

Feb. 14, 1961

W. M. SHOFFNER

2,971,651

TABLE

Filed April 30, 1959

2 Sheets-Sheet 1

FIG-1

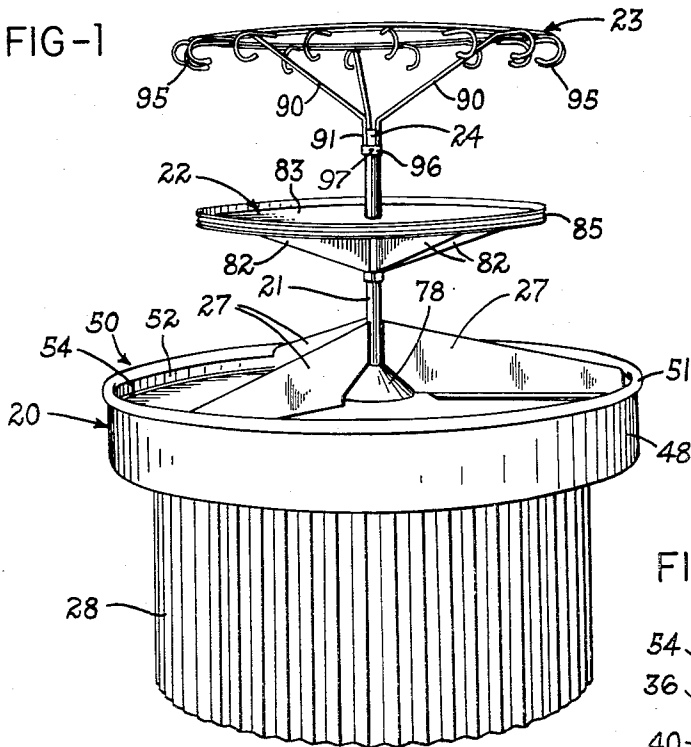


FIG-3

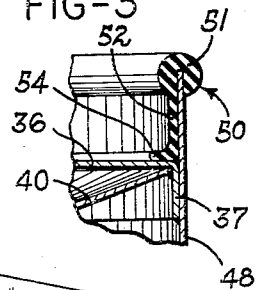
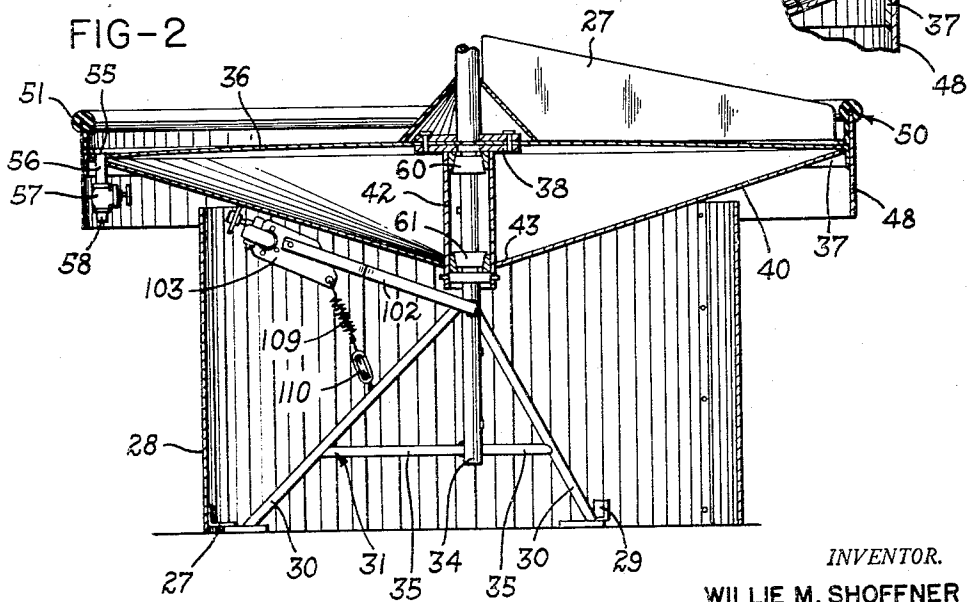


