Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 1

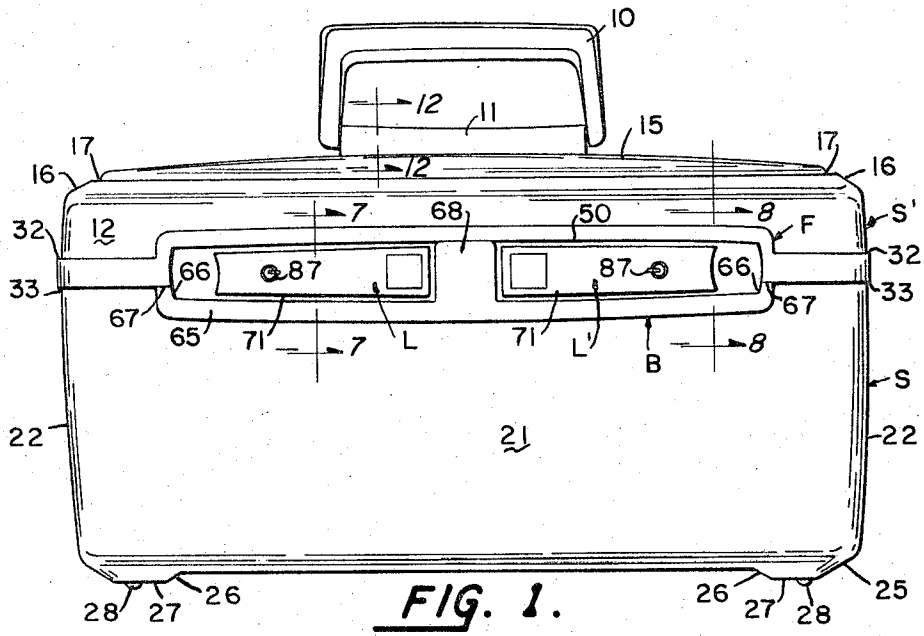


FIG. 1.

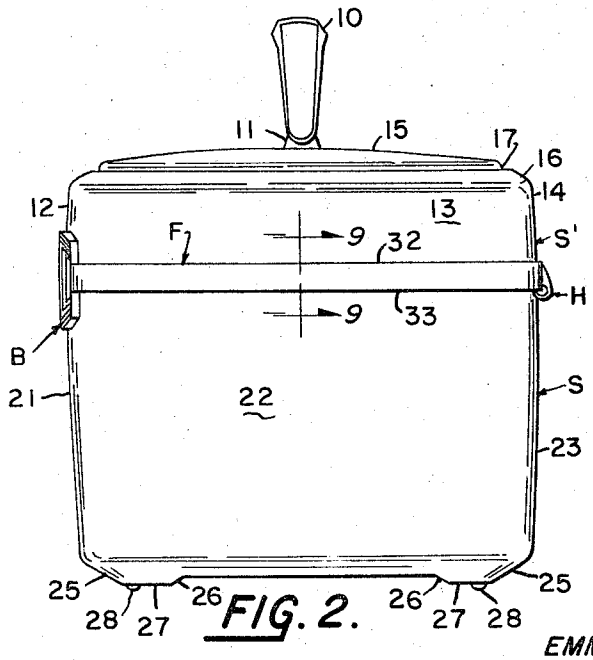


FIG. 2.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

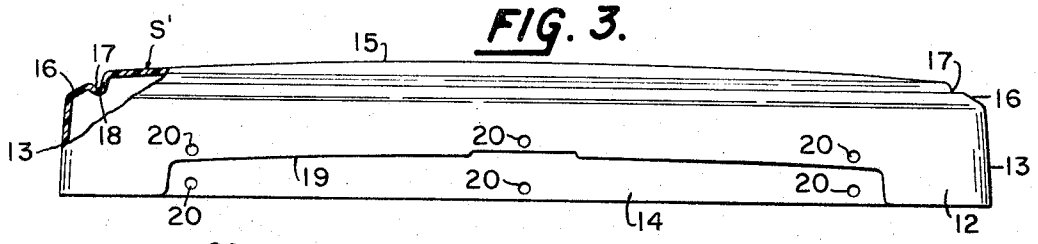
BY Van Vechten Burgh and Fields
ATTORNEYS

Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 2

FIG. 3.



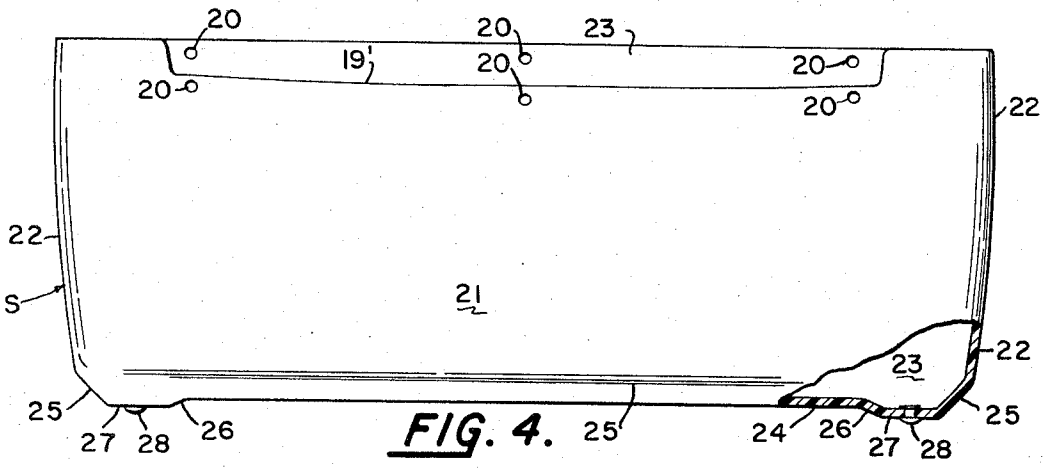


FIG. 4.

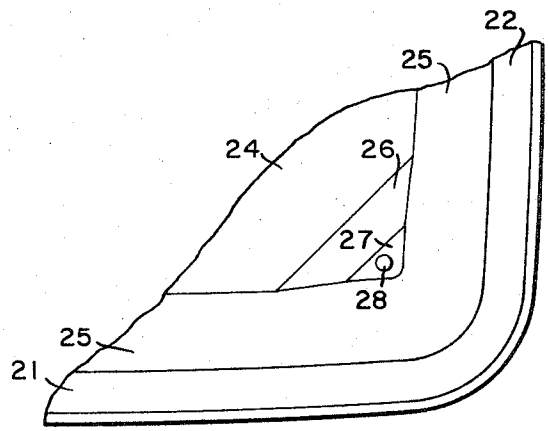


FIG. 5.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

BY Van Valkenburgh and Fields
ATTORNEYS

Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 3

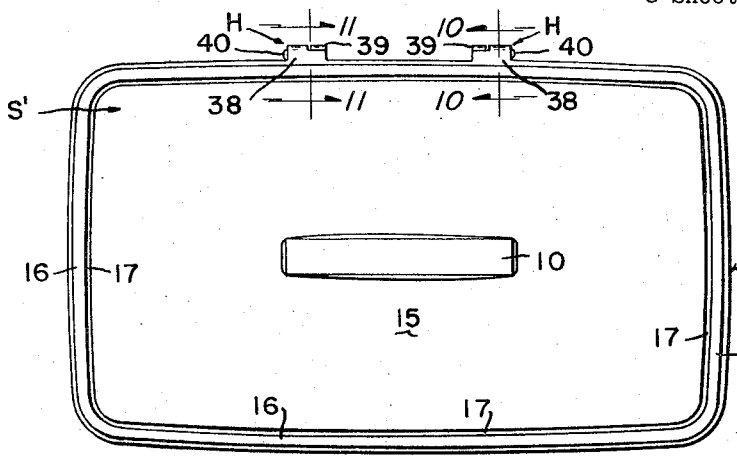


FIG. 6.

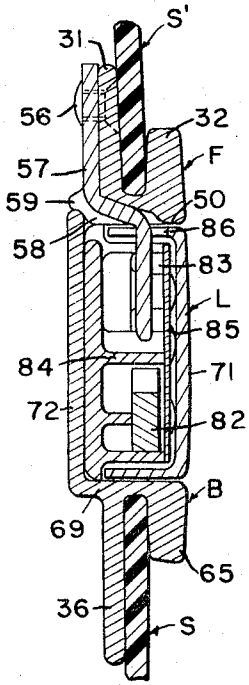


FIG. 7.

