

April 25, 1961

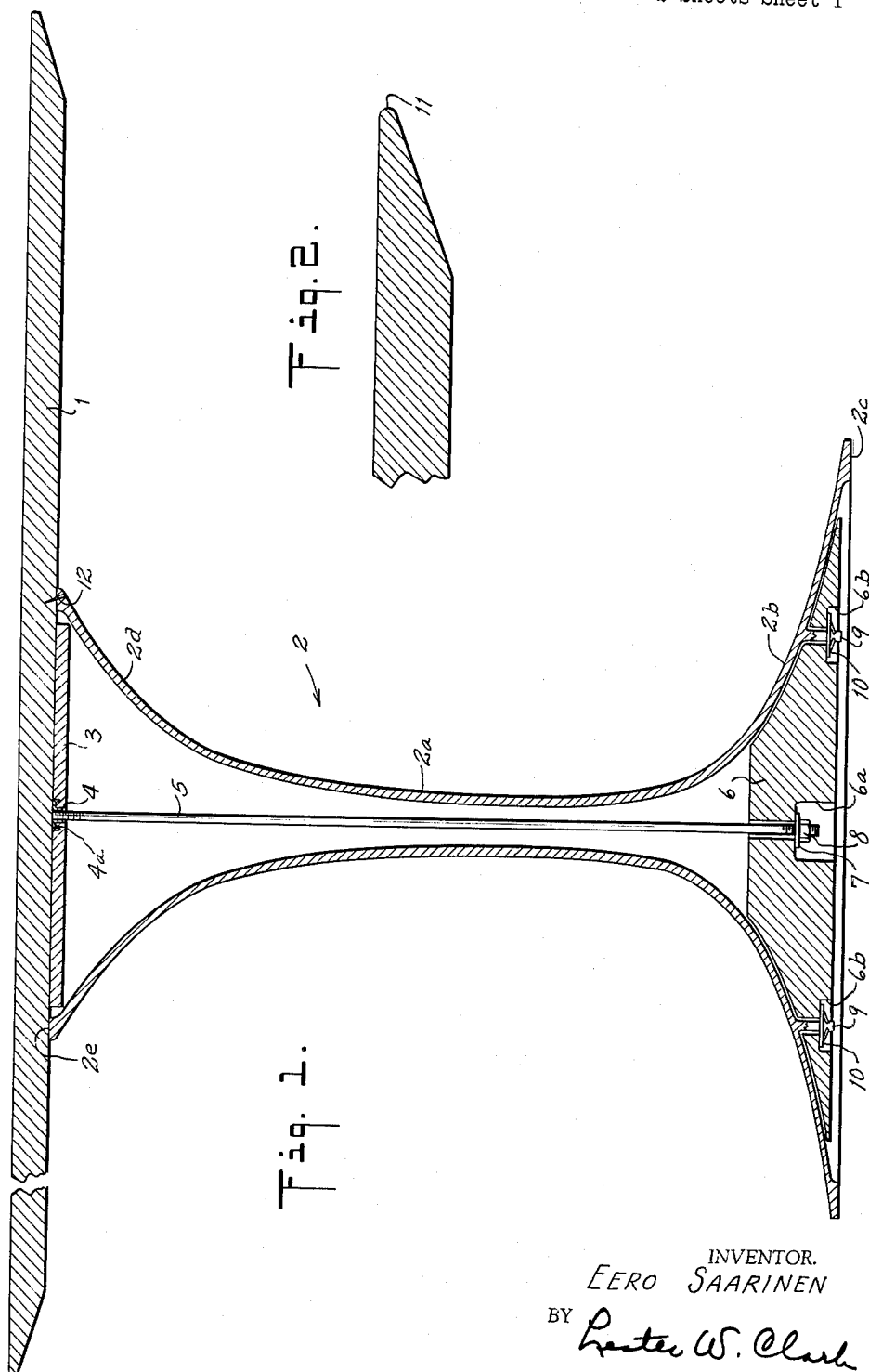
E. SAARINEN

2,981,578

TABLE WITH HOLLOW CENTRAL PEDESTAL SUPPORT

Original Filed May 2, 1957

2 Sheets-Sheet 1



INVENTOR.
EERO SAARINEN
BY *Robert W. Clark*
ATTORNEY

