Nov. 10, 1942. T. E. McFALL 2,301,563

TABLE

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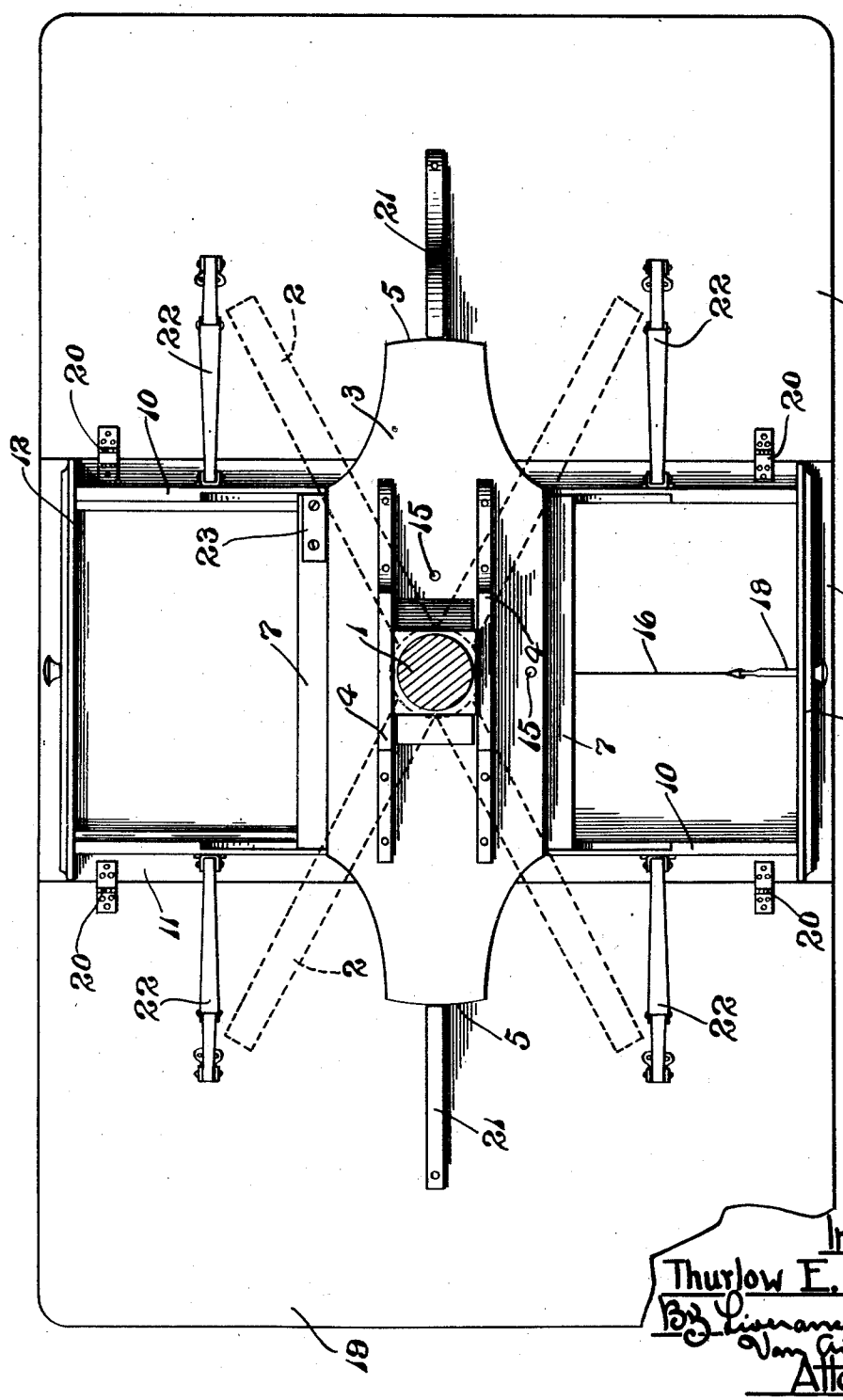


Fig. 1.

