May 21, 1935. O. MITCHELL 2,002,328

SERVING TRAY

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FIG. 1.

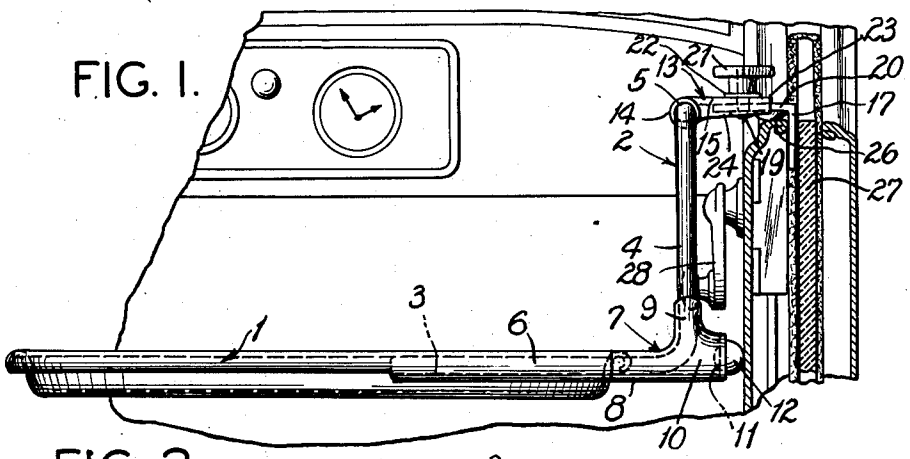


FIG. 2.

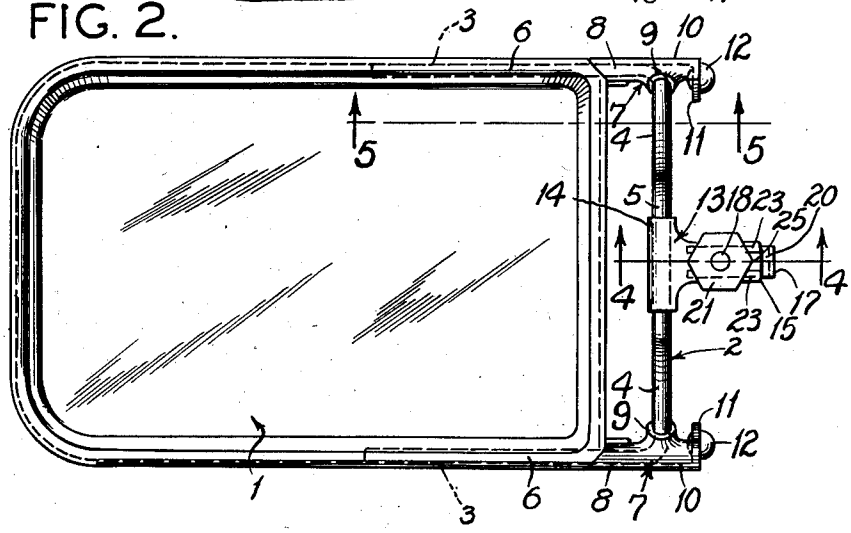


FIG. 3.

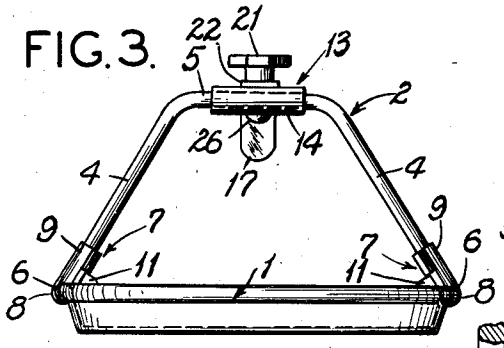


FIG. 4.

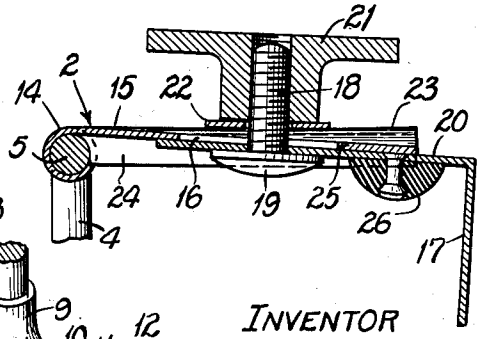
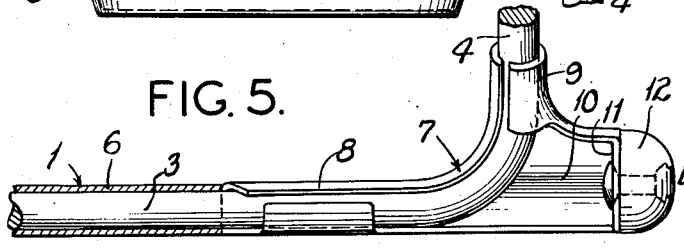


FIG. 5.



