Sept. 1, 1959 E. S. WOOD, JR 2,901,755

CONVERTIBLE BABY CRIB AND PLAYPEN

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Fig. 1.

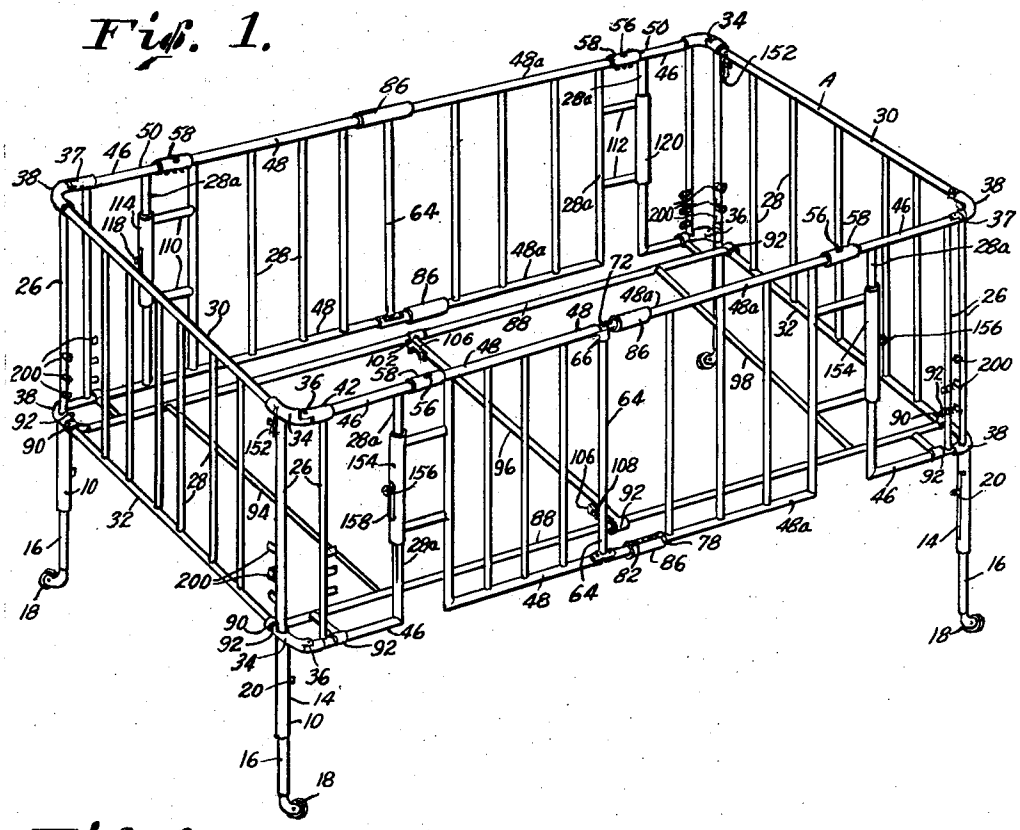


Fig. 6.

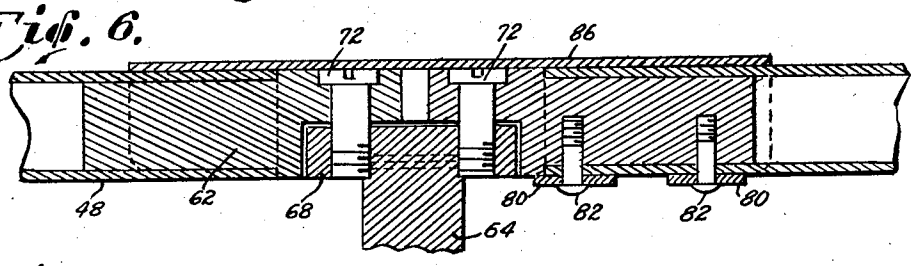
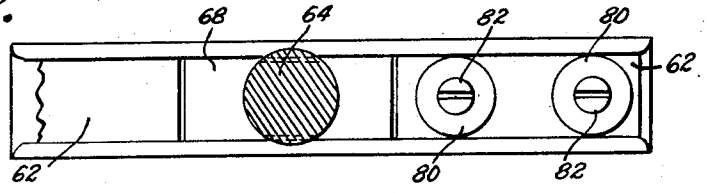


Fig. 7.



INVENTOR.
Elwood S. Wood Jr.
BY
Attorney.

