

[54] **THREE-DIMENSIONAL TABLE GAME DEVICE WITH RESILIENTLY DEFORMABLE SPACER MEMBERS**
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 [51] Int. Cl. **A63f 3/00**
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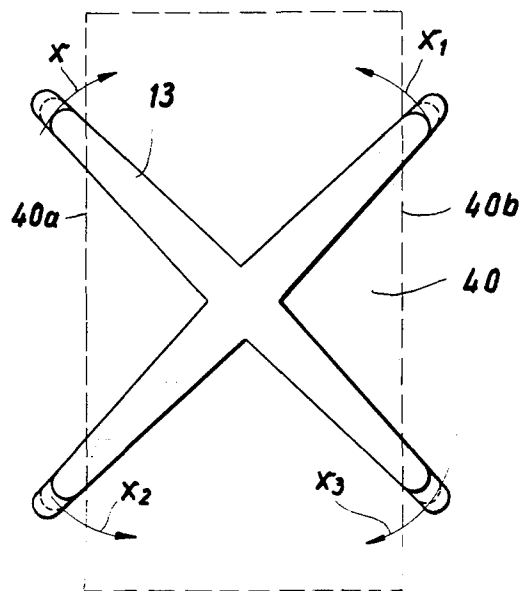
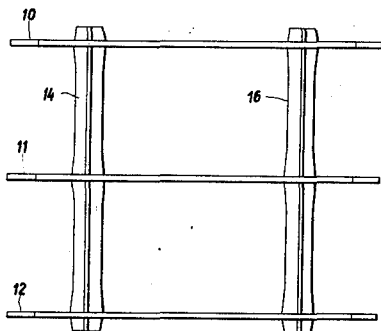
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Primary Examiner—Richard C. Pinkham
Assistant Examiner—R. T. Stouffer
Attorney, Agent, or Firm—Ernest F. Marmorek

[57] **ABSTRACT**

A three-dimensional game consisting of several substantially horizontally arranged game boards in an overlying mutually spaced relationship and two or several spacer members for supporting the boards in this position. The boards on the one hand and the spacer members on the other hand are of similar shapes and dimensions and adapted to be releasably interconnected by plug and clamping type connections. In the one type of connection the boards are provided with openings through which the spacer members are inserted and engaged with the boards. One variety of this type of connection includes spacer members which are resiliently deformable and provided with recesses in such a manner that the recesses may snap engage edges of the openings. In the other type of connection the spacer members comprise retaining members for holding the boards at their edges.

