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(19) **United States**(12) **Patent Application Publication**  
**Degen et al.**(10) **Pub. No.: US 2004/0194677 A1**(43) **Pub. Date: Oct. 7, 2004**(54) **TABLE WITH CENTER HANDLE**(52) **U.S. Cl. .... 108/132**(76) **Inventors: Jin Degen, Xiamen City (CN); Jin Shenghao, Xiamen City (CN); Arvin Patel, Sunnyvale, CA (US)**(57) **ABSTRACT**

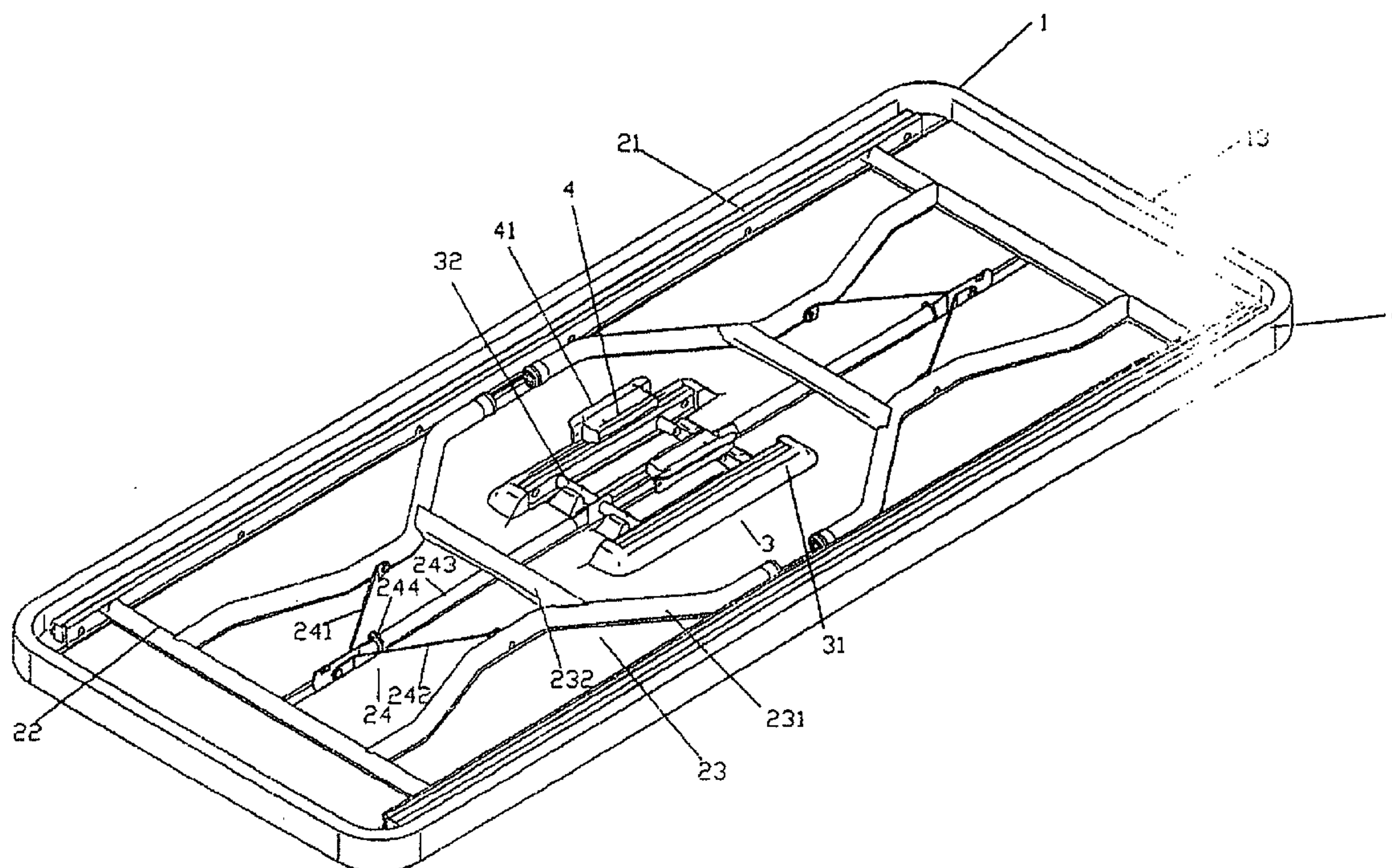
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SALT LAKE CITY, UT 84111 (US)**(21) **Appl. No.: 10/728,284**(22) **Filed: Dec. 4, 2003**(30) **Foreign Application Priority Data**