April 25, 1961

E. SAARINEN

2,981,578

TABLE WITH HOLLOW CENTRAL PEDESTAL SUPPORT

Original Filed May 2, 1957

2 Sheets-Sheet 2

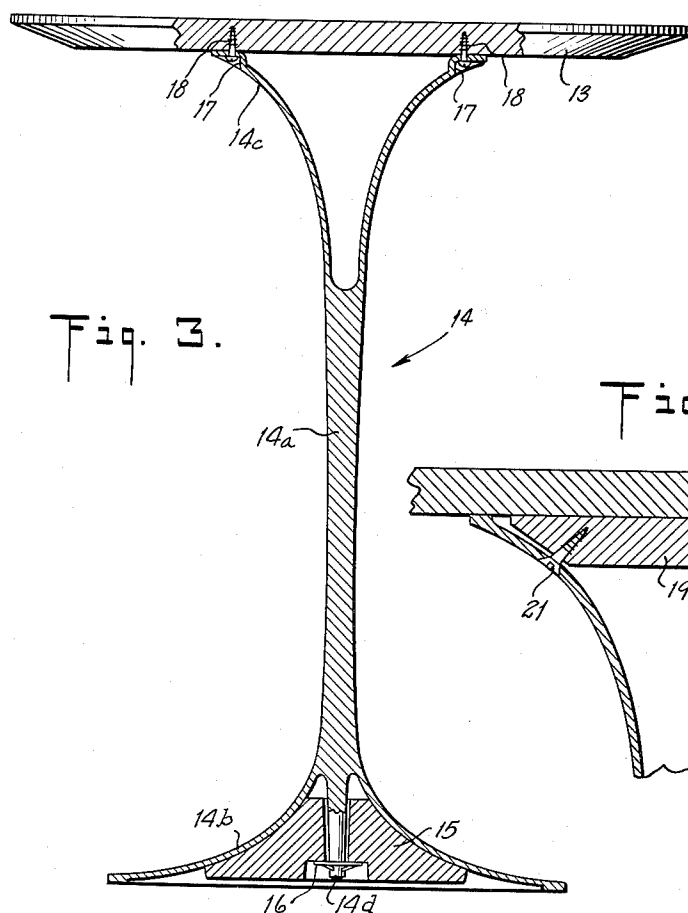


Fig. 3.

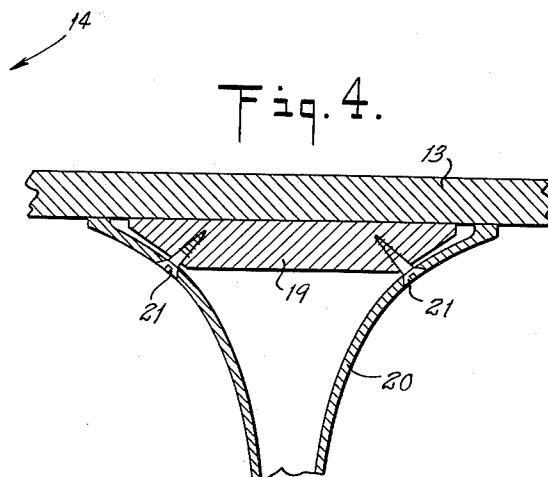


Fig. 4.

