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(54) **PORTABLE FOLDING TABLE**

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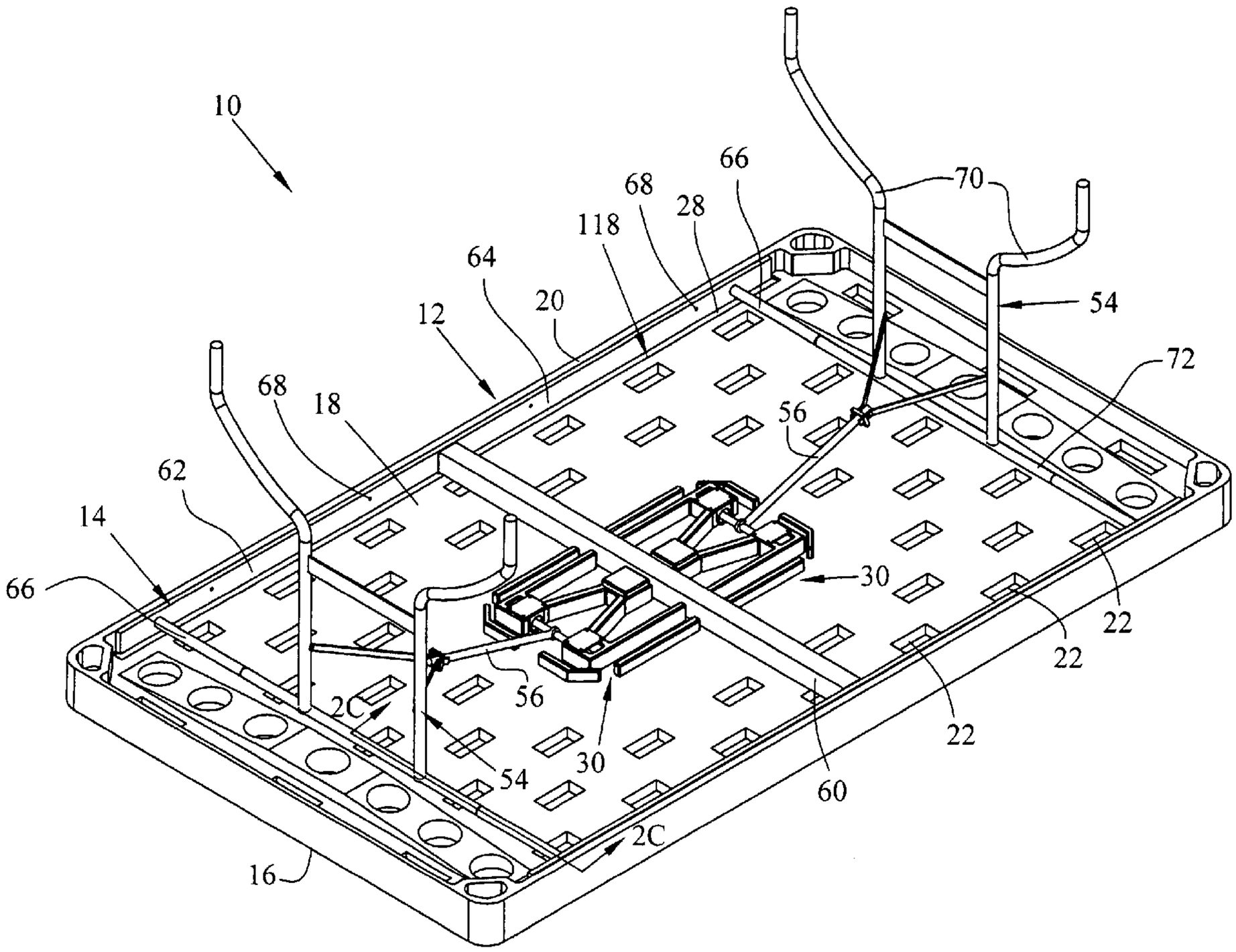
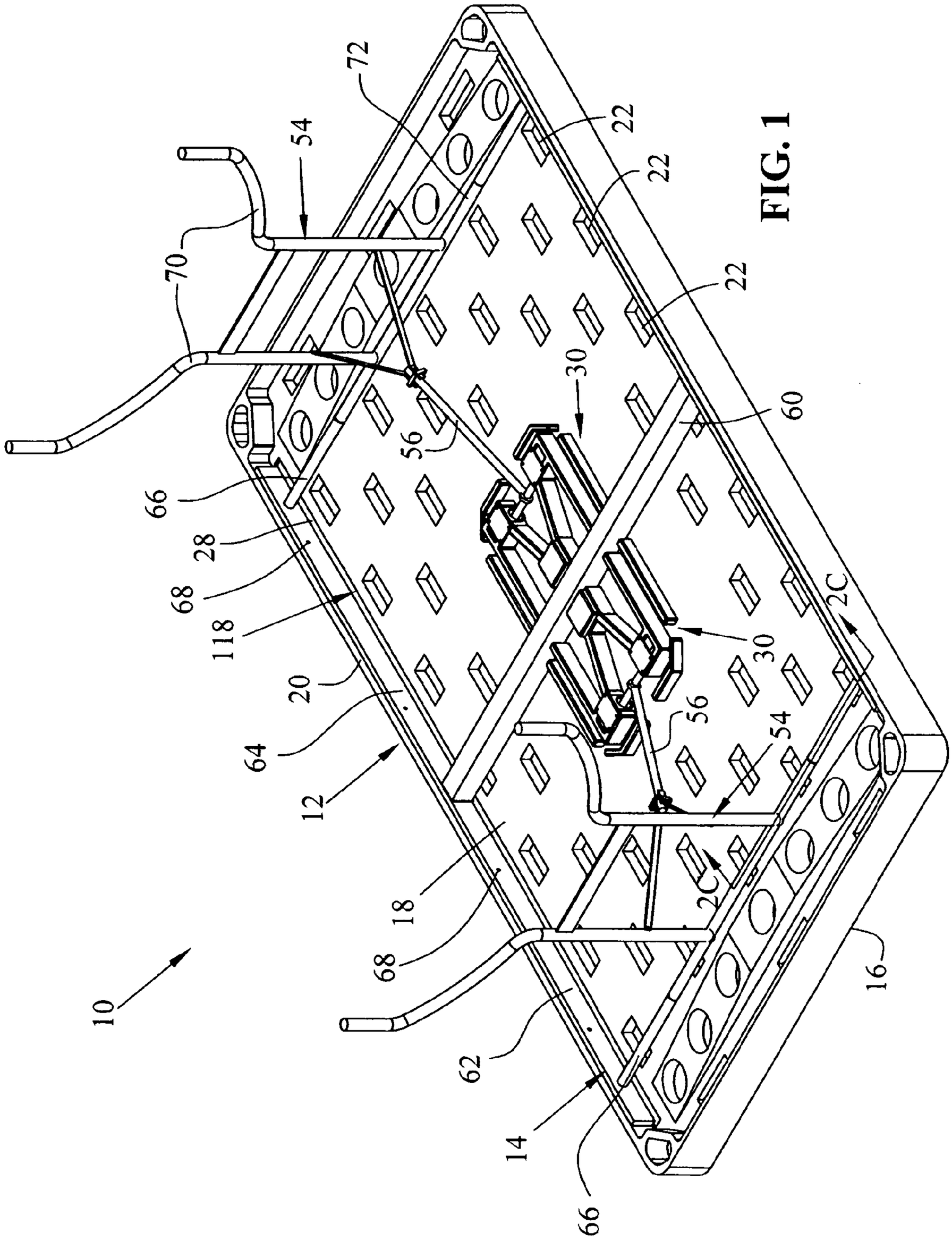
(52) **U.S. Cl.** **108/132**

(57) **ABSTRACT**

A portable folding table includes a tabletop, support for the tabletop and support pedestals. Braces extend from the support pedestals to the underside of the tabletop. The table further includes a transverse strut extending across the underside of the table top to provide support. The transverse strut is located intermediate the pins that attach the braces to the underside of the tabletop.




72
54
22
22
22
70
30
60
56
66
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64
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10
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14
66
16
2C
2C
30
56
54

