Sept. 24, 1935. L. W. LAWRENCE 2,015,599

EXTENSION TABLE

Filed July 10, 1933 3 Sheets-Sheet 1

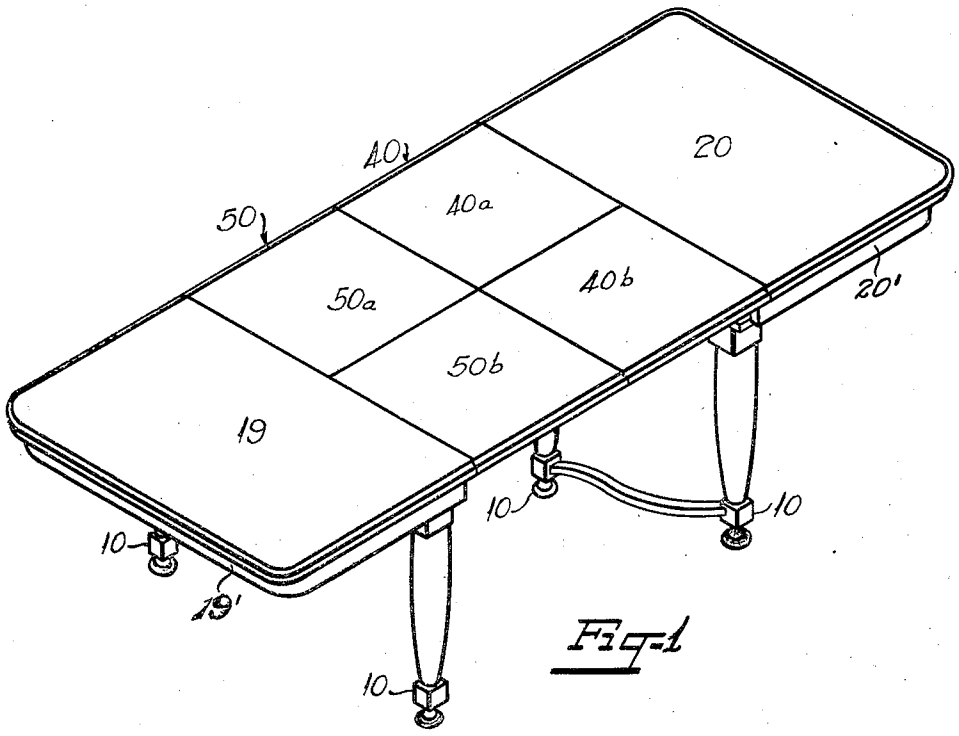


Fig-1

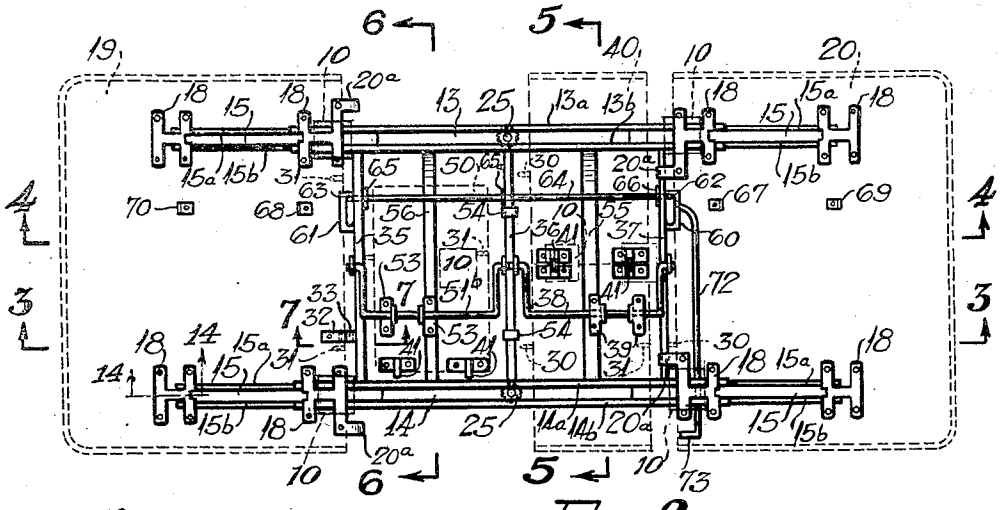


Fig-2

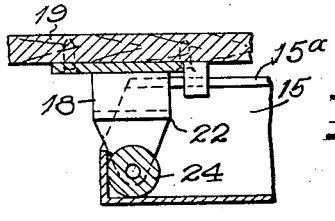


Fig-14.