9 Claims, 17 Drawing Figures



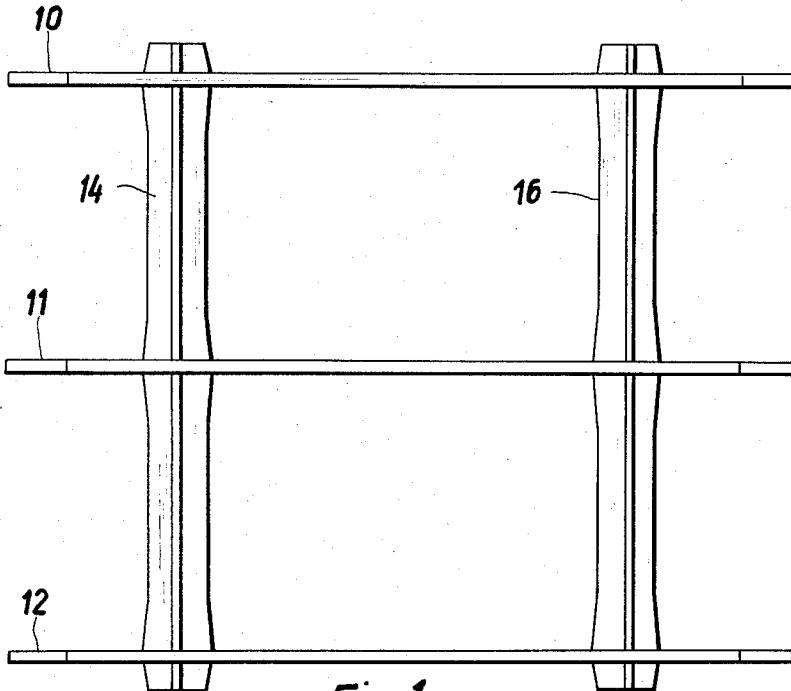


Fig. 1

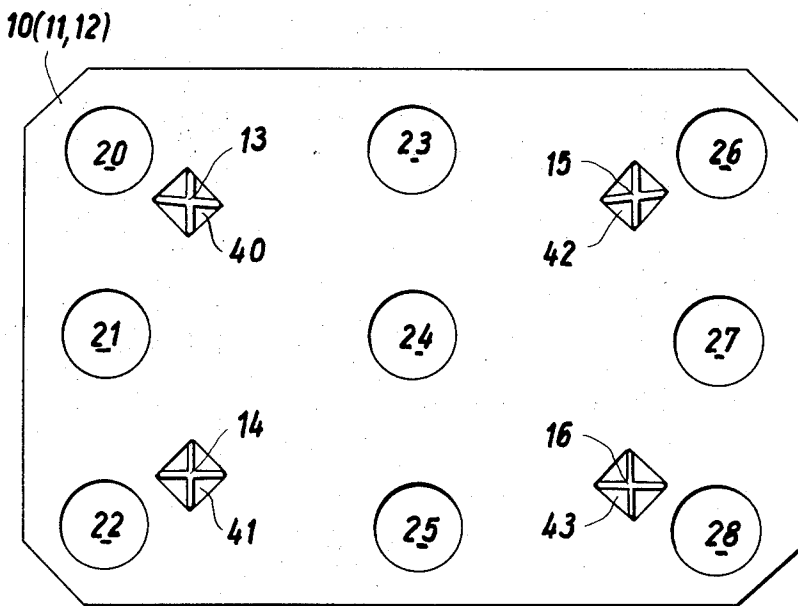


Fig. 2

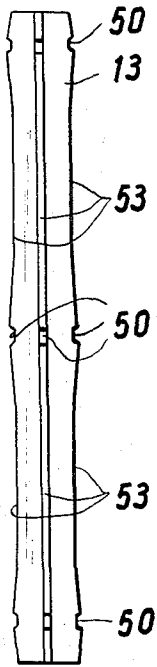


Fig. 3

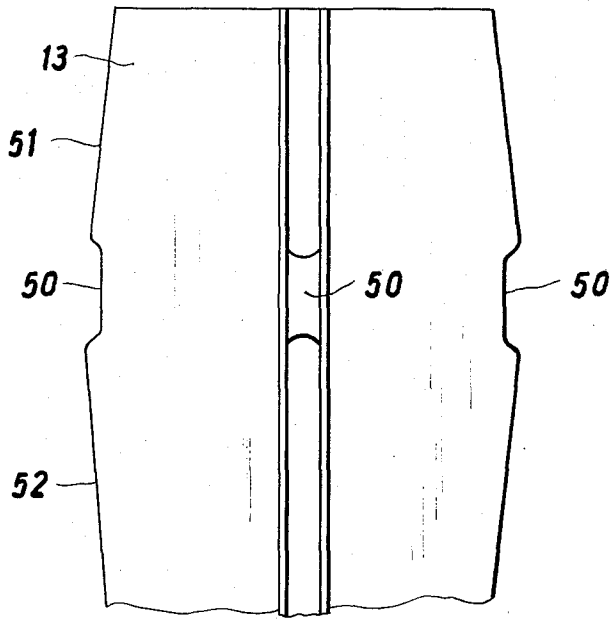


Fig. 3a

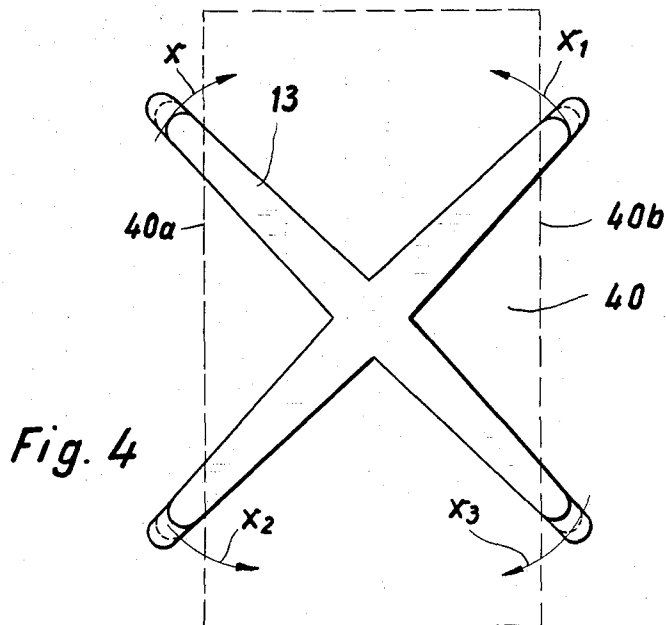


Fig. 4

Fig. 5

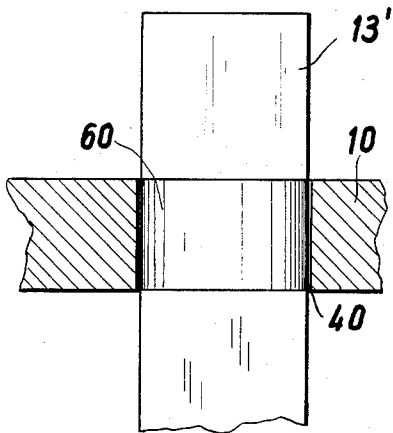


Fig. 7

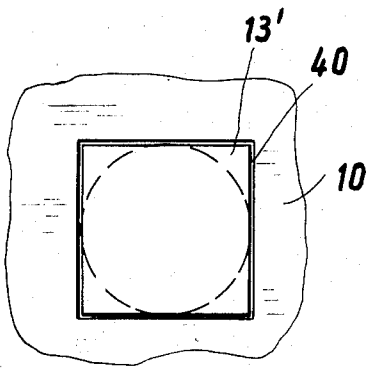
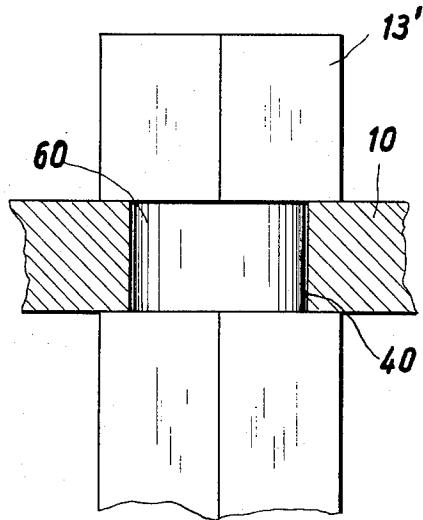


