J. HOFMAYR.

EXTENSION TABLE.

APPLICATION FILED SEPT. 11, 1912.

1,073,128.

Patented Sept. 16, 1913.

2 SHEETS—SHEET 1.

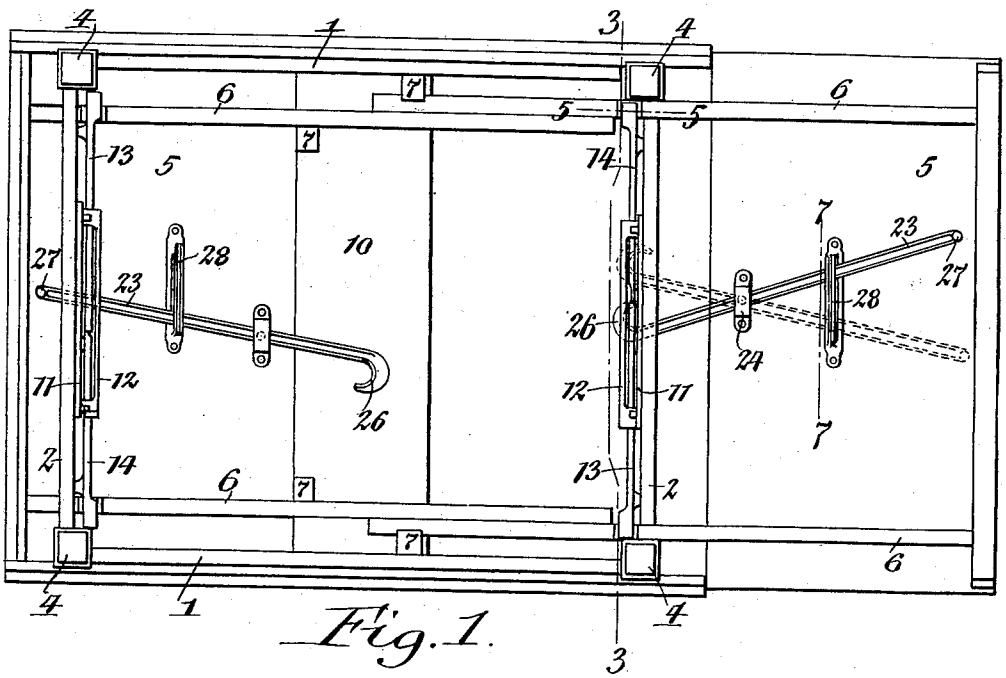


Fig. 1.

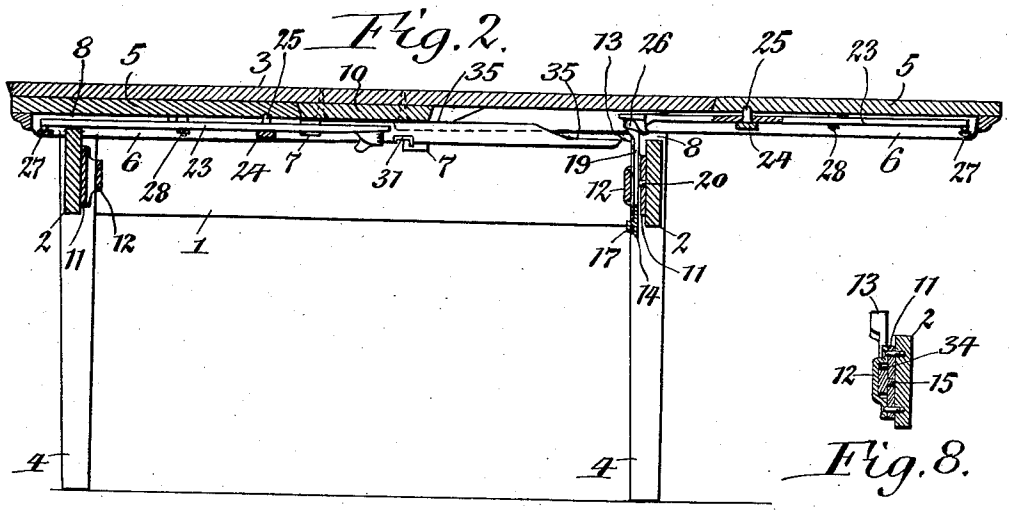


Fig. 2.