FIG. 1

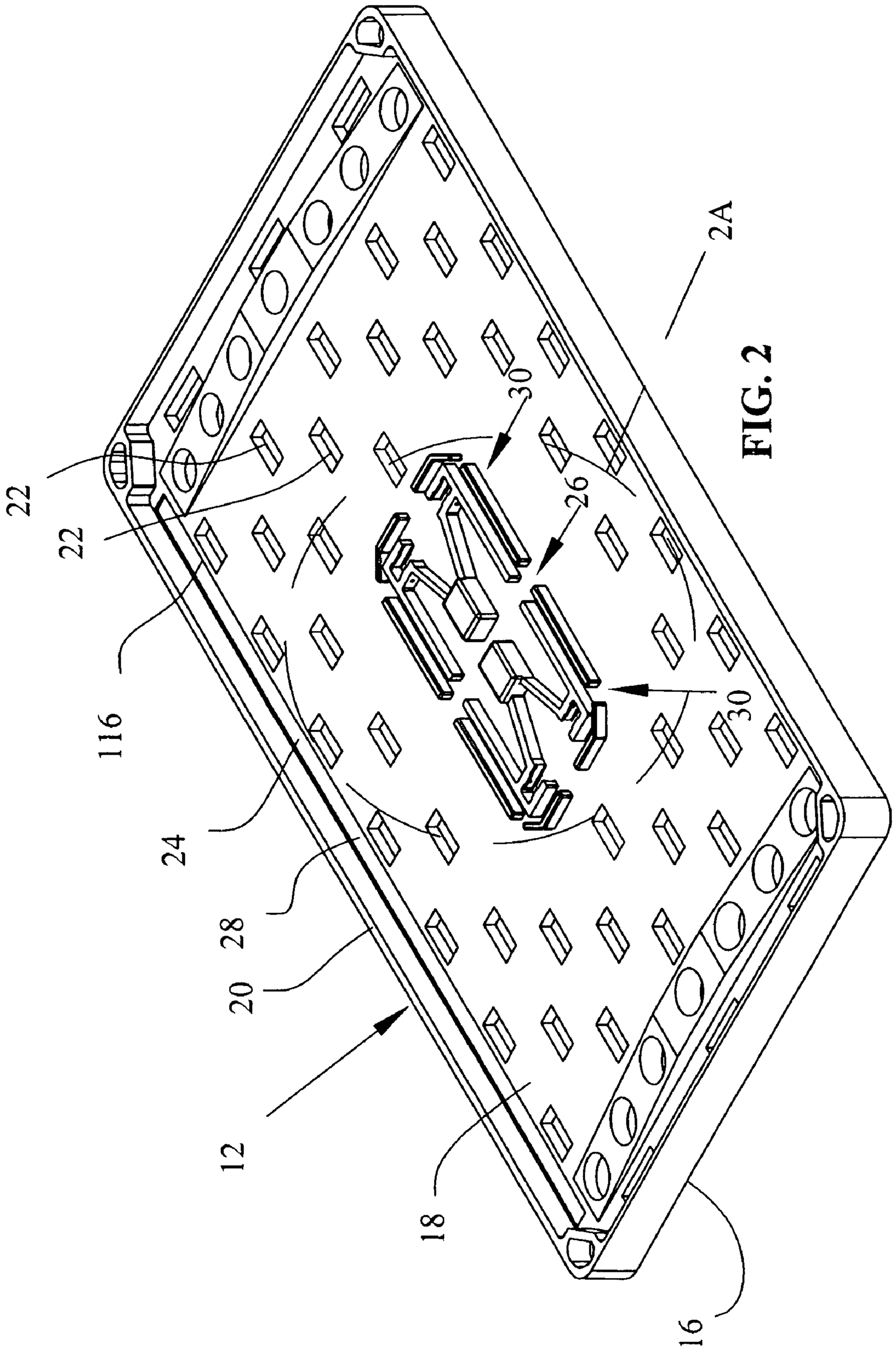


FIG. 2

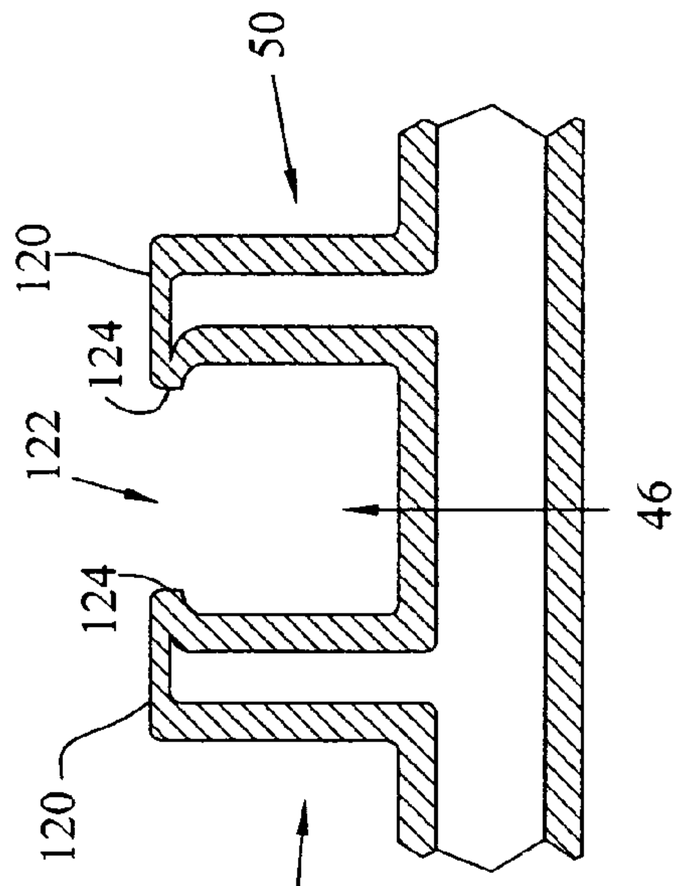


FIG. 2B

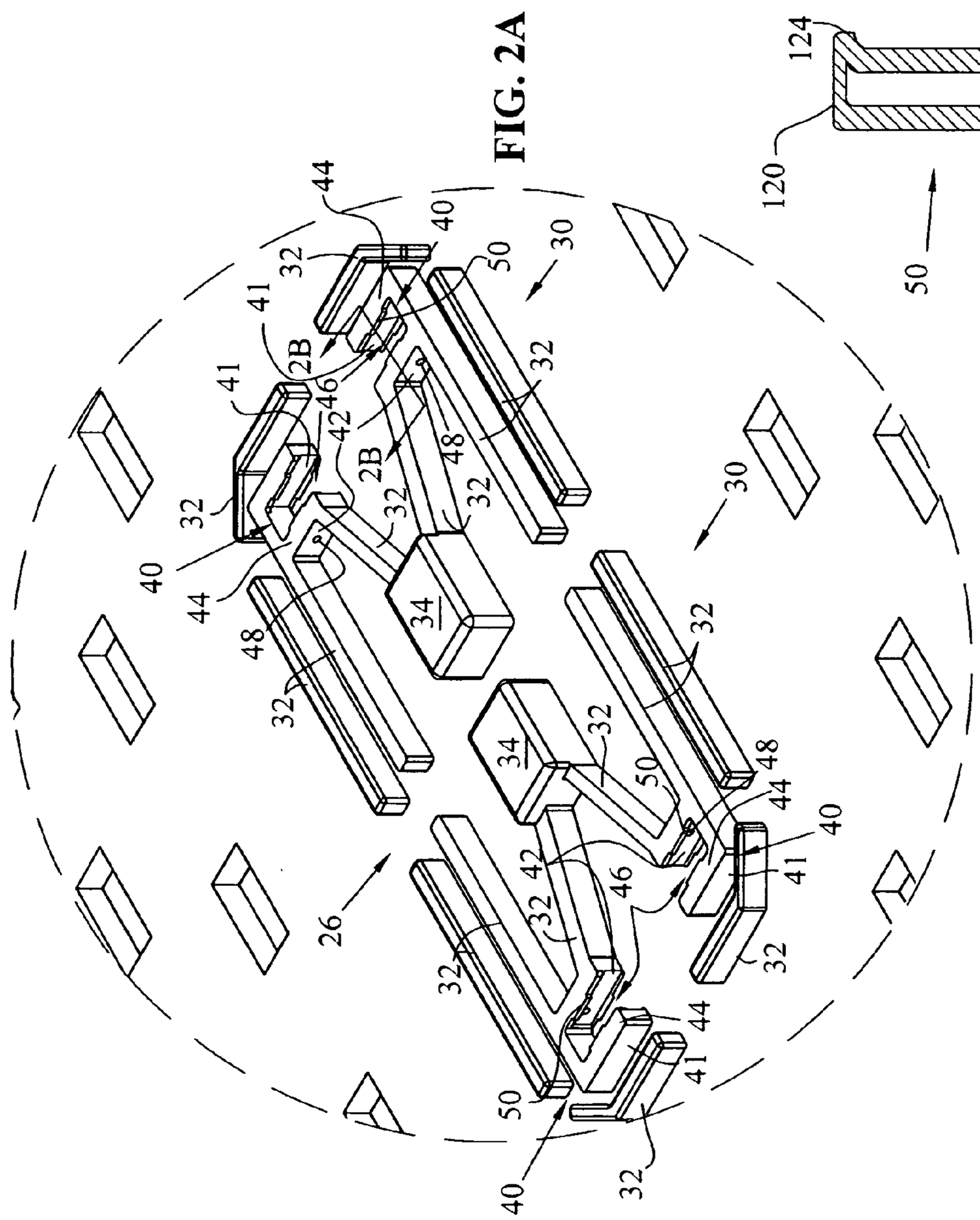


FIG. 2A

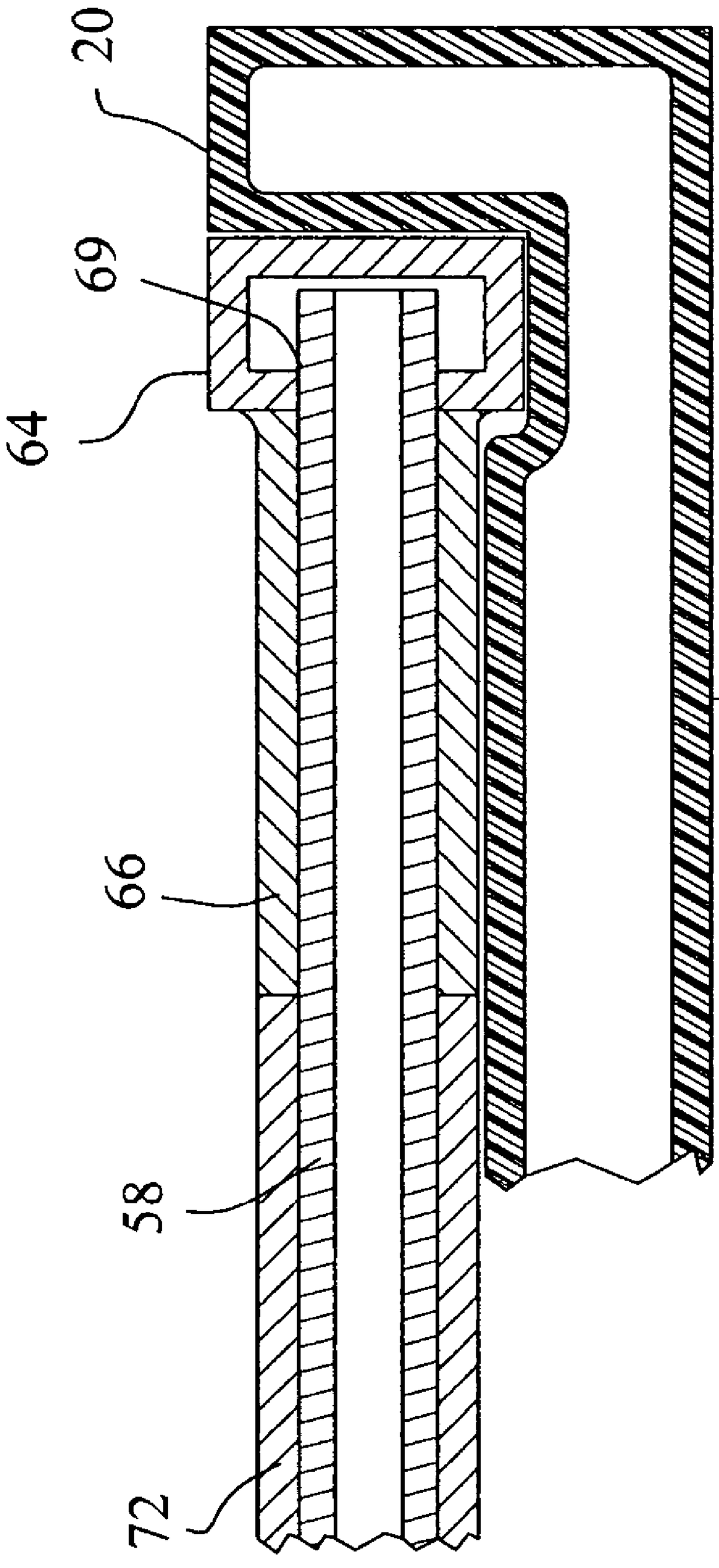