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A table includes a table top with a top surface and a bottom surface. A first leg assembly and a second leg assembly are preferably pivotally connected to the table top. The table top is preferably constructed from plastic, such as blow molded plastic, and a connecting assembly may be formed in or attached to the bottom surface of the table top. The connecting assembly is preferably sized and configured to retain a pair of connecting bars. A first support assembly may be connected between one of the connecting bars and the first leg assembly, and a second support assembly may be connected between one of the connecting bars and the second leg assembly. Desirably a pair of handles is attached to the connecting assembly and a spaced is formed between the handles and bottom surface of the table top allow a person to grip the handle and lift the table.



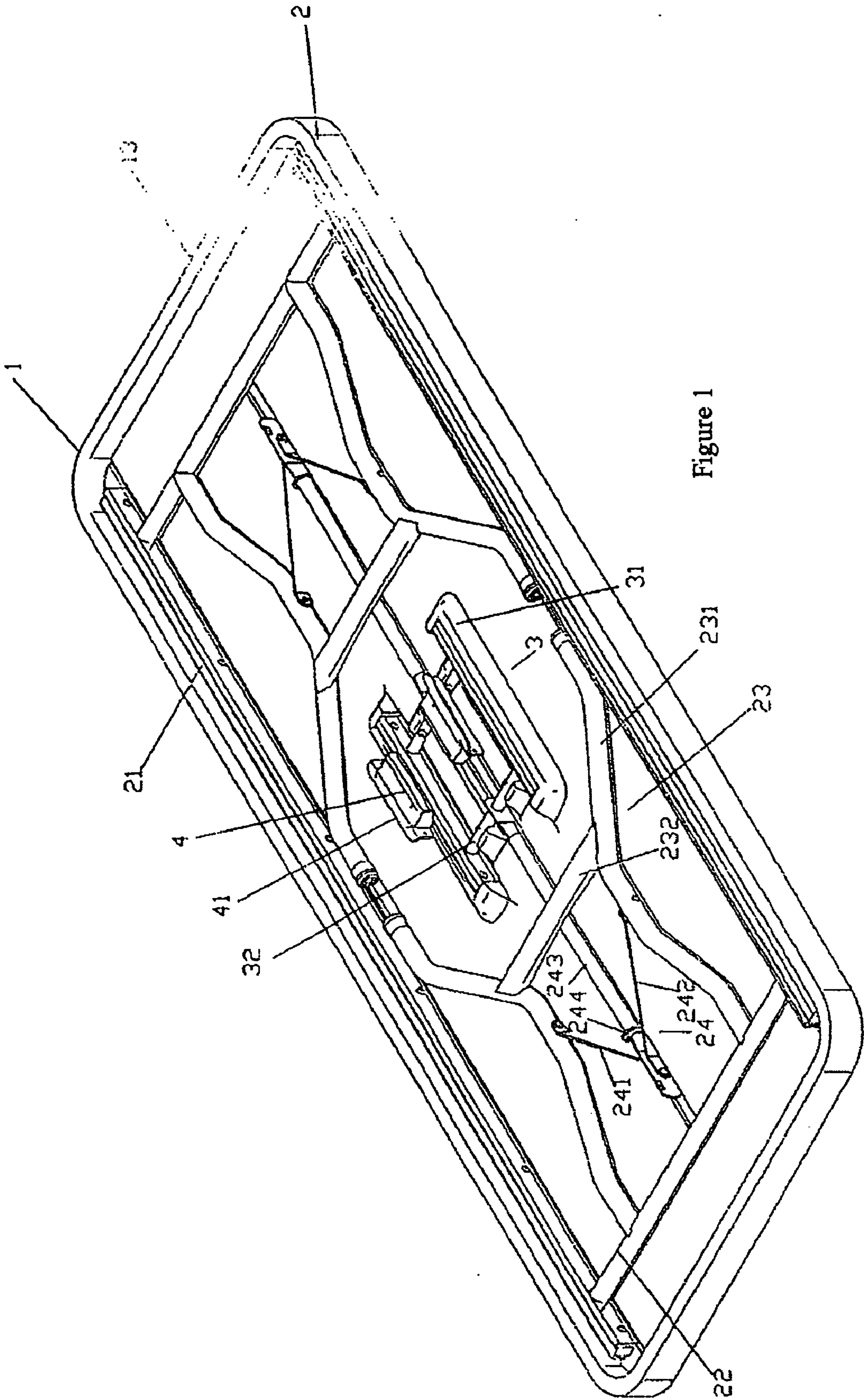
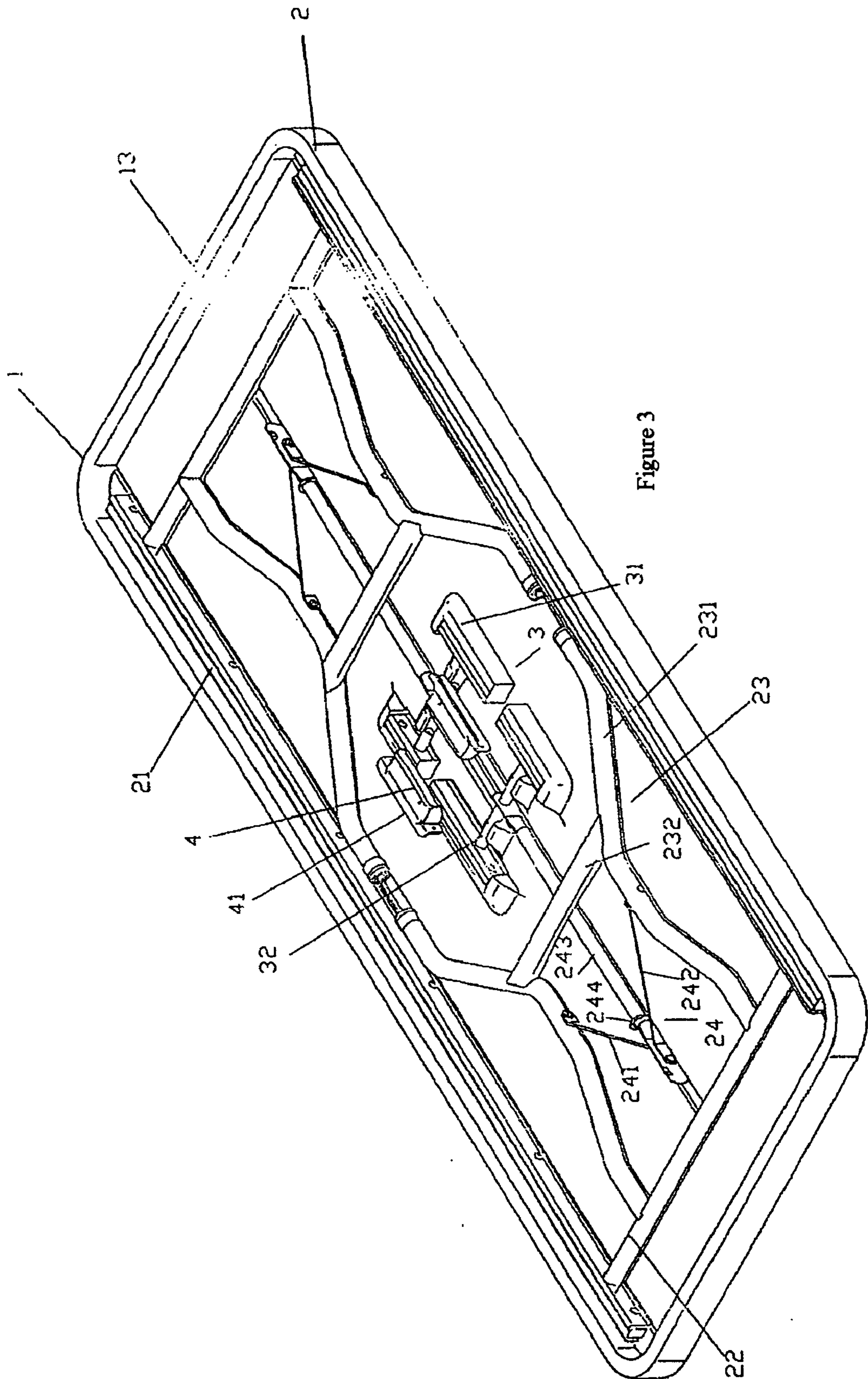