FIG-2



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Feb. 14, 1961

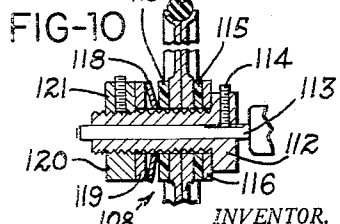
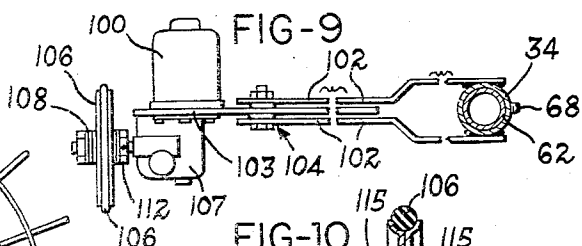
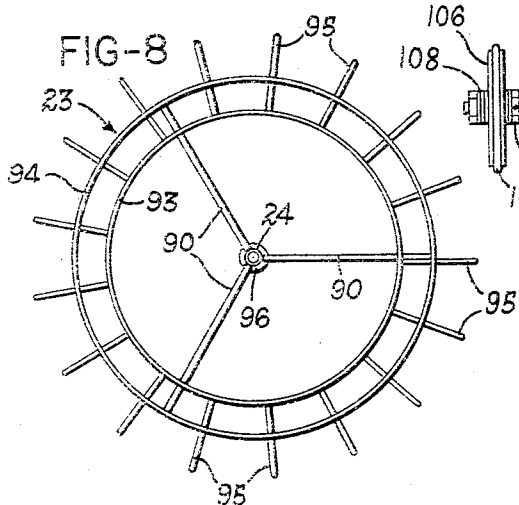
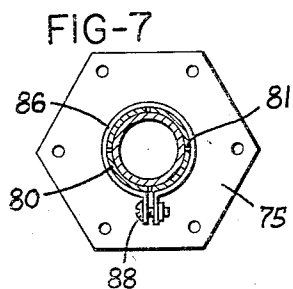
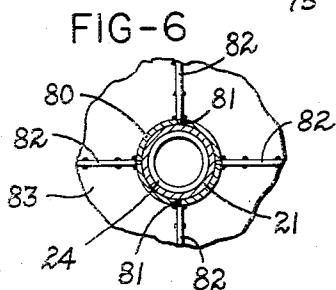
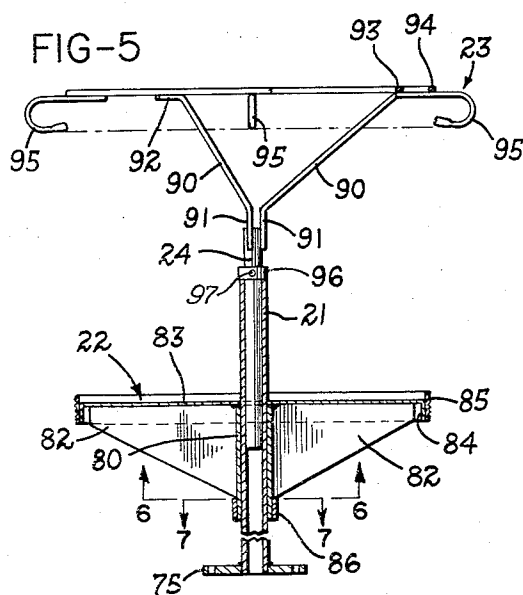
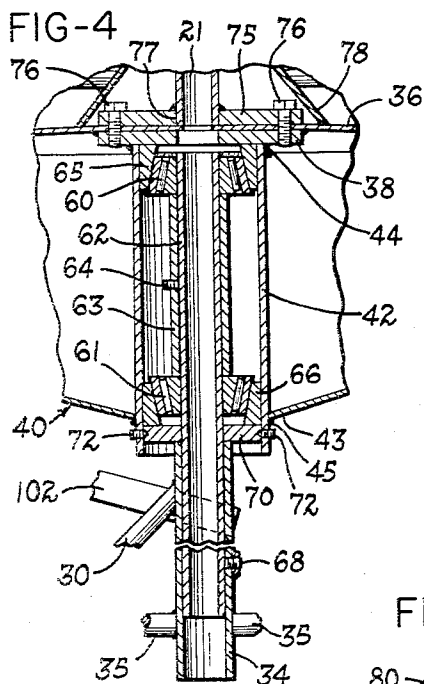
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2,971,651

TABLE

Filed April 30, 1959

2 Sheets-Sheet 2



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1

2,971,651

## TABLE

Willie M. Shoffner, Dayton, Ohio, assignor to The Fogarty Manufacturing Company, Dayton, Ohio, a corporation of Ohio

Filed Apr. 30, 1959, Ser. No. 810,161

8 Claims. (Cl. 211—1.6)

This invention pertains to tables and more particularly to produce display tables.

