Aug. 7, 1951 J. ABEL 2,563,446

COLLAPSIBLE PLAY PEN

Filed July 12, 1946

FIG. 2.

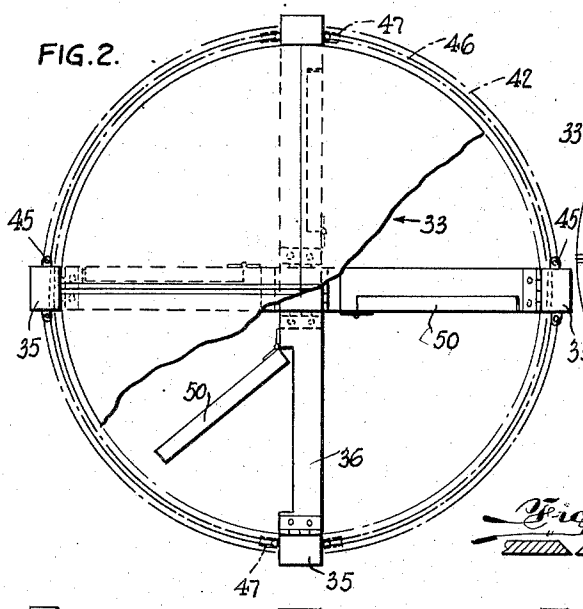


FIG. 4.

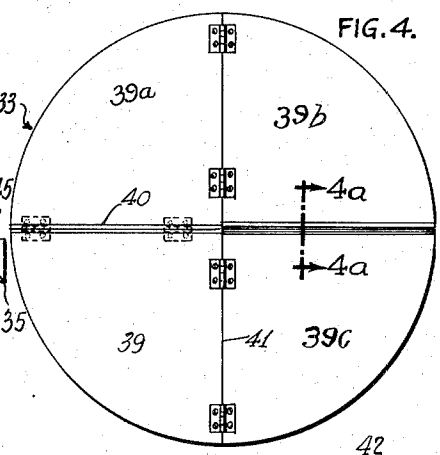


Fig. 4a.

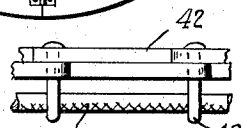
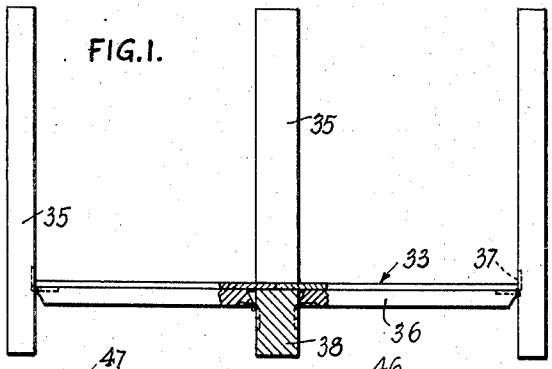


FIG. 5.

FIG. 1.



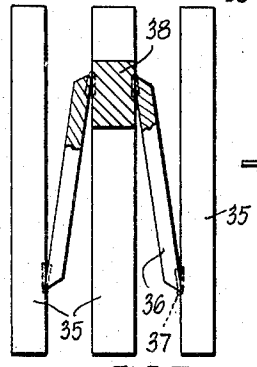


FIG. 7.

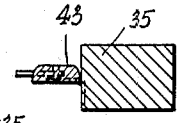


FIG. 6.

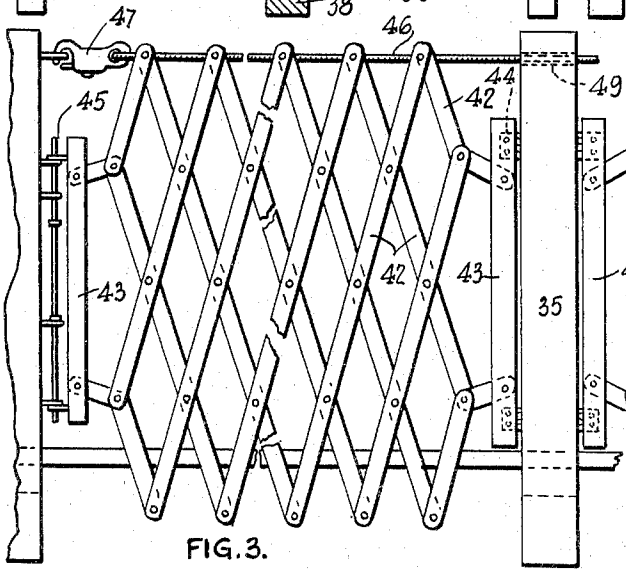
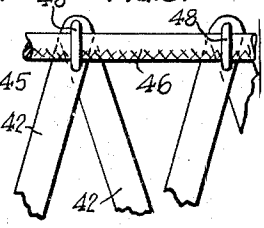


FIG. 3.

FIG. 8.



FIG. 9.



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COLLAPSIBLE PLAY PEN

Jack Abel, Jackson Heights, N. Y.

