

Sept. 25, 1951

D. J. KLYCE

2,569,007

FOLDING TABLE

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2 Sheets-Sheet 1

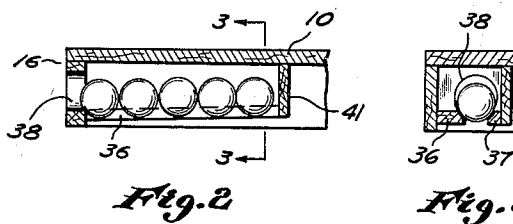
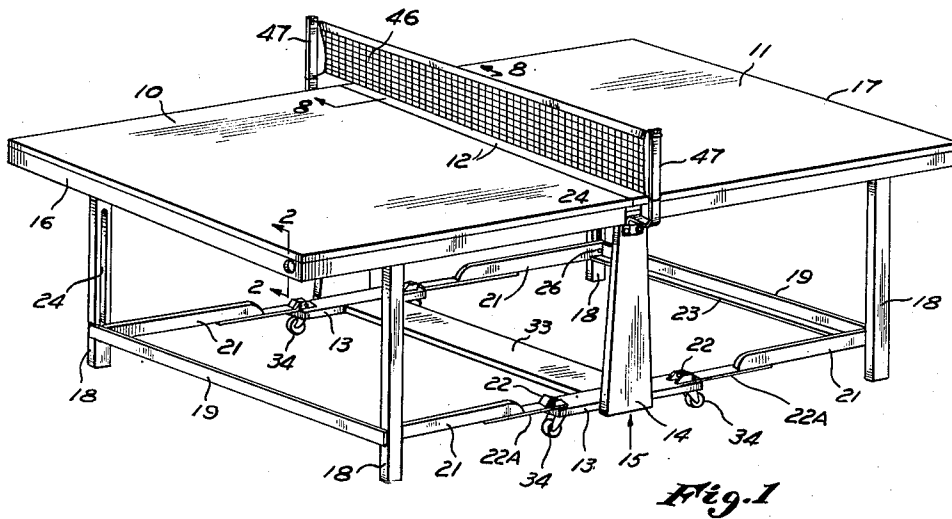