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FIG. 6.

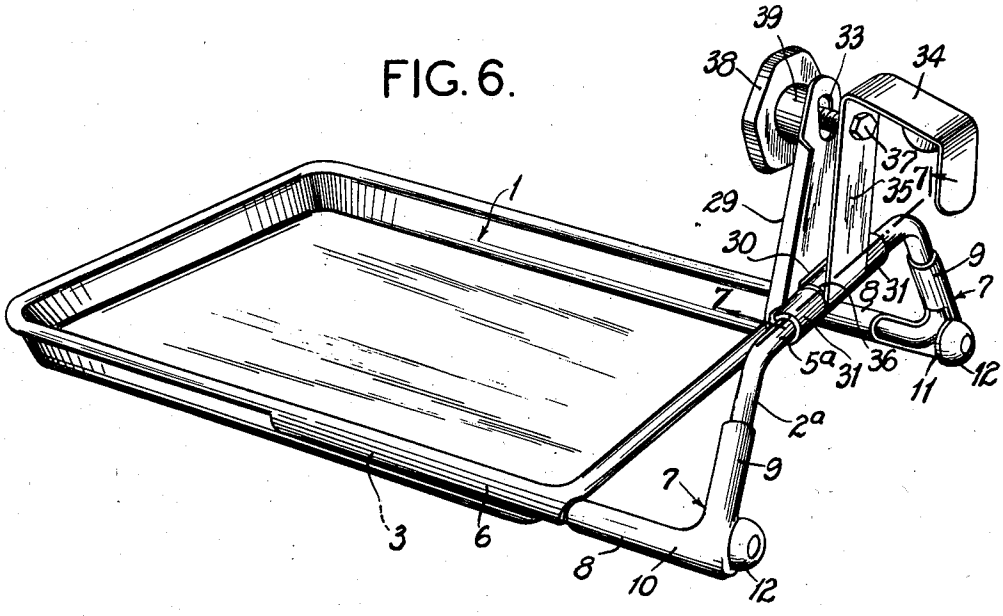
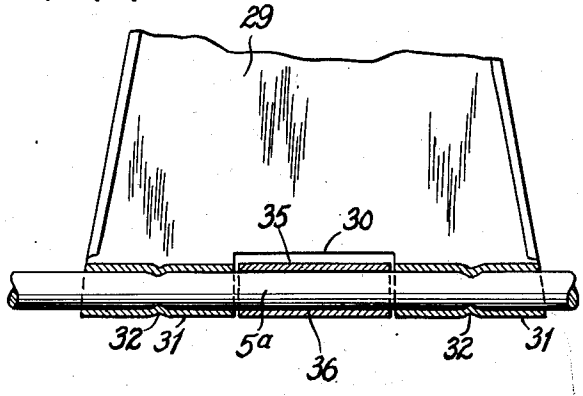


FIG. 7.



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SERVING TRAY

Orville Mitchell, Dallas, Tex., assignor to Inside Tray Company, Dallas, Tex., a corporation of Texas

Application March 10, 1934, Serial No. 714,956

3 Claims. (Cl. 311—22)

This invention relates to a novel construction of service tray intended to be supported from the lower sill of the door window of an automobile and to extend into the car.

The general objects of the invention are to produce a simplified construction of tray of this character, to render the same easy of application to the window, to facilitate adjusting the tray to a level position within the car and to insure that the tray when once adjusted in position will be prevented from displacement in the ordinary use to which it is subjected. In effect, my invention aims to improve the construction of service tray described and claimed in Letters Patent to Graham, No. 1,921,463, dated August 8, 1933.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a sectional view through the right hand front door of a car with the window in a lowered position;

Figure 2 is a plan view of my improved tray;

Figure 3 is a view in end elevation;

Figure 4 is a broken sectional view on an enlarged scale taken on the line 4—4 of Figure 2;

Figure 5 is a similar view taken on the line 5—5 of Figure 2;

Figure 6 is a perspective view illustrating a modified construction of tray and hanger; and

Figure 7 is a longitudinal sectional view through a portion of the support shown in Figure 6.