FIG. 2C

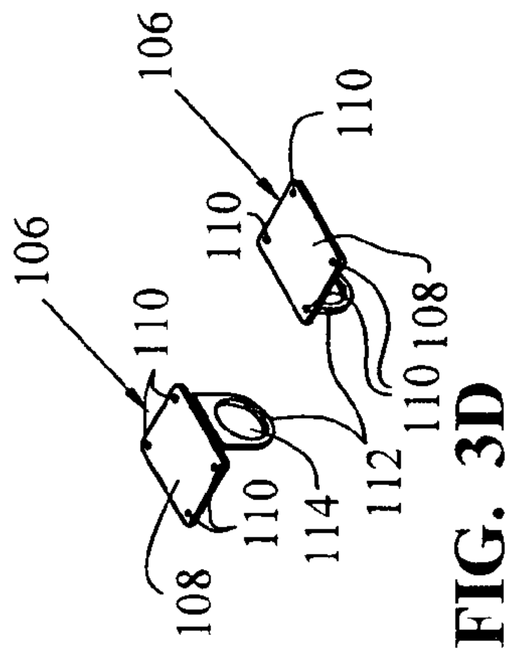


FIG. 3D

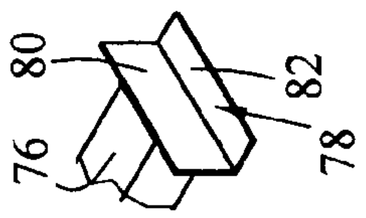


FIG. 3C

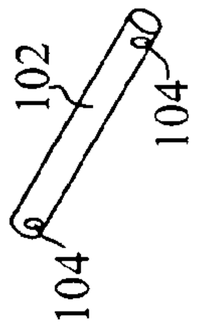


FIG. 3E

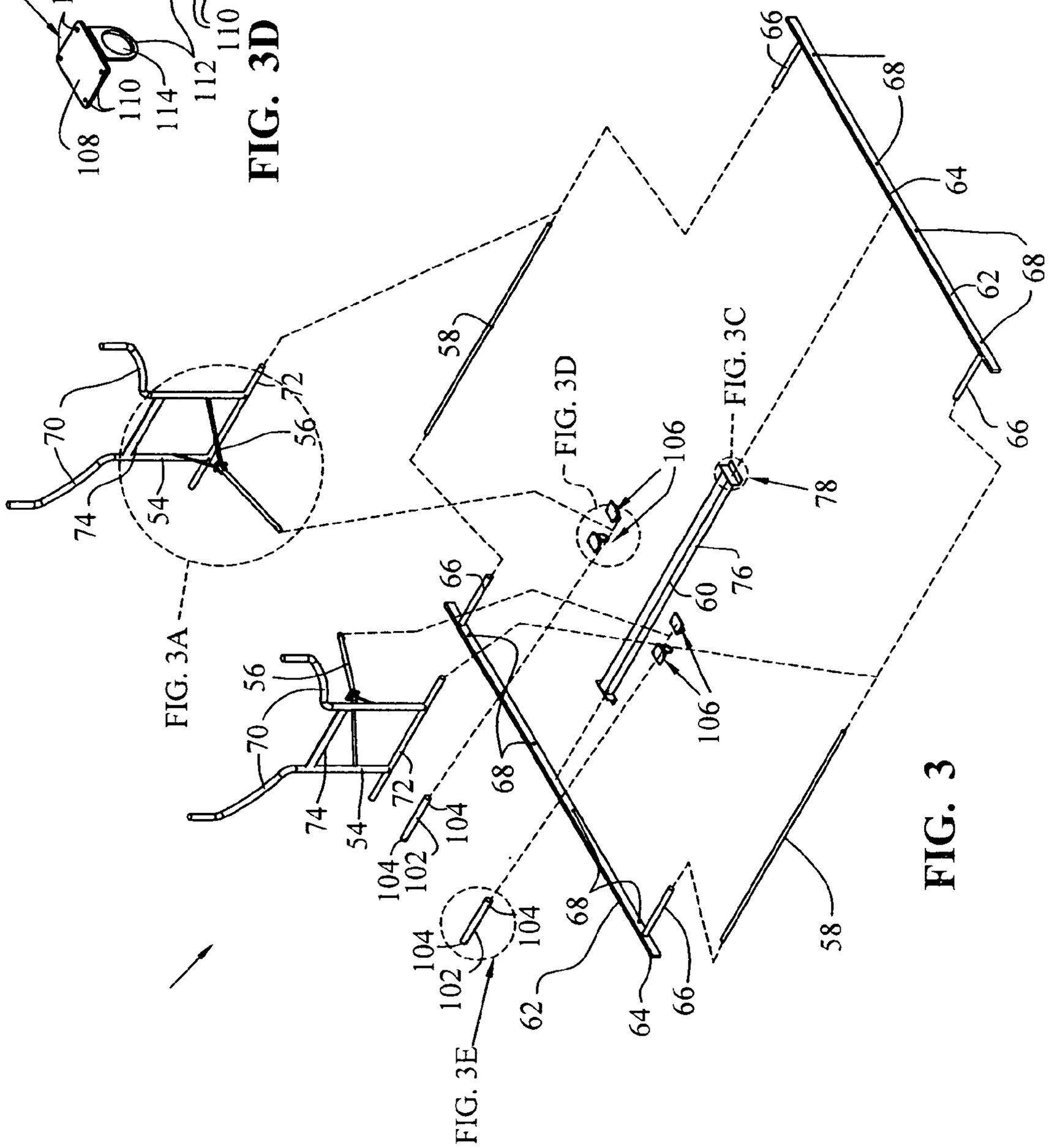