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CONVERTIBLE BABY CRIB AND PLAYPEN

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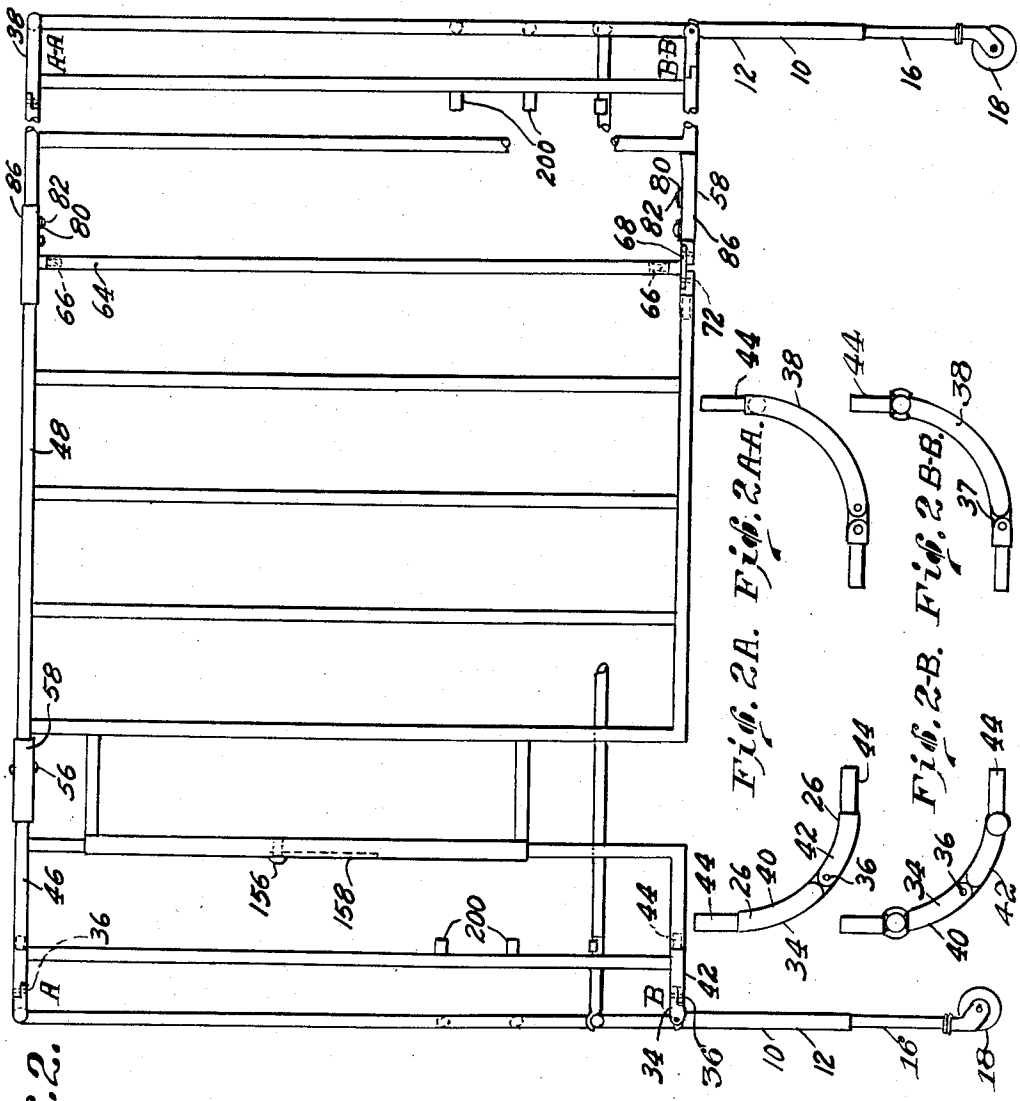


Fig. 2.

Fig. 2A.

Fig. 2-B.

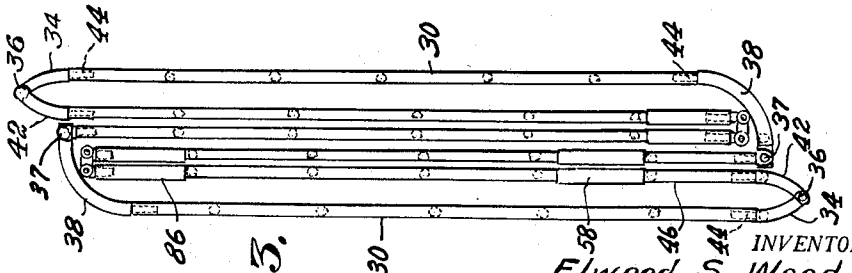


Fig. 3.

INVENTOR.
Elwood S. Wood Jr.
BY
Attorney.

Sept. 1, 1959 E. S. WOOD, JR 2,901,755

CONVERTIBLE BABY CRIB AND PLAYPEN

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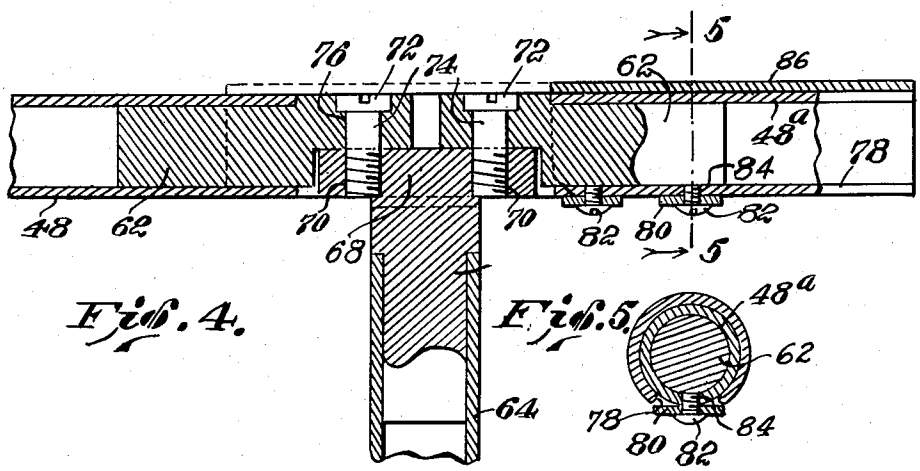


Fig. 4.