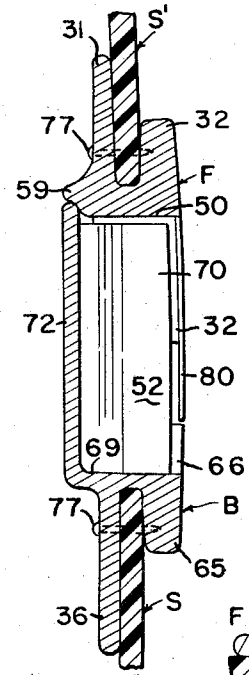


FIG. 8.

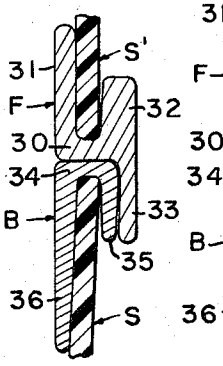


FIG. 9.

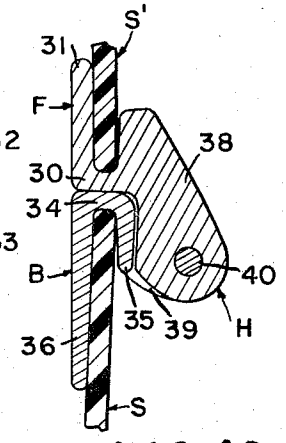


FIG. 10.

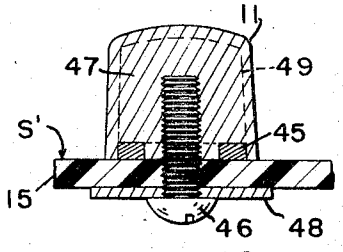


FIG. 12.

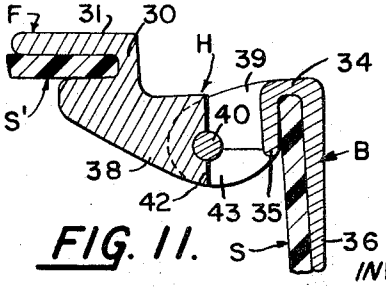


FIG. 11.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

BY Van Valkenburgh and Fields
ATTORNEYS

Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 4

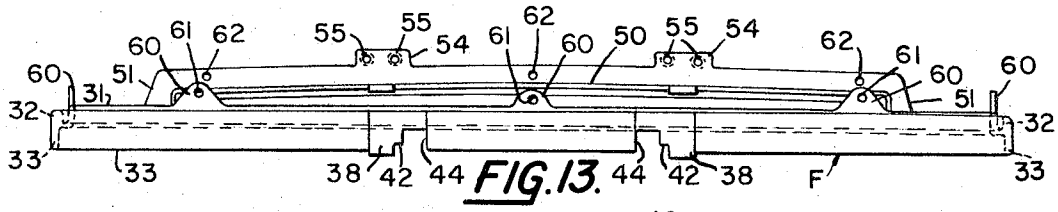


FIG. 13.

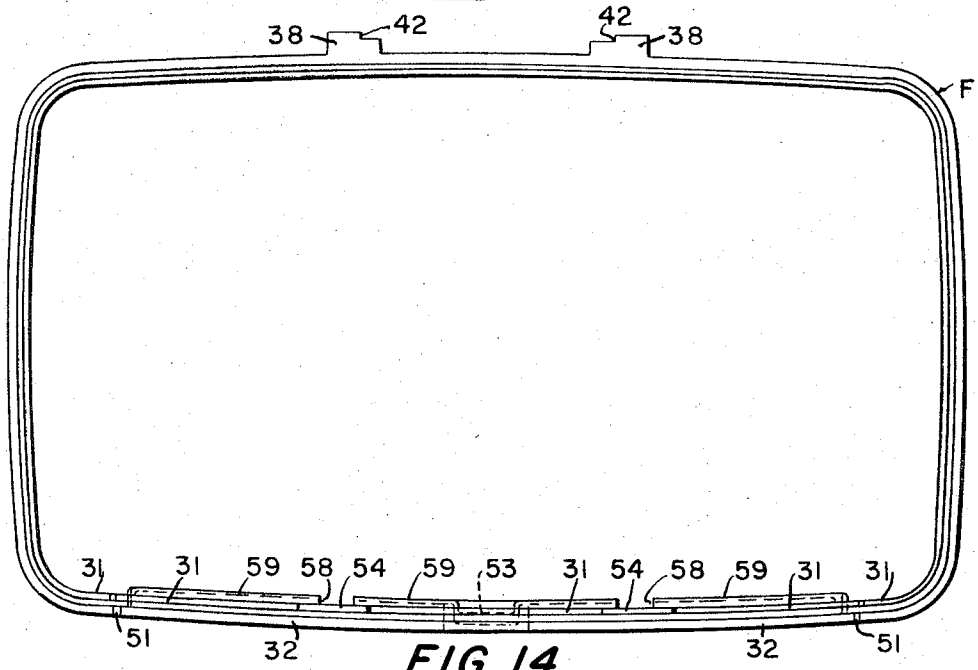


FIG. 14.

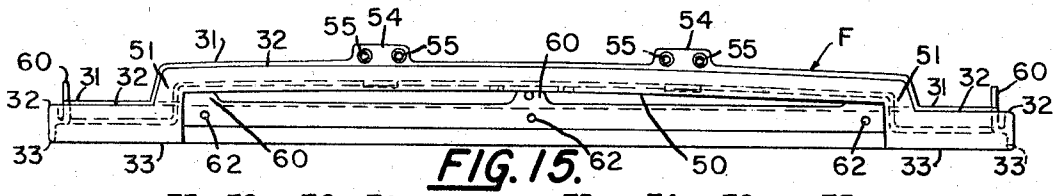


FIG. 15.

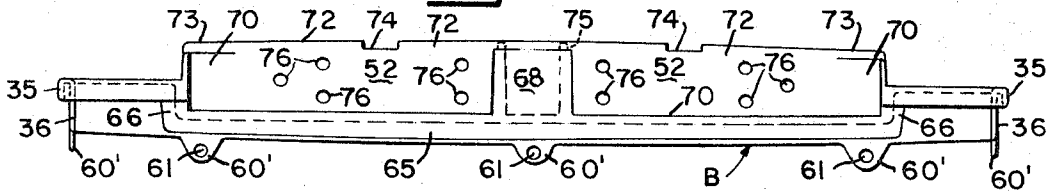


FIG. 16.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

BY Van Valkenburgh and Fields
ATTORNEYS

Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 5

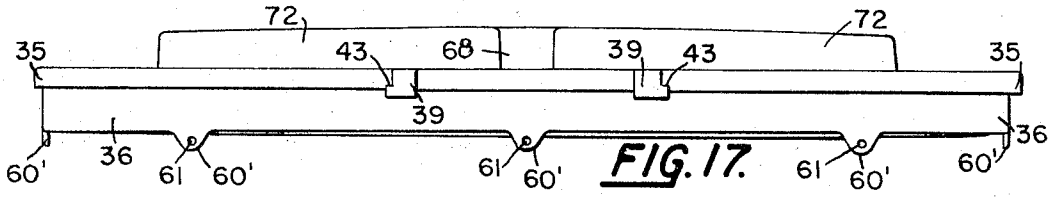


FIG. 17.

