Feb. 19, 1957 J. A. NATALE 2,782,085

COLLAPSIBLE TABLE

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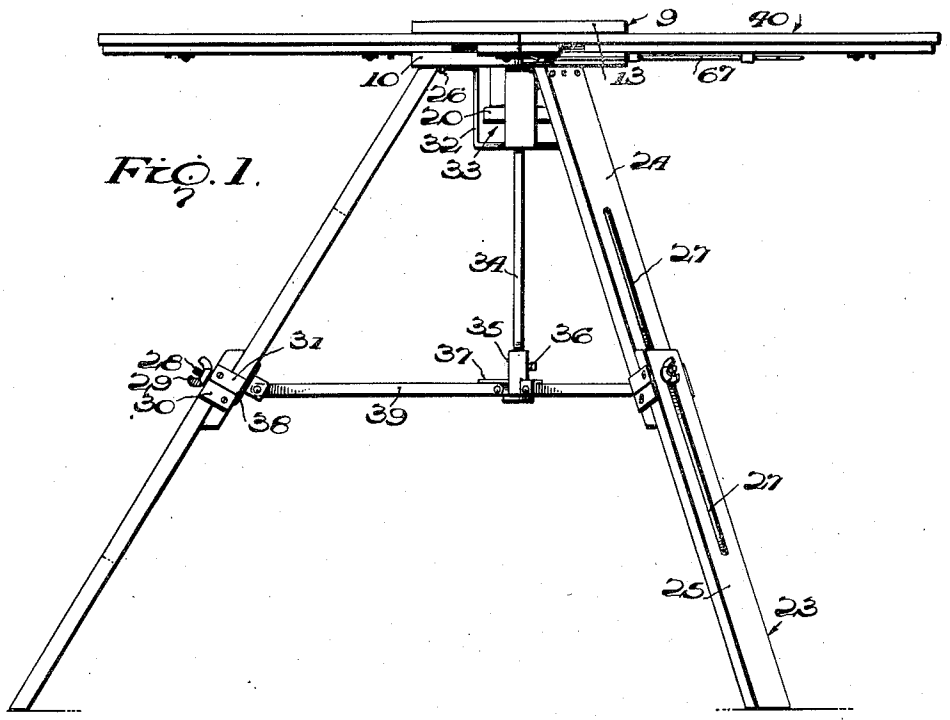


Fig. 1.

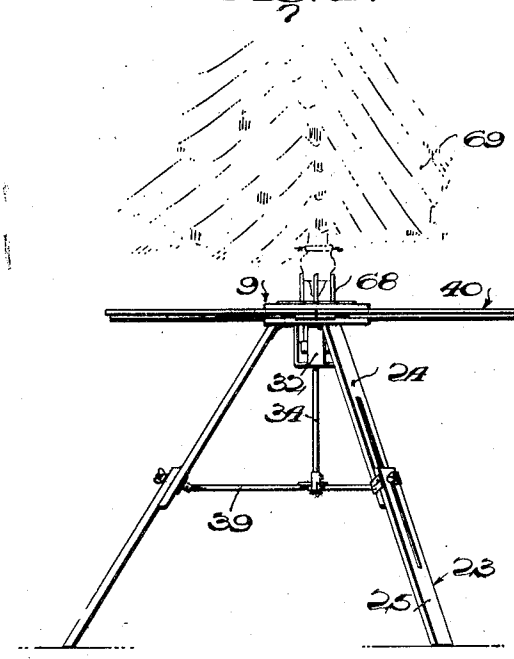


Fig. 2.

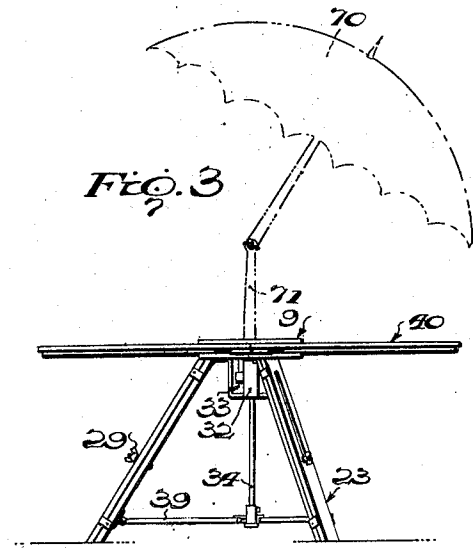


Fig. 3.

