Sept. 16, 1958 E. J. LUKALA 2,851,701

FOLDING PLAY-YARD

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FIG. 1

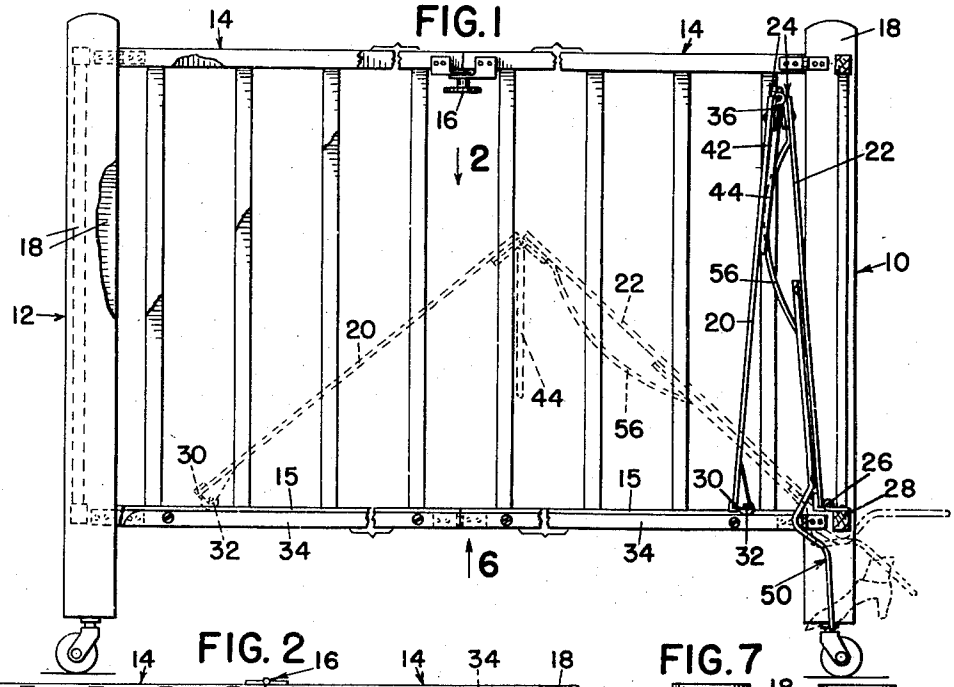


FIG. 2

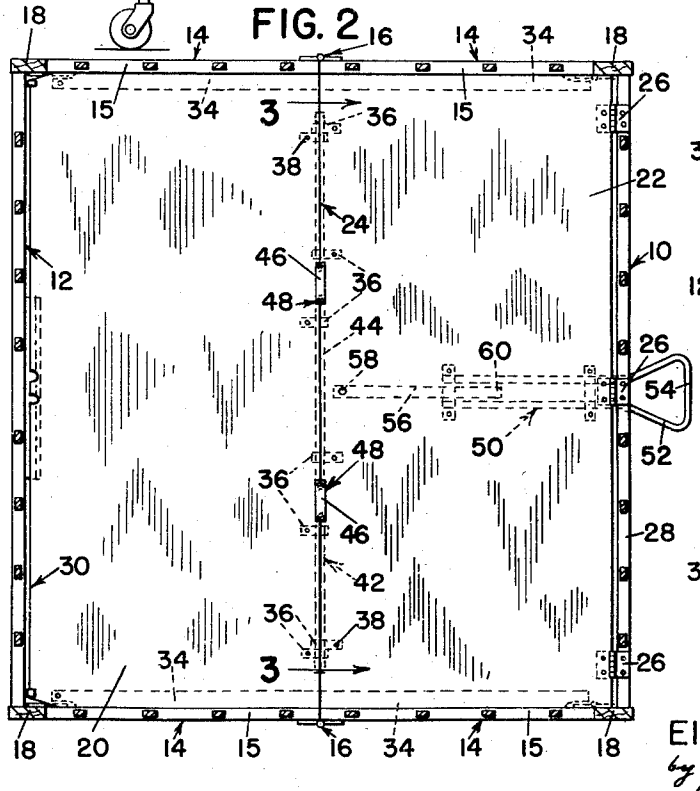
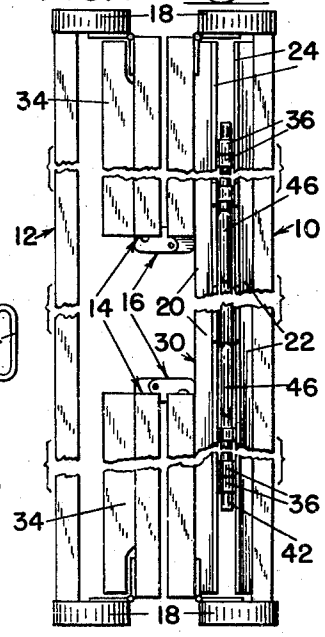