FIG. 3

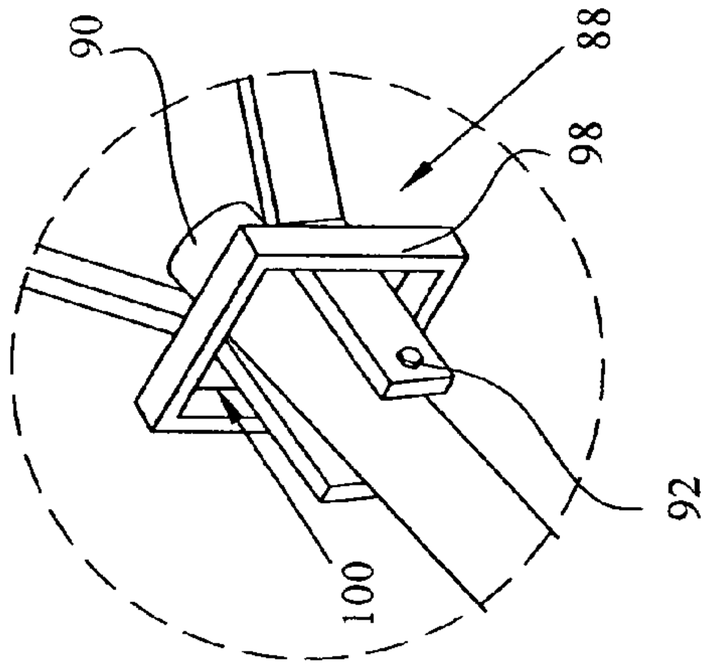


FIG. 3B

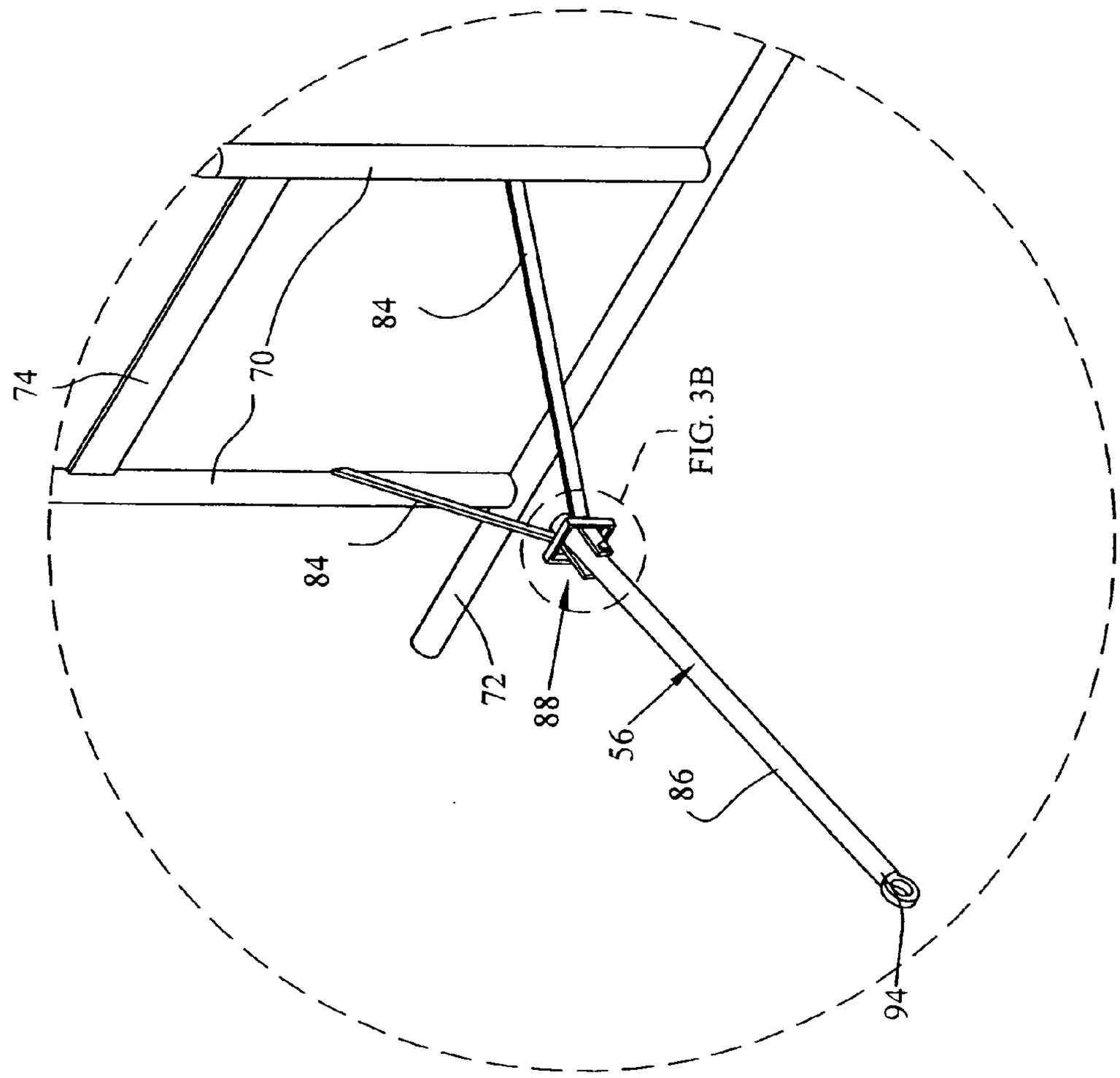


FIG. 3A

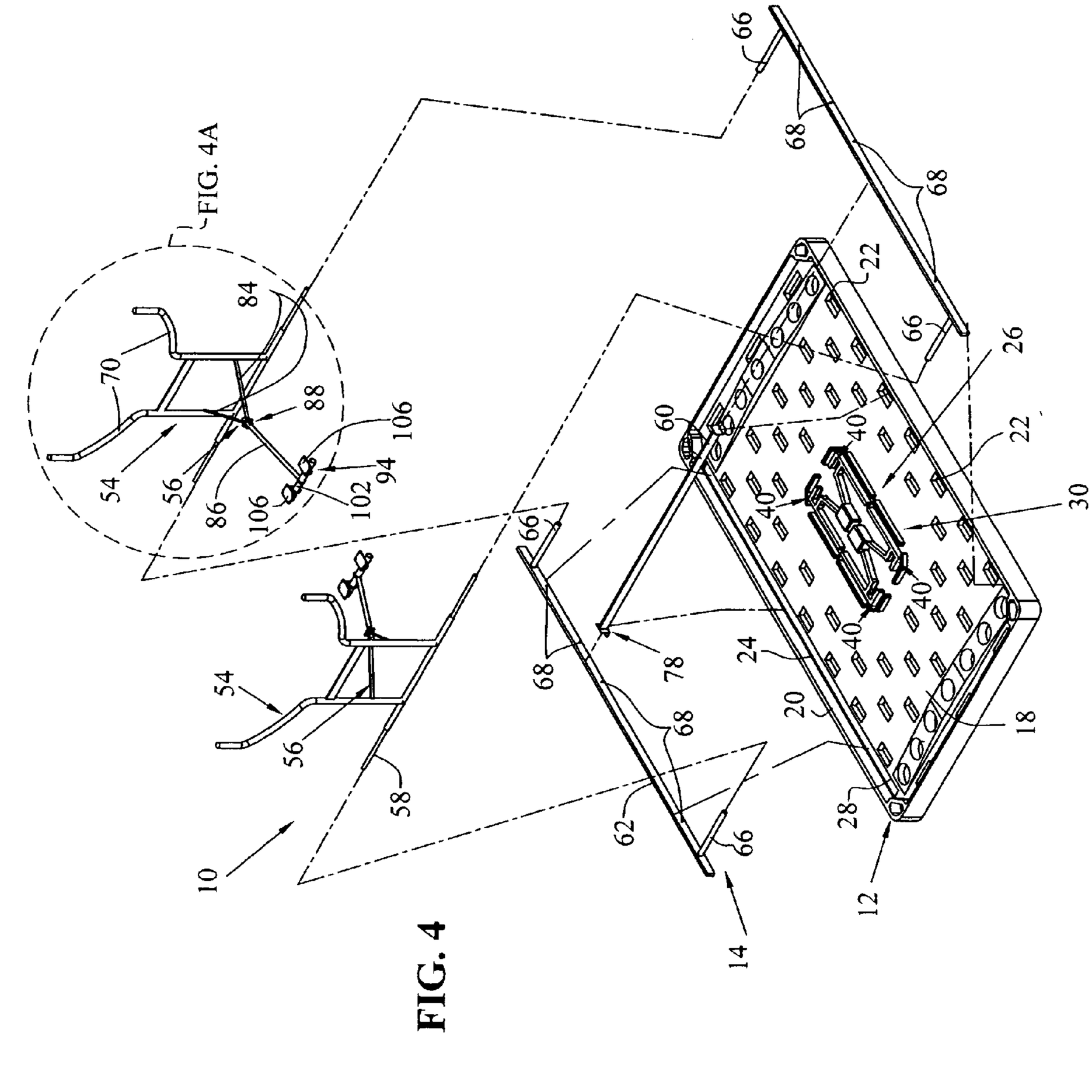
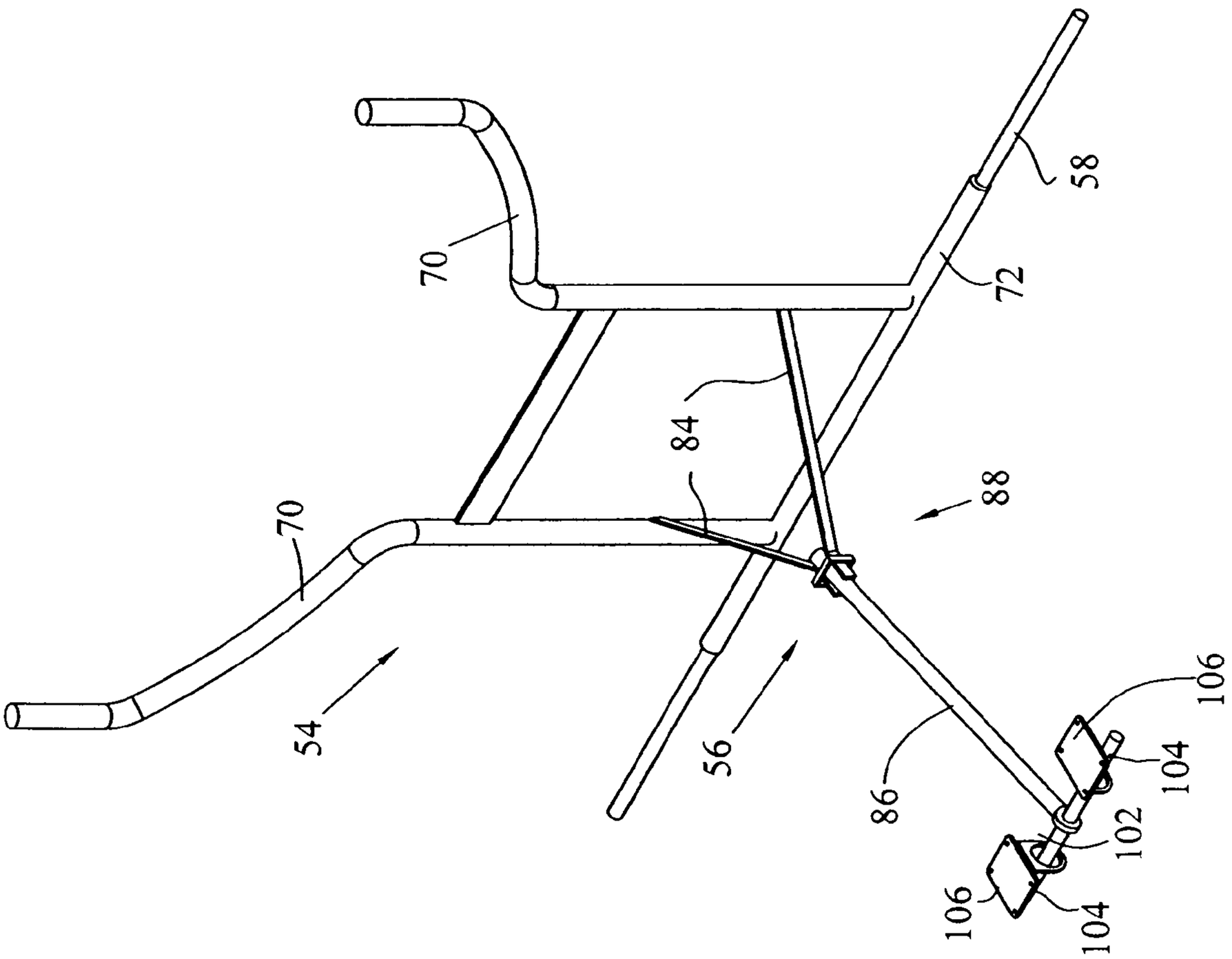


