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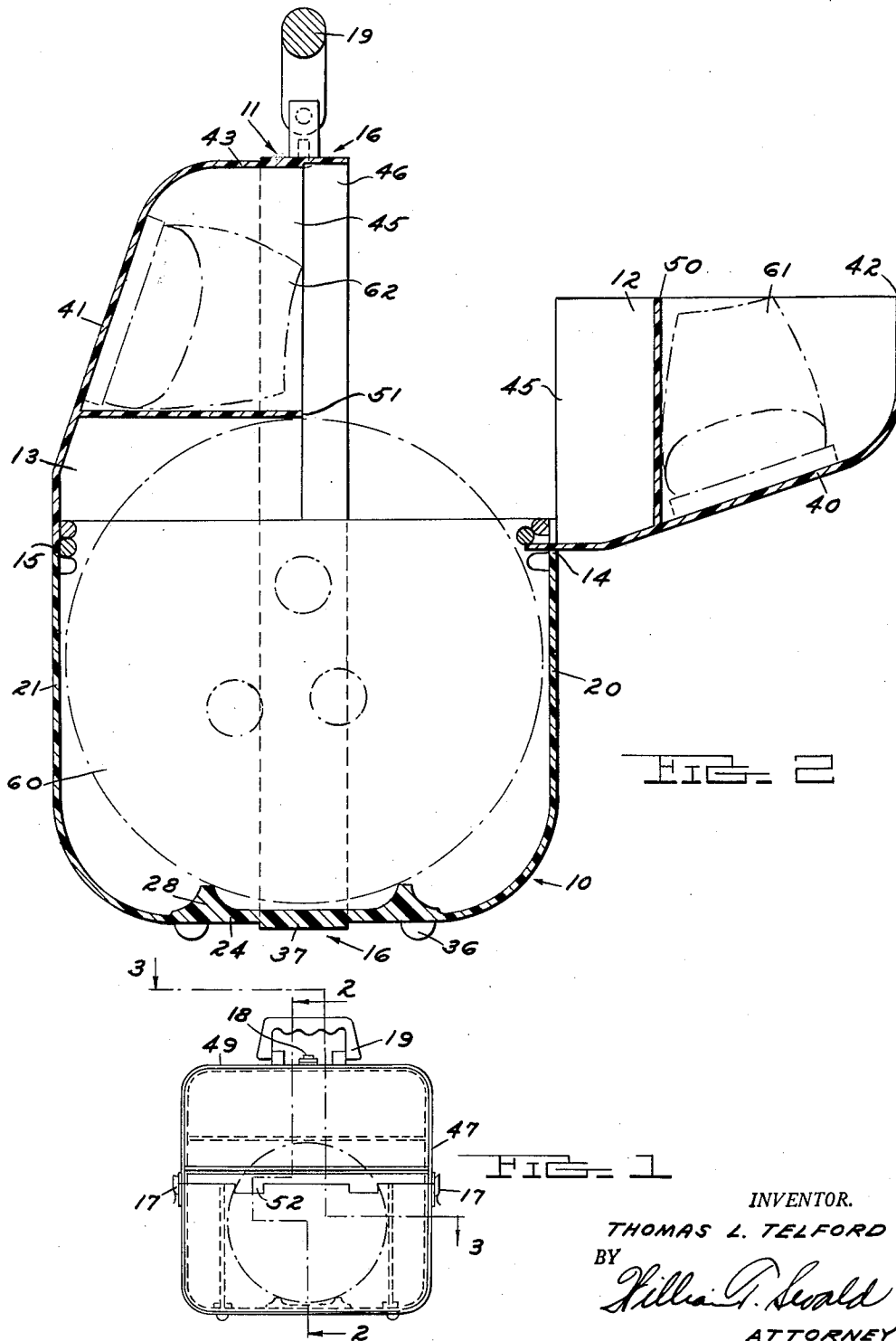
T. L. TELFORD

