for example, will provide extremely poor storing conditions for the articles therein, many of which will undoubtedly become broken with such an article of luggage.

It is therefore a primary object of the present invention to provide an article of luggage of the above type which while capable of storing articles in a perfectly safe condition nevertheless is capable also of being subjected to the stresses which occur during storing and other handling of the article of luggage without being permanently damaged or changed in any way.

In particular, it is an object of the invention to provide an article of luggage of the above type which while being capable of yielding easily to shocks or other loads which are encountered during handling and transportation of the article luggage, nevertheless is capable of safely storing even relatively fragile articles.

A further object of the present invention is to provide an article of luggage which is of relatively light weight so that it can easily be carried about.

Furthermore, it is an object of the present invention to provide for an article of luggage of the above type a handle structure which is very reliably secured to the article of luggage and which at the same time makes the article of luggage very convenient to carry.

Also, it is an object of the present invention to provide an article of luggage which is of a relatively simple and inexpensive construction while at the same time achieving all of the above objects.

Primarily the structure of the invention includes an article of luggage which is provided with relatively flexible walls which can bend quite easily but which are connected, in accordance with the invention, with a frame means of substantially greater rigidity arranged so as to restrict the yieldability of the article of luggage to a predetermined part thereof, so that articles which are stored at other parts of the article of luggage will be safely protected from outside shocks or other loads.

The invention is illustrated by way of example in the accompanying drawings which form part of the application and in which:

FIG. 1 is a perspective illustration of the article of luggage of the present invention, the article of luggage being shown in FIG. 1 in its closed position;

FIG. 2 shows how the article of luggage of the present invention is capable of yielding under shocks or other loads;

FIG. 3 is a transverse sectional view, on an enlarged scale as compared to FIG. 1, of the article of luggage of FIG. 1, the section of FIG. 3 being taken along line 3—3 of FIG. 1 in the direction of the arrows;

FIG. 4 is a longitudinal sectional view of the article of luggage of FIG. 1, also on an enlarged scale as compared to FIG. 1, the section of FIG. 4 being taken along line 4—4 of FIG. 1 in the direction of the arrows; and

FIG. 5 illustrates part of a pair of relatively rigid frames of the article of luggage of the present invention.

Referring now to the drawings, the article of luggage which is shown in FIG. 1 includes a wall means **10** which can be placed either in the closed position shown in FIG. 1, where the wall means **10** defines an enclosure of a given volume, or in an open position, in a manner described below, where the wall means **10** gives access to the interior of this enclosure.

The wall means **10** includes a top wall **12** and a bottom wall **14**, a pair of opposed end walls **16** and **18**, and a pair of opposed side walls **20** and **22**. At least the end walls **16** and **18** and side walls **20** and **22** are sufficiently flexible so as to yield and bend when the article of luggage is subjected to compressive shocks or loads. The article of luggage is shown in FIG. 2 in the position which it takes when subjected to certain loads.

As is shown most clearly in FIG. 3, the wall means **10** further includes a pair of interior partitions **24** and **26** which define between themselves a central compartment while the walls **20** and **24** define between themselves one outer compartment and the walls **22** and **26** define between themselves another outer compartment of the article of luggage.

A slide fastener means is operatively connected to the wall means **10** for releasably maintaining the latter in the closed position shown in FIG. 1, and this slide fastener means includes at least one elongated slide fastener **28** which extends along the top wall **12** substantially midway between the side walls **20** and **22**, this slide fastener **28** extending downwardly along the end walls **16** and **18** part of the way toward the bottom wall **14**, so that in this way when the slide fastener **28**, which is of a conventional construction, is opened, access may be had to the interior of the enclosure defined by the wall means **10**. Of course, in the particular example illustrated the slide fastener **28** will give access only to the compartment situated between the partitions **24** and **26**. It is to be noted that these partitions **24** and **26** are of substantially the same degree of flexibility as the side walls **20** and **22**, so that the partitions **24** and **26** are also capable of bending easily when the article of luggage is subjected to stresses which give it a configuration such as that shown in FIG. 2.