Fig. 8.

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2 SHEETS—SHEET 2.

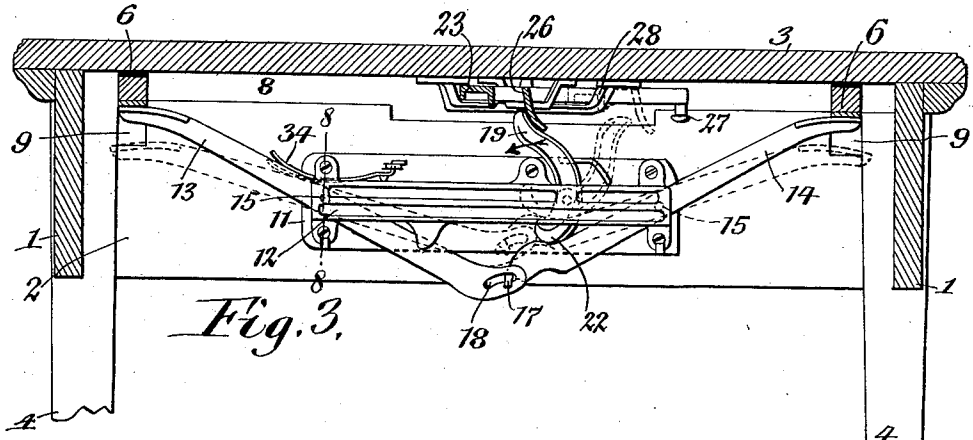


Fig. 3.

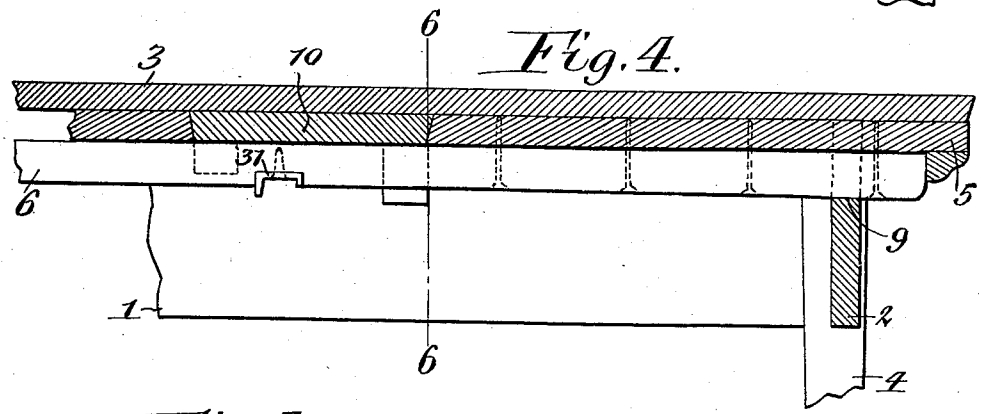


Fig. 4.

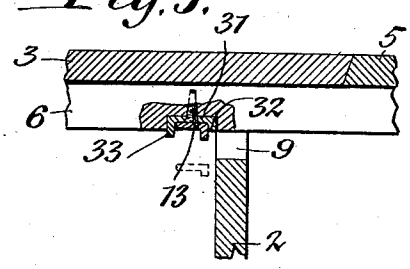


Fig. 5.

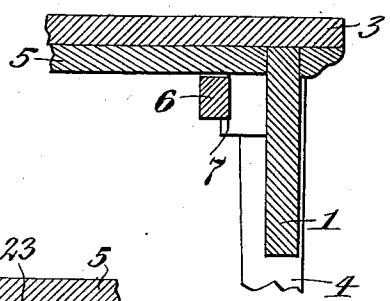


Fig. 6.