3,029,855

BOWLER'S BALL AND SHOE CASE

Filed May 9, 1960

2 Sheets-Sheet 1



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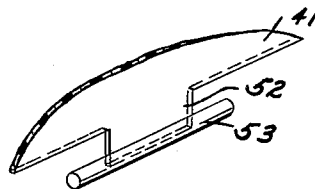
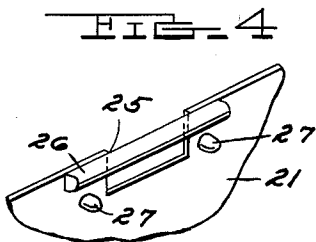
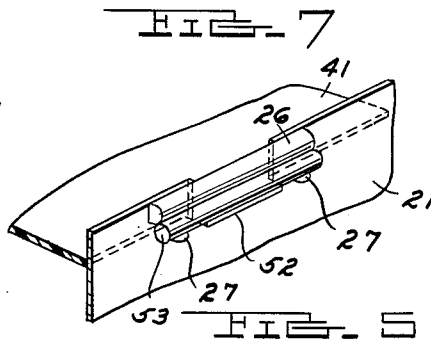
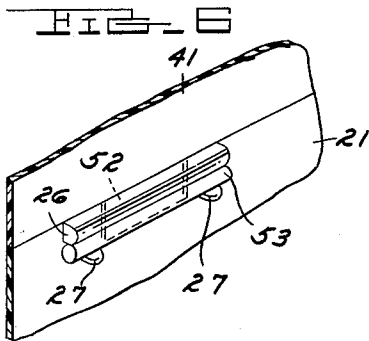
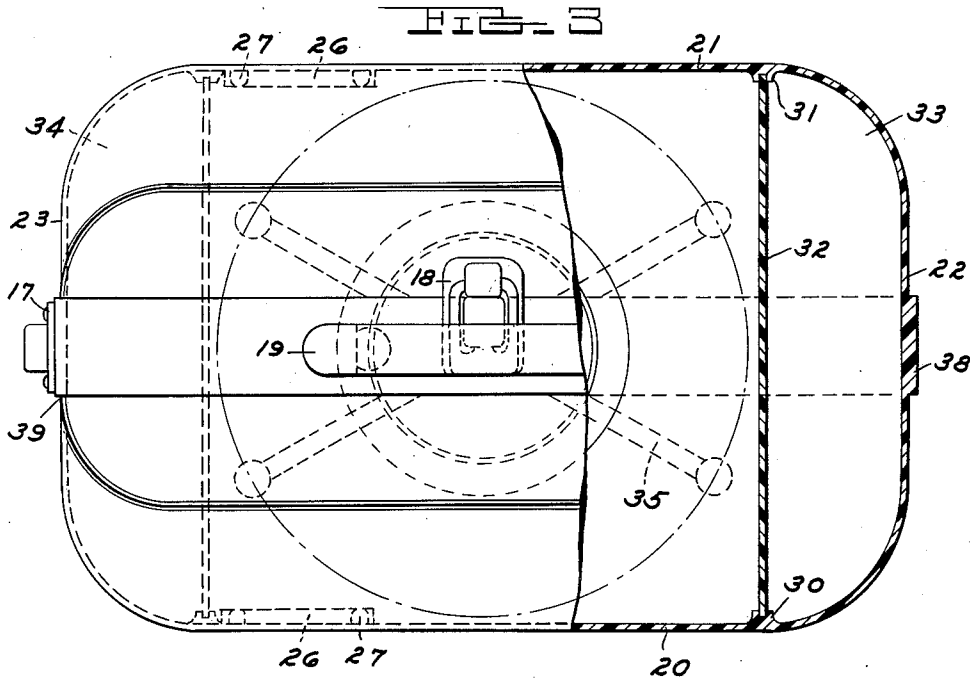
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## BOWLER'S BALL AND SHOE CASE

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8 Claims. (Cl. 150—52)

This invention relates to carrying cases and more particularly pertains to a bowling ball, shoes, and equipment carrying case.