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EXTENSION TABLE

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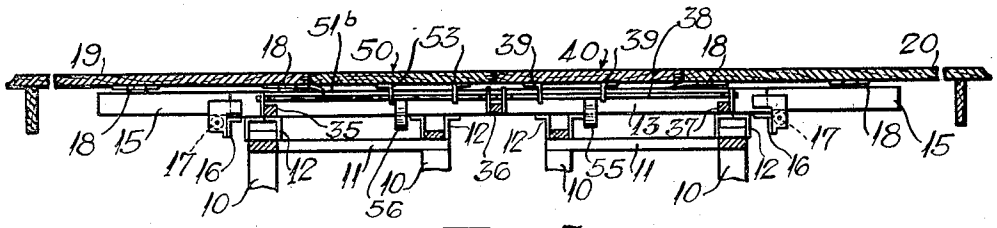


Fig-3

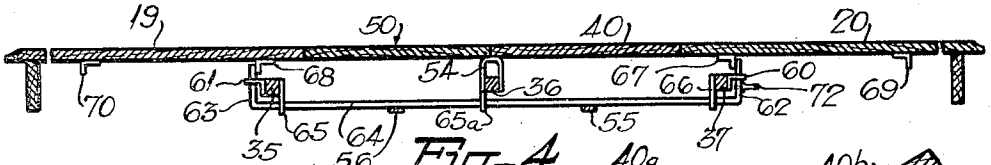


Fig-4

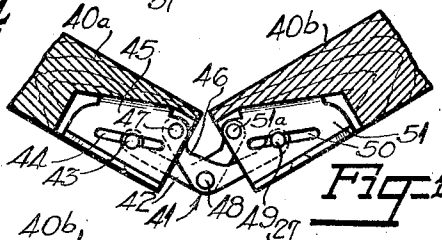


Fig-13

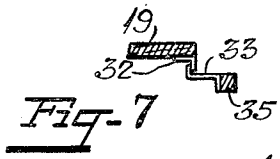


