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FOLDING TABLE

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Fig. 1

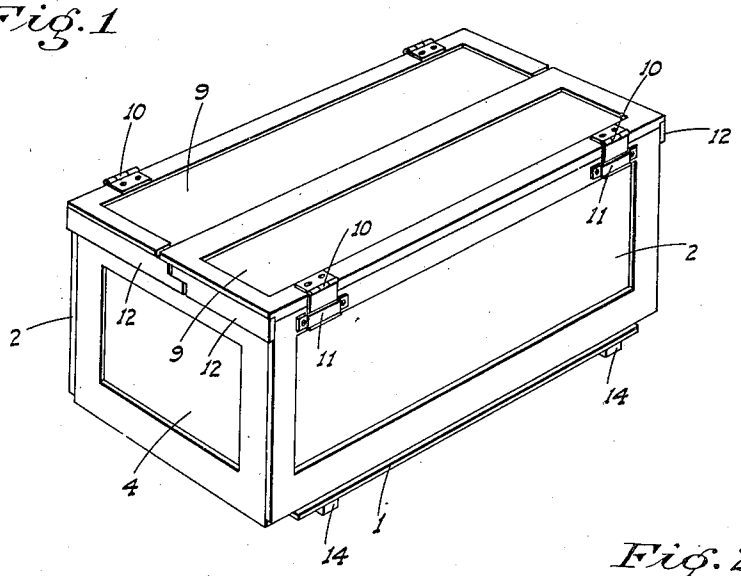
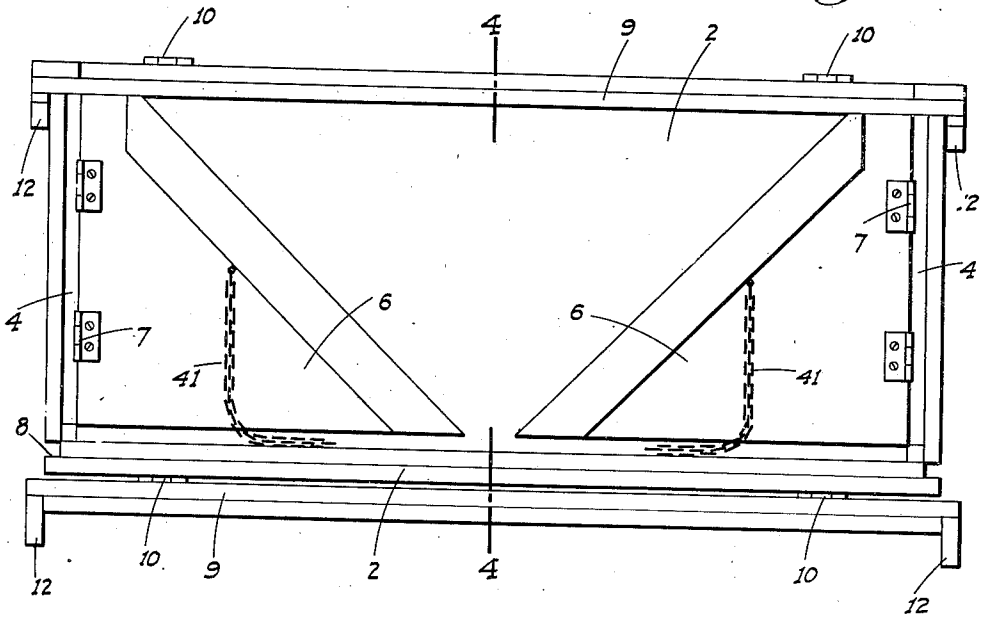


Fig. 2



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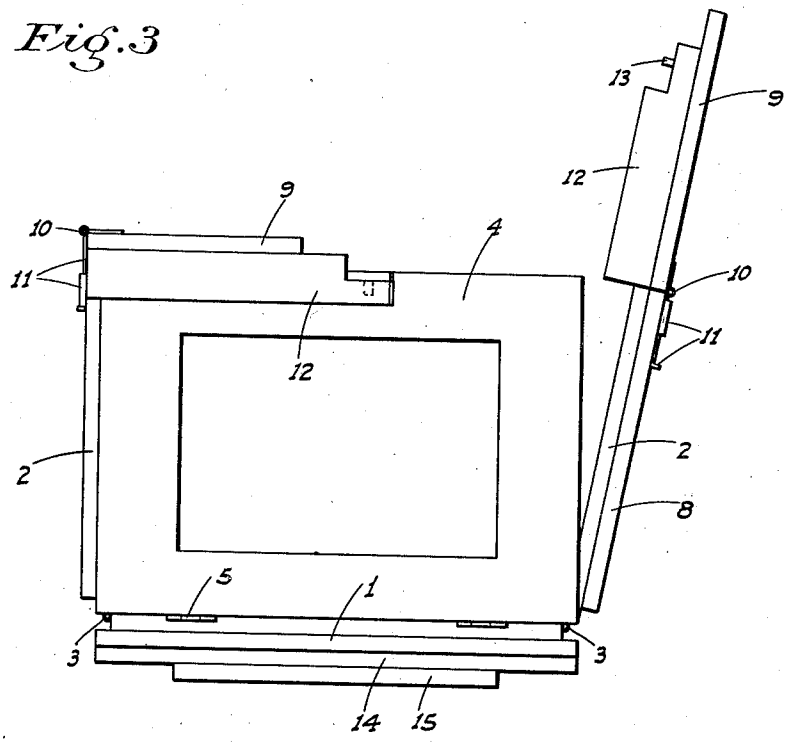
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Fig. 3



