

Nov. 20, 1962

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3,064,277

PLAY PEN

Filed May 31, 1960

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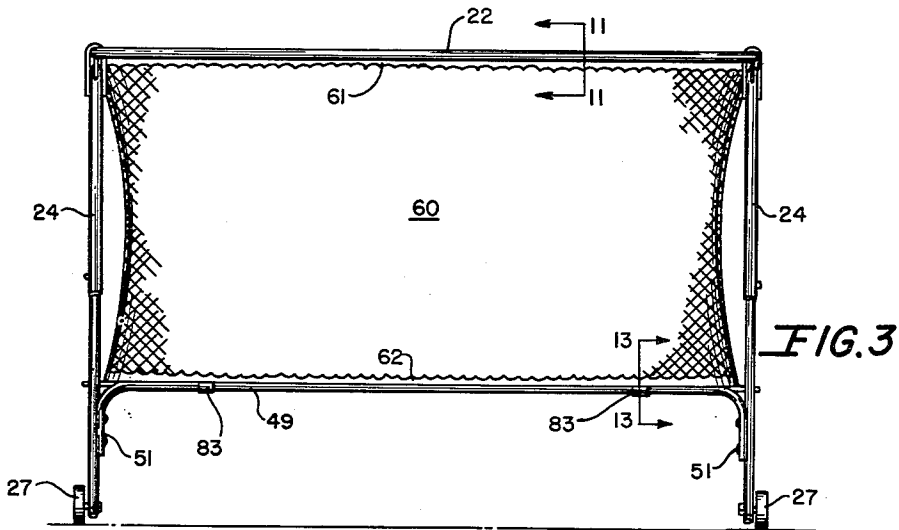
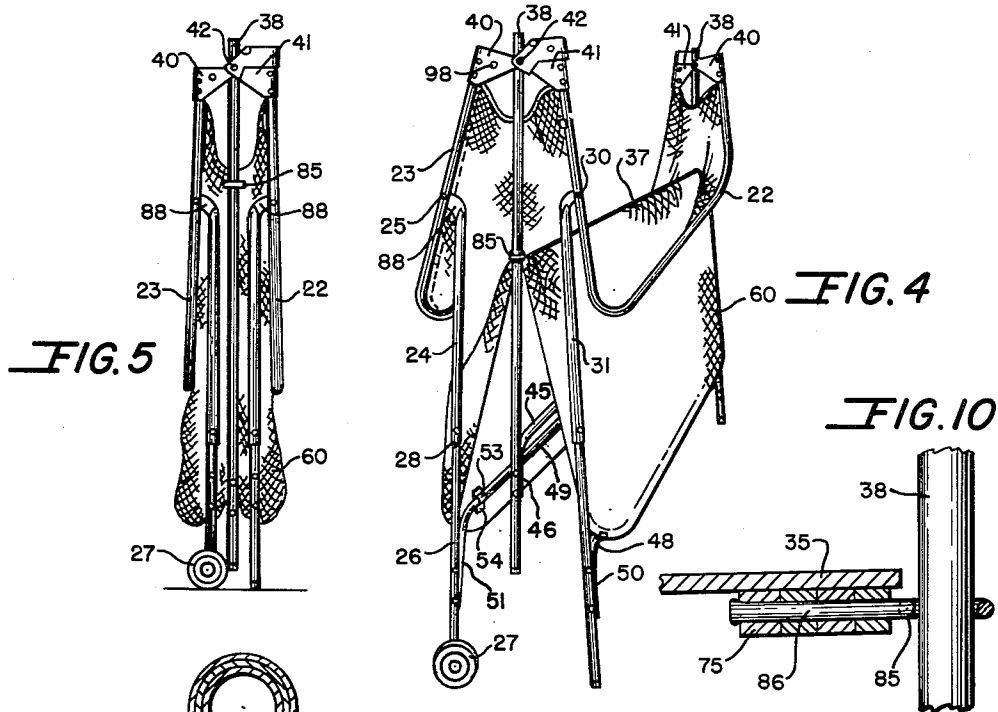


