

April 18, 1950

S. B. GOLDSTEIN
CRIB WITH MATTRESS FRAME AND SIDE PANELS SIMULTANEOUSLY
MOVABLE IN OPPOSITE VERTICAL DIRECTIONS

2,504,324

Filed Aug. 27, 1948

3 Sheets-Sheet 1

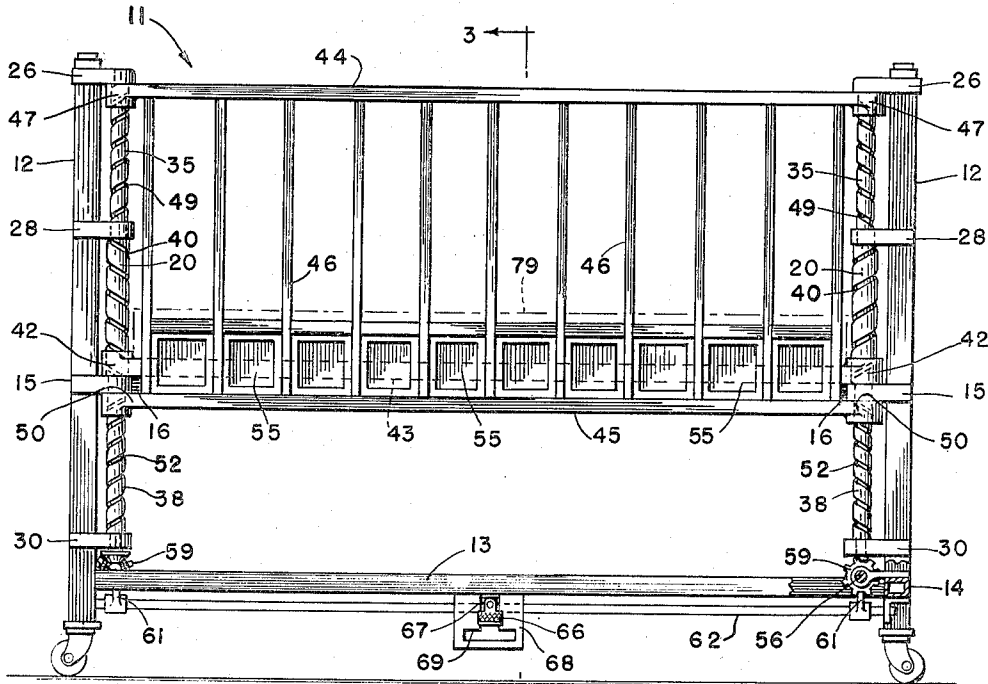


FIG. 1.