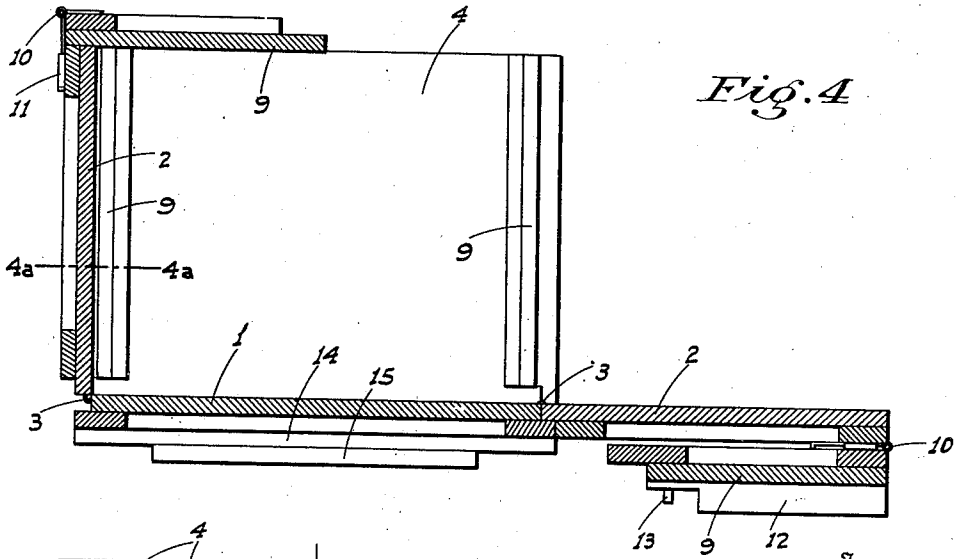


Fig. 4

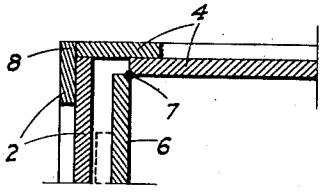


Fig. 4a

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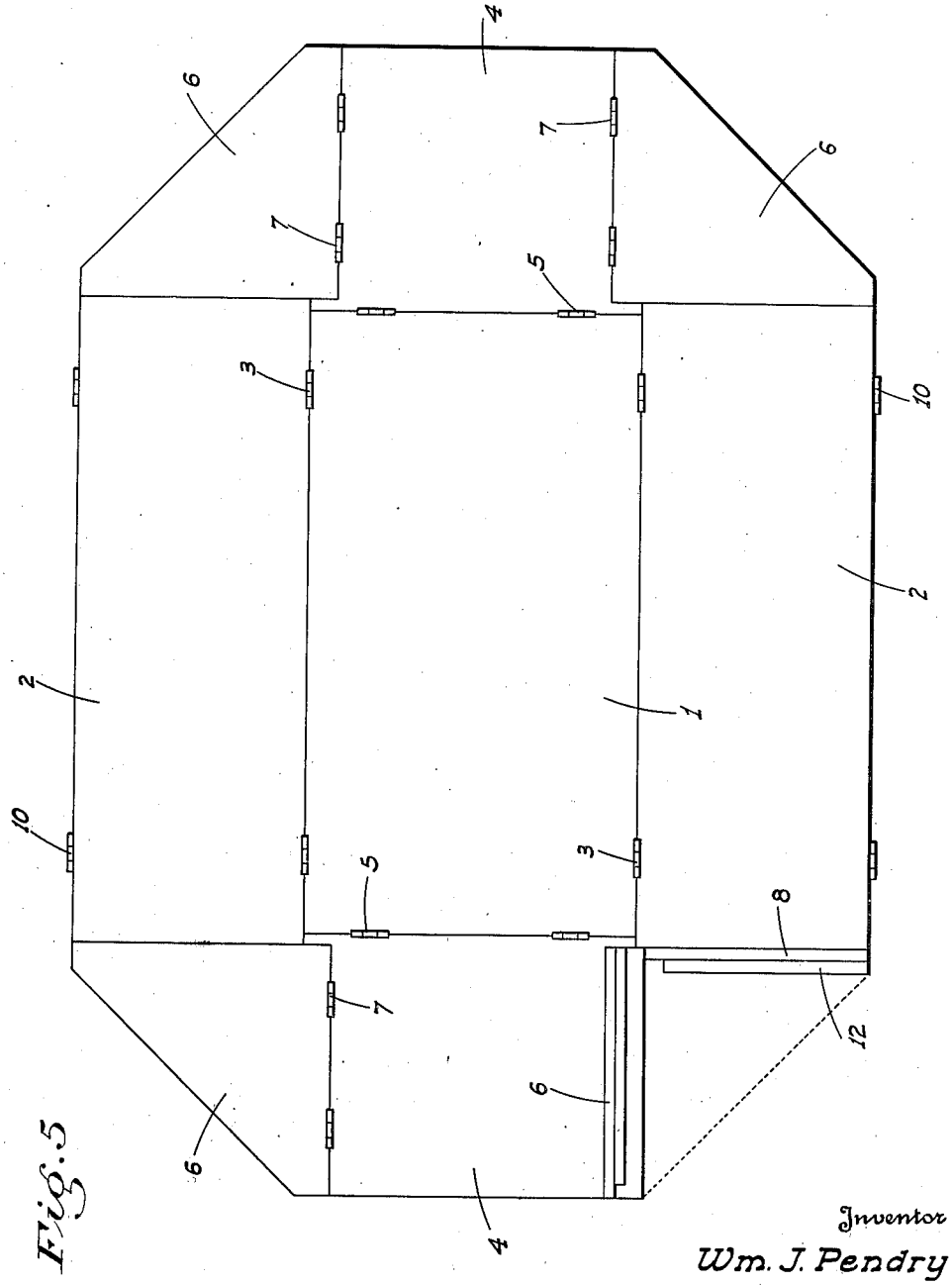