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TABLE

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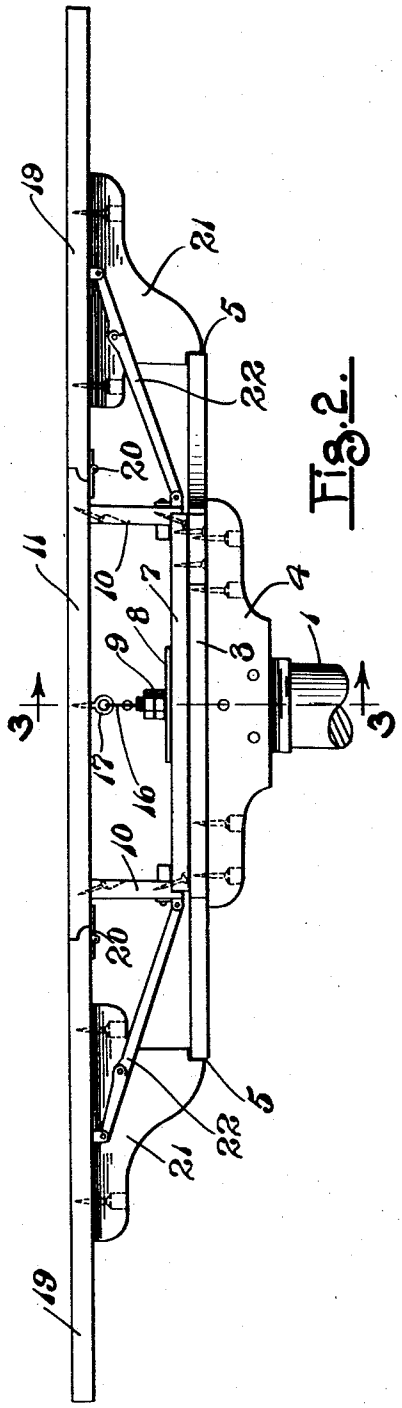


Fig. 2.

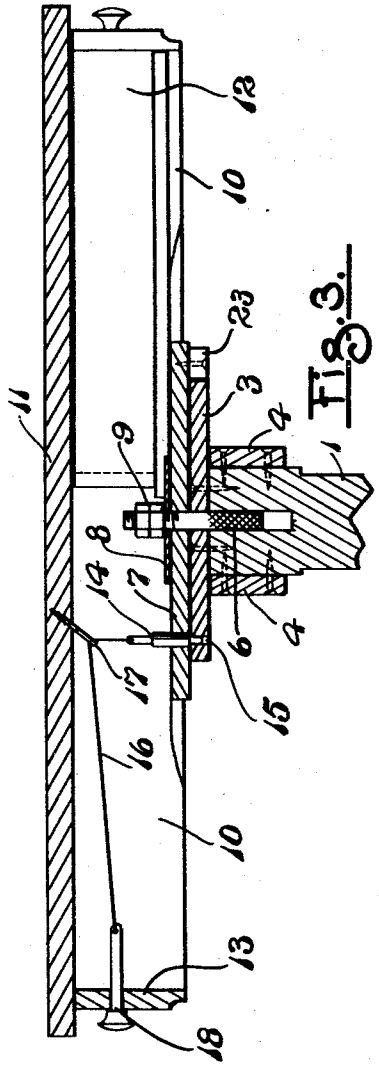


Fig. 3.

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TABLE

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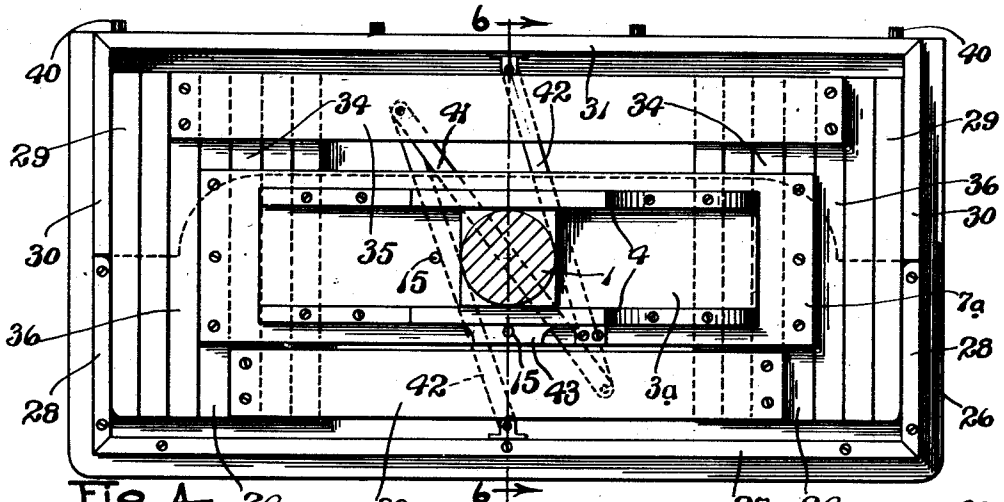


Fig. 4.

