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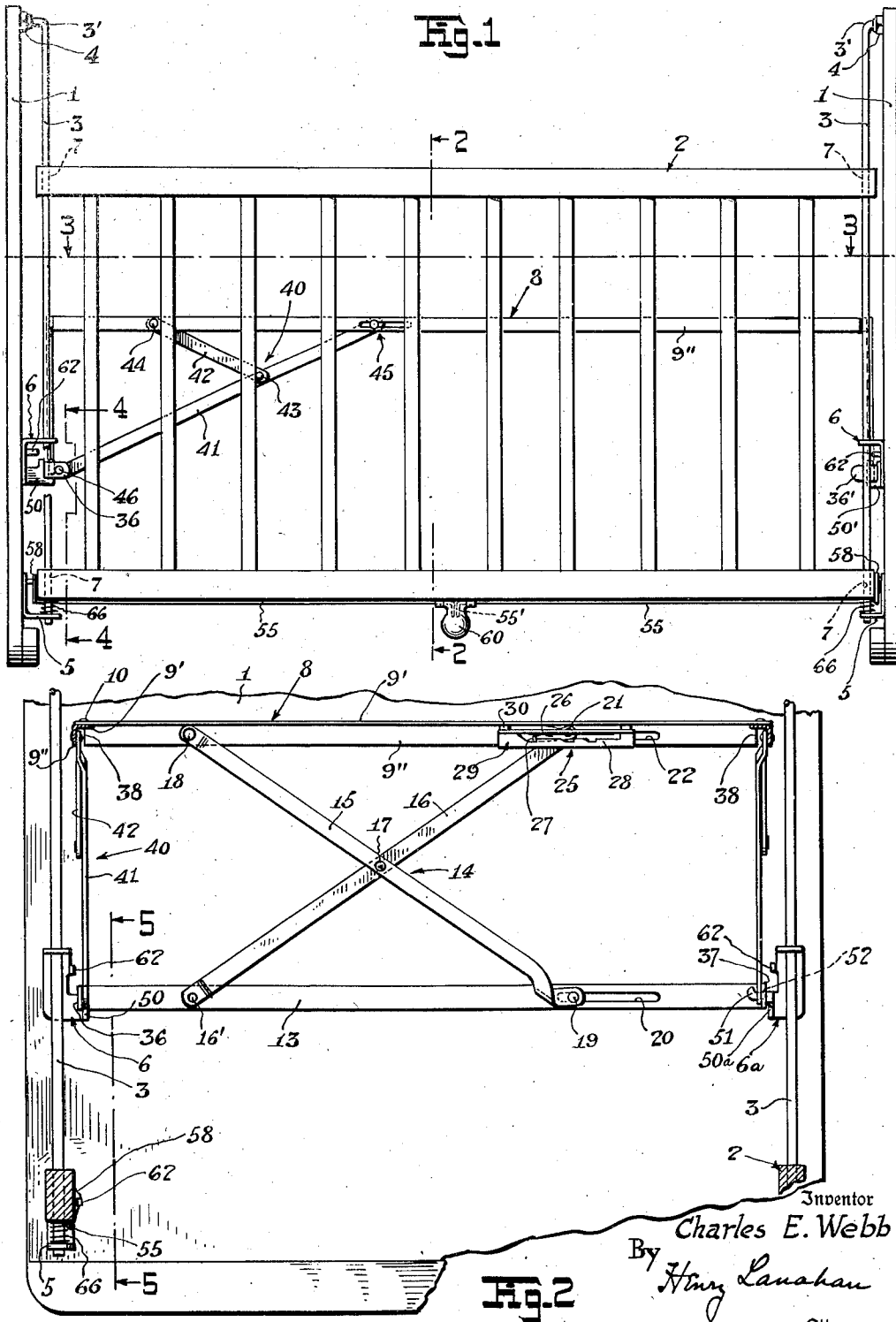
C. E. WEBB

2,380,812

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Filed Oct. 22, 1941

2 Sheets-Sheet 1



July 31, 1945.

