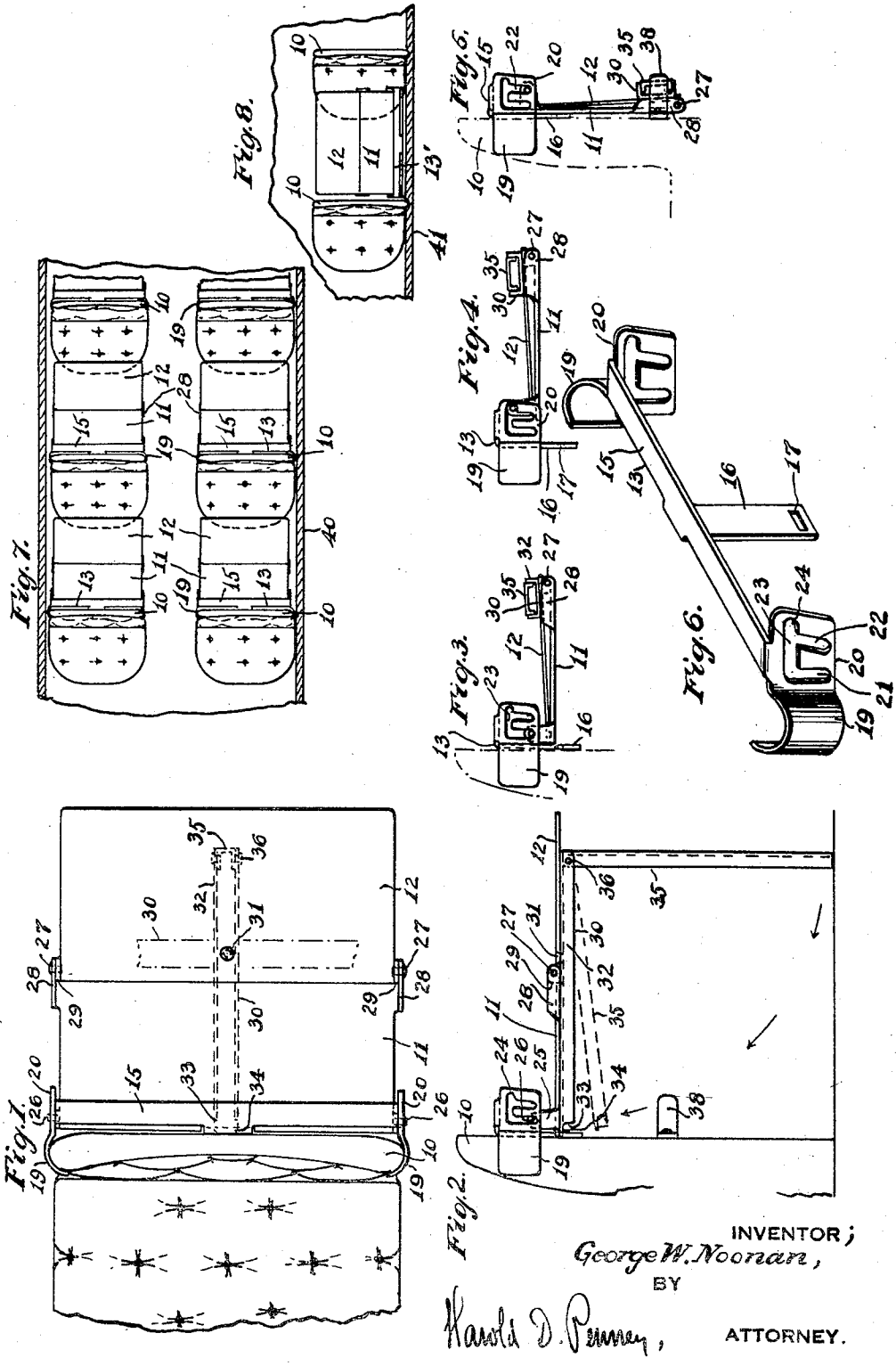
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FOLDING TABLE

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FOLDING TABLE

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This invention relates to folding devices and more particularly to folding tables for airplanes, automobiles and the like, though it is noted that the invention is not limited to vehicles or other moving means nor in some respects even to tables.

One object of the invention is to provide a suitable table of this kind which may be conveniently used between the chairs of an automobile, bus or airplane.

Another object of the invention is to provide a device of this kind which may be easily and quickly folded or extended, and may be conveniently held out of the way when not in use.

Another object of the invention is to provide a device of this kind which may be economically constructed of stamped metal.

Other objects of the invention are to improve generally the simplicity and efficiency of such devices and to provide an apparatus of this kind which is strong, durable, reliable and sightly in use and operation, and which is economical to manufacture.