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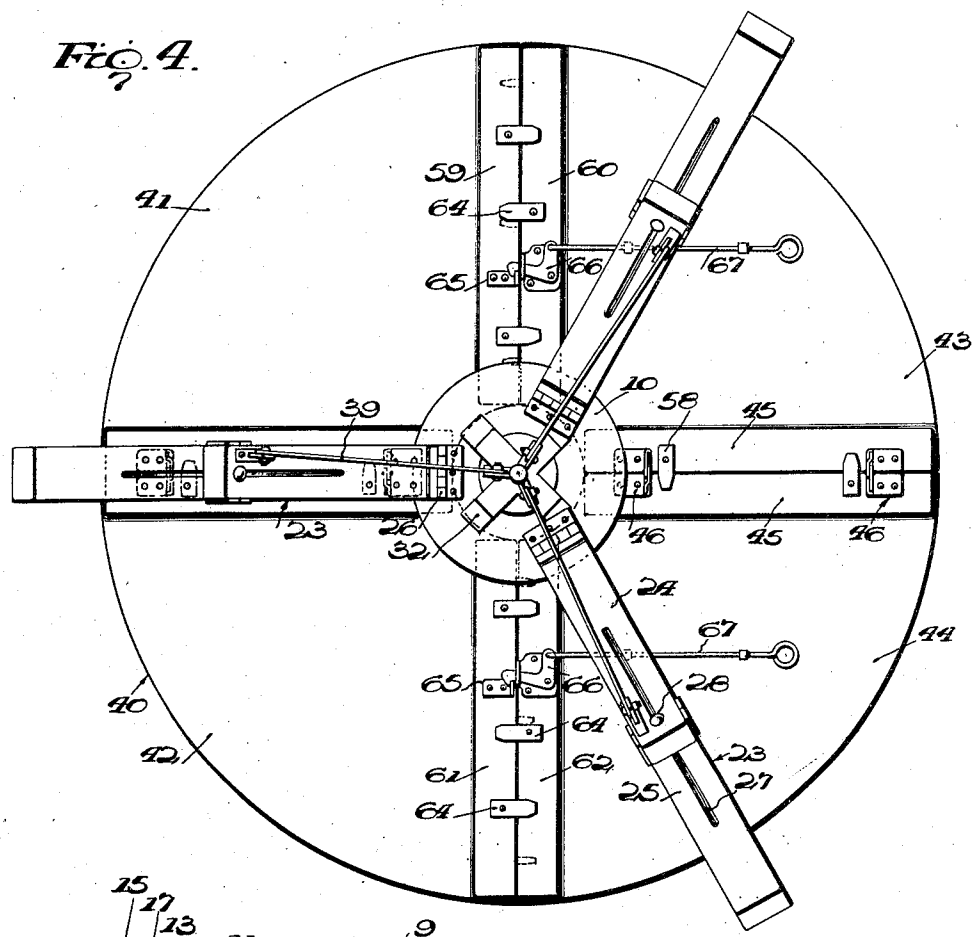
Feb. 19, 1957 J. A. NATALE 2,782,085

COLLAPSIBLE TABLE

Filed Dec. 5, 1955 3 Sheets-Sheet 2

Fig. 4.



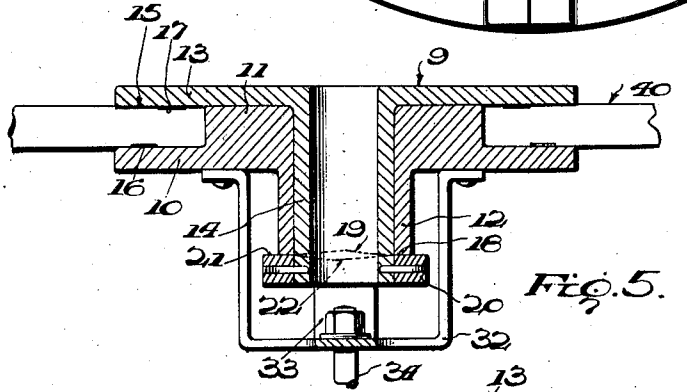




Fig. 5.