FIG. 7

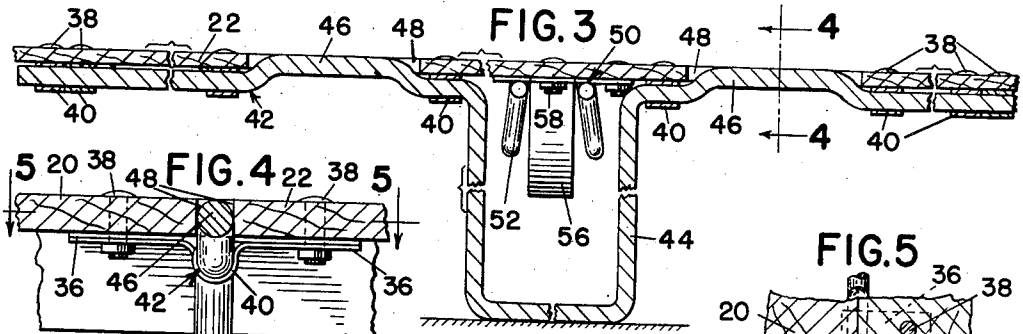


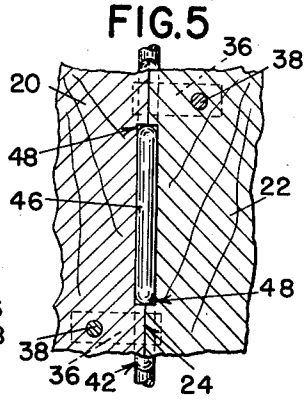
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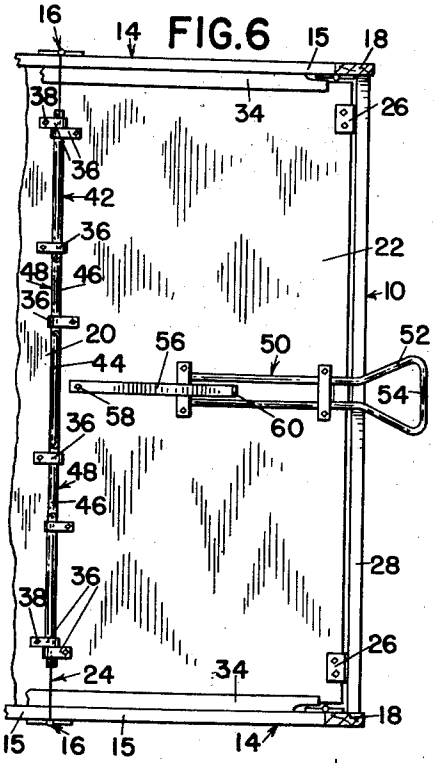
Sept. 16, 1958 E. J. LUKALA 2,851,701

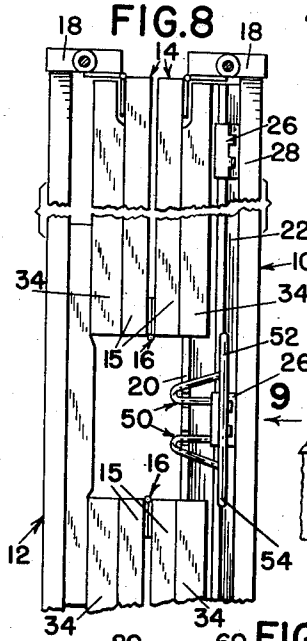
FOLDING PLAY-YARD

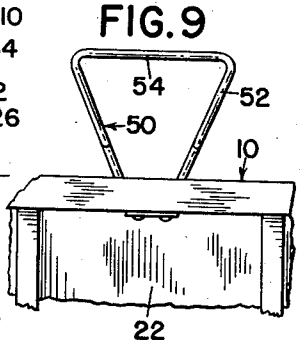
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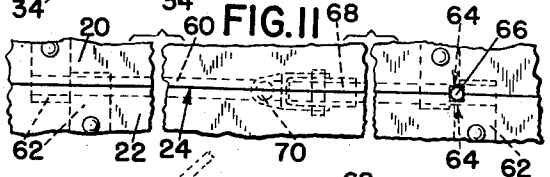


