Sept. 3, 1957 E. E. MUHS ET AL 2,805,019

CARRYING CASE

Filed Oct. 1, 1954 3 Sheets-Sheet 1

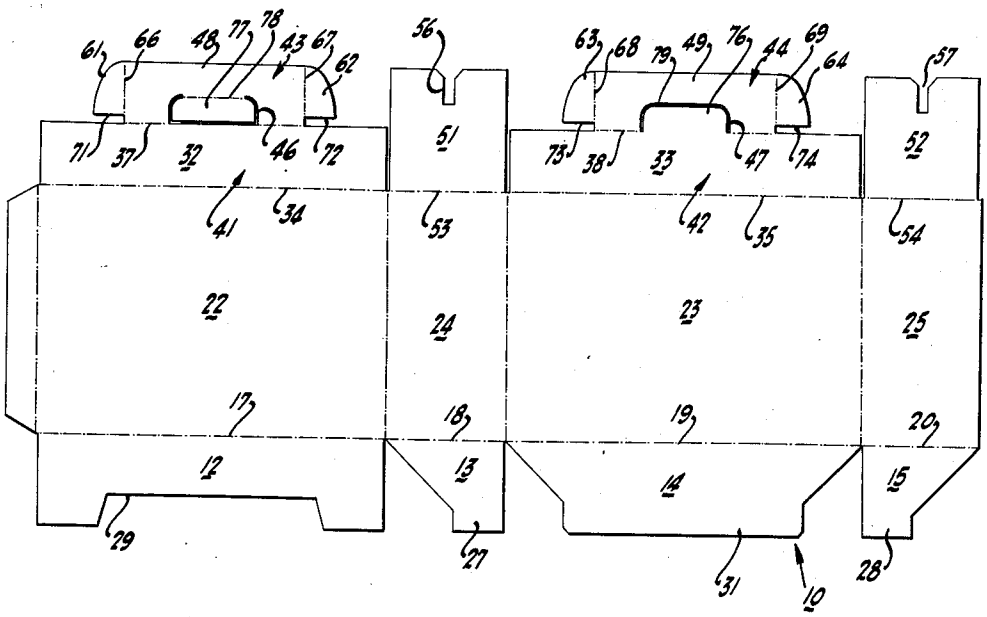


FIG. 1

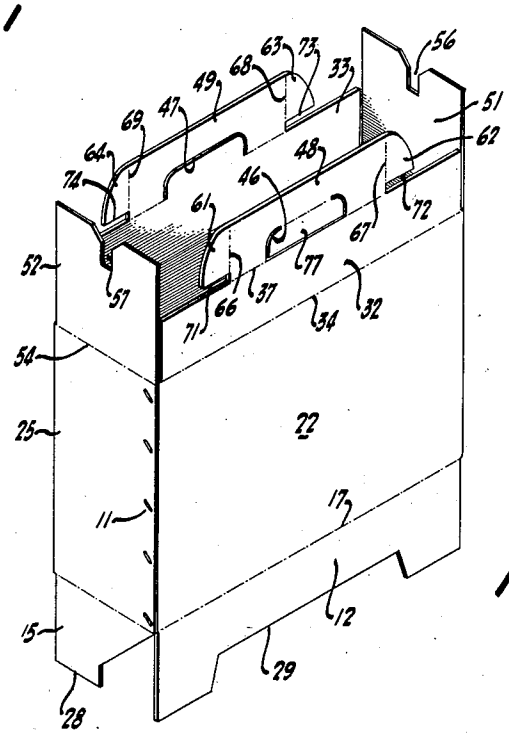


FIG. 2

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Sept. 3, 1957 E. E. MUHS ET AL 2,805,019