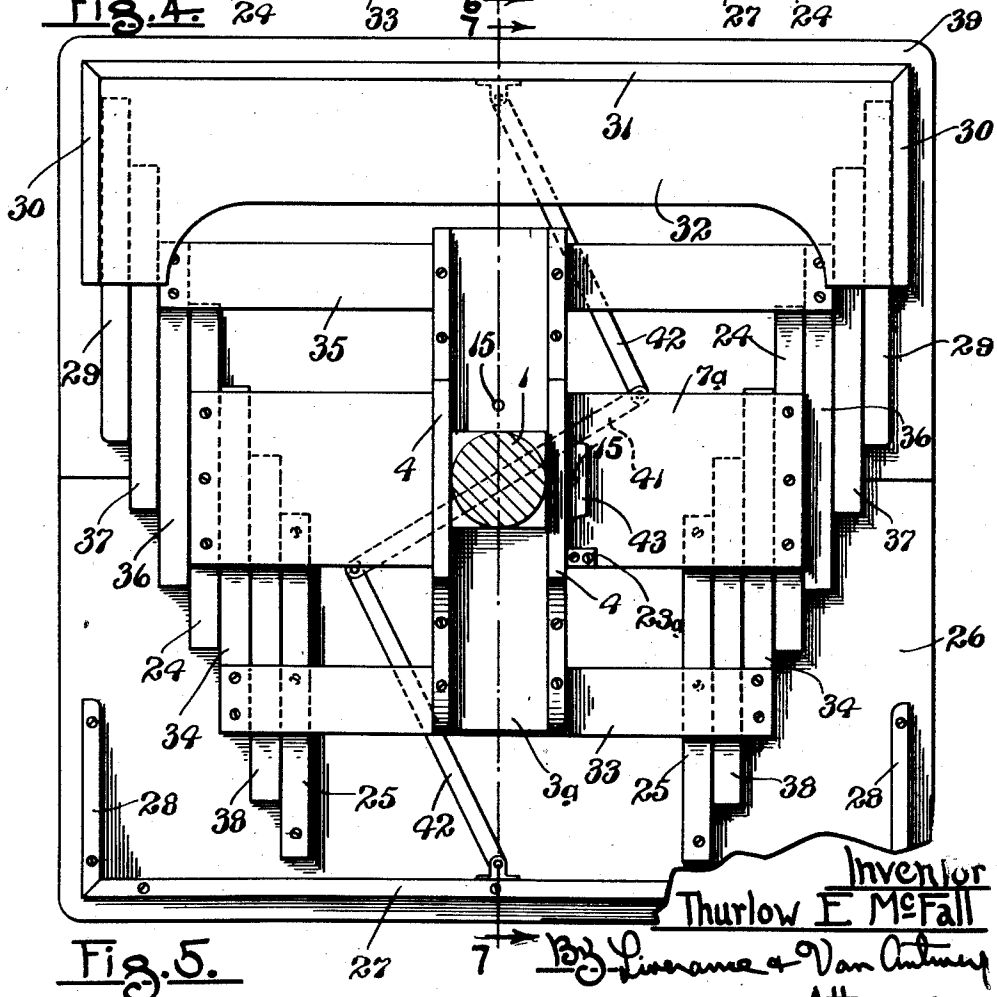


Fig. 5.

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TABLE

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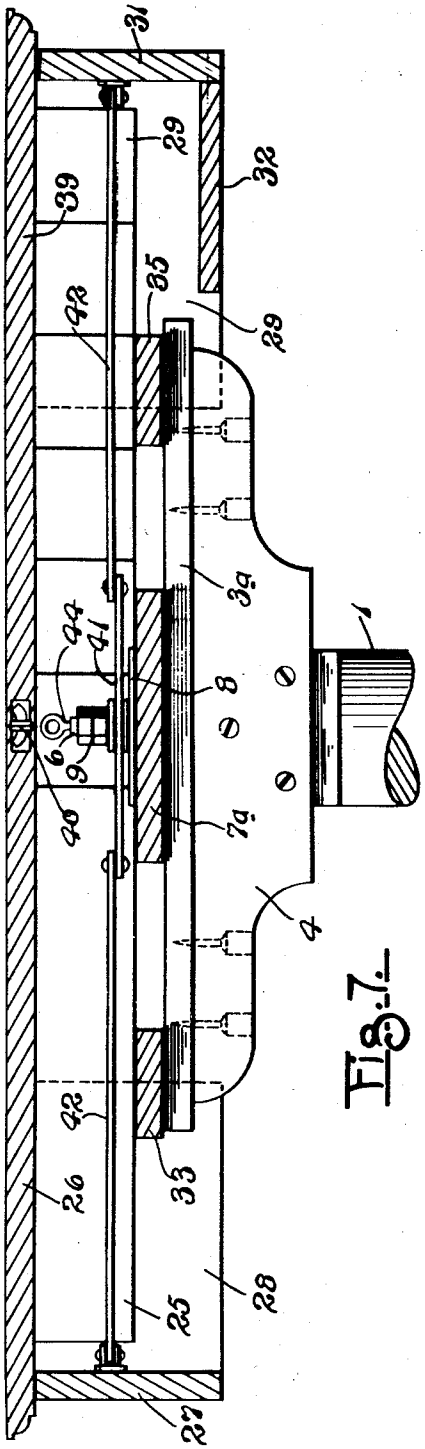


Fig. 7.

