Nov. 15, 1932. J. L. PULASKI 1,888,124

EXTENSION TABLE

Filed Dec. 17, 1931

Fig.1.

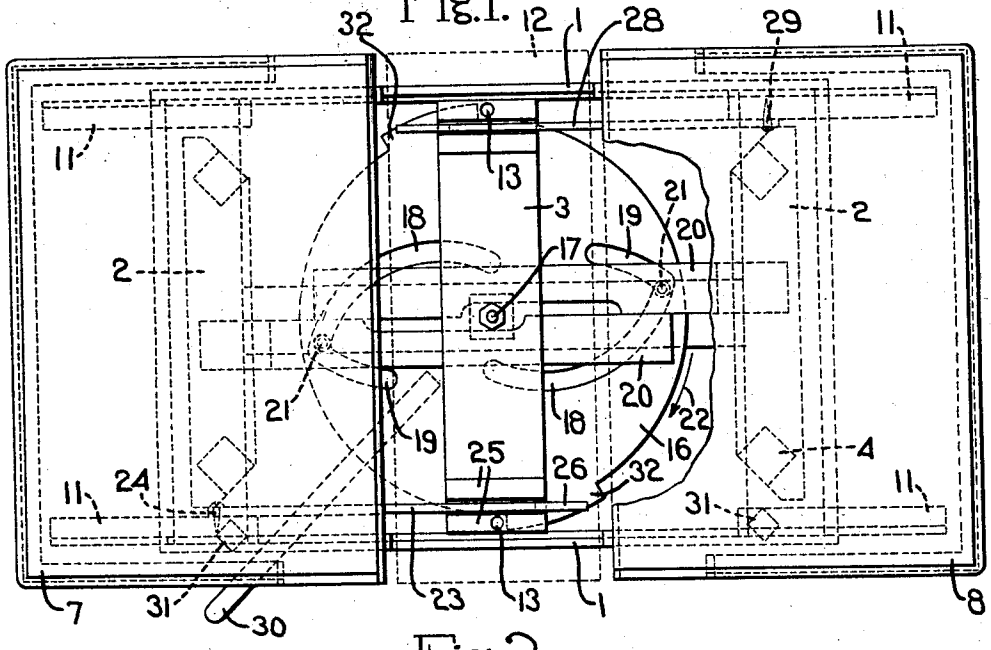


Fig.2.

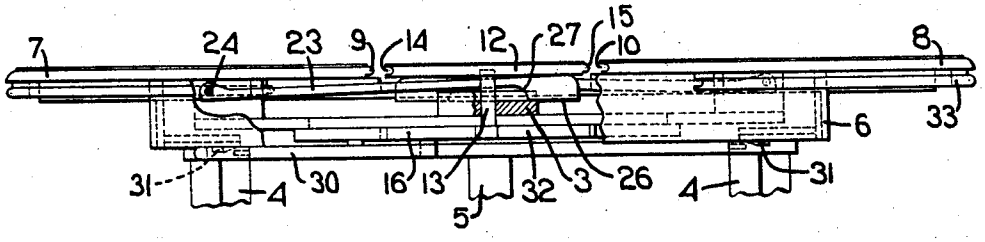
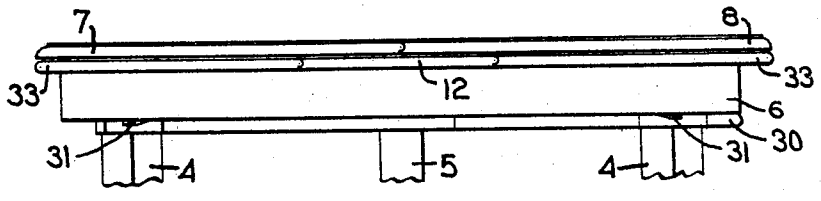


Fig.3.



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UNITED STATES PATENT OFFICE

JACOB L. PULASKI, OF WEST ROXBURY, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO MIRACLE TABLE CORPORATION, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS

EXTENSION TABLE

Application filed December 17, 1931. Serial No. 581,643.

This invention relates to extension tables such as commonly used for dining tables and similar purposes in which a central leaf positioned beneath the plane of the table top is automatically raised into position when the table is extended.

The object of the invention is further to provide an extension table embodying a rotatable actuator acting when rotated in one direction to separate the main leaves of the table, then to raise a central leaf from a position beneath the main leaves into the plane of the main leaves, and then to bring the main leaves into edge to edge engagement with the central leaf, and further acting when rotated in the opposite direction to separate the main leaves, then to lower the central leaf to its concealed position, and then to move the main leaves together to closed position.

