United States Patent [19]

Faria

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[54] **FOLDING TABLE**

[76] Inventor: **Carmen V. Faria,** 353 E. 83rd St., New York, N.Y. 10028

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[52] **U.S. Cl.** **108/112;** 108/67

[51] **Int. Cl.** **A47b 3/04**

[58] **Field of Search** 108/115, 67, 112, 38; 297/440

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Primary Examiner—Francis K. Zugel

Attorney, Agent, or Firm—Gottlieb, Rackman, Reisman & Kirsch

[57] **ABSTRACT**

A foldable table includes a series of parallel slats which are connected together by transverse pieces of non-rigid material permitting the slats to be collapsed onto each other when the table is folded. A diagonal cross-support is provided for supporting the slats when the table is open.

3 Claims, 9 Drawing Figures

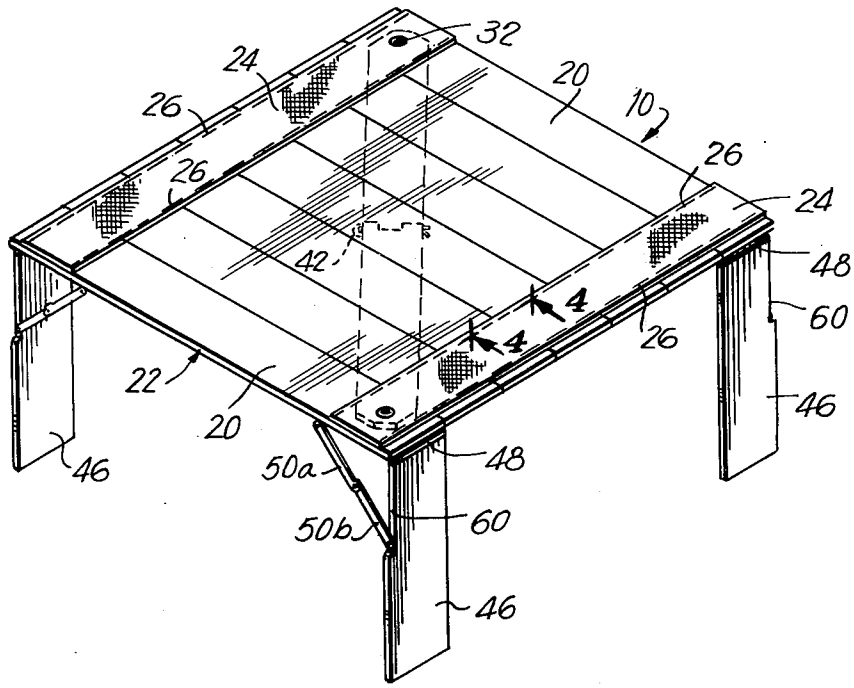


FIG. 1

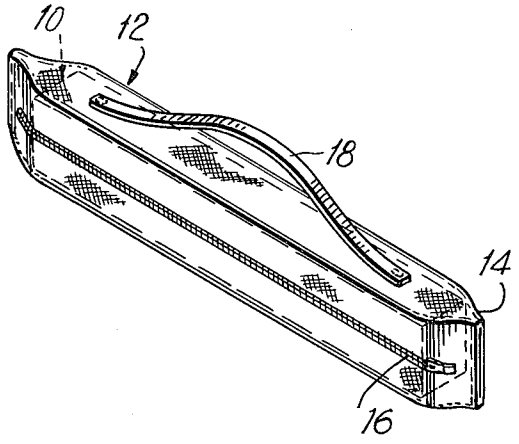


FIG. 2

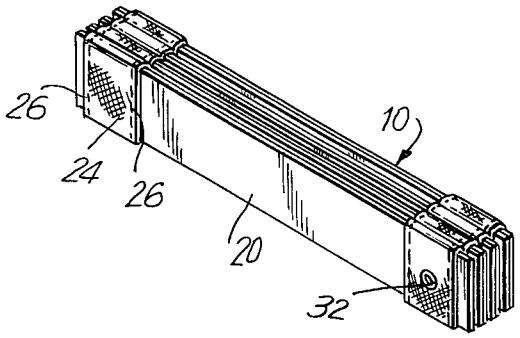
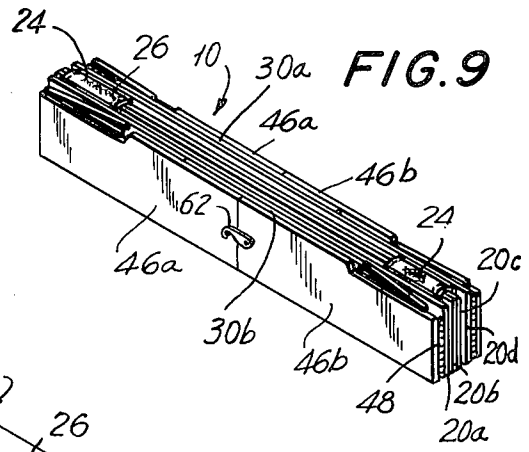


