United States Patent [19]

Mark

[11] **3,760,456**

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[54] **FOLDING GAME BOARD HINGE ASSEMBLY**

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[52] **U.S. Cl.** **16/137,** 16/138, 16/143, 273/30

[51] **Int. Cl.** **E05d 11/10,** A63b 61/02

[58] **Field of Search** 16/137, 138, 139, 16/143, 144; 273/30; 5/57

[56] **References Cited**

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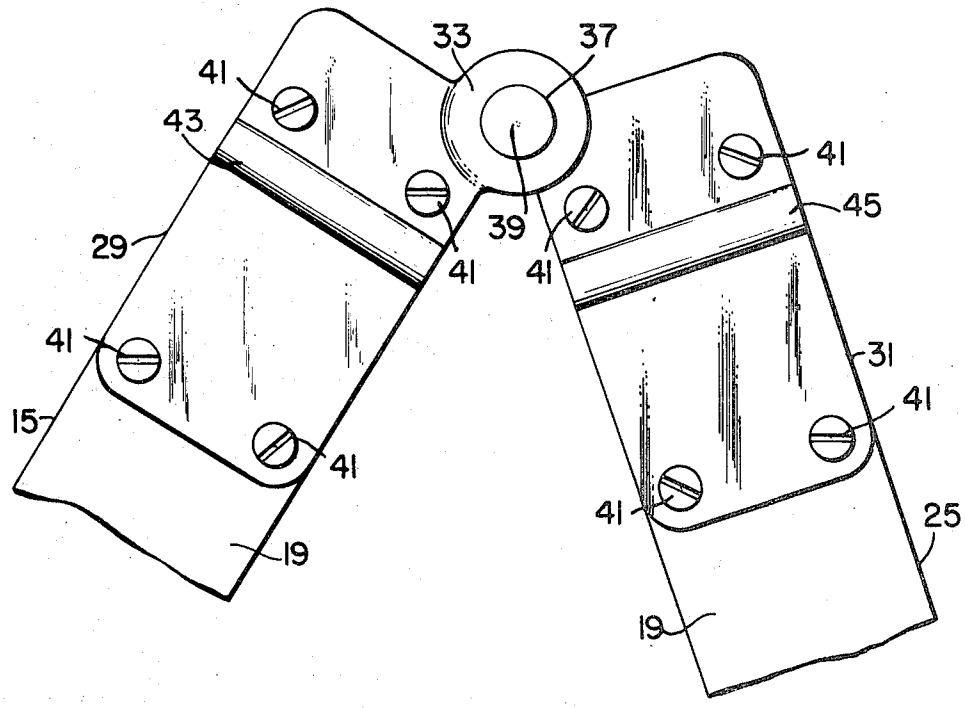
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[57] **ABSTRACT**

An assembly located at opposite sides of a folding game board or table for allowing the table to be folded along an axis and for supporting a net stretched therebetween, each of the assemblies including table edge mounted hinge plates, each plate having a socket portion adapted to receive different ones of a pair of spaced downwardly extending arms of a net support and hinge locking member, the member including an upstanding net supporting rod portion, the hinge plates being locked in an open or playing position when the arms of the net support and hinge locking member are positioned in the hinge plate sockets.

10 Claims, 5 Drawing Figures



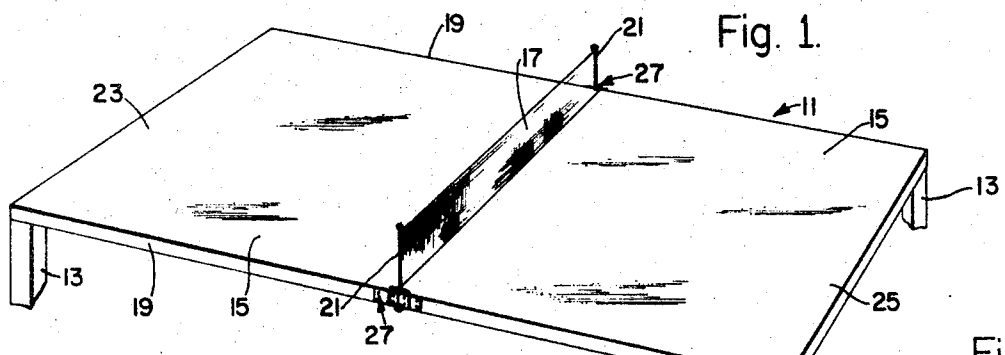


Fig. 1.

