Sept. 20, 1938. C. A. WYLIE ET AL 2,130,703

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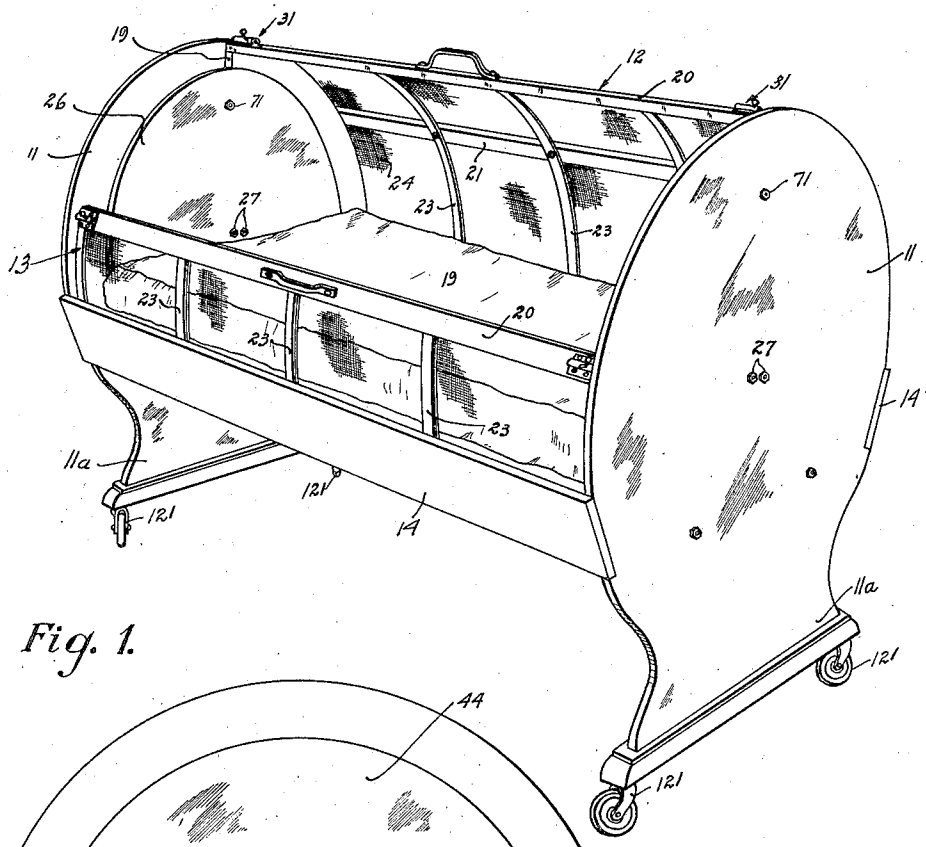


Fig. 1.

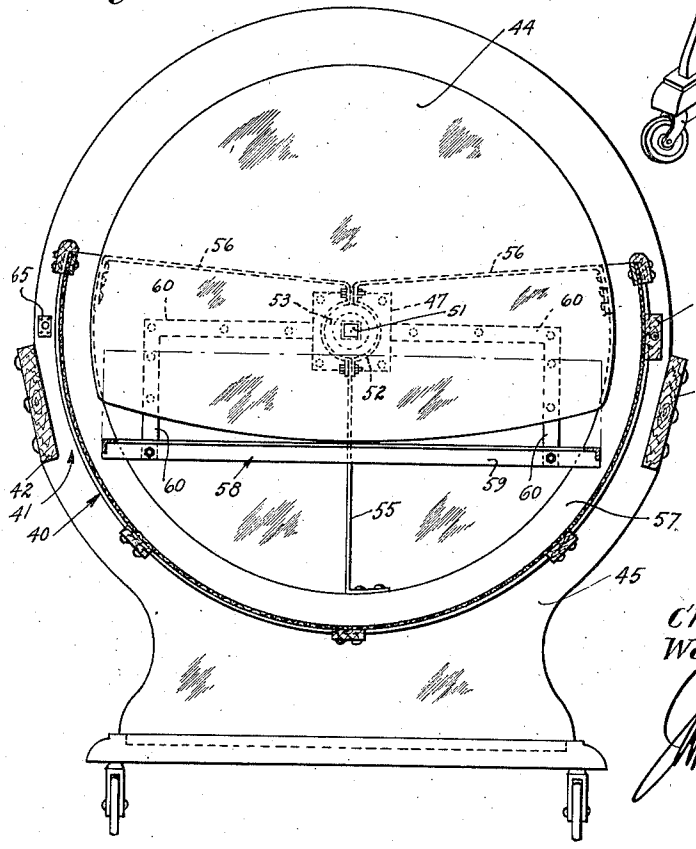


Fig. 7.