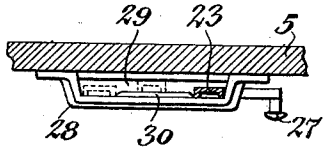


Fig. 7.

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EXTENSION-TABLE.

1,073,128. Specification of Letters Patent. Patented Sept. 16, 1913.

Application filed September 11, 1912. Serial No. 719,742.

To all whom it may concern:

Be it known that I, JOHN HOFMAYR, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Extension-Tables, of which the following is a specification.

This invention relates to extension tables which are more particularly used in dining rooms but which may also be used for other purposes where it is desired to economize space when the table is not in use but which can be extended so as to furnish a larger supporting surface.

It is the object of this invention to provide a table of this character in which the movable end sections or shelves of the top can be readily and easily dropped into a lowered position and pushed inwardly underneath the central main or fixed section of the table top or withdrawn beyond the opposite ends of the central section and raised so as to be flush therewith.

Another object of this invention is to provide means for effecting the shifting of the shelves of the table top in such a manner that the upper surfaces of the shelves will not become marred while pushing the same underneath the central section and withdrawing the same therefrom and also to permit of producing a tight and firm joint between the shelves and the opposite ends of the central top section while the shelves are in their operative position.

My invention has the further object to improve the details of the shelf shifting, operating and locking mechanism as will appear more fully hereinafter.

In the accompanying drawings consisting of two sheets: Figure 1 is a bottom plan view of an extension table embodying my improvements and showing the shelf at one end in its folded or inoperative position and the other shelf in its unfolded or operative position. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a vertical transverse section, on an enlarged scale, taken in line 3—3, Fig. 1. Fig. 4 is a fragmentary vertical longitudinal section of the right hand end of the table showing the right hand shelf pushed inwardly. Fig. 5 is a fragmentary vertical longitudinal section taken in line 5—5, Fig. 1. Fig. 6 is a fragmentary vertical transverse section taken in line 6—6 Fig. 4. Fig. 7 is a fragmentary vertical transverse section taken in line 7—7, Fig. 1. Fig. 8 is a fragmentary vertical section taken in line 8—8, Fig. 3.

Similar characters of reference indicate corresponding parts throughout the several views.

In its general organization the extension table embodying my improvements comprises a frame having two longitudinal side pieces 1, 1, two transverse cross pieces 2, 2 connecting opposite ends of the side pieces and four legs 4 arranged at the corners of the side and cross pieces. The particular construction of the frame is however immaterial as the same may be varied widely and still permit of applying my invention thereto. On top of this frame is mounted the stationary or fixed central main section 3 of the table top which preferably projects at its opposite transverse edges beyond the transverse sides of the frame.

5—5 represents the two movable end sections or shelves of the table top each of which is adapted to be either moved inwardly and downwardly underneath one end of the central top section so that its outer end is flush with the corresponding end of the main top section or to be moved outwardly and upwardly beyond the corresponding end of the table and flush therewith. For this purpose each of the end sections or shelves of the table top is provided on its underside with two longitudinal sliding or guide bars 6, 6 which are secured at their outer ends in any suitable manner to the underside of the shelf while their inner ends slide in inner and outer guideways 7, 9 arranged on the central and end portions of the fixed parts of the table. The upper edges of the frame cross pieces are separated from the underside of the central top section so as to form an intervening slot 8 between these parts through which the respective shell and associated parts may be moved lengthwise of the table. The inward movement of the shelf is limited by means of a stop or bearing block 10 which preferably consists of a plate or board secured centrally to the underside of the central top section and adapted to be engaged on its opposite transverse edges by the inner edges of the shelves when the latter are pushed inwardly into their folded or contracted position, this relative position of the stop block and the left hand shelf being indicated in Figs. 1 and 2. The outer guideways 9 of the sliding bars are constructed

in the form of vertical slots in the cross pieces which are of sufficient height to permit the sliding or guide bars to be raised and lowered the required extent for bringing the respective shelf either in line with the main top section or below the same. In order to permit the sliding bars of both shelves to pass each other in a direction lengthwise of the table the bars of one of the shelves are arranged closer together than those of the other shelf and the outer sides of the closely spaced sliding bars engage with the inner sides of the widely spaced side bars, as shown in Fig. 1.