FIG. 5

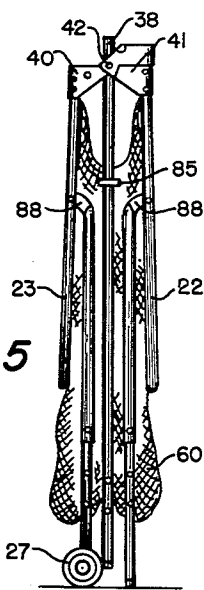
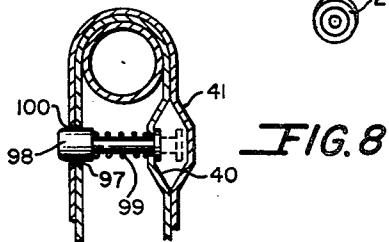


FIG. 10

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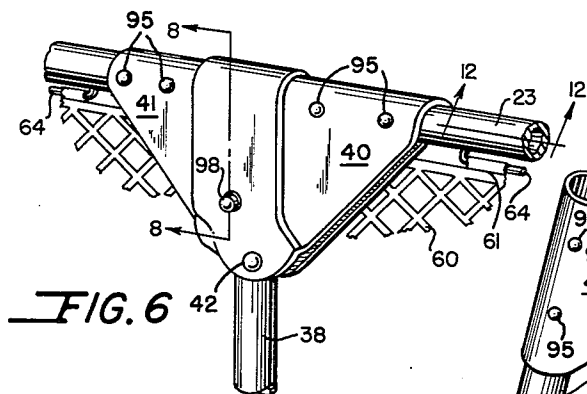


