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2,956,849

REVERSIBLE LAP TABLE AND TRAY

Filed Feb. 12, 1960

2 Sheets-Sheet 1

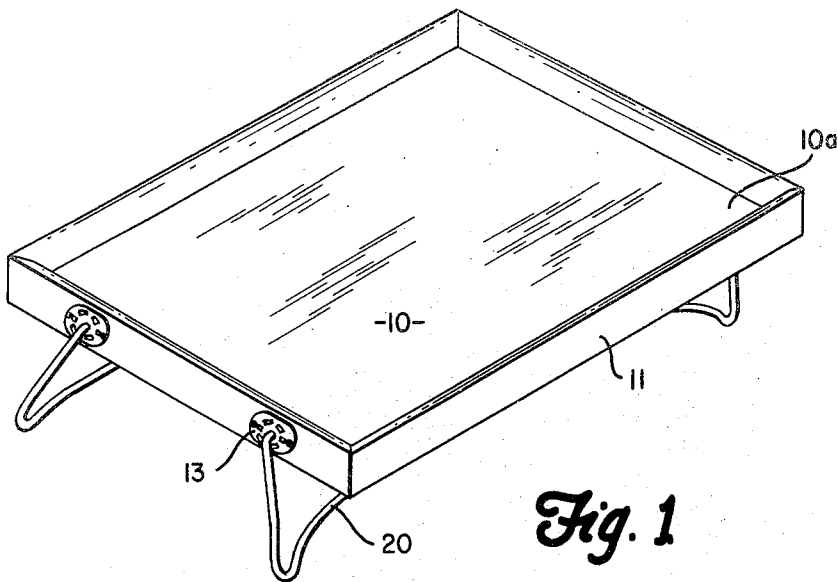


Fig. 1

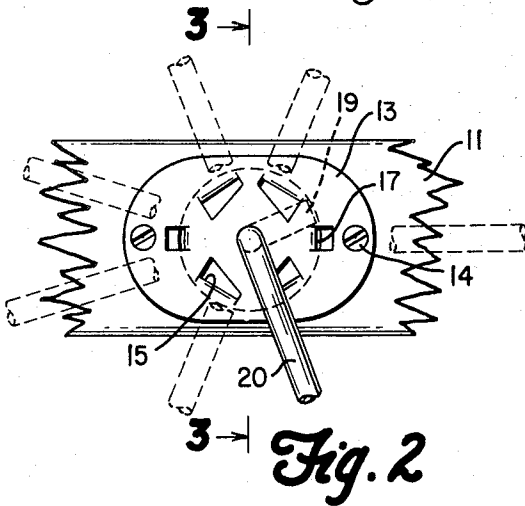


Fig. 2

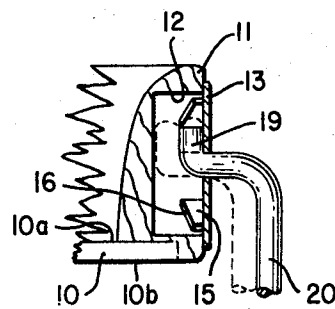


Fig. 3

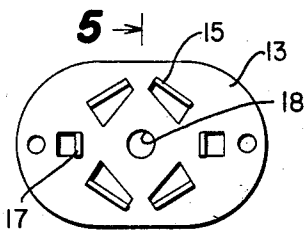


Fig. 4

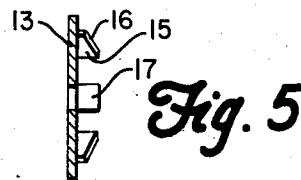


Fig. 5

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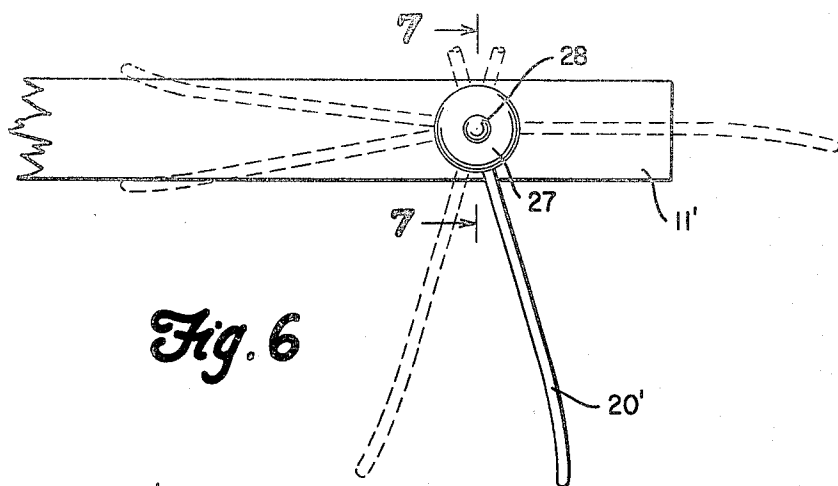