Fig. 6

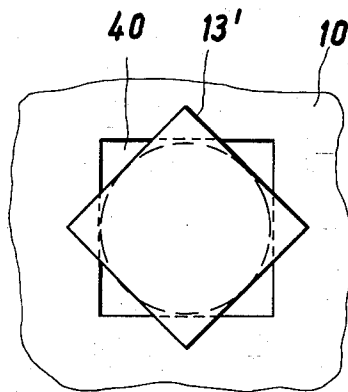


Fig. 8

Fig. 9

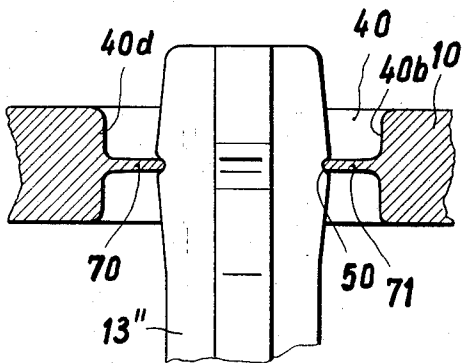


Fig. 11

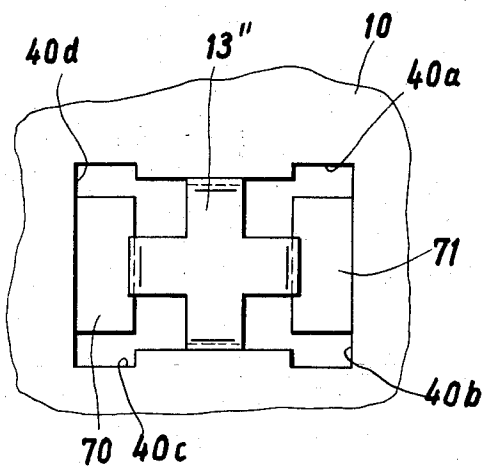
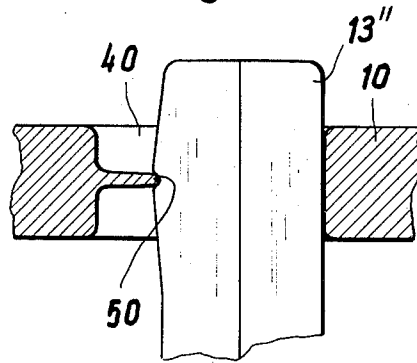


Fig. 10

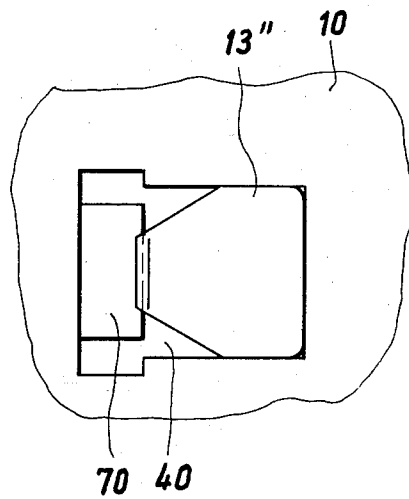
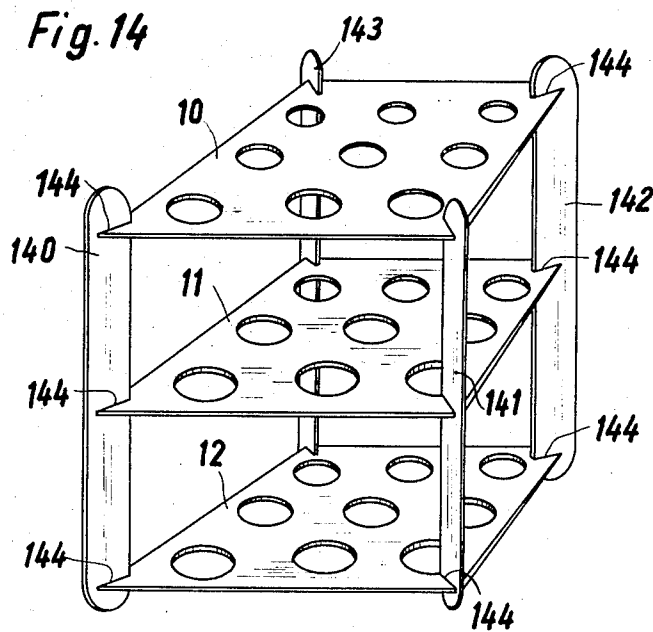
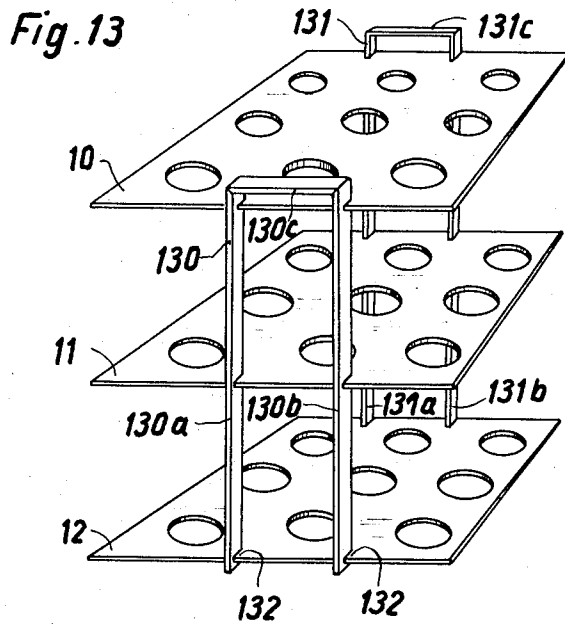