Still other objects of the invention will appear as the description proceeds; and while herein details of the invention are described and claimed, the invention is not limited to these, since many and various changes may be made without departing from the scope of the invention as claimed in the broader claims.

The invention features for the accomplishment of these and other objects are shown herein in connection with an improved folding table which, briefly stated, includes a bracket comprising a stationary abutment portion provided with a recess, and stationary fulcrum ears, each provided with a fulcrum slot, an inwardly and a downwardly slanted cam slot communicating therewith. An inner table section carries corner pins pivotally engaging in said slots; and an outer section is hinged to the inner section. A supporting member pivoted against the lower face of one of the sections is adapted, when transverse to the sections, to engage in said recess and under both sections, and to support the sections when supported by a leg pivoted to the outer end portion of the supporting member.

While in this specification and claims mention is made of the table sections, and of the bottom, top, ends, front and rear of the devices and it is stated that parts are foldably joined, it is understood that these words are used for designation and description and that for purposes of protection they are to be construed broadly enough to cover other devices besides tables, in other relative arrangements, dimensions or positions than as shown, and in general the terms are to be given broad interpretation for the purposes of protection when possible.

In the accompanying drawing showing, by way of example, two of many possible embodiments of the invention,

Figs. 1 and 2 are respectively a fragmental plan and side elevation showing the table attached to the back of a chair and extended ready for use;

Figs. 3 and 4 are elevations showing the partially folded table in different positions relative to the bracket;

Fig. 5 is an end elevation showing the table folded as against the back of a chair;

Fig. 6 is a perspective view showing the details of the bracket;

Fig. 7 is a fragmental plan, partly in section, showing the chairs, as in an airplane, arranged in series with my table attached; and

Fig. 8 is a fragmental plan showing the table attached to the side wall of a fuselage, bus or the like.

The device of Figs. 1 to 7 is shown in combination, with the backs 10 of airplane or automobile bus seats, though it is noted that the invention is in no way limited to the structure to which the device is attached. In Figs. 1 to 7, the table 11, 12 is pivoted to a bracket 13 of metal plate extended across the upper part of the back face of the seat back 10.

Said bracket comprises a horizontal strip like main portion 15 (Fig. 6) provided at the mid part of its forward edge with a downturned securing and abutment portion 16 secured flat against said back face and pro-

vided with a horizontal lower end recess 17.

The ends 19, 20 of said portion 15 are much wider than the intermediate part thereof and are turned down substantially perpendicularly to the main portion, the forward portion 19 of each end being conformably curved around the side edges of the cushion of the seat back 10.

The rear portions 20 of the downturned ends form fulcrum ears, each ear being provided with a vertical inner fulcrum slot 21, an approximately vertical inwardly and downwardly slanted cam slot 22 and an upper substantially horizontal connecting slot 23 connecting the upper end of the other slots and extending slightly outwardly of the cam slot to form a pivot bearing 24.

The inner table section 11 has a pair of upturned inner corner pivot-carrying ears 25 (Fig. 2) near and parallel to the fulcrum ears and respectively carrying fast therein alined pivot pins 26 engageable in the slots of the respective bracket ears. A washer may be provided on each pin for separating the adjacent ears.

The outer corners of said inner section carry extended upwardly turned ears 28, and the inner corners of the outer section carry upwardly turned ears 29, rigid with which are pivot pins 27. These pins are movable in the ears 28, so that the sections may be folded approximately flat against each other (Figs. 3 to 5) or disposed in the same plane with the inner edges abutting (Fig. 2). The extended ears 28 form flanges which may at times serve for preventing articles from sliding off the table; and while these flanges are not shown as extending all around the table, the invention is not thus limited.

A supporting channel member 30 is pivoted as at 31 at its mid part adjacent to the mid point of the inner margin of the outer section 12, with its intramarginal web flat against the lower face of the table as in Fig. 2, the member being disposable along said inner margin or transverse to the sections with the outer end extending near the outer margin of the table.

The inner ends of the flanges 32 of the member are cut away as at 33 (Fig. 2) so that the inner end 34 of the web projects and is adapted to engage in said recess 17 (Fig. 6) when the member is transverse to the table sections and pivot pins 25 are in the bottoms of the fulcrum slots 21 after the table has been pivotally raised and then lowered until the inner edge of the table section 11 abuts said abutment portion 16.

A leg 35, which may be of channel material, is pivoted, by a pin 36, at its upper end between the outer ends of said flanges 32 and is adapted to be housed between said flanges, and when the supporting member is transverse the sections and the pins 26 are in the fulcrum slots; or to be disposed vertically upon the floor to support the outer end of the member 30, to cause the member to support the table sections.