CARRYING CASE

Filed Oct. 1, 1954

3 Sheets-Sheet 2

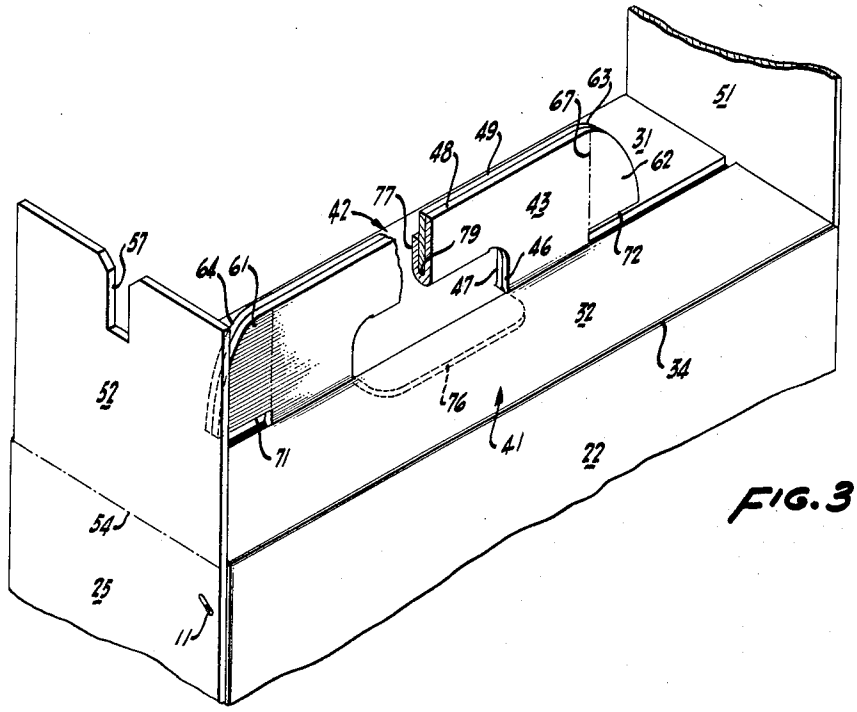


FIG. 3

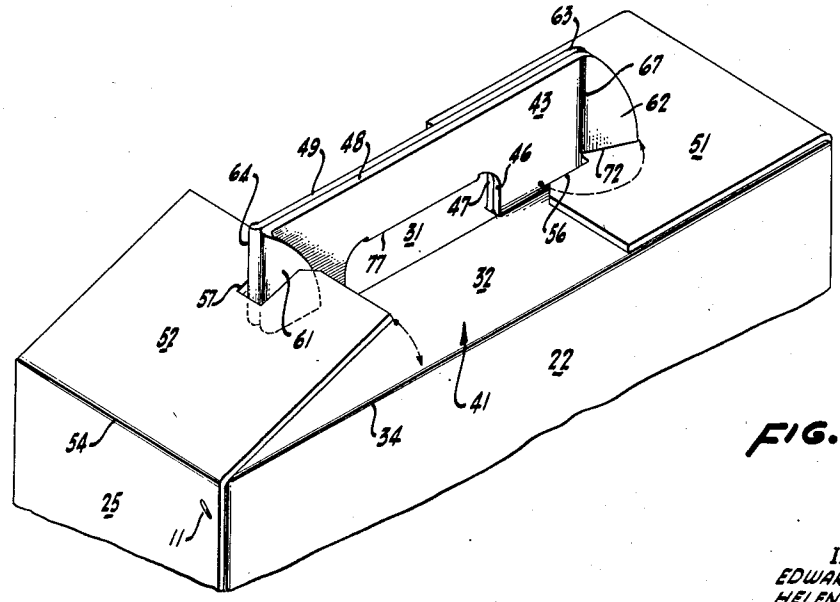


FIG. 4

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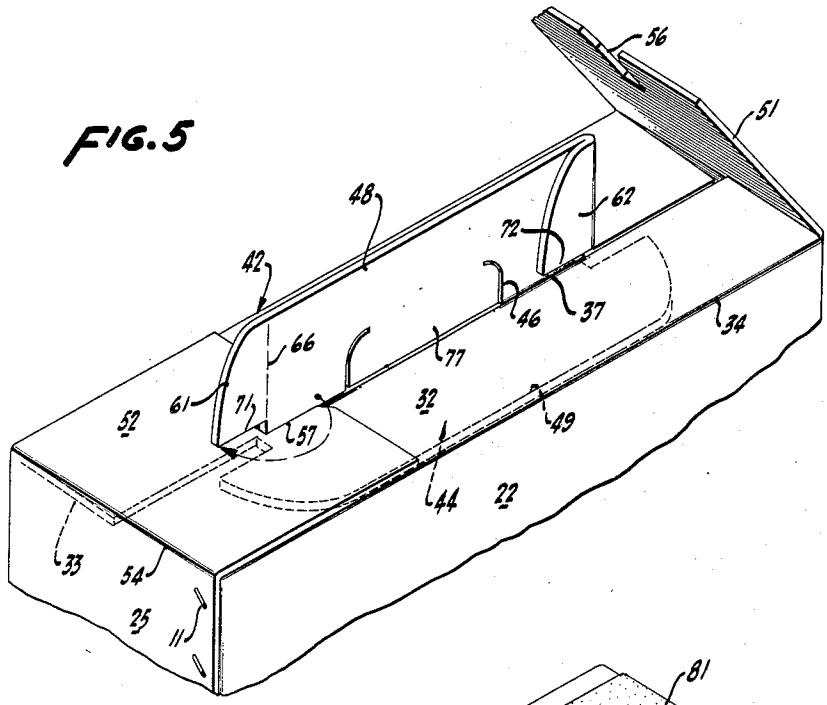
Sept. 3, 1957 E. E. MUHS ET AL 2,805,019

CARRYING CASE

Filed Oct. 1, 1954

3 Sheets-Sheet 3

FIG. 5



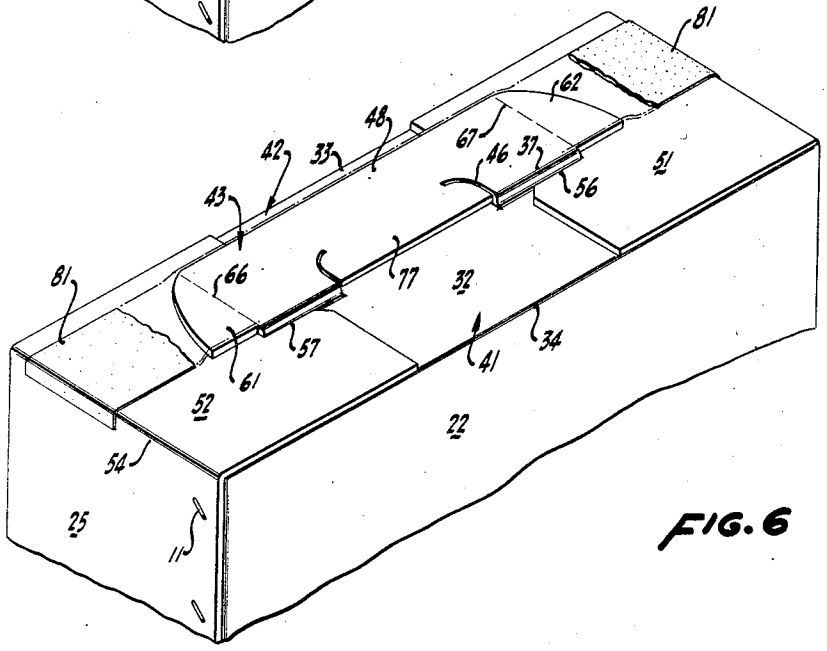


FIG. 6

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2,805,019

CARRYING CASE

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Application October 1, 1954, Serial No. 459,813

4 Claims. (Cl. 229—52)

The invention relates to foldable and collapsible cartons of the type made of paper stock or similar expendable material and modified to provide an integrally formed handle which may be erected for convenient carrying about of the container.

An object of the present invention is to provide a carrying case of the character described which is adapted for inexpensive, mass production from expendable materials which, although light in weight, are fabricated to provide a strong, tough, durable and attractive case of good load carrying capacity which will withstand considerable abuse and frequent re-use over a considerable life span.