Fig. 12



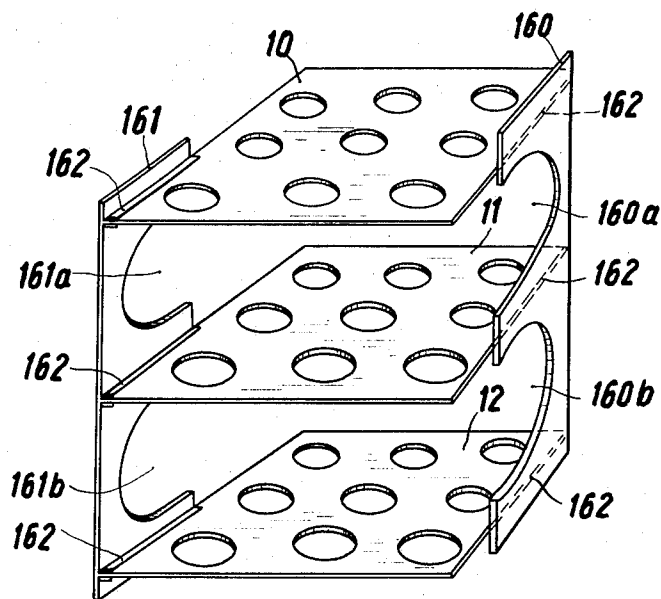
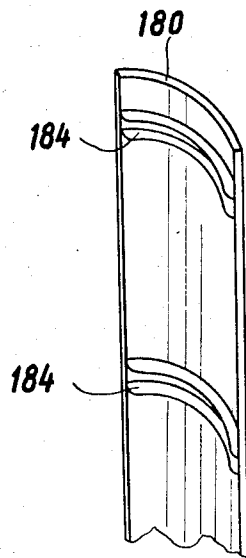
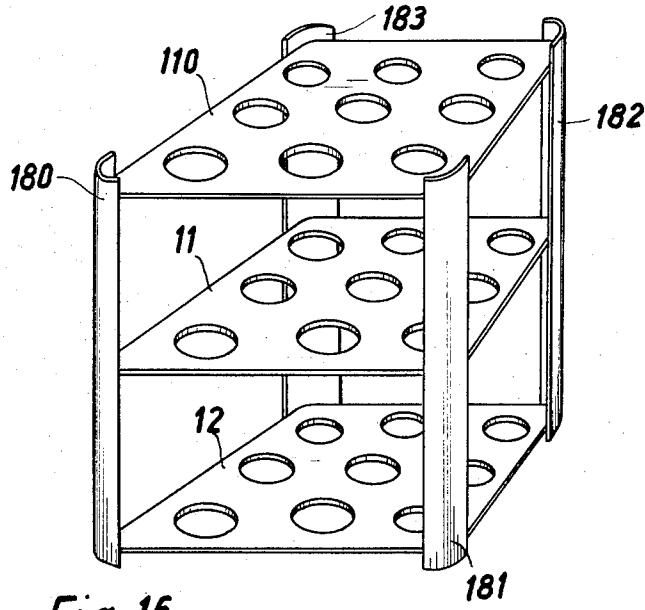


Fig. 15



THREE-DIMENSIONAL TABLE GAME DEVICE WITH RESILIENTLY DEFORMABLE SPACER MEMBERS

This invention relates to a novel and improved three-dimensional table game device which is similar to the German game "Muehle," a kind of morris, but in spatial form.

There is already known a three-dimensional game device in which three pieces may be placed not only along three points in a horizontal row but also along three points in a vertical or oblique row so that a so-called "straight row" may be formed by three pieces placed for example one on top of the other. The spatial configuration of this prior art game device is defined by a cubic support structure in which the stilts form the lines along which pieces may be placed. The pieces are provided with clamping connections for attaching the pieces to the intersecting or corner points of the stilts.