Figure 1









**TABLE WITH CENTER HANDLE****CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims priority to and benefit of Chinese Patent Application Serial No. 2293818.4, entitled BM Table with Improved Center Handle, filed Dec. 27, 2002, which is incorporated by reference in its entirety. This application is also related to co-pending U.S. patent application Ser. No. 10/669,740, entitled Blow-Molded Table with "H" Center Support Assembly, filed Sep. 24, 2003, and co-pending U.S. patent application Ser. No. \_\_\_\_\_, entitled Blow-Molded Table with Center Handle, filed Oct. 24, 2003 (attorney docket No. 15865.8a.1), each of which are incorporated by reference in their entireties.

**BACKGROUND OF THE INVENTION**

[0002] 1. Field of the Invention

[0003] The present invention generally relates to furniture and, in particular, to a table with a center handle.

[0004] 2. Description of Related Art

[0005] Tables are widely used almost every day at home and in the office. Conventional tables are commonly available in a number of sizes and configurations. For example, conventional tables are often four, six or eight feet in length and often have a width of two or three feet. Conventional tables, however, can be difficult to move and store because of their large size and outwardly extending legs.

[0006] Tables with folding legs have been developed in order to allow the tables to be more easily transported and stored. In particular, the folding legs are generally movable between an extended or use position in which the legs support the table top above a support surface, and a collapsed or storage position in which the legs are positioned next to or adjacent the bottom surface of the table top. When the legs are in the collapsed or storage position, the tables are much easier to move and transport because the tables are much less bulky and cumbersome.

[0007] When a conventional table with folding legs is transported, a person generally grips the edge or outer perimeter of the table top. Disadvantageously, gripping the edge or perimeter of the table top is often very difficult because it may be difficult to grasp and/or uncomfortable to hold for more than a few seconds. In addition, because the edge or perimeter is difficult to hold, the person may inadvertently drop the table and that may injure the person and/or damage the table. Further, because of the size of the table and the portion of the table that is being held, the person transporting the table must generally hold the table in an awkward, uncomfortable position and they must frequently change their grip on the table. Finally, when moving the table, the lower edge of the table has a tendency to collide frequently with the person's feet or legs.

**BRIEF SUMMARY OF THE INVENTION**

[0008] A need therefore exists for a table that eliminates the above-described disadvantages and problems.

[0009] One aspect of the invention is a table with a lifting and transporting mechanism that enables a person to more easily carry and transport the table.

[0010] Another aspect is a table with a table top including a top surface and a bottom surface. A first leg assembly is preferably attached to the table top and a second leg assembly is also preferably attached to the table top. The table may also include a first connecting member that is attached to the bottom surface of the table top, and the first connecting member may have an outer side and an inner side. A handle is desirably attached to the inner side of the first connecting member and a space is preferably formed between the handle and the bottom surface of the table top so that a person can easily grip the handle in order to move or lift the table.

[0011] A further aspect is table may include a handle that is sized and configured to help transport or move the table. The handle may include a connecting portion and at least a portion of the connecting portion may be attached to the inner side of the first connecting member. The connecting portion may also include an angled L-iron and at least a portion of the angled L-iron may be connected to the inner side of the first connecting member. Thus, for example, the handle may be formed discretely from the first connecting member. On the other hand, for example, the connecting portion may be formed discretely from the handle portion.