Fig. 2

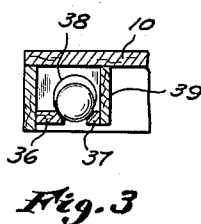


Fig. 3

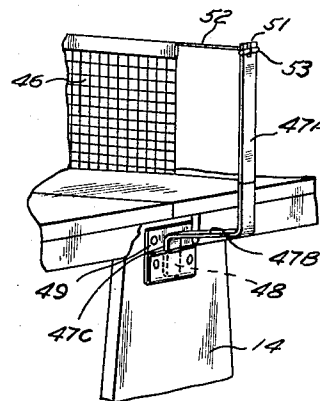


Fig. 4

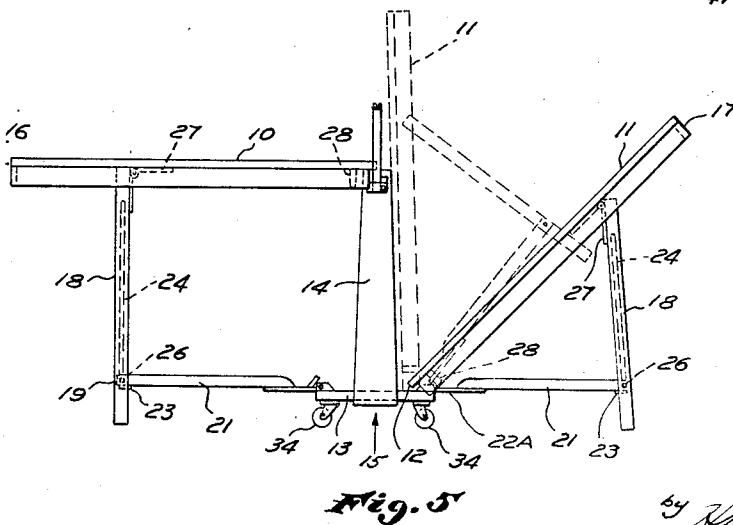


Fig. 5

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2 Sheets-Sheet 2

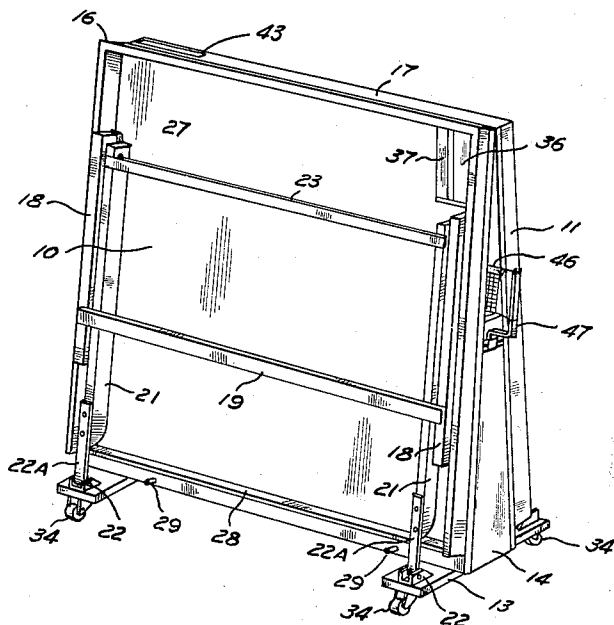


Fig. 6

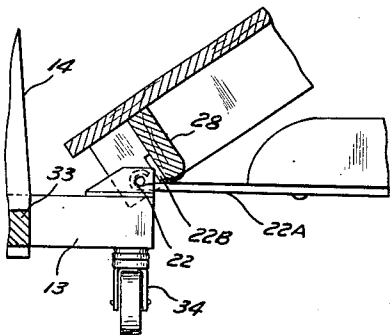


Fig. 7

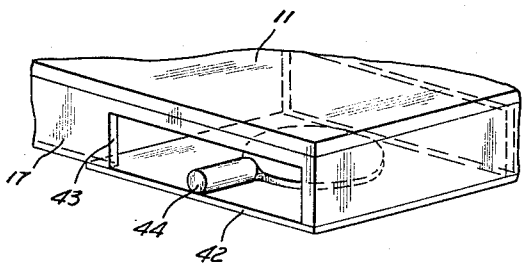


Fig. 9

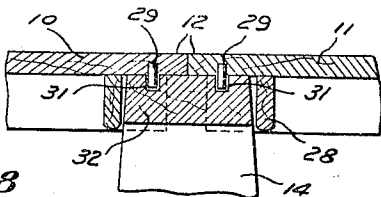


Fig. 8

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FOLDING TABLE

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6 Claims. (Cl. 311-89)

1

2

My invention relates to folding tables, and has particular reference to a tennis table or the like that may be folded into a small unit wherein part of the table acts as a dolly and as a support for the collapsed portions of the table, facilitating ready movement and storage.

It is a general object of my invention to provide an improved folding table of the general type suitable for table tennis.

Another object of my invention is to provide a table that may be folded upon itself to form a mobile unit that may be conveniently moved and stored.

Another object of my invention is to provide a folding tennis table that is so designed and proportioned that it forms a stable unit facilitating folding, movement and storage.

Still another object of my invention is to provide a folding table of the type suitable for tennis wherein the ends of the table are disposed upwardly when the table is completely folded or collapsed.