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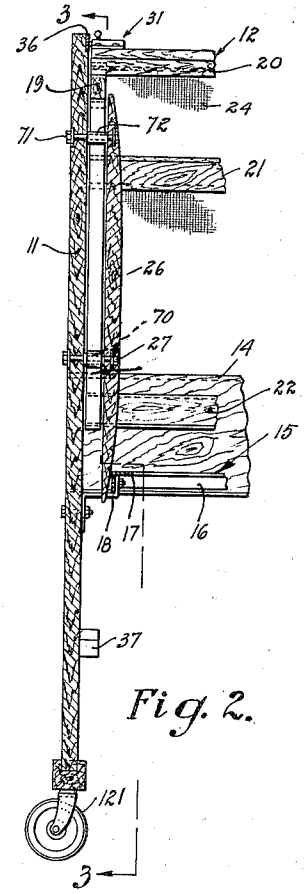


Fig. 2.

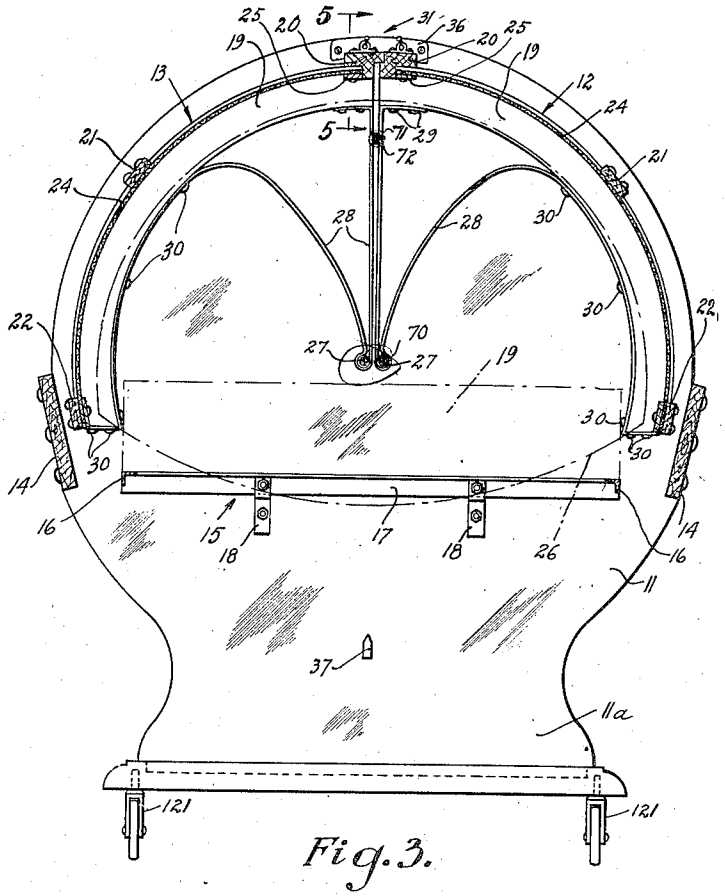


Fig. 3.

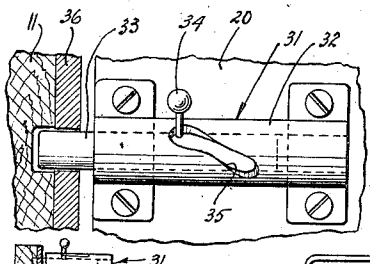


Fig. 4.