FIG. 9



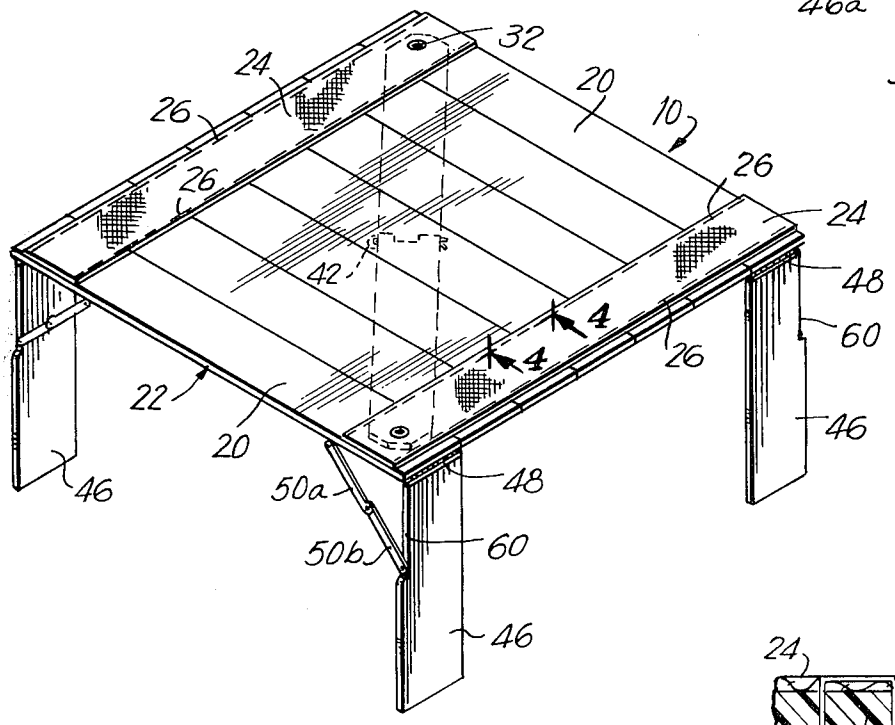


FIG. 3

FIG. 4

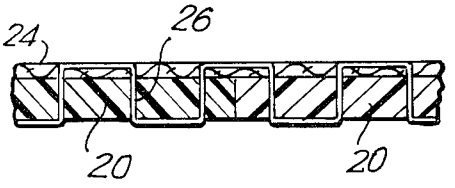


FIG. 5

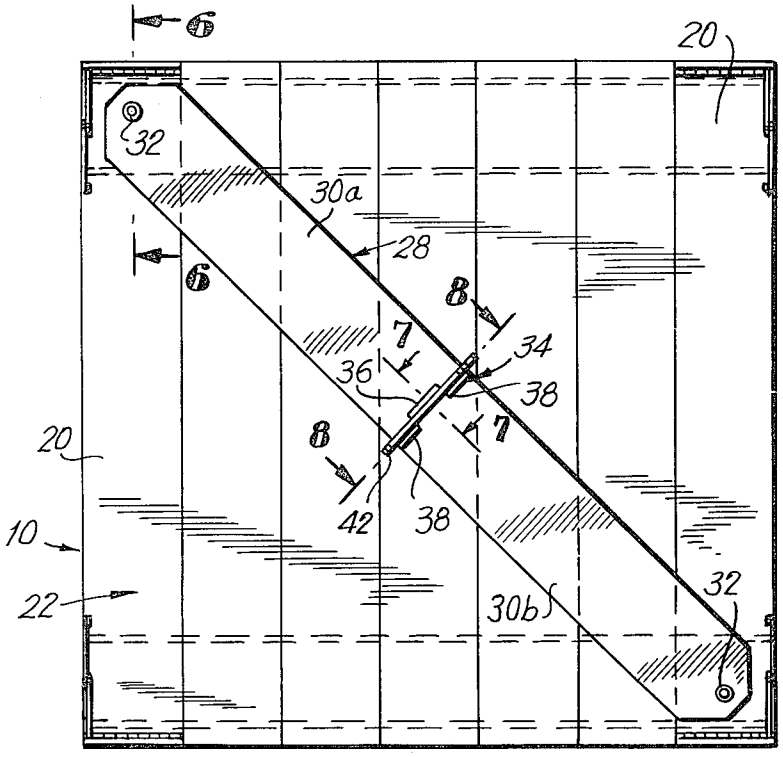


FIG. 6

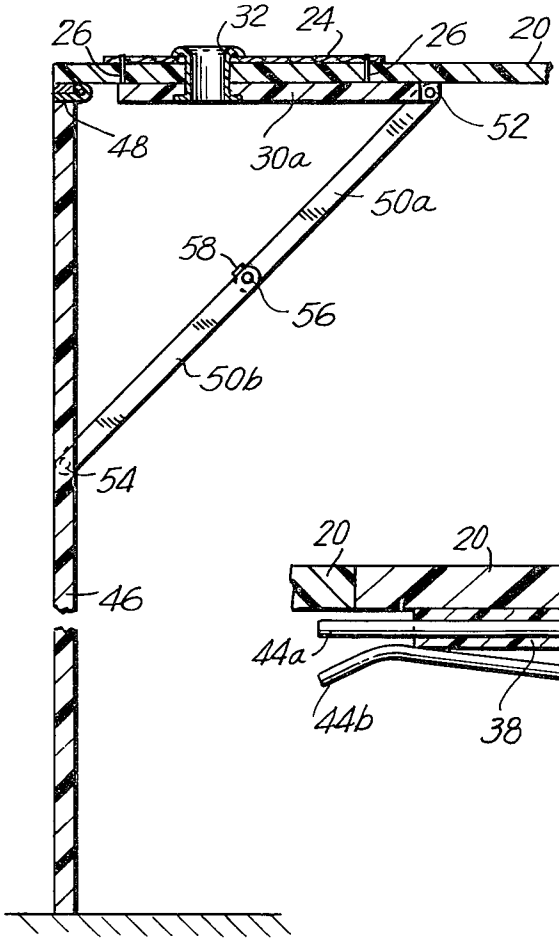


FIG. 7

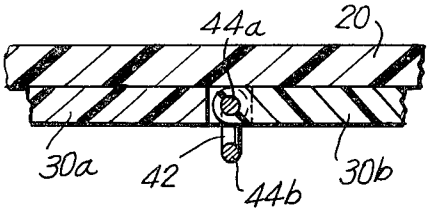
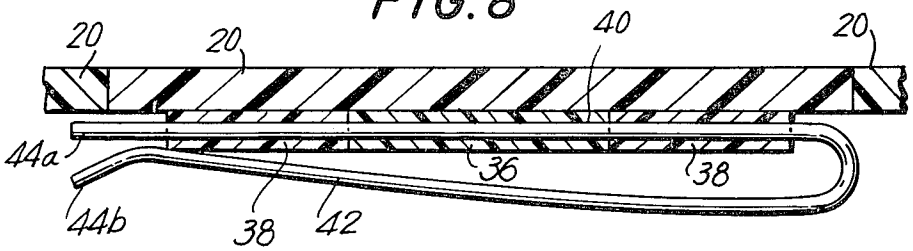


FIG. 8



FOLDING TABLE

This invention relates generally to pieces of furniture and, more particularly, to folding tables and the like.