Other objects and advantages of my invention will be apparent in the following description and claims, considered together with the accompanying drawings, in which

Fig. 1 is an isometric view of a tennis table embodying my invention, extended for use in playing a game of table tennis;

Fig. 2 is a partial sectional view of the table of Fig. 1 taken along the line 2-2 showing the construction of the ball storage mechanism;

Fig. 3 is a sectional view taken along the line 3-3 through the ball storage device of Fig. 2;

Fig. 4 is an enlarged isometric view of the tennis net support mechanism of Fig. 1 with parts of the table broken away;

Fig. 5 is a side view of the table of Fig. 1 on reduced scale and showing several steps in the folding of the table;

Fig. 6 is an isometric view of the table of Fig. 1 showing the table in its completely folded form;

Fig. 7 is a sectional view through the table to disclose the structure of one of the hinged joints and its operation when half of the table is tilted against the hinge structure, as shown in solid lines in Fig. 5;

Fig. 8 is a partial sectional view through the table of Fig. 1 taken along the line 8-8 of Fig. 1; and

Fig. 9 is an isometric view of a corner of the table of Fig. 1 showing the construction of a paddle storage space.

Referring to Fig. 1, a table embodying my invention may include two top panels 10 and 11

having joining edges 12 that are supported upon a pedestal structure including a wheeled base 13 and two upright support members 14. The outer ends of the top panels 10 and 11 are designated by the numerals 16 and 17, and the outer end portions of the top panels 10 and 11 are supported upon pairs of foldable legs 18, each pair being secured together by a cross brace 19. The bottom ends of the legs 18 are spaced from the pedestal base 13 by arms 21 hinged to the base 13 by hinges 22. The arms 21 for each end of the table are joined together by cross braces 23 at their outer ends.

It will also be noted that the inner sides of the legs 18 are grooved as at 24 for a substantial part of their lengths, and that a pin 26 secured to the outer end of each arm 21 rides in a groove. This permits the arms 21 to take various positions along the length of the hinged legs 18 when the legs and arms 21 are being folded against the top panels 10 and 11, as will be explained later.

Referring to Fig. 5, it will be noted that the legs 18 are secured by hinges 27 to the under side of the panels 10 and 11. Further, the parts of the panels adjacent to the joining edges 12 are reinforced by stiffening rails 28. It will be noted by reference to Fig. 8 that the panels 10 and 11 may be locked to the pedestal structure by dowels 29 that are glued or otherwise secured to the panels 10 and 11 and which fit within bores 31 formed in a horizontal frame member 32 securing the tops of the upright support members 14 together. The panels 10 and 11 may be disengaged from this top frame member 32 by merely lifting them upwardly a sufficient distance to clear the pins 29 from their bores 31.

It will be noted with respect to Figs. 1 and 7 that I may provide a cross member 33 for stiffening and joining the two base members 13 to complete the frame of the pedestal member 15. Further, each base member 13 may include a caster 34 on either end thereof so that the entire pedestal member 15 is supported on four casters. As will be noted with respect to Fig. 6, these casters permit the collapsed or folded table to be readily moved inasmuch as the entire table is then supported on the pedestal 15, but the casters do not cause the table to be unstable during operation as shown in Fig. 1 inasmuch as a major portion of the weight of the table is assumed by the legs 18 which are not wheeled.

The manner of collapsing the table is illustrated in Fig. 5. The edge 12 of one of the top panels 10 and 11 may be lifted manually upwardly until the pins 29 thereon become disengaged from their

3

receiving holes 31 and the panel, for example panel 11 in Fig. 5, may be moved outwardly away from the other panel a sufficient amount to allow the inner edge 12 thereof to drop to the base 13 of the pedestal. The stiffening rail 28 may rest upon a flat hinge portion 22A of the hinge 22 while in this position, saving the edge 12 from contact with any parts that might batter its shape. The entire panel 11 may next be manually grasped at the outer end 17 and rotated to the position shown in broken outline in Fig. 5, where it will be observed that the panel 11 is inclined slightly toward the left against the tapered edges of the pedestal members 14. The entire panel 11 is therefore statically balanced, and no latches or catches are required for securing it in the position indicated. The legs 18 may then be collapsed against the panel 11 by moving the outer ends of the arms 21 toward the panel. The arms and legs then lie in a flat array against the panel, as shown most graphically in Fig. 6.