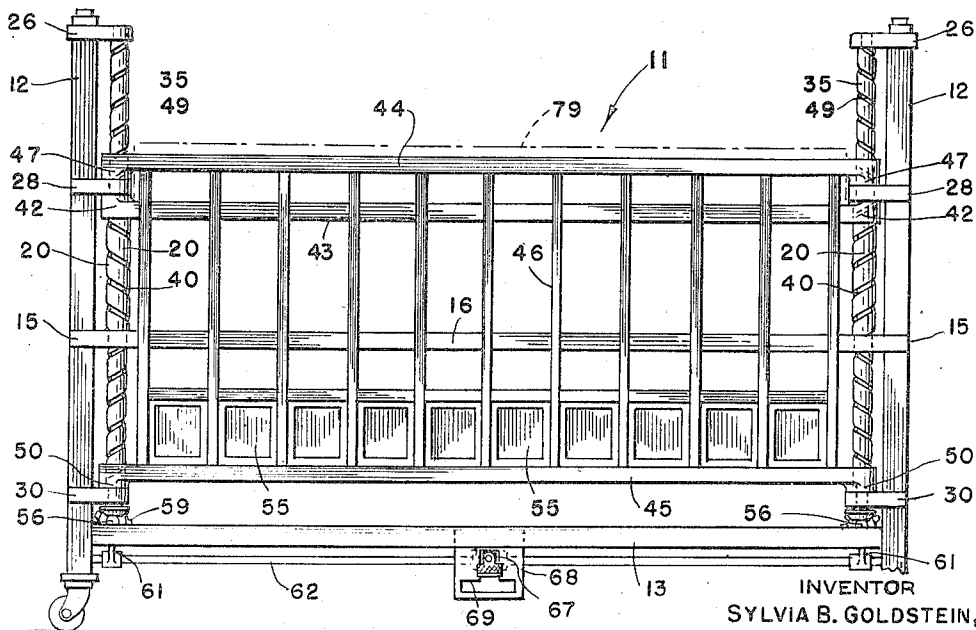


FIG. 2.

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3 Sheets-Sheet 2

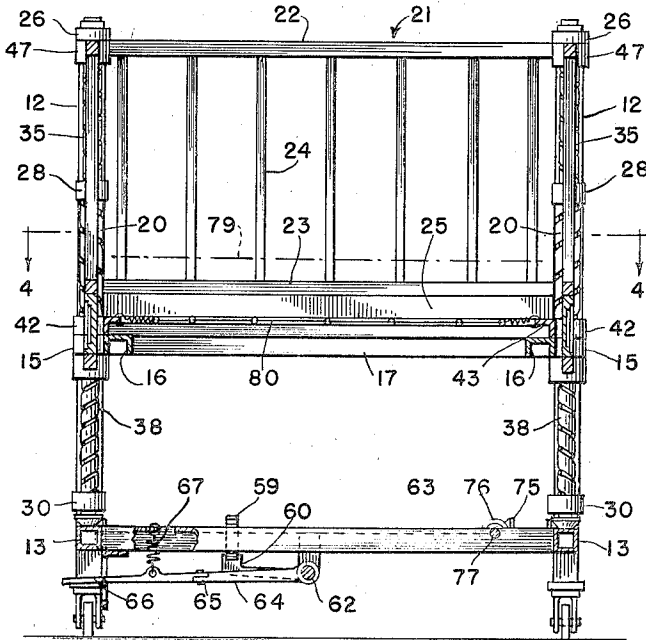


FIG. 3.

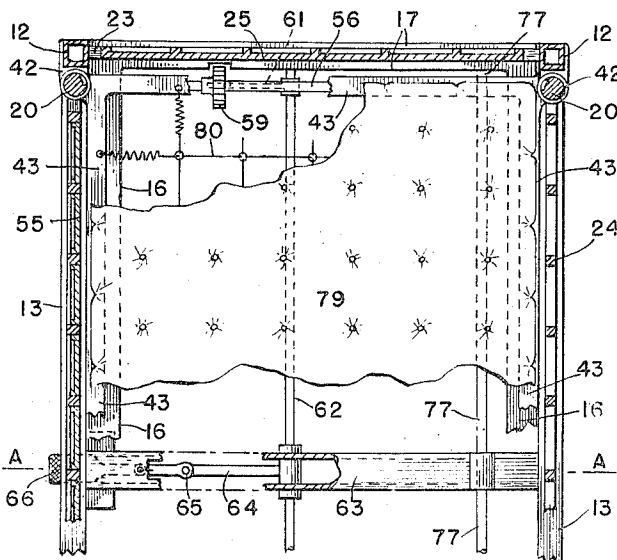


FIG. 4.