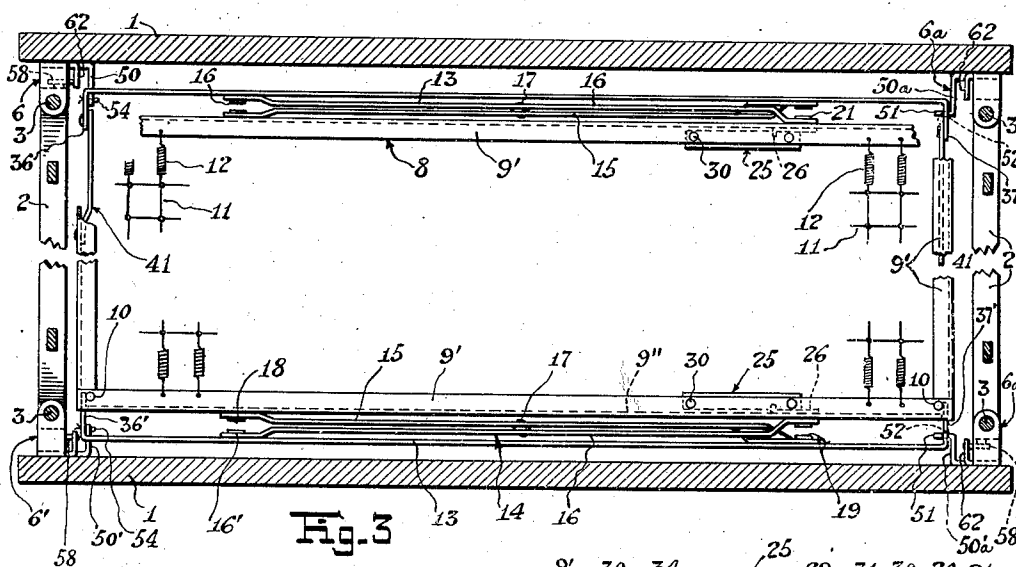
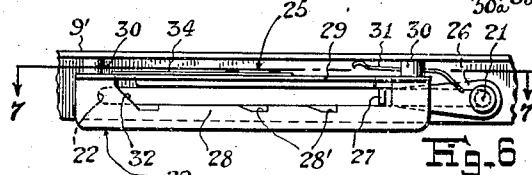
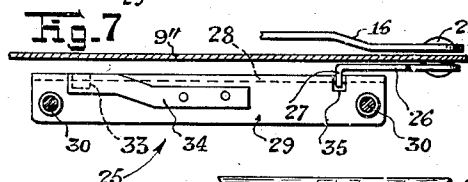
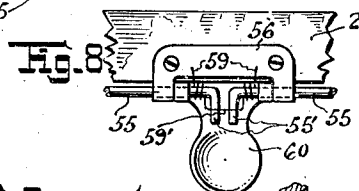
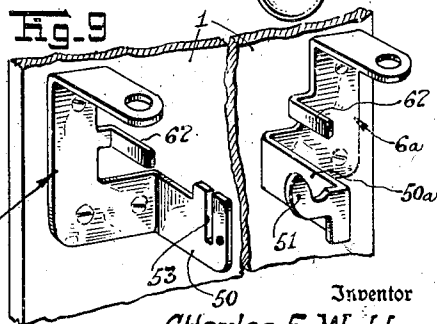
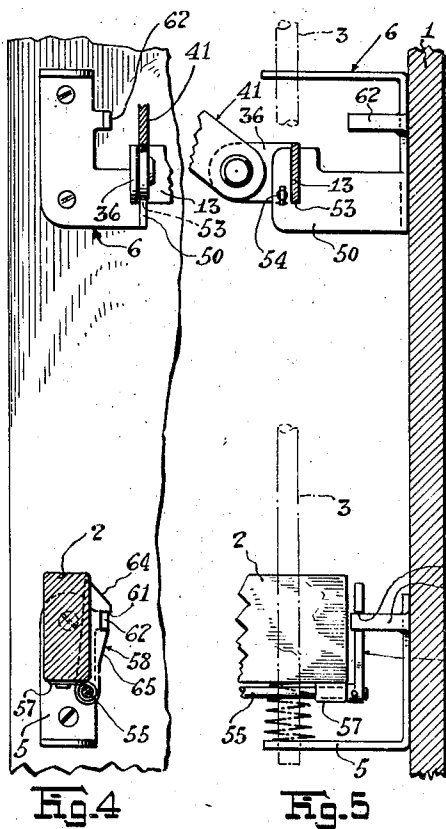
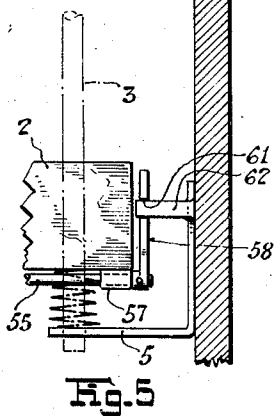
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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CRIB