In the particular example illustrated the slide fastener means includes, in addition to the central slide fastener **28**, a pair of outer slide fasteners **30** and **32** which respectively extend along the entire length of the top wall **12**, adjacent to the side walls **20** and **22**, respectively, and then downwardly along both end walls **16** and **18** all the way to the bottom wall **14**. Thus, the slide fastener **30** will give access to the compartment between the outer wall **20** and the partition **24**, while the slide fastener **32** will give access to the compartment between the outer wall **22** and the partition **26**.

In accordance with a particular feature of the present invention, an upper frame means **34** and a lower frame means **36** are provided. The upper frame means **34** extends along the top wall **12** and extends downwardly along

the end walls **16** and **18** only part of the way toward the bottom wall **14**. The lower frame means **36** extends along the bottom wall **14** and along both of the end walls **16** and **18** only part of the way toward the top wall **12**. In accordance with the present invention, the upper frame means **34** and the lower frame means **36** define between themselves, at the end walls **16** and **18**, a substantial free space. Because the upper and lower frame means **34** and **36** are of considerably greater rigidity than the end walls and side walls of the article of luggage, when the article of luggage is subjected to shocks or other loads, the article of luggage will necessarily yield for the most part in this substantial free space, which is defined at the end walls between the upper and lower relatively rigid frame means **34** and **36**, and this condition is in fact illustrated in FIG. 2.

The upper frame means **34** includes a pair of identical relatively rigid bars **38***a* and **38***b* which can be made of metal, for example, and since these bars are identical the structure of only one of them is shown in FIG. 5. Thus, as may be seen from FIG. 5, the bar **38** includes an elongated portion **42** which extends along the entire length of the top wall **12** and a pair of elongated end portions **44** which extend part of the way downwardly along the end walls **16** and **18**, respectively. These elongated end portions **44** terminate in extremeties **46** of reduced thickness which are formed with openings to receive rivets, or the like, by which the bars are connected to the wall means **10**.

The lower frame means **36** also includes a pair of identical bars **40***a* and **40***b*, and in fact these bars may be substantially identical with those of the upper frame means **34**. Thus, the bars **40***a* and **40***b* may be made of metal and since they are identical only the structure of the bar **40***a* is shown in FIG. 5. Thus, the bar **40***a* includes an elongated portion **48** extending longitudinally along the bottom wall **14** and having a pair of elongated end portions **50** which respectively extend along the end walls upwardly toward the top wall **12**, these elongated end portions **50** terminating in extremeties of reduced thickness formed with the bores **52** which receive the rivets which serve, in part, to fasten the lower frame means **36** to the wall means **10**.

All of these bars of the upper and lower frame means are inclosed in sheaths **54** made of any suitable cloth, plastic, or the like, so that the metal bars of the frame means are not exposed in the interior of the article of luggage.

The lower frame means **36** includes a pair of elongated reinforcing strips **56** which extend along the bars **40***a* and **40***b* respectively, between the sheaths **54** thereof and the lower wall **14** at the interior of the enclosure defined by the wall means **10**. These reinforcing strips **56** are relatively rigid and serve to provide a wider area of support for the frame means **36** on the lower wall **14**.

This lower frame means **36** furthermore includes a pair of cross bars **58** which are also relatively rigid and made of metal, for example, and these cross bars **58** extend transversely across the bottom wall **14** at the exterior thereof while being spaced longitudinally thereof, as is apparent from FIGS. 3 and 4. Any suitable screws or the like fix the cross bars **58** to the bars **40***a* and **40***b*, and at their lower faces the cross bars **58** fixedly carry floor-engaging members **60** by which the article of luggage may rest on a floor or the like.

It is, therefore, apparent that with the above described construction while the article of luggage is capable of yielding quite easily in the space between the upper and lower frame means, nevertheless in the region of these frame means the article of luggage will maintain a substantially unchanged configuration. Thus, the bars **38***a* and **38***b* of the upper frame means **34** will reliably prevent any yielding of the article of luggage at the junction between the top wall **12** and the end walls **16**, although there may be some yieldable movement of the bars **38***a* and **38***b* toward and away from each other.