Fig. 5

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Fig. 6

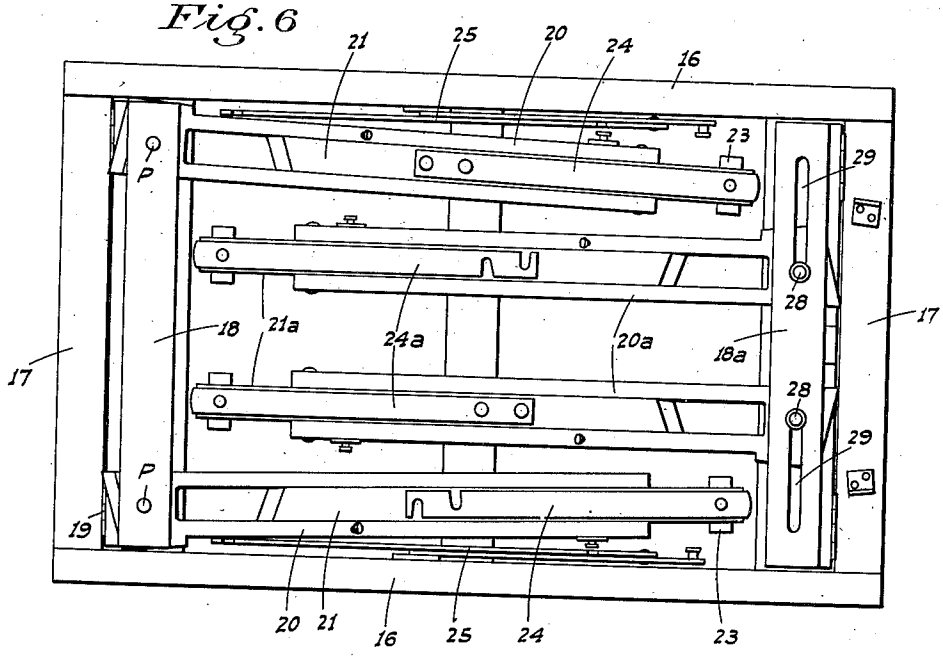
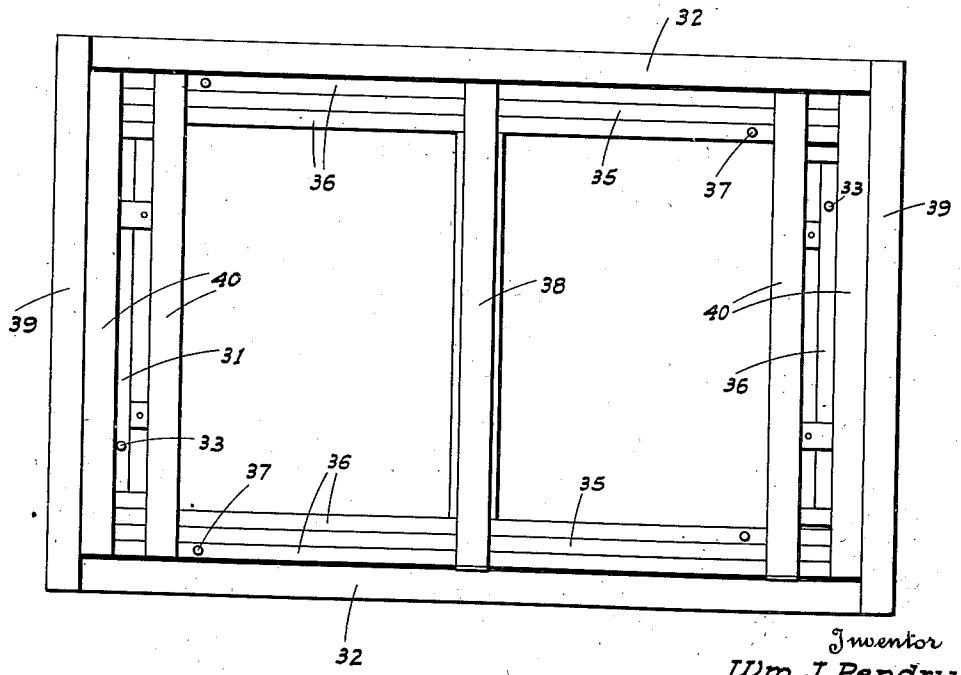