The mechanism whereby the shelves are raised into their operative position and lowered into their inoperative position in accordance with my invention is the same for both shelves and the following description of the mechanism associated with one of these shelves will therefore apply to both of them. On the inner side of each of the cross pieces of the table frame is arranged a supporting bracket comprising a base plate 11 secured to the inner side of said cross piece and a cover plate 12 secured to the base plate but separated therefrom by an intervening space for the reception of mechanism which will be hereinafter described.

13, 14 represent two lifting levers which have their inner parts arranged in the space between the base plate and cover plate while their opposite outer ends are arranged below the sliding bars of one of the shelves and their inner ends are operatively connected so as to cause these levers to turn together in a vertical plane transversely of the table. Each of these levers is pivoted about midway of its length to the supporting bracket preferably by providing the same with an outwardly projecting pivot pin 15 which engages with an opening in the base plate, as shown in Fig. 8. The means whereby the lifting levers are caused to turn together may be variously constructed but those shown in the drawings are suitable and comprise a coupling hook 17 arranged on the lifting lever 14 and working in a curved slot 18 in the other lifting lever 13, as shown in Fig. 3. The means for turning these levers in the direction for lowering their inner ends or arms and raising their outer ends or arms into engagement with the undersides of the sliding bars and lifting the respective shelf may be variously constructed but I prefer for this purpose an upright shifting or locking lever 19 which is arranged between the base and cover of the supporting bracket and pivotally mounted thereon so as to swing vertically transversely of the table by means of a pivot pin 20 formed on this shifting lever and engaging with a pivot opening in the base plate, as shown in Fig. 2. The lower end or arm of this shifting lever is constructed in the form of a cam 22 which engages with the upper side of one of the lifting levers preferably the one having the coupling hook which is shown at the right hand side of Fig. 3. Upon turning the shifting lever 19 in the direction of the arrow in Fig. 3 the cam on the lower end thereof engages the inner arm of the right hand lever 14 and depresses the same as well as the inner arm of the left hand lifting lever 13 which is coupled therewith, thereby causing the outer ends or arms of the lifting levers to be raised so that they engage the adjacent sliding bars and raise the latter together with the respective shelf connected therewith. Upon turning the shifting lever just described in a direction opposite to that indicated by the arrow in Fig. 3, the downward pressure of the cam 22 on the lifting levers is released, thereby permitting the shelf to drop by its weight and depress the outer arms of the lifting levers and raise the inner arms thereof.

The turning of the shifting lever in a vertical plane is effected by means of an operating lever 23 which is pivotally mounted on the underside of the respective shelf so as to be capable of swinging in a horizontal plane. This pivotal mounting of the operating lever preferably comprises a clip 24 secured to the underside of the shelf so as to extend under the operating lever and provided with an upwardly projecting pivot pin 25 which enters an opening in the central part of the operating lever, as shown in Fig. 2. At its inner end the operating lever is provided with a coupling hook or jaw 26 while its outer end or arm is provided with a handle 27. While the shelf is depressed and pushed inwardly underneath the main section of the table top the operating lever is uncoupled from the shifting lever but is turned in such a position that its coupling hook is arranged with its mouth in line with the upper end of the shifting lever, this position of the latter being indicated by full lines at the left of Fig. 1 and by dotted lines at the right side of the same figure. Upon drawing the shelf outwardly into its outermost position the coupling hook of the operating lever engages its mouth with the upper arm of the shifting lever so that these two levers are now coupled. Upon now turning the operating lever from the position indicated by dotted lines at the right of Fig. 1 to the position indicated by full lines in the same figure this lever by means of its coupling hook turns the shifting lever in the direction for causing its cam to depress the inner arms of the lifting levers and the shelf to be raised flush with the central section of the table top by reason of the outer arms of the lifting levers engaging with and lift-

ing the sliding bars associated with this shelf. Upon turning the operating lever in the opposite direction the shifting lever will also be reversed and permit the lifting levers to turn in the opposite direction and the shelf to be lowered by gravity. After the shelf has been thus lowered it may be pushed inwardly underneath the central section of the table top during which movement the coupling hook of the operating lever is disengaged from the upper end of the shifting lever.

