Dec. 28, 1965 G. J. NEHL 3,226,118

COLLAPSIBLE BOUNDARY FRAME FOR GAMES

Filed April 22, 1963

Fig. 1

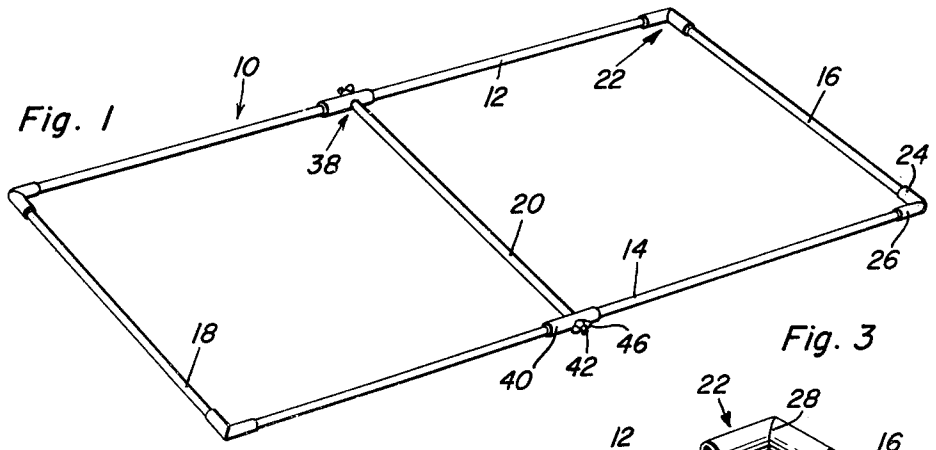


Fig. 2

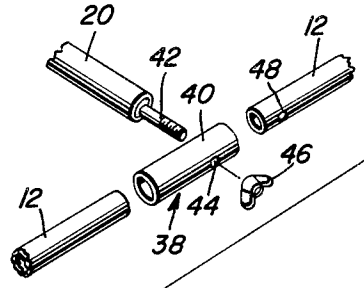


Fig. 3

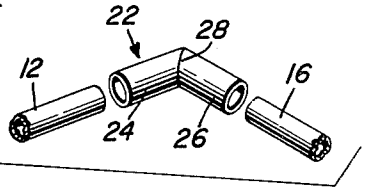


Fig. 4

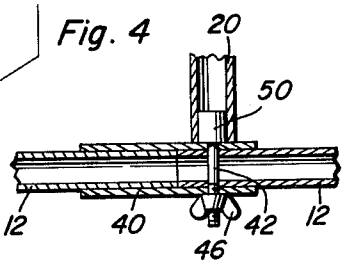


Fig. 5

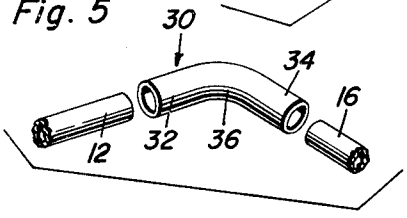


Fig. 8

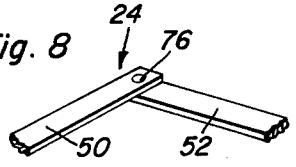


Fig. 6

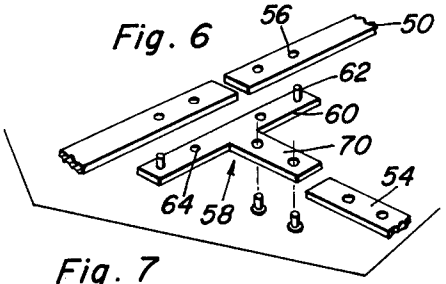


Fig. 9

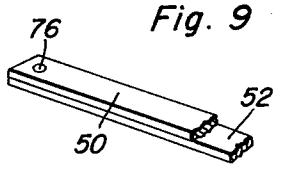
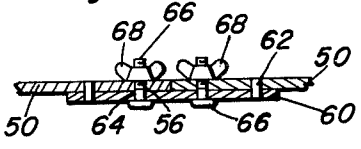


Fig. 7



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COLLAPSIBLE BOUNDARY FRAME FOR GAMES

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1 Claim. (Cl. 273—1)

The present invention generally relates to an improved apparatus to facilitate the playing of various games and more particularly, the present invention relates to a novel boundary frame for use in playing various games, the boundary frame being collapsible or capable of being knocked down into a compact condition for ease of storage, transport or the like.