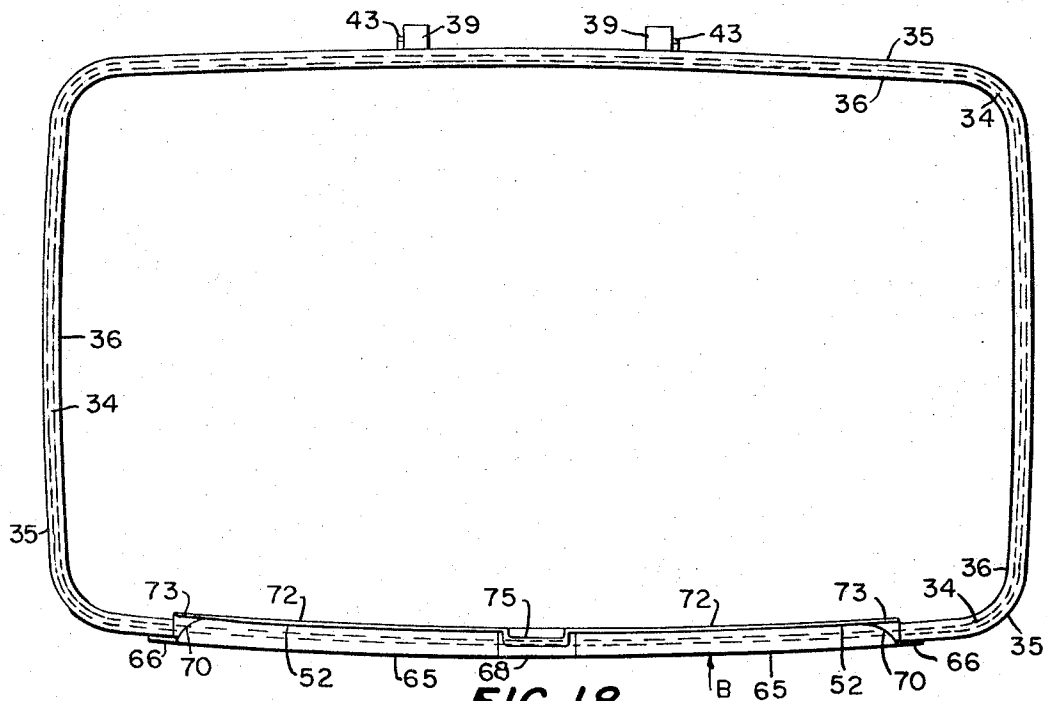


FIG. 18.

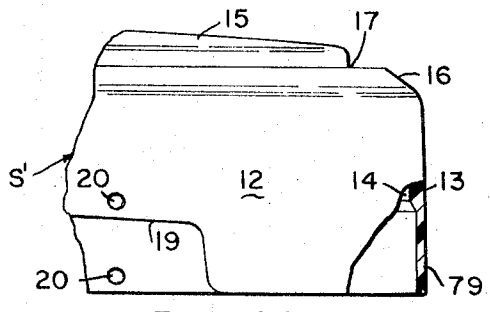


FIG. 19.

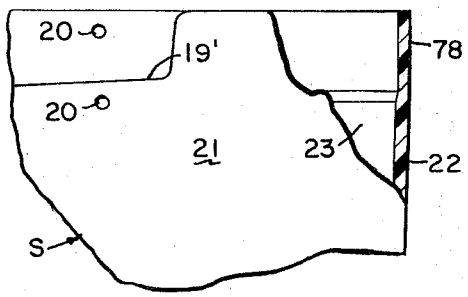


FIG. 20.

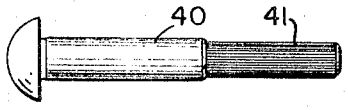


FIG. 21.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

BY Van Valkenburgh and Field
ATTORNEYS

Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 6

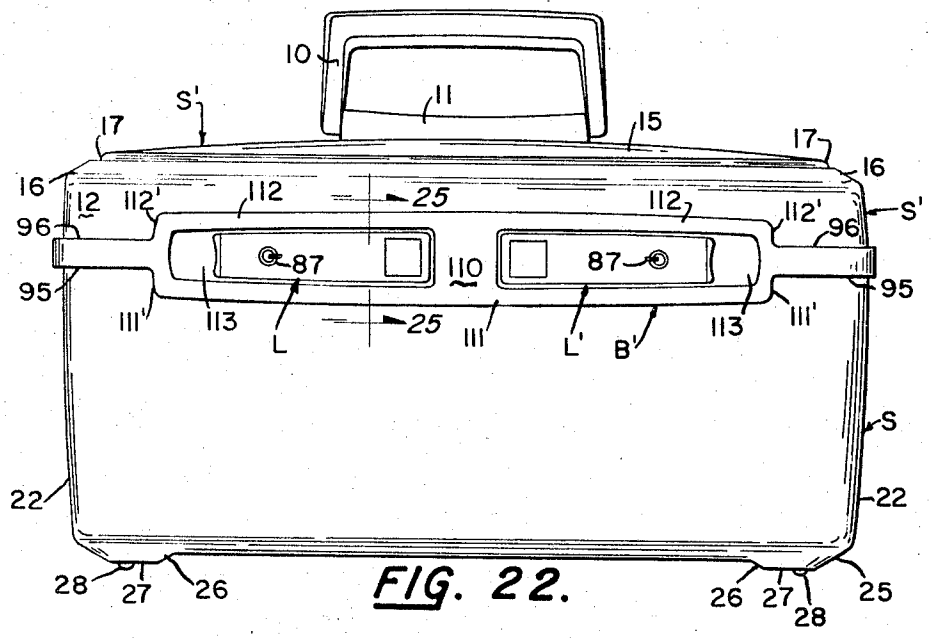


FIG. 22.

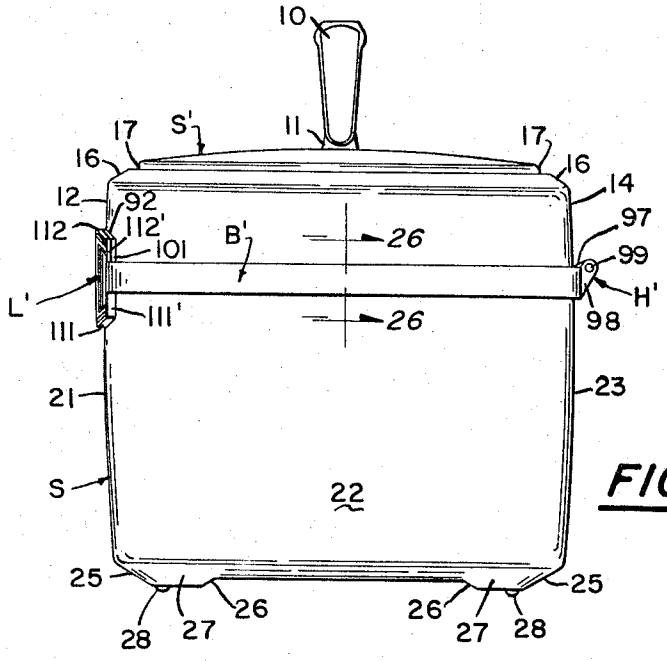


FIG. 23.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

BY Van Valkenburgh and Fields
ATTORNEYS

Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 7

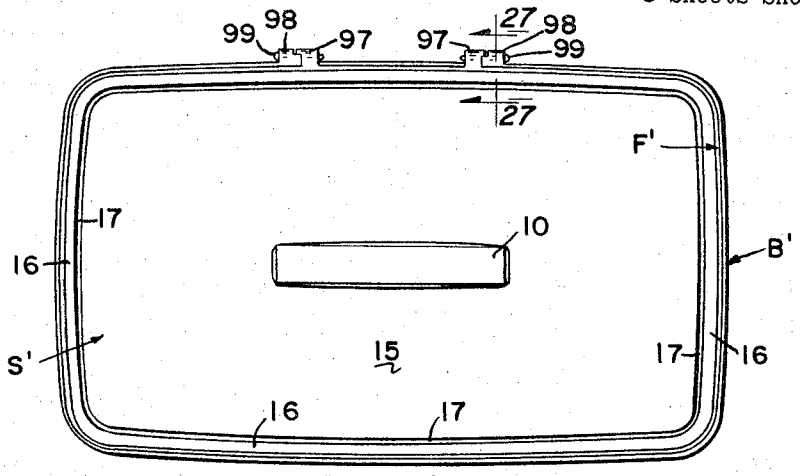


FIG. 24.

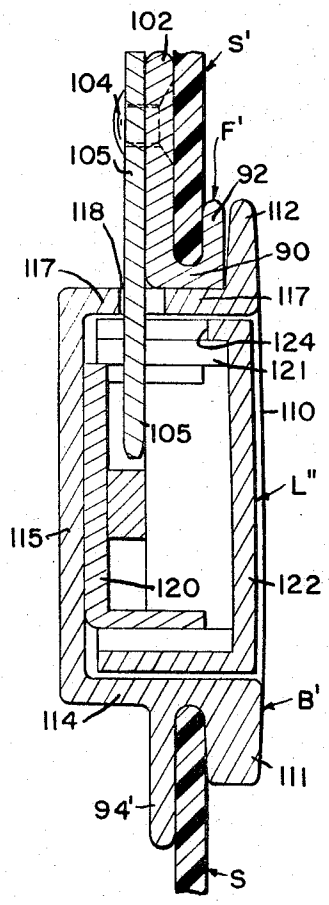


FIG. 25.

