

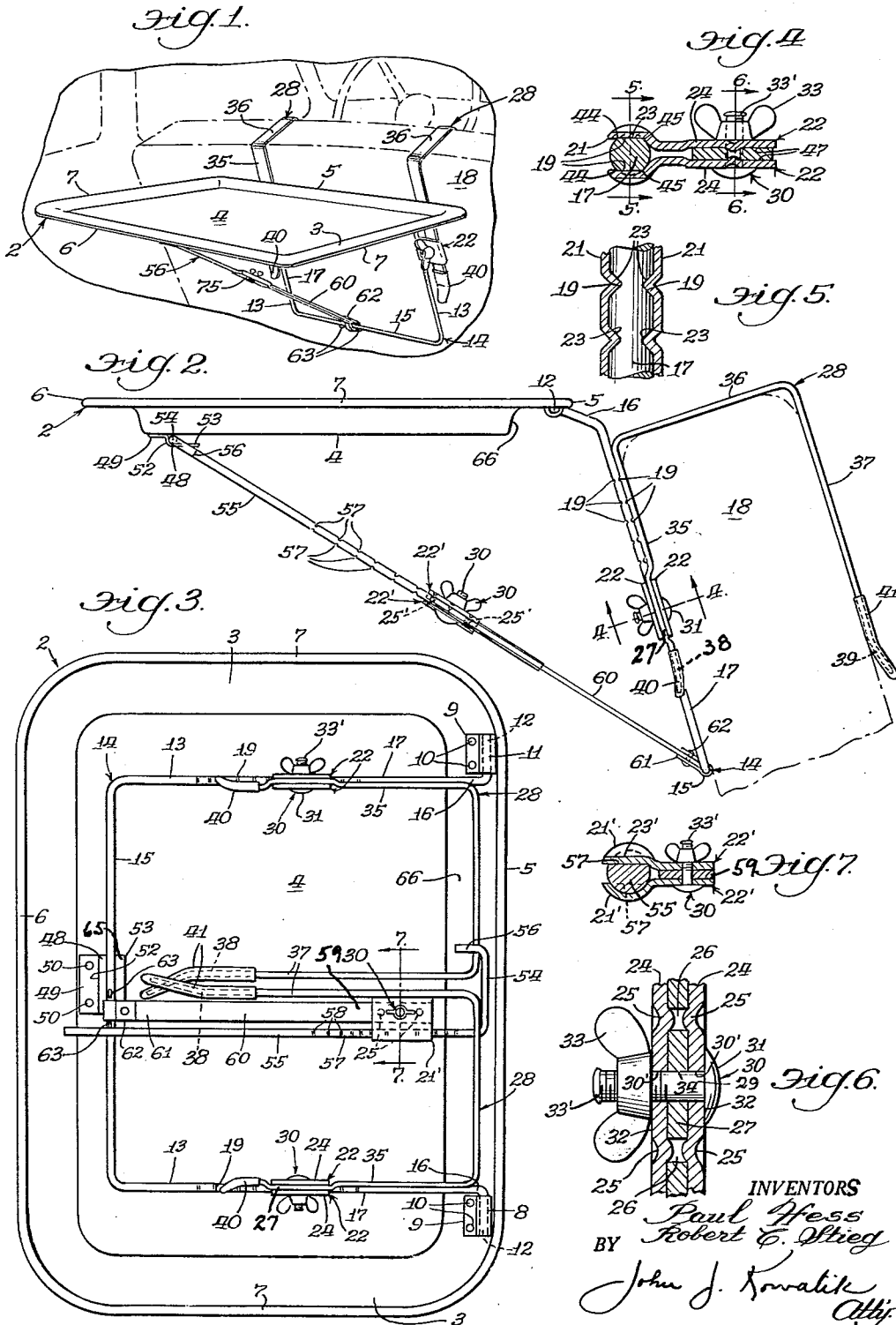
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ADJUSTABLE AND FOLDABLE TRAY

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1

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ADJUSTABLE AND FOLDABLE TRAY
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This invention relates to trays and more specifically is directed to a novel mounting therefor.