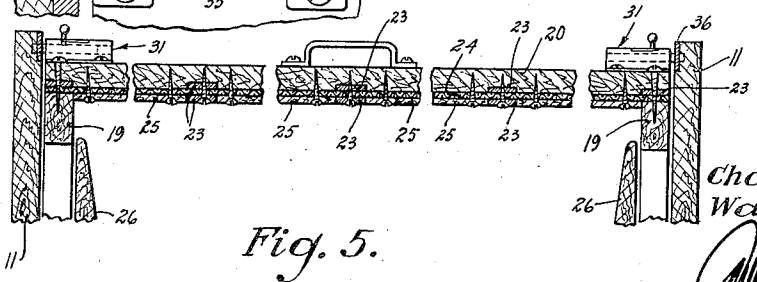


Fig. 5.

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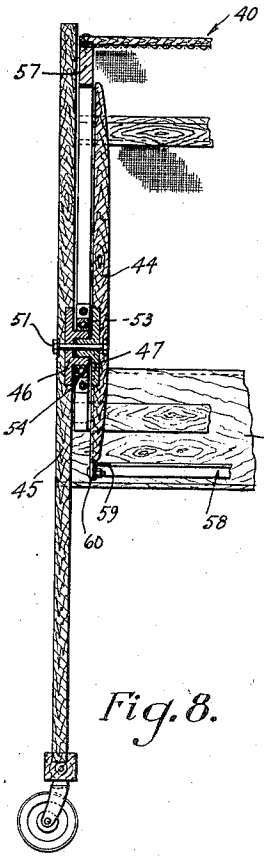


Fig. 8.

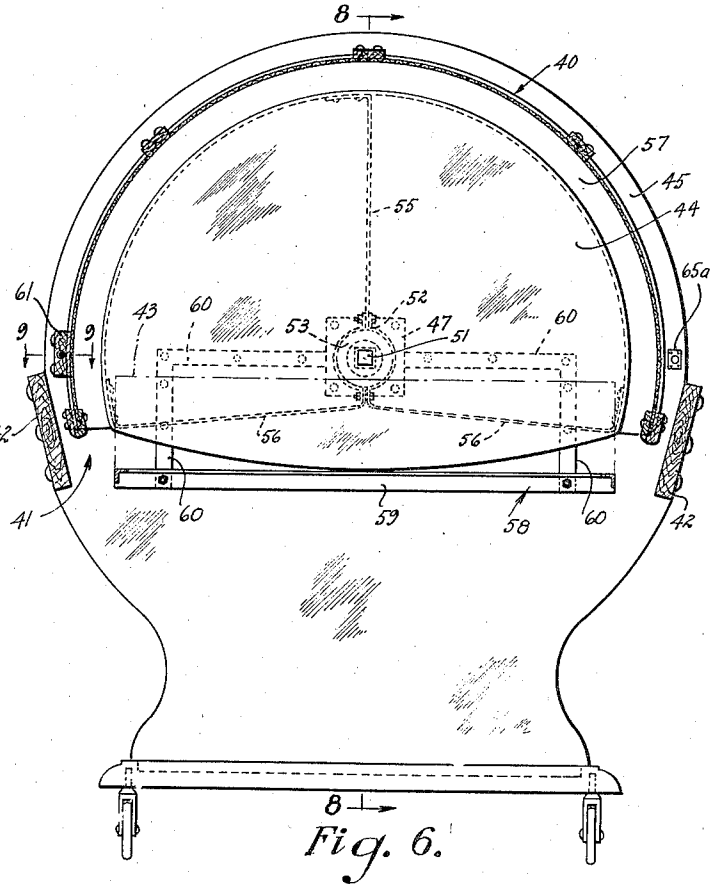


Fig. 6.

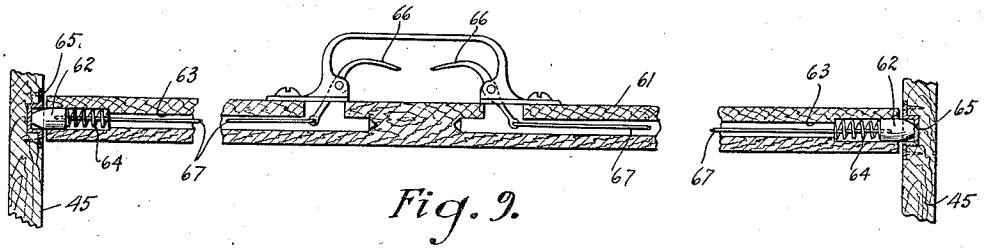


Fig. 9.