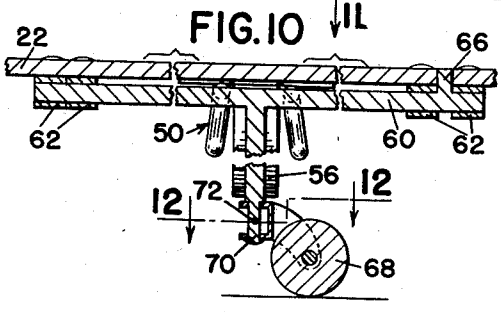


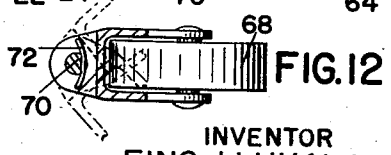












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FOLDING PLAY-YARD

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FIG. 13

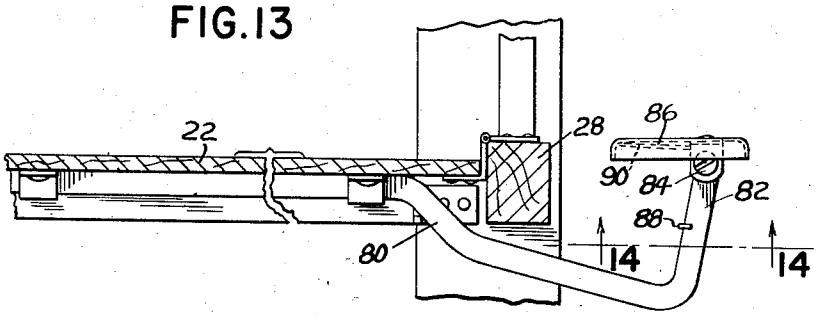


FIG. 14

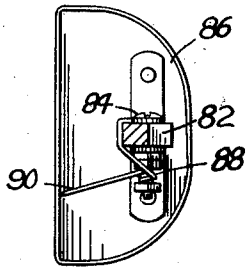


FIG. 15

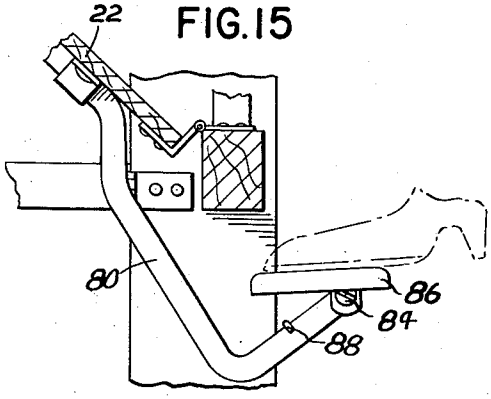


FIG. 16

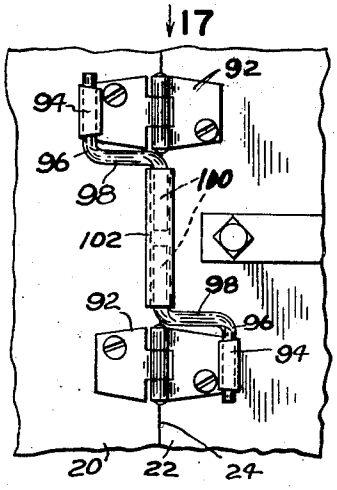
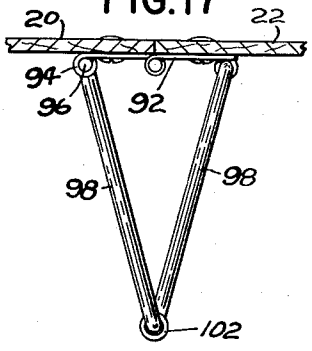


FIG. 17



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FOLDING PLAY-YARD

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Application January 10, 1955, Serial No. 480,678

3 Claims. (Cl. 5—99)

This invention relates to a new and improved folding play-yard particularly of the type comprising front and rear rigid walls connected by in-swinging articulated side walls and wherein one of the walls has hinged thereto one part of an articulated two-part floor which may be folded as for instance by a foot lever or treadle into substantially flat, parallel condition with respect to the wall to which it is hinged but which is extensible into uni-planar condition to act as a floor when the swinging side walls of the play-yard are extended and latched.