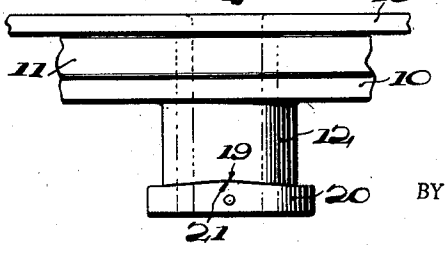



Fig. 6.

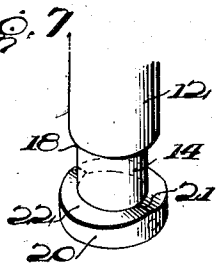



Fig. 7.

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Feb. 19, 1957 J. A. NATALE 2,782,085

COLLAPSIBLE TABLE

Filed Dec. 5, 1955 3 Sheets-Sheet 3

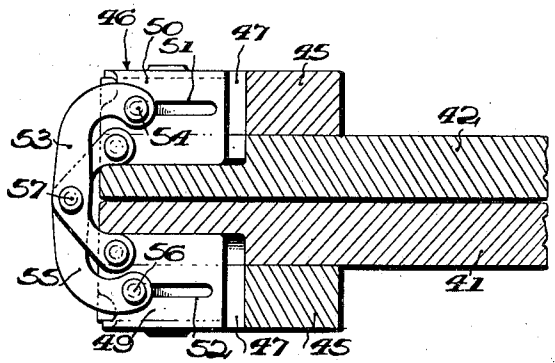


Fig. 8.

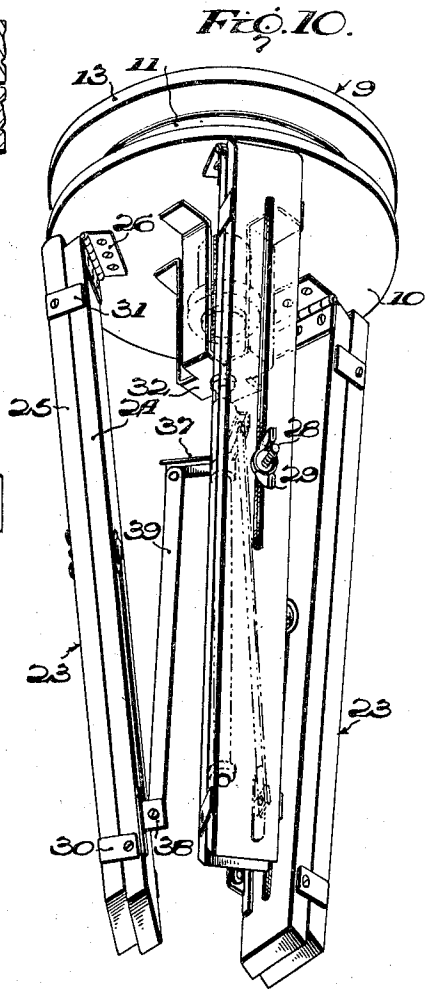


Fig. 10.