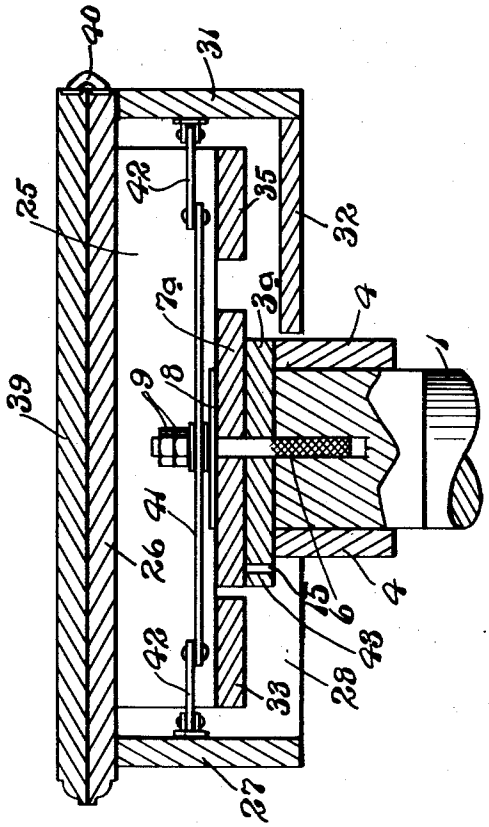


Fig. 6.

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TABLE

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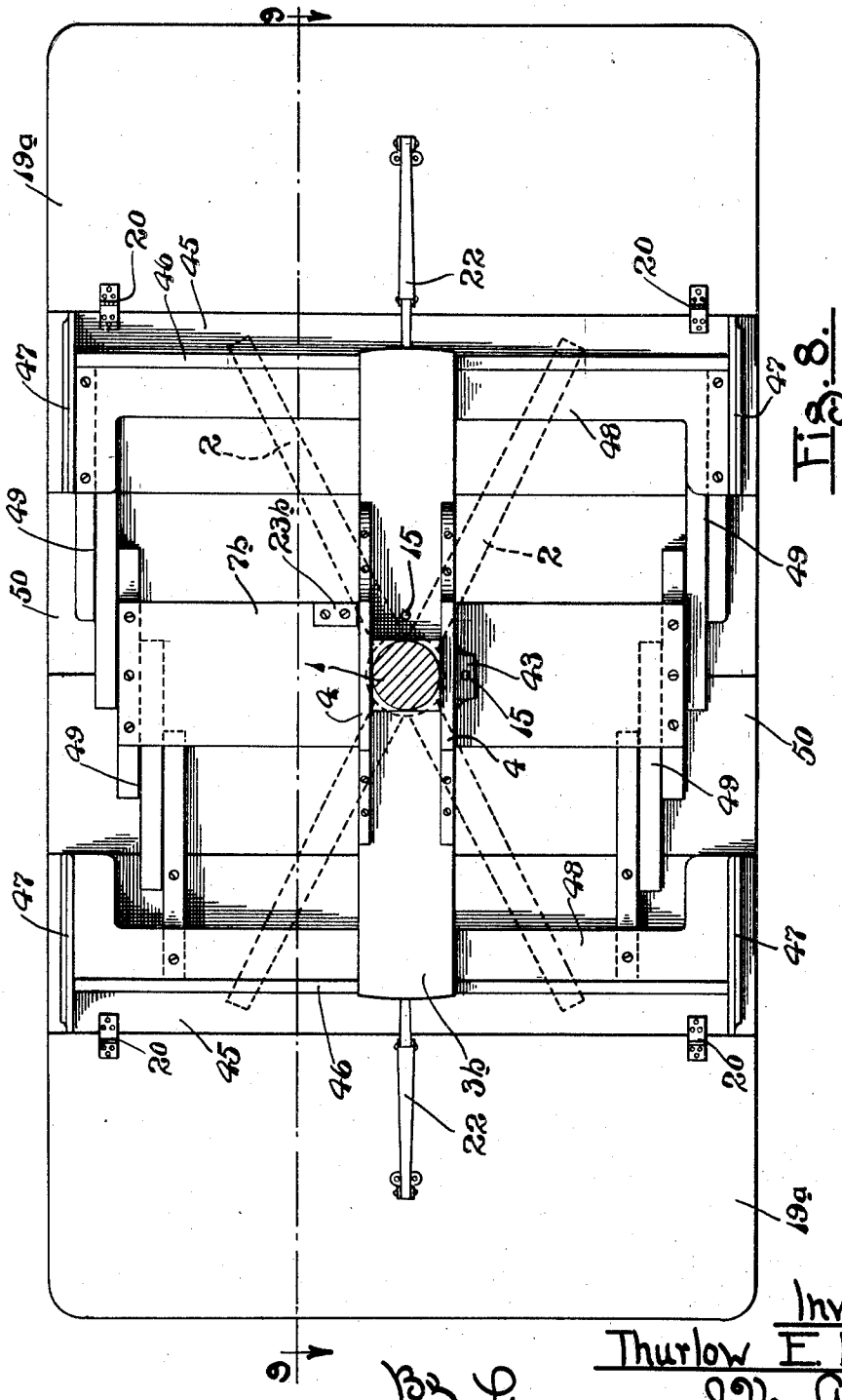


Fig. 8.