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9 Claims. (Cl. 5—99)

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This invention relates to new and useful improvements in play pens for children.

Since these pens often are used indoors, especially during the winter months, it is especially desirous to provide one which can be easily and quickly folded up or collapsed to occupy a very small compass and be stowed away in a closet, and it is one of the objects of this invention to provide a pen having these characteristics.

In one form of the invention, it is intended to provide a pen which has no corners and, therefore, it is still another object of the invention to provide a curved pen with side walls either circular or oval. Preferably these walls are of open-work type such as frames with spaced vertical bars, or are of lazy tong elements which can be expanded and contracted at will.

Yet another object is to provide foldable floors which can either be entirely removed when not in use or folded up in relation to the frame members when collapsed so as to form a compact unit for stowing.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In brief and general terms the invention in the first instance comprises floor elements, frame elements and the like which are hinged together and can be moved around the hinges from operative to collapsed relation and vice versa and which yet when in operative relation have related ends and adjacent surfaces which have a non-butting relation, so that no butt joints are formed to pinch the fingers.

In one form of the invention the pen has end and side walls hinged together, the side walls being of hinged sections which fold inwardly when unlatched to fold together against the end walls and form a compact collapsed unit to stow away. The floor of this form may be hinged to the frame members or walls and folded thereagainst when stowed away, without removal. The periphery of the floor bears against the walls of the pen to hold them in proper desired shape.

With curved walled pens the floor may be circular or oval and of one piece or of foldable sections. The frame of this form comprises spaced upright posts with hinged slats between them connected to a common central element which, when lifted, will cause the slats to fold

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up against the posts and draw the posts together for storage purposes. The side walls preferably are of lazy tong construction with rope or cables running along the top of the posts. The lower portion of the lazy tong elements are curved by the pressure of the periphery of the floor along their lower portions. The lazy tong gate-like walls are preferably contractable against opposite posts when not in use to facilitate the formation of a compact unit for stowing.

The present preferred forms which the invention may assume are illustrated in the drawings of which:

Fig. 1 is a side elevation, with a portion broken away, of the frame of a circular pen.

Fig. 2 is a plan view of the pen with a portion of the flooring broken away to disclose the supporting cleats beneath.

Fig. 3 is a side elevation of a portion of the pen, showing the lazy tong side walls in extended position.

Fig. 4 is a plan view of the circular flooring made of hingedly connected sections.

Fig. 4*a* is a fragmentary section taken on line 4*a*—4*a* of Fig. 4.

Fig. 5 is a fragmentary detail showing the connection between the lazy tongs and the surrounding cable.

Fig. 6 is a cross-sectional detail of the connection between a frame post and the lazy-tongs.

Fig. 7 is a view showing the frame in nearly collapsed condition.

Fig. 8 is a detail of the detachable connection between the frame and one end of a lazy tongs gate or wall.

Fig. 9 is an enlarged elevation of the detail shown in Fig. 5.

Referring now to the particular construction presented in the preferred forms of the device shown in Figs. 1 to 9 inclusive, it is the intention to devise a pen with non-butting joints for the frame as in the other form as well as to provide a pen in such form that there are no corners. In other words, the pen in this modification is in the form of a continuous curve either circular or oval.

As shown in the plan view of Fig. 2, the pen is provided with a plurality of frame posts such as **35** adapted to rest upon the floor. These posts in the normal operative condition shown in Fig. 1, are held in their spaced relation by means of horizontal spacer slats **36** which are respectively hinged at their outer ends as at **37** to the posts **35** and at their inner ends to a common center support block **38** which also rests upon the floor

of the room. These spacer slats also act as supports for the bottom or flooring **33** of the pen which may be of the form shown in Fig. 4.

A circular piece of material for the bottom or flooring **33** is made in four sectors **39**, **39***a*, **39***b*, **39***c*, and is adapted to be folded along two diameters at right angles to each other as **40** and **41**. One of the fold diameters such as **40** is slit along one radius to facilitate the folding action. Sectors **39** and **39***a* are hinged together with the hinges on the under face, as seen in Fig. 4. Sector **39***b* is hinged to sector **39***a*, and sector **39***c* is hinged to sector **39**, as shown, the hinges in the latter cases being located on the upper face as viewed in Fig. 4. To collapse the flooring **33**, the sectors **39***b* and **39***c* are folded to lie respectively upon sectors **39***a* and **39**, to form a semi-circle which is then folded in the opposite direction along radius **40** so that sector **39***a* lies flat against sector **39**, now forming a four-ply quadrant.

The slats **36** are at their ends reversely hinged, as shown, to the posts **35** and to the center block **38**, so that when the bottom **33** is lifted out, the center block **38** can be raised and in so moving will cause the parts to assume the close folded relation, the approach to which is shown in Fig. 7, with the posts moved closely together so that the pen will then, as in the other form described, occupy a small compass. The side walls of the pen in this form are formed from sets of lazy tongs **42** of more or less usual construction, which are connected at each end to vertical bars **43**. Of each set of lazy tongs which extend approximately one-four around the periphery of the pen, one of the bars **43** is definitely hinged as at **44** to a post or upright **35** and at the other end the other bar **43** is detachably latched by hook means **45** to the adjacent post **35**. A rope or cable **46** extends half-way around the top of the pen and is connected by means of snap hooks **47** to the tops of opposite posts. As stated, there are preferably two cables or ropes each extending half-way around the pen. These cables are passed through metal loops **48** which are fastened to the sides of the tongs at the top thereof, as shown in Figs. 5 and 9. Through intermediate posts **35**, the cable passes through suitable holes **49** formed therein.

