July 16, 1957 M. J. LOWRY 2,799,546

FOLDABLE, EXTENSIBLE TABLE

Filed Sept. 13, 1956 4 Sheets-Sheet 1

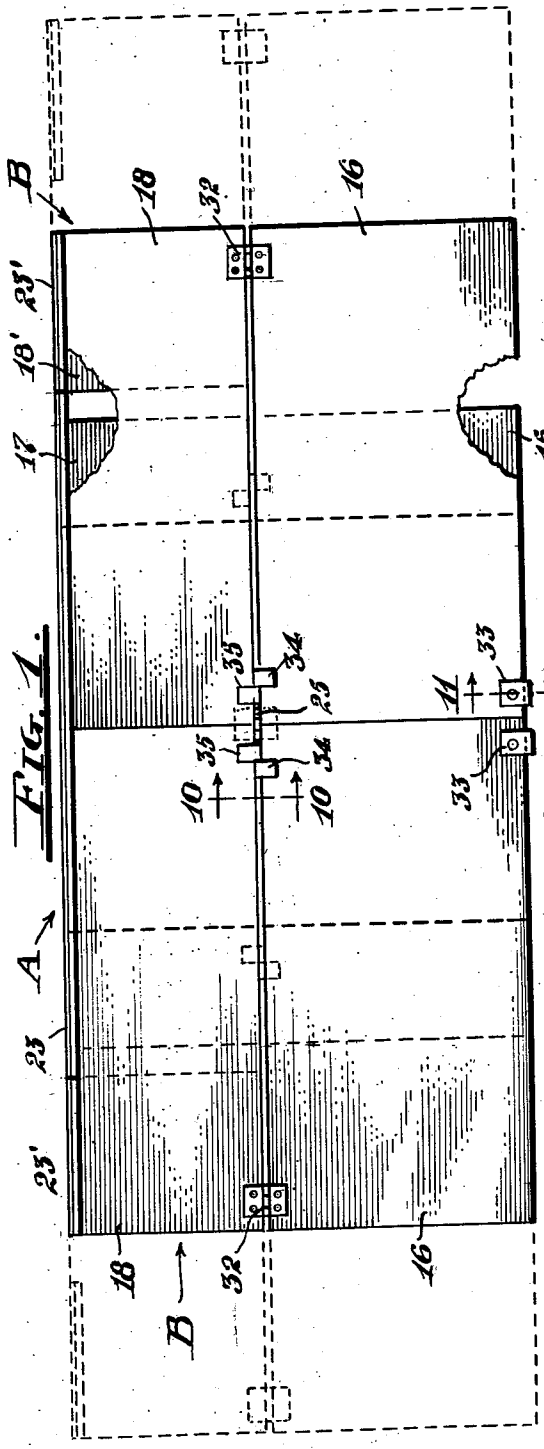


Fig. 1.

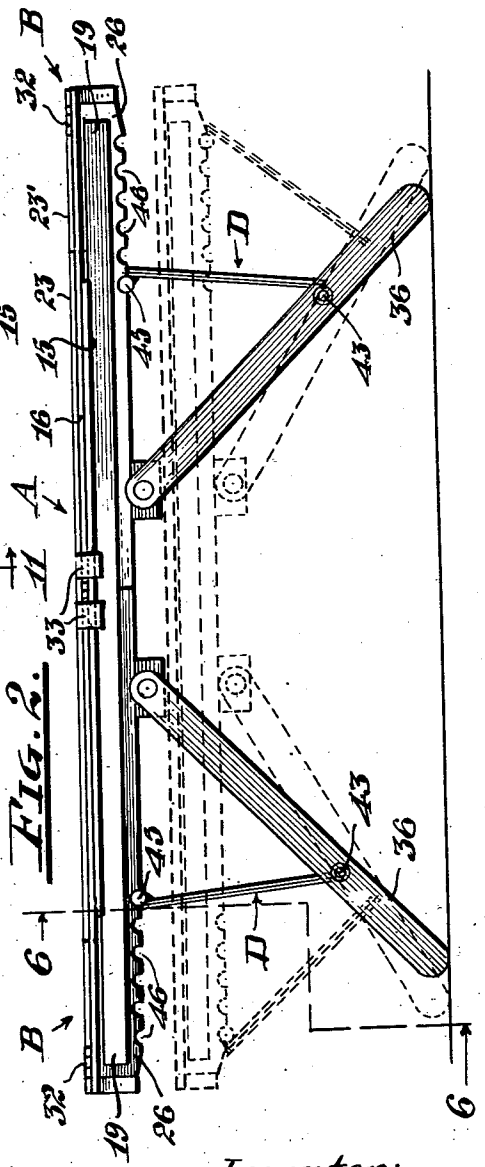


Fig. 2.

