United States Patent

[11] 3,586,367

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[54] MULTIPLE POSITION TRAY APPARATUS
3 Claims, 5 Drawing Figs.

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[51] Int. Cl. A47c 39/00
[50] Field of Search 287/111, 133; 248/484, 481; 297/188, 194, 161, 160

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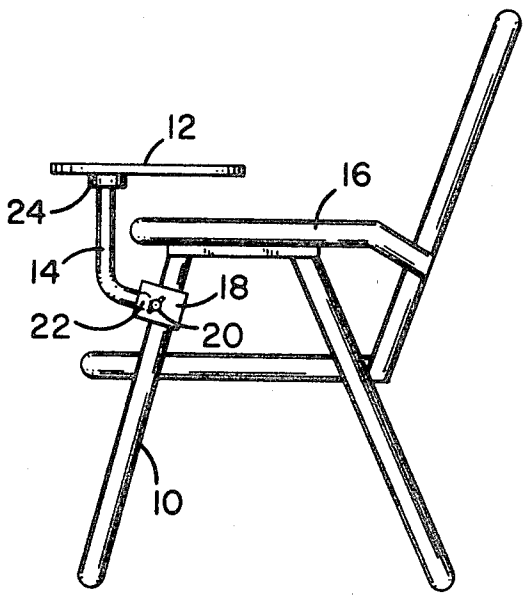
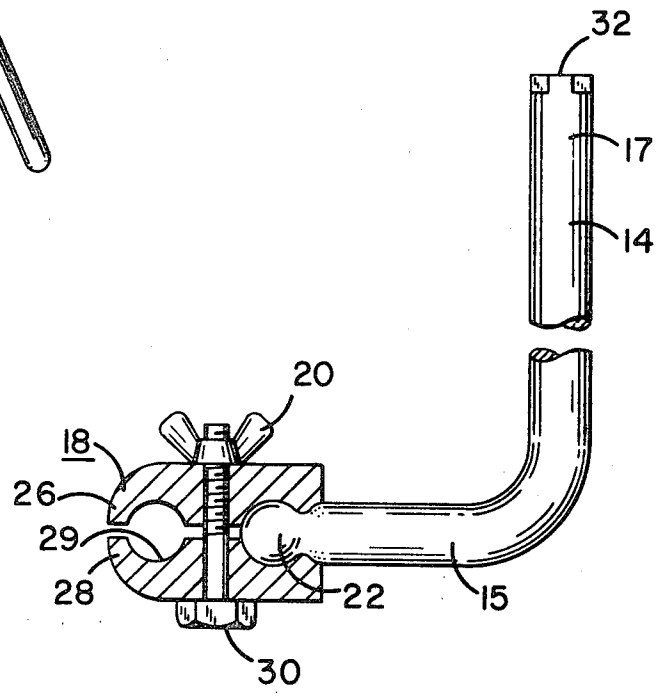
ABSTRACT: A multiple position tray apparatus having a tray with a recess in the bottom surface thereof for coacting with one end of a curved arm that fits in said recess and holds said tray, with the other end of the arm having an adjustable connector that is swiveled on the end of the arm and has means for being adjustably attached to the arm or leg of a lawn chair holding the tray in a horizontal position regardless of the angular position of the particular part of the lawn chair to which the tray is secured and supported.





