

April 8, 1969

R. C. BUE

3,437,058

FOLDING ROOM SERVICE TABLE

Filed June 2, 1967

Sheet 1 of 2

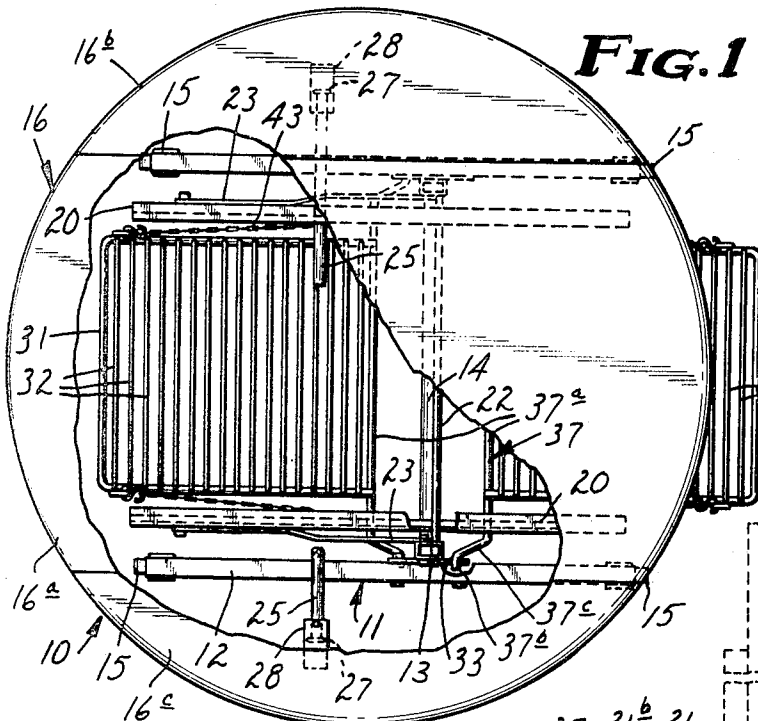


FIG. 1

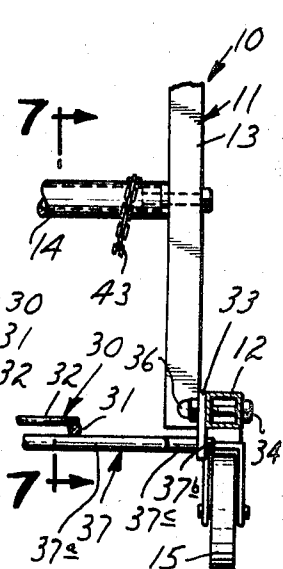


FIG. 6

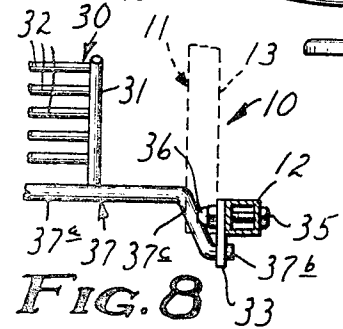