Another object of the present invention is to provide a carrying case of the character described which is fashioned with the various interfitting and interlocking parts shaped and dimensioned for rapid assembly into a rectangular container form in an easily understood and simply executed, yet highly effective, manner so as to provide a firm, strongly assembled and spill-proof enclosure.

A further object of the present invention is to provide a carrying case of the character above which may be initially folded in a flat, unassembled form for storage and transportation and which may be quickly and easily erected into a rectangular shaped carton, either with conveniently arranged upstanding handles for carrying about, or with all of the exposed portions lying flat to the rectangularly related sides of the carton and interlocked for shipping or mailing in its assembled container form.

The invention has other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawings:

Figure 1 is a plan view of a case constructed in accordance with the present invention completely unfolded in its blanked out form.

Figure 2 is a perspective view of the case in partially folded form.

Figure 3 is a fragmentary perspective view of part of the case in further folded form.

Figure 4 is a fragmentary perspective view of the case in further folded form.

Figure 5 is a fragmentary perspective view of the case folded in an alternate manner.

Figure 6 is a fragmentary perspective view of the case completely folded in the manner illustrated in Figure 5.

The case of the present invention and as shown in the accompanying drawings is folded up and assembled out of preferably a single sheet **10**, as illustrated in Figure 1, of any suitable foldable material such as pasteboard, cardboard, corrugated paper board or other paper stock,

or of plastic or any other material suitable for the purpose. In the interests of low cost and to obtain a carrying case of an expendable nature, the paper stock materials are most satisfactory. The sheet is provided with fold lines so that it may be folded up and assembled in a generally cubical shape including substantially mutually perpendicular bottom, side, end and top walls, with one side and end wall having a stapled seam **11**, as seen in Figure 2. The bottom wall is formed by a plurality of contiguous flaps **12**, **13**, **14** and **15** connected by fold lines **17**, **18**, **19** and **20** to the opposite side walls **22**, **23**, and the opposite end walls **24** and **25**. These flaps **12—15** are so fashioned that they will interlock when folded inwardly in the following sequence: Flap **12**, then end flaps **13** and **15**, and finally the other side flap **14**, it being noted that the end flaps **13** and **15** are provided with tongues **27** and **28** which are insertable into a channel **29** provided by flap **12** and are interlocked in such channel by a tongue **31** provided by flap **14** which also enters the channel **29** and is interlocked therein. The form and construction of these bottom flaps is old in the art and, while preferred for present purposes, forms no necessary part of the invention.

With reference to Figures 1 and 2 it will be noted that the side walls **22** and **23** are formed with contiguous top flaps **32** and **33** which are joined by fold lines **34** and **35** for swinging inwardly perpendicularly from the sides **22** and **23**. The flaps **32** and **33** are formed with medial fold lines **37** and **38** parallel to the fold lines **34** and **35** and which divide the flaps into first portions **41** and **42** lying adjacent fold lines **34** and **35**, and second portions **43** and **44** which are foldable on lines **37** and **38** perpendicularly outwardly from the first portions (see Figure 3) in planes substantially parallel to and midway between the side walls **22** and **23**. These latter portions **43** and **44** thus stand erect from the top wall of the container and are here formed with registering openings **46** and **47** for providing handgrips **48** and **49**.