FIG. 4A
84
70
88
106
54
56
86
106
102
94
66
68
68
22
66
26
60
40
22
40
30
40
40
66
78
24
68
68
20
18
54
56
58
62
66
28
10
14
12

FIG. 4

FIG. 4A



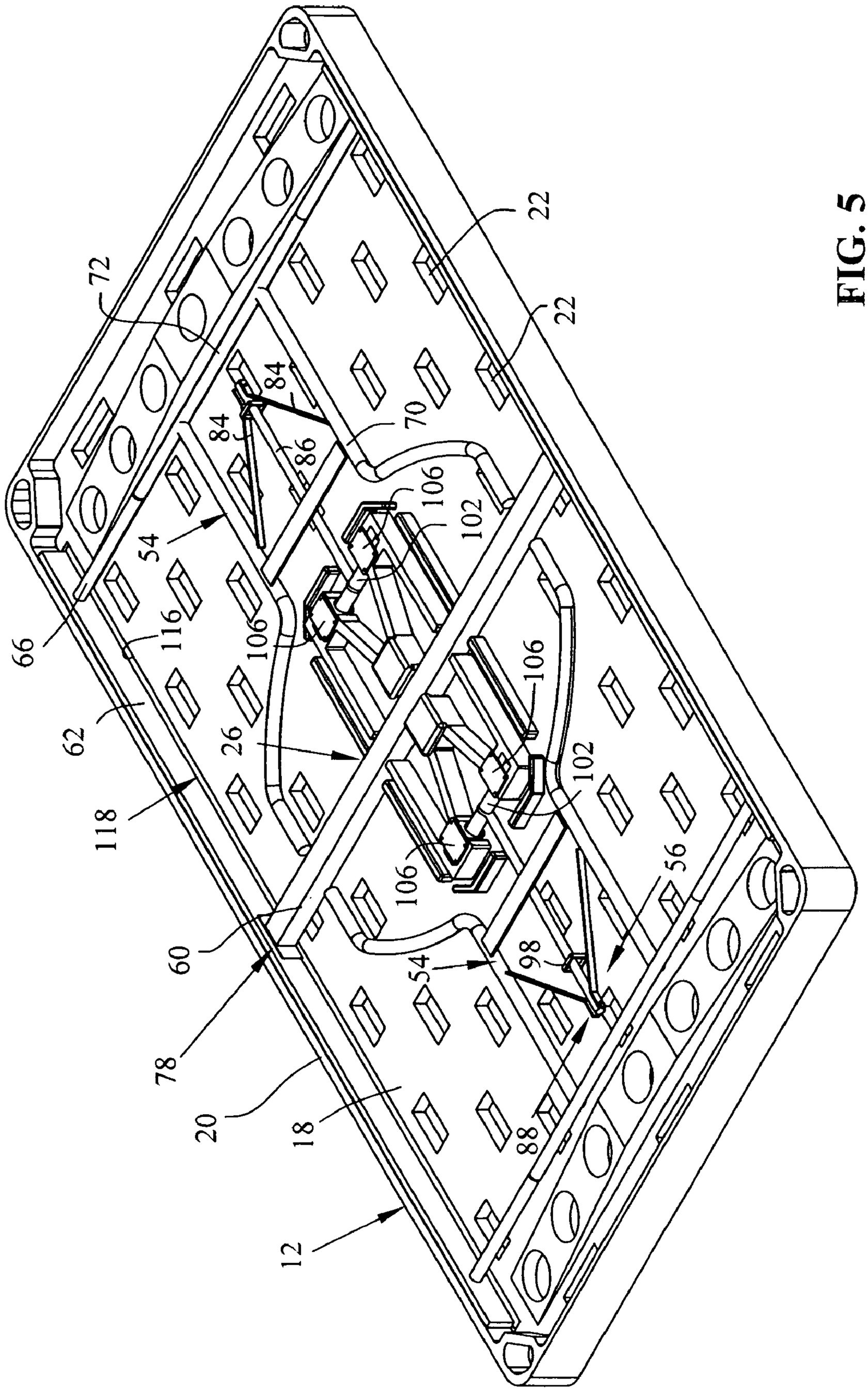

72
22
22
84
84
70
54
86
106
102
66
116
106
62
26
106
118
106
102
56
60
54
98
78
20
18
88
12

FIG. 5

PORTABLE FOLDING TABLE

[0001] This application claims the benefit of U.S. Provisional Patent Application Ser. No. 60/478,495 filed Jun. 13, 2003, the complete disclosure of which is hereby expressly incorporated by reference.

FIELD OF THE INVENTION

[0002] The present invention relates generally to portable folding tables with rigid support systems and, more particularly, to a portable folding table having foldable legs.

BACKGROUND OF THE INVENTION

[0003] The use of portable tables with foldable legs at events such as banquets, picnics, parties, festivals, etc., is well known. Portable tables typically include features allowing the legs to move between into a collapsed position, for relocation or storage, and an extended position for normal operation. Additionally, these tables typically have sufficient strength and rigidity allowing the table to support objects placed upon the tabletop during normal usage. Known portable tables also typically include a locking mechanism for securing the legs of the table in the operative position, thereby preventing the table from inadvertently collapsing.

[0004] Generally, when in the storage position, the legs of the table are located proximate the underside of the tabletop. This requires that an operator place the table on its side prior collapsing the legs. Consequently, heavy tables are undesirable as greater weight increases the difficulty of rotating a table onto its side.

[0005] Normally, known portable tables include systems for supporting any object placed upon the tabletop. Standard usage generally requires that the support system have high durability, since high durability allows the portable tables to withstand the wear and tear associated with the continuous relocation and setup of the portable table. Generally, in known tables, increased durability and load-bearing capability result in a significant increase in the weight of the table, and as explained above, the increase in the weight of the table generally increases the difficulty associated in moving and setting up the table.

[0006] In addition, the folding mechanisms coupled to the legs of a folding table must be manually operated when a user places the legs into the extended or operable position. In known portable folding tables, these mechanisms often require significant physical strength and/or dexterity. Furthermore, the prior art folding mechanisms may be complicated and involve numerous interacting parts, thereby increasing both the manufacturing costs and the assembly costs of the table.

[0007] Accordingly, there is a need for portable folding tables that are strong, durable, lightweight, and have simple folding mechanisms.

SUMMARY OF THE INVENTION

[0008] An embodiment of the present invention discloses a portable folding table. The portable folding table includes a tabletop having a top surface, or working surface, and an undersurface. The undersurface includes a wall extending about the periphery, and elongate channels extending proximate opposing edges of the tabletop. In addition, the undersurface also includes rib assemblies molded therein, defining a transverse channel.

[0009] The portable folding table further includes support tubes for supporting the tabletop. The support tubes include a main body and a plurality of tubular members extending therefrom. The support tubes are located within the elongate channels and are attached to a wall molded into the undersurface.

[0010] The table also includes pedestals for supporting the tabletop above a surface. The pedestals each include a pedestal support tube and legs. The legs may take a variety of shapes and may be joined to each other by braces in order to provide additional support. In addition, tubular supports extend through the pedestal support tubes and into the tubular members providing a pivot upon which the pedestals may rotate.

[0011] In addition, the portable folding table also includes support braces for retaining the pedestals in the extended position with the legs disposed away from the undersurface. The support braces include at least one angle arm and a straight arm fastened together in a manner allowing the straight arm to rotate about the fastened ends. The opposite end of the straight arm is joined to the underside of the tabletop by way of a pin. The pin is connected to the undersurface of the tabletop and remains distinct from the frame.