The tongs are placed in position and the periphery of the bottom flooring member **33** holds the tongs in a curved manner by reason of the fact that it presses against the lower portions of the tong members, it being understood that there is sufficient play at all the riveted joints of the lazy tong members to permit of this bending or curving.

As shown in Fig. 2, the bottom member is held and supported by the slats **36** and these have each a hinged support wing **50** thereon and cut therefrom which can be swung out, as shown in full lines in Fig. 2, to assume a position beneath the flooring away from the line of the slat to which it is connected so as to give additional support uniformly therebeneath.

When the device is to be assembled for use or extending from its folded condition shown in Fig. 7, the center block **38** is pushed downwardly to spread the slats **36** outwardly thus pushing the frame posts to their operative positions shown in Fig. 2. The bottom flooring member is then placed on the slats **36** and their auxiliary hinged supporting wings **50**. The lazy tong elements **42** are then strung around the sides. In the folded position of the device, the lazy tong walls have been unlatched at one end and collapsed up against the adjacent post **35** to which they are

permanently hinged. When these collapsible walls are extended, the periphery of the bottom member **33** will bear outwardly against the tong elements along their bottom portion and maintain them in the curved manner shown. The corners of the bottom and of the frame elements are cut away and shaped as in the other form of the device previously described so as to avoid butting ends and thus avoid pinching the fingers of the child in the pen or those of the person assembling it. In dismantling the device, the lazy tong walls are disconnected at one end and collapsed together against the adjacent post. The bottom member **33** is removed and then the center block **38** is lifted to pull the frame posts together to the collapsed position. Thus it may be seen that the device may be quickly and easily assembled for use and disassembled to be stowed away in a relatively small compass.

While the invention has been described in detail and with respect to present preferred forms which the invention may assume, it is not to be limited to such details and forms since many changes and modifications may be made in the invention without departing from the spirit and scope of the invention in its broadest aspects. Hence, it is desired to cover any and all forms and modifications of the invention which may come within the language or scope of any one or more of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A play pen having upright spaced frame posts, slats hinged to the posts and hinged together at their inner ends, a foldable flooring resting on said slats, and auxiliary wings on the slats swingable to an angle thereto to afford additional support for the flooring between said slats.

2. A play pen comprising a frame of upright spaced posts and horizontal connecting slats at the bottom thereof, a flooring disposed on said slats, walls for said pen comprising lazy tong elements detachably extending between said posts, the lower ends of said lazy tong elements extending below the plane of the flooring and bearing against the edge thereof to hold the walls in the shape of the flooring.

3. A play pen comprising a frame of upright spaced posts, a floor for said pen, floor-supporting elements hinged to said posts and extending beneath the floor, a cable extending between the top of the posts, and lazy tong elements supported on said cable and extending between said posts to form walls for the pen.

4. A play pen comprising a frame of upright spaced posts, a floor for said pen, floor-supporting elements hinged to said posts and extending beneath the floor, a cable extending between the top of the posts, and lazy tong elements supported on said cable and extending between said posts to form walls for the pen, the lower end of said lazy tong elements extending below the plane of the flooring and bearing against the edge thereof to conform them to the shape of the floor.

5. A foldable floor element for a play pen which comprises a sheet of material foldable reversely along perpendicular diameters, said sheet being severed along a radius of one of said diameters.

6. A play pen having a frame of upright spaced posts, lazy tong elements extending between said posts and forming side walls of the pen, each

wall being hinged to one post and detachably connected to the other post to which it extends, and a cable extending between the posts and connected to the tops of said tong elements to support the same.

7. A play pen having a frame of upright spaced posts, lazy tong elements extending between said posts and forming side walls of the pen, each wall being hinged to one post and detachably connected to the other post to which it extends, a cable extending between the tops of the posts, means on the tops of the lazy tong elements to connect to the cable to support the elements therefrom, a floor for the pen disposed between and near the bottom of the posts, the plane of said floor being above and bearing against the bottoms of the lazy tong elements along its periphery to hold the side walls in the shape of the bottom.

8. A play pen having upright spaced frame posts, slats hinged to the posts and hinged together at their inner ends, a flooring resting on said slats, and auxiliary wings on the slats swingable to an angle thereto to afford additional support for the flooring between said slats.

9. In a play pen having adjustable walls and a floor wherein the walls may be drawn together

to contract the pen into small compass, a support for said floor comprising spaced slats hinged to said walls and hinged together at their inner ends, and auxiliary wings on the slats swingable to an angle thereto to afford additional support for the flooring between said slats.

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