Bowling ball and equipment carrying cases have been employed heretofore to facilitate transportation to and from the bowling alley, however, the several devices of the prior art have not proven entirely satisfactory inasmuch as they are inadequate to support the concentrated weight of the ball without distortion, difficult to handle in inserting and extracting the ball, shoes and equipment, and inadequate to prevent the ball from crushing the shoes and other equipment.

With the foregoing in view, the primary object of the invention is to provide a carrying case which is simple in design and construction, inexpensive to manufacture, easy to use, and capable of supporting the concentrated weight of the bowling ball without transferring load stresses in a crushing manner to other equipment in the case, which is easy to handle in inserting and extracting the ball, shoes, and equipment, and which is capable of preventing the ball from crushing the shoes and other equipment.

An object of the invention is to provide a one piece bottom pan portion surmounted by a split dome portion hingedly connected thereto.

An object of the invention is to provide a carrying case so integrated that the split dome portion folds side-wise outwardly clear of the bottom ball containing pan portion so that both the bottom and top of the case is completely open for use.

An object of the invention is to provide a split reinforcing band around the bottom pan portion and around the split dome portion inter-connected by toggle clamps so as to weight-wise support the ball between the handle connected to the reinforcing band at the top of the dome and the ball socket molded in the bottom of the pan portion over the reinforcing band.

An object of the invention is to provide a reinforcing band in the split dome portion molded integral with one half thereof and in over-lapping relationship to the other half thereof.

An object of the invention is to provide latch means between the dome halves for holding same together in closed condition.

An object of the invention is to provide a hinge connection between the split dome half sides and the sides of the pan portion for opening and closing the split dome halves relative to the pan portion.

An object of the invention is to provide novel hinge construction between the pan sides and the dome half sides wherein the dome half sides have at least one projecting tab portion in a notch provided in the pan side portion inter-connected thereto in hinged relationship by a bar across the notch on the pan side portions and a pin across the tab on the dome half portions.

An object of the invention is to provide a cam member on the pan sides adjacent the tab pin for camming the pin into proper relationship so as to position the tabs in parallel with the pan side walls automatically when the dome half halves are moved to the closed position.

An object of the invention is to provide an integrally molded pan portion and integrally molded dome half portions.

An object of the invention is to provide integrally molded shelf portions in the dome half portions which

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meet edge-to-edge when the case is closed and which provide open top pockets when the case is open.

These and other objects of the invention will become apparent by reference to the following description of a carrying case particularly suitable for carrying bowling equipment embodying the invention taken in connection with the accompanying drawings in which:

FIG. 1 is a side elevational view of the inventive case showing the internal construction in dotted lines.

FIG. 2 is an enlarged cross-sectional view of the device seen in FIG. 1 taken on the line 2—2 thereof showing one dome half portion in the open position.

FIG. 3 is an enlarged cross-sectional view of the device seen in FIG. 1 taken on the line 3—3 thereof.

FIG. 4 is a fragmentary view of the pan side wall hinge notch, bar and cams.

FIG. 5 is a fragmentary view of the dome half hinge tab and bar.

FIG. 6 is a fragmentary view combining the showings of FIGS. 4 and 5 showing the elements in hinged relationship in the closed position; and

FIG. 7 is a view similar to FIG. 6 showing the hinged elements in the open position.

Referring now to the drawings wherein like numerals refer to like and corresponding parts throughout the several views, the carrying case disclosed therein to illustrate the invention comprises an open top pan portion 10 surmounted by a split dome portion 11 composed of two halves 12 and 13 hingedly connected as at 14 and 15 to the pan portion 10; a split reinforcing band 16 surrounds the pan portion 10 and the split dome 11 and the split reinforcing band 16 is inter-connected at the ends of the case by the toggle clamps 17 with the latch 18 holding the dome halves together in the closed position, the handle 19 is connected to the reinforcing band 16 in the dome 11 area so that the weight of a bowling ball contained in the pan portion 10 is mainly transferred to the handle via the toggle clamp inter-connected split reinforcing band 16.