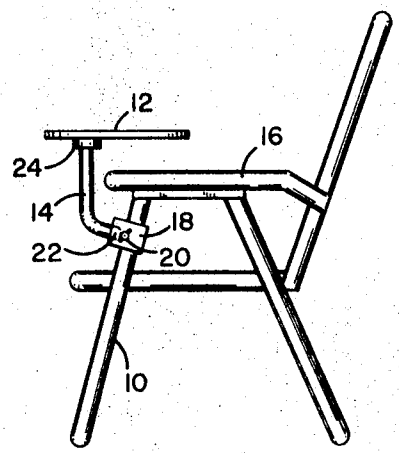


FIG. 1

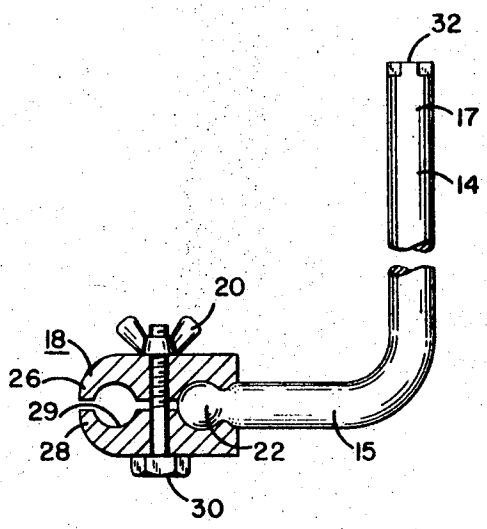


FIG. 2

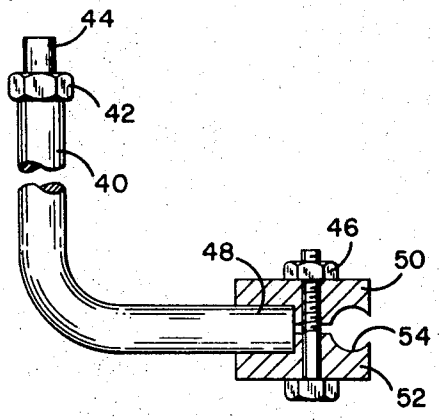


FIG. 3

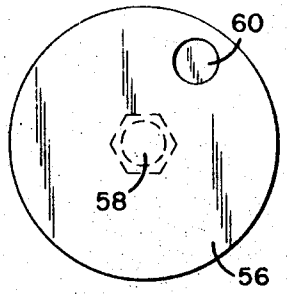


FIG. 4

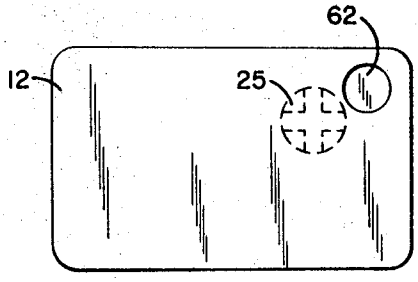


FIG. 5

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MULTIPLE POSITION TRAY APPARATUS

BACKGROUND OF THE INVENTION

There are many different types and constructions of lawn-type furniture that may be used on patios, game rooms, and the like. Often this type of furniture is made of metal tubing, plastic tubing, or other types of materials and constructions that are particularly adaptable for all weather use. Such furniture is well known and is widely used by persons who spend leisure hours on patios and in recreation areas. In such use it is often desirable to support food, drinks, or the like on trays that are supported on such furniture. However such patio furniture is not normally equipped with food- and drink-supporting trays. Further if such patio furniture were equipped with fixed food and drink-supporting trays, then the trays would interfere with other uses of the furniture. Thus it is particularly desirable to have a food or drink-supporting tray that can be easily and quickly secured to and removed from such patio furniture that has many different shapes with legs and arms that are slanted or angled in many different directions.

While there are known adjustable tray-supporting devices, these devices are primarily constructed for a particular installation on a given bed- or similar-type structure. Such tray-supporting devices are not required or expected to be connected to many different types of structures and still maintain a substantially horizontal position as is required for supporting food, drinks, or the like on the tray. Thus the prior art devices are unsatisfactory for use on lawn chairs, unless they are specifically designed for a specific lawn chair-type construction which greatly limits their use.

SUMMARY OF THE INVENTION

In an embodiment of this invention, a tray structure that may be substantially flat, has a recess in its underneath or bottom surface. A curved arm that may have a 90° angle has an end that fits into the opening in the tray and supports the tray thereon. The other end of the arm has a rotatable or pivotally supported connector that in turn connects the arm to a part of a lawn chair structure. The connector comprises a pair of members having identical coacting shapes and recesses. The members are drawn together by a quick bolt to contract against variable size tubings in lawn chair structures. Loosening of the connector provides adjustment of the position of the tray without completely disassembling the connector and the tray structure. The connector is thus able to swivel or pivot around the end of the arm, providing multiple angular positioning of the arm and the supported tray when supported on different angled positions of lawn chair structures. This allows the tray to always be in a substantially horizontal position. The entire tray apparatus can be completely disassembled for easy packaging and storing in relatively small volumes. It is inexpensive to make, is simple in operation, and yet has a rugged structure that will withstand hard use.

It is therefore an object of this invention to provide a new and improved multiple position tray apparatus.

It is another object of this invention to provide a new and improved multiple position tray apparatus that is particularly adaptable for use with lawn chair furniture.

It is another object of this invention to provide a new and improved multiple position tray apparatus that may be supported on arms or legs of lawn chair furniture and which tray is supported in a horizontal position irrespective of the particular angular orientation of the parts of the lawn chair structure on which the tray apparatus is supported.