Playing areas for various games are desirably marked off by boundary lines formed on the playing surface in any suitable manner. While the boundary lines may be painted on the playing surface, it often is desirable not to mar the surface with such boundary lines and also it is desirable to provide a boundary line which may be transported to another area of use when desired and also stored when not in use. Accordingly, the present invention has for its primary object the provision of a boundary frame of any suitable size constructed of rigid material for enclosing a playing area with the components of the frame being capable of collapse or separation into a compact condition for ease of storage in a compact manner and for ease of transportation to another location.

Still another object of the present invention is to provide a boundary frame in accordance with the preceding object having parallel side members and parallel end members and a central dividing member parallel to the end members for dividing the boundary into two separate courts or for providing two separate areas for playing various games.

Still another object of the present invention is to provide a boundary frame for various games which is simple in construction, easy to assemble and disassemble, easy to move from place-to-place and store when desired and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part thereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of one form of the boundary frame of the present invention;

FIGURE 2 is an exploded group perspective view illustrating the central transverse member and the manner in which it is attached to the side rails;

FIGURE 3 is an exploded group perspective view illustrating the corner structure of the boundary frame;

FIGURE 4 is a detail sectional view of the center joint illustrated in FIGURE 2;

FIGURE 5 is an exploded perspective view illustrating a modified corner joint;

FIGURE 6 is an exploded group perspective view similar to FIGURE 2 but illustrating a bar-type of structure;

FIGURE 7 is a sectional view of the joint illustrated in FIGURE 6;

FIGURE 8 illustrates the corner joint employed in the bar-type boundary frame; and

FIGURE 9 is a perspective view of the corner joint of FIGURE 8 illustrating the components in collapsed or folded condition.

Referring now specifically to the drawings, the numeral **10** generally designates the boundary frame of the present invention which includes side rails **12** and **14** which are spaced in parallel relation to each other and are interconnected by end rails **16** and **18** at the outer ends thereof and an intermediate transverse member **20** parallel to the end walls **16** and **18** and equally spaced therefrom. As illustrated, the rails are of rigid construction and may be constructed of plastic, metal or of wood and are of tubular configuration with the diameter being any suitable desired dimension.

Each corner of the boundary frame **10** includes a joining sleeve generally designated by numeral **22** and including perpendicularly arranged tubular portions **24** and **26** which are rigidly interconnected along a miter line **28** forming a juncture between the tubular portions **24** and **26** thereby forming a rigid L-shaped or right angular joint for receiving the ends of the side rails and end members respectively. FIGURE 3 illustrates the manner in which one end of a side rail **12** telescopes into the tubular portion **24** while one end of the end rail **16** telescopes into the tubular portion **26** and forms a loose connection therewith while the tubular side rail **12** is rigidly affixed to the tubular portion **24** by any suitable means such as by crimping, welding or gluing. Thus, in order to detach the side rail **12** from the end rail **16**, the end rail **16** is telescoped outwardly from the tubular portion **26** and the joint **22** is permanently attached to the ends of the side rails **12** and **14** respectively thereby eliminating any possible loss of the connectors **22**.

FIGURE 5 illustrates a modified form of connector generally designated by the numeral **30** which is in the form of a single tubular member having portions **32** and **34** orientated in right angular relation to each other and joined by a right angle bend **36** for telescopically receiving the ends of the side rail **12** and end rail **16** respectively whereby the side rail **12** is permanently secured to the portion **32** and the end rail **16** is loosely received telescopically within the portion **34**. This structure operates in the same manner as the connector **22** and would work equally as well if the connector is constructed of a bendable material which may be formed in right angular configuration.

FIGURE 2 illustrates the detail of the central connecting assembly generally designated by numeral **38** which includes a tubular sleeve **40** telescopingly receiving the adjacent ends of the sectional side rail **12**. The end of the intermediate member **20** is provided with a screw-threaded fastening bolt **42** rigid therewith and extending axially therefrom for extending through an opening **44** formed in the sleeve **40** and for receiving a wing nut **46** on the outer end thereof for retaining the sleeve **40** attached to the bolt **42**. One end of the section of the side rail **12** is provided with an aperture **48** extending therethrough whereby the aperture **48** may be aligned with the aperture **44** when the section of the side rail **12** is telescoped into the sleeve **40**. Thus, the bolt **42** may be inserted through both the aperture **44** and the aperture **48** and the wing nut **46** then assembled thereon for permanently connecting the sleeve **40** to the section of the side rail **12** having the aperture **48** therein. The other section of the side rail **12** is telescopically received within the other end portion of the sleeve **40** and is fixedly secured thereto by crimping, welding, gluing or the like. FIGURE 4 illustrates this assembly with the head **50'** of the bolt being illustrated within the confines of the tubular transverse rail **20** and being secured thereto by any suitable means such as by welding or the like. The orientation of the sections of the tubular side rails **12**, the sleeve **40** and the transverse tubular member **20** when in assembled condition is illustrated clearly in FIGURE 4.