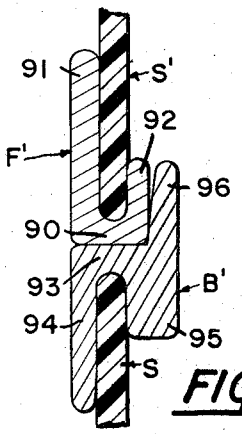


FIG. 26.

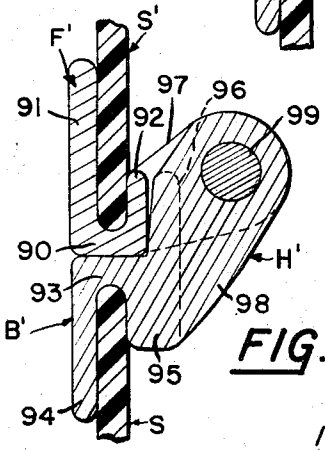


FIG. 27.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

BY VanValkenburgh and Fields
ATTORNEYS

Feb. 28, 1967 E. H. HEITLER ETAL 3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Filed June 20, 1963 8 Sheets-Sheet 8

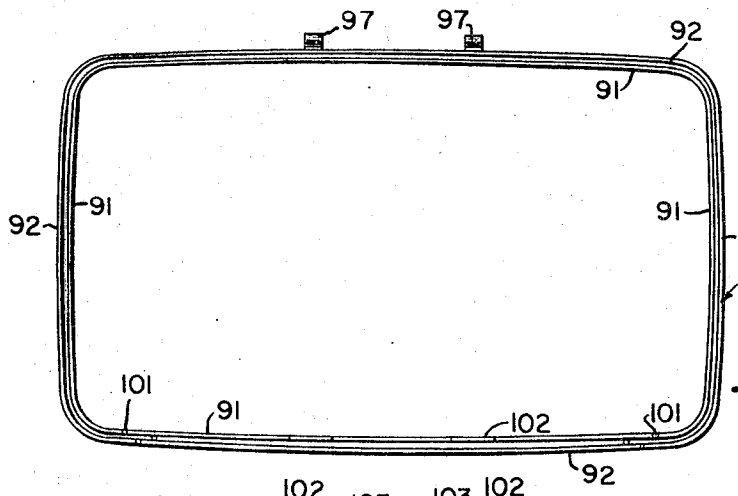


FIG. 28.

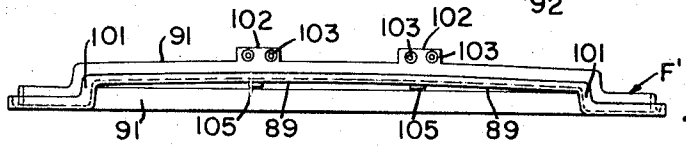


FIG. 29.

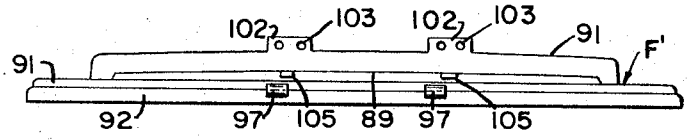


FIG. 30.

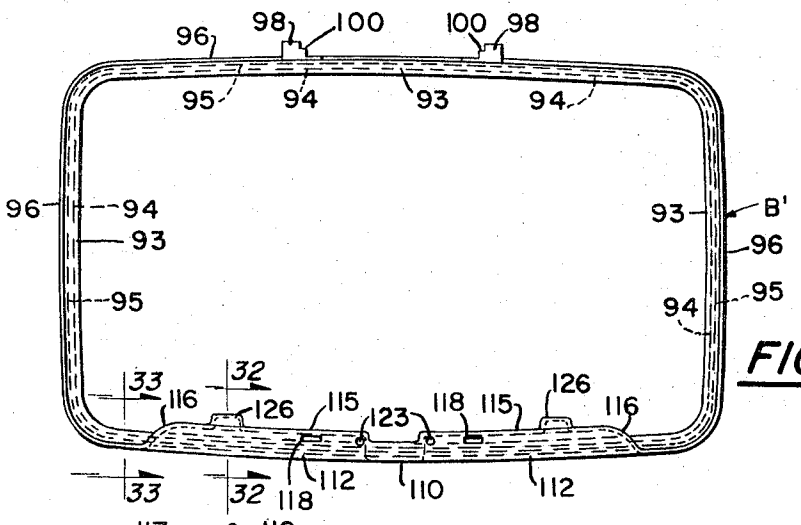


FIG. 31.

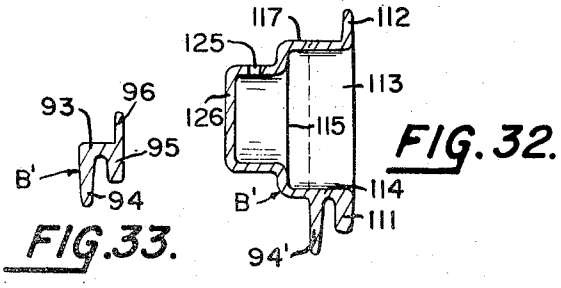


FIG. 32.

FIG. 33.

INVENTORS.
EMMETT H. HEITLER
WILLARD G. AXTELL
ROBERT K. FUJIOKA
ROGER D. WINTER

BY Van Valkenburgh and Fields
ATTORNEYS

United States Patent Office 3,306,402
Patented Feb. 28, 1967

3,306,402

TRAIN OR BEAUTY LUGGAGE CASES

Emmett H. Heitler, Denver, and Willard G. Axtell, Englewood, Colo., Robert K. Fujioka, Los Angeles, Calif., and Roger D. Winter, Denver, Colo., assignors, by mesne assignments, to Samsonite Corporation, Denver, Colo., a corporation of Colorado

Filed June 20, 1963, Ser. No. 289,187
15 Claims. (Cl. 190—49)

This invention relates to luggage cases, and more particularly to train or beauty cases.

With the advent of airplane travel, during which luggage cases are subjected to extreme abuses, not only is the strength and resistance to wear an important factor, but also the weight of the luggage case. Although a train or beauty case is normally smaller in size than other luggage cases and thus is often carried by the passenger, it is also often consigned to the baggage compartment of a plane, which causes it to receive the usual rough treatment. Also, the weight of articles carried in a train or beauty case may often exceed the weight, per unit volume, of the articles in other types of luggage cases, so that a train or beauty case must withstand the stresses imposed by a comparatively heavy load inside the same. A train or beauty case should be easy to open and close and to use, since the contents are normally more frequently removed and replaced than the contents of other types of luggage cases. In addition, in order to attract purchasers, a train or beauty case should be manufactured sufficiently economically that it can be sold at a price attractive to the purchaser.

Among the objects of this invention are to provide a novel luggage case, particularly a train or beauty case; to provide such a luggage case which is light in weight but does not sacrifice resistance to wear and abuse; to provide such a luggage case which is easy to open and close and to use; to provide such a luggage case which will adequately resist deformation, not only by weight or other forces imposed while the luggage case is in an upright position, but also when the luggage case is placed in other positions; to provide such a luggage case which is relatively simple in construction; and to provide such a luggage case which can be manufactured economically.