Fig. 7



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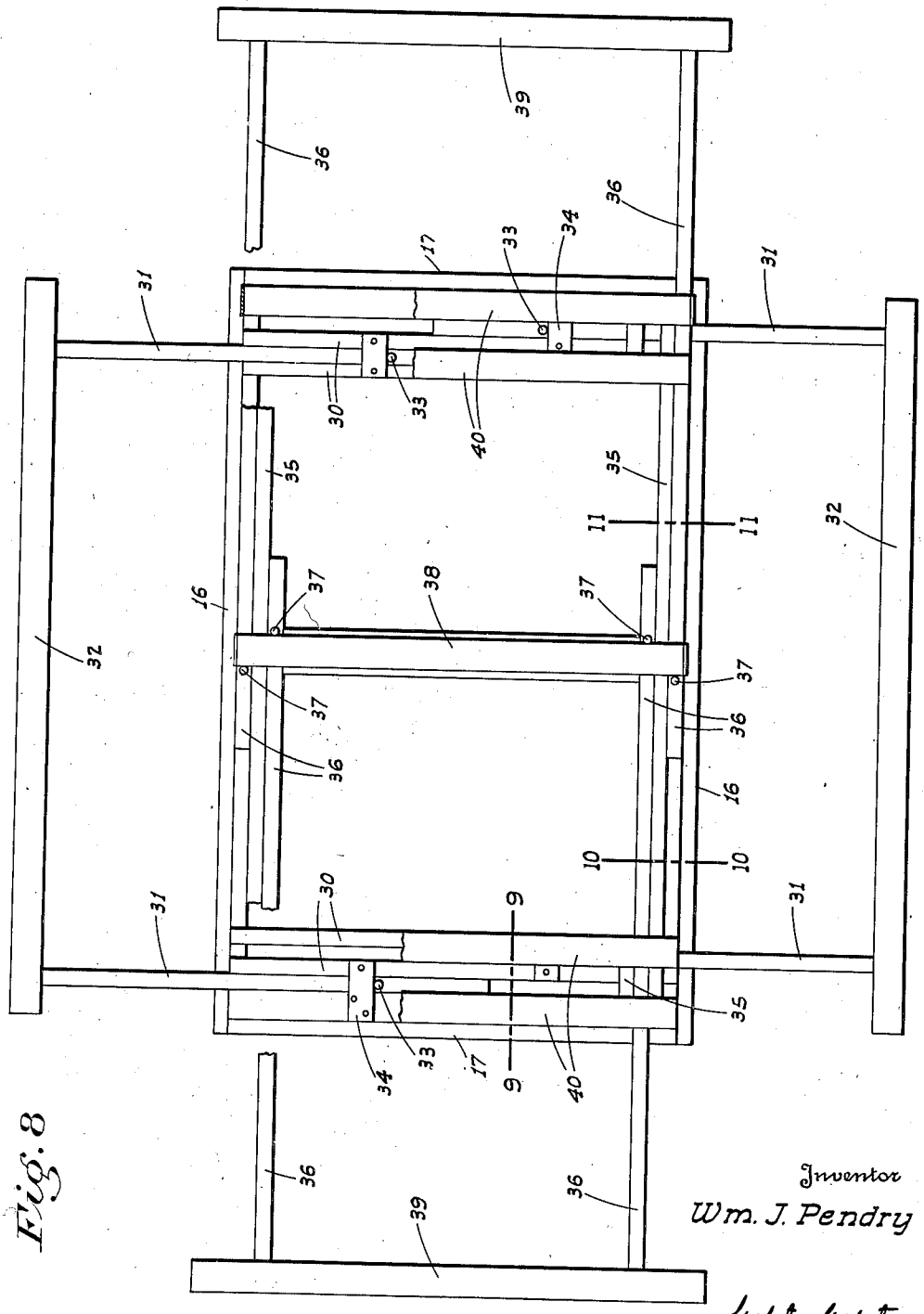


Fig. 8

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Fig. 9

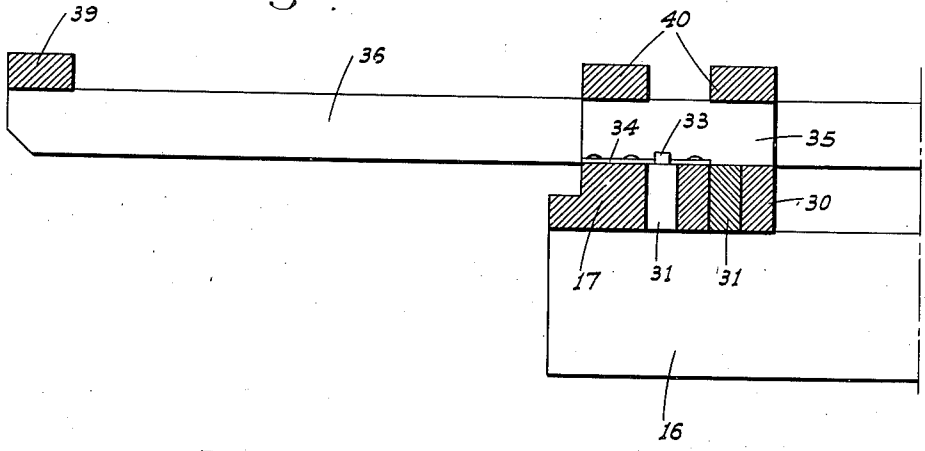


Fig. 10

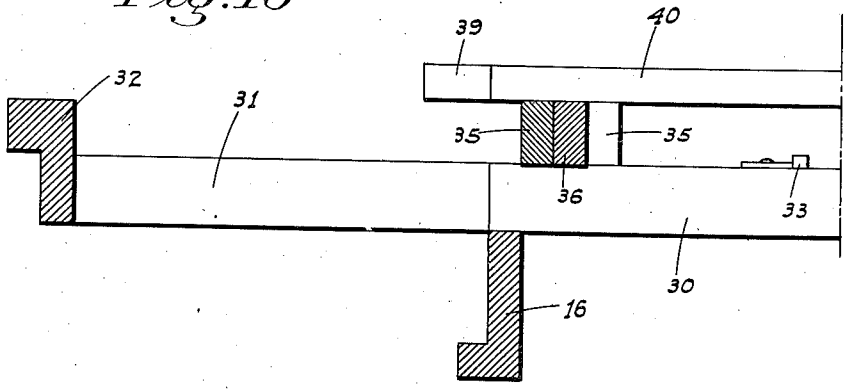
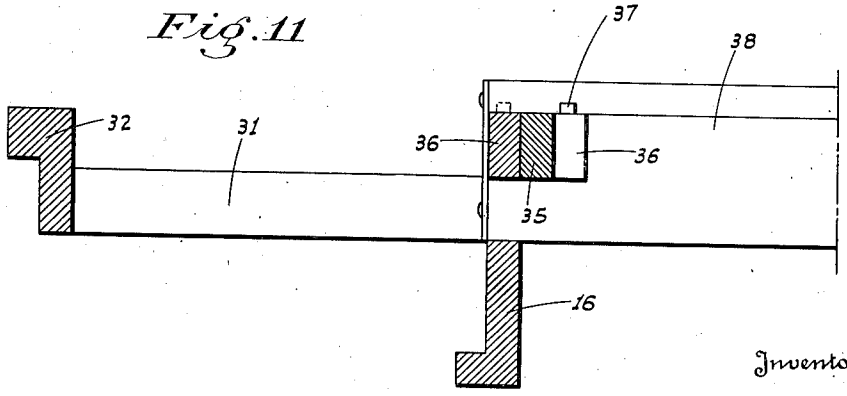