Said pins 26, when in the bottom of the fulcrum slots, co-operate with the inner edge of the inner section 11 and said abutment portion 16 to position the table section horizontally, as in Figs. 3 and 4, whereby after the leg is housed and the supporting member is placed longitudinally, the outer section may be folded against the inner section. The pins 26 are then placed in the pivot extensions 24 to permit the folded table to hang and the pins to move into the cam slots 22 to force and hold, with a wedging action, the table against the abutment portion 16.

Spring clips 38 secured to the back of the chair have each a shoulder and a cam end, the cam end being adapted, when the table is folded, to be engaged by the ends of the housed leg when horizontal and the table is folded, to permit the ends of the legs to snap behind the shoulders, whereby the parts may be retained in folded positions, as shown in Fig. 5.

Fig. 7 shows an arrangement of seat in an airplane cabin 40, instead of having the brackets 13 secured to the chair backs, brackets 13′ (Fig. 8) having the curved portions 19 omitted, may be secured to the side wall 41 of an airplane, bus or other structure, and may be folded against the wall in the same manner as in Fig. 5.

The operation is very simple, and is obvious from the foregoing. When not in use, the device is disposed as in Fig. 5. When it is desired to use it, the whole is slightly raised and then the lower part released from the springs and pulled slightly out, and then raised until the pivot pins engage in the slot extensions 24. Next the parts are moved to the position of Fig. 4 and then to the position of Fig. 3. The parts will remain in the position of Fig. 3 of themselves, which makes it then convenient to unfold the extension 12 and then dispose the member 30 approximately transversely of the sections, letting the leg fall. The supporting member may then be raised, the pins 26 acting as pivots, to permit the end 34 to be inserted in the recess 17, after which the parts are disposed in the position of the solid lines of Fig. 2.

The reverse action takes place when the table is folded, the parts taking the successive positions of Figs. 2 to 5, snapping into place behind the springs 38.

I claim as my invention:

1. In combination, an attaching bracket comprising a main portion, an intermediate abutment portion thereon provided with a recess, and end portions perpendicular to the main portion and forming fulcrum ears, each provided with a vertical inner fulcrum slot, an inwardly and downwardly slanted

cam slot and a slot connecting the other slots; a table comprising an inner section having upturned inner corner ears respectively carrying pivot pins engageable in said slots; an outer section pivoted to the inner section whereby said sections may fold against each other to be disposed in the same plane; a supporting member pivoted on the lower face of the outer section, and disposable longitudinally or transversely of the sections, the inner end being engageable in said recess; a leg pivoted to the outer end of said supporting member; and means adapted to hold the table parts in folded position.

2. In combination, a stationary abutment portion provided with a recess; stationary fulcrum means; an inner table section carrying corner means pivotally engaging said fulcrum means; an outer section hinged to the outer edge of the inner section; a supporting member pivoted against the lower face of one of the sections and adapted to engage in said recess and against the lower face of both sections; and a leg pivoted to the outer end portion of said supporting member.

3. In combination, a member including opposed ears and provided with a recess; a table section having corner means for pivotally mounting said section, said means being engageable with said ears; a supporting member pivoted against the lower face of the section and adapted to be moved to engage at its inner end in said recess; and a leg pivoted to the outer end portion of said supporting member.

4. In combination, a stationary abutment; stationary fulcrum means; a table section carrying off-set corner pins pivotally engaging said means; the inner edge of the table when horizontal engaging said abutment.

5. In combination, an abutment; stationary fulcrum ears each provided with a fulcrum slot; and a table section having upwardly off set ears carrying corner pins engaging in said slots; the inner edge of the section, when the section is horizontal, engaging said abutment.

6. In combination, an abutment; stationary fulcrum ears each provided with an inwardly and downwardly slanted cam slot; and a table section having upwardly off set ears carrying corner pins engaging in said slots; the slots forcing the section when vertical against said abutment.

7. In combination, an abutment; stationary fulcrum ears each provided with an inner fulcrum slot and an outer inwardly and downwardly slanted cam slot connecting with the fulcrum slot; a table including a section having upwardly offset ears carrying corner pins engaging in said slots; the inner slot being positioned to cause the table section when horizontal to engage its inner edge against the abutment; the cam slot being positioned to cause the table section when vertical to press against the abutment.

8. In combination, fulcrum members; a table pivoted between said fulcrum members and comprising an inner section and an outer section; the inner section having pivot means engaging the respective fulcrum members; the outer corners of said inner section carrying upturned outwardly projecting outer flange ears projecting beyond the edge of the section; the inner edge of the outer section being provided with upturned pivot ears respectively pivoted against the inner face of the projecting end of the projecting ears, whereby said sections may be folded approximately flat against each other or disposed in the same plane with the inner edges abutting.