FIGURES 6–10 illustrate another form of boundary frame in which the side rails **50** and the end rails **52** as well as an intermediate transverse rail **54** are all constructed of flat bar or strap material of rectangular cross-sectional configuration and which may be metal, plastic

or wood. FIGURES 6 and 7 illustrate the center joint between adjacent sections of the side rails **50** and the manner of connection with the center transverse member **54**. The adjacent ends of the sections of the side rails **50** each have a pair of longitudinally spaced apertures **56** therein. Forming the connection between the adjacent sections of the side rails **50** is a T-shaped connector generally designated by numeral **58** and including an elongated head or bar **60** adapted to underlie the adjacent sections of the side rail **50**. Adjacent each end of the bar **60** is an upstanding pin **62** for extending through the outermost of the apertures **56**. Also, a pair of apertures **64** are provided for alignment with the adjacent of the apertures **56** as illustrated in FIGURE 7 for receiving fastening bolts **66** having wing nuts **68** thereon thereby securely fastening the adjacent sections of the side rail **50** to the bar or head of the T-shaped connector **58**.

The stem or shank of the T-shaped connector **58** is designated by the numeral **70** and overlaps transverse rail **54** and is secured thereto as by welding, riveting, gluing or the like. Alternatively, the transverse rail **54** could be welded directly to the center of the bar **60** thereby forming a rigid one piece structure with side rails **50** attached thereto.

FIGURES 8 and 9 illustrate a corner connection generally designed by numeral **74** in which the side rail **50** and the adjacent end of the end rail **52** are overlapped and interconnected by a pivot securing pin **76** which may be in the form of a rivet, bolt or any other suitable securing means.

While the boundary frame may be constructed of any suitable size and any suitable material, a size of 6′ x 8′ has been found practical. The wing nuts in each instance serve to hold the structures together and solid with the wing nuts being capable of being removed for enabling the frame to be collapsed to a relatively compact condition during storage or transportation. As illustrated, the frame may be constructed of tubular material or of bar stock material thereby forming a relatively inexpensive collapsible or folding frame for a playing area. Various materials may be employed to form the frame and the frame may be used on almost any surface such as cement, wood, tile, ground surface, rug, grass or beach and is primarily useful for playing games employing balls which may be thrown or projected in any suitable manner by players. The boundary of the frame will make a noise if the ball strikes it or a visible deflection of the ball will occur when the ball strikes the frame.

As a representative game, each player may have a predetermined number of serves before giving the serve to an opponent. Serve is to the opposite side of the center bar with the ball being bounced once and returned to the opposite side. If the ball hits the frame or goes out of the playing area, a point is scored against the last player to hit the ball. The rules of play may be varied and are arbitrary and the length of a particular game may also be arbitrarily selected by the players. The aforementioned rules do not restrict the structure of the frame whatsoever and are merely representative of a type of game which may be played.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

A boundary frame for playing games and the like comprising a generally rectangular peripheral frame enclosing a playing area, said frame including parallel spaced side rails and parallel spaced end rails interconnecting the ends of the side rails, and a transverse center member extending between the side rails and disposed in parallel equally spaced relation to the end rails, means detachably interconnecting the ends of the side rails and the ends of the end rails, and means detachably interconnecting the ends of the center rail and the center portion of the side rails thereby forming a collapsible frame which may be disconnected and collapsed for purposes of storage, transport or the like, said connecting means between the ends of the side rails and the ends of the end rail including an L-shaped tubular sleeve having perpendicularly arranged terminal portions for telescopingly receiving one end of the side rail and an adjacent end of the end rail for retaining the side rails and the end rails in perpendicular relation, said L-shaped sleeve being permanently connected to said side rail and the other of said rails being loosely telescoped therein, said side rail being sectional, a tubular sleeve at the center of the side rail for joining adjacent ends thereof together, one section of the side rail and the sleeve having alignable apertures therein for receiving a bolt projecting axially from the center rail thereby interconnecting the center rail, sleeve and apertured section of the side rail for retaining them in assembled condition, the other section of the side rail being telescopically fixedly received within the other end portion of the sleeve.

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