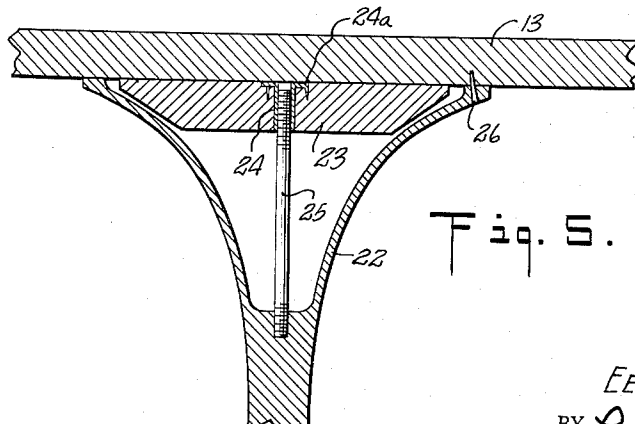


Fig. 5.

INVENTOR.
SAARINEN
EERO
BY Lester W. Clark
ATTORNEY

1

2

2,981,578

TABLE WITH HOLLOW CENTRAL PEDESTAL SUPPORT

Eero Saarinen, Bloomfield Hills, Mich.

Continuation of application Ser. No. 659,639, May 2, 1957. This application May 20, 1959, Ser. No. 814,646

9 Claims. (Cl. 311-101)

This application is a continuation-in-part of my copending application Serial No. 648,804, filed March 27, 1957, entitled "Articles of Furniture and Supports Therefor," now Patent No. 2,939,517, issued June 7, 1960, and is also a continuation of my copending application Serial No. 656,639, filed May 2, 1957, entitled "Table With Hollow Central Pedestal Support," now abandoned in favor of the present application.

The present invention relates to tables and single central pedestal supports for tables whose design and construction generally parallel the design and construction of the chairs disclosed in my co-pending application, identified above.

There are shown and described in my copending design patent applications Serial Nos. D. 46,001, D. 46,002 and D. 46,004, filed May 3, 1957, entitled "Table or the Like," now Design Patent Nos. 187,797, 187,798, 187,799, respectively, issued May 3, 1960, designs which are compatible with the chair designs and structures shown in my application Serial No. 648,804, fully identified above. The tables embodying these designs are supported on a base which comprises a single central pedestal including a narrow column flaring smoothly at its lower end into a foot which engages the floor and flaring at its upper end into a wide upper surface for engaging the underside of the table top. The profile of the central pedestal or column in a single smooth continuous curve from the floor to the highest point where it may be seen by an observer looking at the table from a normal level, i.e., above the level of the table top. There are no angles to break the sweep of the observer's eye along the pedestal. These designs have a very restful and pleasing effect on an observer, particularly when used in conjunction with chairs of corresponding design.

The pedestal contours employed in these designs do not lend themselves readily to manufacture by conventional methods. If made with conventional structures, tables employing these design contours would be top heavy and hence would have a tendency toward instability.

An object of the invention is to provide a single central pedestal structure having a simple external contour and adapted to support a table or the like.

Another object of invention is to provide an improved table of the type described, including improved means for stabilizing the table.

Another object is to provide improved connecting arrangements between the single pedestal and the table top, which connecting arrangements are largely concealed from an observer.

Other objects and advantages of the invention will become apparent from a consideration of the following description and claims taken together with the accompanying drawings.

In the drawings:

Fig. 1 is a vertical sectional view illustrating a table constructed in accordance with the invention, having a part of the table top broken away to reduce the size of the figure;

Fig. 2 is a fragmentary cross-sectional view showing a modified form of construction of the edge of the table top;

Fig. 3 is a view, partly in section and partly in elevation, showing a modified form of table embodying the invention; and

Figs. 4 and 5 are fragmentary cross-sectional views showing modified forms of connections between the pedestal and the table top in accordance with the invention.

Fig. 1

This figure illustrates a table including a relatively wide top 1, which may be either circular or elliptical when viewed in plan, and a single central pedestal supporting the top and indicated generally by the reference numeral 2. The pedestal 2 comprises a relatively slender middle neck portion 2a, an outwardly flaring lower portion 2b terminating at its lower end in an annular foot 2c adapted to engage the floor or other support, and an upper outwardly flaring portion 2d terminating at its upper end in an annular surface 2e adapted to engage the underside of the table top 1.