[0012] The folding table further includes a transverse strut extending between the support tubes of the frame. The transverse strut is confined within the transverse channel by way of attachment assemblies disposed between the frame and the undersurface. The interaction between the support tubes and the transverse strut succeeds in providing a normal force to the tabletop when the tabletop is supporting a load.

DETAILED DESCRIPTION OF THE DRAWINGS

[0013] These and other features of the invention will become more apparent and the present invention will be better understood upon consideration of the following description and the accompanying drawings wherein:

[0014] **FIG. 1** depicts a perspective view of an embodiment of a portable table in the operative configuration;

[0015] **FIG. 2** depicts a perspective view of the tabletop illustrated in **FIG. 1**;

[0016] **FIG. 2A** depicts an enlarged view of the encircled area shown in **FIG. 2**;

[0017] **FIG. 2B** depicts a cross-sectional view through lines 2B-2B of **FIG. 2A**;

[0018] **FIG. 2C** is a cross-sectional view through lines 2C-2C of **FIG. 1**;

[0019] **FIG. 3** depicts an exploded perspective view of the support structure illustrated in **FIG. 1**;

[0020] **FIG. 3A** depicts an enlarged view of the encircled area shown in **FIG. 3**;

[0021] **FIG. 3B** depicts an enlarged view of the encircled area shown in **FIG. 3A**;

[0022] **FIG. 3C** depicts an enlarged view of the encircled area shown in **FIG. 3**;

[0023] **FIG. 3D** depicts an enlarged view of the encircled area shown in **FIG. 3**;

[0024] **FIG. 3E** depicts an enlarged view of a pin utilized in the present invention;

[0025] **FIG. 4** depicts an exploded perspective view of the portable table illustrated in **FIG. 1**;

[0026] **FIG. 4A** depicts an enlarged view of the encircled area shown in **FIG. 4**; and

[0027] **FIG. 5** depicts a perspective view of the portable table illustrated in **FIG. 1** in the collapsed position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0028] Referring first to **FIG. 1**, a portable table is generally indicated by numeral **10**. Portable table **10** includes a tabletop **12** and a support system **14**. In the embodiment depicted, the tabletop **12** is manufactured from blow molded plastic having a rectangular shape and includes a substantially smooth top surface **16** and an undersurface **18** located opposite thereof. However, in alternative embodiments, any or all of the shape, the texture of the surfaces, or the material of manufacture of the tabletop **12** may differ from that disclosed herein. For example, the tabletop **12** may be manufactured from injection-molded plastic or wood. Similarly, the shape of the tabletop **12** may take on the shape of a circle, square, triangle, or any other desired shape.

[0029] **FIG. 2** depicts a perspective view of the tabletop **12**. In this embodiment, undersurface **18** includes a wall **20** extending downward from the edges of the tabletop **12**. As illustrated, the wall **20** is molded into undersurface **18** forming a right angle. In addition, undersurface **18** also includes a plurality of dimples **22** uniformly spaced throughout, as a mechanism of rigidifying undersurface **18**. Undersurface **18** further includes a pair of elongate channels **24** extending proximate the long edges of tabletop **12** and a transverse channel **26** extending the width of the tabletop **12** perpendicular to the elongate channels **24**.

[0030] The elongate channels **24**, set forth above, are recessed into undersurface **18**. Each channel **24** includes a flat surface **28** defining the most recessed position of the channel **24**. Flat surface **28** may be recessed into undersurface **18** any distance desired. In alternative embodiments, flat surface **28** need not be recessed into undersurface **18** at all. When flat surface **28** is recessed into undersurface **18**, a lip **116** is formed separating undersurface **18** and flat surface **28**.

[0031] **FIG. 2** also depicts transverse channel **26**, which extends transversely across the width of undersurface **18**. The transverse channel **26** extends between the two elongate channels **24**. However, unlike the elongate channels **24**, transverse channel **26** is not defined by a flat surface recessed into undersurface **18**. Rather, the area separating a molded pair of rib assemblies **30** defines the transverse channel **26**. In the embodiment depicted, the transverse channel **26** is located mid-way between the two short edges of tabletop **12**.

[0032] **FIGS. 2 and 2A** both depict two molded rib assemblies **30**, separated by transverse channel **26**. Each rib assembly **30** is molded into undersurface **18** and includes a plurality of ribs **32**, a main body **34**, and a pair of pin connecting sections **40**. In the embodiment depicted, the rib assemblies **30** include eight ribs **32** molded into undersurface **18**. Four of the ribs **32** extend outward from transverse channel **26**. Two of the ribs **32** extend substantially parallel to transverse channel **26** proximate pin connecting section **40**. Finally, the remaining ribs **32** extend from the main body **34** to the pin connecting section **40**.

[0033] In the embodiment depicted, the main body **34** of each rib assembly **30** perpendicularly radiates outward from transverse channel **26**, toward the short edges of the tabletop **12**. Furthermore, main body **34** is centered between the two long edges of the table **12** and extends upwards a distance from undersurface **18** equaling the height of wall **20**. In the present embodiment, this distance is slightly greater than the distance separating the top surface of the ribs **32** and the undersurface **18**. In addition, main body **34** has a width approximately double that of each of the ribs **32**.

[0034] As stated above, the rib assemblies **30** each include two pin connecting sections **40**. The pin connecting sections **40** are molded into undersurface **18** and have the same height, with respect to undersurface **18**, as the ribs **32**. Each of the pin connecting sections **40** includes a side wall **41**, a side wall **42**, a top surface **44**, and a pin receiving channel **46**.

[0035] **FIG. 2A** illustrates that each pin connecting section **40** joins two ribs **32**. In the embodiment depicted, side wall **42** represents the portion of the pin connecting sections **40** separating the joined ribs **32**. As depicted, side wall **42** includes an aperture **48** extending therethrough.

[0036] Each pin connecting section **40** also includes a top surface **44**. In the embodiment depicted, top surface **44** is substantially smooth with a square profile. In addition, a pin receiving channel **46** is inset into top surface **44**. As can be seen, the side walls **41**, **42** are located on opposite sides of pin receiving channel **46**. In addition, the two pin receiving channels **46** of each rib assembly **30** open toward each other as depicted in **FIG. 2**.

[0037] Each pin receiving channel **46** represents a void extending into the center of the pin connecting section **40**. In addition, each channel **46** includes tabs **50** depicted in **FIGS. 2A and 2B**. The tabs **50** extend toward the center of the pin receiving channel **46** from each of the side walls **41**, **42**.

[0038] Referring now to **FIG. 2B**, a section view taken through the channel **46** is depicted. Each tab **50** includes a main body **120** including a recess **122** defined by a shoulder **124**. As shown in **FIGS. 2A and 2B**, two shoulders **124** of the two tabs **50** are positioned opposite each other across the channel **46**.

[0039] Referring now to **FIG. 3**, an exploded perspective view of support system **14** is depicted. Support system **14** includes pedestals **54**, support braces **56**, tubular supports **58**, a transverse strut **60**, and a pair of support tubes **62**. In the embodiment depicted, each support tube **62** includes a main body **64** and tubular members **66**. The tubular members **66** inward from the main body **64**. The support tubes **62** may be manufactured from steel or, any material similar, having sufficient strength to prevent the tube **62** from twisting about its longitudinal axis, when loaded.

[0040] In the embodiment depicted, main body **64** has a length approximately equal to that of the elongate channels **24** of undersurface **18** (depicted in **FIG. 2**). In addition, the support tubes **62** have a width slightly smaller than the width of the elongate channels **24**. Furthermore, the height of main body **64** is equivalent to the distance separating the top edge of wall **20** (depicted in **FIG. 2**) from flat surface **28** (depicted in **FIG. 2**). It should be noted that although the main body **64** is depicted as including a rectangular cross section, this cross section might take any shape desired.

[0041] Main body **64** also includes a plurality of apertures **68** that extend through two of the opposing walls thereof. Specifically, the apertures **68** are disposed in the wall of main body **64** that abuts against wall **20** (depicted in **FIG. 2**). Apertures **68** are also disposed throughout main body **64** opposite wall **20**. In addition, the apertures **68** located in each of the opposing walls of body **64** are aligned in pairs, thereby allowing a fastener (not shown) to extend completely through main body **64**.

[0042] In the depicted embodiment, tubular members **66** are fixedly attached to main body **64**. The tubular members **66** have a circular cross-section and are spaced inward toward the center of main body **64**, from the ends thereof. Additionally, the tubular members **66** are manufactured from the same type of material that forms main body **64**. In the embodiment depicted, the main body **64** and the tubular members **66** are steel, and the tubular members **66** are affixed to main body **64** by way of welding. In alternative embodiments, however, the tubular members **66** may be attached to main body **64** in any well-known manner, and main body **64** may be manufactured from any durable material. Main body **64** also includes circular apertures **69** (**FIG. 2C**) located proximate the ends thereof with each aperture **69** having diameter approximately equal to the inner diameter of the tubular members **66**. The circular apertures **69** are disposed throughout in main body **64** in a manner ensuring the apertures **69** are aligned with the tubular members **66**.

[0043] Referring still to **FIG. 3**, it can be seen that each of the pedestals **54** includes a pair of laterally spaced apart support legs **70** radiating from a pedestal support tube **72**. Generally, support legs **70** and pedestal support tube **72** are manufactured from the same material comprising the support tubes **62**. In the embodiment depicted, both the legs **70** and the support tube **72** of each pedestal **54** have circular cross-sections, and furthermore, the pedestal support tube **72** has a circular cross section approximately equivalent to that of the tubular members **66**. In addition, the support tube **72** is independently welded to each leg **70**. Braces **74** extend between the two support legs **70** proximate the ends thereof, thereby allowing the legs **70** to support each other.