Fig-7

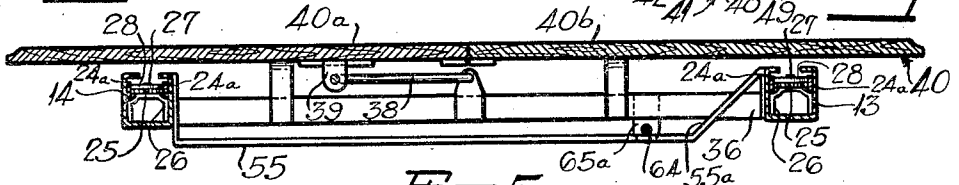


Fig-5

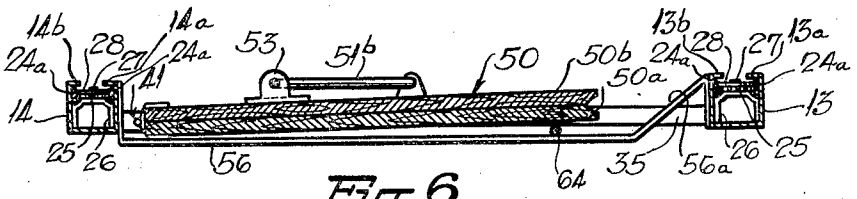


Fig-6

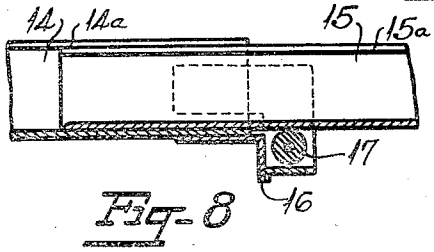


Fig-8

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EXTENSION TABLE

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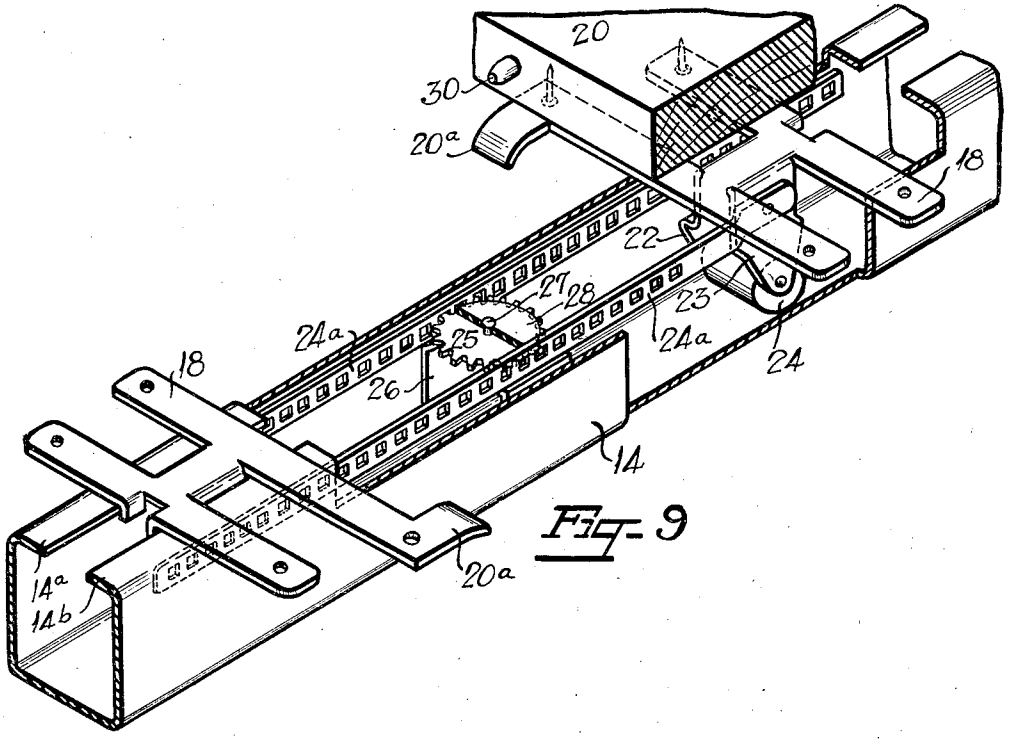