More particularly, the bottom pan portion 10 includes opposite side walls 20 and 21, opposite end walls 22 and 23, and a bottom wall 24; the side walls 20 and 21, FIGS. 2, 3 and 4, are provided with a notch or notches 25 across which the bar 26 is heat sealed or welded to the pan side wall and the cams 27 are located on either side of the slot 25 below the bar 26 in spaced relationship thereto for receiving a pin therebetween as hereinafter more fully described. The ball socket 28 is on the bottom wall 24 and the oppositely disposed mating slide grooves 30 and 31, FIG. 3, are molded in the side walls 20 and 21 and adapted to receive the partition 32 therein in spanning relationship between the walls creating the equipment pockets 33 and 34 at either end of the case outside the ball area. Reinforcing ridges 35 are molded on the pan bottom 24 and terminate in hemispherical feet 36 for supporting the case on a floor and the split reinforcing band 16 in the area of the pan 10 comprises a U-shaped portion having a web area lengthwise disposed across the bottom 24 and upstanding arm portions 38 and 39 leading to the top of the pan 10 to which one half of the toggle clamps 17 are connected.

The split dome portions 11 comprises two half portions, each of which comprise a side wall 40 and 41 respectively, top walls 42 and 43 respectively, and paired oppositely disposed half end walls 45. The split reinforcing band 16 in the area of the split dome 11 is attached to one of the split dome halves, such as the half 13 with an extending flange portion 46 for over-lapping the mating dome half 12 in the closed position and the other half of the toggle clamps 17 is attached to the depending leg portions 47 and 48 of the inverted U-shaped reinforcing band in

the dome 11 area with the web portion 49 of the reinforcing band 16 spanning the dome top and connected to the handle 19.

Each dome half 12 and 13 is provided with a shelf member 50 and 51 respectively which interconnects the dome side and end walls adjacent the bottom thereof providing reinforcement therefor and also providing a shelf for locating the bowling shoes thereon and which, when the dome portion is open provides an open-top closed-side pocket for receiving a shoe. Each dome side wall 40 and 41 is provided with extending or projecting tabs 52 which fit in the slots 25 of the pan side walls 20 and 21 in parallel relationship in the closed position and each tab 52 has a pin 53 heat sealed or welded to the bottom end thereof and disposed in the space between the bar 26 and cams 27 on the pan side wall. In the closed position of the hinge, FIG. 6, any lifting tension placed on the dome half side wall 41 is transferred to the pan side wall 21 via the pin 53 on the tab 52 and the bar 26 on the pan side wall 21. It is to be noted also that the bar 26 sidewise abuts the tab 52 and that the pin 53 sidewise abuts the side wall 21 holding the dome half side wall 41 in parallel abutting relationship to the pan side wall 21.

In the open position of the hinge, FIG. 7, side wall 41 lies at 90° to the side wall 21 with the tab 52 lying on the horizontal edge of the slot 25 and with the pin 53 engaging the bar 26 to prevent further angular movement of the dome half in a downward direction holding same in the position seen at the right of FIG. 2.

In closing a top dome half from the position seen at the right of FIG. 2 to the position seen at the top left of FIG. 2, the user manually swings the dome half upwardly whereupon the cams 27 engage the ends of the pin 53 camming same upwardly in proper relationship between the cams 27 and the bar 26 until the bar 26 abuts the dome tab 52 and the pin 53 abuts the pan side wall 21 holding same in abutting and parallel relationship as hereinbefore described.

In opening the device from the closed position seen in FIG. 1 the user unlatches the latch 18 and then disconnects the toggle clamps 17 whereupon the split dome halves are free to be moved to the open position seen at the right of FIG. 2. This completely opens the bowling shoe compartments of the dome halves, the other equipment compartments at either end of the pan portion, and at the ball area of the pan.

In other words, by opening the split dome at the top, the entire case is open for the inspection and use of the bowler.