FIG. 6

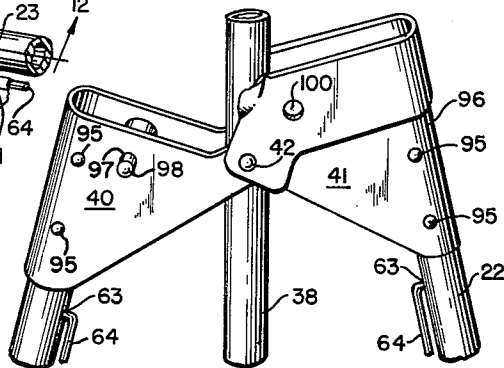


FIG. 7

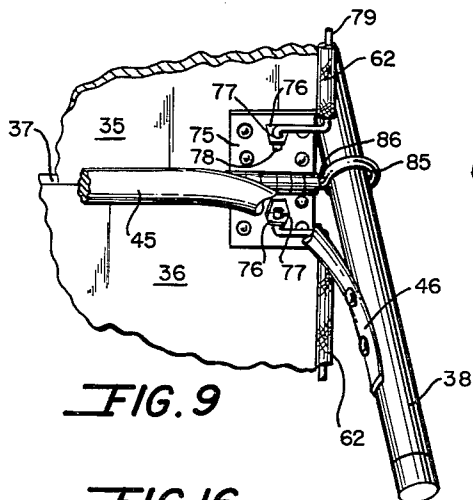


FIG. 9

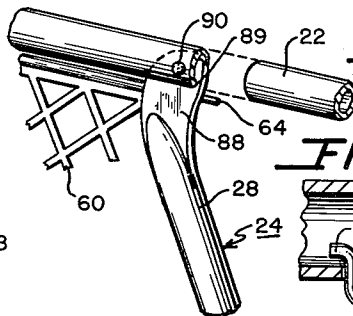


FIG. 12

FIG. 16

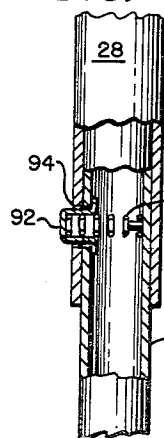


FIG. 13

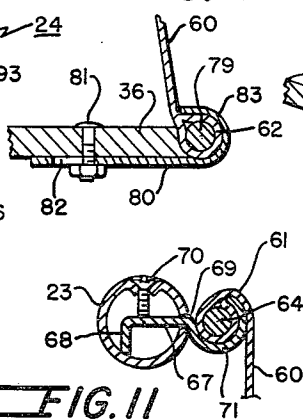


FIG. 14

FIG. 11

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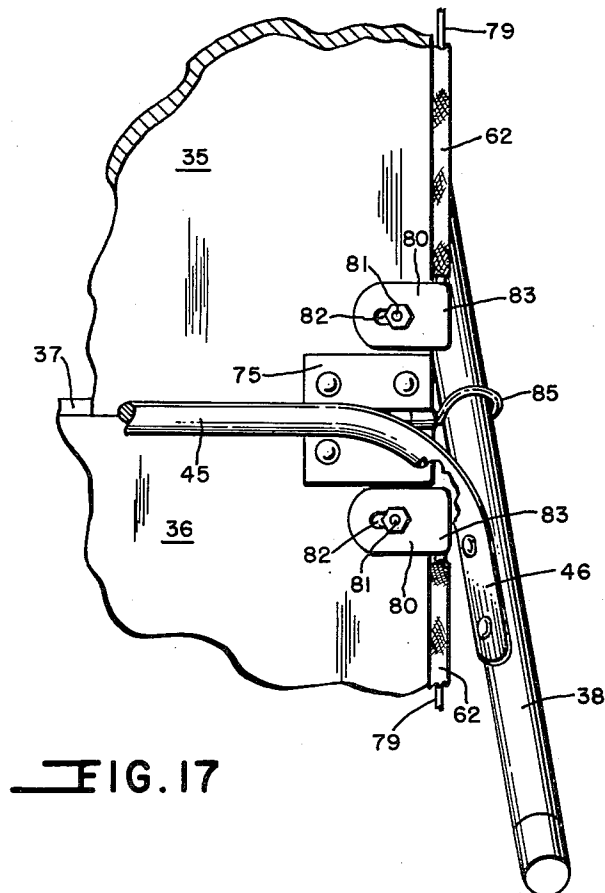


FIG. 17

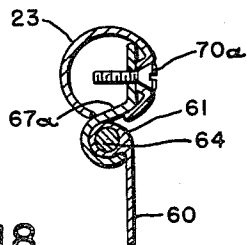


FIG. 18

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3,064,277
PLAY PEN

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This invention relates to play pens for small children.

For many years children's play pens have been of wooden construction, the play pens having upper and lower wooden horizontal rails joined by vertical bars, the lower horizontal rails supporting floor panels by means of hinges and brackets secured to the lower rails. This type of play pen can be collapsed for storage to a certain extent in that the floor panels can be lifted against two opposing sides and the opposing sides move together as permitted by hinges on the adjacent sides.

This type of play pen has not been completely satisfactory for it is awkward to handle; in time the wooden joints become loose, and in time, through usage, the play pen finish becomes chipped and unsightly.

A recent trend in play pen construction has been to provide a metallic framework, the framework being enclosed by a wide mesh fabric. It has been an objective of the invention to provide an improvement in this type of play pen.

The invention provides a new framework construction which is more stable than prior constructions, while at the same time improving the collapsibility of the play pen. Through the use of the framework of the invention, it is possible to collapse the play pen without removing the floor pad normally employed to cover the floor panels.

Through constant use, the mesh fabric forming the side walls of the play pen tends to become dirty, and for reasons of good health and sightliness, it should be cleaned from time to time. The play pen of the present invention provides a means for securing the fabric snugly about the upper portion of the frame and about the floor panels, the securing means being easily removable so as to permit the regular washing of the fabric. The particular securing means utilizes a mesh fabric having a hollow selvage edge adapted to receive elongated rods which are removably secured to the frame and floor panels. Attaching means which are quickly releasable are provided to secure the rods to the frame and floor panels so that the fabric can be made ready for laundering simply by detaching the rods and removing them from the hollow selvage edge. The utilization of a fabric having a hollow woven selvage edge is further advantageous from the standpoint of ease of manufacture, appearance and lasting quality. This construction avoids the necessity of stitching a separate strip of material along the edges of the fabric.

It is from time to time desirable to move a play pen from place to place when the play pen is either in its collapsed or erect condition. It is also desirable for the play pen to remain in one condition and not move about through the activity of the child in the play pen. These desirable features are obtained through the present invention which provides two supporting members on one side of the play pen equipped with wheels by which the play pen can be conveniently moved about and two support members on the other side of the play pen which are not equipped with wheels and which serve to anchor the play pen in a fixed position. When the play pen is in either collapsed or erect condition, the wheels will engage a supporting surface and provide an anti-friction support which permits the play pen to be rolled conveniently from place to place.