Fig. 5.

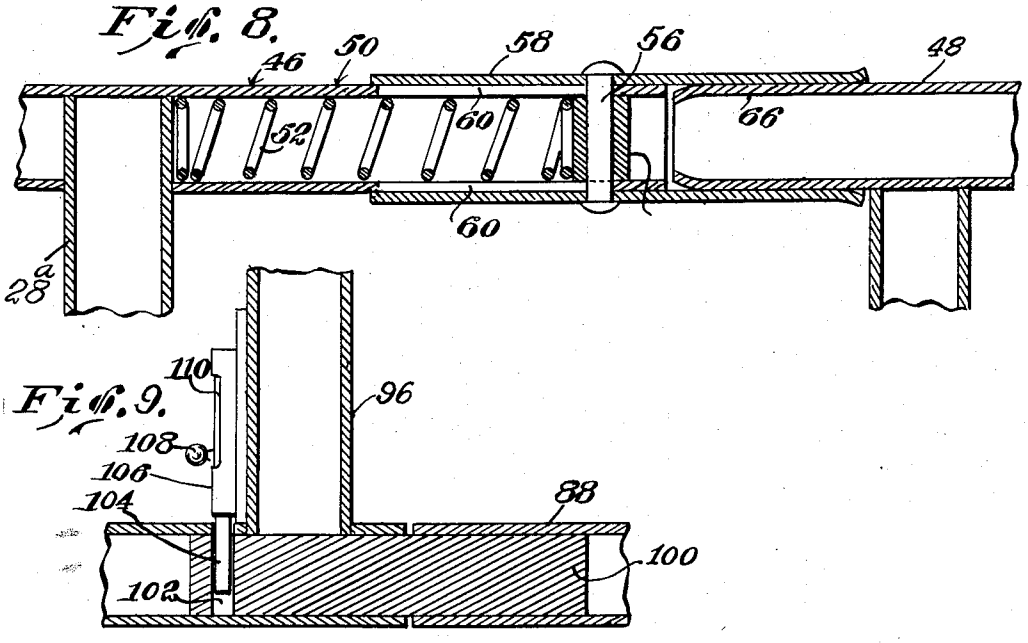


Fig. 8.

Fig. 9.

Fig. 10.

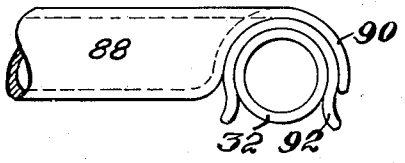
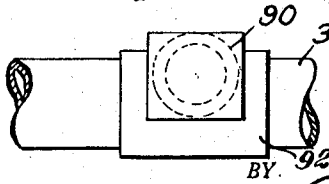


Fig. 11.