The principal object of the present invention resides in the provision of a new and improved play-yard of the class described having a new and improved stirrup-type of treadle to be actuated by the foot of the operator without danger of the foot slipping therefrom; the provision of a new and improved resilient and greatly simplified spring means for starting the unfolding action of the floor toward horizontal condition for use; and the provision of the stirrup treadle construction and the spring construction in a new combination of parts whereby the treadle guides the spring in the motion thereof, the spring having a free end located between parallel runs forming a part of the new treadle and located beneath the floor.

Further objects of the invention include the provision of a new and improved and greatly strengthened supporting member for the center of the floor when in extended condition, greatly rigidifying and strengthening the floor of the play-yard as well as the entire device, said new and improved supporting means comprising in general an elongated rod-like member having a central depending leg or the like adapted to contact a supporting surface and support the play-yard floor thereby, said elongated member being provided with projections located between adjacent edges of the inter-hinged floor parts, said projections being clamped between said edges and held rigidly thereby when the floor is extended for use, said projections being released and capable of free folding upon the folding of the floor by the treadle, so that the floor supporting member is relativetly pivotable and folds flatly with respect to the parts of the play-yard floor when folded.

Still further objects of the invention include the provision of a novel construction for hinging multiple parts of a play-yard floor together, said hinge construction including leaves engaging portions of the elongated rod-like member described above, so that the means for hinging the floor parts together is also a part of the means supporting the floor parts in extended condition.

Still further objects of the invention include new and improved play-yard constructions embodying smoother operation for folding and extension of the floor parts, and including a new combination of the spring referred to above and roller and guide means for the floor part; a new and improved carrying handle which forms a part of the treadle above described, and other elements and combinations of parts.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a view in side elevation of a play-yard according to the present invention, parts being broken away and parts being in section and illustrating the folding operation of the articulated floor;

Fig. 2 is a plan view of the play-yard of Fig. 1, looking in the direction of arrow **2** in Fig. 1, parts being in section.

Fig. 3 is an enlarged section on line **3—3** of Fig. 2, parts being broken away;

Fig. 4 is an enlarged section on line **4—4** of Fig. 3;

Fig. 5 is a section on line **5—5** of Fig. 4;

Fig. 6 is a bottom plan view of the play-yard in extended condition, parts being broken away and looking in the direction of arrow **6** in Fig. 1;

Fig. 7 is a top plan view illustrating the play-yard in folded condition, parts being broken away;

Fig. 8 is a bottom plan view of the play-yard in folded condition, parts being broken away;

Fig. 9 is a view in side elevation showing the stirrup treadle and handle and looking in the direction of arrow **9** in Fig. 8;

Fig. 10 is a section illustrating a modification of the floor-supporting means;

Fig. 11 is a top plan view thereof, parts being broken away;

Fig. 12 is an enlarged section on line **12—12** of Fig. 10;

Fig. 13 is a sectional view showing a modified form of treadle;

Fig. 14 is a section on line **14—14** of Fig. 13;

Fig. 15 is a view similar to Fig. 13 but showing the treadle depressed;

Fig. 16 is a bottom plan view of a modified center leg support; and

Fig. 17 is a view in side elevation, looking in the direction of arrow **17** in Fig. 16.

In carrying out the present invention, there is shown in general in Figs. 1 and 2, a play-yard comprising a rigid front wall generally indicated at **10**, a corresponding rigid rear wall indicated generally by the numeral **12**, these front and rear walls being interconnected by pivoted in-swinging side wall members generally indicated at **14** and having hinge and latch constructions generally indicated at **16**. The hinge and latch constructions provide for the side walls **14** to swing inwardly (see Fig. 7) in folded condition of the device but when the parts of the side walls **14** are aligned as in Fig. 2, the latches **16** hold the same rigidly in this position as is well known in the art.

