CHILD'S PLAY PEN

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8 Claims. (Cl. 5—88)

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The present invention relates to children's play pens.

An object of this invention is to provide a play pen of novel and improved construction, which can be folded up into a relatively small portable package, and when desired for use, can be quickly and easily assembled without tools, anywhere.

A further object hereof is to provide an article of the character described, of novel and improved construction, whose parts cooperate in a novel manner to effect a sturdy structure when in assembled condition, and are adapted to fit into one another when folded, to accomplish a compact bundle which is conveniently stored, transported or carried.

Another object hereof is to provide a novel and improved play pen of the nature set forth, which is reasonably cheap to manufacture, which will not become dismantled or collapsed due to any tampering a small child is capable of, which may include means to keep out the sun from the pen area when the play pen is used in the open, as in a back yard, park or at the beach, and which is efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

In the accompanying drawings forming part of this specification, similar characters of reference indicate corresponding parts in all the views.

Fig. 1 is a perspective view of an embodiment of this invention, as is appears assembled for use.

Fig. 2 shows in perspective the means used to hold the pen in extended use condition. Such means is a frame occupying a position above the pen, and may serve as a canopy frame. It is here shown in partially open condition.

Fig. 3 is a fragmentary sectional view taken at line 3—3 in Fig. 2.

Fig. 4 is a perspective view of the frame which supports the pen, shown in open condition.

Fig. 5 shows the complete component included in this embodiment, in perspective and extended condition. The entire component is made of fabric material and the like. It could not of itself, stand up as shown. It is supported on the pen frame of Fig. 4. It is presented as shown, to facilitate explanation.

Fig. 6 is a perspective view showing the pen frame in substantially folded condition.

Fig. 7 is a perspective view showing the canopy frame in substantially folded condition.

Fig. 8 is a fragmentary perspective view showing the manner in which the floor bars of the pen frame, engage the hinge block of the canopy frame, when said frames and what they carry are associated to form a small bundle, when the canopy frame is telescopically set within the folded pen frame.

Fig. 9 is a fragmentary, perspective "exploded" view, showing the engaging ends of co-operating arms and posts, respectively included in said canopy and pen frames.

Fig. 10 shows the structure of Fig. 1, in fully collapsed condition, with its components compactly arranged in a bundle which is easily carried in hand or conveniently stored.

In the drawings, the numeral 15 indicates generally a pen structure made entirely of fabric-like material as cloth, netting and binding tape, so that it can be freely folded in any desired manner. It may consist of a tubular structure made of upright walls defining the pen area, but it may be formed as a box structure having a bottom or floor component also. In the center of such fabric floor member, is a hole or opening 16, to expose and have access to a handle 17 carried on hinge block 18, of the pen frame designated generally by the numeral 19. The fabric pen 15, may be of any polygonal shape, and is found very practical as in the embodiment illustrated, to be prismatic square. Said pen 15, is carried by and positioned within or about the pen frame 19, whereby the vertices of the dinedextral angles of said pen's upright walls, are respectively along the vertical posts 20, 21, 22 and 23, and suitably secured thereto. Of course, the floor bars 24, 25, 26 and 27, are covered by the floor of the fabric pen 15, from their respective hinge connections to block 18, to the aforementioned vertical posts, which are respectively hingedly connected to the floor bars, as indicated by the numeral 28. Divergent movement of the vertical posts is limited by the fabric pen 15, or chain 18', along its rim hem and their convergent movement, collapses said pen 15. However, upon pulling handle 17 upwardly, the walls and floor of pen 14, will lie between the posts and floor bars of the pen frame 18, as can be visualized from the showing in Fig. 6, where fabric pen 15 is omitted to afford convenience for the explanation of this invention.