In closing the case, the user places the bowling ball 60 on the socket 28, places his gloves, cigarettes, etc., in the compartments 33 and 34 in the pan 10, and places his shoes 61 and 62 in the dome half compartments and then swings the dome halves to the top closed position as hereinbefore described, connects the latch 18, and then connects the toggle clamps 17 whereupon the split reinforcing band 16 is inter-connected at its separation between the pan 10 and dome 11 thereby connecting the reinforcing band between the bottom of the pan 10 and the handle 19 so as to transfer the main load of the bowling ball via the reinforcing band 16 as inter-connected by the toggle clamps 17. However, the side walls of the case and dome also carry and distribute some of the weight load from the handle via the hinge connections 14 and 15 as hereinbefore described.

It is to be particularly noted that the pan 10 and its component parts such as the reinforcing band 16, reinforcing ribs 35, feet 36 and socket 28 are integrally molded in one piece with the bar 26 being heat sealed or welded across the top of the slots 25 and that each dome 11 half is integrally molded having a one piece construction embodying the side, end, and top walls as well as the shelves 50 and 51 and it is to be observed that the reinforcing ring 16 in the dome half area is molded integral with one half and provided with a flange extension

to over-lap the other half of the dome. Also the tabs are integrally molded with the dome half portions and the bar 53 heat sealed thereon or welded thereto.

The component parts of the carrying case have been designed and integrated for injection molding in one piece from synthetic resins such as delrin, nylon, or vinyl synthetic resins which are color-fast and of high tensile strength so that thin side walls can be employed in view of the reinforcing band thereby greatly reducing the weight of the case itself as the bowling equipment is usually sufficiently heavy for the ordinary person to carry.

The inventive case with the features described constitutes a compact, durable, and neat appearing carrying case easily operated to insert and extract the bowling equipment and creates a colorful and attractive appearance with a smooth exterior and the large radii used in inter-connecting the side, top, end, and bottom walls reduces the size appearance-wise without diminishing its internal carrying capacity.

Although but a single embodiment of the invention has been shown and described in detail, it is obvious that many changes may be made in the size, shape, detail, and arrangement of the various elements of the invention within the scope of the appended claims.

I claim:

1. A case suitable for carrying a relatively heavy load such as a bowling ball and equipment comprising a bottom pan having a bottom wall, opposite side walls, opposite end walls, and an open top; a U-shaped reinforcing band centrally longitudinally disposed below said pan bottom wall and leading upwardly centrally longitudinally outside said pan end walls; a bowling ball socket on said pan bottom wall inside said pan and over said band area; reinforcing ribs on said pan bottom wall leading outwardly from said pan band and socket area, and hemispherical feet on said pan bottom at the end of said ribs; said pan bottom, side, and end walls, said band, socket, ribs, and feet being integrally molded together as a one piece pan unit; said pan side walls having a top edge with at least one notch therein; a bar on said pan side wall across each said notch; at least one cam on said pan side wall adjacent each said notch; said notch, bar, and cam constituting a hinge portion on said pan side walls; a longitudinally split dome over said pan having two halves each having a dome side wall having tabs extending into said pan side wall notches, a pin on each said tab having extending ends lying between said pan side wall bar and cams constituting a dome side wall hinge portion pivotally interlocking said dome side walls to said pan side walls; split dome end walls on either dome side wall, a split dome top wall on either dome side and end walls; an inverted U-shaped reinforcing dome band disposed over the abutting edges of said split dome halves top and side walls in overlapping relationship to both and in continuous ring-like relationship to said pan reinforcing bands; said dome reinforcing band being attached to one said split dome half top and end walls; said dome halves being molded in integral one piece units; a latch disposed between said dome halves tops locking same together; toggle draw clamps disposed between the adjacent ends of said pan reinforcing band and said dome reinforcing band drawing and locking same together in a continuous ring around the case; and a handle on the web portion of said split dome reinforcing band; bowling ball weight on said socket being transferred to said handle mainly through said pan and dome reinforcing bands and toggle clamps and secondarily through said pan and dome hingedly connected sides; said split dome being hingewise operable relative to said pan by disconnecting said toggle clamps and pivoting said dome halves downwardly outwardly to a point outside the area of said pan to facilitate inserting and extracting a bowling ball and equipment.