A general object of the invention is to provide a novel support structure for a tray which is easily adjustable and positively locked for properly supporting a tray.

A further object of the invention is to devise a support structure incorporating a novel stay rod assembly for adjusting the tilt of the tray, the assembly being releasably interlocked with the tray to accommodate folding.

A more specific object is to provide a support structure for the tray comprising a bail-type base part having a pair of upright legs hingedly connected to one edge of the tray and having a transverse bight providing a pivotal connection intermediate its ends to the lower end of a diagonal adjustable brace rod assembly which includes a hook shaped outer end including a portion paralleling the bight and insertable into a spring latch mounted on the tray adjacent to the opposite edge, the legs also serving as mounting for vertically adjustable hook members adapted to hook over a car seat or the like.

A still further object is to provide serrations on the legs of the base portion of the supporting structure which interlock with projections on clamps interlocking the hook members to the legs.

A further object is to provide a novel tray assembly which is readily collapsed for storage or packaging for shipping and which is as readily set up for use.

These and other objects of the invention will become more apparent from the specification and the drawings, wherein:

FIGURE 1 is a perspective view of the novel tray shown mounted on a back rest of a seat;

FIGURE 2 is an enlarged side elevational view of the tray with the back rest shown in section;

FIGURE 3 is a bottom view of the tray in folded position;

FIGURE 4 is an enlarged sectional view taken on line 4-4 of FIGURE 2;

FIGURE 5 is an enlarged sectional view on line 5-5 of FIGURE 4;

FIGURE 6 is an enlarged sectional view on line 6-6 of FIGURE 4;

FIGURE 7 is an enlarged cross-sectional view taken substantially on line 7-7 of FIGURE 3.

Describing the invention in detail, the tray generally indicated 2 comprises a rim portion 3 and a depressed or dished center part 4, the rim portion terminating in inner, outer and lateral rolled edges 5, 6, and 7, 7 respectively.

A pair of hinge members 8, 8 are fastened at their flanges 9 as by rivets 10 to the rim portion 3 and the semicylindrical portions 11 are directed toward edge 5 thereadjacent and embrace the undersides of the pintle portions 12, 12 at the upper ends of the legs 13, 13 of the bail-like base member 14, the legs 13 being interconnected at their lower ends by a bight or lower member 15.

It will be seen from FIGURE 2 that the upper ends 16 of the legs extend diagonally at an obtuse angle from the principal or remaining parts 17 of the legs so that the edge 5 is spaced outwardly from the back rest 18 to accommodate tilting movement of the tray as well as folding as seen in FIGURE 3.

2

The portion 17 of the legs are serrated at predetermined intervals at 19 and 19 at opposite sides and these portions 17 are embraced by the complementary concave halves or jaws 21, 21 of the opposed clamps 22, 22 which are provided with teeth 23 registering with respective notches 19, said clamps having opposing flanges 24 with a pair of inwardly directed stamped bosses 25 thereon adjacent the end thereof, each boss 25 entering a recess 26 on an intervening offset intermediate part 27 of a hook or hanger element 28 for holding the clamps in transverse alignment, the clamp flanges 24 further being provided with registering central openings 30' receiving a shank 29 of a bolt assembly 30, the head 31 of which bears against the exterior side 32 of one flange 24 while the wing nut 33 threaded on the end of the shank 29 remote from the head which engages the external side 32 of the other flange 24, the free end of the shank 27 being staked at 33' to prevent removal and loss of nut 32.

The shank 29 passes through opening 34 in part 27 of the support leg 35 of the U-shaped hanger 28 which has an upper bridge part or bight portion 36 which overlaps the back rest 18 and connects to the other or retaining leg 37, the support leg 35 and retaining leg 37 embraces the back rest therebetween. The lower or distal ends 38 and 39 of legs 35 and 37 respectively are turned outwardly and provided with protective plastic sleeves 40, 41 to prevent marring, scratching or injury to the fabric or surfaces of the back rest or other such support.

The parts 27 are located adjacent to the lower ends 38 of members 35 and are offset to accommodate the clamp flange 24 next adjacent the back rest and at the same time provide a positive lock for the clamps 22 against vertical movement on the lengths 35.