Fig-9

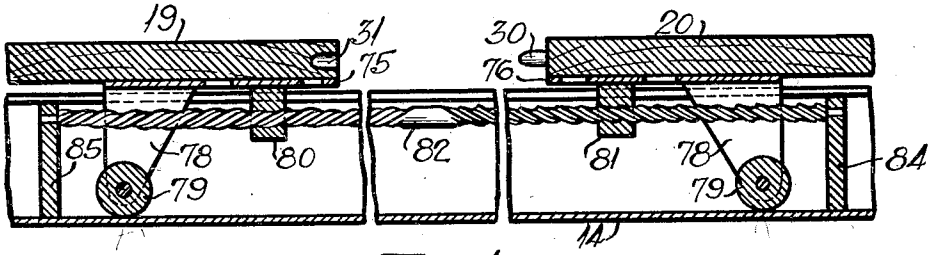


Fig-10

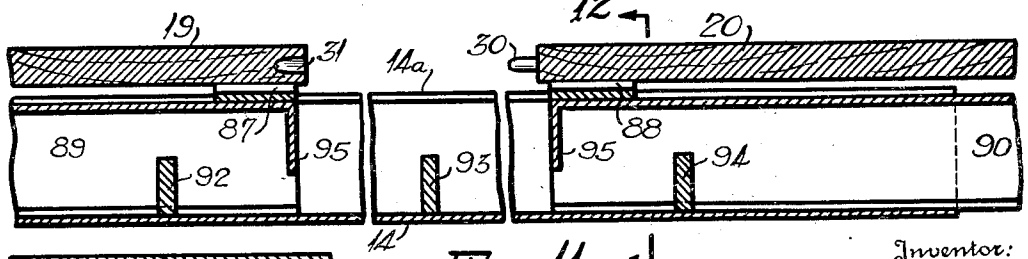


Fig-11

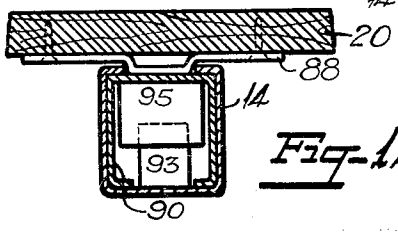


Fig-12

12

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Patented Sept. 24, 1935

2,015,599

UNITED STATES PATENT OFFICE

2,015,599

EXTENSION TABLE

Leo W. Lawrence, Winston-Salem, N. C.

Application July 10, 1933, Serial No. 679,757

10 Claims. (Cl. 311—73)

This invention relates to an extension table structure and more especially to an extension table having the extension structure of all-metal construction which prevents atmospheric conditions from interfering with the dimensions of the parts, therefore, insuring ease of operation at all times.

It is an object of this invention to provide extension hardware for extension tables comprising a pair of channel members almost closed at their top portions, in which the extension structure is adapted to operate, with means for securing the outer top portions of the table to the extension structure, said table also having foldable leaves therein which can be folded to a position beneath the top sections, whereby the top sections can be moved against each other when desired.

It is a further object of this invention to provide an extension structure for tables having means for clamping the extended top sections in position, as well as clamping the top sections in position when the same are moved towards each other.

It is a further object of this invention to provide an extension table having channel bars provided with other channel bars telescopically mounted therein for supporting the top sections of a table.

Some of the objects of the invention having been stated other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is an isometric view of my extension table;

Figure 2 is a top plan view of the extension structure showing the table top and supporting legs in dotted lines;

Figure 3 is a longitudinal sectional view taken along the line 3—3 in Figure 2 with parts omitted;

Figure 4 is a longitudinal sectional view taken along the line 4—4 in Figure 2 showing the means for clamping the extended top sections in different positions;

Figure 5 is a transverse sectional view taken along the line 5—5 in Figure 2;

Figure 6 is a transverse sectional view taken along the line 6—6 in Figure 2;

Figure 7 is a sectional detail view taken along the line 7—7 in Figure 2 which shows means for retarding the outward movement of the extended top sections;

Figure 8 is a vertical longitudinal section showing the telescopic feature of the supporting channels;

Figure 9 is a perspective view of the central portion of the extension assembly, showing one of the pairs belonging to each table;

Figure 10 is a longitudinal sectional view through one of the supporting channels and showing a modified form of the structure displacing the rack and pinion arrangement shown in Figure 9;

Figure 11 is a view similar to Figure 10 and showing another modified form devoid of either rack and pinion or screw means for moving the top sections of the table, each top section of the table being movable independently of the other;

Figure 12 is a transverse sectional view taken along the line 12—12 in Figure 11;

Figure 13 is a detail of the manner in which the center leaves of the table are secured to each other.

Figure 14 is a sectional view taken along the line 14—14 in Figure 2 showing a bracket mounted in the end of an extension channel with the table top secured to said bracket.