Display tables for produce, for use in grocery stores and the like, should support the produce in a manner which is readily accessible to the customer and to the clerks. In many instances, it is desirable that the display table be rotatable for attracting attention to the product and for making all of the merchandise accessible at any position about the table.

Tables for the display of fresh fruits and vegetables are commonly called dump tables by reason of the practice of dumping the produce from a basket or a bag onto the surface of a table. Accordingly, a rotatable table for this service must have strength to withstand the stress of uneven loading and still be able to turn smoothly without dips or hesitation. At the same time, it is important that the table be inexpensive and light in weight.

These desirable characteristics and others are provided by the table of this invention which utilizes components of stressed sheet material for combining strength and light weight. A generally circular upper plate of sheet material is fixed in stressed relation to an inverted frustoconical lower plate by a spacer extending between the plates. The upper plate is provided with an elevated central portion relative to its periphery, thereby providing a downward slope from the center of the table to the table's edge. This slope enables produce, such as potatoes, to roll to the outside as the table is emptied, to provide for the continued accessibility of the displayed produce. The table includes a circumferential retaining rim fixed at the plates for additional strength and for the retention of produce at the periphery of the table. The spacer, which provides for the stressed relation of the upper plate, also includes bearings through which the table is mounted for rotation on a supporting base post. A non-rotating display table is disclosed in the copending application of Willie M. Shoffner, Serial No. 810,162, filed concurrently herewith and assigned to the same assignee as this application.

It is therefore an object of this invention to provide a rotatable table as outlined above characterized by light weight and an ability to support unevenly distributed loads.

Another object of this invention is to provide a table as outlined above having a supporting surface made of sheet material with a stressed elevated center.

A further object of this invention is to provide a table as outlined above wherein an upper plate of sheet material is fixed in stressed relation to a lower plate of sheet material to provide a downward slope from the center of the upper plate to its periphery. Preferably, a circumferential retaining rim is fixed at the plates with at least a portion of the wall extending above the upper plate.

A still further object of this invention is to provide a rotatable dump table for produce as outlined above having upper and lower plates fixed in spaced relation by a tubular spacer which also provides a bearing assembly

2

for the rotational support of the plates on a supporting standard.

Other objects and advantages of the invention will be apparent from the following description, the accompanying drawings, and the appended claims.

In the drawings—

Fig. 1 is a perspective view of the table of this invention;

Fig. 2 is a cross sectional view of the table showing the details of construction;

Fig. 3 is an enlarged fragment of a portion of Fig. 2 showing the sealing arrangement of the table top at the retaining rim;

Fig. 4 is another enlarged fragment of Fig. 2 showing the arrangement for rotatably mounting the table on a supporting base post;

Fig. 5 is a cross sectional view through the shelf supporting standard and the shelf carried on the standard;

Figs. 6 and 7 are sections through the supporting standard taken generally along lines 6—6 and 7—7, respectively, of Fig. 5;

Fig. 8 is a plan view of the banana tree;

Fig. 9 is a plan view of the motor drive assembly; and

Fig. 10 is a section through the motor drive clutch assembly.

Referring to the drawings, which illustrate a preferred embodiment of the invention, and particularly to Fig. 1, the table is shown as including a rotatable main body 20 upon which is mounted a supporting standard 21 for the support of shelving in spaced relation to the body 20. A circular shelf 22 is mounted on the standard 21 in spaced relation to the body 20 and a banana tree 23 is mounted on a tube 24 which is, in turn, inserted into the top of the standard 21. Removable dividers 27 are provided for partitioning the produce, as desired, on the body 20. A relatively fixed non-supporting decorative skirt 28 is bolted by angle braces 29 to the three legs 30 of a tripod table support 31, Fig. 2. The support 31 includes a centrally fixed upstanding post 34 connected to the legs 30 by braces 35 and upon which the body 20 is rotatably mounted. The support 31 and the post 34 form a base for rotatably supporting the body 20.