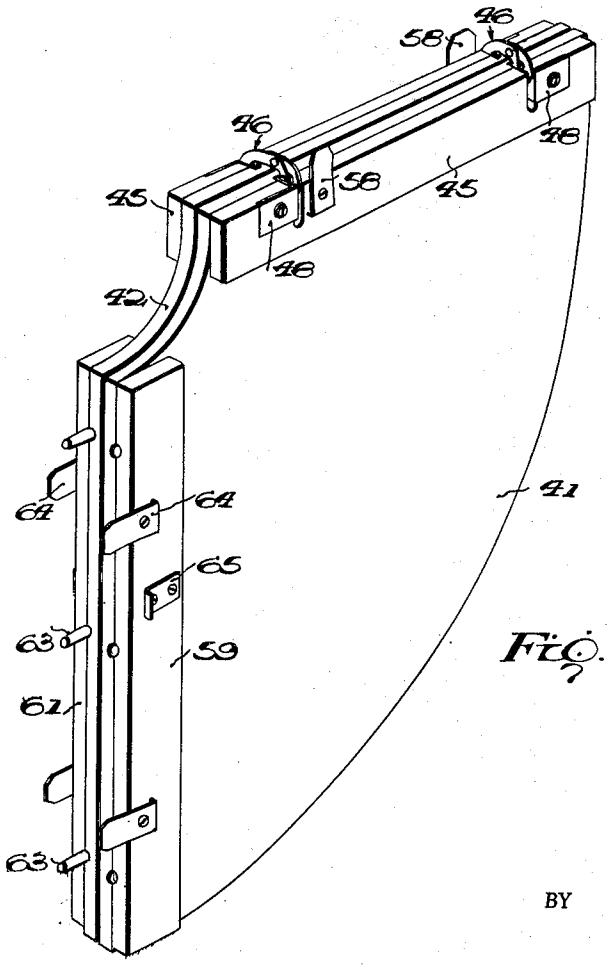


Fig. 9.

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United States Patent Office 2,782,085
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2,782,085

# COLLAPSIBLE TABLE

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Application December 5, 1955, Serial No. 551,106

10 Claims. (Cl. 311—32)

This invention relates to an improved collapsible table.

One of the objects of the invention is to provide a table suitable for use either outdoors or indoors, wherein, when used outdoors, the table will provide an attractive and convenient article of so-called yard furniture suitable, among other uses, to be employed as a support for an umbrella sunshade, and wherein, when used indoors, the table will, among other uses, provide a convenient and stable support for a Christmas tree.

Another object of the invention is to provide a table embodying a stand for supporting the table top, wherein the legs of the stand may be adjusted in length to vary the height of the table, and wherein the table top may be detached from the stand and compactly folded.

And a still further object of the invention is to provide a table wherein the table top may, when so desired, be rotated upon the stand, wherein the table top may be easily locked frictionally in any position of rotated adjustment solidly stationary upon the stand, and wherein the table top may be easily released when it is desired to either rotate the table top or remove the table top from the stand.

Other and incidental objects will appear during the following description of the invention, and in the drawings:

Figure 1 is a side elevation of my improved table.

Figure 2 is a side elevation showing the table used to support a Christmas tree.

Figure 3 is a side elevation showing the table used to support an umbrella sunshade.

Figure 4 is a bottom plan view of the table.

Figure 5 is an enlarged, detail, vertical section through the head of the stand of the table.

Figure 6 is a fragmentary side elevation showing the top plate of the head loosened.

Figure 7 is a fragmentary perspective view particularly showing the cam collar of the top plate of the head of the stand.

Figure 8 is a detail sectional view showing one of the hinges employed between companion sections of the table top.

Figure 9 is a perspective view showing companion sections of the table top folded.

Figure 10 is a perspective view showing the stand collapsed and without the table top.

In carrying the invention into effect, I employ a stand which, as best seen in Figure 5 of the drawings, is provided with a circular head **9** comprising a bottom plate **10** on which is formed a hub **11**, and depending from said plate axially thereof is a sleeve **12**. Coacting with the bottom plate **10** is a flat top plate **13** which overlies the hub **11**, and formed on the top plate axially thereof is a tubular stem **14** which telescopically as well as rotatably fits through the sleeve **12** of the bottom plate. An annular groove **15** is thus defined between the peripheral margins of the plates, and formed on the bottom plate within said groove is an annular bead **16**, while the top plate is provided with a like bead **17** of less diameter than the bead **16**, so that the two beads are staggered with respect to each other.



At its lower end, the sleeve **12** is formed with a sinuous lower edge to provide diametrically disposed cam faces **18**, at a right angle to which are oppositely disposed depressions **19**. Removably pinned or otherwise fixed to the lower end of the stem **14** of the top plate **13** is a collar **20** which is provided with oppositely disposed cam faces **21**, and, at a right angle to the cam faces **21**, with oppositely disposed depressions **22**. Thus, as will be seen, when the top plate is rotated in one direction to dispose the cam faces **21** of the collar **20** beneath the cam faces **18** of the sleeve **12**, the top plate will, as seen in Figure 5 of the drawings, be wedged downwardly toward the hub **11** of the bottom plate **10** and thus tightened, while, when the top plate **13** is rotated in the opposite direction, the cam faces **21** of the collar will, as seen in Figure 6 of the drawings, be received in the depressions **19** and the cam faces **18** of the sleeve in the depressions **22** of the collar, so that the top plate **13** will be freed for limited upward axial movement and thus loosened.