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TABLE

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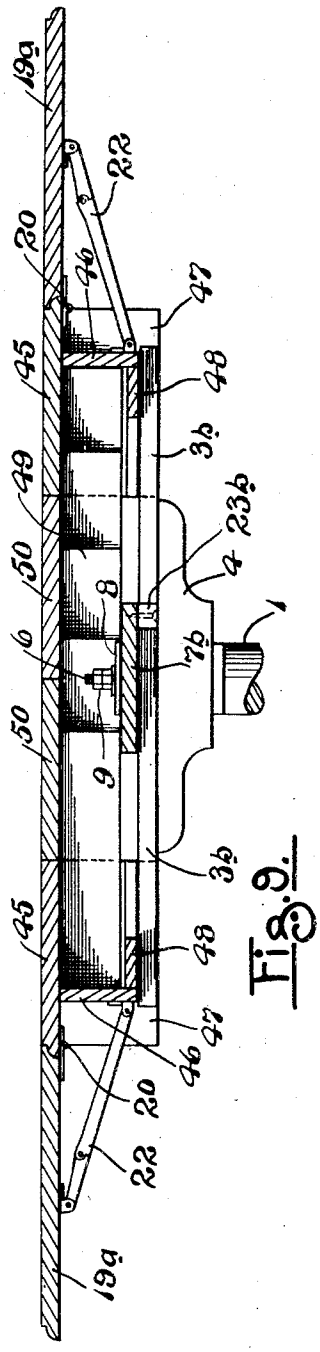


Fig. 9.

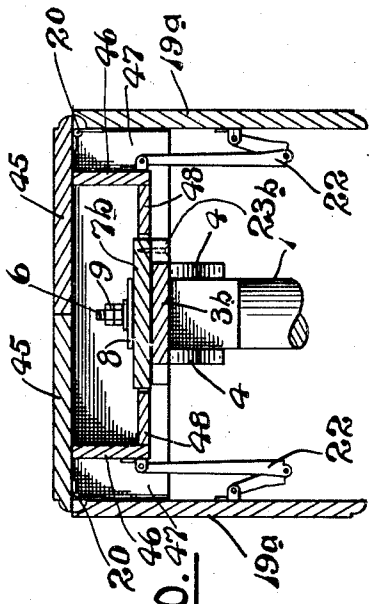


Fig. 10.

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UNITED STATES PATENT OFFICE

2,301,563

TABLE

Thurlow E. McFall, Sparta, Mich., assignor to Michigan Artcraft Company, Sparta, Mich., a corporation of Michigan

Application November 16, 1939, Serial No. 304,768

4 Claims. (Cl. 311—41)

This invention relates to tables. Certain types of tables in practice are carried by a single centrally located supporting pedestal, at the lower end of which are diverging foot members to provide a supporting base area, it of course being essential that the center of gravity of the table shall fall within this base area in order that the table will stand upright. The supporting legs at the lower end of the central pedestal are not located at an angle of 45° to each other, but more closely approach each other and in practice should extend as much as possible in the direction of the longest dimension of the table top. In a desire to minimize the space occupied by the table when not in use, such longest dimension is transverse of the table top when it is used with relatively wide hinged leaves lifted to provide a greater top surface. And if the table top in its relation to its supporting structure remains fixed when the relatively wide leaves are lifted and held in horizontal position, the table becomes unstable and may be very readily tipped upon a pressure applied to the upper side of one of the leaves. In other types of tables, the table when not in use and occupying its smallest space has the central supporting pedestal located substantially directly under the center of the table top. Such other types of tables, such as extension tables when extended, provide a top surface of greatly enlarged area. And if the supporting legs remain fixed with respect to the table they do not then extend generally in the dimension of the greatest length of the table top and the table is unstable and subject to tipping. Tables generally with the supporting structure described are well-known as the Duncan Phyfe type of table.