The object of the invention is further to provide an extension table with a simple form of mechanism for securing the foregoing desired results in which the actuator is rotated by a lever projecting laterally therefrom so that all the user has to do is to move this lever in one direction to secure the complete result either as it is desired to extend the table or to return it to closed position.

These and other objects and features of the invention will appear more fully from the accompanying description and drawing and will be particularly pointed out in the claims.

In the drawing:

Fig. 1 is a top plan view of the table partially broken away and showing the main leaves in their extreme separated position.

Fig. 2 is a side view partially broken away of the construction shown in Fig. 1 with the parts in the same position.

Fig. 3 is a side view showing the table in closed position.

The table is provided with a suitable supporting frame, the general shape and construction of which may be varied as desired so long as it provides the necessary supporting elements for the embodiment of the present invention. As illustrated, the frame comprises the side members 1 and the end members 2 united to form a rectangular structure and a central cross member 3 extending midway between and secured to the side members 1 of the frame. Four legs 4 are shown secured to the rectangular frame and a central leg 5 secured to the cross member 3. A skirt 6 surrounds the rectangular frame and provides a desired finish.

There are two main leaves 7 and 8 mounted to slide toward and from each other on the frame. These main leaves, when brought together into edge and edge engagement, as shown in Fig. 3, define the normal size of the table. They may be of any desired shape and configuration excepting that at their abutting edges they are desirably finished to fit together as by means of the tongue 9 on the leaf 7 and the groove 10 on the leaf 8. These main leaves have secured thereto slide bars 11 fitted to slide on the side members 1 of the frame and thus guide the main leaves in their movements toward and from each other.

The central leaf 12 normally occupies a position, as shown in Fig. 3, beneath the plane of the main leaves and is mounted for up and down movement on the frame. In the construction illustrated, a rectilinear up and down movement of the central leaf is secured by providing it with vertical studs 13 secured thereto and mounted to slide vertically in corresponding apertures in the cross member 3 of the frame. This central leaf is finished at its edges to correspond with the main leaves and consequently is shown as provided with a groove 14 to cooperate with the tongue 9 and a tongue 15 to cooperate with the groove 10.

A rotatable actuator in the form of a disk 16 is journalled centrally at 17 on the supporting frame directly beneath the central leaf and as here shown also beneath the cross member 3. In the preferred construction illustrated, the movements of the main leaves toward and from each other are secured by similar cams on this actuator co-acting with cam slides secured to the leaves. For this purpose the actuator 16 is provided with cam slots, each of which has a similar separating section 18 and contracting section 19. Cam

slide bars 20 secured at their outer ends to the main leaves are provided with roller studs 21 fitting in and co-acting with the respective cam slots. It will thus be seen that when the table is in closed position, if the actuator be rotated in the direction of the arrow 22, the studs 21 riding from the inner to the outer ends of the cam slot sections 18 will move the main leaves apart, and then as this rotary movement of the actuator is continued, and the studs ride in the sections 19 of the cam slots, the leaves will be drawn toward each other, and consequently when the actuator is rotated in the opposite direction, the reverse movements of the main leaves will take place.

The up and down movement of the central leaf is secured in the construction illustrated by leaf lifters 1 at each side of the supporting frame extending beneath the central leaf and having co-acting cam engagements with the cross member 3 of the frame. These leaf lifters are of similar construction. The leaf lifter 23 is pivoted at 24 to the slide bar 11 of the main leaf 7 to swing up and down. It extends over and rests upon the top of the cross member 3 and is guided between guide strips 25 secured thereto. The leaf lifter is of sufficient thickness so that when its shank rests directly on the cross member 3 with the central leaf 12 resting on top, the central leaf will be maintained in its normal lowermost position shown in Fig. 3. At its outer end 26 the leaf lifter is of sufficient thickness so that when this end rests on the cross member 3, the central leaf will be maintained in the plane of the main leaves. A cam surface 27 connecting the shank of the leaf lifter with the end 26 rides on the edge of the cross member 3 to give the raising and lowering movements of the leaf lifter as it is moved longitudinally. The other leaf lifter 28 pivoted at 29 to the main leaf 8 is of similar construction and functions in a similar manner.