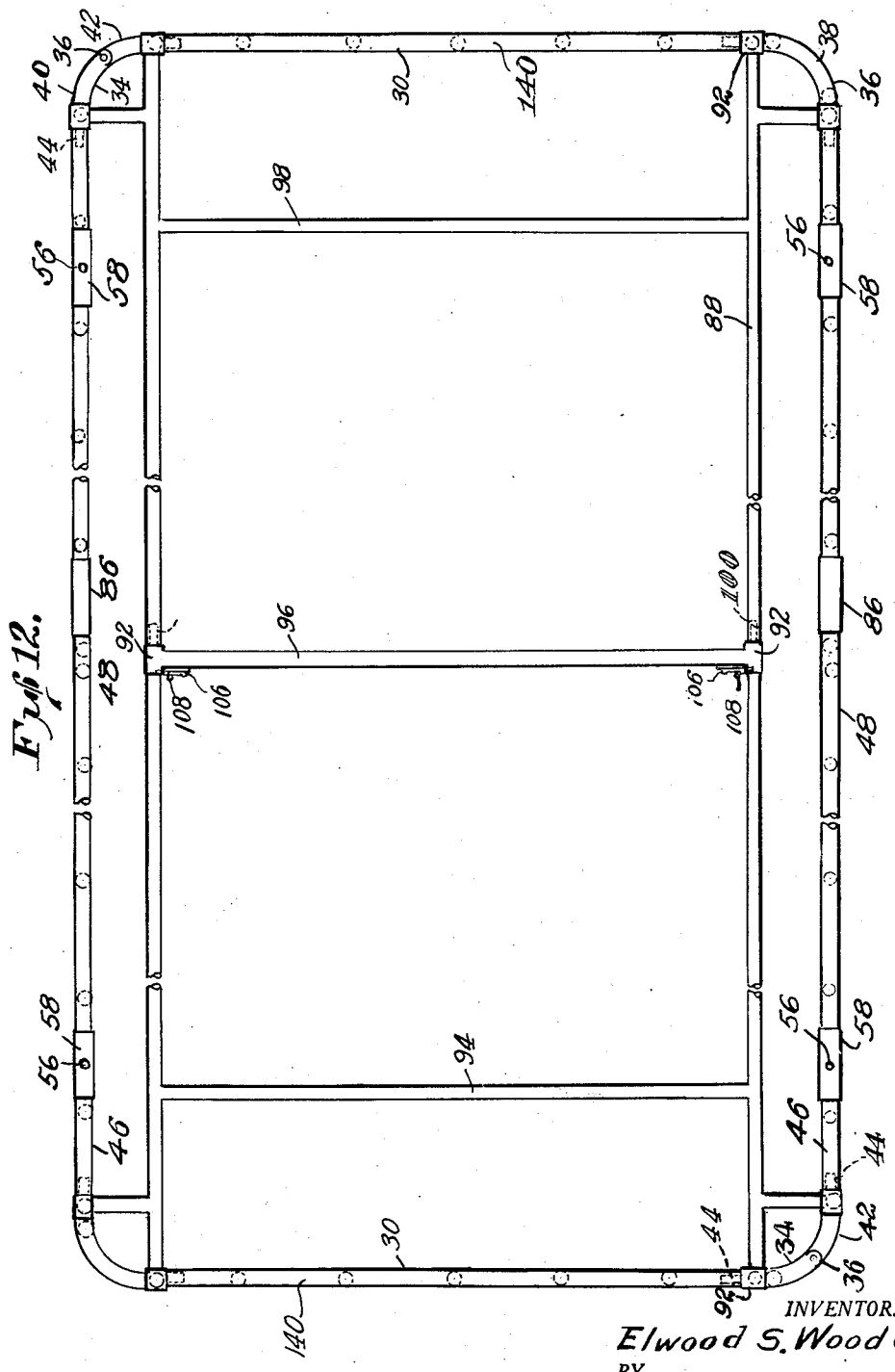


INVENTOR.
Elwood S. Wood Jr.
BY.
Attorney.

Sept. 1, 1959 E. S. WOOD, JR 2,901,755

CONVERTIBLE BABY CRIB AND PLAYPEN

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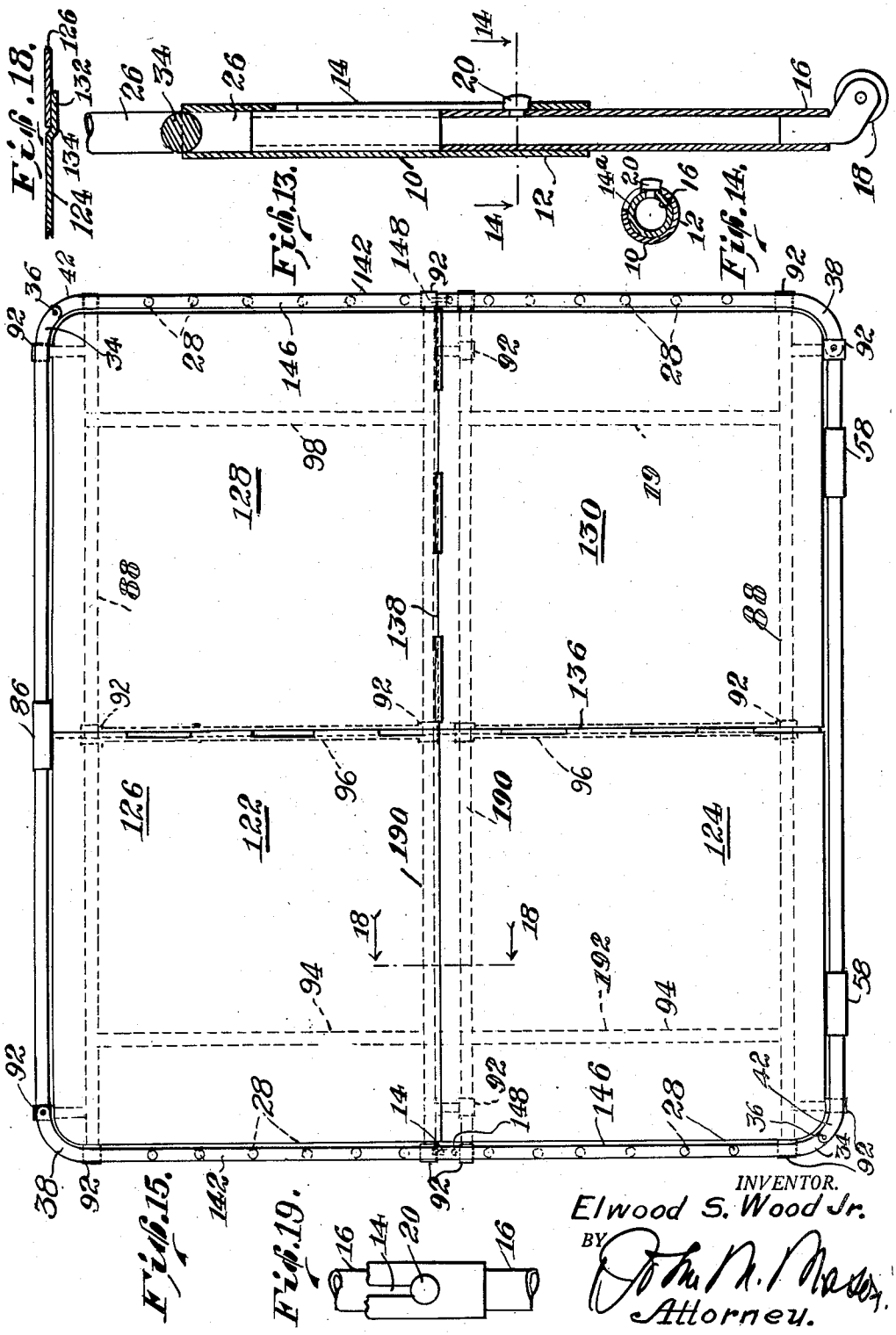