This folding operation is aided by a hinge construction made particularly in accordance with the invention and shown in detail in Fig. 7. I provide the flat hinge portion 22A with an inclined block 22B which may be suitably secured thereto as by welding or soldering. The blocks 22B act as a stop for the downward movement of the panels by contacting the stiffening rails 28. In this regard it will be noted also in Fig. 7 that the rail 28 is also contacting the flat hinge portion 22A. Referring now to Fig. 5, it will be noted that the inclined panel, together with its legs 18 and the arms 21, form a triangular structure which moves as a unit. Therefore, referring back to Fig. 7, when the panel 11 is rotated to its vertical position, the flat hinge portion 22A and the block 22B rotate in unison with the panel member 11 so that there is no sliding engagement with any of the parts that may wear portions of the panel. The rotation to a vertical position of the panel 11 continues until the edge 12 contacts the base 13, whereupon additional rotation to the final vertical position shown in Fig. 5 causes the the stiffening rail 28 to be elevated above the uppermost position of the block 22B. Further it will be noted with respect to Fig. 6 that the final position of the panel 11 positions the stiffening rail 28 far enough to the left so that the flat hinge member 22A may be rotated to a parallel position with the panel 11 without striking the stiffening rail 28.

From the foregoing it will be apparent that I have provided a folding table structure wherein the table panels may be easily collapsed by light manual effort, and further the table panels will not be damaged or bumped during this folding operation. The ease of the folding or collapsing operation is aided by having the innermost edge become the downward edge of the panel in the folded condition, permitting the person folding the table to grasp the outer, more convenient edge 17 of the panel 11, or the edge 16 of the panel 10. When the panels are rotated to their generally vertical position, the legs 18 and the arms 21 are then easily accessible for final rotation to a flat position, as shown in Fig. 6.

When my invention is applied to a tennis table there may be incorporated in the structure storage space for table tennis balls as well as table tennis paddles. Referring to Figs. 1, 2 and 3, it will be noted that inclined rails 36 and 37 may be secured to the under side of one of the panels, for example the panel 10, and aligned in downwardly off-set relation to a circular aperture 38 in the

4

edge 16 of the panel 10. A side wall 39 and an end wall 41 may also be provided for the rails 36 and 37. The storage chamber thus formed may be filled by inserting balls through the aperture 38, and the inclined rails 36 and 37 feed the balls toward the aperture 38. When it is desired to use a ball from the storage chamber, the player's finger may be inserted between the rails 36 and 37, ejecting a ball outwardly through the aperture 38. This storage chamber is not inconvenienced by the folding operation due to the fact that the outermost edge 16 is positioned upwardly in the folded table, as shown in Fig. 6, where the rails 36 and 37 are shown.

A paddle storage chamber may be provided by securing a plate to one corner of the table as shown in Fig. 9, for example the corner diagonally opposite to the ball storage chamber. Accordingly a plate 42 may be secured to the bottom of the panel 11, and a rectangular aperture 43 may be cut into the edge 17. Paddles may then be stored therein, such as a paddle 44, and again the storage space retains its elements because the open side of the storage chamber is in an upward position when the table is collapsed, as again shown in Fig. 6, where the aperture 43 is illustrated.

The net construction of my invention is so arranged with respect to the folded table that it may remain permanently in place, even though the table is fully folded. However the net itself is readily detached from the table when the table is to be used for purposes other than table tennis. Referring to Figs. 1 and 4 it will be noted that a net 46 is stretched between two flexible net supports 47, preferably formed of off-set strip material such as steel or other elastic metal. The supports 47 include an elongated vertical portion 47A, a generally horizontal portion 47B forming an off-set, and a short vertical portion 47C. The short vertical portion 47C may be inserted in a pocket 48 formed in a folded sheet metal bracket 49 which is appropriately secured to the top of the pedestal members 14. The pocket is formed by centrally bulging the outer folded portion of the bracket. Preferably this outer folded portion is of less height than the inner folded portion so as to obtain a bearing surface for the upper end of the short vertical portion 47C. The long vertical portion 47A may be located a standard distance away from the sides of the table in accordance with the rules of the United States Table Tennis Association, and the upper end thereof may be notched at 51 to receive one end of a net cord 52 held therein by a short cross member 53. Tension in the cord 52 is maintained by the spring of the supports 47, and they are preferably initially deformed somewhat to insure suitable tension on the cord 52. This initial bending of the supports 47 also tends to hold the lower vertical section 47C in the pocket 48. The entire supports 47 may be removed from the table by manually lifting the lower vertical sections 47C out of the pockets 48 in the brackets 49.