Fig. 11



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Fig. 12

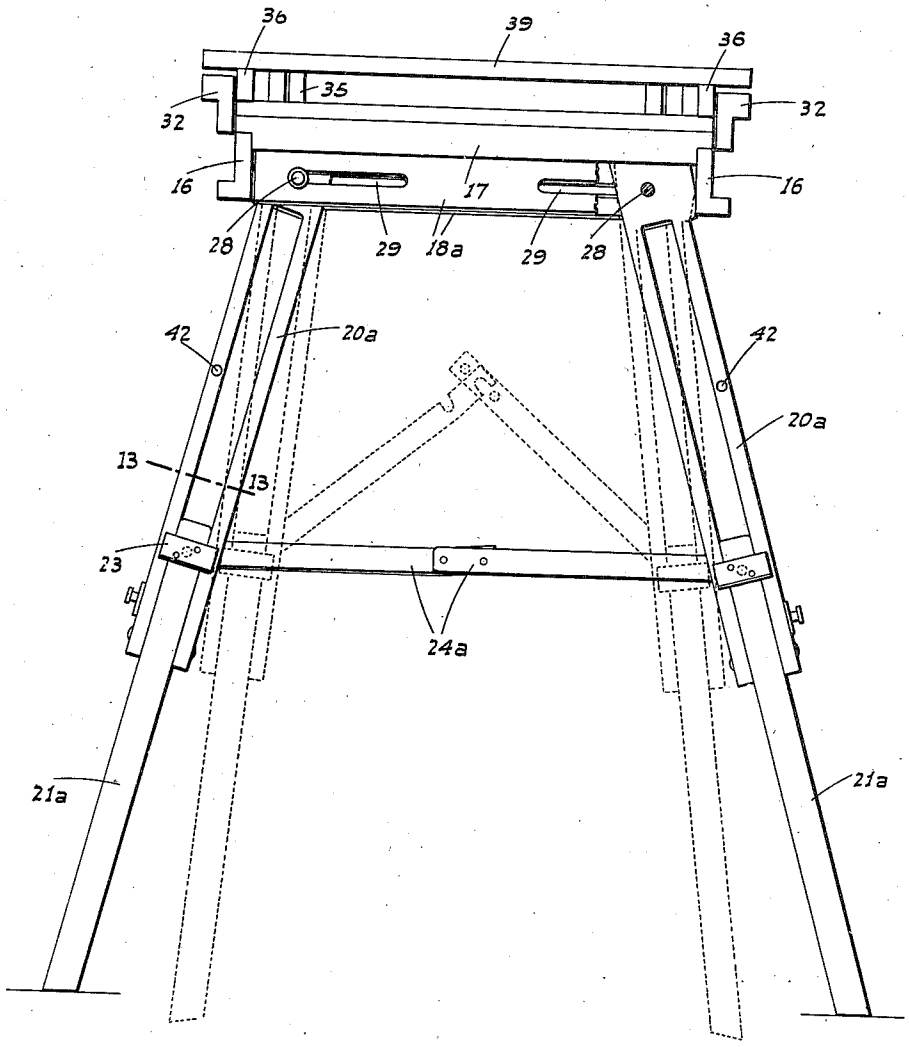
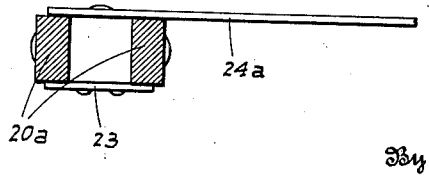


Fig. 13



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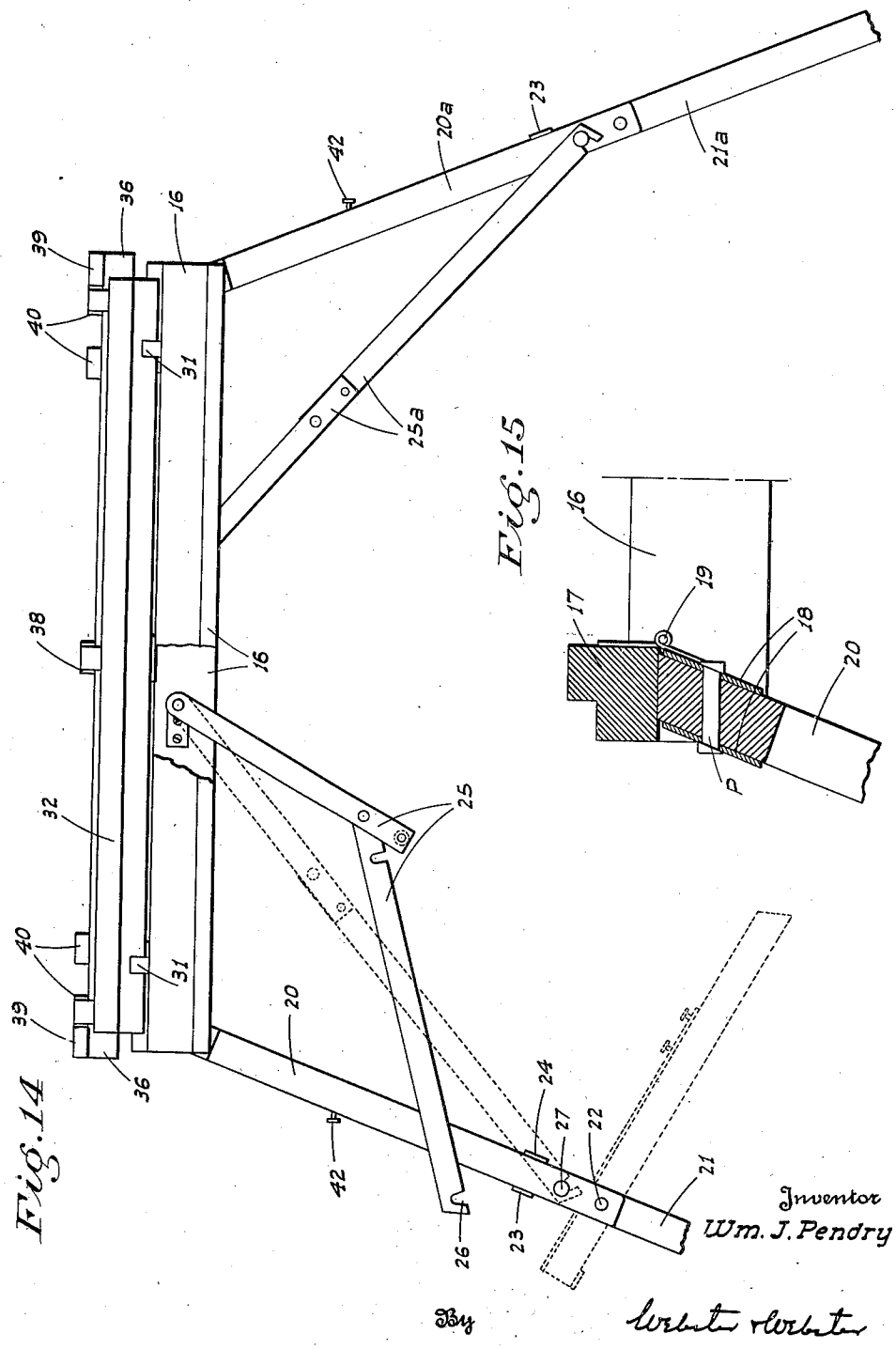