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3 Claims. (Cl. 5—11)

This invention relates to cribs and more particularly to cribs having an adjustable mattress frame and movable side guards or panels.

Some of the more general objects of my invention are to provide an improved and simplified construction of such a crib which may be readily assembled and disassembled; to provide an improved guide mechanism for the mattress frame; to provide a simplified support structure for the mattress frame adapted to permit the frame to be easily installed and removed into and from the crib structure; and to provide a simple crib structure held rigid without the use of a bottom support frame and which may be collapsed or folded when the mattress frame is removed so as, for example, to permit the crib to be readily transported through doorways while the sides and ends thereof are in assembled relation.

In a more particular respect, it is an object of my invention to provide a crib arrangement having a minimum number of parts of simple design which may be readily fabricated at low cost. To this end I provide a crib structure of end sections and side panels which are pivoted together at the corners by rods serving as guides for the side panels; and I hold the structure rigid without the use of bottom side rails, the end sections being held rigid against rocking (that is, against tilting with respect to the horizontal) by means of the movable side panels and the latch means therefor, and the ends and sides of the crib structure being held rigid against collapsing (that is, against change in angle between the adjacent sides) by means of the mattress frame and the adjustable support mechanism therefor. This adjustable support mechanism is effective, without movably contacting the crib ends or sides, to guide the mattress frame and prevent it from swaying.

Accordingly, it is a further object of my invention to provide a stabilized adjustable support mechanism for a crib effective both to hold the mattress frame rigid against swaying and to hold the crib ends and sides angularly rigid at the corners.

In the further interest of reducing the number of separate parts of the crib, and as an object of my invention, I provide mounting brackets on the crib end sections which are constructed and arranged to serve a three-fold purpose—namely, to rigidify the guide rods for the side panels, to support the mattress frame structure and to provide catches for latching the side panels.

Still other objects are to provide improvements in a crib structure of the type abovementioned which are adapted to simplify the support mechanism for the adjustable mattress frame and to simplify the means by which the movable side panel may be held from rattling.

Still further and allied objects of my invention will appear from the attached description and the appended claims.

In the description of my invention, reference is had to the following drawings of which:

Figure 1 is a side elevation of a crib constructed in accordance with my invention, a part thereof being however broken away for the better illustration of details of the structure;

Figure 2 is a fragmentary vertical sectional view taken substantially on the line 2—2 of Figure 1;

Figure 3 is a fragmentary horizontal sectional view taken on the line 3—3 of Figure 1;

Figure 4 is a fragmentary vertical sectional view to enlarged scale taken on the line 4—4 of Figure 1;

Figure 5 is a fragmentary vertical sectional view to enlarged scale taken on the line 5—5 of Figure 2;

Figure 6 is an inside view to enlarged scale of the latch mechanism for one of the scissors or lazy-tongs mechanisms supporting the mattress frame at the ends;

Figure 7 is a sectional view taken substantially along the line 7—7 of Figure 6;

Figure 8 is a fragmentary view to enlarged scale of the lever or pedal for operating the latches of the side panel; and

Figure 9 is a fragmentary view in perspective showing details of my invention.

The embodiment of my invention shown in the accompanying drawings comprises a crib structure of end sections 1 and side panels 2 which are joined together at the corners by vertical rods 3. These rods are secured to the end sections at the top by having their upper end portions 3' bent over horizontally and fastened by union couplings 4 to studs (not shown) in the end sections. In addition, the rods are secured to the end sections at their lower end portions by means of brackets 5 and at their intermediate portions by rigidifying brackets 6 and 6' at the left side of the crib (as it appears in Figure 3) and 6a and 6a' at the right side of the crib, as is hereinafter explained. The top and bottom rails of the side panels are apertured as at 7 and extending through these apertures are the rods 3. Thus the side panels are slidably mounted for up and down movement, the rods serving as guides for the

panels; also the sides and ends of the crib structure are pivoted together by the rods and the crib structure may thus be folded or collapsed by bringing the sides and ends thereof together in parallel movement. This folding feature is highly advantageous in permitting the crib structure to be transported readily through narrow passageways such as through doors from one room to another. However, when the mattress frame is mounted in place in the crib structure as is hereinafter explained, the latter is held angularly rigid at its corners and is thus prevented from being folded.