INVENTOR.
Elwood S. Wood Jr.
BY
John N. Wood
Attorney.

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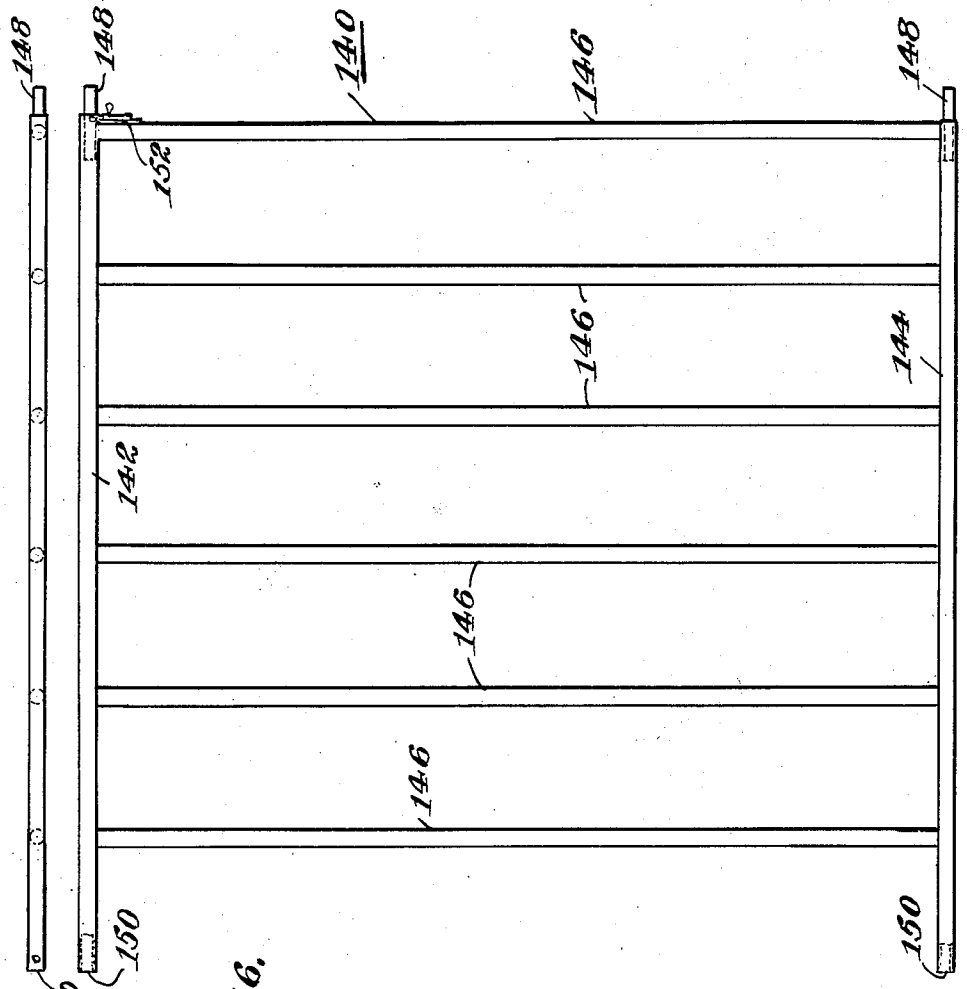


Fig. 17.

Fig. 16.

INVENTOR.
Elwood S. Wood Jr.
BY
Attorney.

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2,901,755

CONVERTIBLE BABY CRIB AND PLAYPEN

Elwood S. Wood, Jr., Norfolk, Va.