The lower frame means **36**, on the other hand, provides a very reliable maintenance of the spacing between the bars **40***a* and **40***b*, as a result of the connection of these bars to the cross bars **58**, and thus if relatively fragile articles are situated in the compartment between the partitions **24** and **26**, at the lower part of the article of luggage between the bars **40***a* and **40***b*, there will be almost no possibility of damaging such fragile articles. As is apparent from FIG. 2, the greatest part of the yieldability and bendability is restricted to the portion of the article of luggage which is situated between its top and bottom walls, while at the region of these top and bottom walls the frame means **34** and **36** respectively provide a far greater rigidity which will maintain articles in the enclosure in relatively good, fully protected condition. Thus, articles of clothing can be situated in the space between the top and bottom walls, since such articles of clothing are easily bendable, while relatively rigid articles which should be protected from any bending, as well as relatively fragile articles, can be situated near the top and bottom walls of the article of luggage and extremely fragile articles should, of course, be situated near the bottom wall in the central compartment between the partitions **24** and **26**.

The structure of the present invention also includes a handle means **62** which is fixed to the upper frame means **34** and extends therefrom to the exterior of the wall means **10** so as to be accessible to the operator. This handle means **62** includes a pair of angle brackets **64** fixed, as by screws **66** (FIG. 4) to each bar **38***a* and **38***b*. The pair of angle brackets **64** which are fixed to one of these bars are respectively aligned with the pair of angle brackets which are fixed to the other of the bars, and each set of aligned angle brackets terminates in elongated outer end portions which are inclined toward each other, as is most clearly shown in FIG. 3. A plurality of metal links **68**, in the form of loops which extend through bores of the bracket **64**, for example, are respectively pivotally connected to the outer ends of the brackets **64** and these links **68** are in turn pivotally connected with the free ends of a pair of substantially U-shaped handle elements **70** which may be made of any suitable plastic, metal, or the like.

Thus, it can be seen from FIG. 3, that all the operator need do is place his hand around both of the handle elements **70** in order to raise the article of luggage and carry it about. It is to be noted that with this handle structure when the weight of the article of luggage is suspended from the handle means **62**, the bars **38***a* and **38***b* tend to move toward each other. The result is that even if the article of luggage is packed with tightly compressed articles, during carrying of the article of luggage its outer side walls will tend to move toward each other so as to oppose any tendency of the article of luggage to spread outwardly due to articles which are packed therein. Furthermore, the tendency of the bars of the frame means **34** to move toward each other relieves the central slide fastener **28** of a considerable amount of stress to which it might otherwise be subjected by articles between partitions **24** and **26** tending to push them apart from each other. Also, the connection of the handle means directly to the metal bars of the upper frame means **34** provides a very secure and reliable connection which will prevent the handle means **62** from tearing away from the wall means **10**.

The walls which make up the wall means **10** can be made of any suitable plastic, leather, cardboard or the like enclosed or covered by fabric or plastic sheets, or any other suitable known material which is flexible enough at least at the sides and end walls to provide an easy bendability of the type indicated in FIG. 2. At the same time, these side and end walls of the article of luggage of the present invention are of sufficient resilience

and rigidity to be self-sustaining and to assume substantially planar configurations when the article of luggage is unstressed.

What is claimed is:

1. An article of luggage comprising wall means having a closed position defining an enclosure of a given volume and an open position giving access to the interior of said enclosure, said wall means including top and bottom walls, a pair of opposed end walls, and a pair of opposed side walls, at least said end and side walls being sufficiently flexible to provide relatively easy bendability of said end and side walls when the article of luggage is subjected to compressive shocks or loads, upper frame means fixed to said top wall and extending therefrom along said end walls part of the way toward said bottom wall, and lower frame means fixed to said bottom wall and extending therefrom part of the way along said end walls toward said top wall, said upper and lower frame means being of substantially greater rigidity than said side and end walls and defining between themselves along said end walls a substantial space to which the greater part of the bending of said end walls is restricted.