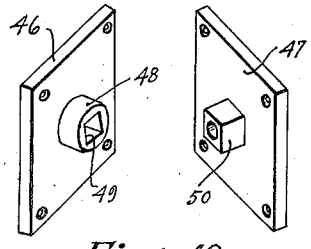


Fig. 10.

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UNITED STATES PATENT OFFICE

2,130,703

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Charles A. Wylie and Warren H. Atwood,
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Application June 18, 1937, Serial No. 148,908

4 Claims. (Cl. 5—97)

This invention pertains generally to improvements in beds, particularly for infants or children, in which the space above the bed proper or mattress is enclosed by a protective screened closure, or a pair of such closures, mounted on the end boards of the bed so as to be capable of downward swinging movement to a position beneath the mattress. While beds of this general form have been proposed heretofore, in all instances of which we are aware the prior constructions have had numerous defects and disadvantages that seriously interfere with their practical utility. Accordingly, our main object is to provide a bed that as fully as possible meets the requirements of protection to the occupant, and safety and ease in the operation of the protective closure.

In accordance with the invention, we pivotally mount an arcuate cross-section closure on the end boards of the bed, preferably at substantially their transverse centers and above the mattress supports, so that the closure may be swung downwardly about its pivotal mountings to open position beneath the said supports. Where a pair of closures are used, we preferably provide a separate pivotal mounting for each so that one is independently operable without interference by the other. A particularly important feature of the invention is the use of panels mounted at the inside of the end boards in spaced relation thereto, so as to enclose the mountings and certain of the relatively rotating parts. The panels thus prevent an infant in the bed from reaching these parts and from possibly becoming injured while the closure is being swung about its mountings. As will be seen from the drawings, the panels serve the additional purpose of greatly improving the appearance of the bed in that they hide the closure mountings and present smooth finished surfaces at the interior.

The above mentioned objects of the invention, together with various additional features and details, will be understood to better advantage and without the necessity for further preliminary remarks, from the following description of the invention in certain of its typical and illustrative forms. Throughout the description reference is had to the accompanying drawings, in which:

Fig. 1 is a perspective view showing a form of bed having two independently operable closures, one of which appears in dropped position;

Fig. 2 is a fragmentary end section of the bed shown in Fig. 1;

Fig. 3 is a transverse section on line 3—3 of Fig. 2;

Fig. 4 is an elevation of one of the latch bolts carried by the closures;

Fig. 5 is a broken section on line 5—5 of Fig. 3;

Figs. 6 and 7 are views similar to Fig. 3 showing a variational form of the invention, the closure appearing in lowered position in Fig. 7;

Fig. 8 is a vertical section on line 8—8 of Fig. 6;

Fig. 9 is a longitudinal section on line 9—9 of Fig. 6, showing the latch device; and

Fig. 10 is a perspective showing the complementary and interfitting plates carried by the end board and panel.

As illustrated in Fig. 1, the bed structure comprises a pair of vertically extending end boards 11, the upper portions of which preferably are of circular form to correspond generally with the curvature of the closures 12 and 13. The outwardly flaring base portions 11*a* of the end boards are supported on pairs of casters 121. The end boards are interconnected by longitudinally extending side boards 14 positioned above the later described mattress supports, and below the top rails of the closures when swung to open position, as illustrated by closure 13 in Fig. 1. Referring to Figs. 2 and 3, the mattress support, generally indicated at 15, comprises a frame including side rails 16 and end rails 17 supported on and in spaced relation to the end boards 11 by brackets 18. The frame 15 supports a mattress 19 or other cushion, indicated by the dot-dash lines in Fig. 3, in such position that when closed, the lower ends of closures 12 and 13 will extend below the top of the mattress.