9. An attachment for a seat back comprising a single piece of metal having a flat horizontal table strip, vertically disposed resilient terminals extending forwardly from said strip for embracing the lateral faces of the seat back, and an abutment also integral with said strip and depending from the central portion of the front edge of said strip for engaging the rear face of said back.

10. An attachment for a seat back comprising a bracket having a flat horizontal table strip, vertically disposed front terminals integral with said strip for embracing the lateral edges of the seat back, and an abutment integral with said strip and depending from the front edge of said strip to engage the rear face of said back.

11. An attachment for seat backs comprising a piece of sheet material having a main strip, vertically disposed front resilient terminals integral with said strip for embracing the lateral edges of a seat back, an abutment integral with said strip and depending from the front edge of said strip to engage the rear face of said back, and vertically disposed rearwardly projecting terminals also integral with said strip and having slots therein for supporting material therebelow.

12. A table for a seat back comprising in combination a bracket including a main strip, front terminals extending from said strip for embracing the opposed side edges of the seat back, an abutment depending from said strip for engaging the rear face of the seat back, rear terminals also extending from said strip and having opposed slots therein, a pin for each slot, an ear depending from each pin, and a table top rigid with said ears, said abutment having its rear face engaged against the front edge of said top to hold the latter suspended in horizontal condition below said second terminals.

13. A foldable table for conveyances including in combination with a conveyance having a vertical wall, a bracket carried on said wall and including fulcrum means, a table section, pivots mounted on said section and engaging said means, a second table sec-

tion, pivots connecting said sections, and means for holding said sections in vertical folded condition on said wall.

14. In combination with a bracket having a depending abutment, said bracket having inner and outer slot portions, a downwardly foldable table removably engaging said abutment in set-up condition and having pivots movably disposed in said inner portions, and a table support removably engaging said abutment and the lower surface of said table, whereby subsequent to movement of said pivots into said outer portions folding movement of said table is effective to dispose said support between said abutment and said surface.

15. A foldable suspension table for vehicles including in combination with a vehicle having a vertically disposed structure, a bracket carried on said structure and including fulcrum means, foldable table sections, pivots mounted on one of said sections and engaging said means, a collapsible support disposed between the lower surface of said sections and said structure, and means including said first means for holding said table suspended in folded condition.

16. In combination, stationary fulcrum ears; an inner table section carrying corner members pivotally engaging said ears; an outer section hinged to the inner section; a supporting member pivoted against the lower face of the outer section; and a leg pivoted to the outer end portion of said supporting member; said sections being foldable against each other in approximately vertical position, with the leg horizontally disposed parallel thereto; and clips engaging the ends of the leg when thus horizontal.

17. In combination, an attaching bracket comprising a horizontal main portion provided at its mid part with a downturned abutment portion provided with a horizontal lower end recess; the ends of said main portion being turned perpendicular thereto to form fulcrum ears, each provided with a vertical inner fulcrum slot, an approximately vertical inwardly and downwardly slanted cam slot and an upper slot connecting the upper end of the other slots; a table comprising an inner section having upturned inner corner pivot-carrying ears respectively carrying pivot pins engaging in said slots, a section pivoted to the inner section so that the sections may be folded approximately flat against each other or disposed in the same plane with the inner edges abuting; a supporting member pivoted to the inner margin of the outer section flat against the lower face of the table, the supporting member being disposable longitudinally or transverse to the sections, the inner end being adapted to engage in said recess; a leg pivoted at its upper end to the outer end of said supporting member and adapted to be disposed vertically or flat against the member; and spring clips adapted to engage the ends of the leg when horizontal, and the table is folded.

18. In combination, with the back of a seat, a bracket of metal extended across the upper part of the back face of the seat back; said bracket comprising a horizontal strip like main portion provided at the mid part of its forward edge with a downturned securing and abutment portion secured flat against said back face; the ends of said portion being much wider than the intermediate portions and turned down substantially perpendicularly to the main portion; the forward portion of each downturned end being conformably curved around the side edges of the seat back; the rear portion of each downturned end forming fulcrum ears, and a table section pivoted between said ears.

19. A bracket comprising a horizontal strip like main portion provided at the mid part of its forward edge with a downturned securing and abutment portion provided with a horizontal lower end recess; the ends of said portion being much wider than the intermediate portions and turned down substantially perpendicularly to the main portion; the forward portion of each downturned end being curved toward each other; the rear portion of each downturned end forming fulcrum ears, and each provided with a vertical inner fulcrum slot, an approximately vertical inwardly and downwardly slanted cam slot and an upper substantially horizontal connecting slot connecting the upper end of the other slots and extending slightly rearwardly of the keeper slot to form a pivot bearing.

Signed at East Lyme in the county of New London and State of Connecticut, this 2d day of August A. D. 1930.

GEORGE W. NOONAN.