2. An article of luggage as recited in claim 1 and wherein a handle means is fixed to said upper frame means and accessible at the exterior of said wall means over said top wall thereof.

3. An article of luggage as recited in claim 1 and wherein a slide fastener means is operatively connected to said wall means for releasably maintaining the latter in said closed position thereof.

4. An article of luggage as recited in claim 3 and wherein said slide fastener means includes at least one slide fastener extending along said top wall substantially midway between said side walls and extending downwardly along said end walls at least part of the way toward said bottom wall so that when said slide fastener is opened the opposed side walls and the parts of the top wall which are respectively situated on opposite sides of said slide fastener can be displaced away from each other to give access to the interior of said enclosure.

5. An article of luggage as recited in claim 1 and wherein a slide fastener means is operatively connected to said wall means for releasably maintaining the latter in said closed position thereof, said side fastener means including a central slide fastener extending all the way along said top wall substantially midway between said side walls and from said top wall downwardly along said end walls part of the way toward said bottom wall, and a pair of outer slide fasteners extending along said top wall respectively adjacent to said side walls and both of said outer slide fasteners extending from said top wall downwardly along said end walls at least to the region of said bottom wall, and said wall means including a pair of flexible partitions situated between and extending substantially parallel to said side walls with said central slide fastener situated between said partitions and said outer slide fasteners being situated outwardly beyond said partitions, so that said central slide fastener can be opened to give access to a compartment situated between said partitions and said outer slide fasteners can be opened to give access respectively to outer compartments defined between said partitions and side walls.

6. An article of luggage as recited in claim 1 and wherein each of said frame means includes at least one elongated substantially rigid bar terminating in a pair of end portions which extend angularly from the remainder of said bar respectively along said end walls.

7. An article of luggage as recited in claim 1 and wherein said upper frame means includes a pair of substantially identical elongated bars spaced from and extending parallel to each other, said bars being fixed to and extending along the entire length of said top wall and each terminating in elongated end portions respectively extending downwardly along said end walls toward said bottom wall.

8. An article of luggage as recited in claim 7 and wherein a pair of angle brackets are fixed to each bar and extend therefrom upwardly beyond said top wall to the exterior of said enclosure, the angle brackets of one of said pairs being aligned with the angle brackets of the other of said pairs and each set of aligned angle brackets having outer end portions inclined toward each other, a plurality of links respectively connected pivotally to said outer end portions of said angle brackets for free turning movement relative thereto, and a pair of handle members respectively pivotally connected to the pairs of links which are pivotally connected to said pairs of angle brackets.

9. An article of luggage as recited in claim 1 and wherein said lower frame means includes a pair of spaced parallel substantially rigid elongated bars extending along and fixed to said bottom wall and being substantially parallel to said side walls, each of said bars terminating in a pair of opposed elongated end portions extending upwardly along said end walls, respectively, toward said top wall.

10. An article of luggage as recited in claim 9 and wherein said lower frame means further includes a pair of cross bars extending parallel to each other transversely across said bottom wall and being spaced from each other longitudinally of said bottom wall, said cross bars being fixed to said bars which extend longitudinally along said bottom wall.

11. An article of luggage as recited in claim 10 and wherein said bars which extend longitudinally along said bottom wall are situated at the interior of said enclosure and said cross bars are situated at the exterior of said enclosure so that said bottom wall is situated between said cross bars and said bars extending longitudinally of said bottom wall.

12. An article of luggage as recited in claim 11 and wherein a pair of elongated reinforcing strips extend longitudinally along said bottom wall between the latter and said bars which extend longitudinally along said bottom wall in said enclosure.

13. An article of luggage as recited in claim 11 and wherein a plurality of floor-engaging members are fixed to said cross bars at the exterior of said enclosure for engaging a floor or the like.

14. An article of luggage as recited in claim 1 and wherein said side and end walls, while of sufficient flexibility to bend under stress, nevertheless are of sufficient rigidity and resilience to be self-standing and assume substantially planar configurations, respectively, when unstressed.

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FRANKLIN T. GARRETT, *Primary Examiner.*