SUPPORTING DEVICES FOR SERVING TRAYS

Fig. 1.

Fig. 2.

Fig. 3.

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Filed Jan. 3, 1964, Ser. No. 335,614

1. Claims. (Ch. 108—9)

My invention relates to devices for supporting a serving tray on a user's lap in a manner to maintain the tray in a level position, so that foods or beverages deposited on the tray may not shift or tip over. A device for this purpose is covered in my Patent No. 2,877,073, dated March 10, 1959; and the device described herein and illustrated in the accompanying drawings is an improvement on the patented one.

The patented device was mainly in the form of a frame adapted for attachment under the tray and swingable from the rear portion thereof to assume the inclination of the user's lap. A pair of blocks carried by the frame were provided to maintain the tray in level position by serving as fillers between the tray and the frame, the blocks being movable between forward and rearward positions to change the inclination of the frame. While the improved device retains the same principle of operation, its main object is to provide a more stable structure in the form of a base portion which serves as a support for the tray, and a swingable portion which is adjustable to various angles of lap inclination in order to maintain the swingable portion and the tray in the level position.

A further object is to depart from the tendency of the blocks in the patented device to shift independently and unbalance the tray, by providing a cross-bar in the swingable portion, extending the full width thereof, as a substitute for the separate blocks, so that the support of the tray is always even from side to side.

Another object is to provide sets of friction bands engageable in front with the swingable portion to hold the aforesaid cross-bar at any point of adjustment, as well as a set of friction bands at the rear to hold the tray against shifting or slipping tendencies.

Another object is to construct the improved device along lines of sturdiness and with the fewest number of parts consistent with efficiency and durability.

A better understanding of the invention may be gained by reference to the drawings, in which—

FIG. 1 is a top view of a serving tray to which the device is attached;
FIG. 2 is a front elevation on a larger scale;
FIG. 3 is a similar view from the rear;
FIG. 4 is a bottom plan view;
FIG. 5 is an elevation from the right-hand side of FIG. 2, the base frame of the device being supported at a slight inclination;
FIG. 6 is a section on the line 6—6 of FIG. 2, with the base frame supported at a steeper inclination; and
FIG. 7 is a side elevation showing a modification.

Referring specifically to the drawings, FIG. 10 denotes the serving tray, the same having a rim portion 10a. While the device, as seen in FIG. 4, fits the size of the tray shown, it is not necessarily limited to such size, and could serve trays of the next larger size. Probably, the device would remain of one size, as individual serving trays are made only in the smaller sizes.

As anticipated, the base portion for supporting the tray comprises a pair of side pieces 12 joined near their rear ends by a cross-rod 13. The side pieces 12 are applied with a straight upper edge to the bottom of the tray for supporting the same evenly. However, the side pieces have the bottom edge tapered toward the front, as shown at 12a; and each piece receives a band 15 of plastic material at the rear designed to secure frictional engagement with the serving tray from underneath.

The swingable portion of the device employs a pair of parallel rods 17 extending along the side pieces 12. The rear ends of the rods 17 occur in the region of the cross-rod 13, and are pivoted on screws 18 driven into the ends of the cross-rod.

A cross-bar 20 extends between the side rods 17, and is made with perforations 20a near the ends for the free passage of the side rods. Inwardly of the latter, the cross-bar carries a pair of friction bands 21 similar to the bands 15. The cross-bar and the bands are preferably made of wood or plastic material for lightness and economy, but the front ends of the side rods carry a metallic cross-strip 23, secured to the rods by screws 24.

The rear portions of the side rods 17 have eyes 26 for the passage of a pair of wires 27. The outer ends of these pass through the receptacles 29a of hooks 29 to be formed with heads 27a; and the hooks engage the rim portions 10a of the tray 10, while the inner ends of the wires are connected by a long draw-spring 30. Thus, the wires 27 urge the side rods 17 to hold the side pieces 12 against the tray at the rear; and the side rods cause the cross-bar 20 to bear against the side pieces through the medium of the bands 21. The strap-like assembly of the wires and draw-spring thus serves to hold the device in engagement with the tray from underneath.

When the tray is to be used—with the device attached as described—its deposit on the lap of the user is followed by the adjustment of the device by means of the cross-bar 20 in case the tray is not level. Thus, if the user's lap has a slight inclination, the cross-bar 20 will be positioned toward the front, as seen in FIG. 5. However, if the lap inclination is steeper, it is a simple matter to draw rearwardly on the ends of the cross-bar and slide it to a position such as shown in FIG. 6. This movement will cause the bands 21 to climb on the tapered edges 12a of the side pieces 12, and increase the angle of the tray from them accordingly. Thus, the tray can be adjusted to the user to rise or fall to the proper level by the simple shifting of the cross-bar 20 with the tips of the fingers; and the position of the cross-bar will be maintained by the tension of the wires 27 and draw-spring 30, as well as by the friction of the bands 21 with the side pieces 12.

The modification of FIG. 6 deals with side-pieces 32 which receive side-rods 33 in opposed relation, and their pivot assembly at the rear is secured by reduced portions 32a and 33a held together by a yieldable band 35, with which the rear portion of the tray is in frictional engagement. This modification may be supplemented by the cross-bar 12, cross-strip 23, plastic bands 21, etc. used in the main embodiment to complete the device.

The improved device is in a unitary assembly with the hooks 29, and is therefore quickly attachable to any tray of commensurate size by simply engaging the hooks with the same. When this has been done, the device becomes firmly mounted, yet affords the simple sliding leverage of the cross-bar 20 along the side-rods 17 for adjusting the level of the tray with ease, with the assurance that the tension of the undergirding wires and draw-spring will maintain any adjustment in the leveling of the tray in positive and reliable condition. This result is gained by providing a firm support for the tray, and an adjusting bar which may be readily engaged at the ends with the fingers and drawn or pushed with an even movement to tend the tray a firm support at both sides as it is leveled. Therefore, the tray will not wobble, tilt sidewise or be insecure at any point. Further, the frontal plastic bands 21 insure the cross-rod 20 against slipping, while the rear bands 15 secure friction engagement with the tray to prevent it from sliding or creeping. Further, the frontal cross-strip 23 is durable and squares up the cross-rod 13 and side-rods 17, whereby
3. The structure of claim 1, and bands of friction material carried by the frontal cross-bar where it engages said lower edges in order to prevent slippage of the cross-bar along such edges.

4. The structure of claim 1, and bands of friction material carried by the rear end portions of the side pieces and preventing the slipping of the tray on the same.

5. The structure of claim 1, said lower edges rising toward the front.

6. The structure of claim 2, said yieldable means comprising aligned wires spanning the device from underneath, a draw-spring connecting the inner ends of the wires, and hooks extending from the outer ends thereof to engage the rim of the tray.

7. The structure of claim 1, and a terminal reinforcing cross-strip connecting the front ends of the side rods.

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