FIG. 8

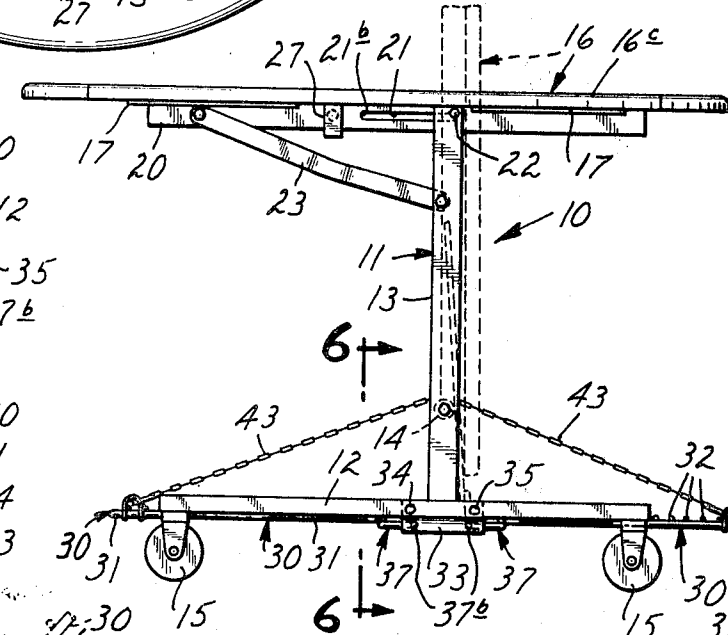


FIG. 2

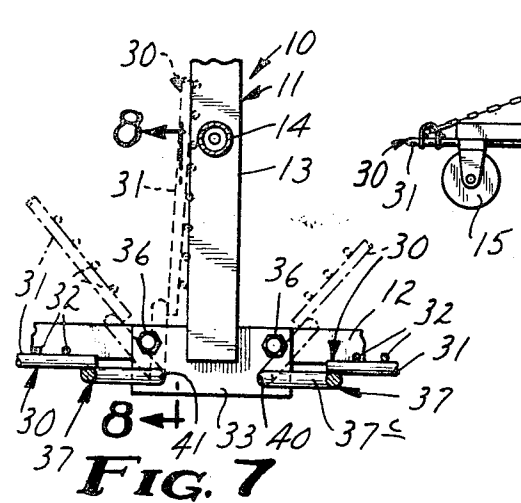


FIG. 7

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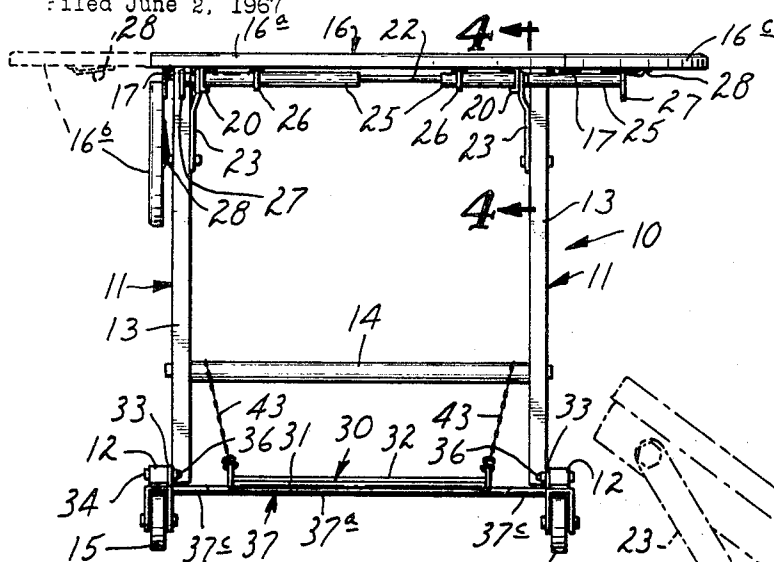