Swingingly connected to the bottom plate **10** of the head **9** of the stand are equidistantly spaced legs **23**, preferably three in number. Each of these legs is composed of overlapping upper and lower sections **24** and **25** respectively, and connecting the upper sections to the plate **10** are suitable hinges **26**. Formed in the sections are elongated slots **27** which more or less freely receive bolts **28** slidably connecting the sections with each other, and, preferably, the bolts are provided with wing nuts **29**, so that, as will be understood, the lower sections of the legs may be readily adjusted upon the upper sections thereof for varying the length of the legs. Fixed to the side edges of the upper sections **24** near their lower ends are guide plates **30** embracing the side edges of the lower sections **25**, and fixed to the side edges of the lower sections near their upper ends are like guide plates **31** embracing the side edges of the upper sections. These guide plates will accordingly maintain the sections **24** and **25** of the legs in registering alignment.

Fixed at their ends to the lower side of the bottom plate **10** of the head **9** of the stand is a pair of U-shaped straps **32** which straddle the sleeve **12** of said plate and are crossed at a right angle to each other to provide a socket **33** at the lower end of the stem **14** of the plate **13** of said head. Extending through the straps **32** at their intersection is a depending rod **34**, and slidable upon said rod is a sleeve **35** which carries a set screw **36** for securing the sleeve in adjusted position along the rod. The sleeve **35** is provided with ears **37**, while at points near their lower ends the upper sections **24** of the legs **23** carry hinge plates **38**, and pivotally connected to said ears and to said plates are links **39**. As will be perceived, the sleeve **35** may thus be adjusted along the rod **34** for adjustably spreading the legs **23** of the stand and securing the legs in adjusted position.

Removably supported by the stand, as described in the foregoing, is a preferably circular table top **40**. This table top is composed of four sector-shaped sections hinged together in pairs, the sections of one pair being indicated at **41** and **42** respectively, and the sections of the other pair at **43** and **44** respectively. Each pair of sections thus forms half of the table top. Fixed to the under side of each pair of sections of the table top at their radial lines of hinged connection are pairs of mating reinforcing cleats **45**, and mounted upon each pair of cleats are spaced hinges **46**. These hinges are all alike, and, accordingly, only a single hinge need be described in detail.

As best seen in Figure 8 of the drawings, the cleats **45** are provided at each hinge **46** with a pair of oppositely disposed slots **47**, and fixed to the lower faces of said

cleats are like angle-shaped hinge plates 48 having wings 49 and 50 respectively which extend into said slots. The wings are provided with like longitudinal slots 51 and 52 respectively, and pivoted at one end to the upper end of the wing 49 is an arcuate hinge link 53, to the free end of which is fixed a stud 54 slidable in the slot 51 of the wing 50. Pivoted at one end to the upper end of the wing 50 is a like mating hinge link 55, to the free end of which is fixed a stud 56 slidable in the slot 52 of the wing 49, and pivotally connecting the links with each other is a pintle 57.

Figure 9 of the drawings shows a pair of the sections of the table top 40, say the sections 41 and 42, folded. As the sections are swung into aligned normal position, the pintles 57 of the hinges 46 of the sections will act on the links 53 and 55 to shift the studs 54 and 56 toward the outer ends of the slots 51 and 52 of the wings 49 and 50, while the sections 41 and 42 of the table top will swing about said pintles into aligned mating position abutting at their meeting edges. Preferably, each pair of cleats 45 carries a pair of spaced, reversely presented, resilient guide clips 58 for directing the sections of each half of the table top into mating relation as well as eliminating any sagging between the parts.