The body 20 includes a generally circular upper plate 36 of sheet material, such as stainless steel, forming the top of the table and having a circumferential turned down lip 37 at the periphery thereof. A centrally disposed reinforcing member 38 is welded to the bottom of the upper plate 36. The body 20 further includes a generally frustoconical lower supporting plate 40 of sheet material circumferentially secured to the lower side of the upper plate 36 by welding adjacent the lip 37.

The body 20 also includes means providing for the stressed elevation of the center of the upper plate 36 in relation to its periphery including a tubular spacer 42 extending axially from the underside of the plate 36, at the member 38, to the smaller end 43 of the lower plate 40. The upper end of the spacer 42 is welded at 44 to the member 38, as shown in Fig. 4. The smaller end 43 of the lower plate 40 is secured as by welding at 45 to the spacer 42 in spaced relation with the upper plate 36 to effect the stressed elevation of the center of the upper plate 36 in relation to its periphery.

Wall means for the body 20 is provided by an annular rim 48 fixed to the upper plate 36 at the lip 37. At least a portion of the rim 48 is arranged to extend above the upper plate 36 for the retention of produce on the top of the table. It is desirable that the rim 48 be fixed in sealing relation to the lip 37 in case the table is used for the display of ice or water-spray cooled produce. For this purpose, a suitable metal-to-metal sealing compound may be employed at the junction of the lip 37 and the

rim 48 as a precaution against leakage. To assist in the sealing of the rim 48 at the lip 37, and to provide protection for produce and personnel against accident or injury, an extruded elastomeric guard 50 is provided as shown in Fig. 3. The guard 50 includes a generally cylindrical upper portion 51 partially notched to slide down over the upper edge of the rim 48. The guard 50 provides a depending wall 52 which lines the portion of the inside of the rim 48 extending above the lip 37. The wall 52 is terminated in a thickened foot portion 54 which is adhesively secured to the upper surface of the plate 36.

The body 20 includes drain means in the plates 36 and 40 adjacent the rim 48 for removing accumulated water from the top when used as a wet table. A drain opening 55 is formed near the rim 48 in the upper plate 36 and a short section of pipe 56 is welded to the bottom surface of the plate 36 at the drain opening 55 prior to the assembly of the plates 36 and 40. A hand valve 57 has a drain section 58 of pipe attached thereto and is threaded on the lower end of the pipe 56 as a means by which the table surface may be drained of accumulated water.

Means for rotatably mounting the body 20 of the table on the supporting post 34 includes the tubular spacer 42 and a pair of tapered roller bearings 60 and 61 within the spacer. The bearings 60 and 61 have their inner races mounted on a tubular bearing support 62 and are held in a spaced apart relation on the support 62 by a bearing spacer 63 fitted over the support 62 between the bearings and secured to the support by a set screw 64. The outer races of the bearings 60, 61 each engage one of a pair of spaced apart cones 65 and 66 which are fitted within the spacer 42. The bearing support 62 is axially extended below the body 20 and is telescopically interfitted within the post 34. The support 62 is secured to the post 34 by set screws 68. The upper bearing 60 is held in place against the cone 65 by the weight of the table transmitted through bearing spacer 63. The lower cone 66 is held against the lower bearing 61 by an annular plate 70, fitted over the support 62 within the spacer 42. The plate 70 is adjustably positioned and held within the spacer 42 by set screws 72 extended through the spacer 42 into the plate. Grease may be packed into the space between the bearings 60, 61 and the spacer 42 at the time of assembly for long trouble-free life.

Means for mounting the standard 21 for rotation with the body 20 include a generally hexagonal plate 75 centrally fixed on the top surface of the upper plate 36 by a plurality of bolts 76 extended through for engagement within the member 38. The plate 75 includes a central opening 77 through which the bottom of the standard 21 is extended and to which the standard is welded. A generally conical sheet metal covering shroud 78 is fitted on the standard 21 over the plate 75.