FIG. 3

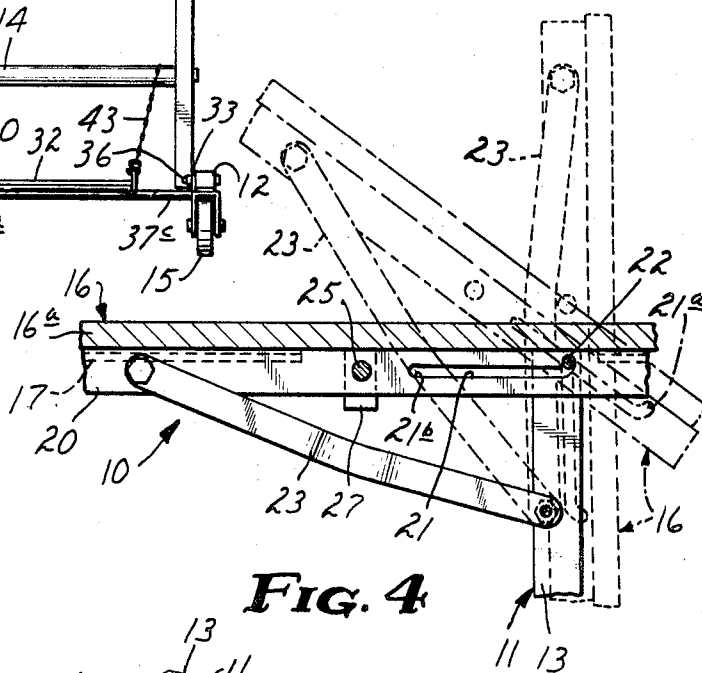


FIG. 4

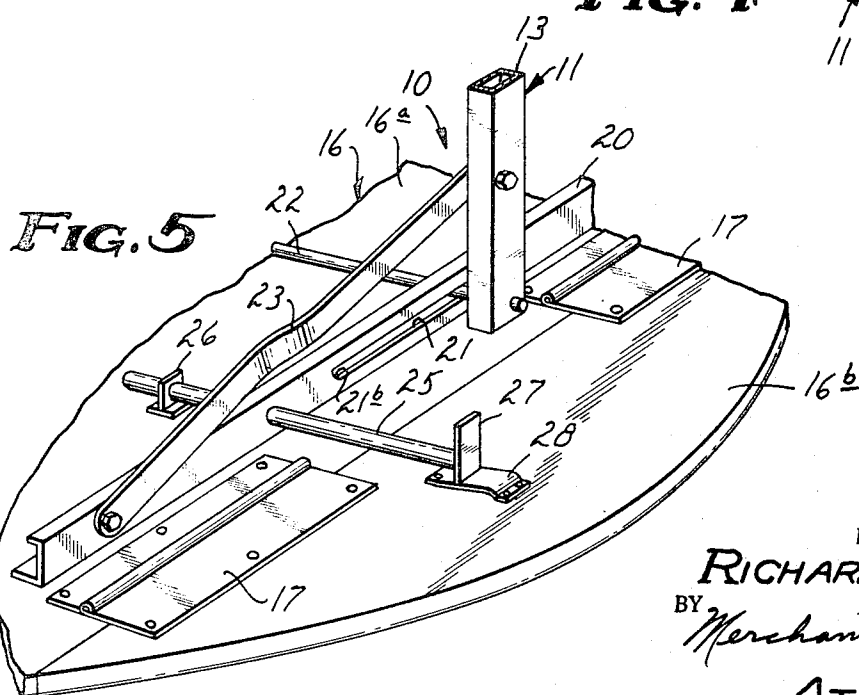


FIG. 5

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FOLDING ROOM SERVICE TABLE

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Filed June 2, 1967, Ser. No. 643,116

Int. Cl. A47b 3/00

U.S. Cl. 108—112

4 Claims

ABSTRACT OF THE DISCLOSURE

A folding room service table having a rigid supporting structure including a pair of horizontal base members and a pair of centrally located upstanding supporting portions. A drop leaf table top is mounted on the upstanding supporting portions for pivotal movements between a horizontal position and a generally vertical storage position adjacent the upstanding supporting portions. A pair of shelf members are mounted between the base members on opposite sides of the upstanding supporting portions for pivotal swinging movements between a horizontal shelf position and a vertical storage position adjacent the upstanding supporting portions.

This invention relates generally to the field of folding table structures, and more particularly relates to an improved folding room service table in which both the normally horizontal top and a pair of normally horizontally positioned shelves are movable to generally vertical storage positions adjacent a pair of upstanding support portions, whereby a plurality of such tables can be easily stored together in a relatively small area. It is therefore a primary object of my invention to provide a room service table having a large table top area and a large shelf area, both of which can be folded to a relatively compact storage position.

A further object of my invention is to provide means for frictionally engaging the shelf members during at least a portion of their travel between the horizontal position and the generally vertical storage position to aid in preventing the shelf members from falling from the storage position.

These and other objects of the present invention will become apparent from the following specification, claims, and attached drawings.