Fixed to the under side of the sections 41 and 43 of the table top 40 at the radial line of separable connection therebetween is a pair of mating reinforcing cleats 59 and 60 respectively, while the sections 42 and 44 carry a like pair of cleats 61 and 62 respectively. Preferably, the cleats 60 and 61 carry dowel pins 63 which removably fit in suitable sockets in the cleats 59 and 62, and secured to the several cleats are reversely presented, resilient guide clips 64 which serve the same purpose as the clips 58.

Secured to the cleats 59 and 61 are catch plates 65, and mounted upon the cleats 60 and 62 are pivoted angle-shaped catch members 66 disposed to engage the plates 65. Connected to the catch members 66 are hand rods 67 which extend toward the free edges of the sections 43 and 44 of the table top and are thus easily accessible for operating said catch members. As will be seen, the catch members 66 will normally lock the two halves of the table top 40 solidly together.

It is now to be noted, as best seen in Figure 9 of the drawings, that the tips of the several sections of the table top 40 are cut away along arcuate lines to fit the hub 11 of the bottom plate 10 of the head 9 of the stand, and, as seen in Figure 5, are received in the annular groove 15 between the peripheral margins of the plates 10 and 13 to coact therewith. Consequently, when the top plate 13 is tightened, as previously described, the inner peripheral margin of the table top will be firmly clamped between said plates for solidly connecting the table top with the stand. Furthermore, as the plate 13 is tightened, the bead 16 will tend to bite into the inner ends of the several cleats 45, 59, 61, and 62, while the bead 17 will tend to bite into the upper surface of the inner peripheral margin of the table top and exert a canting action thereon for eliminating any looseness between the parts.

To assemble the table top 40 with the stand, companion sections of the table top, say the sections 41 and 42, are first swung into alignment and inserted in the groove 15 of the head 9 of the stand, the top plate 13 of said head having been loosened, as previously described. The sections 43 and 44 of the table top are then likewise aligned and inserted in said groove, when the two halves of the table top are locked together by the catch members 66. The top plate 13 is then tightened for binding the table top in position, when, if so desired, the legs 23 of the stand may be adjusted, as previously described, for either raising or lowering the level of the top of the table.

In connection with the installation of the table top 40, it may be noted that after the top plate 13 of the head 9 of the stand has been manually rotated to frictionally grip the table top, the table top itself may then be rotated manually for further turning the plate 13 until the top plate is tightened sufficiently to lock the table top rotatively stationary. On the other hand, the table top may be counter-rotated manually to loosen the plate 13, when the table top may be freely turned to any rotated position of adjustment desired and again locked stationary.



As previously indicated, Figure 9 of the drawings shows the sections 41 and 42 of the table top 40 folded or collapsed, and, of course, the sections 43 and 44 of the table top may be folded in like manner. Figure 10 of the drawings shows the stand collapsed and without the table top.

In Figure 2 of the drawings, I have shown the table employed to support a Christmas tree. A Christmas tree holder is conventionally shown at 68, and a Christmas tree at 69. Any suitable means may be employed for securing the holder 68 to the table, and, if found appropriate, the head 9 of the stand may be provided with suitable openings for receiving fastening elements for the holder. The use of the table as a support for a Christmas tree has been found particularly advantageous, since, as previously noted, the height of the table may be adjusted, while the table top 40 provides ample space for the arrangement of figurines and the like beneath the tree.

In Figure 3 of the drawings, I have shown the table employed to support an umbrella sunshade. A sunshade is conventionally shown at 70, and, as usual, the sunshade is provided with a center pole 71. The lower end of the pole is inserted through the stem 14 of the top plate 13 of the head 9 of the stand to rest in the socket 33 provided by the crossed straps 32. The straps will thus sustain the weight of the sunshade, while the stem 14 will cooperate with said straps for maintaining the lower end of the pole 71 in upright position.

Having thus described my invention, I claim:

1. A table including a head having a bottom plate, an adjustably rotatable top plate overlying the bottom plate and having a stem slidably and rotatably fitting through the bottom plate, a table top disposed between said plates, and coacting means carried one by said stem and the other by said bottom plate and operable by rotative adjustment of the top plate to clamp the table top between said plates.