The several features of the invention will become more

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readily apparent from the followed detailed description taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of the invention;

FIG. 2 is a side elevational view thereof;

FIG. 3 is an end elevational view thereof;

FIG. 4 is a perspective view of the play pen partly collapsed;

FIG. 5 is an end elevational view showing the play pen completely collapsed;

FIG. 6 is a fragmentary perspective view of the upper frame hinge joint;

FIG. 7 is a fragmentary perspective view of the upper frame hinge joint in partly collapsed position;

FIG. 8 is a cross sectional view taken along lines 8—8 of FIG. 6;

FIG. 9 is a fragmentary perspective view of the hinge joint at the bottom of the floor panels;

FIG. 10 is a fragmentary view partly in section of a hinge on the edge of a floor panel;

FIG. 11 is a cross sectional view taken along lines 11—11 of FIG. 3;

FIG. 12 is a cross sectional view taken along lines 12—12 of FIG. 6;

FIG. 13 is a cross sectional view taken along lines 13—13 of FIG. 3;

FIG. 14 is a fragmentary perspective view of the detail of FIG. 13;

FIG. 15 is a fragmentary perspective view of a joint for a vertical support; and

FIG. 16 is an end elevational view partly in section of the telescoping construction for the vertical supports.

FIG. 17 is a fragmentary perspective view similar to FIG. 9 showing an alternative embodiment.

FIG. 18 is a cross sectional view similar to FIG. 11 showing an alternative embodiment.

The play pen indicated at 20 in FIGS. 1 to 5 has an upper horizontally extending frame 21 formed from two U-shaped frame tubular frame members 22 and 23 which may be of stainless steel, chrome plated steel, aluminum or other metal preferably having a bright surface finish. A pair of vertical supports 24 are pivoted at their upper ends 25 to frame member 22. Each support 24 has a lower section 26 to which a wheel 27 is journaled and which telescopes into an upper section 28.

Similarly pivoted at 30 to frame member 23 is a pair of vertical supports 31, each having a lower section 32 telescoping into an upper section 33. The lower end 34 of the lower section 32 may be provided with a plastic or rubber foot which will avoid scratching the surface which it engages. Floor panels 35 and 36 are hinged centrally together along their adjacent edges as at 37 and are supported at the end portions thereof by the vertical supports 24 and 31. The floor panels are supported at their hinged edges by central posts 38 on each side of the play pen.

The U-shaped frame member 22 is fixed at its ends to inner triangular hinge members 40. Similarly, the U-shaped frame member 23 is fixed at its ends to outer triangular hinge members 41. The hinge members 40 and 41 are pivoted at 42 to the central post 38.

To provide support along the hinged edges 37 of the floor panels, a central brace 45 extends across the underside of the play pen and is fixed at its ends 46 to the central post 38. The floor panels merely rest on the central brace 45 and are not otherwise connected thereto.

The end portions of the floor panels 35 and 36 are supported on lateral braces 48 and 49 which extend across the underside of the play pen and normally lie parallel to and in the horizontal plane of the central brace 45. Lateral brace 48 is fixed at its ends 50 to

the lower telescoping section 32 of vertical supports 31. Lateral brace 49 is fixed at its ends 51 to the lower telescoping section 25 of vertical support 24. As shown in FIG. 4, the floor panels 35 and 36 are vertically connected to the lateral braces 48 and 49 by means of U-shaped clips 53 which are riveted at their ends 54 to the floor panels.

Mesh Enclosure

The framework and floor panels described above are enclosed by a fabric mesh 60 having an integrally woven upper selvage edge 61 and an integral woven lower selvage edge 62. The manner in which the upper selvage edge 61 is secured to the U-shaped frame members 22 and 23 is best illustrated in FIGS. 11 and 12. Each frame member 22 and 23 has a small hole 63 in the underside thereof adjacent the respective triangular hinge member 40 or 41. A U-shaped rod 64 which extends along the underside of each U-shaped frame member has deformed ends 66 which are projected through the holes 63 to be retained in the U-shaped frame members. Other means could be provided for supporting the ends of the rod 64 such as an apertured bracket secured to each end of the frame members 22 and 23.