Fig. 14

Fig. 15

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Fig. 16

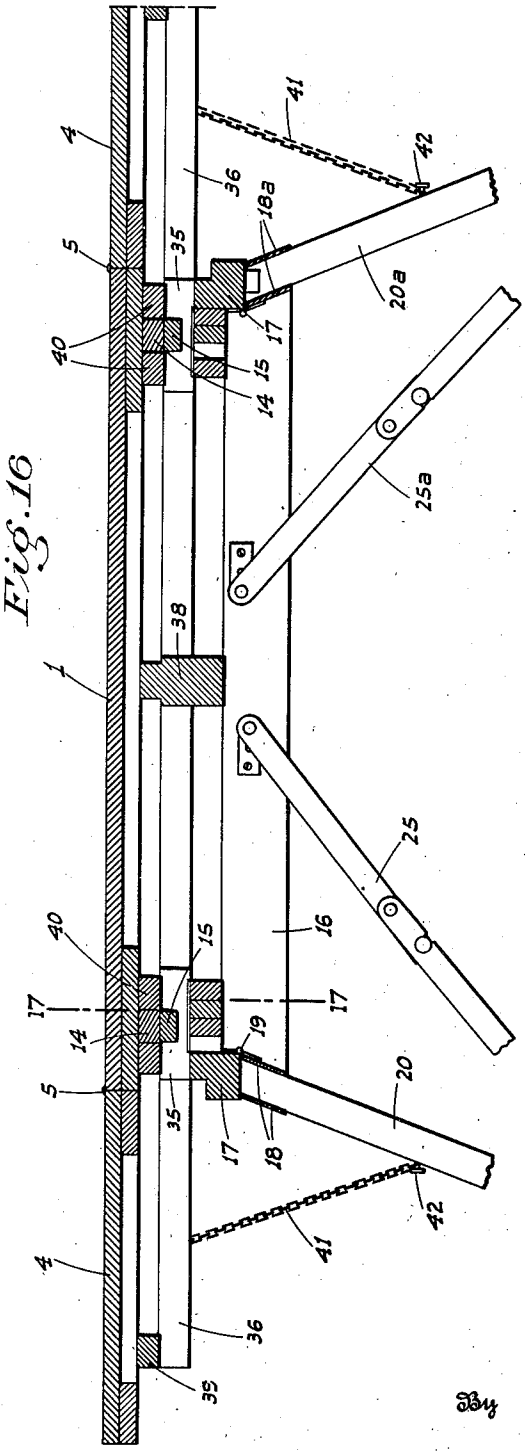
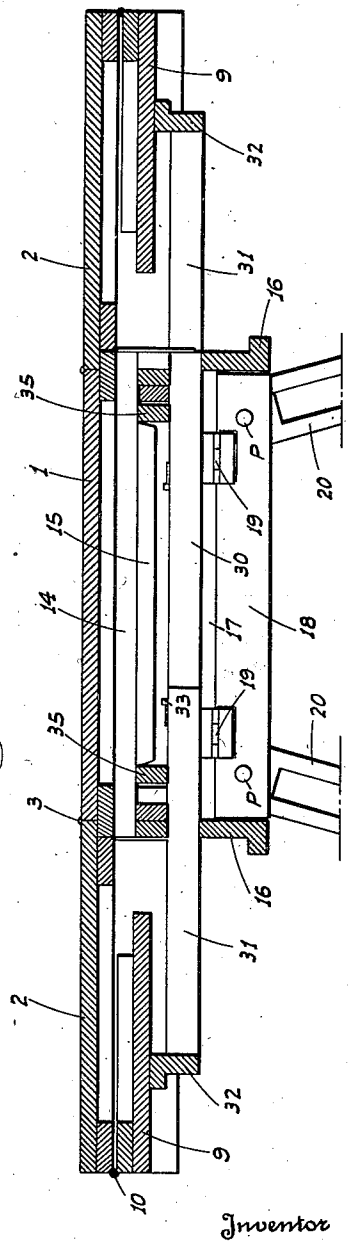


Fig. 17



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Patented Nov. 27, 1945

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UNITED STATES PATENT OFFICE

2,389,930

FOLDING TABLE

William J. Pendry, Brentwood, Calif.

Application August 23, 1943, Serial No. 499,644

6 Claims. (Cl. 311—90)

This invention relates to folding or collapsible tables, my principal object being to provide a table top and leg unit arranged as separate entities, each of which is capable of being folded or collapsed into a compact form, but which may be easily and quickly unfolded and assembled to provide a usable table of considerable size and sturdy character. The table is thus admirably adapted for the use of campers, field workers and the like, whose equipment must be capable of being packed in as small a space as possible for ease of transportation.