The operation of the rotatable actuator is preferably secured by a lever handle 30 projecting laterally and radially therefrom. Means are also provided for locking the lever 30 in each of its extreme positions and thereby locking the actuator against unintentional rotation so that the table is firmly maintained in either its closed or its extended position. For this purpose bevelled positioning lugs 31 are secured on the under side of the supporting frame and so positioned that when the lever 30 reaches its extreme position, it slides under and snaps into position against the outer face of one of these lugs.

Means are also provided to insure that the central leaf shall be maintained in the plane of the main leaves when the main leaves close upon the central leaf even if a lowering movement of the leaf lifters takes place at this time. For this purpose the actuator is shown as provided with lateral diametrically disposed projections 32 which move with the actuator beneath the studs 13 during the final rotation of the actuator in the sections 19 of the cam slots.

The operation of the mechanism will now be apparent. Assuming that the table is in closed position, as shown in Fig. 3, with the inner edges of the main leaves 7 and 8 abutting and with the central leaf 12 beneath the plane of the main leaves and resting upon the shanks of the leaf lifters 23 and 28, the lever 30 will be in engagement with the positioning lug 31 at the right. When, now, it is desired to extend the table, the user seizes the lever 30, depresses it slightly to clear the lug 31, and then moves it to the left, thus causing rotation of the actuator in the direction of the arrow 22. As this rotation takes place, the studs 21 ride out from the inner to the outer ends of the sections 18 of the cam slots and slide the main leaves apart a distance greater than the width of the central leaf. The parts are shown when they have reached this position in Figs. 1 and 2. This movement of the main leaves causes the ends of the leaf lifters 23 and 28 by their cam engagement with the cross member 3 to ride up on top of the cross member and thus to lift or move upward the central leaf into the plane of the main leaves and to bring the lower ends of the studs 13 above the plane of the actuator disk 16. As now the rotation of the actuator continues in the direction of the arrow 22, the studs 21 ride from the outer toward the inner ends of the sections 19 of the cam slots, thus causing the main leaves to move toward each other and forcing them into a firm edge to edge engagement with the central leaf. As this movement causes endwise movement of the leaf lifters which might result in the central leaf being lowered before it is engaged and clamped by the main leaves, the lateral projections 32 ride beneath the studs 13 and thus maintain the raised position of the central leaf. When the rotation of the actuator is completed, the lever 33 snaps behind the positioning lug 31 at the left.

When it is desired to contract the extension table, the reverse movement is given and the lever 30 is swung from the left to the right, the cam slots acting, first, to move the main leaves apart, thus freeing the central leaf, and again bringing the parts into the position shown in Figs. 1 and 2, and then as the rotation of the actuator continues, the free ends of the leaf lifters ride off the cross member 3, the central leaf is lowered and the main leaves are again brought together into edge to edge engagement.

The main leaves are preferably provided at the bottom with a molding 33 corresponding to the ends of the central leaf so that when the central leaf is in its lowermost position,

it will align and interlock with this molding and give a finished appearance to the table in its closed position, as shown in Fig. 3.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. An extension table comprising a supporting frame, main leaves mounted to slide toward and from each other on the frame, a central leaf mounted to move up and down on the frame, a rotatable actuator journalled on the frame, having means respectively operable in sequence by the rotation of the actuator in one direction, to slide the main leaves apart a distance greater than the width of the central leaf, means to move the central leaf from a position beneath up into the plane of the main leaves, and, means to slide the main leaves together into edge to edge engagement with the central leaf, said respective means being operably connected to said rotatable actuator, whereby said means will be operable by continued rotation of the actuator in one direction.

2. An extension table comprising a supporting frame, main leaves mounted to slide toward and from each other on the frame, a central leaf mounted to move up and down on the frame, a rotatable actuator journalled on the frame, having means respectively operable in sequence by the rotation of the actuator in one direction, to slide the main leaves apart a distance greater than the width of the central leaf, means to move the central leaf from a position beneath up into the plane of the main leaves, means to slide the main leaves together into edge to edge engagement with the central leaf, said respective means being operably connected to said rotatable actuator, whereby said means will be operable, by continued rotation of the actuator in one direction, and operated by the rotation of the actuator in the opposite direction, first, to slide the main leaves away from the central leaf, second, to lower the central leaf beneath the plane of the main leaves and, third, to slide the main leaves together into edge to edge engagement.

3. An extension table comprising the construction defined in claim 2, together with an operating lever secured to and extending laterally from the actuator and positioning lugs on the frame to engage and lock the lever when the actuator is in either of its extreme rotary positions, thereby to prevent unintentional rotation thereof.