Furthermore, the arrangement is self-tightening in that upon loading the tray, if the bolt and nut assemblies 30 are loose, there is a turning movement developed about the legs 13 so that the clamps 22 cam the ends 44, 45 of the teeth 23 into the apices 46 of the notches 19. This tends to spread the clamps 22 against the head and nut of assembly 30 while the inner sides 47 of flanges 24 embrace the portion 27 therebetween.

The tray is provided substantially medially adjacent its outer edge 6 with a resilient latch 48 comprising a base portion 49 attached to the dish part 4 adjacent to the rim as by rivets 50, 50, the portion 49 being connected along its inner edge to a dependent flange 52 which in turn along its lower edge merges into an inwardly projecting latching lip 53 which underlies the adjacent portion of the part 4 and is angled thereto to snap behind a transverse bar portion 54 of the upper part 55 of a telescoping brace 56, the bar portion 54 providing a pivot generally parallel to the pintle pivots 12. The distal or free end of bar 54 has an inwardly turned end portion 56 and the proximal end of the bar 54 joints the outer end of the rod or upper part 55 which is provided with a series of opposed V-shaped notches 57, 57 located on the top and bottom edges of the rod portion 55 which enters between the jaws or halves 21', 21' of the opposed clamps 22', 22' of lock 75.

It will be understood that clamps 22', 22' are identical with clamps 22, 22, but for purposes of clarity the corresponding parts thereof are identified by the same reference numeral with the addition of a prime thereto and the teeth 23' thereof cam against the sides 58 of the V-shaped grooves which tend to separate the clamps 22' so they diverge upwardly, and below the bolt assembly 30' to embrace the upper end portion 59 of the lower brace part 60 which is preferably a flat bar fitting at its lower end 61 into a yoke 62 which embraces a medial portion of the bight 15, the yoke being

3

medially positioned by the flanking upset lugs 63, 63 on bight 15.

In order to position the tray with respect to the supporting structure the brace is adjusted longitudinally and locked.

A feature of the present invention resides in its collapsibility for compact storage and packaging for shipment. This position is shown in FIGURE 3 wherein the bail is laid against the underside of the tray, the brace having first been unlatched from the latch 48. The base bight portion 15 lays against the outer side 65 of the lip 53. The bolts 30 are loosened and the hook members thereafter are swung laterally and laid with their legs 37 against the underside of the tray and the bight 36 directed inwardly. It will be observed that the brace is foreshortened and the bar end 54 conveniently pockets into the depression 66 along the periphery of the dished center part 4.

It will be noted that if desired, the base portion 14 may be disassembled by withdrawing pintles 12 from the members 8. The portion 15 may be snapped under the lip 53 and the hook end portion 54 may be extended to overlap edge 6 and then turned and hooked over this edge and then rotated to draw the brace against the underside of the tray while the end portion 56 engages the normally top side of the rim. The pintles 12 may then be reinserted into the hinges 8. The members 28 are held in either folded position against the underside of the tray by tightening the bolts 30' after the hook are rotated to the folded position.

It will be understood that a desired form of the invention has been chosen for description and illustration and that various forms of the invention will become readily apparent to those skilled in the art within the scope of the appended claims.

We claim:

4

1. In a foldable tray mechanism having an unfolded supporting position and a folded stored position, the combination of a tray having front and rear edges, hinge means connected to the tray adjacent to said rear edge, a U-shaped base member having a pair of laterally spaced legs and a transverse interconnecting portion, pivot means on the legs operatively associated with respective hinge means whereby said base is swingable to selected angular relationships to the tray, and adjusting means operative between the base member and the front of the tray for holding the same in selected relationship, and said adjusting means comprising a pair of portions respectively pivotally connected to the base and to the tray adjacent to the front edge of the latter, said portion connected to the tray having a hook shaped end, said hook shaped end having such an extent as to engage the rear edge of the tray in folded position of the mechanism.

2. The invention according to claim 1 and latching means connecting the tray with said adjusting means in the supporting position and operative to engage said transverse portion of the base member in said folded position.

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