Inventor:
Michael J. Lowry.
By R. S. Barry
ATTORNEY

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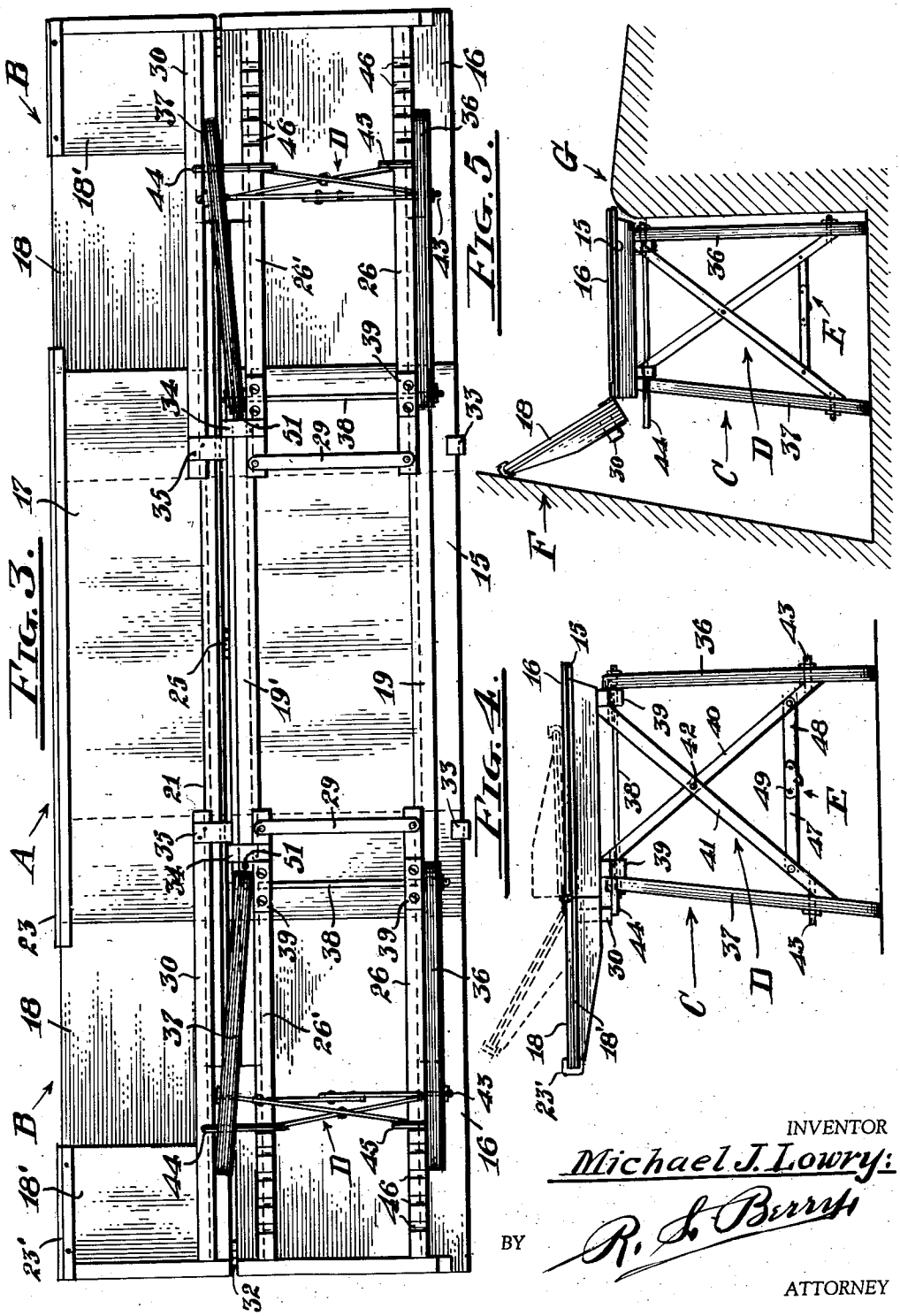


Fig. 3.