Prior to inserting the ends 66 through the holes 63, the rods 64 have been threaded through a hollow or tubular selvage edge 61 of the fabric 60. Spaced around the periphery of each frame member are clips 67 (FIG. 11) having ends 68 projected through slots 69 in the frame members 22 and 23. A set screw 70 secures the clips in the frame member. The set screw may be threaded in the frame member and bear against the clip as shown in FIG. 11. Alternatively, as shown in FIG. 18, the set screw 70a may be threaded in the clip 67a and clamped against the inside of the frame member. The other end 71 of each slip is C-shaped to receive the rod 64 and selvage edge 61 of the fabric 60. The fabric may be removed from the upper frame members merely by loosening the set screw 70 to loosen the clip 67 thereby permitting the clip 67 to be pulled away from the rod 64 and selvage edge 61.

The lower edge 62 of the fabric is secured along the edges of the floor panels 35 and 36 as illustrated in FIGS. 9, 13 and 14. As indicated above, the floor panels are hinged together along their adjacent edges 37. A part of the hinged structure is illustrated in FIG. 9 wherein one of the outermost hinges indicated at 75 is shown. A similar hinge is secured to the floor panels at the opposite side of the play pen. Each hinge member has a downwardly directed tab 76, struck from the hinge member, in which a hole 77 is formed to receive the end 78 of an elongated U-shaped rod 79. A U-shaped rod 79 extends around the periphery of each panel board 35 and 36 and has its ends secured in the holes 77 of tabs 76. Prior to connecting the rod 79 to the tabs 76, however, the rod is threaded through the hollow or tubular selvage edges 62.

Spaced around the periphery of each floor panel 35 and 36 are hook-shaped clips 80 (FIG. 13), each clip being secured by a screw and nut 81 passing through a slot 82 in the clip 80 to the edge of the respective floor panel. The clip has a hooked end 83 which is adapted to surround the rod 79 and selvage edge 62 as shown. The lower selvage edge 62 may be removed from the panel boards merely by loosening screw and nut 81 and sliding clips 80 away from the edge of the panel board or by completely removing the clips 80, pulling the rods away from their connection with tabs 76 and sliding the rods out from the selvage edges.

Alternatively, as shown in FIG. 17, the ends of the rod 79 may be straight. In this embodiment four additional clips 80 are positioned adjacent the hinges 75 to secure the ends of the rods to the panel boards. This construction avoids the necessity of specially designed hinge leaves.

Floor Board Stabilizer

To assure the proper positioning of the floor panels with respect to the central brace 45 upon which the floor panels rest, a ring 85 is slidably mounted on each central post 38. The ring 85 has an integral stem 86 which forms the hinge pin for each outer hinge 75 as shown in FIGS. 9 and 10.

Vertical Support Construction

The vertical support construction is illustrated in detail in FIGS. 15 and 16 and will be described in relation to vertical supports 24. Except as otherwise indicated, the construction of the vertical supports is identical for supports 24 and 31. The upper section 28 of the vertical supports has been flattened as indicated at 88 and is received in a slot 89 formed in the U-shaped frame member 22. A rivet 90 passes through holes in the frame member and flattened portion 88 to provide a pivotal connection of the support 24 to the frame member. By disposing the upper end 88 of a support in the slot of a frame member, a smooth, slightly construction is provided.

The telescoping connection of the lower section 26 into the upper section 28 is illustrated in FIG. 16. The upper end of the section 26 has an aperture through which a button 92 projects, the button being biased outwardly by a spring 93. The upper section 28 has an aperture 94 at the lower end thereof through which the button 92 will project when section 26 is moved to its extended position. Another aperture could be provided above aperture 94 to secure the lower section 26 in its telescoped position. However, friction provided by the spring biased button 92 pressing against the inner wall of upper section 28 is sufficient to maintain the lower section 26 reasonably securely in its telescoped position.

Frame Member Hinge Construction

As illustrated in FIGS. 6, 7 and 8 each hinge member 40 and 41 is formed from a shaped piece of sheet steel and bent into the triangular configuration indicated. Each end of the U-shaped frame members 22 and 23 is secured by rivets 95 in the bend of the hinge along one side thereof. The apex of each triangular member opposite the side 96 which secures the ends of the frame members is riveted by rivet 42 to the respective central post 38. In the riveted position, hinge member 40 is locked within the hinge member 41 so that when the members are pivoted to a position in which the play pen is erect as illustrated in FIG. 6, the hinge member 41 will overlap a portion of hinge member 40 to provide a smooth construction. As illustrated in FIG. 8, hinge member 40 has a hole 97 through which a button 98 projects, the button being urged outwardly by a spring 99. A mating hole 100 is provided in the hinge member 41 to receive the button 98 when the hinge members have been swung to the position of FIG. 6. The button interconnection of hinge members 40 and 41 serves to stabilize the play pen in its erected position.