Referring now to the drawings, the numeral 1 indicates a tray, and 2 a combined support and hanger therefor. This combined support and hanger comprises a metal bar, preferably round in cross section, and bent upon itself at right angles at either end to form parallel arms 3, upwardly converging side bars 4, and a horizontal portion 5. The arms 3 are positioned on either side of the tray at one end thereof and extend along said sides to approximately one half the length of the tray, and are secured to the tray within flanged portions 6 on the side of the tray which are curved about the arms 3, as more clearly shown in Figures 1 and 5. The arms 3, where they join the side bars 4 project some distance beyond the end of the tray, as shown by Figure 2, and mounted on each corner of the hanger 2 is a metal clip 7, having a portion 8, partially encircling the arm 3 and forming a continuation of the curved flange 6, as shown by Figure 5, and another portion 9, curved about the lower end portions of the side bars 4, as shown more particularly in Figures 3 and 5. The portions 8 and 9 of the clips extend at right angles to each other, and are joined to an integral substantially flat portion 10, which projects rearwardly beyond the side bars 4 and is then bent inwardly at right angles to provide a circular flange 11, Figures 1, 2 and 5, on which is secured a rubber button 12, which rests upon the inside of the car when the tray is mounted in position on the sill of the window of the door.

For suspending the tray in position I secure centrally of the horizontal portion 5, of the hanger, a suspension member 13, Figures 2 and 4, the same comprising a body portion 14, which is bent around and rigidly secured to the horizontal portion 5, and an arm 15, which projects rearwardly at right angles to the body portion 14. The arm 15 is provided with a slot 16, and adjustably mounted on the under side of said arm is a suspension hook 17, Figures 1 and 4, which is adapted to be held in adjusted positions on the arm 15 by means of a bolt 18, having a head 19 secured on the under side of a horizontal portion 20 of the suspension hook 17, the bolt extending upward through said horizontal portion and through the slot 16 and having a hand wheel 21 mounted thereon, between which, and the arm 15, is interposed a washer, 22. As illustrated in Figures 1, 2 and 4, the arm 15 is corrugated at its sides to provide outwardly and upwardly inclined beads 23 and depending flanges 24, serving as guides to secure the movement of the suspension hook in right lines, and a relatively narrow central portion 25, which contains the slot 16 and against the under side of which the horizontal portion 20 of the suspension hook will bind when the hand wheel 21 is turned down to force the washer 22 into engagement with the upper surfaces of the lateral tapering beads 23. The construction presents, in effect, a wedge engaged between the hand wheel and the horizontal portion 20 of the adjustable suspension hook, tending to increase the binding action between these parts, or to produce such binding action in the event the hand wheel is not turned into sufficiently firm engagement with the beads 23.

Secured on the under side of the horizontal portion 20 near the outer end thereof is a rubber button, 26, which is adapted to rest upon the sill of the window and prevent marring or scratching of the same by contact of the metal suspension hook therewith.

In practice, as shown by Figure 1, the suspension hook 17 is designed to be inserted in the well of the door which houses the glass window 27, when the latter is lowered. As also indicated in Figure 1, the side bars converging upwardly from the extreme outer sides of the device, will extend on either side of the operating handle 28, for

raising and lowering the window, so that the latter will offer no impediment to placing the tray in position. Furthermore, the buttons or bumpers 12 are positioned a sufficient distance beyond the side bars to cause the latter to be positioned inwardly beyond the plane of the operating handle, so that the latter will not offer an obstruction to the removal of glasses, bottles or the like, from the tray. In Figure 6, I have shown a modification in the suspension means for the tray. According to this construction, I provide a support 2*a*, having a horizontal portion 5*a*, this element being similar to the combined support and hanger 2, of the previous construction, but being of less height. Secured on the horizontal portion 5*a* is a hanger, 29, which is substantially triangular in shape, its lower portion being recessed as shown at 30 in Figure 7, to provide securing members 31, which are curled about the horizontal portion 5*a* and spot-welded thereto, as indicated at 32 in Figure 7.

At its upper end or apex, the hanger 29 is provided with an elongated opening 33. For supporting the device on the sill of the window, I provide a suspension hook 34, which is in the form of a flat metal bar bent twice upon itself at right angles to form the hook and to provide a narrow depending portion 35, which at its lower end is caused to partly encircle the horizontal part 5*a* of the support so as to pivot thereon as indicated at 36 in Figure 7. Secured to and projecting inwardly beyond the suspension hook 34 and through an elongated opening 33, is a bolt 37 having a hand wheel 38 screwed on the outer end thereof and having a central integral boss 39, which is adapted to bear against the upper end of the hanger 29.