Fig. 6

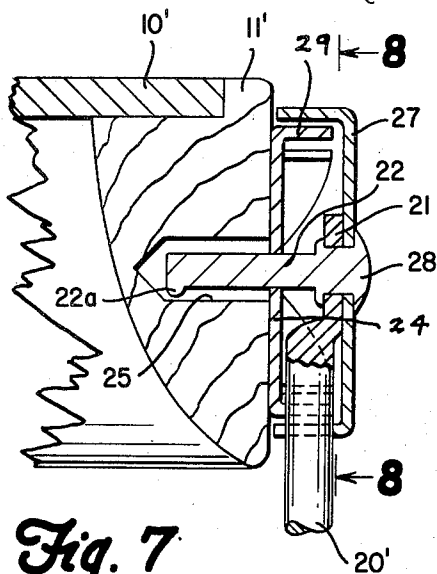


Fig. 7

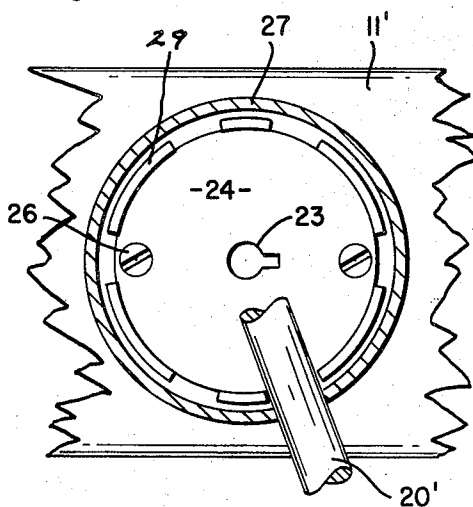


Fig. 8

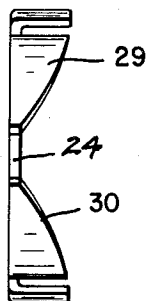


Fig. 9

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REVERSIBLE LAP TABLE AND TRAY

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3 Claims. (Cl. 311—25)

This invention relates to a combined table and tray unit conveniently supported on the lap of a person, for example, and which is provided with adjustable supporting legs connected to the unit in a new and improved manner enabling speedy and convenient adjustment to one of a number of positions. The unit is thus extremely versatile because of the use as a table or a tray, as well as the ability to arrange it selectively in one of many positions.

An object is to produce a leg support which can be rocked from one side to the other so that one or the other supporting surface may be used and can be releasably retained in one or another selected position.

Other objects and advantages of the invention will hereinafter appear and for purposes of illustration, but not of limitation, embodiments of the invention are shown in the accompanying drawings, in which

Figure 1 is a top perspective view of the reversible combined table and tray;

Figure 2 is an enlarged fragmentary side elevation of the rail showing the cam plate with one end of the leg attached thereto;

Figure 3 is a sectional view substantially on the line 3—3 of Figure 2;

Figure 4 is a plan view of the cam plate viewed from the inner side;

Figure 5 is a sectional view substantially on the line 5—5 of Figure 4;

Figure 6 is a fragmentary side elevation showing an alternate mounting for the end portion of the legs to afford the adjustment thereof;

Figure 7 is an enlarged sectional view substantially on the line 7—7 of Figure 6;

Figure 8 is a sectional view substantially on the line 8—8 of Figure 7; and

Figure 9 is an edge elevation of the positioning cam shown on Figures 6 to 8.

The illustrated embodiment of the invention, shown on Figures 1 to 5, comprises an elongate rectangular flat panel 10 of wood, plastic or any suitable sheet material having an upper side 10a and a lower or under side 10b. Suitably secured to the edge portion of the panel 10 and projecting at substantially right angles thereto above the side 10a is a rail 11. It will be observed that a portion of the under part of the rail which projects over the edge of the panel is flush with the under surface 10b so that the side 10a of the panel, when in the upper position, provides a tray since the rail extends completely therearound and above the surface of the panel. On the other hand, by turning the panel over, the opposite side provides a flat surface or table. As will hereinafter appear, this construction greatly increases the uses to which the combined table and tray may be employed.

Formed in each of the end rails is a pair of recesses 12, each recess being positioned closer to the outer end of the respective rail sections. Covering each of the recesses 12 is an oblong metallic cam plate 13 which is

secured in place by a pair of screws 14. Struck from the outer side of each plate 13 to project into the respective recesses 12 are four ears 15 which are arranged in circular form and are spaced from each other to provide notches therebetween for a purpose hereinafter explained, each of these ears being formed with an inclined cam edge portion 16. In order to retain sufficient strength in the central portion of the cam plate and without the necessity of increasing the diameter thereof to an impractical point, a pair of ears 17 is struck from portions of the plate beyond the diameter of the circle formed by the ears 15.

Concentric with a circle formed by the ears 15 is a hole 18 through which extends an L-shaped end portion 19 formed on U-shaped legs 20, there being two of these legs as indicated. The cross arm of the U of each of these legs is upwardly arched to fit comfortably over the knees or upper leg portions of a person as will hereinafter more fully appear.