Folding tables are generally well-known in the art. One type of folding table, commonly known as a "bridge" table, includes a one-piece table top and legs which are adapted to collapse beneath the table top when the table is folded or closed. The principal drawback with this type of table is that the size of the table when closed is limited by the size of one-piece table top. Thus, even when this type of table is closed, the table is still relatively large and therefore difficult to carry. Other types of folding tables have been proposed in attempts to provide a folding table which is small or compact when the table is closed. For example, it has been suggested to provide a folding table having a collapsable table top, the table top being folded or collapsed to reduce the size of the table in its folded or closed position. Specifically, it has been proposed to provide a folding table having a table top formed of leaves or slats. However, these slatted-top folding tables have been less than satisfactory since they have been difficult to assemble, have not been sufficiently strong or rigid when the table is open, and have been expensive to manufacture.

Accordingly, it is a broad object of the present invention to provide a folding table having an improved construction.

A more specific objection of the invention is to provide a folding table which is compact when closed yet strong or rigid when open.

Another object of this invention is to provide a folding table having a slatted-top, with the folding table being relatively inexpensive to manufacture.

In accordance with the present invention, there is provided a folding table having a table top formed of a series of parallel slats adapted to collapse onto each other when the table is folded. The slats are connected together by two transverse pieces of flexible material, which are secured to the slats by stitching. A diagonal cross-support for supporting the slats when the table is open includes two connecting members which extend from respective diagonal corners of the table top. Means are provided for coupling the connecting members together at substantially the center of the table top. The table top is supported, when the table is open, by foldable legs which depend downwardly from the four corners of the table top; The legs are of widths substantially equal to the width of the slats and the folding table is constructed and arranged such that the folding table may be folded or closed to the width of one of the slats.

Further objects, features and advantages of the present invention will be more fully apparent upon consideration of the following detailed description, when considered in conjunction with the accompanying drawings, in which:

FIG. **1** is a front perspective view of a carrying case for use with the folding table of the present invention;

FIG. **2** is a front perspective view showing a folding table according to one embodiment of the present invention, with the table folded or closed;

FIG. **3** is a front perspective view of the folding table of FIG. **2,** and showing the table opened;

FIG. **4** is an enlarged sectional view, taken substantially along the line **4—4** of FIG. **3**;

FIG. **5** is a bottom plan view, slightly enlarged in scale, of the folding table of FIG. **3**;

FIG. **6** is a sectional view, slightly enlarged in scale, taken substantially along the line **6—6** of FIG. **5**;

FIG. **7** is a section view, slightly enlarged in scale, taken substantially along the line **7—7** of FIG. **5**;

FIG. **8** is a sectional view, slightly enlarged in scale, taken substantially along the line **8—8** of FIG. **5**; and,

FIG. **9** is a perspective view, similar to the view of FIG. **2,** but showing a folding table according to a second embodiment of the present invention.

Referring now to the drawings and, particularly to FIGS. **1–8** thereof, a folding table according to the present invention is generally designated **10.** Folding table **10** is constructed and arranged so that the table may assume either a folded or closed position, illustrated in FIG. **2,** or an open or unfolded position, illustrated in FIG. **3.**

For purposes of storage or transportion from one place to another, when folding table **10** is closed, a carrying case, generally designated **12,** is provided. The carrying case may be of molded plastic construction having a case body **14** adapted to receive the closed folding table (which is illustrated in FIG. **1** in dashed line), with the closed folding table being inserted into the case body through a zipper opening **16.** A handle **18** is provided, secured to the top of case body **14,** and is provided to facilitate the transportation of carrying case **12.**