2. A table including a head having a bottom plate, an adjustably rotatable top plate overlying the bottom plate and having a stem slidably and rotatably fitting through the bottom plate, a cam carried by the bottom plate, and a cam carried by said stem and movable by rotative adjustment of the top plate to coact with the cam of the bottom plate and wedge the top plate toward the bottom plate to clamp the table top between said plates.

3. A table including a head provided with a bottom plate having a sleeve provided at its lower end with a cam, an adjustably rotatable top plate overlying the bottom plate and provided with a stem slidably and rotatably fitting through said sleeve, a table top disposed between said plates, and a collar carried by said stem and provided with a cam confronting the lower end of said sleeve, the top plate being rotatably adjustable to shift the cam of said collar into engagement with the cam of said sleeve and wedge the top plate toward the bottom plate to clamp the table top between said plates.

4. A table including a head having a bottom plate provided with a hub, an adjustably rotatable top plate overlying the bottom plate and having a stem slidably and rotatably fitting through said hub, said plates defining a groove surrounding said hub, a table top fitting in said groove, coacting means carried one by said stem and the other by said bottom plate and operable by rotative adjustment of the top plate to clamp the table top between said plates, and means carried by said plates within said groove to coact with the table top at opposite sides thereof and disposed to exert a canting action on the table top for binding the table top in position.

5. A table including a head having a bottom plate provided with a hub, an adjustably rotatable top plate

overlying the bottom plate and provided with a stem slidably and rotatably fitting through said hub, said plates defining a groove surrounding said hub, a table top fitting in said groove, coacting means carried one by said stem and the other by the bottom plate and operable by rotative adjustment of the top plate to clamp the table top between said plates, and beads carried one by the top plate and the other by the bottom plate within said groove and staggered with respect to each other to coact with the table top at opposite sides thereof and exert a canting action on the table top for binding the table top in position.

6. A table including a head having a bottom plate provided with a circular hub, a rotatable top plate overlying the bottom plate and provided with a stem slidably and rotatably fitting through said hub, a rotatable table top fitting the hub between said plates, and coacting means carried one by said stem and the other by the bottom plate and operable by rotation of the top plate to wedge the top plate toward the bottom plate and clamp the table top in position, the top plate being disposed to frictionally grip the table top and permit the table top to be rotated for turning the top plate and frictionally locking the table top rotatably stationary.

7. A table including a head having a bottom plate provided with a hub, a rotatable top plate overlying the bottom plate and having a tubular stem slidably and rotatably fitting through said hub, a table top fitting between said plates, coacting means carried one by said stem and the other by the bottom plate and operable by rotation of the top plate to clamp the table top between said plates, and a socket carried by the head at the lower end of said stem and disposed to sustain a staff extending through said stem.

8. A table including a head having a bottom plate provided with a hub, a rotatable top plate overlying the bottom plate and having a tubular stem slidably and rotatably fitting through said hub, a table top fitting between the plates, coacting means carried one by said stem and the other by the bottom plate and operable by rotation of the top plate to clamp the table top between said plates, a socket carried by the head at the lower end of said stem and disposed to sustain a staff extending



through said stem, legs pivoted to said head and adapted to be spread, a rod depending from said socket, and a sleeve adjustably slidable on said rod and operatively connected to said legs, said sleeve being adjustable along said rod for spreading the legs and securing the legs in spread position.

9. A table including a head having a bottom plate, a rotatable top plate overlying the bottom plate and provided with a stem slidably and rotatably fitting through the bottom plate, a table top removably fitting between said plates and formed of mating detachably connected halves each composed of swingingly connected sections adapted to be folded into overlapping relation, and coacting means carried one by said stem and the other by the bottom plate and operable by rotation of the top plate to clamp the table top between said plates.

10. A table including a stand provided with a head having a bottom plate, a rotatable top plate overlying the bottom plate and having a stem slidably and rotatably fitting through the bottom plate, legs hinged to said head and adapted to be spread, an operative connection between the head and said legs and adjustable for spreading the legs, a table top removably fitting between said plates and adjustably rotatable thereon, said table top being formed of mating detachably connected halves each composed of hingedly connected sections adapted to be folded into overlapping relation, and coacting means carried one by said stem and the other by said bottom plate and operable by rotation of said top plate to clamp the table top between said plates and lock the table top in adjustably rotated position.

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