Referring to the drawings wherein like characters indicate like parts throughout the several views:

FIGURE 1 is a top plan view of my invention, some parts thereof being broken away;

FIGURE 2 is a side elevational view of FIGURE 1 with the folded position shown in dotted lines;

FIGURE 3 is an end elevational view as seen from the left end of FIGURE 1;

FIGURE 4 is an enlarged sectional view taken along line 4—4 of FIGURE 3, with the intermediate and upright or folded position shown by broken and dotted lines;

FIGURE 5 is an enlarged fragmentary view in perspective of the under side of the table top;

FIGURE 6 is an enlarged sectional view taken along line 6—6 of FIGURE 2;

FIGURE 7 is a sectional view taken along line 7—7 of FIGURE 6; and

FIGURE 8 is a sectional view taken along line 8—8 of FIGURE 7, with the shelf member being shown in its intermediate position.

Referring now to the drawings, the folding table structure of my invention is designated generally by the numeral 10. The supporting structure for table 10 includes a pair of laterally spaced end frame members

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11 including forwardly and rearwardly elongated horizontal base members 12. The end frame members 11 further include upstanding supporting portions 13 rigidly connected to base members 12 generally centrally of the forward and rearward ends thereof. A round tubular horizontally extending member 14 is rigidly connected between upstanding supporting portions 13 to fixedly maintain the relative spaced positions of end frame members 11. Members 12 and 13 are preferably formed from a tubular stock having a generally rectangular cross section to provide a stable platform.

Each of the ends of base members 12 is provided with a conventional caster element 15 to permit the table to be easily moved from room to room or to storage areas. Mounted on the upper ends of upstanding supporting portions 13 is a table top member 16. Table top member 16 is generally circular and comprises a central portion 16a and a pair of drop leaves 16b and 16c. Central portion 16a has a pair of parallel side edges that extend outwardly beyond supporting portions 13 and lie generally parallel with base members 12. Drop leaves 16b and 16c are hinged to central portion 16a by a plurality of hinges 17.

Under normal conditions, table top member 16 is supported in a generally horizontal position adjacent the upper ends of upstanding supporting portions 13. For storage purposes, table top member 16 is pivotally connected to upstanding portions 13 for both swinging movements and transverse movements relative to portions 13 between its horizontal table top position and a generally vertical storage position as shown in FIGURE 4 of the drawings. Attached to the bottom of central portion 16a between upstanding portions 13, are a pair of channel members 20. Channel members 20 are mounted parallel to each other and in parallel with base members 12. Each of the channel members 20 has a longitudinally extending slot 21 with one end thereof, end 21a, turned upwardly toward central portion 16a.

Extending between and completely through the upper ends of supporting portions 13 is a rod 22. Rod 22 also extends through slots 21 in channel members 20. Further support for table top member 16 is provided by a pair of control links 23, the opposite ends of each being pivotally connected to channel members 20 and upstanding supporting portions 13, respectively. One end of each control link 23 is connected to a supporting portion 13 a short distance below table top member 16. The other end of each control link 23 is pivotally connected to a channel member 20 near one end thereof.

With table top member 16 in its horizontal position, rod 22 extends through upwardly turning ends 21a of slots 21. Control link 23 is connected to channel member 20 beyond the opposite end of slot 21. Table top member 16 is thus self-locking in its horizontal position since rod 22 will not move within slot 21 unless table top member 16 is lifted to remove rod 22 from upwardly turned slot end 21a. When table top member 16 is so lifted, it can be pivoted from its horizontal position to a generally vertical storage position as shown in FIGURE 4. During this movement from its horizontal position to its storage position, rod 22 completely traverses slot 21 so that in the storage position, rod 22 lies at end 21b of slot 21.

It is noted that control links 23 are curved slightly so that table top member 16 will move "over center" during its travel to the vertical storage position. Thus, the weight of table top member 16 will tend to hold it in the storage position.