Fig. 5.

Fig. 4.

INVENTOR
Michael J. Lowry:
BY R. L. Berry
ATTORNEY

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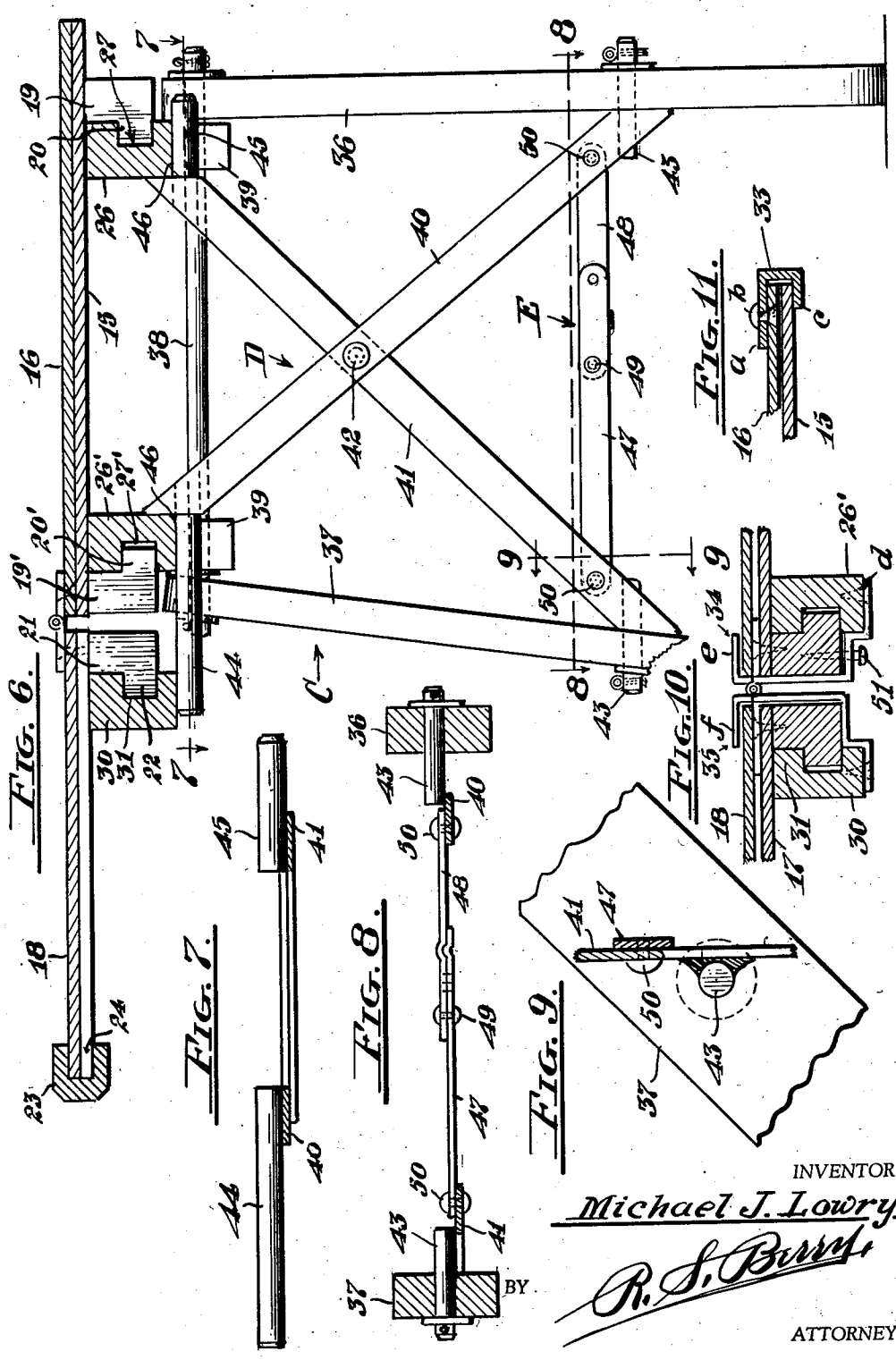


FIG. 6.

FIG. 7.

FIG. 8.

FIG. 9.

FIG. 11.

FIG. 10.

INVENTOR

Michael J. Lowry:

BY R. S. Burry

ATTORNEY

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FIG. 12.