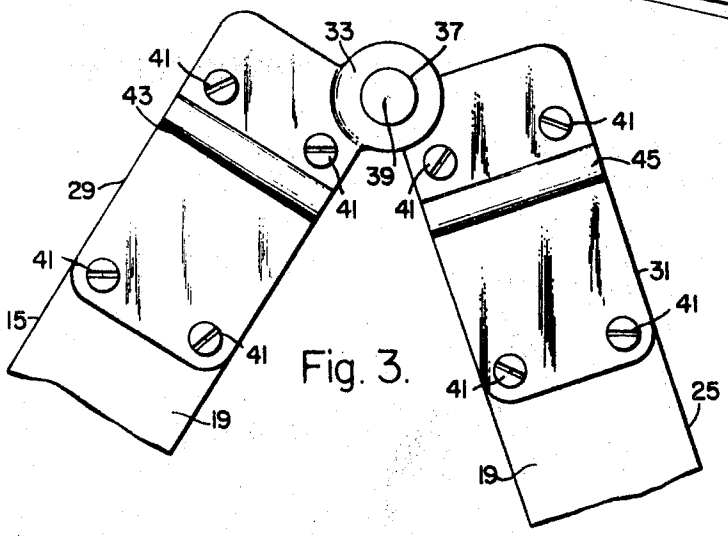


Fig. 3.

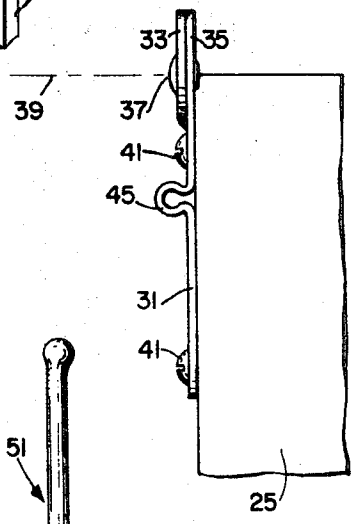


Fig. 4.

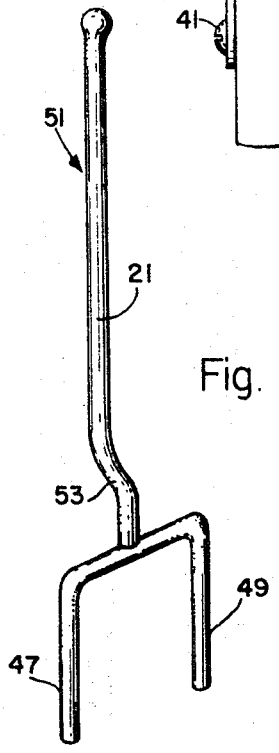


Fig. 5.

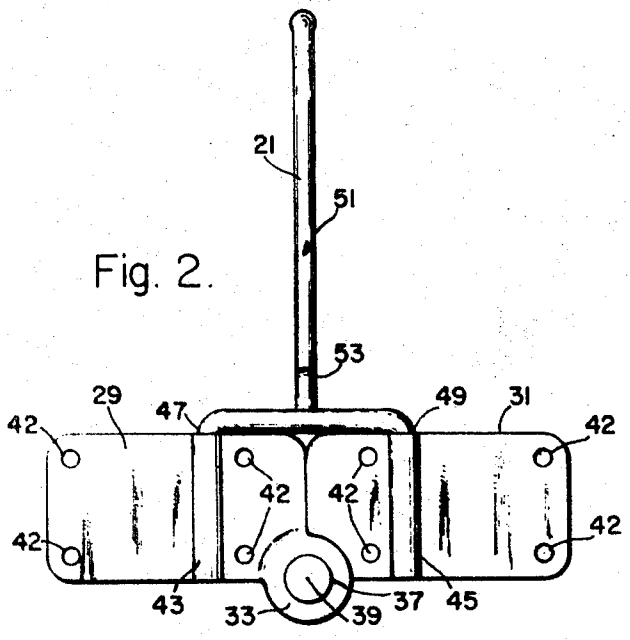


Fig. 2.

FOLDING GAME BOARD HINGE ASSEMBLY

BACKGROUND OF THE INVENTION

The background of the invention will be set forth in two parts.

FIELD OF THE INVENTION

The present invention pertains generally to the field of game boards and more particularly to the folding game boards over which is stretched a net.