The hinge connection 28, is a distance inward from the outward extremities of the floor bars, affording external portions marked prime, which lend greater stability to the assembled structure of Fig. 1. Note the notches in such external portions marked double prime. That is, as to floor bar 24, the outward extension is 24' and the latter's notches are 24'.
It is advisable that hinges 28 shall permit the vertical posts only ninety degrees angular movement with respect to their respectively associated floor bars. Said floor bars and posts are preferably made of flat bar stock, and as thin as required strength shall permit.

Frame 28, which is adapted to have mounted thereon a fabric cover to serve as a canopy sun shade (not shown), includes a central hinge block 30, to which are hinged radially one of the respective ends of a plurality of elongated members or arms 31, which arms extend radially from said hinge block 30. It should be noted that such points 32, which are the hinge connections, are really a little spaced from said ends of the arms 31, so that said ends may be in contact with a swivelled head 32 at the end of a regulating screw 33, which is threaded engaged through the hinge block 30. Said arms 31 are positioned within notches 34 in said hinge block 30, and when swung to folded position as shown in Fig. 7, there is still left some space at the entrance of said respective notches 34, into which may enter the reduced portions, one of which is indicated in Fig. 4, by the numeral 35, between the notches 24 of pen frame floor bar 24, when the entire article is assembled in collapsed condition into a bundle. It might here be noted that if a fabric canopy is mounted on and about the arms 31 of frame 28, said fabric member will lie within the space determined by said arms shown in Fig. 7.

The free end of each of the arms 31, are provided with a notch as at 36. The upper free ends of each of the vertical posts of frame 19, also have a notch 37, across which is mounted a pin or better yet, a headed screw 38, positioned loosely through prong 39 and in threaded relation through prong 31. The stud pin may as many arms 31, as there are posts of the pen frame 19, and the dimensions of the various components are such as to afford the structure contemplated in use condition, and to permit engagement of the frames 18 and 28, when put together in collapsed or folded condition, as hereinafter explained. It is evident that an arm or the frame 29, can be set with pin 38 within notch 36, to engage a vertical post of frame 19. All said arms and posts are adapted to be so associated. If the arm 31 fits snugly between prongs 39 and a screw 38 as used as explained, said screw may be tightened to effect a secure joint.

The entire structure consists principally of two separable parts, shown apart and in folded condition in Figs. 5 and 7, where fabric parts, though present, are not shown for the sake of clarity of illustration.

To assemble for use, the arms 31 of frame 29, referring to Fig. 7, are swung downward to position shown as in Fig. 3. Referring to Fig. 6, handle 17 is taken in hand and pushed downward, and then the vertical posts of pen frame 18 are swung upward, to position as shown in Fig. 4. The respective ends of the arms 31 of frame 29, are now associated with the upper ends of the vertical posts of frame 18; such being afforded by manipulation of regulating screw 33. Screws 38 are tightened, if same are included. The play pin is in condition for use. How to disassemble and bring back the parts to condition shown in Figs. 5 and 7 is evident. When hinged into a bundle, the arms 31 of the folded frame 29, are placed into the space determined by the floor bars of the folded frame 19; the reduced portions 35 of said floor bars, being set respectively into the entrances of notches 34 in the hinge block 30. A rectangular piece of fabric material indicated by 40, may be used for wrapping the folded assembly, and may be provided with a handle 41, whereby the package may be carried. Said fabric cover 40 may have snap fastener parts (not shown) to engage fastener parts 42 on the pen 15, so that piece 40, when spread out, can be hung as a pen shade in the erected assembly of Fig. 1.

Referring to Fig. 3, it might be noted that upon downward movement of the regulator screw 33 through the block 30, the square determined by the outwardly remote ends of arms 31, is increased, and of course decreased upon reverse movement of said regulator screw. The former manipulation is used at the very beginning and the latter when the play pin is to be disassembled. However, regardless of position of said regulator screw 33, the arms 31 are free to be shifted to the position shown in Fig. 7, when frame 28 is separated from frame 19.