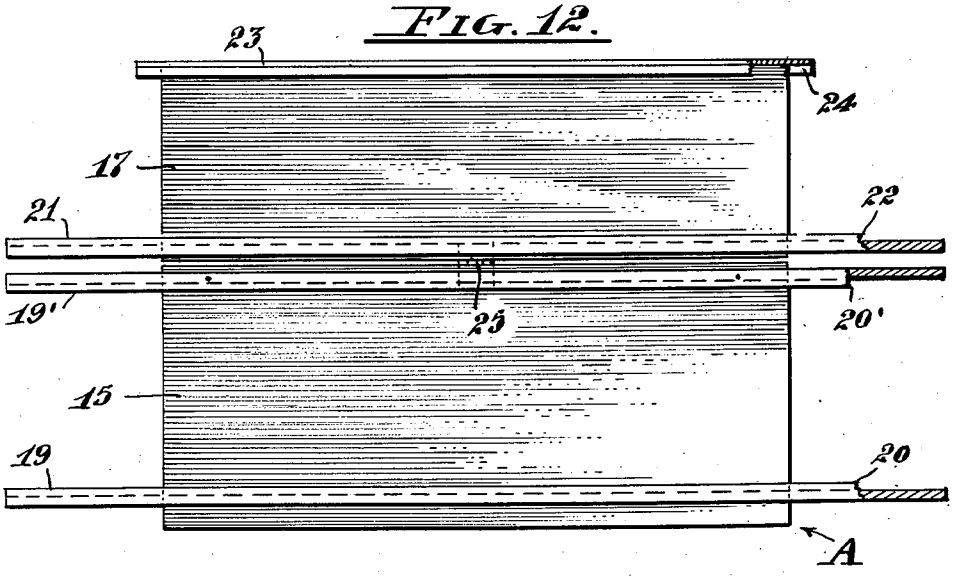


FIG. 13.

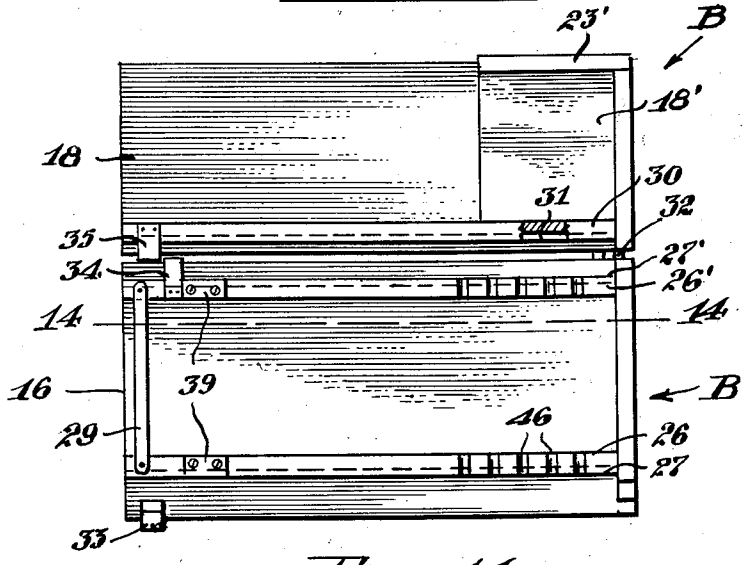
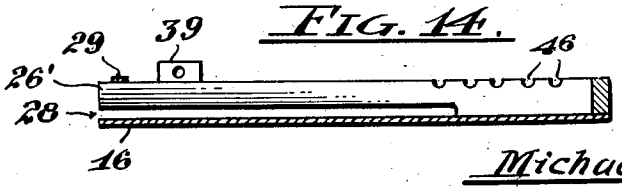


FIG. 14.



INVENTOR
Michael J. Lowry,

BY R. S. Burns

ATTORNEY

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2,799,546

FOLDABLE, EXTENSIBLE TABLE

Michael J. Lowry, Los Angeles, Calif.

Application September 13, 1956, Serial No. 609,580

14 Claims. (Cl. 311—52)

This invention relates to a table and has as its primary object the provision of a table which is adjustable to vary the length, width and the height thereof, and which is adapted to be folded into a compact portable package when not in use.

Another object of the invention is to provide a table which is especially applicable for use as a filler for the space extending between the front and back seats of an automobile with the top of the table lying flush with the front edge of the back seat so as to extend in continuation thereof, the table embodying the above recited adjustable features so that it may be accommodated to such spaces of various dimensions whereby the table is rendered applicable to various makes of automobiles wherein the back seats vary in their height and length and in their spacing from the back of the front seat.