The end of the L-shaped portions 19 is blunt and adapted to fit in the notches between the ears for retaining the leg in a position of adjustment. It will be understood that the legs 20 are formed of a rod or tubing and have inherent resiliency so that by pressing inwardly on both end portions of a U-leg so that the L-shaped end portions clear the various ears, the respective leg may be rocked to a selected position whereupon the leg portions are released so that they snap into a particular notch where the leg is securely retained in position.

By swinging the legs to one position, the tray 10a is uppermost but by completely swinging the legs to the opposite position, then the table 10b is uppermost for use. The change from tray to table is accomplished by the rocking of the arms after first pressing inwardly on the free end portions of each leg, pressure being applied to the legs at a point just below the frame and at the same time rotating the leg to the desired position. When the legs are rocked to a position substantially in alignment with the panel 10, the combined table and tray is then in storage position.

From the above, it is manifest that the combined table and tray may be used as a dinner or snack tray, a bed tray, a writing desk, a book rest, a sewing table, a one or two hand game table as well as a surface or table for drawing, sketching or painting. Furthermore it may be used in an automobile for reading maps or route cards or for an intransit lunch. Indeed it can be employed for almost any activity where a sitting position is desirable and a tray or flat surface, inclined or level is desirable. The combined table and tray rests on the user's lap and is always at a comfortable height. It is extremely simple to reverse from tray to table or to change the angle and fits any lap and can be used with any type of chair or seat. As above pointed out, by extending the legs in substantial alignment with the panel 10, it can be compacted for storage or can be hung on standard closet hooks or in sets of four on a floor rack designed for this purpose.

The alternate form shown on Figures 6 to 9 comprises a flat panel 10' which has an edge rail 11'. Similarly formed legs 20' support the combined table and tray in position, but in this instance the ends of the legs are flattened as indicated at 21. Each flattened end 21 is provided with a hole through which extends a journal pin 22 which has a key end 22a.

The key end 22a extends through a similarly shaped key hole 23 formed in a base plate 24 of a positioning cam. The end portion of the rivet with the key end 22a extends into a socket 25 formed in the rail 11'. The positioning cam base plate 24 is secured to the rail 11' by screws 26.

Fitting over and concealing the positioning cam is a

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cam housing 27 of cup-shaped form. The housing 27 has a central aperture through which the journal pin 22 extends, there being a shoulder on the pin on the inside of the flattened arm portion 21 and the outer portion being riveted over as indicated at 28 to retain these parts in assembled relation for conjoint rotation.

Projecting outwardly from the edge portion of the positioning cam base plate 24 is a series of cam flanges 29 which have inclined or cammed edge portions 30, the flanges being spaced from each other to provide notches therebetween into which the adjacent portion of the respective leg 20 may extend.

In this instance, in order to adjust the legs 20' to one position or another, it is first necessary that the end portions be flexed outwardly by grasping both sides of the U and pressing the same outwardly to enable the arms to clear the flanges 29 and at the same time rock the legs to the desired position whereupon due to the inherent resilience of the legs, the latter will snap inwardly into selected notches. In this manner the legs are securely retained in the adjusted position and enable the combined table and tray to be supported in the desired position.

Numerous changes in details of construction, arrangement and choice of materials may be effected without departing from the spirit of the invention, especially as defined in the appended claims.

What I claim is:

1. A device of the class described comprising a flat panel, a continuous rail connected to the panel and projecting at substantially right angles from one side only of the panel, thereby to enable one side to constitute a tray and the other side a table, a pair of plates disposed closely adjacent each end edge of said panel and spaced from the table side of the panel, means providing an annular series of notches on each plate, a pair of U-shaped legs of flexible resilient material, and terminal portions of said legs rotatably engaging opposite plates respectively to lie selectively in said notches and releasably retained therein by the resilience of the legs and being releasable therefrom by flexure of the respective end portions of

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the legs out of the engaged notches, the legs being so designed that they may be rotated from one side of the panel to the other side to enable either side of the panel to be used.

2. The organization as claimed in claim 1 in which the rail is formed with recesses over which the plates are respectively arranged, inwardly extending spaced ears on the plate providing notches therebetween, L-shaped end portions on said legs extending through holes in the plates respectively for rotation therein, and inclined ends on certain of said ears for inwardly camming the said end portions, whereby leg adjustment is effected by flexing the end portions of the respective legs toward each other and then rotating same to the desired position so that upon releasing same the said end portions spring into the selected notches.

3. The organization as claimed in claim 1 which the plates are formed with outwardly extending peripherally spaced cam flanges providing notches between adjacent flanges, journal pins rotatable in holes in said plates respectively, key means retaining said journal pins in operative position except in one position where the pins may be disengaged from the respective plates, cup-shaped cam housings overlying said cam flanges respectively, and means for securing each journal pin to a leg terminal portion and a cam housing whereby leg adjustment is effected by outwardly flexing opposite terminal portions for clearing the cam flanges and rotating the leg to the selected notches and releasing the terminal portions to allow the same to spring into notch engagement.

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