Additional objects and the novel features of this invention will become apparent from the description which follows, taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a front elevation of a luggage case comprising a train or beauty case and constructed in accordance with this invention;

FIG. 2 is an end elevation of the luggage case of FIG. 1;

FIG. 3 is a front elevation of an upper shell which forms part of the luggage case of FIG. 1, a portion of the shell at an upper corner being broken away;

FIG. 4 is a front elevation of a lower shell, a portion of the shell at a lower corner being broken away;

FIG. 5 is a fragmentary top plan view, on a considerably enlarged scale, of one corner of the lower shell of FIG. 4;

FIG. 6 is a top plan view of the luggage case of FIG. 1;

FIG. 7 is a fragmentary vertical section, on an enlarged scale, taken along line **7—7** of FIG. 1, through one of the latches which connect the two halves of the case together at the front;

FIG. 8 is a section similar to FIG. 7, but taken along line **8—8** of FIG. 1 adjacent the end of a latch;

FIG. 9 is a fragmentary vertical section, on an enlarged scale, taken along line **9—9** of FIG. 2, at one end of the case;

FIG. 10 is a fragmentary vertical section, on an enlarged scale, taken along line **10—10** of FIG. 6, through one of the hinges which pivotally connect the two halves of the case together at the rear;

FIG. 11 is a fragmentary vertical section, on an enlarged scale, taken along line **11—11** of FIG. 6 through the other hinge and showing the position of the hinge parts when the case is open;

FIG. 12 is a fragmentary vertical section, on an enlarged scale, taken along line **12—12** of FIG. 1, through a handle support at the top of the case;

FIG. 13 is a rear elevation of an upper frame, which forms a part of the luggage case of FIG. 1;

FIG. 14 is a top plan view of the upper frame of FIG. 13;

FIG. 15 is a front elevation of the upper frame of FIG. 13;

FIG. 16 is a front elevation of a beam, which forms a load bearing member of the case of FIG. 1 and interfits with the upper frame of FIG. 15 when the luggage case is closed;

FIG. 17 is a rear elevation of the beam of FIG. 16;

FIG. 18 is a top plan view of the beam of FIG. 16;

FIG. 19 is a fragmentary front elevation, on a further enlarged scale, showing one end of the upper shell of FIG. 3, with the lower corner broken away;

FIG. 20 is a fragmentary front elevation, on a further enlarged scale, and partly broken away, of an upper corner of the lower shell of FIG. 4;

FIG. 21 is a front elevation of a hinge pin forming part of the luggage case of FIG. 1;

FIG. 22 is a front elevation of a luggage case, similar to FIG. 1, but showing an alternative construction in which the beam extends over and conceals the frame;

FIG. 23 is an end elevation of the luggage case of FIG. 22;

FIG. 24 is a top plan view of the luggage case of FIG. 22;

FIG. 25 is a fragmentary, vertical section, on an enlarged scale, taken along line **25—25** of FIG. 22, but showing an alternative latch construction;

FIG. 26 is a fragmentary, vertical section, on an enlarged scale, taken along line **26—26** of FIG. 23, at one end of the case;

FIG. 27 is a fragmentary, vertical section, on an enlarged scale taken along line **27—27** of FIG. 24, through one of the hinges which pivotally connect the two halves of the case together at the rear;

FIG. 28 is a top plan view of the upper frame;

FIG. 29 is a front elevation of the upper frame of FIG. 28;

FIG. 30 is a rear elevation of the upper frame of FIG. 28;

FIG. 31 is a top plan view of the beam;

FIG. 32 is a vertical section, on an enlarged scale, taken along line **32—32** of FIG. 31, through the latch recess; and

FIG. 33 is a vertical section, on an enlarged scale, taken along line **33—33** of FIG. 31, showing the cross sectional configuration of the beam adjacent a latch recess.

A luggage case constructed in accordance with this invention, as in FIGS. 1 and 2, includes upper and lower, opposed concave sections which fit together when the case is closed, in the position shown, with a beam B of the lower section comprising a load bearing member. The beam B provides recesses for receiving a pair of latches L and L′, which may be of the type of U.S. Patent No. 3,034,327, or any other suitable type, such as indicated below. The beam B is mounted at the top of the lower section of the luggage case, which includes a deeper concave shell S, conveniently molded from a suitable plastic, such as the acrylonitrile butadiene styrene copolymer

known as ABS. The upper edge of shell S extends into a groove on the under side of beam B, while a frame F is adapted to interfit with the beam B when the case is closed and is provided with a groove which receives the lower peripheral edge of a shallower shell S', which is conveniently formed of the same material as shell S.

Thus, the beam B forms an edge means for one of the shells, while the frame F forms an edge means for the other shell.

Frame F also carries a pair of hooks or the like for engagement with the latches L and L', while the sides and rear of beam B, as well as a portion of the front, are overlapped by frame F, in a manner described later, so that they are not visible from the outside of the luggage case, when closed. For carrying purposes, a handle **10** is mounted on a handle support **11**, attached centrally to upper shell S', while the upper and lower halves or sections of the luggage case are pivotally attached together at the rear, as by a pair of hinges H, which are conveniently formed integrally with the beam B and frame F and which permit the luggage case sections to be opened, through pivotal movement about the hinges, when the latches L and L' are opened. The beam B and frame F are each conveniently formed by die casting, as of a suitable light weight metal, such as an aluminum or magnesium alloy.

The shells S and S' have convex walls, and also have upper and lower edges, respectively, which are similar in contour, but as indicated above, lower shell S is considerably deeper than upper shell S'. Thus, as in FIG. 3, shell S' has a convex front wall **12**, convex end walls **13** and a convex rear wall **14** which are joined by rounded corners, as shown. Shell S' also has a convex top wall **15** which, at its junction with the front, rear and end walls, as in FIG. 6, is provided with a circumferential, relatively flat, angular rim **16** and inwardly therefrom an arcuately concave groove **17** formed by an arcuately formed, inwardly extending corrugation **18**, as in FIG. 3, for strengthening the shell. The front wall **12** of shell S' is provided with a notch or cutout **19** which corresponds to the space occupied by the frame F, as well as holes **20** in the front wall **12** and rear wall **14** for attachment pins, described later. Shell S, as in FIG. 4, has a considerably deeper, convex front wall **21**, convex end walls **22** and a convex rear wall **23** which are joined by rounded corners, as shown. Shell S has a flat bottom **24** which is connected to the remaining walls by an angular rim **25** which is flat in a transverse plane, but otherwise follows the contour of the front, rear and end walls. Bottom **24** is further provided, at each corner, with downwardly sloping portion **26** connecting with a downwardly offset, conveniently triangular foot **27**, into which rim **25** extends, as in FIG. 5 Each foot **27** is provided with a hole in which a rivet **28** may be mounted, with a solid head on the underside of the foot, then headed over on the inside, as in FIG. 4. Rivets **28** will contact any surface on which the case is placed in upright position, as in FIGS. 1 and 2, while feet **27** and angular surfaces **25** and **26** will provide a resiliency to resist impact, in the event a heavy load is placed suddenly on top of the case. The front wall **21** of shell S is provided with a notch or cutout **19'**, corresponding to the space occupied by beam B, and with holes **20** in the front and rear walls for attachment pins.

The ends and rear of frame F, as in FIGS. 9 and 10, are formed with a head **30**, from which a wider flange **31** extends upwardly on the inside, and a thicker flange **32** on the outside, which extends in parallel relation to inner flange **31** to provide a groove into which the peripheral edge of the shell S' fits, as shown. A thinner flange **33**, also on the outside, extends downwardly or in the opposite direction from flange **32**, with the outer surfaces of flanges **32** and **33** being continuous and smooth or provided with any desired surface configuration, preferably of an attractive nature, since this outer surface is visible on the exterior of the case. Flange **33** is thinner to accommodate head **34** of beam B and, so as to overlap the same, is also slightly wider than head **34** and outside flange **35** of beam B, the latter of which, in conjunction with wider, inside flange **36**, provides a groove for receiving the peripheral edge of shell S, as also shown. Head **30** and flanges **31**, **32** and **33** of frame F and also head **34** and flanges **35** and **36** of beam B extend around onto the front of the case, as in FIG. 1, with frame F overlapping beam B in the same manner.

Each hinge H, as in FIG. 10, comprises an ear **38**, formed integrally with frame F and extending downwardly and rearwardly therefrom, and an ear **39**, formed integrally with beam B and extending rearwardly and slightly downwardly from outside flange **35** thereof. Ears **38** and **39** are connected by a hinge pin **40** which, as in FIG. 21, is provided with a reduced section **41** which is conveniently longitudinally knurled to engage a corresponding hole in ear **39**, which may be proportioned to provide a drive fit, for attachment of the hinge pin therein. The larger diameter section of pin **40** is received by a corresponding hole in ear **38**, for pivotal movement therein. As in FIG. 6, ears **39** are each on the inside, opposite the head of the corresponding hinge pin. The upper portion of ear **38** extends over ear **39**, while ear **38** is provided centrally with a narrow abutment **42**, also shown in FIG. 12 and which, as in FIG. 11, engages a narrow abutment **43** at the edge of ear **39**, shown also in FIGS. 16 and 17, to hold the case top in an upright position when raised. Flange **33** of frame F is also provided with a notch **44**, beneath each ear **38**, as in FIG. 13, to accommodate the corresponding ear **39**. Since hinge ears **38** extend rearwardly as well as downwardly from frame F, the top of the case need not be raised to a perpendicular position to be held open, but is disposed slightly forwardly of such a position, since all that is necessary for the abutments **42** and **43**, as in FIG. 11, to hold the top of the case upright, is for the center of gravity of the top of the case merely to be slightly rearwardly of the centerline of hinge pins **40**. This also reduces the stress on the hinges, when the case is maintained in open position.