Another object is to provide a table of the above character which when set up and applied is strong, stable, and not liable to collapse so that it may be safely utilized in converting the back seat of an automobile into a bed or play pen for small children.

With the foregoing objects in view together with such other objects and advantages as may subsequently appear, the invention resides in the parts and in the combination, construction and arrangement of parts hereinafter described and claimed, and as illustrated by way of an example in the accompanying drawings in which:

Fig. 1 is a plan view of the table top with portions broken away showing it in its contracted position in full lines and indicating its longitudinally extended position in dotted lines;

Fig. 2 is a view in front elevation of the table in its longitudinally contracted and elevated position and indicating its lowered position in dotted lines;

Fig. 3 is an inverted plan view of the table showing it in its extended position;

Fig. 4 is an end view of the table;

Fig. 5 is a diagram depicting the manner of applying the table between the front and back seats of an automobile;

Fig. 6 is an enlarged detail in section and elevation taken on the line 6—6 of Fig. 2;

Fig. 7 is a detail in horizontal section taken on the line 7—7 of Fig. 6;

Fig. 8 is a detail in horizontal section taken on the line 8—8 of Fig. 6;

Fig. 9 is a detail in vertical section taken on the line 9—9 of Fig. 6;

Fig. 10 is a detail in section with parts in elevation and seen on the line 10—10 of Fig. 1;

Fig. 11 is a detail in section taken on the line 11—11 of Fig. 1;

Fig. 12 is an inverted plan view of the intermediate portion of the table top with parts shown in section;

Fig. 13 is an inverted plan view of one of the table top extensions with leg portions removed; and

Fig. 14 is a view in longitudinal section taken on the line 14—14 of Fig. 13.

Referring to the drawings more specifically A indicates generally the intermediate portion of the table top and B—B designates slidable end extensions carried on the intermediate portion A. The table top A and the extensions B—B each embody rectangular panels 15 and 16 respectively which panels are of corresponding width and are disposed in longitudinal alignment with the inner end portions of the panels 16—16 superimposed on the end portions of the panel 15 in superficial sliding contact therewith, as will presently be described, so that the end panels 16—16 may be shifted lengthwise relative to the intermediate panel 15 to vary the length of the table top from its contracted position as shown in Fig. 1 to an extended position as indicated in dotted lines in Fig. 1 and as shown in full lines in Fig. 3.

Hingedly mounted on one margin of the panel 15 is a rectangular leaf 17 corresponding in length to the panel 15 and positioned in transverse alignment with the latter and hingedly mounted on the corresponding margin of the panel 16 of each of the extensions B—B is a rectangular extension leaf 18 corresponding in length to the panel 16 and disposed in transverse alignment therewith. The leaf 18 corresponds in width to the leaf 17 and is disposed in longitudinal alignment with the latter with its inner end portion overlying and slidably contacting the adjacent end portion of the leaf 17.

The leaves 17—18 are adapted to be disposed in horizontal alignment with the table top 15 and extensions 16—16, or to be folded to overlie the panels 15 and 16—16, or disposed in various outwardly extending angles or inclinations relative thereto.

The several panels 15—16 and leaves 17—18 are formed of stiff, thin sheet material having smooth flat surfaces on the opposite sides thereof.

Fixedly mounted on the underside of the panel 15 is a pair of parallel guide rails 19—19′ which rails extend adjacent the longitudinal margins of the panel 15 and project a short distance from the opposite ends thereof. The rails 19—19′ are formed on the inner faces thereof with longitudinal tongues 20—20′ which extend throughout the lengths of the rails 19—19′. Mounted on the leaf 17 adjacent its inner margin is a guide rail 21 which parallels the rail 19′ and like the latter projects at its ends from the opposite ends of the leaf 17. The rail 21 is formed with a tongue 22 extending throughout the length thereof on its inner side. The outer margin of the leaf 17 is fitted with a rail 23 formed with a longitudinally extending open ended channel 24 one wall of which abuts against the upper side of the leaf 17 and the other wall of which is spaced from the under face of the leaf 17 to provide the rail 23 with a slide-way on its inner side adjacent the inner face of the leaf 17. The panel 15 and leaf 17 are united intermediate their ends by a hinge 25 as shown in Fig. 12.