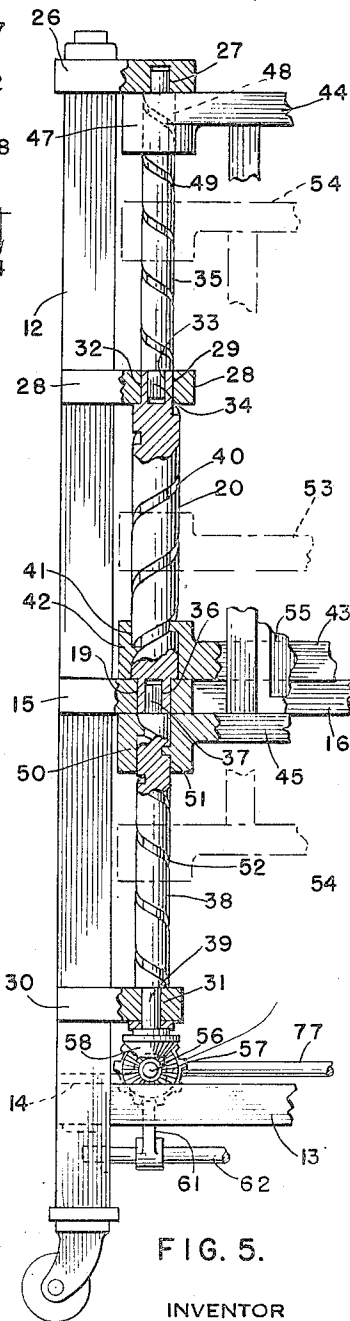


FIG. 5.

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3 Sheets-Sheet 3

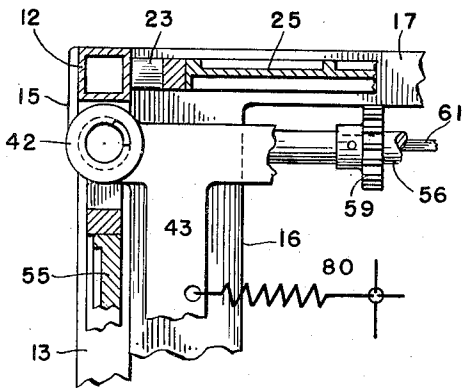


FIG. 6.

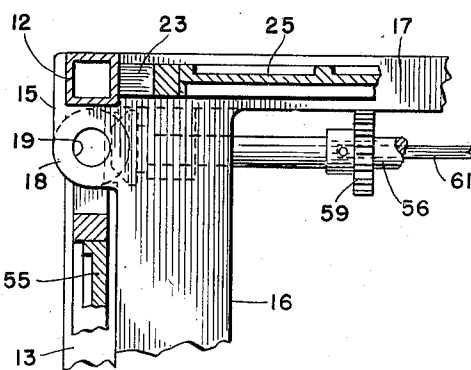


FIG. 7.

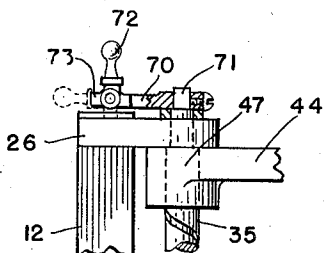


FIG. 9.

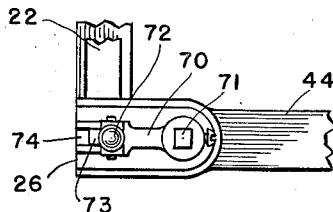


FIG. 10.

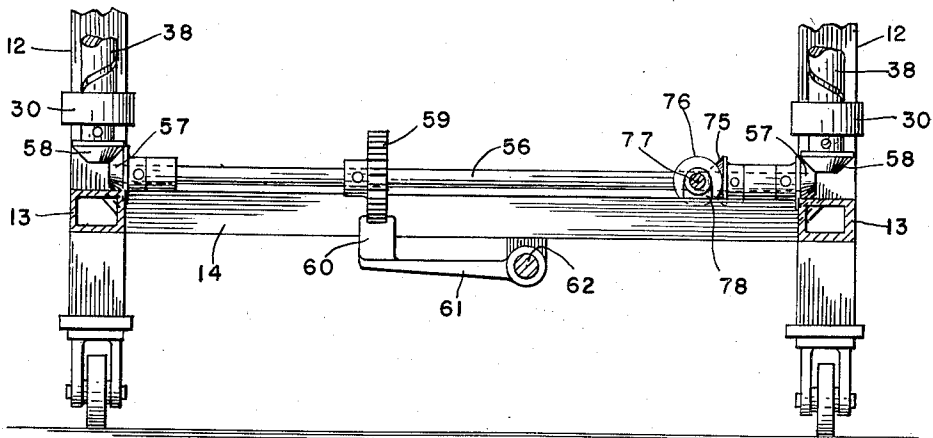


FIG. 8.