Handle **10** and handle support **11** may be constructed in any suitable manner, the handle conveniently being formed of a suitable plastic molded about a reinforcing rod (not shown) whose ends extend inwardly from the lower ends of the handle and are pivotal in angle clips, a portion of the lower leg **45** of one of which is shown in FIG. 12. Each clip is received in the handle support and is attached by a screw **46**, which extends into an integral block **47** to clamp the handle support block against the lower leg of each clip, which has a hole engaged by the lower end of block **47**. Screws **46** extend through top wall **15** of shell S', reinforced at each screw by a washer **48**, and also clamp peripheral flange **49** of the handle support against the top surface of the shell. Handle support **11**, which is conveniently die cast, is hollow on the inside at appropriate positions, to reduce the amount of metal used, in a conventional manner.

The front, rear and ends of frame F are bowed outwardly, as in FIG. 14, to correspond to the contour of the upper edges of shell S', while a front portion **50** of frame F is offset upwardly, as in FIG. 15, with an upwardly extending leg **51** at each side thereof. Outside flange **32** and also inside flange **31** continue upwardly along each leg **51** and across offset portion **50**, as in FIGS. 14 and 15, providing a groove for receiving the lower edge of shell S', along notch **19**. The underside of offset portion **50** is flat, as in FIGS. 7 and 8, to provide one side for each latch recess **52** of beam B, but provided at the center with a U-shaped groove **53**, shown in dotted lines in FIG. 14, for a purpose described later. At spaced positions on offset portion **50**, corresponding to the positions of latches L and L', inside flange **31** is provided with upwardly extending tabs **54**, each having a pair of rivet holes **55**, for attachment by rivets **56**, as in FIG. 7, of the upper

ends of a pair of complementary, offset hooks **57**, the lower offset portion of each of which is provided with a notch adapted to engage an appropriate part of the latch L or L'. The central portion of each hook **57** is received in a slot **58** in the underside of offset portion **50**, which notch extends through a rearwardly extending flange **59**, which in turn provides a notch or shoulder for a purpose described below. The inside flange **31** is provided at spaced positions with upwardly extending tabs or ears **60** having holes **61** for rivets whose heads are disposed between the shell S' and the respective ears **60** and extend inwardly into the case, for heading over onto the lining, to attach the same in position, while inside flange **31** may also be provided with a series of holes **62**, at the front as in FIG. 13, and at the rear as in FIG. 15, for shell attachment pins, described later.

The beam B, as in FIGS. 7, 8, 16 and 18, is provided at the front with a lower, outside flange **65** having upwardly extending, end extensions **66**, flange **65** and extensions **66** being thicker than flange **35** but similarly disposed in generally parallel relation to inside flange **36**, to form therebetween a slot for receiving the upper edge of shell S, as shown in FIGS. 7 and 8. The upper edge of each end extension **66** forms a shoulder against which the lower edge of flange **32** of frame F, just below each leg **51**, may abut or approach closely when the case is closed. As will be evident from FIG. 1, the line of this abutment, indicated at **67**, and the line at the top of the center post **68** of beam B, are the only portions of the parting line between the case sections which are clearly evident when the case is closed, since the remainder of the parting line is hidden by the overlap of flange **33** of frame F on beam B and by the interfitting of frame F and beam B along the upper edges of the latch recesses **52**. The front surface of center post **68** and the front surface of flange **65** are conveniently smooth to provide a pleasing appearance. The recesses **52**, for receiving the respective latches L and L', are formed by inwardly offset walls **69** on opposite sides of center post **68**, while the surface of the outer end **70** of each recess preferably slants outwardly, as in FIG. 18, to facilitate access to a lift lever **71** of the respective latch, shown in FIGS. 1 and 7. The upper edge of the rear wall **72** of each recess **52**, as in FIGS. 7 and 8, engages the notch or shoulder formed by flange **59** of frame F, while the edge of rear wall **72**, as in FIG. 18, extends as a flange **73** along the top of the thickened outer end **70** of each recess. Each rear wall **72** of each recess, as in FIG. 16, is conveniently provided with a notch **74** to accommodate the central portion of the corresponding hook **57**. Center post **68** is conveniently hollow on the inside, as in FIG. 18, while the upper end thereof is provided with an upstanding, U-shaped flange **75** adapted to interfit with groove **53** in the underside of frame F, the latter being shown in dotted lines in FIG. 14, as indicated previously. The rear wall **72** of each latch recess is provided with a series of holes **76** for receiving rivets or screws for attachment of latches L and L', while inside flange **36** of beam B is provided with a series of spaced, depending tabs **60'** having holes **61** therein, for the same purpose as tab **60** and holes **61** of frame F. Also, flange **36** is provided with spaced holes for attachment pins corresponding to holes **62** of frame F and corresponding in posiion to holes **20** in shell S.

Shells S and S' may be attached to the beam B and frame F, respectively, in any suitable manner, such as by staking prongs into the respective shells, or by a series of spaced pins **77**, as in FIG. 8, which are inserted in holes **62** provided for that purpose in the inside flange **31** of frame F and driven through holes **20** in the respective shell and into the opposite flange **35** or **65** and **32**, respectively. Pins **77** may be fluted, so as to be self tapping. The shell S, along its upper edge, as at **78** in FIG. 20, and the lower edge of shell S' as at **79** in FIG. 19, may be reduced in thickness to fit more readily into the grooves provided in beam B and frame F, respectively.

As will be evident, when the two halves of the luggage case are closed, the hooks **57** will not only interlock with the respective latches L and L', but the beam B and frame F will interfit, the underside of the offset portion **50** of frame F forming the opposite side of each of the recesses for the latches, as in FIGS. 7 and 8, while the lower edge of extension **80** of flange **32** of the frame F will abut against each shoulder formed by the upper edge of the corresponding end extension flange **66** of the beam B, is in FIG. 8, and will also overlap the outer end of each latch recess **52**. As indicated above, upstanding U-shaped flange **75**, at the center of beam B, will engage slot **53** of the frame F, while the upper edge of each rear wall **72** of the latch recesses will engage a shoulder formed by flange **59** of the frame F. Thus, the beam and the frame will be interlocked together. In addition, the frame F will overlap the beam B, along the ends and rear and a portion of the front adjacent each end, to provide a rigid framework which is resistant to distortion in any direction, with the case closed, and which is strengthened by the load bearing member, beam B. The attachment of the shell S to the beam B and the similar attachment of shell S' to frame F also contribute to the stability of the case construction.

Each latch L and L' may be constructed as in U.S. Patent No. 3,034,327, as indicated, or may include, as indicated generally in FIG. 7, a longitudinally movable slide **82** having a flange **83** adapted to engage a notch of the corresponding hook **57** and connected to lift lever **71** by a generally rectangular link (not shown) formed of rod or the like. Lift lever **71** may be channel shaped and pivoted at one end on a base **84**, in which slide **82** is held by a plate **85**. One side of the lift lever is provided with a notch **86** to accommodate hook **57**, while a leaf spring (not shown) may engage slide **82** to urge the slide toward an open position. Lift lever **71** is also provided with a key operated lock **87**, as in FIG. 1, for locking the lift lever in closed position through engagement with a portion of base **84**. When the case is to be opened, each lift lever **71** is raised, moving each slide **82** longitudinally toward the adjacent end of the luggage case, so that each flange **83** will clear the corresponding hook **57**. Then, the case may be opened through pivotal movement about hinges H. When the case is closed, each hook **57** will enter the corresponding latch space, whereupon each lift lever **71** may be pushed down, so that each flange **83** will engage a notch in the corresponding hook **57**. Preferably in closing, the lift lever is overthrown past a neutral position, so that the pressure of the spring (not shown) will maintain the latch closed. As will be evident, the position of the latches in the recesses of the beam will prevent an object moving along or across the top of the luggage case from accidentally opening the latch. Thus, an outward force on the underside of the free end of the lift lever is necessary to open either latch.