It is another object of this invention to provide a new and improved multiple position tray apparatus that may be quickly and easily disassembled and reassembled, is inexpensive and rugged in construction, and that may be adjusted to multiple positions for supporting the tray in a horizontal position relative to angular supports, and which apparatus is quickly and easily released for adjustment of the position of the supported tray.

Other objects and advantages will become more apparent upon a reading of the following detailed description and an examination of the drawing wherein like reference numerals designate like parts throughout and in which:

FIG. 1 is a side view of an embodiment of this invention positioned on a lawn chair.

FIG. 2 is a side view with parts broken away and parts in cross section of the supporting arm and connector of this invention.

FIG. 3 is a side view with parts broken away and parts in cross section of a modified arm and connector structure.

FIG. 4 is a top plan view of an embodiment of a tray that is supportable on the support art structure.

FIG. 5 is a top plan view of still another modified form of the tray structure.

Referring now to FIG. 1, a lawn chair structure of known design has tubular arms 16 and tubular legs 10 that may be made of aluminum, steel, plastic, or like materials. Supported on the leg 10 is a tray 12 on which food or drinks may be supported, as for example in recesses 60 and 62. The tray 12 is supported on an arm 14 with a stop member 24 that is secured to the lower surface of the tray 12. A connector 18 having split parts 26 and 28 and a wing nut connector 20, secures the arm 14 and thus the tray 12 to the angled leg 10 in the manner that will be described in more detail hereinafter.

Referring to FIG. 2, arm 14 has a vertical portion 17 and a horizontal portion 15 with an integral ball-shaped end 22. It may be understood that the arm 14 may be constructed of wood, plastic, metal, or any other suitable material. The upper end 32 of arm 14 has a cross notched structure that coacts with cross slots 25, see FIG. 5, in the bottom surface of the recessed opening in the tray 12. This allows the tray 12 to be rotated through various horizontal positions and yet be rigidly held relative to the vertical portion 17 of the arm 14. Collar 24 is secured to the underneath surface of the tray 12 and provides additional lateral support contact to upper portion 17 of arm 14.

A connector 18 is secured to the ball-shaped end 22 of the horizontal portion 15 of arm 14. The connector 18 has a pair of identical sides 26 and 28 that are held in gripping contact with end 22 by bolt 30 and wing nut 20. A cylindrical recess 29 fits around a tubular leg, such as tubular leg 10, and grips the leg 10 providing a rigid support of the arm 14 and thus the tray 12. It may be understood that the connector 18 may be rotated or pivoted around the ball end 22 and slidable moved along the leg 10 in opening 29 providing selective heights and angular positions of the supporting arm 14 and thus the tray 12.

In the modified embodiment of FIG. 3, the arm 40 has a cylindrical end 44 that fits into a cylindrical recess 58 in the underneath surface of the circular tray 56. The nut-shaped member 42 is threaded onto the end of the arm 40 and can either function as a support against the lower surface of the tray 12, depending upon the length of projection 44, or rest in the opening in tray 12 which may have a hexagonal shape for receiving the nut 42. This provides a rigid adjustable positioning of the tray 56 relative to the arm 40. The other end 48 of the arm 40 in this embodiment has a cylindrical shape and fits into a cylindrical opening in the connector. As in the embodiment of FIG. 2, the connector in FIG. 3 comprises a pair of identical members 50 and 52 that are joined together by a normal bolt and nut connector 46.

Having described my invention, I now claim.

1. A multiple position tray apparatus for lawn chairs and the like comprising in combination,

a tray having a recess in its lower surface,

a curved arm with one end fitting into said recess and supporting said tray in a given plane,

the other end of said curved arm has a rotatable connector adjustably secured thereto,

and said connector comprises an adjustable clamp for clamping onto the arms, legs, or other portions of lawn chairs.

2. A multiple position tray apparatus as claimed in claim 1 in which,

said other end of said arm has a cylindrical shape,

said connector has a first cylindrical opening for fitting over said cylindrical end, and a second opening substantially perpendicular to the first opening for receiving a chair member,

and said connector comprises two parts, which are joined by a threaded member for being tightened onto said cylindrical end.

3. A multiple position tray apparatus as claimed in claim 1 in which,

said opening in said lower surface of said tray has a notched recess in the bottom thereof,

and said one end of said arm has a corresponding configuration for fitting into said slotted recess and preventing rotational movement of said tray relative to said supporting arm.