As previously mentioned, drop leaves 16b and 16c are hinged to central portion 16a to permit room service table 10 to be easily moved through doors or between tables in a restaurant. When the full table top surface is needed,

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leaves 16b and 16c are swung to their horizontal positions and locked in such positions by a sliding support member 25. Sliding support member 25 extends through channel member 20 and through an angle member 26 secured to the bottoms of central portion 16a. Although support member 25 is freely movable longitudinally through channel member 20 and angle member 26, lateral movements thereof are prevented by said members. Attached to the outer end of supporting member 25 is a downwardly extending handle 27. Attached to the bottom surfaces of drop leaves 16b and 16c are a pair of ramp-like plates 28. Each plate 28 is positioned in line with the corresponding support member 25 and handle 27. To secure the drop leaves 16b and 16c in their horizontal positions, each handle 27 is moved along the surface of ramp-like plate 28 until a tight frictional engagement is attained. When it is desired to discontinue using drop leaves 16b and 16c, supporting members 25 are moved inwardly by means of handle 27 until handle 27 lies completely beneath central portion 16a adjacent channel member 20. Drop leaves 16b and 16c can then be folded to their vertical position as shown in FIGURE 3.

Referring now to the bottom portion of folding table structure 10, I provide a pair of generally flat shelf members 30, which are similar in construction, mounted between base members 12 on opposite sides of upstanding supporting portions 13 adjacent the bottom ends thereof. Each of the shelf members 30 is pivotally attached to the spaced end frame members 11 adjacent its inner end for swinging movements between a horizontal shelf position lying generally in a plane extending through base members 12, and a generally vertical storage position between upstanding supporting portions 13.

Each shelf member 30 comprises a generally U-shaped supporting element 31, the open end of which faces toward the other shelf member 30. Welded or otherwise attached to the upper surfaces of the longitudinally extending arms of element 31 are a plurality of spaced, laterally extending rods or bars 32.

The inner ends of shelf members 30 are supported by a pair of pivot plates 33 that are attached to base members 12 adjacent the bottom ends of upstanding supporting portions 13 to extend on either side thereof. Pivot plates 33 are generally rectangular metal plates and are secured to the inner faces of base members 12 by a pair of bolts 34 and 35 extending therethrough. Upstanding supporting portions 13 are in turn welded to the inner surfaces of pivot plates 33. Each of the bolts 34 and 35 is held in place by a round headed nut 36 threadedly attached to the inner end thereof. Each of the round headed nuts 36 thus extends inwardly a short distance from pivot plate 33.

Welded or otherwise attached to the inner ends of U-shaped supporting element 31 is a pivot rod 37. Each of the pivot rods 37 comprises a central shelf support portion 37a, a pair of opposite end portions 37b, and a pair of connecting portions 37c. End portions 37b lie in a common line parallel to but offset from a line extending through central portion 37a. Central portion 37a is connected to end portions 37b by the connecting portions 37c.

Formed in opposite ends of each of the pivot plates 33 are a pair of openings 40 and 41. Openings 40 and 41 are positioned beneath bolts 34 and 35 and are positioned slightly closer to upstanding supporting portion 13 than are bolts 34 and 35. This relationship can be most clearly seen in FIGURE 2. The end portions 37b associated with one shelf member 30 extend through the one pair of oppositely disposed openings 40, while the end portions 37b of the other shelf member 30 extend through the other pair of oppositely disposed openings 41.

To support shelf members 30 in their horizontal positions, flexible support means such as a pair of chains 43 are connected to the outer ends of each shelf member 30 and to horizontal connecting member 14.