Referring to Figs. 5 and 6, it will be noted that when the two panels 10 and 11 are folded against the pedestals 14 there is a space provided above the pedestals 14 for the net structure. This is due to the fact that the point of convergence of the tapered sides of the pedestals 14, if projected, meet at a point substantially above the top of the net 46. Accordingly, therefore, when the table is in a completely folded position the net is not touched or otherwise interfered with, and accordingly may remain attached to the table even

5

though the entire table is completely folded, as shown in Fig. 6.

When it is desired to fold the table from its operating condition shown in Fig. 1 to its completely folded condition shown in Fig. 6, the person performing the folding operation grasps one edge of either panel 10 or 11, lifting the inner edge 12 thereof until the dowel pins 19 clear the recesses 31. The entire panel is then moved away from the other panel until its end 12 clears the top portions of the pedestal members 14. In this connection the backward movement of the panel is facilitated by the use of hinge joints 27 (Fig. 5) at the top ends of the legs 18 and by the pin connection of the legs 18 with the arms 21. The entire inner edge of the panel is then lowered until the panel stiffener 28 rests upon the flat portion 22A of the hinge 22, as shown in Figs. 5 and 7. The panel stiffener 28 also contacts the block 22B, forming a permanent part of the hinge 22 and attached to the flat hinge portion 22A. The outer edge of the panel is next grasped, that is, the edge 16 for the panel 10 or the edge 17 for the panel 11, and the entire panel is rotated until it leans against the pedestal 14 as shown in Figs. 5 and 6. In this condition the legs 18 and the arms 21 are projecting from the panel as shown in broken outline in Fig. 5. The arms 21 are then moved upwardly along the legs 18 so that the pin 26 in the end of each arm 21 slides upwardly within the groove 24 of each leg. As the pins approach the end of the grooves, each leg then swings downwardly against its panel and the arms 21 are also aligned with and close to the panel.

When both panels of the table are thus folded against the support members 14, the entire assembly forms a compact unit as shown in Fig. 6. The supports 14 together with the wheeled pedestal bases 13 form a readily movable dolly upon which the remainder of the table is supported. The folded table accordingly may be easily moved to any desired location with very little manual effort. It should be noted also that the net structure may remain intact, even though the table is folded, and that the folding motion disposes the ball storage space and the paddle storage space with their openings facing upwardly so that the stored contents will not fall therefrom.

When it is desired to again erect the table for use as shown in Fig. 1, the reverse procedure is followed. The legs 18 are rotated outwardly simultaneously with the outward rotation of the arms 21 until the structure assumes a shape shown in broken outline in Fig. 5. The upper end of the panel is then grasped and pulled outwardly until the legs 18 contact the ground, the panel being in an inclined condition as shown in Fig. 5. The inner edge of the panel may next be grasped and lifted to the height of the top of the pedestals 14 and the dowel pins 29 (Fig. 8) may then be engaged with their recesses 31 for locking the panel to the pedestal structure.

While I have described my invention with respect to a particular embodiment thereof, I do not care to limit myself to this embodiment, nor otherwise, except by the terms of the following claims.