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CRIB WITH MATTRESS FRAME AND SIDE PANELS SIMULTANEOUSLY MOVABLE IN OPPOSITE VERTICAL DIRECTIONS

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5 Claims. (Cl. 5—93)

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This invention relates to cribs and has particular reference to the type of cribs having vertically adjustable side drop panels and a mattress supporting frame. The said side drop panels and adjustable mattress supporting frame are mechanically connected to move simultaneously in opposite vertical directions.

Various cribs of this type have been devised but all of them are more or less complicated and require considerable physical effort to operate.

It is an object of this invention to provide a crib of the character described which is so constructed as to require a minimum physical effort to operate.

Another object of this invention is the provision therein of a novel mechanism which permits the operator to stop and lock the said mattress supporting frame and coordinating side drop panels at any desired level within the limit of their vertical movement.

A further object of this invention is the provision therein of the novel mechanical means employed to simultaneously raise or lower the said mattress supporting frame and said side drop panels.

A further object of this invention is the inclusion therein of means whereby a vertical movement is imparted to the said mattress supporting frame when the said side drop panels are given a vertical movement in an opposite direction.

Another object of this invention is the inclusion therein of a series of rotating vertically arranged motivating units having helical grooves thereon engaging through sockets, having complementary helical ribs, upon the said mattress supporting frame and said side drop panels and adapted, when rotated, to raise or lower the said mattress supporting frame and said side drop panels.

A still further object of this invention is the inclusion therein of manually actuated means for rotating the said helically grooved motivating units.

Another object of this invention is the inclusion therein of counter weight elements upon the said side drop panels to balance the weight of the said mattress supporting frame and partially overcome the friction of the said motivating units through the said sockets, of the mattress supporting frame and said side drop panels.

A still further object of this invention is the provision of a device in which the constituent elements are so arranged structurally and functionally as to assure improved results with mate-

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rials and members which may be manufactured at reasonable cost, may be easily assembled and which will be efficient in operation with minimum wear to the parts.

The best embodiment of the invention has been chosen for illustrative purposes, but this embodiment should be viewed as being illustrative only and not as limiting because obviously the invention is capable of other embodiments having revised details of construction, so long as they fall within the ambit of the appended claims.

The invention itself, however, both as to its organization and its method of operation, will be best understood from the following description when read in connection with the accompanying drawings, in which:

Fig. 1 is a side elevational view of a crib showing the side drop panels in normally raised and the mattress supporting frame in normally lowered positions.

Fig. 2 is a similar view but showing the side drop panels and mattress supporting frame in lowered and raised positions respectively.

Fig. 3 is a transverse sectional elevation taken along the line 3—3 of Fig. 1, looking in the direction indicated by the arrows.

Fig. 4 is a sectional plan view of one end of the crib and is taken along the line 4—4 of Fig. 3. (The line A—A indicating, approximately, the center line.)

Fig. 5 is an enlarged fragmentary detail, partly in section, of a portion of the crib and will be hereinafter fully described.

Fig. 6 is a fragmentary detail of one corner (in plan) of the crib and will be hereinafter fully described.

Fig. 7 is also a fragmentary detail of the same corner of the crib taken at a lower level than Fig. 6 and will be fully described hereinbelow.

Fig. 8 is a transverse sectional elevation of a part of the crib, showing a lower end of same.

Fig. 9 is a fragmentary detail, in elevation, of a hand turning element and locking means which will be hereinafter described.

Fig. 10 is a plan view of same.