As previously mentioned, shelf members 30 are movable

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from a horizontal shelf position to a generally vertical storage position by means of a pivotal attachment of pivot rod 37 to pivot plates 33. When shelf members 30 are moved to their storage position, it is desirable that they remain in such position while the tables are being used or moved about. In the present structure, two different means are provided to accomplish this self locking feature of shelf members 30. First of all, as will be most apparent from FIGURES 2 and 7, openings 40 and 41 are spaced a sufficient distance from upstanding supporting portions 13 to permit shelf members 30 to pass through a perfectly vertical position before reaching their generally vertical storage positions. Thus, since the shelf has passed "over center" before reaching its storage position, it will tend to remain in the storage position without further locking. In addition to this "over center" provision, means are also provided for frictionally engaging shelf members 30 during at least a portion of their travel between the horizontal position and the generally vertical storage position. As previously mentioned, round headed nuts 36 extend inwardly a short distance from pivot plates 33. Further, as best shown in FIGURE 8, the connecting portions 37c of pivot rods 37 form an acute angle with the adjoining pivot plate 33 in all positions thereof. This acute angle is sufficiently small so that connecting portion 37c will frictionally engage the associated round headed nut 36 during movement of shelf members 30 between their horizontal and storage positions. Because of the inherent resilience of pivot rod 37, it can be easily snapped through the abutment formed by the oppositely disposed nut 36. As best shown in FIGURE 7, shelf members 30 cannot be returned from their storage position to the horizontal position without snapping over nuts 36.

My invention is particularly adapted to be used as a room service table for hotels, restaurants, or the like. Because of the drop leaf feature of the table top, the table structure can be easily moved through doors or between tables. Further, a plurality of these structures can be easily stored in a small amount of space because both the table top and the shelves fold to generally vertical positions adjacent the upstanding supporting portions 13. While I have shown a preferred embodiment of my invention, it would be possible for one skilled in the art to make changes and modifications in the structure without departing from the spirit and scope of my invention.

I claim:

1. A folding table structure, comprising:

- (a) a pair of end frame members including laterally spaced forwardly and rearwardly elongated base members, and a pair of upstanding supporting portions rigidly connected to said base members generally centrally of the forward and rearward ends thereof;
- (b) a table top member extending between said upstanding support portions;
- (c) means for supporting said table top member in a generally horizontal position adjacent the upper ends of said upstanding supporting portions and for pivotally connecting said table top member to said upstanding portions for both swinging movements and transverse movements thereof relative to said upstanding portions between its generally horizontal table top position and a generally vertical storage position, said table top member in its horizontal position overlying the upper ends of said upstanding supporting portions and in its vertical storage position being disposed adjacent one side of said upstanding supporting portions;
- (d) a rigid connecting structure extending between and rigidly connecting said end frame members to fixedly maintain the relative positions thereof;
- (e) first and second generally flat shelf members mounted between said end frame members on opposite sides of said upstanding supporting portions adjacent the bottom ends thereof, said shelf members

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each being pivotally attached to said spaced end frame members adjacent its inner end for swinging movements between a horizontal shelf position lying generally in a plane extending through said base members, and a generally vertical storage position, said shelf members in said storage position lying adjacent to and generally between said upstanding supporting portions whereby a plurality of said folding tables can be nested in an over-lapping relationship to conserve storage space;

(f) means for supporting each of said shelf members in said horizontal shelf positions; and

(g) means on said end frame members for frictionally engaging each of said shelf members during at least a portion of its travel between said horizontal position and said generally vertical storage position to aid in preventing said shelf member from falling from said storage position to said horizontal position.

2. The apparatus of claim 1 wherein said means for supporting said shelf members comprise flexible support means connected to the outer ends of each of said shelf members and to said rigid connecting structure to support said shelf members in said horizontal positions.

3. The apparatus of claim 1 wherein a pivot plate is attached to the inner face of each of said base members adjacent the bottom ends of said upstanding supporting portions to extend on either side thereof, and wherein a pivot rod is attached to the inner end of each of said shelf members and extends beyond the side edges of

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said shelf members through openings in said pivot plates, each of said openings being spaced from said upstanding supporting portions a sufficient distance to permit said shelf members to pass through a perfectly vertical position before reaching their storage positions.

4. The apparatus of claim 3 wherein each of said pivot rods comprises a central shelf support portion, a pair of end portions extending through said openings in said pivot plates, said end portions lying in a line parallel to but offset from a line extending through said central portion, and a pair of connecting portions connecting said end portions to said central portion, each of said connecting portions forming an acute angle with said adjoining pivot plate in all positions thereof, and wherein an abutment member extends inwardly from each of said pivot plates for frictional engagement with said connecting portions during movement of said shelf members from said horizontal to said storage positions.

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