Another prior art three-dimensional table game device of this type comprises three mutually spaced game boards each provided with holding means for receiving pieces which may thus be placed on the game boards. The game boards are mutually spaced by means of spacer rods which are tightly screwed to the boards and in this known arrangement impede the placing or moving of pieces on the game boards.

The principle object of the invention is to provide a three-dimensional table game device of the above type which is of a simple design, comprises a minimum number of parts, is sufficiently stable, allows a ready access to the holding means for receiving the pieces, may be quickly and easily assembled and disassembled and wherein the disadvantages associated with screw connections such as the possible breakage of the game boards by too tight fastening of the screws or nuts, the necessity of using an appropriate tool for tightening the fasteners and the risk of screws or nuts getting lost are avoided. The game device shall be economically manufactured in using a minimum of different tools or machinery.

In accordance with the present invention, a three-dimensional table game device is characterized by the following combination of features:

a. several plate-shaped game boards each having holding means for receiving pieces, several spacer members for supporting the boards in an overlying mutually spaced relationship in a substantially perpendicular direction, the boards and the spacer members defining a rack allowing to place and displace any of the pieces without interfering with any already placed pieces;

b. the plate-shaped game boards being of similar shape and dimensions;

c. the spacer members being of similar shape and dimensions; and

d. releasable plug and clamping connections for interconnecting the game boards with the spacer members.

Each game board may be substantially rectangular and may include several rectangular openings for affixing the spacer members whereby the openings are arranged along the diagonal lines of the substantially rectangular game boards interiorly of the holding means for receiving the pieces located adjacent the peripheral edge of the game boards. Each spacer member

may consist of a spacer rod defining in cross-section a cross profile of crossed flanges which are resilient and extend at right angles to each other and are adapted to engage the rectangular openings in the game boards in a clamp fit. The openings in the game boards may be arranged at angles of about 45° to the lateral edges of the game boards whereby the resilient flanges of the spacer rods include angles of substantially 45° with the lateral edges of the openings and are adapted to return into their initial positions after insertion of the spacer rods into the openings.

The diagonal extension of the cross-profile spacer rods in the clamping regions at the game boards may exceed, over a length substantially corresponding to the thickness of a plate-shaped game board, the minimum diagonal extension of the rectangular openings. The diagonal extension of the flanges of the spacer rods along short portions above and below respectively of the clamping regions may be greater than the diagonal extension of the flanges in the clamping regions whereas the free ends and the portions intermediate of the clamping regions of the spacer rods may be of a smaller diagonal extension than the remaining rod portions.

According to another embodiment of the invention the spacer rods may be provided with plug-and-rotate type connection means and be of square cross-section whereby the openings in the plate-shaped game boards are of a correspondingly mating configuration to the one of the spacer rods so that the rods may be passed through these openings. The spacer rods may be provided in the connecting regions with the plate-shaped game boards with annular grooves of a width substantially corresponding to the thickness of a plate-shaped game board so that the spacer rods after having been passed through the openings in the plate-shaped game boards may be rotated through about 45° in order to lock the spacer rods with the game boards.

The fastening of the spacer rods in the game boards may also consist of a clamping arrangement of resilient lugs or tongues projecting from the edges of the openings in the game boards and adapted to engage corresponding recesses in the spacer rods when introducing the spacer rods through the openings in the game boards. In this case, the resiliency of such lugs or tongues allows to readily assemble and disassemble the game device.

In the following, the invention will be described by reference to several illustrative embodiments shown in the appended drawings in which the same reference numerals have been used for identical or similar parts. In these drawings:

FIG. 1 is a side elevational view of a first embodiment of a three-dimensional table game device having three horizontal game boards held by spacer rods in an overlying mutually spaced relationship and each board including circular holding means for receiving spherical pieces;

FIG. 2 is a top view of the game device shown in FIG. 1;

FIG. 3 is a lateral elevational view of a spacer rod; FIG. 3a is an enlarged fragmentary elevational view of a portion of the spacer rod shown in FIG. 3;

FIG. 4 is a top view of the spacer rod shown in FIGS. 3 and 3a;

FIGS. 5 and 6 are a fragmentary vertical cross-section and a top view respectively of a spacer rod pro-

vided with a plug-and-rotate type connecting means after insertion of the rod through an opening in a plate-shaped game board;

FIGS. 7 and 8 are a fragmentary vertical section and a top view respectively of the spacer rod shown in FIGS. 5 and 6 in the locked position in a plate-shaped game board;

FIGS. 9 and 10 are a fragmentary elevational view and a top view respectively of another embodiment of a spacer rod connection in a game board opening by means of a pair of resilient tongues projecting from opposite edges of the board opening into the same and adapted to engage corresponding recesses on the spacer rod;

FIGS. 11 and 12 are a fragmentary elevational view and a top view respectively of another connecting means for a spacer rod in a game board opening by means of a resilient tongue;

FIG. 13 is a perspective view of another embodiment of a game device, in accordance with the invention, wherein the game boards are supported by means of a pair of opposite U shaped support members;

FIG. 14 is a perspective view of another embodiment of the game device wherein the spacer members consist of flat spacer rods;

FIG. 15 is a perspective view of another embodiment of the game device wherein the spacer members consist of a pair of plate-shaped members which may be laterally attached to opposing game board edges;

FIG. 16 is a perspective view of another embodiment of the game device in which the game boards are supported at their corner regions by means of spacer members of angular or arcuate cross-section; and

FIG. 17 is a fragmentary perspective view of a spacer member of FIG. 16.