The circular shelf 22 may be of the type described in the copending application of Shoffner, Serial No. 651,492, filed April 8, 1957, now U.S. Patent No. 2,915,194, granted December 1, 1959, and assigned to the assignee of this invention. The shelf 22 includes a mounting tube 80 with a slitted lower end 81 for axially positioning the shelf 22 on the standard 21. A plurality of generally triangularly shaped support arms 82 are welded to the tube 80 in extended relation for the support of a circular sheet metal plate 83 on the upper edges thereof. The plate 83 has a turned down peripheral edge 84 to which an annular retaining ring 85 is mounted. A compression collar 86 is fitted over the end 81 and includes an adjusting bolt 88 by means of which the tube 80 may be clamped on the standard 21.

The banana tree 23 includes radially upwardly extending support arms 90 each having an inner end 91 welded at the banana tree tube 24 and flattened at outer ends 92. A pair of concentric rings 93 and 94 are mounted to the top surface of the flattened ends 92. The rings 93 and 94 carry a plurality of outwardly extending inwardly turned hooks 95 to which bunches of bananas or other produce

may be attached for display. The tree 23 is vertically adjustable on the standard 21 by means of a collar 96 and set screw 97 which may be positioned, as desired, along the length of the tube 24 for abutment against the top of the standard 21.

Preferably, drive means are provided for turning the table body 20 at a slow rate, such as one r.p.m., for the rotational display of the produce carried thereon. For this purpose, a drive motor 100 is pivotally supported on a pair of extended motor support arms 102. The arms 102 have their inner ends welded at opposite sides of the supporting base post 34, as shown in Fig. 9. The motor 100 includes a mounting plate 103 which is pivotally mounted between the arms 102 on a rubber bushing assembly 104. The motor 100 drives a rubber rimmed pulley 106 through reduction gearing 107 and a clutch assembly 108. The pulley 106 is held in frictional driving contact with the bottom of the lower plate 40 by a tension spring 109 extended between the plate 103 and one of the legs 30 of the tripod support 31. A turn buckle 110 may be employed between the spring 109 and the leg 30 for adjusting the force of frictional contact between the pulley 106 and the plate 40.

The table of this invention may be stopped, or moved in either direction, as for loading, without danger of damage to the motor 100 or the reduction gearing 107. It has been found that the coefficient of friction between the pulley 106 and the plate 40 does not remain consistent, and the pulley 106 cannot be depended upon to slip upon the forceful movement of the body 20 without damage to the gearing 107. Accordingly, a clutch assembly 108, Fig. 10, is provided as an adjustable means for fixing the point at which the pulley will slip relative to the gearing 107.

The assembly 108 consists of a machine bolt 112 which has been axially bored for attachment on an output shaft 113 of the reduction gearing 107 by a set screw 114. The pulley 106 is mounted on the bolt 112 between a pair of Bakelite washers 115. An ordinary steel washer 116 backs up the Bakelite washer 115 on the inside, and a spring or Belleville washer 118 backs up the Bakelite washer 115 on the other side. A second steel washer 119 is positioned against the spring 118 and an adjusting nut 120 is threaded onto the bolt 112 against the washer 119. By adjusting the nut 120 against the washer 119, the spring washer 118 may be adjustably compressed against the combination of the pulley 106 and the Bakelite washers 115 for adjusting the point at which the washers 115 will slip on the pulley 106. The nut 120 includes a set screw 121 for locking the nut on the bolt 112 after adjustment.

The operation of the invention is generally apparent from the preceding description. The table, being relatively light in weight, may easily be moved wherever desired, and loaded. The stressed upper plate 36 provides a table top of great strength, and the uneven loading of produce will have no noticeable effect on the true-ness with which the body 20 turns. Power may be applied to the motor 100 to cause the rotation of the body 20 and the displayed produce on the table top and on the shelf 22 and tree 23. The slope in the plate 36 which is caused by the stressed elevation of its center in relation to its periphery assists in causing loose produce, such as dry onions or potatoes, to roll to the periphery as the table is emptied. When ice cooling is employed, the accumulated water may be tapped from time to time at the valve 57 as desired. The spaced relation of the shelf 22 to the body 20 may be adjusted as desired by the collar 86, and similarly, the extended height of the tree 23 in the standard 21 may be adjusted by the collar 96.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made

therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. A produce table comprising a support base, an upper plate of sheet material forming the top of said table, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to the lower side of said upper plate adjacent the periphery of said upper plate, a spacer mounted on said base for the support of said plates and extending axially from the underside of said upper plate to said lower plate, means securing the smaller end of said lower plate to said spacer in spaced relation with said upper plate causing said spacer to effect stressed elevation of the center of said upper plate in relation to its periphery, and wall means fixed in circumferential relation to said upper plate to provide for the retention of produce on said table.

