Sept. 14, 1943. A. W. LEHMAN, JR., ET AL 2,329,475

CHILDREN'S FURNITURE

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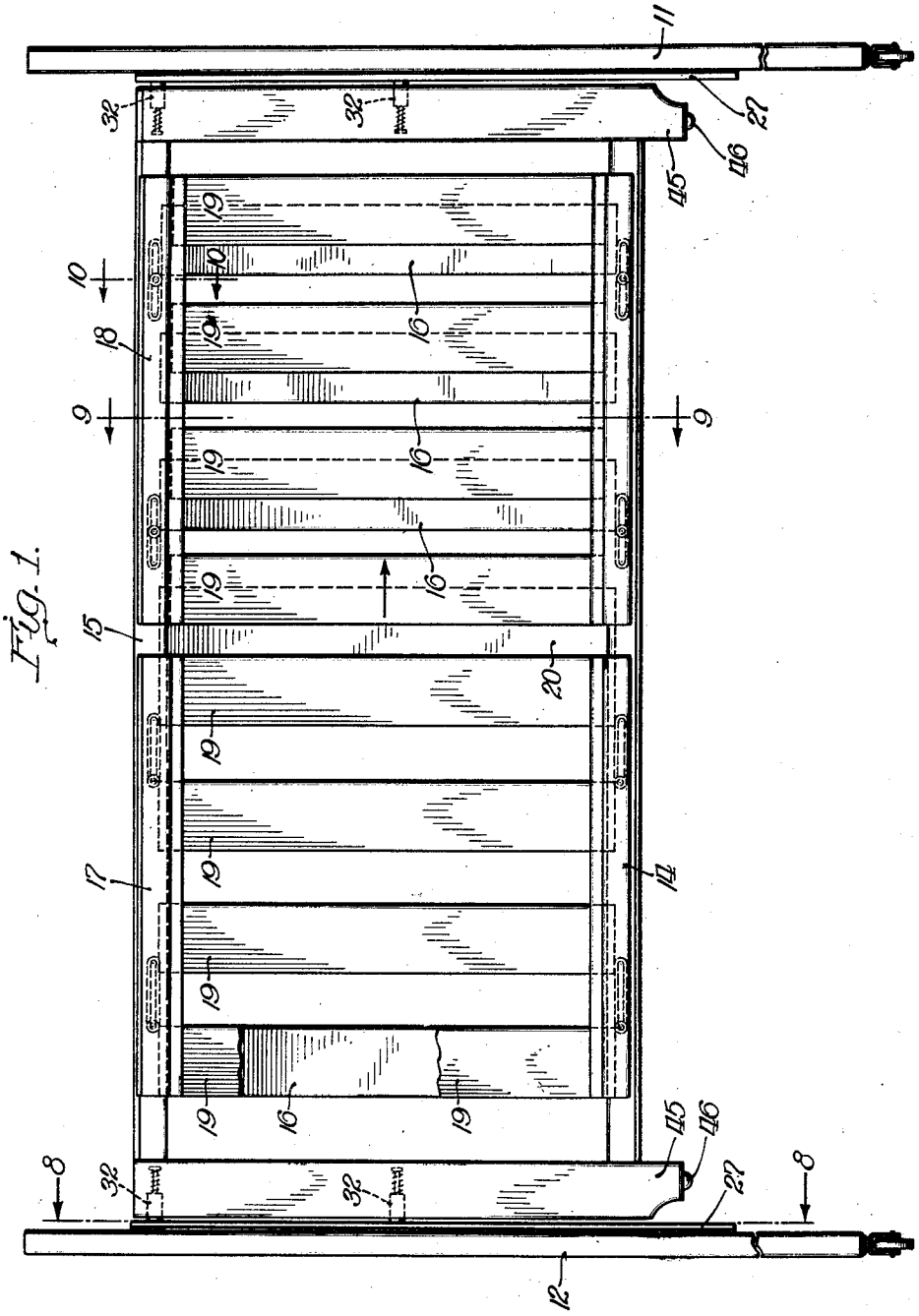


Fig. 1.