Application July 13, 1955, Serial No. 521,736

4 Claims. (Cl. 5—99)

This invention relates to a convertible baby crib and play pen, having novel features of construction hereinafter described.

An object of the invention is to provide a full sized baby crib that can be rolled through doors without disassembling any of the parts of the crib.

A further object of the invention is to provide a convertible crib and play pen, either of which may be folded to a compact size for carrying, without dismantling any of the parts.

An additional object is to provide a crib and play pen which is so constructed that the crib may be converted to a play pen, or the play pen may be converted to the crib without the use of any tools.

Yet another object is to provide a construction of this type wherein all of the corners of the crib and play pen are rounded, and wherein there are no projecting elements of the sides or ends, i.e., all surfaces are substantially smooth surfaces.

A further object is to provide a construction of this type having means for dropping portions of the sides without disturbing other elements of the crib or play pen.

Other objects will appear hereinafter throughout the specification.

In the drawings:

Figure 1 is a perspective view of the crib with the mattress removed;

Figure 2 is a side elevation of the crib with parts broken away;

Figures 2A, 2B, 2A–A and 2B–B show enlarged detail views of the rounded corners at the upper and lower extremities of the convertible crib and play pen;

Figure 3 is a top elevation of the parts in folded position;

Figure 4 is an enlarged vertical section of the central side hinges with the slidable cover therefor in position to expose the parts;

Figure 5 is a sectional view on the line 5—5 of Figure 4;

Figure 6 is a view similar to Figure 4, with the cover in the final or closed position;

Figure 7 is a bottom plan view of the cover and parts associated therewith shown in Figures 4 and 6;

Figure 8 is a vertical section of the slip-lock for one of the drop sections;

Figure 9 is a detailed horizontal section of the detachable connection between the cross bars and the longitudinal supports shown in Figure 1;

Figure 10 is a side elevation of the tube stretcher and with parts broken away;

Figure 11 is a side elevation of the structure shown in Figure 10;

Figure 12 is a top plan view of the crib;

Figure 13 is a detail of one of the ends of the convertible crib and play pen showing a telescoping leg element in vertical section;

Figure 14 is a horizontal section taken on the line 14—14 of Figure 13;

Figure 15 is a top plan view of the play pen;

Figure 16 is a side elevation of one of the insertable play pen end sections;

Figure 17 is a top plan view of the structure shown in Figure 16;

Figure 18 is a vertical section, partly broken away, of the lapped plates in the play pen bottom, taken on the line 18—18 of Figure 15; and

Figure 19 is a detailed view of the slot end pin of the telescoping leg.

The convertible baby crib and play pen has been provided to make available a full sized baby crib that is so designed and constructed that it may be readily moved through conventional doors without being dismantled, folded without being dismantled, with two small sections of the stretchers, into a small compact unit that may be covered with a suitable bag of canvas or other material having a handle, to thereby permit carrying in the same manner as the conventional handbag.

Referring to Figures 1–14, inclusive, which show the crib construction, the crib as a whole is indicated by the letter A. The crib or play pen is supported on a plurality of legs **10** which are four in number, and which are located at the usual corners of the device. As shown in detail in Figures 13 and 14, each leg consists of an outer sleeve portion **12** that is provided with a slot **14**, and an inner sleeve portion **16**, the lower end of which receives the roller and roller support designated by the numeral **18**. The inner sleeve may be adjusted vertically in the outer sleeve by means of the pin **20** which slides in the slot and which may be tightened by a quarter turn at either the top or bottom of the slot, for adjustment of the sides of the crib.

The upper end of the outer sleeve fits over the extended part of corner bar **26**. Each corner bar forms one of a series of vertically extending bars indicated by the numeral **28** that form parts of the ends of the device. Such vertical bars are connected at their upper and lower ends by horizontal bars **30** and **32**.

Referring to Figures 1, 2 and 12, diametrically opposite corners **34** such as the lower left and upper right corners of the device shown in Figures 1 and 12 are provided with corner hinges **36** at both the upper and lower ends, mated in pairs and having vertical pintles at diametrically opposite ends whereby the portions of each corner may swing in horizontal directions when the device is folded, as shown in Figure 3. The upper left and lower right corners **38** are not provided with corner hinges as such are not necessary in order to provide for folding from the position shown in Figure 1 to the position shown in Figure 3.

Figures 2A, 2B, 2A–A, and 2B–B all show plan views of these corners which have been enlarged. Corners **34**, as shown in Figures 2A and 2B, each consist of a pair of similar curved links **40** and **42** which are joined by the hinge **36**, and the corner **38** is joined to the stud member by the hinge **37**, as seen in Figures 1 and 4.