[0044] As indicated above, support system **14** also includes tubular supports **58** located at opposite ends of the support system **14**. The diameter of the tubular supports **58** is slightly less than the diameter of both the tubular members **66** and pedestal support tubes **72**. In addition, the tubular supports **58** are longer than tubes **72**, such that a portion of the supports **58** extends outward from the tubes **72**, as best shown in **FIG. 4**. Accordingly, the tubular supports **58** extend through both the pedestal support tubes **72** and into the tubular members **66**. Furthermore, the tubular supports **58** extend into the support tubes **62** through the circular apertures **69**, as depicted in **FIG. 2C**.

[0045] As explained above, tubular supports **58** have a diameter less than the tubular members **66**, the circular apertures **69** and the support tubes **72**. Accordingly, when fully assembled as depicted in **FIG. 2C**, support tubes **72** may rotate about the tubular support **58**, extending therethrough. Thus, this connection allows support pedestals **54** to rotate with respect to the tabletop **12** between an extended position and a collapsed position.

[0046] Referring again to **FIG. 3**, transverse strut **60** of the support system **14** is depicted. The transverse strut **60** includes a main body portion **76** having a rectangular cross section and an attachment assembly **78** located at each end thereof. In the embodiment depicted, each attachment assembly **78** comprises an angle plate including a vertical plate **80** and a horizontal plate **82**. Vertical plate **80** extends above the top surface of main body portion **76**, with horizontal plate **82** extending perpendicularly therefrom. This attachment creates an angle between the two plates **80**, **82** approximately measuring 90 degrees.

[0047] The support system **14** also includes a pair of support braces **56**, as depicted in **FIGS. 3, 3A** and **3**B. Each support brace **56** includes angled arms **84**, a straight arm **86** and a junction **88** therebetween. A portion of straight arm **86** is pinned between the angled arms **84**. A fastener **92** affixes the angled arms **84** to a first end **90** of the straight arm **86** in a manner allowing straight arm **86** to rotate with respect to the angled arms **84**.

[0048] Straight arm **86** also includes a second end **94** located opposite first end **90**. Second end **94** includes an aperture **96** positioned therein having a circular cross-section. In the embodiment depicted, the support braces **56** further include locking components **98** having a rectangular shape. The locking components **98** include an aperture **100** extending through the center. Straight arm **86** extends through aperture **100**. Aperture **100** has a size sufficient to allow for the sliding movement of locking component **98** proximate first end **90**. Furthermore, when straight arm **86** is aligned with the angled arms **84**, the locking component **98** may be positioned over junction **88** in order to prevent rotation of the straight arm **86** about fastener **92**.

[0049] **FIG. 4A** depicts a pin **102** having a circular cross-section sized and configured to extend through aperture **96** of straight arms **86**. The pin **102** is further sized and configured in both length and diameter to allow for the insertion of the pin **102** into the pin receiving channels **46** depicted in **FIG. 2**. The pin **102** includes mounting apertures **104** located proximate its ends.

[0050] Referring again to **FIGS. 3 and 3**D, the support system **14** further includes pin clamps **106**. In the embodiment depicted, the pin clamps **106** are manufactured from the same type of material comprising pedestals **54**, support braces **56** and support tubes **62**. Each pin clamp **106** includes a flat plate **108** with a rectangular shape that includes a plurality of apertures **110**. In the embodiment depicted, apertures **110** are located proximate the corners of plate **108**. The apertures **110**, however, may be disposed throughout plate **108** as desired. The pin clamps **106** further include ears **112**, which extend perpendicularly downward from the flat plates **108**, forming a right angle therebetween. Each ear **112** includes an aperture **114** extending therethrough. Aperture **114** is sized and configured to allow pin **102** to extend therethrough.

[0051] Now that the major components comprising portable table **10** have been explained, the assembled structure of portable table **10** will be described in detail with reference to **FIG. 4**. Beginning with transverse strut **60**, the transverse strut **60** is positioned within located in the transverse channel **26** of undersurface **18**. Transverse strut **60** is sized to both substantially fill channel **26** and also extend across the undersurface **18** of tabletop **12**. When transverse strut **60** is properly located, the horizontal plates **82** of the attachment assemblies **78** should rest flush against the flat surfaces **28** of the elongate channels **26**.

[0052] Once transverse strut **60** has been properly positioned within transverse channel **26**, the remainder of support system **14** is then positioned within the undersurface **18** of the tabletop **12**. In no particular order, tubular support **58** is inserted into a pedestal support tube **72** of one of the support pedestals **54**. The tubular supports **58** are then inserted into the tubular members **66** of the support tubes **62**, in the manner described above. Next, the support tubes **62** are positioned within the elongate channels **24** of undersurface **18**. A plurality of fasteners, such as screws (not shown), affixes the support tubes **62** to the wall **20**. Specifically, the fasteners extend through apertures **68** and into wall **20** of tabletop **12**. In the embodiment depicted, the portable table **10** requires eight fasteners to attach both support tubes **62** to wall **20**. In alternative embodiments, however, a different number or type of fastener may be employed.

[0053] It should be noted that the attachment of the support tubes **62** to the tabletop **12** in the manner set forth above retains the support tubes **62** against the wall **20**. Furthermore, in the embodiment depicted, since the width of elongate channel **24** is greater than the width of the support tubes **62**, the retention of the support tubes **62** against wall **20** prevents the support tubes **62** from contacting the raised lips **116** of the elongate channels **24**. This creates a gap **118** between the lips **116** and the tubes **62**. It should be noted that in this embodiment, since the support tubes **62** are positioned within the elongate channels **24** only after transverse strut **60** has been positioned within transverse channel **26**, the horizontal plates **82** of the transverse strut **60** are positioned intermediate support tubes **62** and flat surface **28**. This means of engagement causes the transverse strut **60** to "hang" from the support tubes **62** by way of the horizontal plates **82**.

[0054] Following the connection of the support tubes **62** to wall **20**, the pins **102**, pin clamps **106** and second ends **94** of the straight arms **86** are first assembled together and then affixed to undersurface **18** of tabletop **12**. In the embodiment depicted, pins **102** are inserted into the apertures **96 (FIG. 3A)** of pin clamps **106**, as shown in **FIG. 4A**. Pins **102** may then be pressed into the pin receiving channels **46 (FIG. 2A)** of the pin connecting sections **40**. As explained above, each pin receiving channel **46** includes a plurality of shoulders **124 (FIG. 2B)**. As each pin **102** is pressed into the pin receiving channel **46**, the shoulder **124** will deform allowing the pin **102** to pass therethrough. The pin **102** is received by space **122**, shoulders **124** return to their original position thereby trapping pin **102**.

[0055] In an effort to ensure that the pins **102** remain situated within the pin receiving channels **46**, fasteners (not shown) are inserted into the aperture **48 (FIG. 2A)** located within side wall **42**. The apertures **48** of the pin connecting sections **40** should align with the mounting apertures **104** located proximate the ends of the pins **102**, thereby allowing for the insertion of the fastener into the pins **102**. The extension of the fastener through apertures **48** and into apertures **104** succeeds in retaining securing the pins **102** within the pin receiving channels **46**.

[0056] The attachment of pin clamps **106** to the pin connecting sections **40** further succeeds in retaining the pins **102** within the pin receiving channels **46**. As described above, each of the pin clamps **106** includes a plurality of apertures **110** dispersed throughout flat plate **108**. Fasteners (not shown) may be inserted through the apertures **110 (FIG. 3B)** into top surface **44** of pin connecting section **40**, thereby affixing the pin clamps **106** to the top surfaces **44**. Since the pins **102** extend through ears **112**, the retention of the pin clamps **106** against the pin connecting sections **40** further ensures that the pins **102** remain secured within the pin receiving channels **46**. The attachment of the pin clamps **106** to the pin connection sections **40** represents the final step of assembling the portable table **10**.

[0057] Now that the assembly of portable table **10** has been described, the function of portable table **10** will now be explained in detail with reference to **FIGS. 1 and 5**. **FIG. 5** depicts the portable table **10** configured in the storage position with the pedestals **54** located proximate undersurface **18**. Generally, this position is preferred when either storing or moving the portable table **10**, as the portable table **10** occupies less area than that occupied by the table **10** when in the operative position illustrated in **FIG. 1**. In the operative position, the pedestals **54** extend away from undersurface **18**.

[0058] Referring now to **FIGS. 4 and 5**, and starting first with the pedestals **54**, the interaction of the pedestal support tubes **72** and the tubular support **58** allows the pedestals **54** to pivot about the support **58** and into the operative position illustrated in **FIG. 1**.

[0059] Referring still to **FIG. 1**, when the pedestals **54** extend away from the tabletop **12** in the operative position, the straight arms **86** and angled arms **84** the support braces **56** align to share a common longitudinal axis (not shown). In order to prevent the portable table **10** from inadvertently collapsing, the brace locks **98** lock the support braces **56** in this position by being placed over junction **88**. This prevents the rotation of straight arm **86** about fastener **92**, thereby preventing the pedestals **54** from undesirably moving into the storage position illustrated in **FIG. 5**.