Each of the closures has a frame including arcuate shaped end members 19 extending adjacent and parallel with the end boards 11, and longitudinally extending rails 20, 21 and 22. The closure frames also include spaced pairs of arcuate shaped ribs 23 set into grooves in rail 20, see Fig. 5, and confining and shaping between them a covering 24 which is secured to the longitudinal rails. Referring to Fig. 5, cleats 25 may be employed to secure the covering flatly against the longitudinal rails. The covering 24 preferably will consist of a fine mesh copper screen, although it is to be understood that any other suitable foraminate or transparent material may be substituted, and that different portions of the covering about each closure may be made of different materials of this general description. To illustrate, that portion of the covering between rails 20 and 21 may consist of a transparent material, such as Cellophane, and the lower portion between rails 21 and 22 made of open mesh material to afford proper ventilation.

As best illustrated in Fig. 2, a vertically extending panel 26 is mounted on and at the inside of each end board 11 by a pair of bolts shafts or pivots 27, which also maintain the panel in spaced relation to the end board. The upper portion of the panel preferably has a circular periphery extending radially a distance sufficient to at least slightly overlap the curved end members 19 of the closure frames. Closures 12 and 13 are mounted for pivotal movement on bolts 27 by metallic strap pieces 28 looped around sleeves 70 placed about the bolts to keep the panel and end board properly spaced. The strap members 28 are attached at 29 and 30 to the inner edges of members 19 and to their lower ends as at 30. It will be noted that the pivotal closure mountings, as well as the rotatable parts of the closure frames radially within the end members 19, are enclosed by the panels 26, so that by no possibility can an infant in the bed reach these parts and suffer any injury as the closures are rotated. The panel and end board may also be connected at the upper central part of the panel by a bolt 71 carrying a spacer sleeve 72, thereby further strengthening and stabilizing the panel mounting.

The closures may be releasably held in raised positions by latch bolts 31 mounted at the ends of rails 20 and engageable with keepers in the end boards 11. As shown in Fig. 4, each of the latches comprises a tubular body 32 attached to the rail 20 and containing a bolt 33 that may be thrust by handle 34 extending through slot 35, into the keeper 36. When dropped, the closures swing downwardly between side boards 14 and the supporting frame 15 to a position beneath the latter, in which the closures are arrested by engagement with stops 37 projecting from the end boards. In stating that the closure or closures may be swung beneath the mattress support, I refer to the direction of movement and general lower position of the closure, without meaning that the support entirely overlies the closure. Brackets 18 are sufficiently offset inwardly from the ends of rails 17 to permit the closure end members 19 to swing downwardly between the outer portions of the rails and the end board. The closures thus are freely rotatable on their pivotal mountings between the positions illustrated, without interference with any of the stationary parts of the bed.

In Figs. 6 to 10 we show a variational embodiment of the invention similar to the first described form, except as to the shape of the closure and its mounting on the end boards. Here the closure 40 is somewhat greater than semicircular in cross sectional shape, and in its closed position, see Fig. 6, it encloses the interior of the bed above the mattress 43 and extends downwardly within the spaces at 41 between the side boards 42 and the mattress. The panel 44 is mounted on the end board 45 by means of plates 46 and 47, see Fig. 10, set into recesses in the end board and panel, plate 46 carrying a circular boss 48 having a polygonal cross sectional socket 49 that receives the correspondingly shaped lug 50 on plate 47. The interfit between the projecting boss and lug on the plates prevents rotation of the panel, and the parts are held together by bolt 51 extending through the plates and into the panel and end board.

The closure 40 is rotatably mounted on boss 48 by means of a clamp 52 secured to the outer race ring 53 of the roller bearing assembly 54, and also to strap members 55 and 56 attached to the inner surface of the arcuate closure frame member 57. As in the first described form of the invention, panel 44 preferably extends outwardly in overlapping relation with the inner edge of member 57, to enclose the space between the panel and end board, and the parts contained therein. The mattress supporting frame 58 is indirectly mounted on the end board by way of panel 44, the end rails 59 of the frame being suspended on angular brackets 60 set into recesses in the panel 44, and extending outwardly and then downwardly from the side of plate 47.