This invention is capable of various forms and numerous applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiment herein be deemed illustrative and not restrictive and that the patent shall cover any equivalent matter herein set forth; reference being had to the following claims rather than to the specific description herein to indicate the scope of this invention.

The claim:
1. In an article of the character described a foldable pen frame comprising a member determining a floor area, a series of posts hingedly mounted at their bottom ends at spaced points on said member and adapted to be respectively swung downward to lie on said member, means on the pen frame for limiting angular movement of the posts with respect to said member, a foldable canopy frame comprising a hinge block, a series of arms pivotally mounted at one of their respective ends to the hinge block and adapted to extend radially angularly therefrom and an arm supporting means on the canopy frame adapted to simultaneously move said arms substantially identically; the free ends of said arms and of said posts having cooperative engagement means, whereby when the posts are in their raised position and when the arms of the canopy frame are positioned extending angularly from the hinge block, the free ends of said arms are adapted to be set into engagement respectively with the respective posts of the pen frame, whereupon manipulation of the arm supporting means to move said arms towards coplanar relation the frames become sturdier.
2. An article as defined in claim 1, wherein the means for limiting the angular movement of the posts comprises a non-stretchable foldable member carried on all the posts.
3. An article as defined in claim 1, wherein the means for limiting the angular movement of the posts comprise walls of foldable material spanning successive posts and carried by them and forming an enclosure about the floor area.
4. In an article of the character described, a foldable pen frame comprising a first hinge block, a series of floor bars pivotally mounted at one of their respective ends to the first hinge block and adapted to extend horizontally radially therefrom and a series of posts, each respectively mounted at one end to the free end of each of the floor bars respectively; said posts being adapt-
ed to lie superposed on the respective floor bars with their free ends positioned at or towards the first hinge block, and adapted when the floor bars are arranged horizontally, to be swung upwardly in angular relation to the respective floor bars, means for limiting the angular movement of the posts with respect to the floor bars, and a foldable canopy frame comprising a second hinge block, a series of arms pivotally mounted at one of their respective ends to the second hinge block and adapted to extend radially angularly therefrom, and an arm positioning means on the canopy frame, adapted for simultaneously moving said canopy frame arms substantially identically; the free ends of said arms and of said posts having cooperative engagement means whereby when the pen frame is positioned with its floor bars horizontal and with its posts in raised position and when the arms of the canopy frame are positioned extending angularly from the second hinge block, the free ends of said arms are adapted to be set into engagement respectively with the top ends of the respective posts, whereupon manipulation of said arm positioning means to move said arms towards horizontal the frames become sturdy, and whereby upon removal of the canopy frame from the pen frame, the latter is foldable upon upward movement of the first hinge block so that the floor bars hang vertical therefrom and the posts are swingable to position adjacent the respective floor bars.

5. An article as defined in claim 4, wherein the means for limiting the angular movement of the posts comprises a non-stretchable foldable member carried on all the posts.

6. An article as defined in claim 4, wherein the means for limiting the angular movement of the posts comprise walls of foldable material spanning successive posts and carried by them and forming an enclosure about the floor area substantially determined by said posts.

7. An article as defined in claim 4, wherein the posts are respectively hinged to the floor bars, spaced from the respective outer ends of the floor bars, whereby upon arranging the pen frame into erected position, the floor bars extend exterior the floor area determined by the posts.

8. An article as defined in claim 4, wherein the canopy frame is adapted to be folded whereby all the arms thereof are positioned substantially normal to the second hinge block and whereby with the pen frame in folded condition, the frames may be placed telescopically one within the other so that the hinge blocks are adjacent opposite ends of the resulting bundle, and wherein the hinge block of one of the frames is provided with cutouts wherein the members extending from the hinge block of the other of said frames, enter and are engaged respectively, locking said frames against separation by a longitudinal movement with respect to each other.

WILBUR E. FISCHER.

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The following references are of record in the file of this patent:

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