[0060] Once the table **10** is configured in the operative position, the portable table **10** is capable of supporting loads above the floor. The load associated with an object placed on the center of the table **10** is counteracted by the interaction between the transverse strut **60** and tubular supports **62**. Specifically, a load supported by the center of the table **10** travels through the tabletop **12** and into the transverse strut **60**, where the force of the load is met with a countering, or normal, force. This normal force exists by way of the interaction between the transverse strut **60** and the support tubes **62**. Specifically, the normal force travels up from the floor (not shown) through the legs **70** of the support pedestals **54**. The force then travels into the pedestal support tubes **72**, through the tubular supports **58**, and into the tubular members **66**. Once the normal force reaches tubular members **66**, it transfers into the support tubes **62** and travels

down the support tubes **62** into the transverse strut **60**. In this manner, portable table **10** prevents the tabletop **12** from bowing when the tabletop **12** is loaded in the center.

[**0061**] Once a load has been placed upon the table **10**, at a position other than the center, the force of the load travels through the tabletop **12** and into the support tubes **62**. The normal force for counteracting the force of the load is supplied to the support tubes **62** from the floor in a manner identical to that described above. In this manner, portable table **10** can support a load exerted anywhere upon top surface **16**.

[**0062**] Furthermore, the design of the table allows for the pedestal legs to be easily stored. For example, as the pins **102** and their associated rib assemblies are narrow, the pedestal legs **70** flank the combination of the pins **102** and rib assemblies **30** when in the stored position, as shown in **FIG. 5**. This is advantageous, since this configuration does not require the legs **70** to be collapsed or reduced in length when positioned against undersurface **18**.

[**0063**] The present support system **14** also provides a very rigid assembly. As the tubes **62** are rectangular in cross section, they themselves are quite rigid. However, the torsional rigidity of the tubes **62** is increased by the extension of tubular support **58** through the tubular members **66**.

[**0064**] The present table also provides a cosmetically appealing design from the perspective of the underside structure **14**. In particular, as the support tubes **66** and the tubular members **72** have a consistent diameter, the combination of the tubes **66**, **72** take on the appearance of a continuous tube.

[**0065**] The presently disclosed embodiment provides a portable folding table that is lightweight, easy to fold/unfold and may be efficiently stored when folded. The portable folding table provides functionality and load-bearing capability when unfolded with relatively few separate parts. Accordingly, manufacture and assembly of the portable folding table is relatively efficient.

[**0066**] While the invention has been described in its currently best known modes of operation and embodiments, other modes and embodiments of the invention will be apparent to those skilled in the art and are contemplated.

What we claim is:

1. A table comprising:

a tabletop including an underside and a pair of rib assemblies defining a transverse channel intermediate the rib assemblies;

a transverse strut disposed in said transverse channel, said transverse strut supporting the tabletop;

a pair of pivotal support pedestals moveable between an extended position and a collapsed position; and

a pair of braces extending between said support pedestals and a pair of attachment points;

wherein said transverse strut is positioned intermediate said attachment points.

2. The table as set forth in claim 1, further comprising a pair of pins connected to said rib assemblies, said pins providing said attachment point for said braces.

3. The table as set forth in claim 2, wherein said support pedestals include a pair of legs, said pins intermediate said legs when said support pedestals are in the collapsed position.

4. The table as set forth in claim 1, further comprising a pair of support tubes disposed within a pair of elongate channels integrally formed in said undersurface, said transverse strut extending between and being connected to said support tubes.

5. The table as set forth in claim 4, wherein each said support tube comprises a main body and a pair of tubular members, a portion of said transverse strut being disposed between said main bodies and said undersurface.

6. The table as set forth in claim 5, further comprising a pair of tubular supports extending between said tubular members of said support tubes, said tubular supports extending through a support tube included in each of said pedestals, wherein said pedestals pivot about said tubular support.

7. The table as set forth in claim 6, wherein said transverse strut further comprises a pair of attachment assemblies including a horizontal plate, wherein said horizontal plate is disposed between said undersurface and said main bodies.

8. The table as set forth in claim 7, wherein said pins are distinct from said support tubes.

9. The table as set forth in claim 2, further comprising a plurality of brackets and a plurality of fasteners connecting said pin to said undersurface.

10. The table as set forth in claim 2, wherein said rib assemblies include channels for receiving said pins.

11. The table as set forth in claim 10, wherein said pins include apertures for receiving fasteners extending through said channels.

12. The table as set forth in claim 1, wherein said table top is a one-piece table top manufactured from blow molded plastic.

13. A table comprising:

a tabletop including an underside and a pair of elongate channels integrally formed therein;

a pair of support tubes disposed in said elongate channels including a main body and a pair of tubular members;

a pair of tubular supports extending between each pair of said tubular members; and

a pair of pedestals each including a pedestal support tube and a plurality of legs extending therefrom, wherein one of said tubular supports extends through one of said pedestal support tubes thereby allowing said pedestals to pivot about said tubular supports between an extended and a collapsed position.

14. The table as set forth in claim 13, wherein said tubular members include an outer diameter and said pedestal support tubes include an outer diameter sized equivalent to said outer diameters of said tubular members.

15. The table as set forth in claim 13, wherein said undersurface includes a pair of rib assemblies defining a transverse channel disposed perpendicular to said elongate channels, said transverse channel receiving a transverse strut supporting said tabletop.

16. The table as set forth in claim 15, wherein said transverse strut is connected to said support tubes.

17. The table as set forth in claim 16, wherein said transverse strut includes a pair of attachment assemblies

located at each end, a portion of said attachment assemblies disposed between said underside and said support tubes.

18. The table as set forth in claim 17, further comprising a pair of braces extending between said underside and said support pedestals, said braces attached to said underside at attachment points.

19. The table as set forth in claim 18, further comprising a pair of pins attached to said underside at said attachment points, each of said pins extending through an aperture located in one of said braces.

20. The table as set forth in claim 19, wherein each of said rib assembles includes channels and said pins are located within said channels.

21. The folding table as set forth in claim 13, wherein said table top is a one-piece table top manufactured from blow molded plastic.

22. A folding table comprising:

a tabletop comprising a top surface and an undersurface located opposite said top surface, said undersurface including a pair of elongate channels extending proximate the edges of said tabletop and a transverse channel extending perpendicular to said elongate channels;

a support structure comprising a pair of support tubes disposed in said elongate channels;

a pair of pedestals each including a pedestal support tube and a pair of legs, said pair of pedestals being rotatable between a storage position with said legs proximate said undersurface and an operative position with said legs located distant from said undersurface, each said pedestal rotating about said pedestal support tube;

a pair of support braces each having a first end attached to one of said pedestals and a second end attached to a pin mounted to said undersurface; and

a transverse strut disposed within said transverse channel;

wherein each said pin is located intermediate a different pair of said legs of said pedestals when said pedestals are arranged in said storage position.

23. The folding table as set forth in claim 22, wherein said transverse strut includes an attachment assembly at each end, said attachment assembly being disposed between said undersurface and said frame in order to retain said transverse strut within said transverse channel.

24. The folding table as set forth in claim 22, wherein said transverse channel is located intermediate said pins attached to said undersurface.

25. The folding table as set forth in claim 22, further including a pair of tubular supports extending between said support tubes, each of said tubular supports being located within one of said pedestal support tubes.

26. The folding table as set forth in claim 22, further including a plurality of fasteners attaching said pins to said undersurface.

27. The folding table as set forth in claim 22, further including a plurality of pin clamps including an ear and a flat plate, one of said pins being disposed within said ear and said flat plate being attached to said undersurface by way of a plurality of fasteners.

28. The folding table as set forth in claim 22, wherein said table top is a one-piece table top manufactured from blow molded plastic.

29. A folding table comprising:

a tabletop comprising a top surface and an undersurface located opposite said top surface, a pair of elongate channels disposed in said undersurface and extending proximate the edges of said tabletop;

a support structure comprising a pair of support tubes, rectangular in cross-section, including a main body and a pair of tubular members, attached thereto adjacent to the ends of the support tubes, said support tubes being disposed within said elongate channels;

a pair of pedestals each including a pedestal support tube and a plurality of legs extending therefrom; and

a pair of tubular supports extending between said tubular members of said pair of said support tubes and through said support tube of said pedestal.

30. The folding table of claim 29, wherein the rectangular support tubes have a plurality of apertures located proximate said tubular members, whereby the tubular support which extends through said pedestal support tube and said tubular members, also extends into said rectangular support tubes.

31. The folding table as set forth in claim 29, further comprising a pair of braces and a pair of pins, said braces extending from said pedestals to said pins.

32. The folding table as set forth in claim 31, wherein each said brace is joined to a different one of said pins.

33. The folding table as set forth in claim 32, wherein each said pin is disposed in different said rib assemblies.

34. The folding table as set forth in claim 33, wherein said pins remain distinct from said support tubes.

35. The folding table as set forth in claim 34, wherein said support braces include a pair of fastened angled arms joined by a fastener to a first end of a straight arm at a junction, said straight arm being rotatable about said fastener at said junction.

36. The folding table as set forth in claim 35, wherein said straight arms include a second end opposite said first end, said pin attached to said second end.

37. The folding table as set forth in claim 36, wherein said attachment assemblies include a horizontal plate and a vertical plate, said horizontal plate being disposed within said elongate channels between said undersurface and said support tubes.

38. The folding table as set forth in claim 37, wherein said support tubes include a plurality of apertures spaced throughout a pair of opposing side walls, said apertures being of sufficient size to receive a plurality of fasteners that extend through said apertures and into said wall.

39. The folding table as set forth in claim 38, wherein said rib assemblies include a pin receiving channel having tabs for retaining said pin therein.

40. The folding table as set forth in claim 39, wherein said pins include at least one aperture, a fastener extending through said rib assemblies and said at least one aperture thereby affixing said pin to said rib assembly.

41. The folding table as set forth in claim 29, wherein said table top is a one-piece table top manufactured from blow molded plastic.

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