Another object is to provide a table top so arranged that when folded it forms a rectangular container in which food or other articles may be carried, thus not only protecting such articles, but providing a convenient means for packing the same for transportation along with the table.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a perspective view of the table top as folded.

Figure 2 is a side elevation of the top partly folded, but with one side panel turned down.

Figure 3 is an end elevation of the table top showing the initial step in an unfolding operation.

Figure 4 is a transverse section on the line 4—4 of Fig. 2.

Fig. 4*a* is a fragmentary sectional plan on the line 4*a*—4*a* of Fig. 4.

Figure 5 is a top plan view of the table top completely unfolded.

Figure 6 is a plan view of the leg and frame unit folded.

Figure 7 is a similar view looking at the opposite side of the frame to show the top supporting slides, the legs being omitted.

Figure 8 is a plan view similar to Fig. 7 but showing the slides extended.

Figure 9 is an enlarged cross section on the line 9—9 of Fig. 8.

Figure 10 is a similar view on the line 10—10 of Fig. 8.

Figure 11 is a similar view on the line 11—11 of Fig. 8.

Figure 12 is an end view of the leg and frame unit, unfolded or erected.

Figure 13 is a fragmentary enlarged sectional plan on the line 13—13 of Fig. 12.

Figure 14 is a fragmentary side view of the leg and frame unit as being erected.

Figure 15 is a fragmentary enlarged sectional elevation showing the mounting of a leg in connection with the supporting frame.

Figure 16 is a fragmentary longitudinal section of the table as erected.

Figure 17 is a fragmentary transverse section on the line 17—17 of Fig. 16.

Referring now more particularly to the characters of reference on the drawings, the table top, which is particularly illustrated in Figs. 1 to 5, will be described first. This top comprises a main or central panel 1 of rectangular form, side panels 2 connected by hinges 3 to the central panel for upward folding movement, and panels 4 connected to the central panel by hinges 5 for upward folding movement, and triangular corner panels 6 connected along one side to the end panels by hinges 7 for upward folding movement. The panels 6 are adapted, when unfolded, to lie along one edge on ledges 8 formed on the corresponding end edges of the panels 2 (see Fig. 5). As will be clearly seen from Figs. 3, 4*a*, and 5, the end panels 4 include an exterior framing, and a main panel portion inwardly of said frame (or above the same where the table top is set up) and which, except immediately adjacent the panel 1, is of a somewhat lesser width than said panel 1, as shown in Fig. 5. The panels 6 are hinged to the side edges of said main portion of panel 4 so that when folded, they lie inside the plane of the side edges of panel 1 and of the side panels when the latter are folded up as shown in Fig. 4*a*. At the same time, the panels 4 present a full-width appearance when folded and viewed from the outside, as shown in Figs. 1 and 3.

The panels are arranged so that their upper faces, when unfolded, all lie in a common plane to form a smooth-top surface. When the top is folded the corner panels lie at right angles to the end panels, and the ledges 8 of the side panels overlap the side edges of the end panels. A rectangular receptacle or container is thus formed, of which the bottom is the central panel 1. Since it is desired to cover such container, the following arrangement is provided:

Lid panels 9 project from the free edges of the side panels, being adapted to extend over the top of the container in overlapping relation to each other to provide a substantially weather-tight closure, as shown in Fig. 1. The lids have hinges 10 along their upper outer edges which have slidable connection, as at 11, with the side

panels. This enables the lids to be folded over the container from one direction, or to be turned in the opposite direction to lie under and close to the side panels when the latter are unfolded, as shown in Fig. 4, so that the lids are then out of the way.

In order to prevent undesired unfolding movement of the panels when folded, the lids are formed along their ends with depending flanges 12 which overlap the end panels 4, and which—at adjacent ends—overlap each other. The overlapping portions of the flanges are releasably held together by a cooperating dowel pin arrangement 13. The main panel is provided underneath with longitudinally spaced full-width cleats 14, from which shorter cleats 15 depend. The purpose of this will be seen later.

The frame and leg unit for the support of the table top, whether the latter is folded or unfolded, is shown particularly in Figures 6 to 15, and will now be described. This unit comprises a rectangular frame which includes side beams 16 and end beams 17, the latter being on a higher level than the side beams. This frame is substantially the same size as the central table panel 1.

A pair of transverse plates 18, spaced lengthwise of the frame, are hinged as a unit along the top and inner edge to the adjacent beam 17 at its lower inner edge as at 19, so that said plate unit may be swung up and back or behind the beam 17. Leg sections 20 formed transversely of the frame are pivoted between the plates 18 adjacent their ends, as at P, for lateral swinging movement; lower leg members 21 being pivoted between the sections 20 at their lower ends, as at 22, for folding and unfolding movement relative to the sections 20. The length of the sections 20 is less than the distance between the beams 17, while the length of the members 21 is less than that of the sections 20. Said members 21 may thus be folded into the sections 20, while the latter may be swung into a folded position in the frame, as shown in Fig. 6.

The legs when unfolded are adapted to lie at an outward diverging angle to a vertical plane, both transversely and lengthwise of the frame; the top edge of the sections 20 being cut to then seat flatly against the under side of the beam 17, as shown in Fig. 15. Each leg member 21 adjacent its pivot 22 is provided with a transverse stop 23 adapted to overlap the section 20 in front of and above said pivot, when the member is unfolded, to prevent further unfolding or turning movement in the corresponding direction. In order to prevent turning movement of the leg member in the opposite direction, and to maintain the legs as a whole in the desired spread transversely, brace straps 24, adapted to be detachably coupled together at adjacent ends, are pivoted on the members 21 adjacent the stops 23, but on the opposite sides thereof, as shown. These straps when folded lie against the members 21 and fold therewith into the sections 20, as shown in Fig. 6.