With my invention the Duncan Phyfe table and particularly its support is utilized, and the table top, whether in its contracted or operative position is related to the supporting legs so that the table is much more stable and there is little or no danger of tipping or tilting the table from any normal pressure applied to its top at any point thereon. The table top and its immediate box structure beneath is mounted to turn about a vertical axis through an arc of 90°, whereby the longest dimension of the top, no matter whether it is in its operative extended position or in its position of non-use where it is reduced to the lowest space occupying condition, will parallel the longest dimension of a rectangle connecting the lower outer ends of the supporting legs attached to the central pedestal. With my invention a very practical and sturdy construction is utilized which is economical to produce, the additional cost of changing the ordinary Duncan Phyfe table to a table having my invention incorporated therewith being very small.

The invention and the constructions which embody the same thus far devised by me may be understood from the following description, taken in connection with the accompanying drawings, in which:

Fig. 1 is an under plan view of a table, the central supporting post or pedestal being shown in horizontal section, and the top extended as in use.

Fig. 2 is a side elevation of the upper portion of the table in extended position.

Fig. 3 is a transverse vertical section substantially on the plane of line 3—3 of Fig. 2.

Fig. 4 is an under plan view with the pedestal in horizontal section, of an extension table which uses my invention, said table when in its extended position having twice the table top area that it has in its collapsed form.

Fig. 5 is a similar view to that shown in Fig. 4, showing the table extended.

Fig. 6 is a transverse vertical section on the plane of line 6—6 of Fig. 4.

Fig. 7 is a vertical section on the plane of line 7—7 of Fig. 5, looking in the direction indicated by the arrows.

Fig. 8 is a view similar to Fig. 1, showing an extended table with hinged drop leaves, and the utilization of filler leaves at the middle portion of the table top.

Fig. 9 is a longitudinal section substantially on the plane of line 9—9 of Fig. 8, taken in the direction indicated by the arrows, and

Fig. 10 is a similar section to that shown in Fig. 9 of the table in fully retracted position.

Like reference characters refer to like parts in the different figures of the drawings.

Referring to the construction shown in Figs. 1 to 3 inclusive, a central post or pedestal 1 is provided which at its lower end carries diverging outwardly extending supporting legs 2, indicated in dotted lines in Fig. 1, which, as previously stated, are located at angles less than a right angle to each other at two opposite sides of the post 1 and at angles greater than a right angle at other sides of the post 1 so that the base rectangle, the sides and ends of which connect the outer ends of the legs, is longer in one direction than the other. At the upper end of the post 1 a flat plate 3 is permanently secured and lies in a horizontal plane, below and lengthwise of which are two depending spaced apart reinforc-

ing members 4 lying in vertical planes at opposite sides of the post 1, and permanently secured to the upper end portion thereof. The ends of the plate 3 are narrowed in width as shown and are of an arcuate formation as indicated at 5 (Fig. 1) struck in the arc of a circle, the center of which is the vertical axis of the post 1. In the upper end portion of the post 1 and permanently secured thereto is a rod 6, the lower end portion of which is knurled and when driven into an opening in the post 1 has a very secure connection thereto. The rod 6 extends above the post 1 and through the plate 3 for a distance and is threaded at its upper end. Said post 1 with the supporting legs 2, the plate 3 and the reinforcing members 4 and the rod 6 are of a permanent construction and the parts thereof do not change position relative to each other.

The table top structure supported over the plate 3 includes a base 7 somewhat wider than the plate 3 but of less length, through the center of which the rod 6 extends. A flat metal plate 8 with an opening therethrough for the passage of rod 6 is placed against the base 7 and nuts 9 are threaded onto the upper end of the rod 6. The base 7 and the parts of the table top structure connected therewith may be turned about the rod 6, as hereafter described, between two extreme positions, one of which is at an angle of 90° to the other.

At each end of the base 7 vertical box sides 10 are permanently secured extending thereabove in parallel relation to each other, over which a permanent table top member 11 is located and securely connected with the sides 10 of the box. A drawer 12 may be slidably received between the two sides 10 and underneath the top 11 at one side of post 1, as shown, while at their opposite ends the two sides 10 are connected by a depending apron 13 which at its upper edge is also connected to the top 11. It has the same design and appearance as the end of the drawer 12. A spring actuated locking bolt 14 is carried by the base 7 (Fig. 3), the lower end of which normally extends downwardly below the casing of the bolt and is adapted to be received in one or the other of two vertical openings 15 made in the plate 3 (Fig. 1) so as to releasably lock the table top structure in its two positions. A cable 16 attached to the upper end of the bolt is guided through a change direction eye 17 fixed to and depending from the lower side of the top 11, and thence leads outwardly to the part 13 and is connected to an operative member 18 which has a knob to be grasped at its outer end, so that upon pulling on the knob the latch bolt will be lifted and the lock made ineffective.