In the alternative embodiment shown in FIGS. 22–33, a beam B' overlaps a frame F' of FIGS. 28–30, so that the parting line, when the case is closed, will be hidden around the periphery of the luggage case by the beam. In this embodiment, shells S and S' are constructed in the same manner as before and hence need not be further described, other than to note that corresponding parts of shells S and S' have the same reference numerals in FIGS. 22–24 as in FIGS. 1–6. Thus, the principal difference between the two embodiments is in the construction of the beam and the frame. As before, beam B' and frame F' are each conveniently formed by die casting, as of a suitable light weight metal, such as an aluminum or magnesium alloy.

As in FIGS. 29 and 30, the front frame F' is provided with an upwardly offset portion **89** to accommodate the front portion of beam B', while as in FIGS. 25–27, the front, ends and rear of frame F' are formed with a head **90**, from which a wider flange **91** extends upwardly, on the inside, and a narrower flange **92** extends upwardly, on the outside, in parallel relationship to inner flange **91**

to provide a groove into which the peripheral edge of shell S' fits, as shown. At each side of the front, as in FIG. 33, and along the ends and rear, as in FIGS. 26 and 27, beam B' is formed with a head **93**, adapted to abut head **90** of frame F' when the case sections are in closed position, as shown, and is provided with a wider flange **94**, extending downwardly, together with a thicker flange **95**, also extending downwardly, and in spaced, parallel relationship to wider flange **94** to provide a groove for receiving the upper edge of shell S. A thinner flange **96**, on the outside, extends upwardly from head **93** or in the opposite direction from flange **95** and is adapted to overlap flange **92** of frame F'. The beam B' also overlaps the frame F' at the front of the case in a similar manner, which will be described below. Thus, the beam B' completely conceals frame F' when the case sections are closed, so that no parting line is visible.

Each hinge H', as in FIG. 27, comprises an ear **97**, formed integrally with frame F' and extending upwardly and rearwardly from outside flange **92** thereof, and an ear **98**, formed integrally with beam B' and extending rearwardly and upwardly from outside flanges **95** and **96** thereof. Ears **97** and **98** are connected by a hinge pin **99**, which may be similar to hinge pin **40** of FIG. 21, being provided with a reduced section which is conveniently longitudinally knurled to engage a corresponding hole in ear **97**, which may be proportioned to provide a drive fit, for attachment of the hinge pin therein. The larger diameter section of the hinge pin is received in a corresponding hole in the ear **98**, for pivotal movement therein. As in FIG. 24, ears **97** are each on the inside, opposite the head of the corresponding hinge pin. The upper portion of ear **98** extends over ear **97** to provide an abutment **100**, as in FIG. 31, which is adapted to engage ear **97** to hold the case top in an upright position when raised to an open position. As before, the top of the case need not be raised to a perpendicular position to be held open, but is disposed slightly forwardly of such a position, since all that is necessary, to hold the top of the case upright, is for the center of gravity of the top of the case merely to be slightly rearwardly of the centerline of hinge pins **99**.

The front, rear and ends of frame F' are bowed outwardly, as in FIG. 28, to correspond to the contour of the upper edges of shell S', while an upwardly extending leg **101**, as in FIG. 29, connects the upwardly offset front portion **89** of frame F'. Outside flange **92** and also inside flange **91** continue upwardly along each leg **101** and across offset portion **89**, providing a groove, as in FIG. 28, for receiving the lower edge of shell S' along notch **19** of FIG. 3. Conveniently, the shell is held in position in the groove by means of a suitable adhesive and a plurality of clips spaced along the edge of the shell and constructed in accordance with the invention disclosed in the application of Willard G. Axtell, Serial No. 266,699, filed March 20, 1963, now U.S. Patent No. 3,207,275 of September 21, 1965. Alternatively, the shell may be fastened to frame F' by means of pins which extend through holes, similar to holes **62** in flange **31** of FIG. 8. At spaced positions on upwardly offset portion **89**, corresponding to the positions of latches L and L', inside flange **91** is provided with upwardly extending tabs **102**, each having a pair of rivet holes **103**, for attachment by rivets **104**, as in FIG. 25, of the upper ends of a pair of complementary hooks **105**, the lower portion of each of which is provided with a notch adapted to engage an appropriate part of latches L and L'.

The beam B', as in FIGS. 22 and 25, is provided at the front with a central post **110** which connects a downwardly offset, front depending flange **111** and an upwardly offset, upwardly extending flange **112**, with the former being connected at each end to flange **95** by an integral flange portion **111'** and the latter at each end with flange **96** by an integral flange portion **112'**, as in FIGS. 22 and 23. A depending inside flange **94'**, as in FIG. 25 and similar to flange **94**, extends in parallel relation to lower outside flange **111**, across the lower portion of the front of the beam, to provide a groove for receiving the upper edge of shell S along notch **19'** of FIG. 4. At each side of center post **110**, beam B' provides recesses **113** for the respective latches L and L', such recesses having a bottom wall **114**, a rear wall **115**, having an outwardly curving end **116**, as in FIG. 31, and a top wall **117**, having a slot **118** through which hook **105** extends. The walls of the recesses are conveniently formed integrally with each other and with center post **110** and flanges **111**, **111'**, **112** and **112'**. Upwardly extending flange **112**, when the case sections are in the closed position, overlaps flange **92** of frame F', so that, as will be evident from FIG. 22, there is no parting line which shows because frame F' is hidden by upper flanges **112**, flange portion **112'** and upper flange **96** of beam B'. Thus, beam B' will overlap frame F' to provide a rigid framework which is resistant to distortion in any direction, when the case is closed, and which is strengthened by the load bearing member, beam B'.

As in the previous embodiment, latches L and L' may be constructed as in U.S. Patent No. 3,034,327, as previously described in connection with FIG. 7. Or, to accommodate a straight hook **105** rather than an offset hook **57** of FIG. 7, each latch may be modified, as in the case of latch L'' of FIG. 25. Such a latch may include a longitudinally movable slide **120** having a flange **121** adapted to engage a notch of the corresponding hook **105** and connected to a lift lever **122** by a link (not shown). Lift lever **122** may be channel shaped, as shown, and pivoted at one end within latch recess **113** by means of a pin extending through holes **123**, shown in FIG. 31. On one side, the lift lever is provided with a notch **124** to accommodate hook **105**, while a leaf spring (not shown) may engage the slide to urge the slide toward an open position. The lift lever is also provided with a conventional, key operated lock **87**, as in FIG. 22, for locking the lift lever in closed position, the lock extending rearwardly from left lever **122** and having a tumbler adapted to engage a slot **125** in an inwardly extending lock receptacle **126**, as in FIG. 32, which is integral with the rear wall **115** of latch recess **113**. When the case is to be opened, each lift lever **122** is moved outwardly, thus moving each slide **120** longitudinally toward the adjacent end of the luggage case, so that each flange **121** will clear the corresponding hook **105**. Then the case lid may be opened through pivotal movement about rear hinges H'. When the case is closed, each hook **105** will enter the corresponding latch space, whereupon each lift lever **122** may be pushed inwardly, so that each flange **121** will engage a notch in the corresponding hook **105**. Preferably, the lift lever is arranged so as to be overthrown past a neutral position in closing, so that the pressure spring (not shown) will maintain the latch closed. As will be apparent, the position of the latches and the latch recesses in the beam prevent an object moving along or across the front of the luggage case from accidentally opening either latch. Thus, an outward force on the underside of the free end of the lift lever is necessary to open either latch.

From the foregoing, it will be evident that the objects and requirements of this invention have been fulfilled to a marked degree. Thus, a train or beauty case has been provided wherein the luggage case is light in weight but does not sacrifice resistance to wear and abuse. Furthermore, the luggage case is easy to open and close. The luggage case also will adequately resist deformation, not only by weight or other forces when the luggage case is in an upright position, but also when the luggage case is placed in other positions, and this is true even though the luggage case is of simple construction. Furthermore, in the first embodiment, the frame F overlaps beam B so that the only visible parting line is at the front of the case where the frame and beam meet. In the alternative embodiment of FIGS. 22–33, the beam overlaps the frame

so as to entirely conceal the frame so that no parting line whatsoever is visible.

As will be evident, the notch **19'** in the upper front edge of lower shell S may be deepened, so that the entire offset front portion of beam B or B' will be received in the notch and the upper edge of the front portion of the beam will be level with the ends and rear thereof. In such an instance, the frame F of the first embodiment will overlap the beam but the upwardly offset front portion of the frame may be dispensed with, with a resultant elimination of notch **19** of upper shell S'. However, such a variation will provide a less attractive appearance than the embodiments shown.