Referring to the preferred embodiment of the table game device according to the invention shown in FIGS. 1 and 2, the device comprises three horizontally disposed game boards 10, 11, 12 held in a superposed mutually spaced relationship by means of rod-shaped spacer members 13, 14, 15 and 16. The mutual spacing of the game boards 10, 11, 12 is selected such that pieces placed on any of the game boards may be easily picked up by the hand of a contestant without thereby displacing any other pieces from their positions on the game boards.

The game boards 10, 11, 12 consist of plate-shaped parts, injection molded parts, molded or cut to size plates or the like and may be of a rectangular, square, polygonal, circular or any other configuration. The plate-shaped boards 10, 11, 12 are held in this mutual spaced relationship by means of four spacer rods 13, 14, 15 and 16. Any other number of spacer rods may likewise be employed. These spacer rods 13, 14, 15 and 16 define in cross-section preferably a cross profile (FIG. 4), and are retained in a clamp fit in approximately rectangular openings 40, 41, 42 and 43 respectively of the game boards 10, 11, 12. To achieve a releasable connection on the one hand and a tight fit on the other hand of the game boards 10, 11, 12 along the spacer rods 13, 14, 15, 16 the width of the crossed flanges of the cross profile spacer rods 13, 14, 15, 16 is selected such that the flanges may be retained in a slightly compressed condition in the rectangular openings, as indicated in FIG. 4 by means of the arrows X, X1, X2, X3. The dashed lines 40a and 40b in FIG. 4 indicate opposing wall portions or edges of the opening

40, in order to demonstrate that the length of the flanges in the non-compressed condition exceeds the length of a pair of diagonal lines coinciding with the cross profile of the spacer rod and extending between the walls 40a and 40b of the opening 40. The flanges of the cross profile spacer rods are made of a resilient material so that any two flanges may be readily bent towards or away from each other when passing a spacer rod through an opening in a game board. After insertion of the spacer rods into the openings 40, 41, 42, 43 the flanges return by their inherent resiliency into their initial positions and are thus retained in a clamp fit in the openings. The width of the spacer rods 13, 14, 15, 16 is somewhat greater in the clamping regions adjacent the game boards 10, 11, 12. These enlarged portions of the cross profiles of the spacer rods 13, 14, 15, 16 are provided with recesses 50 corresponding in the clamping region of the plate-shaped game boards 10, 11, 12 approximately to the thickness of the game boards 10, 11, 12. The edge portions 51, 52 of the cross profile flanges leading up to the recesses 50 are of steadily increasing width and taper towards the profile sections 53 of the spacer rods 13, 14, 15, 16, as may be seen from FIGS. 3 and 3a. Due to this unique configuration a tight fit of the game boards 10, 11, 12 along the spacer rods 13, 14, 15, 16 defining the supporting structure for the game boards 10, 11, 12 is assured. On the other hand this specific configuration of the spacer rods allows by means of these plug type connections to readily assemble and disassemble the game device, and in the disassembled condition the various parts of the device require a minimum storage space.

The openings 40, 41, 42, 43 for receiving the spacer rods 13, 14, 15, 16 are preferably arranged at angles of approximately 45° to the lateral edges of the plate shaped game boards 10, 11, 12, i.e. that the edges of the openings include angles of substantially 45° with the edges of the game boards. The resilient flanges of the spacer rods include angles of substantially 45° with the lateral edges of the openings and are adapted to return into their initial positions after deformation of the flanges during insertion of the spacer rods into the openings. In this manner the resultant rack has a high stability. The openings 40, 41, 42, 43 are furthermore arranged along the diagonal lines of the substantially rectangular game boards 10, 11, 12 and are disposed interiorly of the holding means 20, 21, 22, 25, 28, 27, 26 and 23 for receiving the pieces which holding means are located adjacent the peripheral edge of the game board (FIG. 2). The diagonal extension of the cross profile spacer rods 13, 14, 15, 16 in the clamping regions at the game boards exceeds, over a length substantially corresponding to the thickness of a plate-shaped game board, the minimum diagonal extension of the rectangular openings in the game boards. The diagonal extension of the flanges of the spacer rods along short portions above and below, respectively, of the clamping regions is greater than the diagonal extension of the flanges in the clamping regions. The free ends and the portions intermediate of the clamping regions of the spacer rods 13, 14, 15, 16 are of a smaller diagonal extension than the other rod portions so that the spacer rods may readily be passed through the openings 40, 41, 42, 43 whereby this passing of the spacer rods through one of the openings is further facilitated by the configuration of the transitions between the different rod portions of varying widths. After the maximum