Two drop leaves 19 of relatively large size are hinged by hinges 20, one at each side edge of the top 11. Each of said drop leaves at its under side and midway between its ends is provided with a block 21 depending therefrom and of the form shown in Fig. 2, which is notched so as to engage with a rounded curved end 5 of the plate 3. The drop leaves are provided with supporting braces 22, each in the form of a toggle, the ends of which are pivotally connected respectively to the under side of a drop leaf and to the adjacent side 10 of the box structure. A stop block 23 is secured adjacent one corner and to the under side of the base 7. When the top structure relative to the plate 3 is in one position, the block comes against a side of the plate 3 as in Fig. 1, engaging a side of the block against a side edge of the plate. When turned through 90° the inner end of the block comes against the same side edge of the plate 3. In these two positions the spring actuated latch bolt at 14 is directly over an opening 15.

In Fig. 1 the table is shown in its extended operative position and with the longest side of the rectangle made by connecting the outer ends of the legs 2 in parallelism with the longest dimension of the extended table top. When the leaves 19 are to be dropped so as to depend from the side edges of the top 11, the knob on the operating member 18 is grasped and the latch bolt 14 lifted, and the entire top structure turned through an angle of 90° about the vertical axis of the rod 6. In such position the longest side of the rectangle joining the outer ends of the legs 2 parallels the longest dimension of the central permanent top section 11. The leaves may thereupon be dropped to depending position by properly operating the supporting braces 22. It is evident that if the table top occupied the same relative position with respect to the supporting legs 2 in Fig. 1, with the leaves dropped to depending position, the ends of the supporting legs 22 would project out too far beyond the edges of the table. But when turned through a 90° angle as described, the outer ends of said supporting legs 2 are within the side edges of the top 11. It is also apparent that the plate 3 provides an abutment against which the members 21 engage so as to greatly strengthen the table and relieve the braces 22 and the hinges 20 from strain and hold the wide leaves 19 from sagging. The construction is relatively simple and economical to produce.

In the structure shown in Figs. 4 to 7, inclusive, the invention is applied to an extension table wherein, in the contracted position of the table, one-half of the table top is turned to lie over the other half. The pedestal 1 with its supporting legs 2, the horizontal plate 3*a* secured to the upper end of the post 1, and reinforced and supported by the members 4, and the vertical rod 6 about which the top structure may turn, are susbtantially identical with the similar structure described in Figs. 1 to 3 inclusive. The plate 3*a* is of a different form but it is of an elongated character the same as before. The table structure which turns about the pin 6 is carried on a base 7*a* through the center of which pin 6 extends, there being the metal plate 8 and the nuts 9 on the threaded end of the pin 6 as before.

Each end of the base member 7*a* is connected to the central slide member 24 of an extension slide series, two of such series being used. One of the end slides 25 of each of said series is permanently connected to the under side of the table top section 26, which at its outer edge has a depending apron 27 and two short end members 28, as shown. The other end member 29 of each of the two series of slides is permanently connected to a box structure which comprises two ends 30 of substantially the same length and in the same vertical planes as the end members 28, previously described, and a connecting apron 31 between their outer ends, with a board 32 connected to and extending between the ends 30, as shown. A cross bar 33 in the same horizontal plane with the base member 7*a* is connected at its ends to the outer ends of two slide members 34 which lie immediately adjacent and inside the middle slide members 24 of the slide series. Similarly a cross member 35 in the same

horizontal plane with the base 7a is connected at its ends to the outer ends of slide members 36, which lie immediately adjacent but outside the middle slides 24. The slides 37 and 38 between the slides 36 and 29 and the slides 25 and 34 respectively, complete the series of slides of the construction shown.

A second table top section 39, substantially identical in form with the permanent section 26, is hinged at 40 thereto so that it may be turned to lie above the section 26 as in Fig. 6, or in the same plane therewith as in Fig. 7. An equalizing mechanism consisting of three links, a middle link 41 and two end links 42 is used, the middle link 41 being pivotally mounted midway between its ends on the rod 6, and the end links 42 being pivotally connected one at each end of the link 41 and to the inner sides of the aprons 27 and 31. The plate 3a has a lateral projection 43 and in this projection and also in the plate 3a openings 15 are provided for the locking pin 44, which is mounted on the plate 7a and extends downwardly and is spring pushed in a downward direction so as to enter the openings 15 when in conjunction therewith. The stop block 23a mounted on the base 7a serves the same purpose as block 23 to limit the swinging movement of the entire top structure about the axis of the rod 6 to an arc of 90°.

In the operation with the table closed as in Fig. 6, the extension may be accomplished by grasping the apron 27 and pulling outwardly thereon, whereupon the slides will simultaneously extend in opposite directions because of the equalizing mechanism used, the top section 26 moving with the apron 27, while the box structure comprised of the parts 30, 31 and 32, moves in the opposite direction. When thus extended and before leaf 39 is turned to lie in the same plane with the top member 26, the pin at 44 will be exposed for manual operation, and it will be lifted and the top structure turned through an arc of 90° and the pin released to enter the other opening 15. Thereupon the hinged top section 39 is turned to occupy the position shown in Fig. 7.