The above construction presents, in certain cases, some advantages over the preceding construction, particularly in rendering it easier to adjust the position of the tray to level the same when the window 27 is raised. It will be seen that in the modified construction, the hand wheel 38 is disposed at the side of the hanger instead of being located on top of the suspension hook, as in the preceding construction, thus rendering it quite easy for an occupant of the car to turn the hand wheel 38 to adjust the level of the tray.

Another advantage resides in the fact that the leveling of the tray is accomplished merely by turning the hand wheel, requiring the use of only one hand, whereas, in the previous construction, the hand wheel must be turned with one hand and the tray raised or lowered with the other.

An important feature of the invention is the fact that in the main construction the side bars 4 converge upwardly to provide a relatively narrow portion 5 at the top of which the suspension hook is mounted, which tapering of the adjustable support or hanger, in combination with the widely separated bumper supports 12 present widely separated points of leverage with respect to the point of suspension which assures stability of the tray and prevents accidental turning or misplacement of the tray in making adjustment thereof.

The same principle is preserved in the modified construction, where the hanger 29 tapers upwardly to the hook 34.

In adjusting the tray longitudinally, the buttons 12 act as pivots or trunnions for the tray, and the narrow suspension member at the top permits ready adjustment of the tray transversely.

Another distinctive feature of the invention is the tapered or wedge shape of the binding surfaces of the arm 15, afforded by the beads 23 and central flat portion 25, clearly illustrated in Figure 4. If the arm 15 were perfectly flat on opposite sides any slight loosening of the hand wheel 21 or the failure of the operator to properly tighten this hand wheel when adjusting the tray to a level position would permit the arm to be drawn inward by weight applied on the tray, the latter turning on the trunnions 12, with the liability of discharging the contents of the tray into the laps of the occupants of the car. By providing binding surfaces on the arm 15 which form a wedge between the corresponding binding surfaces of the suspension hook and hand wheel, it will be obvious that if the hand wheel should not be turned to force the respective binding surfaces into engagement, or if the hand wheel should be accidentally loosened, or unturned, the gradual outward divergence between the flat surface 25 and the beads 23 will insure these parts moving into binding engagement with the hand wheel and suspension hook 20 and thus prevent any but a slight downward movement of the tray.

I claim:

1. A serving tray adapted to be supported from the window sill of an automobile comprising, in combination, a tray, an integral supporting structure therefor consisting of a one-piece metal bar having parallel portions extending along opposite sides of the tray, side portions extending at right angles to said parallel portions and converging upwardly therefrom and a horizontal portion connecting the upper ends of said side portions, flanges on the sides of the tray inclosing and securing said parallel portions to the tray, metal clips secured to said supporting structure at the junctures of said side and parallel portions and projecting rearwardly therefrom, a bumper mounted on the projecting portion of each of said clips for resting against the inside of the door below its sill, and a suspension member secured on the upper end of said supporting structure and including a hook for engaging over the sill of the window, said hook and supporting structure being relatively adjustable.

2. A serving tray adapted to be supported from the window sill of an automobile comprising, in combination, a tray, a supporting structure therefor consisting of a one-piece metal bar having parallel portions projecting along opposite sides of the tray and a hanger portion consisting of side portions extending at right angles to said parallel portions and converging upwardly to a horizontal portion of the bar, flanges on the sides of said tray inclosing and securing said parallel portions to the tray, bumpers mounted on said supporting structure in line with said parallel portions, a suspension member secured to and projecting outward from the horizontal portion at the upper end of said hanger and a hook for engaging over the sill of the window adjustably mounted on said suspension member.

3. A serving tray adapted to be supported from the window sill of an automobile comprising, in combination, a tray, a supporting structure therefor consisting of a one-piece metal bar having parallel portions projecting along opposite sides of the tray and side portions converging upwardly to a horizontal portion of the bar, flanges on the sides of said tray inclosing and securing said parallel portions to the tray, bumpers mounted on said support in line with said parallel portions, a hanger secured to and projecting upwardly from the horizontal portion of said bar, a suspension member pivotally mounted centrally of the

horizontal portion of said bar opposite said hanger and having a hook for engaging over the sill of the window, and means for adjusting said support relative to said suspension member comprising a bolt mounted on the latter and extending through the upper end of said hanger, and a hand wheel mounted on said bolt and engaging said hanger, whereby the upper end of the latter may be moved toward or from the suspension member by turning said hand wheel in one direction or the other.

ORVILLE MITCHELL.