2. A rotatable produce table comprising a support base, a generally circular upper plate of sheet material forming the top of said table, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to the lower side of said upper plate adjacent the periphery of said upper plate, a spacer rotatably mounted on said base for the support of said plates and extending axially from the underside of said upper plate to said lower plate, means securing the smaller end of said lower plate to said spacer in spaced relation with said upper plate causing said spacer to effect stressed elevation of the center of said upper plate in relation to its periphery, and a rim fixed in circumferential relation to said upper plate with at least a portion thereof extending above said top to provide for the retention of produce on said table.

3. A produce table comprising, a generally circular upper plate of sheet material forming the top of said table and having a circumferential turned down lip at the periphery thereof, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to the lower side of said upper plate adjacent said lip, a tubular spacer extending axially from the underside of said upper plate to said lower plate, means securing the smaller end of said lower plate to said spacer in spaced relation with said upper plate causing said spacer to effect stressed elevation of the center of said upper plate in relation to its periphery, an annular rim fixed to said upper plate at said lip with at least a portion thereof extending above said upper plate to provide for the retention of produce on said table a supporting post, means including said spacer for rotatably mounting said table on said post, and support means including legs for supporting said post in upstanding relation.

4. A wet table adapted for the support and display of iced fresh produce comprising a support base, a generally circular upper plate of sheet material forming the top of said table and having a circumferential lip at the periphery thereof, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to the lower side of said upper plate adjacent said lip, a spacer mounted on said base for the support of said plates and extending axially from the underside of said upper plate to said lower plate, means securing the smaller end of said lower plate to said spacer in spaced relation with said upper plate causing said spacer to effect stressed elevation of the center of said upper plate in relation to its periphery, an annular rim fixed in sealing relation to said upper plate at said lip with at least a portion thereof extending above said upper plate to provide for the retention of produce on said table, and drain means in said plates adjacent said rim for removing accumulated water from the top of said table.

5. A produce table comprising a table supporting base, an upper plate of sheet material forming the top of said table, a central opening in said plate, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to the lower side of said upper plate adjacent the periphery of said upper plate, a spacer mounted on said base and extending axially from said upper plate at said central opening to said lower plate, means securing the smaller end of said lower plate to said spacer in spaced relation with said upper plate causing said spacer to effect stressed elevation of the center of said upper plate in relation to its periphery, a standard for the support of shelving in spaced relation to produce on said top, and means for mounting said standard to said upper plate for extension substantially normal to said top.

6. A produce table comprising an upper plate of sheet material forming the top of said table and having a circumferentially turned lip, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to the lower side of said upper plate, a spacer extending axially from the underside of said upper plate through said lower plate, means securing the smaller end of said lower plate to said spacer in spaced relation with said upper plate causing said spacer to effect stressed elevation of the center of said upper plate in relation to its periphery, an annular rim fixed to said upper plate at said lip with at least a portion thereof extending above said upper plate to provide for the retention of produce on said table, a supporting post having legs arranged to hold said post in upstanding relation, means including said spacer for rotatably mounting said table on said post, table drive means including a table drive pulley, a drive motor, and a friction clutch interposed in driving relation between said pulley and said motor to provide for the moving of said table independently of said motor.

7. A rotatable display table comprising a body including an upper plate of sheet material forming the top of said table, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to said upper plate, spacer means extending centrally from said upper plate to said lower plate and being secured to said plates with the smaller end of said lower plate in spaced relation with said upper plate and with the center of said upper plate in stressed elevation in relation to its periphery, and table support means rotatably supporting said table body at said spacer means.

8. A display table comprising a body including an upper plate of sheet material forming the top of said table, a generally frustoconical lower supporting plate of sheet metal circumferentially secured to said upper plate, spacer means extending centrally from said upper plate to said lower plate and being secured to said plates with the smaller end of said lower plate in spaced relation with said upper plate and with the center of said upper plate in stressed elevation in relation to its periphery, and a table support base supporting said table body at said spacer means.

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