As particularly shown in Fig. 13 the panel 16 of each of the end extensions B has affixed thereon a pair of parallel rails 26—26′ formed on their outer faces with longitudinally extending channels 27—27′ which slidably receive the tongues 20—20′ on the rails 19—19′. The inner end portions of the rails 26—26′ are spaced from the panel 16 to provide a slot 28 for the reception of the outer end of the panel 15 and to afford a sliding connection between the panels 15 and 16. In order to stabilize and maintain the free ends of the rails 26—26′ in proper spaced relation the end portions thereof are connected by a tie bar 29.

The leaf 18 is fitted with a rail 30 extending along the length thereof adjacent its inner margin which rail is provided with a channel 31 slidably engaged by the tongue 22 on the rail 21. The rail 30 like the rails 26—26′ is spaced throughout a major portion of the length thereof

from the adjacent face of the panel 18 to provide a space for reception of the outer end portion of the leaf 17 in slidable engagement therewith. The outer margin of the panel 18 is slidably engageable with the channel 24 on the rail 23. The panels 16 and 18 are connected together at the outer ends of their longitudinal edges by hinges 32.

Mounted on the outer margin of each of the panels 16 adjacent the inner end thereof is a guide yoke 33 which extends astride the margins of the panels 15—16 as particularly shown in Fig. 11, one leg *a* of the yoke 33 being affixed to the panel 16 as by a rivet *b* while the other leg *c* of the yoke projects beneath the panel 15 in slidable contact therewith. Similarly a guide yoke 34 having one leg *d* thereof affixed to the rail 26' extends between the adjacent margins of the panel 16 and leaf 18 and has its other leg *e* overlying the inner margin of the panel 16 in slidable relation thereto as particularly shown in Fig. 10. The yokes 33 and 34 serve to retain the outer end portions of the panels 16 and 15 in close sliding relation to each other.

In similar fashion a guide yoke 35 carried on the inner end of the rail 30 extends between the adjacent margins of the panel 16 and 18 with one leg *f* thereof overlying the outer face of the panel 18, the yoke 35 spanning the inner margins of the leaves 17 and 18 and serving to retain such margins in close sliding relation to each other, as particularly shown in Fig. 10.

Each of the end extensions B is fitted with a vertically adjustable support C which support is here shown as embodying a pair of legs 36—37 pivotally mounted at their upper ends on the outer end portions of a shaft 38 extending beneath the rails 26—26' transversely thereof and carried in bearings 39 mounted on the latter, the legs 36—37 being designed for positioning at various angular relations to the table top so as to support the latter at a selected level or height relative to the floor on which the legs are seated.

As a means for holding the legs 36—37 in various angular relations to the table top a brace D is provided having its lower end pivotally connected to the legs 36—37 and having its upper end portion engageable with the rails 26—26' at various points along the lengths of the outer end portions thereof. As here shown the brace D comprises a pair of cross arms 40 and 41 pivotally connected together intermediate their ends by a pivot 42 and having their lower ends connected to pivot pins 43—43 mounted on the lower end portions of the legs 36—37.

The upper ends of the arm 40 and 41 are fitted with axially aligned studs 44—45 which project outwardly from the arms for positioning beneath the rails 26—26', the studs 44—45 being designed to be connected to the rails 26—26' at various points along the lengths thereof; the rails being here shown as formed with a series of transverse notches 46 adapted to receive the studs 44—45. The upper ends of the arms 40 and 41 are formed to abut against the inner faces of the rails 26—26', while the lower ends of the arms are formed to abut against the inner faces of the legs 36—37 when the arms are in their extended rail engaging position as shown in Fig. 6.

The studs 44 are elongated so that when seated in the notches 46 in the rail 26' their outer end portions will underlie and form an abutment for the rails 30 on the table leaves to limit downward swinging movement of the latter and afford a support therefor when the leaves are disposed coplanar with the table top.

The lower end portions of the arms 39—49 are connected together by a spreader E comprising a pair of toggle links 47—48 interconnected by a pivot 49 and having their outer ends connected to the arms 39—40 by pivots 50 in the manner common in rule joint connections. The links 47—48 serve when in their extended positions as a means for spreading the arms 39—40 and holding them in their spread position.