Operation

When the play pen is in its erect position, as illustrated in FIGS. 1 through 3, the floor panels 35 and 36 rest on their adjacent hinged edges on the central brace 45 and are supported on their outer edges by the lateral braces 48 and 49. In this position, the vertical supports 24 and 31 as well as the central post 38 engage the ground to provide a six point support for the play pen. The utilization of three supporting braces provides good, solid support for the floor panels. The shaping of the hinge members 40 and 41 coupled with their interconnection through button 98 securely maintains the play pen in the stable, erect position illustrated. The engagement of the ends 34 of support members 31 with the ground or other supporting surface prevents the play pen from shifting about through the activity of the child inside the play pen.

However, if it is found necessary or desirable to move the play pen from one location to another, the movement can be simply performed by lifting on frame member 23 so that the play pen is fully supported on wheels 27. The rotatably mounted wheels 27 permit the play pen to be moved very conveniently.

The collapse of the play pen is easily effected. Buttons 98 are pushed in to free hinge member 41 from the hinge member 40. By grasping the frame member 22 and lifting slightly on floor panel 36, the play pen may be completely collapsed by pressing down on the frame member 22. The collapse of the play pen is actually brought about by what may be considered a linkage connection between the frame members, their vertical supports 24 and 31, and the pivoted connection of the floor panels 35 and 36 to the frame members. The hinging together of the floor panels permits the unitary action of both sides of the play pen when the collapsing force is applied to one side of the play pen, the unitary action being coordinated or stabilized by the rings 85 which are slidable on the posts 38.

The play pen is normally provided with a floor mat as illustrated at 101 in FIG. 4. Because the floor panels 35 and 36 are hinged together to pivot upwardly into an inverted V, it is not necessary to move or remove the floor mat 101 to perform the collapsing operation.

From time to time, it may be found necessary or desirable to clean the mesh fabric. As discussed above, the connection of the mesh fabric to the upper frame members and floor panels is such as to permit the easy removal of the connecting rods from the frame members and floor panels and by sliding the rods out from the selvage edges of the fabric, the fabric can be laundered.

Having described my invention, I claim:

1. A collapsible play pen comprising, a pair of normally horizontally disposed U-shaped frame members, two parallel spaced central posts, means pivoting the free ends of said frame members to said posts, a central horizontal brace connected to said posts and spaced below said pivoting means, a pair of generally vertical support members pivoted to each said frame member on axes spaced from said pivoting means, a lateral horizontal brace connected between the support members of each pair and extending parallel to said central brace, a pair of floor panels hinged together along adjacent edges thereof, said panels normally extending between said lateral braces and having their adjacent edges resting on said central brace, a ring surrounding each post and connected to said floor panels at approximately their hinge axis, means connecting said floor panels to said lateral braces, and a collapsible enclosure surrounding said floor panels and extending between said floor panels and said U-shaped frame members.

2. A collapsible play pen comprising, a pair of normally horizontally disposed U-shaped frame members, two parallel spaced central posts, means pivoting the free ends of said frame members to said posts, a central horizontal brace connected to said posts and spaced below said pivoting means, a pair of generally vertical support members pivoted to each said frame member on axes spaced from said pivoting means, a lateral horizontal brace connected between the support members of each pair and extending parallel to said central brace, and a pair of floor panels hinged together along adjacent edges thereof, said panels normally extending between said lateral braces and having their adjacent edges resting on said central brace.

3. A collapsible play pen comprising, a pair of normally horizontally disposed U-shaped frame members, two parallel spaced central posts, means pivoting the free ends of said frame members to said posts, a central horizontal brace connected to said posts and spaced below said pivoting means, a pair of generally vertical support members pivoted to each said frame member on axes spaced from said pivoting means, wheels rotatably mount-

ed on the lower ends of only one pair of vertical supports, a lateral horizontal brace connected between the support members of each pair and extending parallel to said central brace, and a pair of floor panels hinged together along adjacent edges thereof, said panels normally extending between said lateral braces and having their adjacent edges resting on said central brace.