The pedestal 2 is hollow throughout its length. There is bonded or otherwise suitably fastened to the under side of the table top a circular block 3. Before being bonded to the table top 1, the block 3 has a central aperture formed therein as by boring, a bushing 4, internally threaded and having a flange 4a on its upper end, is inserted in the aperture. The top of the block 3 is recessed to receive the flange 4a so that it does not project above the upper surface of the block. A rod 5 is threaded at its upper and lower ends, and has its upper end threaded into the bushing 4. The lower end of the rod 5 extends through a central aperture in a weight 6, which is contoured to conform generally to the interior of the flared lower portion 2b of the pedestal. The rod 5 extends into a recess 6a formed in the lower side of the weight 6. Inside that recess a washer 7 is received on the rod 5 and a nut 8 is threaded onto that rod. The washer 7 is large enough to engage the bottom of the weight 6. Tightening the nut 8 on the rod 5 brings the weight up into engagement with the inner surface of the flaring column portion 2b. The vertical dimension of the weight 6 is such that its lower end clears the floor by a substantial amount when it is so received.

The downwardly flaring lower portion 2b of the pedestal has formed thereon a plurality of downwardly projecting integral studs, two of which are shown at 9 in the drawings. These studs 9 project through corresponding apertures in the weight 6 into recesses 6b formed in the lower surface thereof. Within those recesses, the studs receive spring washers 10, of conventional form, having radially inwardly projecting teeth, which engage the studs 9 and prevent downward movement of the weight thereon. The weight is held snugly and firmly in place by the washer 7, nut 8 and the spring washers 10, so that no part of it can extend downwardly below the foot 2c of the pedestal.

The periphery of the table top 1 has its lower end bevelled. The outer periphery of the top may have square corners at the edge of the bevel and at the edge of the upper surface as shown at Fig. 1 or may have rounded corners as shown at 11 in Fig. 2.

In assembling the table, the bushing 4 is first assembled with the block 3 and the latter is then fastened to the table top 1. The weight 6 is assembled with the pedestal 2 by inserting it therein and placing the spring washers 10 in place. The table top with the attached block is then supported upside down while the assembled pedestal and weight are placed on it. The rod 5 is then inserted through the weight 6 and threaded into the bushing 4. After the end of the rod 5 is brought into abutting en-

3

gagement with the table top, the washer 7 and nut 8 are added on the lower end of the rod 5. A pin or nail 12 is driven through the periphery of the upper end of the pedestal 2 and into the table top to prevent relative rotation between the table top and the pedestal 2, which might cause a loosening of the rod 5 in the bushing 4. The assembly is then complete.

The pedestal 2, may be regarded as a hollow cylinder which has been deformed at its ends by flaring. Since all the load on the table is to be borne by this single cylinder, it is highly desirable that any such load or stress applied to the top of the cylinder be distributed substantially equally about the cylinder walls. Such equal distribution of stress is best attained by making the pedestal 2 circularly annular in cross-section. It is possible to obtain a fairly good stress distribution in a column structure which is polygonal in cross-section rather than circular. However, the best distribution of stress is attained in a circular cross-section structure where there are no angles to serve as points of stress concentration.

It is greatly preferred to have the cross-sectional profiles of the base, top and neck portions of the column taken on any vertical plane containing the vertical axis join one another along a single smooth continuous curve, as illustrated in Fig. 1. When the column is so constructed, the loads on the table are transmitted from higher to lower localities in the column as compressive stresses, without the development of substantial shear stresses or vertically directed tensile stresses at any locality. Practically the only tensile stress present in the structure is a horizontally directed peripheral stress tending to spread the column.