The end walls **24** and **25** are likewise formed with contiguous top flaps **51** and **52** which are joined by fold lines **53** and **54** for swinging inwardly to complete the top of the case. In accordance with the present construction these end flaps are formed with centrally arranged edge slots **56** and **57** which are arranged to slip over and to receive therein the erect handle portions **43** and **44** so as to permit the folding of the end flaps **51** and **52** completely down and against the outer surfaces of the top flap portions **41** and **42**. In accordance with the present invention, means is carried by one or both of the handle portions **43** and **44** of the top flaps for positioning in overlying relation to the end flaps **51** and **52** when the latter are folded inwardly as described, so as to lock the end flaps and all of the other flaps and their portions in positions above described. This last named means here consists of the provision on the handle flap portions **43** and **44** of longitudinal ends **61**, **62**, **63** and **64** which are joined to the portions **43** and **44** by fold lines **66**, **67**, **68** and **69**, permitting swinging of the ends **61—64** back against the outer sides of the portions **43** and **44** as illustrated at the left end of the handle portions in Figure 4; and the edge slots **56** and **57** in the end flaps are sufficiently wide so as to slide over and receive therein the overfolded longitudinal ends **61—64** constituting at such point four thicknesses or layers of material.

The base sides **71**, **72**, **73** and **74** of the end flaps **61—64** are cut out in the blank (see Figure 1) so as to lie in spaced relation to fold lines **37** and **38** by a distance sufficient to admit the thickness of the end flaps **51** and **52** therebetween (see Figure 4), whereby the ends **61—64** may be swung from their overfolded position against the sides of the handle portions outwardly across

the face of the end flaps in overlying relation thereto so as to lock the end flaps down against the side flaps, as described. Preferably, the first top flap portions **41** and **42** extend for the full length of the side walls **22** and **23** so as to insure a complete and overlapping enclosure for the case, while the outstanding handle portions **43** and **44** may be and preferably are foreshortened longitudinally so as to extend over the central portion only of the top flaps **32** and **33**.

As another feature of the present invention, the handholes are cut out in such a manner as to provide integral interlocking and reinforcing tongues which greatly improve the load carrying capacity and ease of carrying of the case. As will be best seen in Figures 1 to 3, the opening **47** is formed by making a three-sided cut through the flap portion **44** extending from the fold line **38** so that when the portion **44** is folded perpendicularly from the portion **42**, the material normally lying in the area of the opening **47** will project from the fold line **38** coplanar to the portion **42** in the form of an integral tongue **76** which may be positioned as illustrated in Figure 3 in underlying relation to the opposed top flap portion **41** to provide material strengthening of and support for the top wall construction of the case.

The other opening **46** is similarly formed by a three-sided cut through the flap portion **43** with one line of the cut at the fold line **37** so as to define a tongue or tab **77** integral with the flap portion **43** and which is joined thereto by a fold line **78** which permits the folding of the tab **77** perpendicularly to the handle portion **43** for extension through the opening **47**, the tab being foldable around the top edge **79** of the opening **47** and against the outer side of the handle portion **44** so as to provide a smooth, broadened and reinforced handgrip for the case.

In closing the top of the case, the top flap **33** is first folded inwardly, and handle portion **44** folded upwardly from the flap portion **42**. The opposite top flap **32** is then folded inwardly so as to position the base portion **41** thereof directly upon the tongue **76** of the portion **42**. The tab **77** of handle portion **43** is then inserted through the opposite opening **47** and against the top wall **79** thereof and in this position, cooperates with the tongue **76** to hold the two side flaps in position. The longitudinal ends **61—64** are then folded back against the outer sides of the handle portions **43** and **44** and the end flaps swung inwardly and downwardly upon the outer sides of the side flap portions **41** and **42** with the edge slots **56** and **57** on the end flaps passing over and receiving therein the overfolded longitudinal ends **61—64**, as illustrated at the left side of the handle portions in Figure 4. When the end flaps have been completely folded down against the side flaps, they will clear the base sides **71—74** of the end portions **61—64** and the latter will then swing away from their overfolded positions and lock the end flaps against raising.

As another feature of the present invention, all of the portions making up the top of the container may be conveniently and securely folded flat and interlocked if desired for shipping or mailing or the like. Most simply, the four top flaps are merely folded one over the other to provide a flat top, after which the flaps may be taped or otherwise secured in closed position. Desirably, in such case, the two side flaps **32** and **33** are folded in first, and then the two end flaps **51** and **52** are folded in. A piece of tape run over the top between the ends medially of the side walls will secure the carton in closed position.