The mattress frame of the crib, which is herein referred to as 8, comprises angle irons at its sides and ends which are secured together at the corners as by rivets 10. These angle irons have horizontal flanges 9' extending inwardly of the frame and vertical flanges 9'' extending downwardly beneath the frame, as is shown in Figures 2 and 3. Between the horizontal flanges 9' there is a screen 11 which is held stretched by tension springs 12.

The support structure for the mattress frame is adapted to permit the frame to be raised and lowered at either end, and comprises laterally extending horizontal bars 13 carried respectively by the brackets 6 and 6a and the brackets 6' and 6a' and lazy-tongs or scissors mechanisms 14 interposed between the bars 13 and the ends of the frame, as is shown in Figure 2. These scissors mechanisms each comprise two levers 15 and 16 pivoted together at their centers as at 17. The lever 15 is pivoted at 18 to the vertical flange 9'' at the end of the frame and has a slidable pivotal connection with the bar 13 comprising a stud 19 on the lever and a slot 20 in the bar in which the stud may pivot and slide; conversely, the lever 16 is pivoted at 16' to the bar 13 and has a slidable pivotal connection with the vertical flange 9'' of the frame comprising a stud 21 on the lever and a slot 22 in the flange as shown in Figure 6. Thus either end of the mattress frame may be raised and lowered, the studs 19 and 21 being slid, inwardly and outwardly in relation to the crib, along the respective slots 20 and 22 as the frame is so moved.

In order that either or both ends of the frame may be retained in elevated position, there are provided latches at the slidable pivotal connections between the levers 16 and the frame which are effective to hold the studs from sliding outwardly along the slots 20 and 22. These latches, which are herein referred to as 25 and shown in detail in Figures 6 and 7, each comprises a dog 26 pivoted on the inner end of the stud 21 within the angle irons at the ends of the frame. The dog 26 has a lug 27 turned over from the end thereof which engages a rack 28. This rack constitutes the vertical flange of an angle iron 29, the top flange 29' of which is secured by spacing rivets 30 to the under side of the flange 9' of the frame. The dog 26 is biased downwardly against the rack by a leaf spring 31 which is suitably secured at one end to the dog and slidably constrained to the other end by the under side of the flange 9'. As the frame 8 is raised the dog is moved across the rack 28, the lug 27 thereof being brought progressively into engagement with the successive notches of the rack. In the present instance there are three such notches 28' adapted to permit either end of the frame to be held at different heights in any one of three different positions.

The latches 25 are arranged so that, if the

frame is raised to a level above its uppermost latched position, it may then be freely lowered without restriction to its lowermost position. To this end, a cam 32 is provided at the end of the rack. When the frame is raised to the level just mentioned, the lug 27 engages the cam 32 and is cammed upwardly into contact with the top surface of the flange 29', there being a slot 33 in this flange through which the lug passes. This slot is covered by the end portion of a leaf spring 34 which is riveted to the top side of the flange 29', but the spring yields to the pressure of the lug to permit the lug to pass up through the slot. When the lug has however passed through the slot the spring snaps back to close the latter and thus prevent the lug from returning back onto the rack through this slot. When the frame is next lowered the lug is caused to slide across the top of the flange 29' through the length of the rack. When the frame however reaches its lowermost position, the lug comes into engagement with a slot 35 in the top of the flange 29' and is snapped downwardly onto the rack by the biasing spring 31. Thus, upon raising either end of the frame that end will be latched successively in progressively higher positions against downward movement, except that should the frame be raised above the uppermost one of these latched positions, it is then freed to be returned to its lowermost position.