The opposite end of each link is directly connected to one of the corner bars **26** and these ends are also provided with stud posts **44**, which posts are rigidly connected to the links, and which frictionally engage the short bars **46** forming parts of the upper sides of the crib. These bars **46** are joined to intermediate bars **48** by the spring-loaded slip-lock device **50**, shown in detail in Figure 8, where, as shown, the bar **46** contains a spring **52**, one end of which abuts against one of the vertically extending bars **28***a*, and its opposite end bears against the spring stop **54** which is held by a pin **56** to the handle **58**. As shown in Figure 8, the handle **58** may be positioned to the left as the pin **56** will slide in the slot **60**, whereby the said handle will move away from the projection **66**, forming one end of the bar **48**. The

opposite end of the bar **48** has a connection, as shown in Figures 4 and 5, wherein the open end of this bar or tube has been closed by the hinge member **62** that projects from the end of the tube **48**, and is held in rigid position by any suitable means such as pinning, riveting, brazing, welding, sweating or soldering.

The central post **64**, shown in Figures 1 and 4, is provided with a projection **66** which is held rigidly to the bar or tube **64** in the same manner as part **62** is held in part **48**. The projection **66** is provided with a head **68** having screw threaded apertures **70** for the reception of the headed screws **72**, each of which is provided with a cylindrical portion **74**. The end of the hinge member **62** is provided with a cylindrical aperture **76**, whereby to permit rotation of the bar **48** and the hinge member **62** on the cylindrical portion of the headed screw **72**.

As viewed in Figure 4, the other intermediate bar **48***a* is the same as bar **48**, except that the slide cover **86** is provided with a slot **78** and a guide washer **80** is provided with a screw **82** which engages the guide washer and positions it on the intermediate bar **48***a* by a screw threaded aperture **84** in the intermediate bar **48***a*, as shown in Figure 5. By this means, the slide cover **86** is prevented from rotation on the intermediate bars **48** and **48***a*. The slide cover **86** may be slid from the full line position, as shown in Figure 4, to the dotted line position shown in the same figure, and as shown in full lines in Figure 6. In the position shown in Figure 6, all of the parts are covered so as to protect the hands of the infant and its clothing. This cover also serves, when in the position shown in Figure 6, to rigidly lock the two bars **48** and **48***a*.

It will be noted by referring to Figure 1 that the lower cover **86** is in its retracted position, and the upper cover **86** is in its closed or covered position.

The bottom of the crib which supports the mattress consists of a pair of longitudinal supports **88** which are held by the structure shown in Figures 10 and 11. This structure includes a transverse channel **90** in each end of each longitudinal support which has a spring clip **92** welded to the channel **90**, whereby the end of each support **88** may be snapped over the lower horizontal bar **32**, as shown in detail in Figures 10 and 11. The bottom of the crib can be adjusted to higher heights so that baby may be attended from bed or chair by resting the bottom assembly on studs **200** (Figure 1) in lieu of bar **32**.

The longitudinal supports **88** are joined to each other by a plurality of transverse bars or tubes **94**, **96** and **98**. The central bar **96** may be detachably joined to the longitudinal bars **88** by the construction shown in detail in Figure 9. In this structure, the bars **88** are each provided with a stud **100** which is welded in place within the bar **88**. Each stud is provided with a slot **102** for a plunger **104** which slides in the housing **106**, the latter being mounted on the transverse bar **96**. The plunger **104** is moved back and forth by the handle **108** which slides in slot **110** of housing **106**. By this means, the transverse bar **96** may be readily detached from the longitudinal bars **88**.

As noted in Figures 1 and 2, when it is desired to drop either side, the pair of handles **56** on that side are slid away from each other. This will permit the portions **48** and **48***a* with the connecting parts indicated by the numeral **50**, and other parts connected thereto, including the vertical bars **28** and the center post **64**, to drop about four inches. When these drop, the guides **154**, which are sleeves, slide on the rods **28***a*, with the pins **156** which are affixed to parts **28***a*, sliding in slots **158**, as shown particularly in Figure 2. This movement is stopped when the sleeves engage the lower horizontal short bars **46**. The nurse can then reach inside the crib to attend to the child therein without having to lean over the bars. The parts may then be restored to the position shown in Figure 1, and the sleeve **58** moved to the position shown in Figure 8.

As shown in Figures 13, 14 and 19, the slot **14** is provided with an enlarged lower end **14***a*, and the pin **20** has a head, as shown in Figure 19. When it is desired that the legs be lengthened for use with the crib, the part **16** is moved to the position shown in Figure 13, and the pin is rotated so that its head will engage the enlargement **14***a*, as shown in Figure 14.

Figures 15–19, inclusive, show the elements which permit the crib to be converted to a play pen.

Referring to Figure 15, it will be noted that the play pen utilizes the ends of the crib, including the legs. In order to convert the device from the crib to the play pen, the bottom longitudinal and transverse members **88** and **94**, **96** are allowed to remain in the crib, and to the play pen bottom additional longitudinal and transverse members **190** and **192**, respectively, are added and form additional bottom supports. These are placed beside the members **88**, **94** and **96**, representing the original bottom members shown in Figure 1. These members are all provided with clips **92**, as shown in Figure 15, so that they may be clipped to each other and to the ends of the play pen floor member. This consists of four parts, namely four substantially square sheet metal parts indicated by the numerals **124**, **126**, **128** and **130**. The parts **124** and **126** are not directly connected to each other, as shown in Figure 18, part **124** has a depressed flange **132** on which the end **134** of the member **126** rests. The other elements, **128** and **130**, are hinged to the members **124** and **126** by the continuous hinge **136**. There is another hinge half the length of the hinge **136**, designated by the numeral **138**, which hinges the parts **128** and **130** to each other.