Referring more specifically to the drawings the numeral 10 indicates the legs of the table having a suitable frame work 11 on the upper end thereof, on which frame work is mounted members 12 for supporting the channel bars 13 and 14. At each end of the channel bars 13 and 14 another channel bar 15 is slidably mounted therein, each end of the channel bars 13 and 14 having a fitting 16 thereon in which is mounted a roller 17 adapted to support the extension channel 15. These extension channels 15 have suitable H-shaped members 18 slidably mounted therein which are adapted to be secured to the lower side of the table leaves 19, and 20. These H-shaped members 18 are illustrated in Figures 9 and 14 and the approximate edges of the four center members 18 have the down-turned lips 20*a* adapted to support the folding leaves when in extended position, which leaves will be presently described. These members 18 have downwardly and outwardly projecting portions 22 and 23 in which is mounted a roller 24 adapted to roll along the bottom of the channel bar 13, 14 or 15 as the case may be. Channel members 13 and 14 have the inturned upper portions 13*a* and 13*b*, 14*a* and 14*b*, respectively, and these, co-operating with the racks 24, prevent upward movement of the H-shaped members 18. Similar inturned upper flanges 15*a* and 15*b* are provided on channel members 15. The outwardly projecting portions 22 and 23 prevent upward movement of the brackets and the table top sections carried thereby. The four extension channels 15 are telescopically mounted in the ends of channels 13 and 14 and may be pushed inwardly or pulled to an extended position according to the amount the table is desired to be extended. It is evident that one of downwardly extending fascia members 19' or 20' will contact the ends of channels 15 to push the channels inwardly when the table top 19 or 20 is closed while the rollers 24 in the outer brackets 18 will contact the closed ends of the channels 15 and pull the same outwardly when the table leaf 19 or 20 is extended. When the rollers 24 are contacting the closed ends of chan-

nels 15 (Fig. 14) there is a substantial distance between fascia member 19' or 20' and the end of these channels and the table top 19 or 20 will have to be moved inwardly this distance before the members 15 are moved by the table top; consequently, the roller 24 has to roll in the channel 15 until member 19' or 20' contacts the ends of the channels or until the rollers contact the closed ends when the tops are being extended.

To the innermost or center members 18, having the projection 20a thereon, are secured, pivotally or fixed, a rack member 24a which meshes with the opposed sides of pinion 25, rotatably mounted on an inverted U-shaped supporting member 26 secured in the bottom portion of the channel member 13 or 14. A pin 27 is mounted in said support 26 and not only supports pinion 25 but also a washer 28 which is adapted to press against the racks 24a to prevent rattling and undue vibration of same. The proximate edges of extension top section 20 has pins 30 therein which are adapted to fit in suitable holes 31 in the proximate edge of the other top section 19, or in suitable holes in the foldable leaves, said foldable leaves also being provided with such an arrangement whereby the parts are held securely in position when unfolded and ready for use.

Transverse members 35, 36 and 37 are provided, and in members 36 and 37 is mounted a bell crank 38 to which is pivoted as at 39 a foldable leaf 40, said foldable leaf 40 being divided into sections 40a and 40b and hinged together as at 41 by means of a hinge which is best illustrated in Figure 13 and which is embedded in the ends of the leaves. Member 42 has a pin 43 working in a slot 44 in a fitting 45 embedded in portion 40a whereas member 46 is pivoted in fitting 45 as at 47 and also pivoted to member 42 as at 48. This member 46 has a pin 49 working in slot 50 in fitting 51 embedded in portion 40b and one end of member 42 is also pivoted in fitting 51 as at 51a. In Figure 5 the folding leaf 40 is shown in open position whereas in Figure 6 a similar leaf 50 is shown in folded position, which is pivotally mounted on bell crank 51b which in turn is pivotally secured to supports 35 and 36, said leaf 50 being pivotally secured to bell crank 51b as at 53. This leaf 50 is in all respects identical to leaf 40 and the same fittings are applied thereto.