width portion of a spacer rod has passed through an opening an engagement takes place at the clamping regions by the openings "snapping on" in these regions. In the first embodiment shown in FIGS. 1 and 2 the three plate-shaped game boards 10, 11, 12 are tensionally connected to the spacer rods 13, 14, 15, 16 at 48 points. The lower free ends of the spacer rods simultaneously serve as rack feet and support the lowermost game board 12 in a predetermined spacing from a support surface such as a table top. The inherent clamping force of the spacer rods is selected such that the rack-shaped game device may be easily assembled or again disassembled but nevertheless in assembled condition constitutes a rack having a high stability. A rack assembled by means of screw connections and made of similar or more expensive materials is liable to breakage when dropped for example from a table whereas in contrast thereto the inventive rack-shaped game device in which the game boards are retained by clamping connections at the spacer members will when dropped collapse and merely needs to be reassembled.

The three game boards 10, 11, 12 are provided with an identical number of holding means for pieces. In the embodiment of the inventive table game device shown in FIGS. 1 and 2 the holding means for the pieces consist of circular holes 20, 21, 22, 23, 24, 25, 26, 27, 28 whereas the corresponding pieces are spherical and of a somewhat larger diameter than the diameter of the circular holes so that the pieces engage the edges of the circular holes 20 - 28 in a manner preventing that the pieces roll away or drop through the holes. On every game board 10, 11, 12 the circular holes 20 - 28 are arranged in rows. Three holes each 20, 21, 22 and 23, 24, 25 and 26, 27, 28 define a row, and in the transverse direction corresponding holes in the three rows define a straight line. The arrangement of the holding means for the pieces and the configuration of the latter may likewise be different from the one shown. In order to allow an unimpeded picking up of pieces, particularly pieces that have been placed on the center or on the lowermost game boards, the spacer rods 13, 14, 15, 16 extend preferably adjacent to the corner holding means 20, 22, 26, 28 thus allowing to readily pick up any pieces placed on the game boards 11 and 12.

Apart from the above described connection arrangement of the spacer rods 13, 14, 15, 16 at the game boards 10, 11, 12 the spacer rods may also be held at the game boards by means of plug-and-rotate type connections as illustrated in FIGS. 5 - 8.

In this case, the spacer rods 13', 14', 15', 16' are preferably of a square cross-section. The openings 40, 41, 42, 43 in the game boards are of a configuration closely similar to the cross-section of the spacer rods so that the latter may readily passed through the openings (FIG. 5). In the clamping regions the spacer rods 13', 14', 15', 16' are each provided with annular grooves 60 of a width substantially corresponding to the thickness of a game board. By rotating the spacer rods through approximately 45° the rods may be locked with the game boards (FIGS. 7 and 8).

Another embodiment of the support for the spacer rods 13'', 14'', 15'', 16'' in the game boards 10, 11, 12 is shown in FIGS. 9 and 10. In this embodiment, the lateral wall portions of the openings 40, 41, 42, 43 in the plate-shaped game boards 10, 11, 12 comprise resilient tongues or lugs 70, 71 adapted to engage corresponding recesses 50 on the spacer rods 13'', 14'', 15'',

16'' when inserting the spacer rods into the openings. FIGS. 9 and 10 show the connection of the spacer rod 13'' to the plate-shaped game board 10. The edges of the opening 40 are indicated by 40a, 40b, 40c and 40d. Each of the two opposing edges 40b, 40d comprises a projecting tongue 70, 71 respectively, and when inserting the spacer rod 13'' into the opening 40 each of the tongues engages a corresponding recess 50 of the spacer rod.

Another facultative arrangement comprises a single resilient tongue as illustrated in FIGS. 11 and 12. In this arrangement, the edge 40d of the opening 40 includes a projecting tongue 70 which engages the recess 50 of the spacer rod 13'' when the latter is introduced through the opening 40 of the game board 10. The length of the tongue 70 is selected such that the spacer rod surface away from the tongue 70 will be urged against the edge 40a of the opening 40 thus retaining the spacer rod 13'' safely in the opening 40. The spacer rod 13'' may have a profile similar to the one shown in FIGS. 11 and 12 whereby an increased positional retention of the spacer rod in the opening is assured.

In the further embodiment of the three-dimensional table game device shown in FIG. 13 the spacer members for the game boards 10, 11, 12 consist of a pair of U shaped support members 130, 131. The support members each consist of a pair of legs 130a and 130b and a leg connecting web 130c or respectively of the legs 131a and 131b and the connecting web 131c. The legs 130a, 130b and 131a, 131b are of flat stock material and comprise slot-shaped recesses 132 in such an arrangement and spacing that the game boards 10, 11, 12 may be introduced into these slot-shaped recesses 132. The two support members 130, 131 are disposed on opposite sides of the game boards 10, 11, 12 so that the game boards are freely accessible for placing or moving spherical or the like pieces.

In accordance with the embodiment shown in FIG. 14 the game boards 10, 11, 12 are supported at their corner regions by means of flat rod members 140, 141, 142, 143 each having mutually spaced slot-shaped recesses 144 for inserting or plugging in the game boards 10, 11, 12. In both the embodiments of FIGS. 13 and 14 the slot-shaped recesses 132 or 144 respectively for the lowermost game board 12 are spaced from the free ends of the support members so that the game board 12 is spaced from the support surface for the game device.