I claim:

1. A folding table comprising a pedestal with a supporting top and with lower supporting projections, two top panels having adjacent edges resting on the top of the pedestal, a latch for removably locking the adjacent edges to the pedestal, and foldable legs supporting the ends of the panels disposed outwardly from the pedestal,

6

whereby the inner adjacent edges of the panels may be manually unlatched from the pedestal top and placed upon the lower pedestal projections and the tops may be rotated against the pedestal and the legs folded against the panels for collapsing or folding the table.

2. A folding table comprising a horizontally elongated pedestal having the long sides tapering toward each other at the top and having projections near the base thereof, two top panels having adjacent edges supported on the top of the pedestal, a latch for removably locking the adjacent edges to the top of the pedestal, and foldable legs secured to the panels outwardly from the pedestal, whereby the adjacent edges of the table may be manually disposed upon the pedestal projections and the outer ends of the panels may be rotated past a vertical position so that when both panels rest upon the tapering sides of the pedestal in a generally upright position with the legs folded against the panels, the center of gravity of each panel is disposed inwardly of the projections so that the panels may maintain their generally upright positions.

3. A foldable table comprising a pedestal having a supporting top and lower projections, two top panels having adjacent edges supported on the top of the pedestal, means for removably securing the adjacent panel edges to the pedestal, foldable legs hinged at their upper end to the panels and disposed outwardly from the pedestal, arms hinged to the lower part of the pedestal, and means permitting engagement of the outer ends of the arms with the lower ends of the legs to position the lower ends of the legs with respect to the pedestal and the panels secured to the pedestal.

4. A foldable table comprising a pedestal having a supporting top and lower projections, two top panels having adjacent edges supported on the pedestal top, means for removably securing the adjacent edges of the panels to the pedestal, foldable legs hinged at their upper ends to the panels and each leg having a groove along the length thereof, arms hinged to the lower part of the pedestal, and pins carried on the outer end of the arms for engagement with the grooves of the legs whereby the lower ends of the legs may be positioned with respect to the pedestal and the panels secured thereto, and whereby the arms and the legs may be folded against the panel when the adjacent edges of the panels are resting upon the pedestal projections and the entire panels are rotated to a generally vertical position against the pedestal.

5. A folding table comprising an elongated pedestal having projections near the bottom thereof, two panels having adjacent edges resting upon the pedestal to form a table top, a stiffening rail secured to the underside of the panel adjacent to the edges resting upon the pedestal, legs hinged to the panels outwardly from the pedestal, arms for each leg having a sliding connection with the leg along the length thereof, hinges connecting each arm to the bottom part of the pedestal with flat hinge portions extending from the end of the arms to the hinge joint, inclined blocks secured to the flat hinge portions, whereby the table may be collapsed by lifting an edge of a panel off of the pedestal and allowing it to drop until the stiffening rail contacts the flat hinge portion and the inclined blocks thereof, whereby the arms and legs and panel may thereafter be rotated as a unit on the hinge until the edge of the panel rests upon the pedestal projections.

7

6. A folding table comprising an elongated pedestal having lower projections and a narrow top, wheels disposed on the bottom of the pedestal so that it may form a dolly for the collapsed parts of the table, two adjoining panels having their adjacent edges resting upon the top of the pedestal, a pin and recess connection between each panel and the pedestal top for removably securing the panels thereto, legs hinged to the undersides of the panels and disposed outwardly from the pedestal and having grooves along the inner sides thereof, a hinge secured to the bottom part of the pedestal adjacent to the projections, arms secured to the hinges and having pins on their outer ends thereof for engagement with the grooves of the legs so that the arms may move with respect to the legs, blocks secured to the part of the hinge structure secured to the arms, and a stiffening rail secured to the underside of the panels adjacent to the edges resting on the pedestal top whereby the table may be collapsed by lifting a panel upwardly to disengage the pin and

8

recess connection and thereafter moving the entire panel outwardly from the pedestal and then down until the rail contacts the hinge and the block on the hinge, and so that the outer edge of the panel thus dropped may be rotated upwardly toward the pedestal so as to rest against the pedestal upon the pedestal projection.

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