In order to hold the operating lever in either one or the other of its extreme positions and also to guide the same in its horizontally swinging movement a guide bracket 28 is provided which is secured to the underside of the shelf in front of the pivot of this lever and provided with a transverse slot 29 which receives the outer arm of the operating lever and also with a raised portion or stop block 30 on the underside or lower wall of this guide slot. By this means the operating lever may be moved freely in the guide slot 29 into either of its extreme positions and then held in either of these positions by engagement either with one end or shoulder of the stop 30, as shown by full lines at the right of Fig. 7, or by engagement with the other shoulder of this block, as shown by dotted lines at the left end of Fig. 7.

For the purpose of avoiding undue wear upon the undersides of the sliding bars where the same are engaged by the lifting levers during the operation of lifting the shelf these places are provided with bearing plates 31, as shown in Figs. 1, 3, 4 and 5. These bearing plates stand vertically in line with the outer ends of the lifting levers and in a position to be engaged by the latter when the shelf is in its outermost position. At the outer and inner ends of each of these bearing plates the same is provided with depending flanges 32, 33 forming the shoulders of sockets which engage with opposite sides of the lifting lever while the same is in engagement therewith whereby any longitudinal movement of the shelf is prevented while the same is lifted by the lifting levers. The inner end of the shelf is by these means prevented from being pressed or crowded unduly against the outer transverse end of the central table top section and marring the latter at this place while the table is extended, thereby avoiding an unsightly appearance at the transverse edges of the central section of the table top when the same is folded or contracted. The inner flanges or shoulders 33 of the bearing plates are preferably longer or extended downwardly somewhat farther than the outer shoulders 32 thereof, whereby these inner shoulders serve as stops for limiting the outward movement of the shelf by engaging with the outer arms of the lifting levers upon drawing the shelf outwardly.

The downward movement of the shelf is limited by engagement of the undersides of its guide or sliding bars with the bottoms or lower ends of the guide slots 9 and if no provision were made to disengage the outer arms of the lifting levers from the sockets formed on the bearing plates by the front and rear flanges or shoulders thereof it would not be possible to push the shelf inwardly after the same have been lowered. In order, however, to accomplish this an additional movement is imparted to the lifting levers which operates to depress the outer arms thereof sufficiently to disengage the same from the outer shoulders 32 of the bearing plates after the shelf and its sliding bars have reached the limit of their downward movement. This is preferably effected by means of a spring 34 secured to the base plate 11 and bearing against the outer arm of one of the lifting levers, as shown in Fig. 3. It follows from this construction that when the shifting lever releases the lifting levers the outer arms of the latter not only move downwardly with the sliding bars but these outer arms of the lifting levers are moved downwardly an additional distance by the spring 34 sufficient to cause these lifting levers to clear the front shoulders 32 of the bearing plates as indicated by dotted lines in Fig. 5 and thus permit the shelf and sliding bars to be moved inwardly independently of the lifting levers.

It will be noted that the upper and lower sides of the sliding bars are parallel from the outer ends of the same nearly to the inner ends thereof and that each of these bars is provided on the upper side of its inner end with the depressed part 35. By this construction of these sliding bars the shelf upon being moved outwardly travels nearly the entire distance in a perfectly horizontal line or path parallel with the central section of the table top because the parallel upper and lower sides of the sliding bars at this time engage with the underside of the block 10 and the lower ends of the guide slots 9, thereby preventing marring of the upper surface of the shelf during such horizontal movement of the shelf which is particularly desirable if the upper side of this shelf is highly polished. When, however, the shelf reaches the outer part of its movement the same may be lifted bodily by the mechanism heretofore described inasmuch as the depressed rear parts 35 of the sliding bars are now below the bearing block 10 of the table which permits the sliding bars to be raised relatively to said block, as shown at the right hand side of Fig. 2.