The in-swinging side walls **14** are swingably mounted on corner posts **18** and when the floor, which in this case comprises the two floor parts **20** and **22** hinged together centrally of the play-yard along the edges thereof indicated at **24** in Fig. 2, is folded upwardly into the solid line position of Fig. 1, and the walls **14** may be swung inwardly upon release of the respective latches **16** to bring the rear wall **12** into close proximity thereto in folded condition thereof as shown in Figs. 7 and 8.

The two floor parts **20** and **22** are inter-hinged as will be later described and the part **22** is hinged as at **26** to a lower rail **28** of the front wall **10**. The floor part **20** has a free edge **30** and adjacent this edge at the corners of part **20** there is provided a pair of rollers **32** which ride on guide rails **34** in substantially the entire extent of movement of the floor parts from the folded solid line position through the intermediate dotted line position of Fig. 1, to the fully extended position of Fig. 2, so that the folding extension of the floor is very smooth and easily accomplished, this construction resulting in less noise and

shock to the various parts as the floor is actuated. Rails **34** are mounted on the lower rails **15** forming parts of the side walls **14**, and support the side edges of the floor parts in extended condition thereof.

At the lower surface of the respective floor parts, bent straps **36** are connected as at **38** to the respective floor portions and each strap is folded over to provide an eye **40**, which receives a part of an elongated rod generally indicated at **42**. The elongated rod **42** therefore acts in the nature of a hinged pintle and straps **36** act as hinge leaves. In addition, however, the rod **42** is elongated and is bent downwardly at its center portion as at **44** in Fig. 3 and forms a U-shaped leg to support the floor in extended condition. This leg is rotatably and dependently mounted in the straps **36** and tends to remain vertical as seen in Fig. 1 by its own weight. Leg **44** is therefore very easily automatically folded upon motion of the floor parts **20** and **22** from horizontal flat condition to raised folded substantially vertical condition, and is automatically extended into fixed operating relationship upon swinging motion of the floor parts to extended condition (see particularly the dotted lines in Fig. 1).

The rod **42** is provided with offset bends **46** which are gripped by the adjacent edges of the two floors parts **20** and **22** (see Fig. 2) and the edges of the floor parts are recessed at **48** to accommodate these bent portions and yet at the same time to grip the same firmly to hold the leg **44** in vertical position.

It will be seen that the entire operation of the supporting leg **44** is automatic as it tends to remain in vertical position at all times, and when the floor parts are aligned as in Fig. 2, the offset portions **46** of the rod **42** will be gripped therebetween and firmly held in vertical floor-supporting condition.

The floor part **22** is provided with a bent wire treadle generally indicated at **50**. This treadle is provided with the two runs shown in Fig. 6 which extend outwardly beyond the forward wall **10** and form a stirrup **52** as plainly shown in the drawings. With the play-yard in extended condition for use, the operator merely places the toe of the foot upon the bar **54** of the stirrup pedal **52** and may then push down upon the same to raise the floor without the foot slipping from the treadle as is normally the case where there is no interfitting engagement between the foot and the treadle, and this results in greatly improved control of the motion of the floor in its change from folded to extended condition.

At the lower surface of floor section **22**, there is provided a free-ended bowed leaf-spring **56** fastened at **58** to the floor and having a completely free end **60** which extends in between the two legs **50** of the treadle member **52** (see particularly Figs. 1 and 6), whereby the spring **56** is always maintained in its relative position as shown and cannot escape in a lateral direction.

When the parts are folded as in Fig. 7, the spring **56** constantly urges the floor parts **20** outwardly, i. e. to the left in Fig. 1, so that when the side walls **14** are swung outwardly, the spring **56** immediately initiates extending action of the articulated floor. As soon as the floor starts, it will proceed very smoothly due to the rollers **32** riding on rails **34** and the floor is re-folded very easily due again to the anti-friction qualities of the rollers **32**.

A modification of the supporting leg is shown in Figs. 10, 11 and 12 wherein an elongated rod **60** is journalled in brackets **62** which are similar to those at **36** but in this case the hinges overlap slightly (see Fig. 11) and are cut away at **64** to accommodate a pin **66** mounted on the rod **60** and gripped between the edges of the play-yard floor pieces and the hinges themselves as above described with relation to the parts **46**.