4. An extension table comprising a supporting frame, main leaves mounted to slide rectilinearly toward and from each other on the frame, a central leaf mounted to move rectilinearly up and down on the frame, a rotatable actuator journalled on the frame beneath the central leaf, a cam slide connected to each main leaf, similar cams on the actuator cooperating with the respective cam slides, a pair of leaf lifters one at each side of the frame extending beneath the central leaf and connected to the respective main leaves and having vertical cam engagement with the frame, the said elements co-acting upon the rotation of the actuator in one direction, first, to slide the main leaves apart a distance greater than the width of the central leaf, second, to lift the central leaf from a position beneath into the plane of the main leaves, third, to slide the main leaves together into edge to edge engagement with the central leaf and co-acting upon the rotation of the actuator in the opposite direction, first, to slide the main leaves away from the central leaf, second, to lower the central leaf to a position beneath the plane of the main leaves, and, third, to slide the main leaves together into edge to edge engagement.

5. An extension table comprising the construction defined in claim 4, in which the rectilinear up and down movement of the central leaf is determined by vertical studs secured to the central leaf and extending through guiding apertures in the frame.

6. An extension table comprising the construction defined in claim 4, in which the rectilinear up and down movement of the central leaf is determined by vertical studs secured to the central leaf and extending through guiding apertures in the frame, and in which the actuator is provided with lateral diametrically disposed projections moved by the actuator beneath the studs during that portion of the rotation of the actuator which effects the movement of the main leaves from their extreme separated position to their edge to edge engagement with the central leaf, whereby the stud projections maintain the central leaf in raised position notwithstanding any lowering movement of the leaf lifters.

7. An extension table comprising a supporting frame, main leaves mounted to slide toward and from each other on the frame, a central leaf mounted to move up and down on the frame, a rotatable actuator journalled on the frame, cam connections between the actuator and the main leaves acting upon the rotation of the actuator in one direction, first, to slide the main leaves apart a distance greater than the width of the central leaf and, second, to slide the main leaves together until separated only by the width of the central leaf and acting upon the rotation of the actuator in the opposite direction to effect similar reverse movements of the main leaves, and leaf lifters disposed at each side of the frame raised by co-action with the main leaves and the frame upon the rotation of the actuator in the first direction to lift the central leaf up into the plane of and between the main leaves and lowered by said co-action upon the rotation of the actuator in the opposite direction to lower the central leaf to

a position beneath the plane of the main leaves.

8. An extension table comprising the construction defined in claim 1, together with an operating lever secured to and extending laterally from the actuator for effecting the rotary movement of the actuator.

9. An extension table comprising the construction defined in claim 2, together with an operating lever secured to and extending laterally from the actuator for effecting the rotary movement of the actuator.

10. An extension table comprising the construction defined in claim 2, together with an operating lever secured to and extending laterally from the actuator for effecting the rotary movement of the actuator, and means for locking the actuator in each of its extreme positions.

11. An extension table comprising the construction defined in claim 1, in which the actuator is rotatively journalled centrally of the frame, together with an operating lever secured to and extending laterally of said actuator for effecting rotative movement thereof and of such length that at either limit of its swinging movement it will be wholly concealed beneath the leaves of the table.

12. An extension table comprising a supporting frame, main leaves mounted to slide toward and from each other on the frame, a central leaf mounted to move up and down on the frame, a rotatable actuator journalled on the frame, means operable by the rotation of the actuator in one direction to slide the main leaves apart a distance greater than the width of the central leaf, means operable upon said separation of the main leaves to move the central leaf from a position beneath up into the plane of the main leaf, and means operable upon continued rotation of the actuator in the same direction to slide the main leaves together into edge to edge engagement with the central leaf.

13. An extension table comprising a supporting frame, main leaves mounted to slide toward and from each other on the frame, a central leaf mounted to move up and down on the frame, a rotatable actuator journalled on the frame, means operable by the rotation of the actuator in one direction to slide the main leaves apart a distance greater than the width of the central leaf, means operable upon said separation of the main leaves to move the central leaf from a position beneath up into the plane of the main leaf, means operable upon continued rotation of the actuator in the same direction to slide the main leaves together into edge to edge engagement with the central leaf, and means operable by continued rotation of the actuator in the opposite direction first to slide the main leaves away from the central leaf thus permitting the central leaf to be depressed below the plane of the main leaves, and operable upon continued rotation in said opposite direction to slide the main leaves together into edge to edge engagement.

In testimony whereof, I have signed my name to this specification.

JACOB L. PULASKI.