When it is desired to fold the parts in the position shown in Figure 3, the two parts **128** and **130** are moved over on top of the parts **124** and **126**, and they are folded again to form a total area one-fourth of the area shown in Figure 15.

In order to convert the crib to a play pen wherein the play pen becomes substantially twice the width of the crib, as shown in Figure 15, the corners **34** and **38** are removed from the lower left or right ends, as shown in Figure 1, and each end is joined to one of the supplemental ends shown in Figure 16, as will be obvious from an inspection of these figures. The horizontal bars **30** and **32** and vertically extending bars **28** and two end pieces such as illustrated in Figures 16 and 17 are substituted for the ends which have been removed. This will double the width of what had been the crib, as shown in Figure 15. By reference to this figure, it will be seen that there are two bases including parts **88** and **96** and clips **92** connecting the same, whereby the two bases may be clipped to each other and to the bottom rail **144**, as shown in Figure 16.

When all of these parts are separated, the sides shown in Figures 16 and 17 have been inserted, and the solid bottom portions designated as a whole as **122** and **124**, shown in Figure 15, have been placed in position, the device may be used as a play pen. At this time the legs are collapsed, so that the bottom of the play pen will only be a few inches above the floor or other support upon which the play pen rests.

The vertical play pen sections shown in Figure 16 and indicated as an entirety by numeral **140** are inserted. As will be noted, each section consists of upper and lower bars **142** and **144**, respectively, which are permanently attached to the vertical or side bars **146**. One or both ends of the side sections may be provided with stud members **148**, or socket members **150**.

When the crib has been converted to a play pen, each of the inner sleeve portions **16** is adjusted to its upper position wherein the upper end of the inner sleeve portion **16** bears against the stud **20**. Suitable locking means indicated by reference numeral **152** as shown in Figure **16**, may be used to lock the stud members in their extended position. This locking means may com-

prise a conventional slide bolt on a bar **146** that engages a notch on the stud **148**, all as shown at the upper right end of Figure 16. The pawl used may be a spring-loaded pawl or the pawl may be the same or similar to that illustrated in Figure 9 at **104**, **106**, **108**, and **110**.

With the construction shown, and as stated above, it is very easy to convert the crib to a play pen or the play pen to a crib, and such conversion may be obtained without the use of any tools.

In a slight variation of the structure shown in Figure 1, the clips **92** at the ends of longitudinal supports **88**, may be dispensed with. These supports may be shortened three or four inches at each end so that the socketed ends may engage any one of the studs **200**. In this structure, parts **88** must be far enough apart from each other to permit the ends to engage the studs **200**. In this manner, the mattress supporting frame may be held in various vertically adjusted positions.

It will be understood that a mattress such as a foam rubber mattress comprising two hinged sections may be used which will allow folding of the mattress, not shown, and that the material used in the construction of the convertible crib and play pen may be of such material as rust-proof metals, or plastics, or a combination of metals and plastics may be used.

The above description and drawings disclose a single embodiment of the invention, and specific language has been employed in describing the several features. It will, nevertheless, be understood that no limitations of the scope of the invention are thereby contemplated, and that various alterations and modifications may be made such as would occur to one skilled in the art to which the invention relates.

I claim:

1. A folding crib and playpen comprising a pair of side members, a pair of end members, said side members and end members being composed essentially of detachable tubular elements, means forming a bottom between said side members and end members, four pairs of upper and lower corners joining said side members to said end members, each pair of corners being curved whereby to join a side member to an end member, one corner of each pair of corners being located at the upper extremities and another at the lower extremities of its end member and side member, hinges located substantially centrally of diagonally located pairs of corners, hinges located substantially at one end of the other diagonally located pairs of corners, each of said last named hinges being positioned between its end member and one of said side members whereby to permit compact folding of said side members and said end members when used as a crib or as a playpen, each of said side members comprising a plurality of side parts, pivot means pivotally connecting the side parts of each side member, a central post between the upper and lower side members, said post having a pair of oppositely extending flanges at its upper end, said pivot means including a pivot member supported by each flange and pivotally supporting one of said side parts, a sleeve slidable on one of said side parts which is pivotally supported by one of said pivot members, said sleeve being adapted to slidably engage over both of said pivot members whereby to protect the hands of a child from the same, and legs for supporting said folding crib and playpen.

2. The structure of claim 1 wherein said side members and end members are provided with means for detachably connecting said side members and end members to said corners.

3. The structure of claim 2 wherein said last named means comprises stud and socket means located at the adjacent abutting ends of said corners and the ends of said sides and said end members.

4. The structure of claim 1 wherein said bottom is provided with supporting means when used as a crib and additional supporting means when said folding crib and playpen is used as a playpen.

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