In the embodiment of the invention shown in FIG. 15 the spacer members for the game boards 10, 11, 12 consist of a pair of plate-shaped members 160, 161 which may be attached to opposite sides of the game boards 10, 11, 12, i.e. to the edges thereof. The members 160, 161 include at the plate surfaces facing the game boards 10, 11, 12 channel-shaped retaining bars 162 into which the edges of the game boards 10, 11, 12 may be inserted. The plate-shaped support members may be connected to the game boards 10, 11, 12 diagonally to each other and include arcuate recesses 160a, 160b or 161a, 161b respectively in the interstices between two adjacent game boards thus allowing to easily place spherical or the like pieces onto the game boards.

For holding the game boards 10, 11, 12 in the described overlying mutually spaced relationship there may likewise be employed, as illustrated in the embodiment of FIG. 16, profile spacer members 180, 181,

182, 183 of angular or arcuate cross-section which may be attached to the corner regions of the game boards. The selected profile of the spacer members in this case corresponds to the configuration of the corresponding corner regions of the game boards 10, 11, 12. The support of the game boards 10, 11, 12 at the spacer members 180 - 183 consists of retaining bars 184 connected to the inner surfaces of the spacer members. These retaining bars may be groove or channel shaped (FIG. 17).

The plate-shaped game boards 10, 11, 12 and the spacer members such as 13, 14, 15 and 16 may be made of a transparent material so that the several game boards may be overlooked at a glance and the positions of any pieces thereon perceived.

The invention is not restricted to the above described embodiments which are illustrated in the drawings. Other arrangements and configurations of the game boards, the spacer means or the supporting structure for the game boards and of the holding means for the pieces are considered to be within the scope of the present invention as also a great variety of materials from which the game device may be made. If such a game device comprises three game planes and each game plane includes nine holding means for pieces the game program may be similar to the one for the well-known board game of "Muehle" or morris, with the additional feature of allowing to form "straight rows" by placing three pieces of the same color or shape one on top of another along a straight line and each piece in a different plane. Depending upon the number of holding means or pieces on the various planes programs for games of a different type may be developed. The game device moreover allows to play other types of games.

The usage of plug type connections allows to readily assemble the game device, and the assembled device is highly stable but has nevertheless flexible characteristics which generally safeguard the device against breakage. No screw connections are employed. If the game device should inadvertently be dropped, the plug connections automatically disengage thus allowing to use also less costly or even brittle materials. The spacer members do not impede the placing or moving of pieces on the game boards. By the fact that the spacer means are located adjacent to the corner regions of the game boards or as in the preferred embodiment located internally of the corner holding means for pieces all of the pieces that may have been placed on any of the game boards may readily be reached without displacing any set piece when it is intended to move a piece.

Having thus described the invention including several embodiments thereof, the one skilled in the art may perceive other modifications, changes and improvements, and such modifications, changes and improvements are intended to be included herein, limited only to the scope of the hereinafter appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A three-dimensional table game device compris-

ing, in combination,
a plurality of game boards, each having holding means operable for receiving and holding game pieces,

several elongated spacer members having connecting regions operable for supporting said game boards in superposed mutually spaced relationship,

each board having several substantially rectangular openings adapted for receiving said spacer members, each opening defining opposite acute angles between its diagonals,

each spacer member including resiliently deformable crossed flanges corresponding in cross-section substantially to but not exceeding the length of the diagonals of said rectangular openings, said flanges defining opposite angles which exceed said opposite acute angles between the diagonals,

said flanges having in said connecting regions recesses adapted to snap engage edges of said rectangular openings.

2. A three-dimensional table game device according to claim 1, said game boards having a substantially rectangular configuration.

3. A three-dimensional table game device as defined in claim 2, characterized in that said openings in said game boards are arranged in angles of approximately 45° to the lateral edges of said game boards and that the resilient flanges of said spacer members define between each other angles of substantially 90°.

4. A three-dimensional table game device as defined in claim 2, characterized in that the diagonal extension of said flanges in the clamping region at the game boards overlaps the edges of said rectangular openings over a length substantially corresponding to the thickness of one of said game boards.

5. A three-dimensional table game device as defined in claim 2, characterized in that the diagonal extension of the flanges of said spacer members along short portions above and below respectively of said clamping regions is greater than the diagonal extension of the flanges in said clamping regions.

6. A three-dimensional table game device as defined in claim 2, characterized in that the free ends and the portions intermediate of said clamping regions of said spacer members are of a smaller diagonal extension than the other portions of said spacer members.

7. A three-dimensional table game device as defined in claim 2, characterized in that said recesses in said flanges of said spacer members are relatively small recesses of a length substantially corresponding to the thickness of one of said game boards.

8. A three-dimensional table game device as defined in claim 2, characterized in that the free ends of said spacer members extend beyond the uppermost and lowermost game boards respectively.

9. A three-dimensional table game device as defined in claim 1, characterized in that said game boards and said spacer members are made of a transparent material.

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