Where an interlock of the top flaps is desired in the closed, flat, shipping arrangement of the container, the parts may be folded as illustrated in Figures 5 and 6 of the drawings. The sequence of folding in such case is as follows: Flap **33** is first folded inwardly so that both portions **42** and **44** thereof lie horizontally across the top of the carton. The opposite side flap **32** is then folded inwardly and the handle portion **48** thereof folded upwardly, as illustrated in Figure 5. The longitudinal ends **61** and **62** of the handle part **48** are folded back against the handle portion so as to permit the folding inward of the end flaps **51** and **52**, the edge slots **56** and **57** clearing and passing over the overfolded longitudinal ends **61** and **62**, as above described. When the end flaps **51** and **52** have been folded inwardly against the outer sides of the top flap, the handle portion **48** may be folded down flat, as illustrated in Figure 6, thereby interlocking all of the top flap portions. Stapling or otherwise fastening the handle portion **48** will securely lock all of the parts in closed position, or if desired, a strip of tape **81** may be run over the top for this purpose.

Another alternate flat-top folded and interlocked position is provided by the parts when folded in outside-in manner, wherein neither staples nor tape is required to hold the various flaps in securely locked position during shipping, transporting, storage, or other handling. This is made possible due to the symmetry of the parts and is achieved by the following sequential folding of the parts: End flaps **51** and **52** are first folded completely inwardly and against the end walls **24** and **25**. Outer handle portions **48** and **49** are turned inwardly upon their fold lines **37** and **38** and the side flaps are swung in perpendicular to the sides, with the tongue **76** projecting horizontally through the opening **46**. In such position the handle portions **48** and **49** lie in side-by-side relation, depending perpendicularly from the top wall in parallel planes midway between the side walls. The longitudinal ends **61—64** may then be folded back onto the sides of the handle portions and the end flaps swung upwardly against the under sides of the inturned side flaps, with the edge slots on the end flaps receiving and passing over the overfolded ends **61—64** in the same manner as above described, thus locking the parts with the handle portions turned inwardly from the top, and with the outer exposed side of the top perfectly smooth and flat.

The case constructed as above described is trim, strong, spill-proof, and very light in weight for its load carrying capacity. For example, a case having dimensions of 18" x 6" x 10½", constructed of 200-lb. test B-Flute corrugated paper board, will easily support twenty-five pounds bulk load. Such a case is well adapted for many types of applications and uses, such as an overnight, train or travel case, especially inexpensive children's luggage for camps or vacations, with handy mailing features; mailable laundry container; salesman's sample case, picnic hamper, beach or club bag, locker or general storage case; and a general utility bag of manifold uses. Also, as will be understood, the arrangement of the fold lines and the tough, durable, although inexpensive, quality of the material used permit of the continued folding and re-use of the container over a very satisfactory life span of the unit, considering its low cost and essentially expendable character.

We claim:

1. A carrying case comprising, substantially mutually perpendicular bottom and side and end walls, said side walls being formed with contiguous top flaps having top sections foldable inwardly perpendicularly to said side walls and handle portions foldable perpendicularly outwardly from said top sections in substantially parallel planes substantially midway between said side walls and being formed to provide a hand grip, said handle portions being formed with hinged ears at their longitudinal ends set off by fold lines extending perpendicular to said top sections and being severed from said top sections for swinging of said ears back against the outer sides of said handle portion, said end walls being formed with contiguous top flaps having free ends extending into overlapping relation with said handle portions and formed with slots opening to said ends dimensioned and positioned to slip over and to receive therein said handle portions and the over-folded ears upon inward folding of said end

flaps perpendicularly to said end walls so as to lie against said top sections and to close the top of said case, said ears being formed to overlie and to swing across the outer face of said end flaps in their last named position so as to lock said flaps in the positions described and said slots having their bases disposed adjacent said fold lines for said ears with the sides of said slots extending into keyed relation with said handle portions.