Although two embodiments of this invention have been illustrated and described, it will be understood that other embodiments may exist and various changes and other variations may be made, without departing from the spirit and scope of this invention.

What is claimed is:

1. A train or beauty case comprising:

upper and lower concave shells, each having a front wall, a rear wall, and end walls, said upper shell having a top wall and said lower shell having a bottom wall, the front wall of said lower shell having a notch extending downwardly therein and the front wall of said upper shell having a notch extending upwardly therein;

a beam extending around the edge of one of said shells and providing spaced recesses at the front of said luggage case and having at the front a portion offset both upwardly and downwardly and engaging the notch of one of said shells;

means attaching the edge of said one of said shells to said beam;

a frame adapted to interfit with said beam when said case is closed and having an offset portion engaging the notch of the other of said shells, said offset portion of said frame engaging the offset portion of said beam when said case is closed;

means attaching the edge of the other of said shells to said frame;

a handle for carrying said luggage case;

means attaching said handle at a central position to the top wall of said upper shell;

latch means mounted in each recess of said beam;

a catch for engagement with each of said latch means and mounted on said frame; and

hinge means pivoting said beam and frame together at the rear of said case.

2. A train or beauty case, as defined in claim **1**, wherein:

said beam and frame each have an inside and an outside flange forming a groove receiving the edges of the respective shells, said outside flange of one of said beam and frame being extended to overlap said outside flange of the other of said beam and frame when said case is closed.

3. A train or beauty case, as defined in claim **1**, wherein:

said lower shell is attached to said beam; and

said upper shell is attached to said frame.

4. A train or beauty case, as defined in claim **3**, wherein:

said outside flange of said beam overlaps said outside flange of said frame.

5. A train or beauty case, as defined in claim **3**, wherein:

said beam is provided with downwardly extending, inside and outside flanges forming a groove for receiving the upper edge of said lower shell, said outside flange being offset downwardly at the front of said case and having upwardly extending end extensions providing a shoulder at each upper edge thereof at the ends of said latch recesses, a front center post extending upwardly from said outside flange and forming the inner end wall of each latch recess, the rear surface of each latch recess adjacent the outer end curving outwardly, a generally U-shaped flange extending upwardly from the top of said center post, and a rear wall for each latch recess whose upper edge is disposed at the same elevation as the top of said U-shaped flange on said center post; and

said frame is provided with upwardly extending, inside and outside flanges forming a groove receiving the lower edge of said upper shell, said frame is also provided with a front offset having a lower edge adapted to abut the upper end of said center post and provided with a central, U-shaped groove interfitting with said U-shaped flange of said beam, each with said case closed, said offset having a rearwardly extending flange providing a shoulder engaged by the upper edge of said rear walls of said latch recesses, with said case closed, said frame is further provided with a depending flange adapted to overlap said beam around the ends and rear of said case when closed, said depending flange also overlapping said beam between said ends and the ends of said latch recesses, with said case closed, the lower edge of said depending flange abutting said shoulder at the upper ends of said end flange extensions of said beam with said case closed.

6. A train or beauty case, as defined in claim **3**, wherein:

said beam is provided with downwardly extending, inside and outside flanges forming a groove for receiving the upper edge of said lower shell, and an upwardly extending flange opposite to but narrower than said outside flange and having an outside surface contiguous therewith, said inside and outside flanges being offset downwardly and said narrow flange being offset upwardly at the front of said case to form said latch recess, and a center post extending between said upper and lower offsets and forming the inner end wall of each said latch recess, the rear surface of each said latch recess adjacent the outer end curving outwardly; and

said frame is provided with upwardly extending, inside and outside flanges forming a groove receiving the lower edge of said upper shell, said frame being offset upwardly at the front of said case corresponding to said upward offset of said beam, said frame being adapted to abut said beam so that the outside flange of said frame is concealed by said upwardly extending flange of said beam when said case is closed.

7. A train or beauty case, as defined in claim **6**, wherein said hinge means comprises:

a pair of spaced hinge members integral with said beam and extending rearwardly from the rear of said beam;

a pair of similarly spaced hinge members integral with said frame and extending rearwardly from the rear of said frame;

a hinge pin extending through one of said hinge members and an adjacent hinge member, said hinge pin being fixed to one of said hinge members and the other hinge member being pivotal about said pin; and

an abutment on at least one hinge member for limiting the pivotal movement of the upper half of said case.

8. A train or beauty case, as defined in claim **7**, wherein said hinge members extend rearwardly and upwardly from said respective beam and frame.

9. A train or beauty case, as defined in claim 6, wherein each said latch recess has a slot in the upper wall thereof, through which hooks mounted on said frame are adapted to extend into said latches when said case is closed.

10. A train or beauty case, as defined in claim **1**, wherein:

an outside flange of said frame overlaps an outside

flange of said beam at the ends and rear and a portion of the front of said case; and

said front offset portion of said frame provides a side wall for each said latch recess.

11. A train or beauty case, as defined in claim **1**, wherein said hinge means comprises:

a pair of spaced hinge members integral with said beam and extending rearwardly from the rear of said beam;

a pair of similarly spaced hinge members integral with said frame and extending rearwardly from the rear of said frame;

a hinge pin extending through one of said hinge members and an adjacent hinge member, said hinge pin being fixed to one of said hinge members and the other hinge member being pivotal about said pin; and

cooperating abutments on adjacent hinge members for limiting the pivotal movement of the upper half of said case.

12. A shell for a luggage case, comprising:

convex front, rear and end walls having an angularly disposed, inwardly extending rim around the lower edges thereof; and

a generally flat bottom wall connected to the lower edges of said rim and provided with a downwardly offset portion at each corner, said rim extending below said bottom wall to said downwardly offset portion at each corner.

13. A shell for a luggage case, as defined in claim **12**, wherein:

said downwardly offset portion at each corner of said bottom wall provides a generally triangular foot; and

each said foot is provided with a member having a head on the underside of said foot for engaging a surface on which said shell is placed.

14. A luggage case of the train or beauty case type, including upper and lower shells, each of which has end walls and side walls, with said upper shell having a top wall and said lower shell having a bottom wall, said shells having opposed edges attached to interfitting edge means, with hinges pivotally connecting said edge means together at the rear and latches detachably connecting said edge means together at the front, said luggage case having a handle mounted on said top wall, the improvement wherein:

a first edge means extends around and is attached to the edge of one of said shells and includes a beam section disposed at the front thereof but spaced from said end walls and having a greater depth than the remainder of said first edge means, said beam section having spaced recesses therein for receiving said latches and the narrower remainder of said first edge means extends around each of the corners of said shell between said front wall and said end walls;

a second edge means extends around and is attached to the edge of the other of said shells, said second edge means having a depth corresponding to that of said remainder of said first edge means; and

the front wall of at least one of said shells has a notch to accommodate said beam section.

15. A luggage case as defined in claim **14**, wherein:

the opposite, upper and lower edges of said beam section and the portion of said second edge means opposite said beam section are disposed laterally from the longitudinal parting line of said case determined by the remainder of said first and second edge means; and

a lateral cutout in the front wall of the corresponding shell, spaced from each end wall, will fit an edge of said beam section and an edge of the aforesaid portion of said second edge means, respectively.

References Cited by the Examiner

UNITED STATES PATENTS

163,747	5/1875	Cummings	220—70 X
298,146	5/1884	Wilson	190—28
711,881	10/1902	Rubens	190—18
1,682,057	8/1928	Wheary	190—28
1,705,150	3/1929	Brady	190—18
1,957,639	5/1934	Goodwin	220—72
2,025,101	12/1935	Halpin.	
2,312,637	3/1943	Fulenwider et al.	220—72 X
2,822,900	2/1958	Kivett	190—53
2,832,448	4/1958	Axtell	190—49
2,912,080	11/1959	Ikelheimer	190—53
2,950,793	8/1960	Axtell	190—49
3,029,915	4/1962	Axtell	190—49
3,034,327	5/1962	Garmon et al.	70—70
3,112,018	11/1963	Gehrie	190—28
3,198,299	8/1965	Axtell et al.	190—49 X

FOREIGN PATENTS

127,408	9/1928	Switzerland.

FRANKLIN T. GARRETT, *Primary Examiner.*

JOSEPH R. LECLAIR, *Examiner.*

M. L. MINSK, *Assistant Examiner.*