In this case, the caster **68** swivels on a rod **70** but is stopped by a pin **72** which extends through the shaft **70** (see Figs. 10 and 12). The pin **72** restrains the caster from too great a rotary motion, so that every time the floor is folded, the caster **68** will fold with it and will not extend transversely thereto to block the free and full folding of the two floor parts as might otherwise be the case.

With the device completely folded, it may be inverted and the stirrup type pedal may be used as a handle to carry the entire device from one space to another, see Figs. 8 and 9.

Figs. 13, 14, 15 and 16 show a modified treadle comprising a bar **80** bent as shown in Figs. 13 and 15 and secured to the under side of the floor part **22** in place of the treadle **50**, the other parts of the device being the same as before. The extending end **82** of the bar **80** is inclined upwardly when the floor parts are down and at its end it is provided with a pivot connection **84** for a foot-piece **86**, there being a spring **88** having one end hooked over the bar itself and the other end pressing upwardly on the under side of the foot-piece **86** as at **90**.

When the foot is placed upon the foot-piece **86** and pushed downwardly thereon, the floor **22** rises as previously explained, but in this case the foot-piece **86** remains horizontal as shown in Fig. 15 so as to tend to prevent the same from becoming inclined as for instance as illustrated in dotted lines in Fig. 1 as to the stirrup treadle, so that the foot does not tend to slide from the treadle.

Figs. 16 and 17 show a modified form of center support including a pair of hinges **92** secured to the floor parts **22** and **20**, one hinge leaf of each hinge providing a receptacle **94** offset from the dividing line **24**. These receptacles each receive an end **96** of a crank-shaped bent rod **98** having another offset end at **100** received in the sleeve **102**.

As shown in Fig. 17, when the floor parts **20** and **22** are extended for use, the members **98, 98** form a triangular leg which is held in position due to the angularity of the parts as shown; but when the floor is folded, the members **98** move together in aligned condition and although the floor in extended condition is firmly supported thereby, this leg folds smoothly into a condition requiring very little space between the floor parts **20** and **22** as shown in solid lines in Fig. 1.

It will be seen that this invention provides a new and improved folding play-yard of the class described, said play-yard being smoother and quicker in operation, having a stronger and better central floor-supporting means, and having a new and improved stirrup treadle for safer operation of the device.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A folding play-yard comprising a pair of rigid walls, a pair of folding walls connecting the rigid walls, a multi-part articulated folding floor hinged at one edge of one part to a rigid wall, one edge of another floor part being free, means forming a guide on each folding wall, a sliding member at each end of the free-edged floor part, and resilient means initiating the unfolding action of the articulated floor from folded to extended condition with the sliding members riding on the guides substantially throughout the entire range of folding and unfolding action of the floor, said resilient means comprising a bowed leaf spring mounted at one end on one floor part and having the other end free, said bowed spring bearing on the other floor part only when the floor parts are folded.

2. A folding play-yard comprising a pair of rigid walls, a pair of folding walls connecting the rigid walls, a multi-part articulated folding floor hinged at one edge of one part to a rigid wall, one edge of another floor part being free, means forming a guide on each folding wall, a sliding member at each end of the free-edged floor part, and resilient means urging the articulated floor from folded to extended condition with the

sliding members riding on the guides substantially throughout the entire range of folding and unfolding action of the floor, the sliding members engaging the guides in folded condition of the floor wherein the floor parts are folded into substantial parallelism with the rigid walls, said resilient means including a bowed spring strip having one free end and connected at the other end thereof to the under surface of one floor part and yieldably engaging another floor part at the bowed portion thereof and urging the latter relatively outwardly away from said one floor part to initiate the unfolding action of the articulated floor, said spring strip being flattened between the floor parts in folded condition of the play-yard.

3. A folding play-yard comprising a pair of rigid walls, a pair of folding walls connecting the rigid walls, a multi-part articulated folding floor pivoted at one end thereof to a rigid wall, the other end of the floor being free of the walls for folding of the floor against the rigid wall to which the floor is pivoted and with the parts of the floor in substantially parallel, substantially contacting side-by-side relation, and a bowed spring secured at one end thereof to the under side of a floor part for contact with the under side of another, adjacent floor part only when the floor is folded, the spring having the other end thereof free and tending to urge the floor parts apart to initiate unfolding of the parts to extended condition of the multi-part floor.

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