Fig. 3

This figure illustrates a modified form of table and supporting pedestal, which is generally suitable for smaller tables, e.g., bedside tables and the like. This table includes a relatively wide top 13 and a central pedestal 14. As in the case of Fig. 1, the top 13 may be either circular or elliptical when viewed in plan. The column 14 comprises a solid, relatively slender neck portion 14a with a flaring hollow lower portion 14b and a flaring hollow upper portion 14c. Inside the hollow lower portion 14b there is integrally formed with the column 14 a single downwardly projecting stud 14d. A weight 15 is received within the hollow portion 14b and is apertured to permit passage of the stud 14d. A spring washer 16, similar to the spring washers 19 of Fig. 1, engages the stud 14d and holds the weight 15 firmly in place within the raised lower portion 14b. The flared upper portion 14c is provided at diametrically opposite points of its periphery with indentations 17 on its lower surface. These indentations provide flat, plane upper surfaces, and are apertured to permit passage of screws 18 which fasten the pedestal 13 on the top 14.

Fig. 4

An alternative method of fastening top 13 to pedestal 20 is shown in this figure. In this arrangement, a block 19 is fastened, as by bonding, to the under side of the table top 13. The block 19 is contoured so that it is received within the hollow upper end portion of a pedestal 20. The pedestal 20 is provided with apertures to receive a pair of screws 21 which threadedly engage the block 19 and hold the table top 13 firmly in place.

Fig. 5

This figure illustrates still another alternative method of fastening the table top 13 to a central pedestal 22 having a hollow top portion. A block 23 is fastened as by bonding to the under side of the table top 13. The block 23 has an aperture formed in its center, as by boring, and a bushing 24 having a flange 24a on its upper end is inserted in that aperture. A rod 25 has a threaded upper end which is received in the internally

4

threaded bushing 24. The lower end of the rod 25 is threaded into the solid middle section of the pedestal 22. A pin or nail 26, similar to the pin 12 of Fig. 1 holds the pedestal 22 and table top 13 against rotation.

The structure shown in Fig. 5 is assembled by first assembling bushing 24 in block 23 and then bonding the block 23 to the table top 13. The rod 25 is then threaded into the pedestal 22. The parts are then assembled by placing the top on the pedestal and threading the upper end of the rod into the bushing 24, whereupon the top is rotated until its under surface engages the top of the pedestal 22. The pin 26 is then inserted to hold the parts firmly in place.

While I have shown and described certain preferred embodiments of my invention, other modifications thereof will readily occur to those skilled in the art, and I therefore intend my invention to be limited only by the appended claims.

I claim:

1. A table comprising a relatively wide top, a single central pedestal supporting said top, said pedestal having a relatively slender middle portion, a flaring lower portion terminating in a floor-engaging rim, and a flaring upper portion terminating in a top-engaging rim, at least said lower and upper portions being hollow, a weight received in said hollow lower portion with the bottom of said weight above said floor-engaging rim, means attaching said weight to said lower portion, and means attaching the top to said upper portion with the under surface of the top abutting said top-engaging rim, said weight attaching means comprising at least one stud integral with and projecting downwardly from said pedestal within said hollow lower portion, said weight being apertured to receive said stud and having a recess in its lower surface around said aperture, and a spring washer received in said recess and having a peripheral flange abutting the under side of said weight and a plurality of central spring teeth bitingly engaging said stud to prevent downward movement of the washer thereon.

2. A table as defined in claim 1, in which said pedestal has a solid middle portion, said pedestal comprising a single stud integral with said middle portion and projecting downwardly therefrom, said weight being fastened on said stud by a single spring washer.

3. A table as defined in claim 1, in which said hollow lower portion has a plurality of integral studs spaced radially from the axis of the pedestal and projecting downwardly therefrom, said weight being apertured to receive said studs, and a corresponding plurality of spring washers attached to said studs and engaging the under surface of the weight.