DESCRIPTION OF THE PRIOR ART

Because of the space consuming bulk of conventional game boards such as used for playing the game of table tennis, for example, it has been found desirable to provide a means for folding such game boards, usually along a center line dividing the playing surface into two equal areas. In many of these game boards, a net is supported between two vertical posts and along the aforementioned center line.

Most such folding game boards or tables include either an elongated piano hinge mounted along the under surface of the abutting ends of the two game board sections, or similarly functioning but separate conventional flat hinges having their hinge pins parallel to the dividing line.

Another style of hinge has also been used for this purpose. In this configuration, one such hinge is mounted at each side of the table at the opposite ends of its center line and although the axis of the hinge pins are parallel to the center line, the hinge comprises a pair of planar plates that lie and move in a common plane perpendicular to the hinge pin axes.

In none of these conventional folding arrangments is a provision for locking the pivoting hinge portions to prevent the possibility of an undesirable change in relationship between the two halves of the playing surface. Also, none of the prior art hinge arrangements provided a net supporting member that, in addition to its normal function, further combines with the hinge portions to lock the hinges in their open position.

SUMMARY OF THE INVENTION

In view of the foregoing factors and conditions characteristic of the prior art, it is a primary object of the present invention to provide a new and improved folding game board hinge assembly.

Another object of the present invention is to provide a simple and economical to fabricate folding game board hinge assembly that allows the game board to be folded and also locked in an unfolded position.

Still another object of the present invention is to provide a folding game board hinge assembly adapted for use with a folding table tennis table and includes means for simultaneously locking the hinged table in an open position and supporting a net stretched across the table.

These and other objectives are provided according to the present invention in a hinge-net support arrangement for use with a folding game board having two table sections comprising:

first and second hinge members fixedly attachable to abutting table section side edges, each of the hinge members including an inner planar surface and pivoted overlapping portions, at least one of the overlapping portions being offset whereby the planar surfaces move in a common plane with pivoting of the hinge members,

each of the hinge members also including a socket portion. The invention also includes a removable net support and hinge locking member having an upstanding net support portion and a lower plug portion, the plug portion registering with and insertable in both of the socket portions of the hinge members to rigidly position the net support portion while preventing relative movement of the hinge members when the members are in their open position.

The features of the present invention which are believed to be novel are set forth with particularly in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by referring to the following description, taken in conjunction with the accompanying drawing in which like reference characters refer to like elements in the several views.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of the upper portion of a table tennis table incorporating a hinge-net support arrangement constructed in accordance with the present invention;

FIG. 2 is an elevational view of a hinge-net support arrangement of the type illustrated in FIG. 1;

FIG. 3 is an enlarged view of the hinge portion of the hinge-net support arrangement seen in FIG. 1, the table being shown in a partially folded configuration;

FIG. 4 is a view, taken perpendicularly to the playing surface, of the hinge portion of FIG. 3 when the table is in its fully folded configuration; and

FIG. 5 is a perspective view of the net support portion of the hinge-net support arrangement of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawing and more particularly to FIG. 1, there is shown a folding game board or table 11 having legs 13 and a playing surface 15 divided into two equal areas by a net 17 stretched orthogonally to the table sides 19 and supported over and perpendicular to the surface 15 by net supports 21. The table 11 is provided in two equal sections 23 and 25 that abut along a line directly under the bottom of the net 17. The table sections are pivotally joined together by a hinge arrangement 27 attached by any conventional means to the opposite table sides 19 straddling the abutting ends such that the playing surface 15 is essentially continuous smooth and flat surface when the sections 23 and 25 are in their unfolded or open position.

FIGS. 2, 3, and 4 illustrate that the hinge arrangements 27 include first and second planar hinge portions 29 and 31 that overlap at generally circular corner sections 33 and 35, respectively. As best seen in FIG. 4, the corner section 33 is formed with an offset approximately the thickness of the section 35 so that in overlapping, their respective larger planar portions are coplanar. Also, each of these corner sections is punched, drilled, or otherwise provided with a registering hole (not shown) through which a rivet or other conventional type pivot pin 37 is mounted. Thus, the portions 29 and 31 of each of the hinge arrangements 27 pivot about the pins 37 which pins, for proper table alignment, are located on an axis of rotation 39 that lies along the lower abutting edges of the table sections 23 and 25.

The table **11** is preferably of wood construction, but a metal or synthetic material may be used in fabricating same. The hinge arrangements **27** are preferably metal, such as steel, for example, but may be fabricated from a strong plastic material. Any conventional metal or plastic forming or casting processes may be utilized in providing the components of the net support and hinge arrangements, the latter being fixedly attached to the sides **19** by any conventional means such as screws **41**, for example, that extend through appropriate apertures **42** in the portions **29** and **31** (see FIG. **2**).