My improved extension table is compara-

tively simple and inexpensive in construction, the same can be easily operated and it is so designed that the upper surfaces of the shelves will always be preserved in as good a condition as the central section of this top, and when these shelves are in use they are as rigid and as strong as any other part of the table top and will not yield or break down under the load likely to be imposed upon the same.

I claim as my invention:

1. An extension table comprising a frame, a fixed top section arranged on the frame, a movable top section or shelf slidable lengthwise under the fixed top section and movable vertically at the outer end of the same, and a lever mechanism for raising and lowering said shelf comprising a lifting lever pivoted on the frame and operating to raise or lower the shelf, a vertically swinging shifting lever pivotally mounted on said frame and operating to turn said lifting lever, and a horizontally swinging operating lever pivotally mounted on said shelf and adapted to be coupled and uncoupled with said shifting lever.

2. An extension table comprising a frame, a fixed top section arranged on the frame, a movable top section or shelf slidable lengthwise under the fixed top section and movable vertically at the outer end of the same, and a lever mechanism for raising and lowering said shelf comprising a lifting lever pivoted on the frame and operating to raise or lower the shelf, a vertically swinging shifting lever pivotally mounted on said frame and operating to turn said lifting lever, and a horizontally swinging operating lever pivotally mounted on said shelf and provided with a hook which is adapted to be engaged with and disengaged from said shifting lever upon moving the shelf outwardly and inwardly.

3. An extension table comprising a frame, a fixed top section arranged on the frame, a movable top section or shelf slidable lengthwise under the fixed top section and movable vertically at the outer end of the same, and a lever mechanism for raising and lowering said shelf comprising a lifting lever pivoted on the frame and operating to raise or lower the shelf, a vertically swinging shifting lever pivotally mounted on said frame and operating to turn said lifting lever, a horizontally swinging operating lever pivotally mounted on said shelf and adapted to be coupled and uncoupled with said shifting lever, and means for guiding and holding said operating lever comprising a bracket secured to the shelf and provided with a slot which receives said operating lever and with a stop block on one side of said slot forming stop shoulders at opposite ends of the block which are adapted to be engaged by the operating lever upon being moved into one or the other of its extreme positions.

4. An extension table comprising a frame, a fixed top section mounted on the frame, a movable top section or shelf, sliding bars supporting said shelf and guided on the fixed parts of the table, and means for raising and lowering said shelf and bars comprising two oppositely disposed lifting levers pivoted to swing vertically on the frame and having their inner ends operatively connected while their outer ends are adapted to engage with the undersides of said bars, a shifting lever pivoted to swing vertically on said frame and provided with a cam engaging one of the lifting levers, and an operating lever pivoted to swing horizontally on said shelf and adapted to be coupled with or uncoupled from said shifting lever.

5. An extension table comprising a frame, a fixed top section mounted on the frame, a movable top section or shelf, sliding bars supporting said shelf and guided on the fixed parts of the table, and means for raising and lowering said shelf and bars comprising two oppositely disposed lifting levers pivoted to swing vertically on the frame and having their inner ends operatively connected by means of a hook arranged on one of these levers and engaging with a slot in the other lever while their outer ends are adapted to engage with the undersides of said bars, a shifting lever pivoted to swing vertically on said frame and provided with a cam engaging one of the lifting levers, and an operating lever pivoted to swing horizontally on said shelf and adapted to be coupled with or uncoupled from said shifting lever.

Witness my hand this 10th day of September, 1912.

JOHN HOFMAYR.

Witnesses:
THEO. L. POPP,
E. M. GRAHAM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."