Attached to one side of the closure 40 is a longitudinally extending rail 61 that contains a suitable latch device for releasably holding the closure against rotation from closed or open position. Typically, the latch mechanism, shown in Fig. 9, comprises a pair of detents 62 contained in the outer ends of bores 63 in member 61 and adapted to be thrust by springs 64 into keepers 65 and 65a in the end boards 45. Detents 62 are retractible from the keepers by grasping hand levers 66 connected to the detents by rods or cables 67. The detents are engageable with keepers 65 to retain the closure 40 in its closed position shown in Fig. 6. By releasing the latch, the closure may be swung in a clockwise direction beneath the mattress supports to the open position of Fig. 7, in which the closure is retained by the engagement of the latch detents with keepers 65a. It will be noted that in their open positions, both the described forms of closures extend a sufficient distance above the mattress to keep the infant from rolling out of the bed, and yet permit free and ready access to its interior.

It will be understood that the drawings are to be regarded as typical and illustrative only, and that various changes and modifications may be made without departure from the invention in its intended spirit and scope.

We claim:

1. A bed comprising end members supporting the bed from the floor, side members connecting said end members to provide a rigid frame, panels rigidly mounted inwardly of and parallel to the end members and spaced therefrom, a mattress supporting frame disposed in said rigid frame, its ends lying inwardly of said panels, means at each end to support said mattress frame on said end members, a pair of closures of arcuate cross section normally overlying the interior of the bed, said closures mounted for independent downward swinging movement on separate shafts positioned between and connecting said end members and said panels, said side members being disposed substantially opposite the side edges of the mattress, the lower edges of said panels terminating adjacent the mattress supporting means so as to extend to the lower surface of the mattress, said panels having upper arcuate peripheries extending in direct proximity to the ends of said closures in the normal closed position of the latter.

2. A bed comprising end members supporting the bed from the floor, side members connecting said end members to provide a rigid frame, panels rigidly mounted inwardly of and parallel to the end members and spaced therefrom, a mattress supporting frame disposed in said rigid frame, its ends lying inwardly of said panels, means at each end to support said mattress frame on said end members, pairs of pivots extending between and connecting said end members and said panels, a pair of closures of arcuate cross section normally overlying the interior of the bed, and means extending between said end members and panels for mounting said closure for independent downward swinging movement

about said pivots respectively, said side members being disposed substantially opposite the side edges of the mattress, the lower edges of said panels terminating adjacent the mattress supporting means so as to extend to the lower surface of the mattress, said panels having upper arcuate peripheries extending in direct proximity to the ends of said closures in the normal closed position of the latter.

3. A bed comprising end members supporting the bed from the floor, side members connecting said end members to provide a rigid frame, panels rigidly mounted inwardly of and parallel to the end members and spaced therefrom, a mattress supporting frame disposed in said rigid frame, its ends lying inwardly of said panels, means at each end to support said mattress frame on said end members, pairs of pivots extending between said end members and said panels, a pair of closures of arcuate cross section normally overlying the interior of the bed, each closure including curved frame members positioned between said end members and the upper edges of the panels, and means extending between said end members and panels for mounting said closure for independent downward swinging movement about said pivots respectively, said side members being disposed substantially opposite the side edges of the mattress, the lower edges of said panels terminating adjacent the mattress supporting means so as to extend to the lower surface of the mattress, said panels having upper arcuate peripheries extending in direct proximity to the ends of said closures in the normal closed position of the latter.

4. A bed comprising end members having circularly curved upper portions supporting the bed from the floor, side members connecting said end members to provide a rigid frame, panels rigidly mounted inwardly of and parallel to the end members and spaced therefrom, said panels having upper circularly curved peripheries substantially concentric with the curved portion of the end members, a mattress supporting frame disposed in said rigid frame, its ends lying inwardly of said panels, means at each end to support said mattress frame on said end members, a pair of pivots extending between each of said end members and said panels, a pair of closures of arcuate cross section including arcuate end frame members extending between said end members and said panels and in vertically overlapping relation with the panels, radially extending arms between said end members and panels for supporting said closure for independent downward swinging movement about said pivots respectively, said side members being disposed substantially opposite the side edges of the mattress, the lower edges of said panels terminating adjacent the mattress supporting means so as to extend to the lower surface of the mattress, said panels having upper arcuate peripheries extending in direct proximity to the ends of said closures in the normal closed position of the latter.

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