The end portions of the support bars 13 are bent over to form inwardly projecting lugs at the four corners of the crib, there being thus formed lugs 36 and 36' at the front side of the crib structure and lugs 37 and 37' at the back side—that is at the left and right sides of the crib as it appears in Figure 3. The lugs having the same reference character are substantially the same in shape except that those with the prime marks are slightly longer. These lugs extend beneath the frame and serve to support it in its lowermost position. Preferably, in order that the lowermost position of the frame may be one in which the scissors mechanisms 14 are in a substantially wholly collapsed condition and the frame in a position substantially in horizontal relation with the support bars 13, the vertical flanges 9'' of the frame ends are provided with slots 38 as shown in Figure 2. When the frame is lowered the lugs 36 and 37 engage these slots and come into contact with the under sides of the horizontal flange 9' of the frame.

As the frame is raised and lowered the scissors mechanisms 14 operate to hold the frame in parallel relation to the support bars 13 and, in addition, to hold the frame rigid against swaying in a direction lateral or sidewise of the crib. To hold the frame rigid against swaying in a direction lengthwise of the crib there are provided stabilizers 40, one at each side of the frame. These stabilizers each comprise a half scissors mechanism made up of a diagonal lever 41 and a brace link 42 which are pivoted together at 43, as shown in Figure 1. The link has a pivotal connection at 44 to the vertical flange 9'' at the side of the frame, and the lever has, at one end, a slidable pivotal connection 45 to this vertical flange and, at the other end, a fixed pivotal connection 46 with one of the support bars 13, the pivotal connections of the levers of the stabilizers to this one support bar being conveniently made to the lugs 36 and 37 aforementioned. It will be recognized that these stabilizers will guide the frame vertically and effectively hold it rigid against swaying lengthwise of the crib. Having

however only one point of pivoting at one end—the pivotal connection 46 to the support bar 13—the stabilizers have the advantage of permitting the mattress frame to be raised at either end and be thus placed at an inclination with the horizontal—a feature which is very desirable in children's cribs.

It will be seen that by the use of two stabilizers 40 placed between opposite sides of the frame and one of the support bars 13, the frame is held angularly rigid against turning about a vertical axis in relation to that one support bar. Since the support bars are securely held in place on the crib end sections—as will hereinafter be apparent—it will be seen that this angular rigidity between the frame and support bar and that rigidifying influence of the scissors mechanisms 14 which prevents the frame ends from being displaced sidewise in relation to the crib end sections, are effective by their conjoint action to angularly brace the crib structure and hold it rigid at its corners against being folded or collapsed in the manner hereinbefore mentioned. Thus the same mechanism which guides and stabilizes the mattress frame serves also to hold the crib structure rigid against being folded. This rigidifying of the crib—it will be seen—is accomplished without the use of the usual bottom side rails—there being independent mountings of the frame support mechanism to the crib end sections—and without involving any direct or sliding contact of the mattress frame with either the crib side panels or end sections.

The support bars 13 are carried by the pairs of brackets 6 and 6a (see Fig. 9) and 6' and 6a' respectively, as aforementioned, on lugs 50 and 50a provided on the brackets 6 and 6a respectively and lugs 50' and 50a' provided on the brackets 6' and 6a' respectively, the lugs with the prime marks being somewhat shorter than the corresponding lugs without the prime marks (see Fig. 3). The lugs 50a and 50a' have up-turned hooks 51 thereon extending laterally of the crib, which engage respective apertures 52 in the lugs 37 and 37' of the support bars to form a pivotal support for the mattress frame at one side of the crib, as is shown in Figure 3. The support bars merely rest on the lugs 50 and 50', there being however slots 53 in these lugs open to the top into which the support bars fit. Cotter pins 54, as are shown in Figure 3, serve to hold the support bars from being raised from these brackets. Lateral movement of the bars in relation to the crib end sections is prevented by the engagement of the lugs 37 and 37' of the support bars with the hooks 51. Thus the support bars and mattress frame are securely fastened to the crib end sections. The support bars may however be readily detached merely by removing the cotter pins and thereafter lifting the support bars from the brackets 6 until they reach such angle that the other ends thereof may be slid off from the hooks 51.