The arm 40 is formed of a length exceeding that of the arm 39 whereby on spreading the arms 39 and 40 relative to each other the leg 37 engaged thereby will be thrust laterally to an outwardly inclined position, the pivotal mounting of the legs 40 being sufficiently loose to permit such lateral movement thereof. By this arrangement the legs 40 will serve as diagonal struts to stabilize the table and also serve to oppose tilting of the table under loads imposed on the leaves thereof.

At the outer end of the extension B a spacer panel 18' underlies the panel 18 and is interposed between the latter and the rail 30, being seated on the latter to space the inner end portion of the panel 18 from the top of the rail 30. The opposite margin of the panel 18' is engaged by a molding 23' which is positioned astride the outer margins of the panels 18 and 18' and is rigidly affixed thereto.

In assemblying the end extensions B on the intermediate table top A, the ends of the panels 15 and leaves 17 of the latter are inserted in the open ends of the slots 28, and in the space between rail 30 and the leaf 18, so as to position the panels 16 and leaves 18 on top of the panels 15 and leaves 17 respectively. The yokes 33, 34 and 35 will then be positioned astride the margins of the panels 15—16 and the inner margins of the leaves 17—18. On advancing the panels 16 and leaves 18 over the panel 15 and leaves 17 the outer ends of the rails 19—19' and 21 are slidably engaged respectively with the rails 26—26' and 30 on the end extensions B while the outer margins of the leaves 18 will be slidably engaged with the channel 24 on the rail 23 extending along the outer margin of the leaf 17. The end sections B may then be advanced on the intermediate section A until their inner ends abut as shown in Fig. 1. The end panels 16 and leaves 18 will then overlie the panel 15 and leaf 17.

On completion of the assemblage above described stops are provided at 51 on the rail 19' which project into retractive movement of the yokes 34 so as to limit outward movement of the extensions and prevent their accidental withdrawal from engagement with the intermediate section, the stops 51 consisting of screws applied to the rail 19' so that the heads thereof will form abutments.

When the table is assembled, the leaf portion thereof comprising the relatively sliding leaves 17 and 18—18' may be swung on the hinges 25 and 32 between a position extending coplanar with the table top panels 15 and 16—16, to a position overlying the latter as shown in dotted lines in Fig. 4.

The table is especially designed for positioning in the space extending between the back of the front seat F of an automobile and the front of the back seat G thereof as shown in Fig. 5. The adjustable leg structure C permits of varying the height of the table top, if need be, so that the upper face of the table top will extend on a plane with the forward edge of the seat G against which the overhanging forward edge of the table top substantially abuts. The leaf portion of the table top is swung from its folded position so that its outer margin formed by the rail 23—23' will abut the seat back F so as to close the gap extending between the table top proper and the back of the front seat. The leaf portion of the table is formed of a width exceeding the ordinary width of such gap so that when the outer margin of the leaf is brought into contact with the back of the front seat the leaf will come to rest in an upwardly inclined position which will vary according to the spacing of the seat F and G and which may vary in different models of automobiles. In this fashion the table is accommodated to various widths of such spacing and by reason of the end extensions is adjustable longitudinally to fit various lengths of seats. Manifestly the table may be utilized as such apart from an automobile in which event the leaf portion thereof will be extended horizontally as shown in full lines in Fig. 4.

When not in use the table may be folded into a compact package by retracting the end extensions B to their innermost positions, disposing the leaf assembly in its folded position and folding the legs against the under side

of the table on disengaging the upper end of the brace D and swinging it to a folded position overlying the under side of the table top.

While a specific embodfiment of the invention has been shown and described, the invention is not limited to the exact details of construction set forth, and the invention embraces such changes, modifications and equivalents of the parts and their formation and arrangement as come within the purview of the appended claims.

I claim:

1. A foldable, and extensible table embodying a table top, and end extensions slidably carried on said table top; a foldable leaf on a longitudinal margin of said table top, and foldable leaves on corresponding margins of said extensions having slidable connection with the ends of the leaf on said table top.

2. The structure called for in claim 1 together with foldable supporting legs carried on said end extensions, and means for adjusting said legs to vary the height of the table top assembly relative to the floor on which said legs are supported.

3. The structure called for in claim 1 together with foldable supporting legs carried on said end extensions, means for adjusting said legs to vary the height of the table top assembly relative to the floor on which said legs are supported, and means carried by said supporting legs limiting downward swinging movement of said leaves and for supporting said leaves in coplanar relation to said table top.