Referring in detail to the parts, 11 designates a crib comprising corner posts 12, connected along the sides by side rails 13 and transversely at opposite ends, by cross rails 14. A frame 15, having longitudinal or side members 16 and cross members 17 is secured to the said corner posts 12 in any suitable manner and is formed with corner projections 18 having a bore 19 in which the lower end of a central shaft section 20

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engages and which will be hereinafter more fully described. The said corner posts 12 are further securely held together, at opposite ends of the crib, by transverse members 21 (Fig. 3), each of which consists of a top rail 22, a bottom rail 23 and vertical bars 24 which are fastened to the said top and bottom rails 22 and 23 respectively. Below the said bottom rail 23 there is secured a panel 25 which is attached at its ends to the adjoining posts 12, to the said bottom rail 23 and to the upper side of the aforesaid frame 15.

A bracket and capping member 26 is attached to the upper end of each corner post 12 and is formed with a partial bore 27. A second bracket member 28 having a bore 29 therethrough is also secured to the corner posts (Fig. 5) and a third bracket member 30 is secured to each of the said corner posts. The bracket 30 has a bore 31. The upper end of the said central shaft section 20 has a contracted end portion 32 which rotatably engages in the said bore 29 of the bracket 28 and is formed with a squared recess 33 within which a coinciding squared projection 34 formed upon the lower end of an upper shaft section 35 engages. The upper end of said upper shaft section 35 has a contracted circular projection which fits into the said bore 27 upon the bracket 28.

The contracted lower end of the said central shaft section 20 is also formed with a squared recess 36 within which a corresponding squared projection 37 upon a shaft 38 is adapted to engage. The lower end of the said shaft 38 is contracted to form a circular projection 39 thereon which engages through the bore 31 upon the said bracket 30. When the sectional shafts 20, 35 and 38 are in place as shown in Fig. 5, they can be made to rotate as a single unit.

The shafts 20, one of which is adjacent to each of said corner posts 12, have formed upon their outer peripheral surfaces helical grooves 40 and engage through bores 41 formed upon the four projecting corners 42 of a mattress supporting frame 43. The said bores 41 have internally formed helical ribs which are complementary to the said helical grooves upon the said shafts 20. It is obvious that when the shafts are rotated, in the proper direction, the said rotation will urge the said mattress supporting frame upwardly from its lowermost position or downwardly from its uppermost position, when the said shaft is rotated in the opposite direction.

The aforesaid side drop panels, one upon each side of the crib, are each formed with a top rail 44 and a bottom rail 45 connected by vertical members 46. The outer ends of the top rails of the said side drop panels are formed with a boss or knob 47 having a bore 48 (Fig. 5), which is formed with a helical rib conforming to and engaging with a helical groove 49 upon the peripheral surface of the aforesaid upper shaft section 35. The bottom rails 45 of the said side drop panels are similarly formed with a boss or knob 50 having a bore 51 and a helical shaped rib conforming with and engaging a helical groove 52 upon the said shaft 38. Thus when the shafts comprising the three sectional portions 20, 35 and 38 are rotated in the proper direction, the said mattress supporting frame 43 will move upwardly while the said side drop panels will move downwardly as indicated by the dot-dash lines 53 and 54 respectively (Fig. 5) and by the full lines in Fig. 2.

By reversing the direction of rotation of the said shafts 20, 35 and 38 the said mattress supporting frame 43 and the said side drop panels will move

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downwardly and upwardly respectively to resume the position shown by the full lines of Figs. 1 and 5.

With the said mattress supporting frame and said side drop panels in their respectively normal, lowered and raised positions, the said activating shafts may be rotated by manually depressing or raising the said side drop panels.

Upon the said side drop panels there are provided weight blocks 55 of sufficient weight to counteract and balance the weight of the said mattress supporting frame and the friction of the rotating shafts.