Members 35 and 37 of the table have suitable members 60 and 61 secured thereto having suitable elongated slots in which the upwardly projecting portions 62 and 63 of rod 64 are adapted to have movement. This rod 64 is turnably mounted in brackets 65, 65a and 66 secured to the frame work of the table. The upper ends of portions 62 and 63 of rod 64 are adapted to engage projections 67 and 68 on the top sections 20 and 19 respectively when the table is in extended position and both leaves 40 and 50 are unfolded and in position. Suitable members 54 are secured to transverse member 36 and serve as supports for the leaves 40 and 50 and cause the upper surface of said leaves to be flush top with the extended top sections 19 and 20 when the table is in an extended position. When both leaves are left in folded position and the two top sections 20 and 19 are moved to cause their proximate edges to fit against each other then the portions 62 and 63 are adapted to engage lugs 69 and 70 of top sections 20 and 19 respectively, to hold the leaves in position. In case leaf 40 was left folded and leaf 50 was unfolded then of course portion 62 would engage projection 69 whereas portion 63 would engage projection 68 and vice versa. The portion 62 has pivotally connected thereto a rod 72 which extends laterally and is suitably and slidably mounted in the frame work of the table and extends to near the outer side of the table where it has a handle 73 thereon so that when seized by the operator and pulled toward the operator the arms 62 and 63 will be moved toward the operator and caused to move out of the path of the lugs 67 to 70 inclusive and whereas when it is pushed back to its position in Figure 2 is will engage said lugs and hold the parts of the table in adjusted position.

Secured to transverse member 35 is a suitable Z-bar 33 which serves as a stop for the top sections 19 and 20 when the angle member 32, which is secured to the lower side of the top section 19 engages Z-bar 33. This prevents top sections 19 and 20 from spreading too far apart when the leaves 40 and 50 are being folded or unfolded.

Suitable supporting straps 55 and 56 are secured between channel members 13 and 14 which serve as a support for leaves 40 and 50 respectively. These straps 55 and 56 have inclined surfaces 55a and 56a which guide the leaves 40a and 50a, as the case may be, to their proper position when said leaves are being folded or unfolded.

Figure 10 shows a modified form of the center portion of the supporting members in which suitable brackets 75 and 76 are used instead of the brackets 18 as shown in Figure 9. These brackets 75 and 76 have downwardly projecting portions 78 between which are mounted suitable rollers 79. Lugs 80 and 81 project downwardly from the lower side of brackets 75 and 76 and have threadably mounted therein a threaded rod 82, said rod being rotatably mounted in bearings 84 and 85 secured to the inside of channel member 14. It can be seen that the right hand portion of rod 82 has right hand threads thereon whereas the left hand portion has left hand threads, therefore when either top section 19 or 20 is moved in one direction the other top section will move in an opposite direction.

Figures 11 and 12 show still another modified form in which the end top sections of the table are movable independently of each other. In this form the top sections 19 and 20 are secured to suitable brackets 87 and 88 which, in turn, are secured to telescoped members 89 and 90 respectively. These members 89 and 90 are slidably mounted in the ends of channel 14 and are adapted to move with the top sections 19 and 20. Suitable stops 92, 93 and 94 are secured in the lower portion of member 14 to limit the movement of the telescoped members 89 and 90 since each member has a downward projection 95 which engages one of these stops when the limit of the movement has been reached.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being set forth in the appended claims.

I claim:

1. An extension table having a framework, a pair of parallel spaced channel members, U-shaped in cross-section and having their upper edges inturned to partially close the open side thereof, a bracket mounted for movement in the end portions of each of the channel members, the brackets having an enlarged portion on the lower portion thereof which is larger than the open side

of the channel members, a roller mounted in the lower portion of each of said brackets, means for securing a pair of said brackets to a portion of the table top, each of said brackets having secured thereto an extended rack member extending along the inner sidewalls of the channel members and beneath the inturned upper edges, a pinion mounted in said channel members and having engagement with a pair of said racks.

2. An extension table having an extensible top portion, a framework, a pair of channel members, U-shaped in cross section, a pair of brackets mounted in each end of each channel member for longitudinal movement therein, a top section secured to the brackets in one end of the channel members, another top section secured to the brackets in the other ends of the channel members, a roller on the lower portion of each bracket for supporting the bracket for movement in said channel members, a rack secured to the inner brackets and extending towards and past the central portion of the channel members, a pinion mounted in said channel members for engagement with said racks, and a disk mounted on said pinion for pressing against said rack members for guiding and supporting the same.