4. In a foldable and extensible table, an intermediate rectangular panel, a leaf hinged on a longitudinal margin of said panel foldable to overlie said intermediate panel, extension panels slidably seated on the end portions of said intermediate panel for longitudinal adjustment relative thereto; a leaf hinged on a margin of each of said extension panels slidably engaged with the leaf on said intermediate panel for swinging movement therewith and being adjustable longitudinally relative thereto together with said extension panel.

5. The structure called for in claim 4 together with foldable supporting legs carried on said extension panels adapted to extend in angular relation thereto, and means for holding said legs fixed relative to said extension panels at various angles relative thereto.

6. In a foldable and extensible table, an intermediate rectangular panel, a leaf hinged on a longitudinal margin of said panels, said leaf being foldable to overlie said panel and being adapted to be positioned coplanar with said panels and at various upward inclinations relative thereto; extension panels slidably seated on end portions of said intermediate panel for longitudinal adjustment relative thereto; a leaf hinged on a longitudinal margin of each of said extension panels slidably engaged with and overlying the leaf on said intermediate panel for swinging movement therewith and for adjustment longitudinally thereof in conjunction with longitudinal adjustment of the extension panel on which it is mounted; foldable supporting legs carried on said extension panels, brace means carried by said legs detachably connected relative to said extension panels, and means carried by said brace means limiting downward swinging movement of said leaves relative to said panels and for supporting said leaves in coplanar relation to said panels.

7. In a foldable and extensible table an intermediate rectangular panel, a leaf hinged on a longitudinal margin of said panel foldable to overlie said intermediate panel; a pair of parallel guide rails on the underside of said intermediate panel; and end extension panels; a pair of guide rails on the underside of each of said extension panels spaced therefrom throughout the major portions of the lengths thereof and between which and said extension panels slidably extends said intermediate panel, said last named guide rails slidably engaging the guide rails on the underside of said intermediate panel; a leaf on said intermediate panel; a leaf on each of said extension panels; and means slidably interconnecting the leaves on said extension panels with the leaf on said intermediate panel.

8. The structure called for in claim 7 in which said last named means embodies a guide rail on the leaf on said intermediate panel and a guide rail on each of said leaves slidably engaging the guide rail on said leaf; the guide rail on said leaves being spaced therefrom a major portion of their lengths; said first named leaf slidably extending between said second named leaves and the guide rails thereon.

9. The structure called for in claim 7 in which said last named means embodies a guide rail on the leaf on said intermediate panel and a guide rail on each of said leaves slidably engaging the guide rail on said leaf; the guide rail on said leaves being spaced therefrom a major portion of their lengths; said first named leaf slidably extending between said second named leaves and the guide rails thereon; and a guide way fixed on the outer longitudinal margin of said first named leaf slidably engaging the outer longitudinal margins of the last-named leaves.

10. In a table, a table top panel, a pair of guide rails on the underside of said panel, extending longitudinally thereof, an extension panel overlying an end portion of said table top panel, a pair of guide rails on the under side of said extension panel extending beneath said table top panel in sliding engagement with said first named pair of guide rails; a leaf hinged on a longitudinal margin of said table top panel to swing to and from a position overlying the latter, a guide rail on the underside of said leaf adjacent its inner margin and extending longitudinally thereof; an extension leaf hinged on said extension panel overlying an end portion of said first named leaf, a guide rail on the underside of said extension leaf slidably engaging the guide rail on said extension panel; and guide means interengaging the outer margins of said leaves.

11. In a foldable extension table, a table top panel, end extension panels mounted on said top panel for slidable adjustment longitudinally thereof, slidably interconnected leaves hinged on said panels to swing from a position coplanar with said panels to a position overlying said panels; a pair of supporting legs pivotally mounted on each of said extension panels, a cross brace pivotally carried between the legs of each pair thereof having outer ends, and means for detachably connecting the outer ends of said cross brace at various points longitudinally of said extension panel.

12. The structure called for in claim 11 together with means on the outer ends of said cross braces for limiting downward swinging movement of said leaves and for supporting said leaves in coplanar relation to said panels.

13. The structure called for in claim 11 together with toggle links connecting said cross brace adjacent the pivotal mounting of said brace for spreading and contracting said brace.

14. The structure called for in claim 11 together with toggle links connecting said cross brace adjacent the pivotal mounting of said brace for spreading and contracting said brace, one of the members of said cross brace being longer than the other so as to spread the leg engaged thereby relative to the other leg.

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