As best seen in FIGS. **2–4**, the hinge portions **29** and **31** further include sockets **43** and **45** which are adapted to receive respective yoke arm portions **47** and **49** of the net supports **21**. It will be noted from the enlarged view of FIG. **5**, that the arm portions **47** and **49** are parallel and spaced from each other in order to register in associated ones of the sockets **43** and **45**, only when the table sections are in their open or playing position (see FIGS. **1** and **3**). FIG. **5** also illustrates that the vertical net supporting portion **51** of the net supports **21** may be offset by a bend portion **53** adjacent its lower extremity, and the top of the portion **51** may be spherical in order to better accommodate the net end ties (not shown).

In accordance with the invention, the table may be unfolded to its playing configuration (FIG. **1**) from its completely folded configuration (FIG. **4**) by pivoting the two table sections **23** and **25** until the adjacent ends of these sections meet adjacent the axis **39**. At this point, the arm portions **47** and **49** of the net supports **21** are inserted into the sockets **43** and **45** to lock the hinge assemblies and table sections in their open or playing configuration. The net supports also provide the vertical net support portions **51** to which the ends of the net **17** may be attached in a conventional manner.

From the foregoing, it should be evident that the invention provides a new and improved folding game board hinge assembly that effectively allows a game board to be folded and further includes means for locking the folding game board or table in its playing configuration while simultaneously providing vertical posts for supporting a net stretched across the table's playing surface.

It is to be further noted that the materials used in constructing the invention are not critical and any material generally considered to be suitable for a particular purpose may be substituted for the materials specifically identified.

Although only the presently preferred embodiment of the invention has been herein set forth in detail, it should be understood that the invention is susceptible to modifications and further embodiments incorporating the basic inventive features herein described. Accordingly, it is intended that the description and drawing herein set forth should be considered as illustrations of the principles of this invention.

What is claimed is:

1. A hinge-net support arrangement for use with a folding game board having two table sections, comprising:

first and second hinge members fixedly attachable to abutting table section side edges, each of said hinge members including an inner planar surface and pivoted overlapPing portions, at least one of said overlapping portions being offset whereby said planar surfaces move ina common plane with pivoting of said hinge members, each of said hinge members also including a socket portion; and

a removable net support and hinge locking member having an upstanding net support portion and a lower plug portion, said plug portion registering with and insertable in both of said socket portions of said hinge members to rigidly position said net support portion while preventing relative movement of said hinge members, when said members are in their open position.

2. The arrangement according to claim **1**, wherein said plug portion includes a pair of spaced downwardly extending arms, and wherein said socket portions of said hinge members include apertures adapted to receive said arms.

3. The arrangement according to claim **2**, wherein said socket portions are disposed on said outer surface of said hinge members and spaced from said overlapping portions.

4. The arrangement according to claim **3**, also comprising a pivot pin rotatably joining said overlapping portions of said hinge members.

5. The arrangement according to claim **4**, wherein said socket portions are elongated cylinders having axes perpendicular to the axis of rotation of said pivot pin.

6. The arrangement according to claim **1**, wherein said overlapping portion and said socket portion of each of said hinge members is integrally formed therein.

7. The arrangement according to claim **6**, wherein each of said hinge members is formed from a piece of steel plate and include mounting holes therein.

8. The arrangement according to claim **1**, wherein said net support portion of said net support and hinge locking member includes an offset bent portion adjacent its lower extremity.

9. In a folding game table having first and second table sections wherein a net is stretched between side edge mounted net supports, a hinge-net support arrangement mounted at each side edge comprising:

first and second hinge members attached to respective side edges of first and second table sections adjacent their abutting ends, each of said hinge members including an inner planar surface adjacent said side edges and also including overlapping portions, at least one of said overlapping portions being offset whereby said planar surfaces move in a common plane with pivoting of said hinge members, each of said hinge members further including a socket portion; and

a removable net support and hinge locking member having an upstanding net support portion and a lower plug portion, said plug portion registering with and insertable in both of said socket portions of said hinge members to rigidly position said net support portion while preventing relative movement of said hinge members when said table sections are in their unfolded configuration.

10. The arrangement according to claim **9**, wherein said hinge members include mounting holes, and further comprising screws disposed through said mounting holes and into said table sections.

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