[0012] The table may also include a second connecting member that generally faces the first connecting member. The table may further include a first connecting bar that is disposed between the first connecting member and the second connecting member. In addition, the table may include a first support assembly with a first end and a second end, and the first end is preferably connected to the first leg assembly and the second end is preferably connected to the first connecting bar. Further, a second connecting bar may be disposed between the first connecting member and the second connecting member to form a generally II-shaped connecting assembly. The second support assembly preferably has a first end and a second end, and the first end may be connected to the second leg assembly and the second end may be connected to the second connecting bar.

[0013] Another aspect is a table with a connecting assembly that has a generally II-shape. That is, in addition to the first and second facing connecting members, the table may include a third connecting member that is generally placed in the same plane as the first connecting member on the bottom surface of the table top, and a fourth connecting member that is placed in generally the same plane as the second connecting member on the bottom surface of the table top. Preferably the third connecting member faces the fourth connecting member, and a second connecting bar may be disposed between the third connecting member and the fourth connecting member.

[0014] Yet another aspect is a table with a table top that is constructed from blow-molded plastic. The table top, however, could be also be constructed from extrusion molded plastic, injection molded plastic, and the like. Preferably, at least a portion of the support is integrally formed in the table top as part of a one-piece structure. For example, the first connecting member may be integrally in the bottom surface of the table top as part of a one-piece structure. In addition, the first leg assembly and the second leg assembly may be pivotably connected to the table top.

[0015] Advantageously, when the table is in the folded position, one or more handles are located near the center of



the table top. In addition, space is preferably provided for a person's fingers between the handle and the table top. Therefore, a person can easily lift the folding table and move it to a desired location. In addition, because the table is easily lifted from the ground, the person's feet are unlikely to collide with the table when it is being moved.

[0016] These and other objects and features of the present invention will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth hereinafter.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0017] To further clarify the above and other advantages and features of the present invention, a more particular description of the invention will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. It is appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

[0018] **FIG. 1** is a perspective view of an exemplary embodiment of the table with a center handle, illustrating the table with the legs in a collapsed or storage position.

[0019] **FIG. 2** is a perspective view of another exemplary embodiment of the table with a center handle, illustrating the table with the legs in the collapsed or storage position.

[0020] **FIG. 3** is a perspective view of yet another exemplary embodiment of the table with a center handle, illustrating the table with the legs in the collapsed or storage position.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] **FIGS. 1 and 2** illustrate an exemplary embodiment of a table incorporating features of the present invention. The table includes a table top **1** including a top surface and a bottom surface. Preferably the table top **1** is formed of blow-molded plastic. The bottom surface of the table top **1** includes a lip **2** formed on the outer periphery of the bottom surface and extending outwardly therefrom. The lip **2** forms a perimeter **13**.

[0022] A frame is attached to the lip **2**. The frame is composed of two side rails **21**, two end rails **22**, two sets of leg assemblies **23**, and two support assemblies **24**. The two side rails **21** are spaced apart and attached to lip **2** on opposing sides of the table top **1**. The two end rails **22** are spaced apart and each is pivotally attached to the same end of two side rails **21**. Each leg assembly **23** includes two leg tubes **231** connected by a cross bar **232**. One end of each set of leg assemblies **23** is secured to the two end rails **22**.

[0023] Each support assembly **24** includes three rod elements **241**, **242**, and **243**. Two rod elements, the first **241** and the second **242**, are separately and pivotally connected at one end a lower part of a leg tube **231**. At the other end, each is pivotally connected together to one end of the third rod element **243**. The pivotal connection of these three rod elements is selectively encircled by a locking ring **244** to keep the leg assemblies **23** from folding and thereby to

strengthen the support provided by the leg assemblies **23**. The other end of the rod element **243** is pivotally connected to the bottom surface of the table top by a connecting rod **32**. The connecting rod **32** is configured to have the opposing ends thereof connect to a connecting assembly **3**.