4. A table comprising a relatively wide top, a single central pedestal supporting said top, said pedestal having a relatively slender middle portion, a flaring lower portion terminating in a floor-engaging rim, and a flaring upper portion terminating in a top-engaging rim, at least said lower and upper portions being hollow, a weight received in said hollow portion with the bottom of said weight above said floor-engaging rim, means attaching said weight to said lower portion and means attaching the top to said upper portion with the under surface of the top abutting said top-engaging rim, said table top attaching means comprising a block fixed to the under side of said table top and received in said hollow upper portion, an internally threaded bushing in said block, a rod threaded at its ends and having its upper end received in said bushing, said rod extending downwardly through said hollow upper portion, means threadedly engaging the lower end of the rod and effective to fix it against upward movement with respect to said pedestal, and means to fix said top against rotary movement on said threaded rod.

5. A table as defined in claim 4, in which said means

5

threadedly engaging the lower end of the rod is integral with the middle portion of said pedestal.

6. A table as defined in claim 4, in which said pedestal is hollow throughout its length, said rod extends downwardly through said weight, and said weight attaching means comprises means fixed to the lower end of the rod and engaging the under side of the weight.

7. A table comprising a relatively wide top, a single central hollow pedestal supporting the top, said pedestal having a relatively slender middle portion, a flaring lower portion terminating in a floor-engaging rim, and a flaring upper portion terminating in a top-engaging rim, a plurality of studs integral with and projecting downwardly from the pedestal inside said lower portion and spaced radially from the pedestal axis, a block fixed to the under side of said table top and received in said hollow upper portion, an internally threaded bushing in said block, a rod threaded at its ends and having its upper end received in said bushing, said rod extending downwardly through the pedestal, a weight received in the lower portion of the pedestal and apertured to receive the studs and the lower end of the rod, said weight having recesses in its lower surface of larger diameter than and encircling the apertures, and means in each recess engaging the associated stud or rod, said last-named means collectively holding the weight within the pedestal.

8. A table comprising a relatively wide top, a single central pedestal supporting said top, said pedestal having a relatively slender middle portion, a flaring lower portion terminating in a floor-engaging rim, and a flaring upper portion terminating in a top-engaging rim, said pedestal being hollow throughout its vertical length, a weight received in said hollow lower portion with the bottom of the weight above the floor-engaging rim, and means attaching the top to said upper portion, said table top attaching means comprising a block fixed to the under side of said table top, an internally threaded bush-

6

ing in said block, a through bolt threaded at its ends and having its upper end received in said bushing, said rod extending downwardly through said hollow pedestal and through said weight, means fixed to the lower end of the rod and engaging the under side of the weight, and means to fix said top against rotary movement on said threaded rod.

9. A table comprising a relatively wide top, a single central pedestal supporting said top, said pedestal having a relatively slender middle portion, a flaring lower portion terminating in a floor-engaging rim, and a flaring upper portion terminating in a top-engaging rim, at least said upper portion being hollow, and means attaching the top to said upper portion, said table top attaching means comprising a block fixed to the under side of said table top, an internally threaded bushing in said block, a rod threaded at its ends and having its upper end received in said bushing, said rod extending downwardly through said hollow upper portion, means integral with the middle portion of the pedestal and threadedly engaging the lower end of the rod and effective to fix it against upward movement with respect to said pedestal, and means to fix said top against rotary movement on said threaded rod.

References Cited in the file of this patent

UNITED STATES PATENTS

775,006	Groll	Nov. 15, 1904
797,990	Treichel	Aug. 22, 1905
905,627	Astruck	Dec. 1, 1908
1,081,498	Gudeman	Dec. 16, 1913
1,320,823	Astruck	Nov. 4, 1919
1,425,945	Congdon	Aug. 15, 1922
1,719,098	Carmichael et al.	July 2, 1929
1,744,425	Wanner	June 21, 1930
2,079,532	Sheppard	May 4, 1937
2,560,659	Payeur	July 17, 1951