A latch means is provided for each side panel 2 which comprises a pair of rods 55 extending along the bottom rail of each panel from the center to the opposite ends thereof. The rods of each pair are journaled to the lower rail of the side panel through a bracket 56 at their inner ends and through brackets 57 at their outer ends. Secured to the outer ends of the rods are pawls 58. The pawls of each pair are normally held vertically by a torsional spring 59 hooked at its ends on the bottom edge of the bottom rail of the side panel and having a central U-shaped portion 59' which is looped over short bent-over

extensions 55' at the inner ends of the rods. A panel 60 which is pivoted on each pair of rods and which bridges the inner end portions thereof provides the means by which the pawls are controlled. The pawls are provided with notches 61 in their inner vertical faces by which they are adapted to engage respective catch fingers 62, integrally provided on the rigidifying brackets, to latch the side panels in raised position or other similar catch fingers 62, integrally provided on the brackets 5, to latch the side panels in lower position. Upper and lower inclined edges 64 and 65, provided on the pawls above and below the notches 61 as are shown in Figure 4, form cam faces by which the pawls are cammed back preliminary to their engagement with the catch fingers 62 as the side panel is raised and lowered.

The side panels are placed under a constraint or bias while they occupy their lower latched positions so as to prevent them from being rattled. This is done by means of compression springs 66 which are coiled about the guide rods between the lower rails of the side panels and the brackets 5. These springs rest on the brackets and are placed under compression by the impact thereon of the side panels as the same are let to drop from raised positions into their lower latched positions, the springs being held compressed by the latching of the side panels. The force exerted by the springs against the latches thus serves to hold the side panels constrained against rattling.

In the crib structure above described the only framework interconnecting the crib end sections, aside from that of the side panels, is the framework formed by the mattress frame 8 and the scissors mechanisms 14, bars 13 and brackets 6 and 6a which couple the mattress frame to the end sections. This coupling means is not in itself sufficiently rigid for practical purposes to prevent the end sections from being racked or inclined with respect to the horizontal. It is however a feature of my invention to rigidify the crib structure against being so racked through the medium of the movable side panels. It will be understood that so long as one or another of these side panels is latched at each end thereof to the respective crib end sections, the crib end sections will be so interconnected as to be free from being racked in the manner hereinabove mentioned. In order to assure that one or another of the side panels will be so latched at all times, I provide the aforescribed latch means at each end of each side panel effective to latch the side panel in both its raised and lowered positions. Thus, when either or both side panels are in raised position or are released from raised position to fall into a lowered position, they are latched to each end section to form a rigid crib structure. Because of the wide separation of the top and bottom rails of the side panels which interconnect the end sections, there is here realized a crib structure which is more rigid against racking than is the usual crib structure wherein reliance is had on relatively narrow brackets, between the end sections and a bottom frame, to so rigidify the crib structure.

The particular embodiment of my invention herein disclosed will be understood to be illustrative and not limitative of my invention, as the same is subject to many changes and modifications without departure from the scope of my invention, which I undertake to express according to the following claims.

I claim:

1. In a crib: the combination of end sections; side panels each slidably and pivotally connected to said end sections for vertical movement; a mattress frame; laterally extending cross bars separate from one another and carried by said end sections respectively; scissors mechanisms operatively interposed between said cross bars and the ends of said frame; levers at the sides of said frame having sliding pivotal connections to the frame and each having a pivotal connection to one of said bars; and brace links respectively pivotally connected to said levers intermediately thereof and to the sides of said frame.

2. Apparatus for detachably and adjustably securing a mattress frame to the end sections of a crib, comprising a pair of parallel horizontal bars at the ends of the crib; vertically adjustable mechanisms connecting the ends of said frame to said bars respectively; detachable means pivotally connecting said bars to said end sections at

one side of the crib; and a pair of brackets on said end sections for supporting said bars at the other side of the crib.

3. In a crib structure including end sections, side panels interconnecting said end sections, and a mattress frame: the combination of full-scissors mechanisms at the ends of said crib for supporting said mattress frame at different elevations, said scissors mechanisms having operative connections to the ends of said mattress frame and having other operative connections, separate from one another, to the respective end sections of said crib; and half-scissors mechanisms at the sides of said crib and extending lengthwise thereof, said half-scissors mechanisms being operatively interposed between said mattress frame and one of said end sections and cooperating with said full-scissors mechanisms for stabilizing said frame lengthwise of the crib.

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