To maintain the legs spread lengthwise of the frame, foldable brace strap units 25 are pivoted at their upper ends on the inside of the beams 16 intermediate their ends, and at their other ends are formed with hooks 26 adapted to engage pins 27 projecting laterally from the sections 20 adjacent their lower end. The brace strap units, when uncoupled from the legs and folded, are adapted to extend lengthwise of the beams 16 back of the same and between said beams and the folded legs. The leg sections 20 are pivoted in a fixed position at the corresponding end of the frame and when turned to lie substantially parallel to the beams 16, may be folded inside the same just clear of the brace units 25.

It is desirable that the legs at the other end of the frame shall also be capable of being folded into the frame and not interfere with the leg sections 20. To this end the pivots 28, which connect the leg sections 20*a* of said other legs with the corresponding mounting plates 18*a*, are slidable along slots 29 in said plates, as shown in Fig. 12. This enables these legs when not in use to be slid toward each other so that when folded they will fit in the frame between the leg sections, as shown in Fig. 6. Other than this difference, the construction of the two pairs of legs and the bracing of the same when unfolded is identical; the leg sections 20*a* thus having depending leg members 21*a*, transverse connecting braces 24*a*, and diagonal longitudinal brace units 25*a*.

On the top of the frame sets of transverse guide bars 30 extend between the side beams 16 adjacent their ends. Pairs of slides 31 project from the opposite sides of the frame in a horizontally offset relation and are guided between bars 30. A cross bar 32 connects corresponding slides at their outer end. Outward movement of the slides is limited by the engagement of pins 33 on their inner end with stop plates 34 on the bars 30 which straddle the slides, as shown in Fig. 8.

A series of guide bars 35 extend between the frame members 17 adjacent their ends and directly above the bars 30, between which longitudinally extending pairs of slides 36 are disposed in offset relation. Outward movement of these slides is limited by the engagement of pins 37 thereon with a central transverse beam 38 on the frame. Cross bars 39 connect corresponding slides 36 at their outer ends.

Pairs of bars 40 extend over and are secured on the guides 35 adjacent their ends, the spacing of which lengthwise of the frame is such as to receive the table top cleats 14 therebetween in locating relation, as shown in Fig. 16. The table top is thus held against longitudinal shifting movement on the frame, whether folded or unfolded. Lateral shifting movement is prevented by the depending cleats 15 which project between the innermost guide members 35, as shown in Fig. 17. The bars 39 are on a level with the bars 40 so as to engage the unfolded end panels of the table at the same level as the central panel, which is supported on the bars 40, as shown in Fig. 16. The bars 32, however, are on a lower level, or so as to directly engage the unfolded table-top lids 9 and maintain the side beams 2 on a level with the central panel 1, as shown in Fig. 17.

In operation, the legs are first unfolded and the frame is then erected on the floor or ground. The slides are then pulled out. The table top, in a still folded condition, is then placed on the frame, which—as previously stated—engages and locates the central panel 1 by means of the cooperating cleats and bars. The side and end panels are then let down to rest on the corresponding slides. After the corner panels 6 are unfolded, the table top may be secured against vertical movement relative to the frame by chains 41 or the like, which are connected to the under side of the corner panels intermediate their ends and adapted to detachably engage pins 42 pro-

jecting from the leg sections 20 and 20a intermediate their ends. This arrangement prevents upward displacement of the table top, as well as relative folding of any of the panels, since the corner panels from which the chains depend are permanently connected to the end panels, and also overlap the side panels and hold the same down.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent is:

1. In combination, a table top, a supporting frame separate therefrom, and on which the top is adapted to rest, a pair of parallel horizontally spaced bars on the frame, locating elements on the frame immediately below and adjacent the ends of the bars, a cleat on the bottom of the table top adapted to fit between the frame bars, and another cleat on and depending from the first named cleat adapted to fit between said locating elements.

2. A foldable supporting structure for a table top, such structure comprising a rectangular frame on which the top is adapted to rest, a transverse unit hinged at each end of the frame for folding movement in the direction of the opposite end of the frame, a pair of legs pivoted on each unit, the pivots thereof extending transversely of the units near the ends thereof, whereby when the units are unfolded such legs may be disposed in relative diverging relation to extend outwardly beyond the plane of the sides of the frame, and braces engageable between the legs when in such latter relationship to maintain them in that position while the parts are unfolded.

3. A table construction including a table top unit which comprises a central rectangular panel and side and end panels hinged thereon for upward folding movement to form a rectangular container with the central panel, lid members on the side panels adapted to extend over the top of the container in overlapping relation to close the same, means hinging the lid members in connection with the side panels at their outer edges, the hinges being so positioned that the lid members may be moved from a position at right angles to such edges of the side panels to a position substantially parallel to and below the normal under faces of such side panels when the latter are unfolded, and a supporting structure on which the table top is adapted to rest when unfolded, such structure including sets of slide units mounted in the frame for movement out from the sides and ends thereof respectively, the set of side extension units lying in a lower plane than the end extension units whereby the folded-under lid sections may be supported on such side extension units.

4. A structure as in claim 2, in which the pivot means of the legs at one end of the frame are mounted for sliding movement along the unit and toward each other whereby said legs may be disposed relative to each other to fit between the other legs when the units are folded.

5. A foldable table top adapted when folded to form a rectangular container, such top comprising a central panel, side panels hingedly connected to the central panel along the sides thereof, end panels hingedly connected to the central panel along the ends thereof, said end panels including main portions of lesser width than the central panel, lid panels hingedly connected along their side edges to the outer side edges of the side panels; and corner panels between the side and end panels hingedly connected to the side edges of said main portions of the end panels, the lesser width of said portions of the end panels permitting the corner panels to move inside the plane of the side panels when all the panels are folded together to form the container.

6. A device as in claim 5 with ledges on and projecting from under the ends of the side panels to support the corner panels when the various panels are unfolded.

WILLIAM J. PENDRY.