In Figs. 8 to 10 inclusive the invention is applied to an extension table having drop leaves. The central pedestal or post 1 at its lower end has the same diverging foot members 2, at its upper end has an elongated horizontal plate 3b reinforced by the members 4, and the pin 6 extends upwardly above the base 3b as in previous structures. The upper table top structure is carried by a base 7b, through the center of which the pin 6 passes and about which pin the base and attached portions of the table may be turned 90°.

The top in this structure comprises two horizontal top sections 45, at the outer edges of each of which a drop leaf 19a narrower than the leaf 19 is hinged by hinges 20. Each of said top sections has a box structure underneath comprising a depending apron 46, at each end of which are end members 47 and with a board 48 extending between the end members 47 substantially at the lower edges of the aprons 46 and in the same horizontal plane with the base 7b. Two series of extension slides, indicated at 49, are used, the end slides of each series being connected with the top sections 45 and its associated box structures, while the intermediate slide of each section is connected to an end of the base 7a. The drop leaf supports 22 are the same as before, connected at their ends to the drop leaves 19a and to the aprons 46. The same lateral projection 43 with an opening 15 therein is provided on plate 3b, and the stop 23b attached to the underside of the base 7b serves the same purpose as the stops 23 and 23a in the previously described structures. The openings 15 are to receive the lower end of the locking bolt, which like in Fig. 7, is accessible for direct manual operation when the two sections 45 of the top are separated from each other.

In operation the sections 45 may be brought together and the leaves dropped as in Fig. 10, whereupon the table occupies little space, and the longest side of the rectangle of the outer ends of the supporting feet is parallel to the length of the sections 45. To extend the table the two sections 45 are moved outwardly away from each other, leaving a space between them open, in which filler leaves 50 may be placed. Before the leaves are thus put in, the top structure is turned through 90° so that after the filler leaves are in and the drop leaves 19a are lifted, the longest side of the rectangle previously mentioned of the lower supporting feet is parallel to the length of the table top. It will be noted that the ends of the plate 3b extend underneath the lower edges of the aprons 46 when the table is extended as in Fig. 8, comparative to the cross bars 33 and 35 in Fig. 5 bearing against the outer end portions of the plate 3a, and the blocks 21 bearing against the concave ends 5 of the plate 3 in Fig. 1, thereby relieving strain on the top and preventing warping or sagging.

The construction described is very practical and useful. A particular advantage of this invention is its simplicity of structure combined with a full attainment of the primary objects desired, namely, the strengthening and reinforcing of the table and an insurance of its stability when extended, and with the outer ends of the supporting legs at the lower end of the central post or pedestal aways within the space occupied by the table top when the table is contracted. This simplicity of construction further insures that the cost of manufacture will be a minimum.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In a table, a vertical supporting pedestal, an elongated horizontal plate permanently connected to and located at the upper end of said pedestal, a horizontal base located over the plate, means for pivotally mounting said base on the pedestal to turn about a vertical axis located substantially centrally of said base, a stop member carried by said base adapted to engage an edge of said horizontal plate in two positions, in one of which the length of said base is parallel to the length of said plate and in the other of which it is at right angles thereto, and a top structure connected to the ends of said base and including a horizontal top, said horizontal top having means whereby it may be enlarged to increase its horizontal supporting surface, as specified.

2. In a construction of the class described, a vertical pedestal, an elongated horizontal plate permanently secured to the pedestal at its upper end, a horizontal base located over said plate, means for pivotally mounting the base to turn about a vertical axis substantially coincident with the vertical axis of the pedestal, two series of extensible slides, means for connecting the ends of said base to the intermediate slide members of

said series of slides, horizontal top sections connected to the end members of said series of slides, and cross members extending between the slides and lying over said plate and resting upon the outer end portions thereof when the slides are extended.

3. A construction containing the elements in combination defined in claim 2, said base when the slides are extended and said cross members therebetween are resting upon the upper sides of the end portions of said plate being located transversely of said plate, a stop block carried by said base to engage against a side edge of the plate to stop it in selected position, and a releasable lock mounted on the base adapted to engage with said plate at two separated points, in one of which the length of the base is substantially at right angles to the length of said plate and in the other of which it is substantially parallel to the length of said plate.

4. A table comprising a supporting pedestal, a horizontal plate fixed at the upper end of the pedestal, an extensible table including two top sections, extensible slides between them and box constructions underneath, located over said plate, means for mounting said top structure to turn about a vertical axis, means for limiting the turning movement to an arc of substantially 90°, and manually operable means for locking the top structure in its two extreme positions, said top when extended and in one of said positions having the box structures underneath thereof bearing upon the end portions of said plate, as specified.

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