4. A collapsible play pen comprising, a pair of normally horizontally disposed U-shaped frame members, two parallel spaced central posts, means pivoting the free ends of said frame members to said posts, a central horizontal brace connected to said posts and spaced below said pivoting means, a pair of generally vertical support members pivoted to each said frame member on axes spaced approximately half the distance between said pivot means and the end of each frame member, a lateral horizontal brace connected between the support members of each pair and extending parallel to said central brace, and a pair of floor panels hinged together along adjacent edges thereof, said panels normally extending between said lateral braces and having their adjacent edges resting on said central brace.

5. A collapsible play pen comprising a pair of normally horizontally disposed U-shaped frame members, two parallel spaced central posts, means pivoting the free ends of said frame members to said posts, a pair of generally vertical support members pivoted to each said frame member on axes spaced from said pivoting means, a pair of floor panels, hinges joining said panels along adjacent edges thereof, means supporting said panels on said posts and support members, a ring surrounding each post, each said ring having an integral rod stem forming a hinge pin for two panel hinges located adjacent said posts, and a collapsible enclosure surrounding said floor panels and extending between said floor panels and said U-shaped frame members.

6. A collapsible play pen comprising, a pair of normally horizontally disposed U-shaped frame members, two parallel spaced central posts, means pivoting the free ends of said frame members to said posts for movement between an erect horizontal position and a downwardly directed collapsed position, said pivot means comprising inner and outer triangular members each pivoted at an apex thereof to said post, the ends of said frame members being secured to the sides of respective triangular members opposite said pivoted apex, and releasable means for securing said triangular members together when said frame members are erect, a pair of generally vertical support members pivoted to each said frame member on axes spaced from said pivoting means, a pair of floor panels hinged together along adjacent edges thereof, and means for supporting said floor panels from said posts and support members.

7. A collapsible play pen comprising, a pair of normally horizontally disposed U-shaped frame members, two parallel spaced central posts, means pivoting the free ends of said frame members to said posts, a pair of generally vertical support members pivoted to each said frame member on axes spaced from said pivoting means, a pair of floor panels hinged together along adjacent edges thereof, means supporting said hinged edges of said panels from said posts, and means supporting the outer edge portions of said panels from said support members.

8. In a collapsible play pen having a horizontally supported closed tubular frame comprising two U-shaped frame members hinged together at their ends, and spaced below said frame a horizontally supported floor comprising two panels hinged together along adjacent edges, an enclosure for said play pen comprising, a mesh fabric extending from said frame to said floor, a tubularly formed selvage edge at the upper and lower edges of said fabric, a pair of U-shaped upper rods passing through the upper selvage edges of said fabric, said rods having their ends projecting into holes in said tubular frame members adja-

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cent their hinged ends, the ends of said rods being deformed to secure them in said frame members, a plurality of clips spaced along said frame members, one end of each clip projecting through a slot in said frame member, a set screw fixing each said clip in said frame member, the other end of said clip being bent to surround said rod and selvage edge to support said selvage edge adjacent said frame members, and means connecting the lower selvage edge to the peripheral edge of said floor.

9. In a collapsible play pen having a horizontally supported closed tubular frame comprising two U-shaped frame members hinged together at their ends, and spaced below said frame a horizontally supported floor comprising two panels hinged together along adjacent edges, an enclosure for said play pen comprising, a mesh fabric extending from said frame to said floor, a tubularly formed selvage edge at the upper and lower edges of said fabric, a pair of U-shaped upper rods passing through the upper selvage edges of said fabric, said rods having their ends projecting into holes in said tubular frame members adjacent their hinged ends, the ends of said rods being deformed to secure them in said frame members, a plurality of clips spaced along said frame members, one end

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of each clip projecting through a slot in said frame member, a set screw fixing each said clip in said frame member, the other end of said clip being bent to surround said rod and selvage edge to support said selvage edge adjacent said frame members, a pair of U-shaped lower rods passing through the lower selvage edges of said fabric, means connecting the ends of said rods to said panels at the adjacent edges thereof, and clips spaced around the periphery of said panels for securing said lower rod and selvage edge to said panels.

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