2. A carrying case comprising, substantially mutually perpendicular bottom and side and end walls, said side walls being formed with contiguous first and second top flaps having first and second top sections foldable inwardly from said side walls and first and second handle portions joined to said top sections along first and second longitudinal fold lines and being foldable outwardly therefrom in substantially parallel planes substantially midway between said side walls, said first handle portion being formed with a U-shaped cut having the ends of the U extending to said first fold line so as to define a hand hole in said first handle portion when bent outwardly from said first fold line and to provide a tongue integral with said first section and projecting from said first fold line to underlie and support said second section, said second handle portion being formed with a U-shaped cut with the base of the U extending to said second fold line to define a hand hole registrable with said first named hand hole to provide a hand grip and a tab extendable through and foldable around the top edge of said first named hand hole to broaden and reinforce said hand grip, said handle portions being formed with hinged ears at their longitudinal ends set off by fold lines extending perpendicularly to said first mentioned fold lines and being severed from said top sections for swinging of said ears back against the sides of said handle portions, said end walls being formed with contiguous top flaps foldable inwardly onto said top sections and having free ends overlapping said handle portions and being formed with slots opening to said ends dimensioned and positioned to slip over said handle portions and said ears folded back thereon, said ears being formed to overlie and lock down said end flaps and said slots having their bases disposed adjacent said fold lines for said ears with the sides of said slots extending into keyed relation with said handle portions.

3. A top construction for a folding paperboard box comprising, side walls formed with contiguous top flaps having top sections foldable inwardly from said side walls and handle portions joined to said top sections along first longitudinal fold lines and being foldable outwardly therefrom in parallel planes substantially midway between said side walls, said handle portions having registering hand grip openings defined in part by a U-shaped cut-out in one of said handle portions with the ends of the U extending to the fold line of such handle portions so as to form a tongue integral with the contiguous top section and projecting from its fold line in position to underlie and support the other of said top sections, said handle portions being formed with hinged ears at their longitudinal ends set off by second fold lines perpendicular to said first fold lines and being severed from said first portions for swinging of said ears back against the outer sides of said handle portions, and end walls formed with contiguous and imperforate top flaps having free ends extending into overlapping relation with said handle portions and being formed with centrally positioned edge slots opening to said ends and dimensioned for slipping over said handle portions and said ears in swung back position with the bases of said slots disposed adjacent said second fold lines and with the sides of said slots extending into keyed relation with said handle portions, said ears being relieved at their bases to receive said end flaps thereunder and being hinged on said second fold lines to swing across the outer faces of said end flaps and to lock them in their keyed position wtih said handle portions and to cooperate with said tongue to support said top construction when under load.

4. A top construction for a folding paperboard box comprising, side walls formed with contiguous top flaps having first and second top sections foldable inwardly from said side walls and first and second handle portions joined to said first and second sections along first longitudinal fold lines and being foldable outwardly therefrom in parallel planes substantially midway between said side walls, said first handle portion being formed with a U-shaped cut having the ends of the U extending to said first fold line to define a hand hole in said first handle portion and a tongue integral with said first section and projecting from said first fold line to underlie and support said second section, said second handle portion being formed with a U-shaped cut with the base of the U extending to said second fold line to define a hand hole registrable with said first named hand hole and a second tongue foldable through said first hand hole to provide a hand grip, said handle portions being formed with hinged ears at their longitudinal ends set off by fold lines extending perpendicular to said first mentioned fold lines and being severed from said top sections for swinging of said ears back against the outer sides of said handle portions, and end walls formed with contiguous and imperforate top flaps having free ends extending into overlapping relation with said handle portions and being formed with centrally positioned edge slots opening to said ends and dimensioned for slipping over said handle portions and said ears in swung back position with the bases of said slots disposed adjacent said second fold lines and with the sides of said slots extending into keyed relation with said handle portions, said ears being relieved at their bases to receive said end flaps thereunder and being hinged on said second fold lines to swing across the outer faces of said end flaps and to lock them in their keyed position with said handle portions and to cooperate with said first tongue to support said top construction when under load.

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