The said sectional rotating shafts are coupled by means of a transverse shaft 56 mounted at each end of the crib and upon the ends of which there is attached a bevel gear 57 coacting and meshing with a similar gear 58 upon the lower end of each lower section 38 of the said rotating shaft. Upon each of the said shafts 56 there is provided a locking wheel 59 which is notched to receive the fin end 60 of an arm 61 which is in turn mounted upon a shaft 62 extending longitudinally across the lower portion of the crib and rotatably mounted in the said cross rails 14 at each end of crib and centrally thereof upon a cross channel 63. From the said shaft 62 there is attached an extending arm 64 terminating at its outer end in a pivotal connection 65 at which point there is attached a foot pedal arm 65 (Figs. 1, 2, 3 and 4). A spring 67 is provided to normally keep the locking member 60 in engagement with the said locking wheel 59. When the said fin end 60 is in engagement with the said locking wheel 59, the said mattress supporting frame 43 and its coordinating parts are held immovable. However, by pressing the foot pedal down the said locking wheel 59 is released and the parts may be operated. It will be noted upon the drawings, Figs. 1, 2 and 3 that the pedal 66 passes through a slot 67 in a depending plate 68 and that the slot 67 is formed with a broadened lower cut out to form ledges 69 under which the said pedal may be moved to hold same down.

In Figs. 9 and 10 there is shown a crank handle 70 secured upon a squared section 71 formed upon the upper end of the shaft 35. The outer end of the said crank handle 70 is provided with a pivotally attached L-shaped portion comprising a hand hold or knob 72 and a finger 73 which is adapted to engage in a slot 74 formed upon the cap member 26. With the knob 72 in the upright position shown in Fig. 9, the handle may be used to raise or lower the said mattress supporting frame and the coacting side drop panels. By turning the said knob 72 about its pivotal connection the finger 73 may be brought into engagement with the slot 74 and lock the parts against movement. The aforesaid shafts 56 (one at each end of the crib) may be connected by means of a bevel gear 76 upon one end of a shaft 77, having end bearings on the cross rails 14 and bearing 78 upon the channel member 63 and bevel gears similar to bevel gears 75 and 79 at the opposite end of the said crib.

In Fig. 4 a portion of a mattress 79 is shown resting upon a conventional spring 80 mounted upon the said mattress supporting frame 43.

In the drawings Fig. 5, the helical grooves 40 in the central section 20 of the three sectioned motivating shaft are cut in such manner that when the said motivating shaft is given a clock-wise rotation, the said grooves 40, when considered as imparting a downward movement to its coordinating mattress supporting frame, will travel in

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a clock-wise direction while the helical grooves 49 in the upper section 35 and the helical grooves 52 in the lower section will at the same time travel in a counter clock-wise direction to raise the said side drop panels, or vice versa.

I claim:

1. In a crib, an enclosure frame, comprising end panels, corner posts, connecting cross rails and side rails, a vertically adjustable mattress supporting frame, vertically adjustable side drop panels, threaded shafts each having oppositely threaded portions rotatably mounted upon said enclosure frame in close juxtaposition to said corner posts and engaging through threaded sockets in the said vertically adjustable mattress supporting frame and the said vertically adjustable side drop panels to simultaneously and vertically move in opposite directions, the said mattress supporting frame and said side drop panels when the said threaded shafts are rotated.

2. A crib as defined in claim 1 in which a locking means is provided to manually hold the parts immovable and a foot pedal actuating means to release the said locking means.

3. A crib as defined in claim 1, in which a crank handle is attached to one of the said threaded shafts to afford a means for manually rotating said threaded shaft.

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4. A crib as defined in claim 1, in which a crank handle is attached to one of the said threaded shafts to afford a means for manually rotating said threaded shaft, a knob pivotally attached to said crank handle and a locking finger integrally formed upon said knob adapted to engage in a groove upon said enclosure frame when the said knob is turned down about its pivotal connection.

5. A crib as defined in claim 1, in which counter weights are included upon the said side drop panels to counter balance the excessive weight of the said mattress supporting frame and overcome the friction of the said threaded shafts in the said threaded sockets.

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