[0024] The connecting assembly **3** is formed on a central portion of the bottom surface of the table top **1**. The connecting assembly **3** includes a first pair of connecting members **31** spaced apart and fixed to the bottom surface of the table top **1**. The connecting members **31** are parallel to the side rails **21**. A first connecting rod **32** is disposed transversely or perpendicularly to the two connecting members **31**. In one embodiment, as shown in **FIG. 1**, a pair of connecting rods **32** are connected to the connecting members **31**, thus forming a **II** structure. Additional retention members may be formed on the bottom surface of the table top between the connecting member **31** to engage the connecting rods **32** to provide reinforcement thereto.

[0025] A handle **4** is configured to attach to each connecting member **31** of connecting assembly **3**, thus providing the user a means by which to transport the table when folded. The handles **4** include a handle portion and a connecting portion. In one embodiment, the connecting portion is an angled L-iron **41**. The handles **4** are attached to the inner sides of the connecting members **31** by means of the L-irons **41**. Preferably, a space remains between the handle portion and the bottom surface of the table top **1** so that a user may grip the handle **4**. The handle portion of the handle **4** may be formed of a hard, durable material such as, but not limited to, metal, plastic or ceramic material.

[0026] As shown in **FIG. 3**, each of the connecting members **31** may be separated into right and left portions. The right portions of opposing beams **31** are configured to engage a connecting rod **32**, while the left portions are configured to engage the other connecting rod **32**. The right portion or left portion may be slightly longer than the other so that the handles **4** can be attached thereto. Alternatively, the right portion and left portion may be symmetrical so that a first end of the handle **4** is connected to a right portion and the second end of the handle is connected to a left portion.

[0027] When the user desires to store the table, the user turns the table upside down so that the leg assemblies **23** are extended upward. The user folds the leg assemblies **23** against the bottom surface of the table top **1**. The handles **4** provide space for the user to grip the table. Because the handle **4** is preferably centrally located, the table is balanced on both sides of the handle **4** so that the user can easily wield the folded table. In addition, because the user can easily lift the table, space is provided between the bottom edge of the table and the ground for the person to move their feet, thus preventing the user from colliding with the table when walking.

[0028] The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.



What is claimed is:

1. A table comprising:
  - a table top having a top surface and a bottom surface;
  - a first leg assembly attached to the table top;
  - a second leg assembly attached to the table top;
  - a first connecting member attached to the bottom surface of the table top, the first connecting member having an outer side and an inner side; and
  - a handle attached to the inner side of the first connecting member, wherein a space is formed between the handle and the bottom surface of the table top so that a person can place their fingers in the space in order to lift the table.
2. The table as recited in claim 1, wherein the handle comprises:
  - a connecting portion having at least a portion of the connecting portion attached to the inner side of the first connecting member; and
  - a handle portion.
3. The table as recited in claim 2, wherein the connecting portion comprises an angled L-iron, wherein at least a portion of the angled L-iron is connected to the inner side of the first connecting member.
4. The table as recited in claim 1, wherein the handle is formed discretely from the first connecting member.
5. The table as recited in claim 2, wherein the connecting portion is formed discretely from the handle portion.
6. The table as recited in claim 1, further comprising a second connecting member facing the first connecting member.
7. The table as recited in claim 6, further comprising a first connecting bar disposed between the first connecting member and the second connecting member.

8. The table as recited in claim 7, further comprising a first support assembly having a first end and a second end, the first end being connected to the first leg assembly and the second end being connected to the first connecting bar.

9. The table as recited in claim 6, further comprising a second connecting bar disposed between the first connecting member and the second connecting member.

10. The table as recited in claim 9, further comprising a second support assembly having a first end and a second end, the first end being connected to the second leg assembly and the second end being connected to the second connecting bar.

11. The table as recited in claim 6, further comprising:

a third connecting member placed in the same plane as the first connecting member on the bottom surface of the table top;

a fourth connecting member placed in the same plane as the second connecting member on the bottom surface of the table top, the third connecting member facing the fourth connecting member; and

a second connecting bar disposed between the third connecting member and the fourth connecting member.

12. The table as recited in claim 1, wherein the table top comprises blow-molded plastic.

13. The table as recited in claim 12, wherein the first connecting member is formed integrally with the bottom surface of the table top.

14. The table as recited in claim 1, wherein the first leg assembly and the second leg assembly are pivotably connected to the table top.

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