3. An extension table having a framework, a pair of parallel channel members U-shaped in cross-section and having their upper open portion restricted and being disposed on said framework, a support telescopically mounted in each end of each channel member, each support being U-shaped in cross-section and having its upper open portion restricted, a bracket mounted for movement in each support, each bracket having a lower portion larger than the restricted opening in the channel members and said supports, a second bracket mounted for movement in each end of the channel members, a table top section for each pair of supports and means for securing a top section to the brackets in the supports and the brackets in the channel members.

4. An extension table having a framework, a pair of parallel channel members disposed on said framework, a support telescopically mounted in each end of each channel member, a bracket mounted for movement in each support, a second bracket mounted for movement in each end of the channel members, a table top section for each pair of supports, means for securing a top section to the brackets in the supports and the brackets in the channel members, and interconnecting means between the top sections for causing the movement imparted to one top section to cause reverse movement of the other top section.

5. An extension table having a framework, a pair of parallel channel members disposed on said framework, a support telescopically mounted in each end of each channel member, a bracket mounted for movement in each support, a second bracket mounted for movement in each end of the channel members, a table top section for each pair of supports, means for securing a top section to the brackets in the supports and the brackets in the channel members, a rack secured to each of the inner brackets mounted in the channel members and extending along the inner sidewalls of the channel members past each other, a pinion fixedly supported by each channel member for rotation and engaging the racks whereby movement imparted to one rack will cause reverse movement of the other rack and the top section carried thereby.

6. An extension table comprising two oppositely slidable outwardly movable top sections, a pair of oppositely slidable rack members secured to the top sections, a pair of parallel channel members in which the rack members are adapted to have movement, a pinion mounted in each channel member for engagement with a pair of said rack members and a washer mounted to rotate with said pinion and to press said rack members against the sidewalls of said channel members.

7. An extension table comprising two oppositely slidable outwardly movable top sections, a pair of parallel channel members, a pair of brackets secured to the lower side of each top section, a roller on each bracket adapted to rest on the bottom of each channel member, a rack pivotally secured to each bracket and extending along one of the sidewalls of the channel members and a pinion mounted in each channel member being adapted to be engaged on opposite sides by a pair of said racks.

8. An extension table having two oppositely slidable top sections, a pair of channel bars, U-shaped in cross section, and having their sidewalls turned inwardly toward each other partially closing the channel, a plurality of brackets to which the top sections are secured, each bracket having an enlarged lower portion provided with a roller resting on the bottom of the channel bars, a pinion mounted in each channel bar and a rack pivotally secured to each of a pair of brackets on opposed top sections and projecting along the inner sidewalls of the channel members and engaging opposite sides of said pinions.

9. An extension table having two oppositely slidable top sections, a pair of channel bars, U-shaped in cross section, and having their sidewalls turned inwardly towards each other partially closing the channel, a plurality of brackets to which the top sections are secured, each bracket having an enlarged lower portion provided with a roller resting on the bottom of the channel bars, a pinion mounted in each channel bar, a rack pivotally secured to each of a pair of brackets on opposed top sections and projecting along the inner sidewalls of the channel members beneath the inturned sidewalls and engaging opposite sides of said pinions, and a washer mounted for rotation with each of said pinions and being adapted to press the racks against the sidewalls of the channel bars.

10. An extension table having an extensible top portion, a framework, a pair of channel members, U-shaped in cross section, and supported by the framework, a bracket mounted for movement in each end of each channel member, a top portion secured to the brackets in each end of the channel members, a roller on the lower portion of each bracket, a rack pivotally secured to each of the brackets and extending past each other inside the channel members, and a pinion mounted in said channel members for engagement with said racks whereby when movement is imparted to one top portion the other top portion will be moved in a reverse direction.

LEO W. LAWRENCE.