2. A case suitable for carrying a relatively heavy load such as a bowling ball and bowling equipment comprising a bottom pan having a bottom wall, opposite side walls,

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opposite end walls, and an open top; a U-shaped reinforcing band centrally longitudinally disposed below said pan bottom wall and leading upwardly centrally longitudinally outside said pan end walls; a bowling ball socket on said pan bottom wall inside said pan and over said band area; reinforcing ribs on said pan bottom wall leading outwardly from said pan band and socket area, and hemispherical feet on said pan bottom at the end of said ribs; said pan bottom, side, and end walls, said band, socket, ribs, and feet being integrally molded together as a one piece pan unit; hinges on either pan side wall having one hinge portion connected to said pan side walls; a longitudinally split dome over said pan having two halves each having a dome side wall connected to the other half of said hinges pivotally interlocking said dome side walls to said pan side walls; split dome end walls on either dome side wall, a split dome top wall on either dome side and end walls; an inverted U-shaped reinforcing dome band disposed over the abutting edges of said split dome halves top and side walls in overlapping relationship to both and in continuous ring-like relationship to said pan reinforcing band; said dome reinforcing band being attached to one said split dome half top and end walls; said dome halves being molded in integral one piece units; a latch disposed between said dome halves top drawing and locking same together; toggle draw clamps disposed between the adjacent ends of said pan reinforcing band and said dome reinforcing band drawing and locking same together in a continuous ring around the case; and a handle on the web portion of said split dome reinforcing band; bowling ball weight on said socket being transferred to said handle mainly through said pan and dome reinforcing bands and toggle clamps and secondarily through said pan and dome hingedly connected sides; said split dome being hingewise operable relative to said pan by disconnecting said toggle clamps and pivoting said dome halves downwardly outwardly to a point outside the area of said pan to facilitate inserting and extracting a bowling ball and equipment.

3. A case suitable for carrying a relatively heavy load such as a bowling ball and bowling equipment comprising a bottom pan having a bottom wall, opposite side walls, opposite end walls, and an open top; a U-shaped reinforcing band centrally longitudinally disposed below said pan bottom wall and leading upwardly centrally longitudinally outside said pan end walls; hinges on either pan side wall having one hinge portion connected to said pan side walls; a longitudinally split dome over said pan having two halves each having a dome side wall connected to the other half of said hinges pivotally interlocking said dome side walls to said pan side walls; split dome end walls on either dome side wall, a split dome top wall on either dome side and end walls; an inverted U-shaped reinforcing dome band disposed over the abutting edges of said split dome halves top and side walls in overlapping relationship to both and in continuous ring-like relationship to said pan reinforcing band; said dome reinforcing band being attached to one said split dome half top and end walls; a latch disposed between said dome halves tops drawing and locking same together; toggle draw clamps disposed between the adjacent ends of said pan reinforcing band and said dome reinforcing band drawing and locking same together in a continuous ring around the case; and a handle on the web portion of said split dome reinforcing band; weight on said pan bottom wall being transferred to said handle mainly through said pan and dome reinforcing bands and toggle clamps and secondarily through said pan and dome hingedly connected sides; said split dome being hingewise operable relative to said pan by disconnecting said toggle clamps and pivoting said dome halves downwardly outwardly to a point outside the area of said pan.

4. A carrying case comprising an open-topped pan and a hingedly connected split dome top; said pan having integrally molded bottom, side, end walls, and a U-shaped

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reinforcing band with a web portion extending longitudinally on said pan bottom and leg portions extending up said pan end walls; said split dome having two halves each having integrally molded side, top, and end walls; one said dome half having an inverted U-shaped dome reinforcing band with a web portion, leg portions, and a side-wise extending flange over-lapping said other dome half; hinges disposed between said pan sides and said dome sides pivotally connecting each said dome half to said pan at either side thereof for outward swinging movement to uncover said pan open top; means latching said dome halves together, a handle on said dome reinforcing band web portion; said reinforcing bands being in endwise leg portion abutting relationship to each other; toggle clamps inter-connecting the leg ends of said reinforcing band together making one continuous supporting band around the case transferring load weight on said pan bottom to said handle; said case being opened by loosing said latch and toggle clamps and pivoting said dome halves via said hinges outwardly of said pan open top.