Folding table **10** includes a series of parallel slats **20** which are adapted to be next to each other, in a single plane, when the folding table is opened (FIG. **3**) to form a table top, generally designated **22.** The slats **20** are connected together by two transverse pieces of flexible material **24,** such as canvas strips or the like, which are disposed at the ends of the slats, on the upper surface of table top **22.** The flexible material strips **24** are secured to the ends of slats **20** by stitching the strips to the slats. Specifically, and as illustrated in FIG. **4,** the flexible material strips **24** are secured to slats **20** by stitching **26** which extends from the flexible material strips **24** through the slats. Thus, the stitching **26** extends from the top or upper face or surface of table top **22** to the bottom or lower face or surface of the table top. Advantageously, two rows of stitching **26** are provided to secure each flexible material strip to slats **20,** with the stitching being near the edges of the flexible material strip. Thus, although it may be contemplated that there will be other ways of connecting the slats together, it has been found that the use of flexible material strips, secured to the slats by stitching, is economical and also adequately and securely connects the slats together. Importantly, and as shown in FIG. **2,** this construction providies a folding table in which the series of parallel slats **20,** which form the table top when the folding table is open, can collapse onto each other when the table is folded. Accordingly, folding table **10** is compact and may be carried quite easily, when the table is closed.

In order to support slats **20** when the folding table is open, at least one diagonal cross-support, generally designated **28,** is provided. As illustrated in FIG. **5,** cross-support **28** includes two connecting members **30***a*, **30***b*, which are pivotally connected at diagonal corners of table top **22,** for example by rivets **32** which extend through the connecting members, slats **20** and the flexible material strips **24** (see FIG. **6**). Each con-

necting member **30***a*, **30***b*, should be of width no wider than the width of a slat **20**, and should also be of a length no longer than the length of a slat **20**, thereby enabling the connecting members **30***a*, **30***b*, to pivot about respective rivets **32** so that the connecting members lie beneath the end slats when the table is closed. Specifically, and referring to FIG. **5**, connecting member **30***a* is adapted to pivot in a clockwise direction about rivet **32**, from the position illustrated in FIG. **5**, such that the connecting member lies directly beneath the left-hand slat, when the folding table is closed. Similarly, connecting member **30***b* is adapted to pivot in a clockwise direction about rivet **32**, from its position illustrated in FIG. **5**, such that this connecting member lies beneath the right-hand slat **20** of FIG. **5**, as the table is closed.

Connecting means, generally designated **34**, are provided for coupling the connecting members together, substantially at the center of table top **22**, at the bottom thereof, when folding table **10** is open. Referring to FIGS. **5**, **7** and **8**, the ends of connecting members **30***a*, **30***b* are formed such that connecting member **30***b* defines a male projection **36** which is adapted to fit between corresponding projections **38** formed at the end of connecting member **30***a*. Projection **36** and projections **38** include circular bores, which extend in the plane of the connecting members, and which define, when projection **36** is inserted between projections **38**, a passageway **40** extending through the connecting members. The connecting means **34** includes a substantially U-shaped pin member **42** having a straight leg **44***a*, which is adapted to be inserted through passageway **40** to couple connecting member **30***a* to connecting member **30***b*, and a bent leg **44***b*. Bent leg **44***b* bends towards straight leg **44***a* thereby adequately securing leg **44***a* within passageway **40**. However, both the legs of the pin member **42** are flexible to faciliate the insertion of the pin into and out of passageway **40**.

Table top **22** is supported by foldable legs **46** which are hingedly supported at the ends of outermost slats **20** (see FIG. **3**). Specifically, each of the legs, which are of the same overall construction, are connected to the outermost slats of the table top by a hinge **48** disposed at the junction of the leg and the slat (see FIG. **6**). Pivotal hinge arms **50***a*, **50***b*, which extend between the slats and the legs, are also provided to maintain the legs **46** in a perpendicular position, relative to slats **20**, thereby supporting the table top when the folding table is open. Referring to FIG. **6**, hinge arm **50***a* is pivotally connected to slat **20** at pivot **52**, while hinge arm **50***b* is pivotally connected to leg **46** at pivot **54** and the hinge arms **50***a*, **50***b* are connected to each other at pivot **56**. A pivot stop **58**, carried by one of the arms, cooperates with the other arm, as is generally understood in the art, to keep the hinge arms in alignment to support the legs **46** when folding table **10** is open. Upward pressure or force at pivot **56** causes hinge arm **50***a* to rotate about pivot **52** with the hinge arm moving in a clockwise direction twards slat **20**; similarly, hinge arm **50***b* is caused to rotate about pivot **54** in a counterclockwise direction towards leg **46**. Accordingly, as is generally understood, leg **46** rotates about hinge **48** towards slat **20**. This enables leg **46** to be folded beneath slat **20**, with the pivotal hinge arms **50***a*, **50***b* closing onto each other and fitting into a notch **60**, formed in legs **46**. As was the case with the connecting members **30***a*, **30***b* of diagonal cross-support **28**, the width of legs **46** should be no wider than the width of one of the slats **20** so that the entire folding table may be closed or folded to a width substantially equal to the width of one of the slats.