5. In a device as set forth in claim 4, each said dome half having a false bottom wall integrally molded with said dome half side and end walls strut-wise inter-connecting and reinforcing same and forming a shelf in said dome when said dome is closed and forming an open top pocket in each dome half when open.

6. In a device as set forth in claim 4, said hinges each comprising at least one notch in each said pan side wall at the top thereof, a bar across said pan side wall notch at the top thereof, a cam on said pan side wall at the bottom of said notch spaced from said bar; a tab on each said dome half side wall extending into said pan side wall notch, a pin lying between said pan bar and cam secured to said dome half tab; said bar and pin being in vertical abutting relationship when said dome is closed to inter-connect said dome half side walls with said pan side walls; said pin swinging out of vertical abutting relationship when said dome halves are pivotally swung outwardly with said tab moving from a parallel relationship with said notch to an angular relationship to said notch; said cams moving said pins into vertical abutting relationship when said dome halves are swung to the closed position over said pan with said tabs in parallel with said notches.

7. A carrying case comprising an open-topped pan and a hingedly connected split dome top; said pan having bottom, side, end walls, a U-shaped reinforcing band with a web portion extending longitudinally on said pan bottom and leg portions extending up said pan end walls; said split dome having two halves each having side, top, and end walls; one said dome half having an inverted U-shaped dome reinforcing band with a web portion, leg portions, and sidewise extending flange overlapping said other dome half, hinges disposed between said pan sides and said dome sides pivotally connecting each said dome half to said pan at either side thereof for outward swinging movement to uncover said pan open top; means latching said dome halves together, a handle on said dome reinforcing band web portion; said reinforcing bands being in endwise leg portion abutting relationship to each other; toggle clamps inter-connecting the leg ends of said reinforcing band together making one continuous supporting band around the case transferring load weight on said pan bottom to said handle; said case being opened by loosing said latch and toggle clamps and pivoting said dome halves via said hinges outwardly of said pan open top; each said dome half having a false bottom wall integrally molded with said dome half side and end walls strut-wise inter-connecting and reinforcing same and forming a shelf in said dome when said dome is closed and forming an open top pocket in each dome half when open; said hinges each comprising at least one notch in each said pan side wall at the top thereof, a bar across said pan side wall notch at the top thereof, a cam on said pan side wall at the bottom of said notch spaced from said bar; a tab on each said dome half side wall extending

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into said pan side wall notch, a pin lying between said pan bar and cam secured to said dome half tab; said bar and pin being in vertical abutting relationship when said dome is closed to interconnect said dome half side walls with said pan side walls; said pin swinging out of vertical abutting relationship when said dome halves are pivotally swung outwardly with said tab moving from a parallel relationship with said notch to an angular relationship to said notch; said cams moving said pins into vertical abutting relationship when said dome halves are swung to the closed position over said pan with said tabs in parallel with said notches. 10

8. A hinge particularly suitable for carrying cases comprising a first wall having a first abutting edge having a notch, a second wall in parallel with said first wall lying in the same plane having a second abutting edge abutting said first abutting edge and having a projecting tab lying in said notch; said notch and tab lying in the same plane with said walls; said walls having inner and outer sides; a bar on said first wall inner side overlying said notch adjacent said first abutting edge and abutting said tab, a cam on said first wall inner side below said notch, a pin on said tab inner side lying between said bar and said cam in abutting relationship to said bar and also abutting said first wall inner side in the closed position; said bar on said first wall and said pin on said second 15

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wall tab holding said walls in parallel relationship in the closed position; said second wall being movable out of parallel relative to said first wall by manually swinging said second wall and said tab in said notch to move said pin outwardly of said cam and bar to dispose said second wall and tab at an angle to said first wall; said second wall and tab being movable into parallel relationship with said first wall by reverse swinging movement of said first wall with said cam holding said pin and tab in free pivotal position; both side walls outer sides being plane and free of hinge projections.

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