FIG. **9** illustrates a folding table **10** according to a second embodiment of the present invention. According to this embodiment, folding table **10** is formed with an even-number of slats, i.e., **20***a*, **20***b*, **20***c* and **20***d*. Legs **46***a*, **46***b*, with each leg being approximately one-half the length of one of the slats are also provided. This configuration is especially advantageous for providing a folding table which is very compact when folded since a table having an even-number of slats enables all slats to be collapsed one on top of the other, when the table is folded, with the connecting members **30***a*, **30***b* being on the outside surfaces of the collapsed slats followed by the foldable legs **46***a*, **46***b* which collapse on top of the connecting members. (If an odd-number of slats is used, the connecting member and two of the foldable legs must necessarily lie between the slats, rather than at the outside of the slats. This results in a less compact table). Connecting means, such as a clap or hook and eye **62**, is provided in order to secure the foldable legs **46***a* and **46***b* to each other at the "outside" of the collapsed slats. This helps maintain the folding table in its folded or collapsed position; while the fact that the legs are no greater than half the length of the slats prevents overlap of the legs further providing a compact table when the table is closed or folded.

Obviously, numerous embodiments according to the present invention are possible in light of the above teachings. For example, it has been found advantageous to fabricate the folding table with legs and slats formed of plastic material, such as lucite or the like, since this provides a table which is economical to fabricate, relatively strong or rigid in construction and lightweight to carry. Of course, other materials may be utilized. Similarly, it may be possible to connect the connecting members **30***a*, **30***b*, by other than the pin-type connecting means disclosed.

It is apparent, therefore, that other embodiments according to the teachings of the present invention may be contemplated within the scope of the present invention as set forth by the following claims.

What is claimed is:

1. A folding table comprising an even-number of parallel slats adapted to collapse onto each other when the table is folded, said slats connected together by two transverse pieces of flexible material secured to the slats at the ends thereof by stitching, at least one diagonal cross-support for supporting the slats in a common plane to form a table top when the table is open, said diagonal cross-support including two connecting members of widths no greater than the width of one of the slats independently pivotally extending from two diagonal corners of the table top, means for coupling the connecting members together at substantially the center of the table top, foldable legs hingedly connected to the slats at the four corners of the table top, each of said legs of a width no greater than the width of one of the slats and of a length substantially equal to one-half the length of one of the slats, latch means for connecting the ends of the legs together when the table is folded, and hinge means connected between said slats and said legs for maintaining said legs substantially perpendicular to said slats when the table is open.

2. A folding table according to claim 1 wherein said connecting means includes a passageway extending through said connecting members at the ends thereof and a pin member insertable through said passageway to maintain the connecting members together at substantially the center of the table top.

3. A folding table comprising a series of parallel slats adapted to collapse onto each other when the table is folded, at least two transverse pieces of flexible material secured to the slats by stitching for connecting the slats together near the ends thereof, a diagonal cross-support for supporting the slats in a substantially common plane to form a table top when the table is unfolded, said cross-support including two connecting members each of a width no greater than the width of one of the slats, said connecting members having first ends independently pivotally connecting to respective diagonal corners of the table top, said connecting members adapted to pivot to a position beneath the end slats of the table top when the table is folded, means for coupling the connecting members together at their other ends at substantially the center of the table top when the table is open, foldable legs hingedly connected to the end slats, each of said legs substantially equal in length to one-half the length of one of the slats and of a width no greater than than the width of the slats, said legs being constructed and arranged to fold beneath the connecting members when the table is folded, and locking means attached to the legs for maintaining the legs in position when the table is folded.

* * * * *