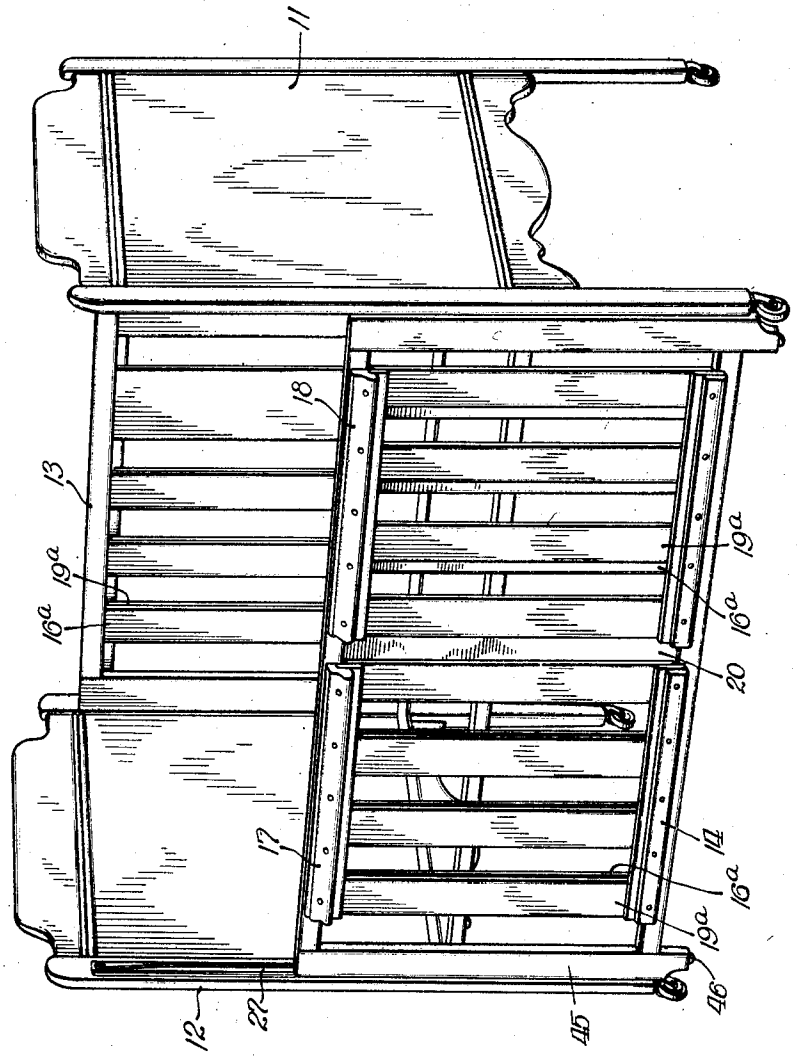
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Fig. 2.



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Fig. 8.

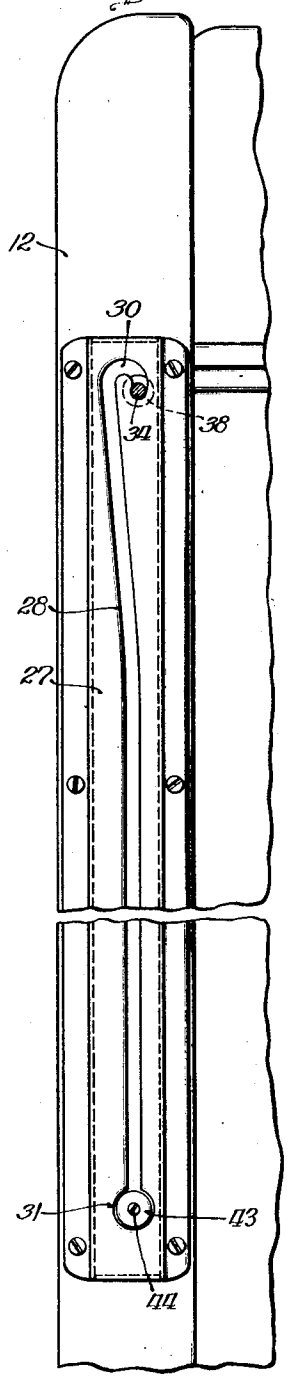


Fig. 3.

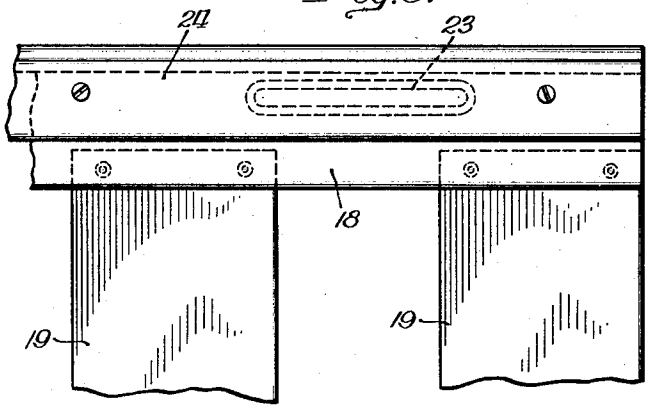


Fig. 4.

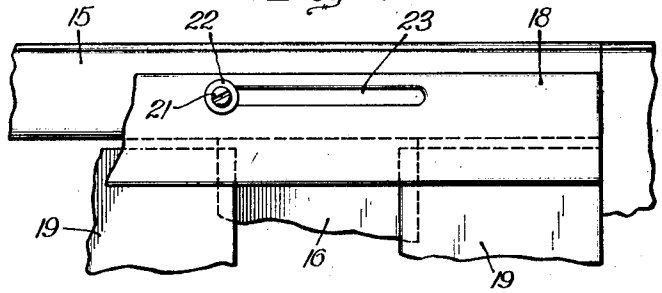


Fig. 5.

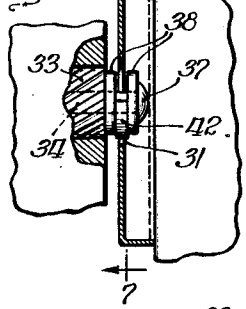


Fig. 6.

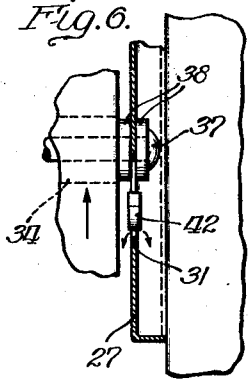
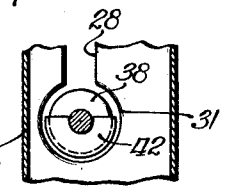


Fig. 7.



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Fig. 9.

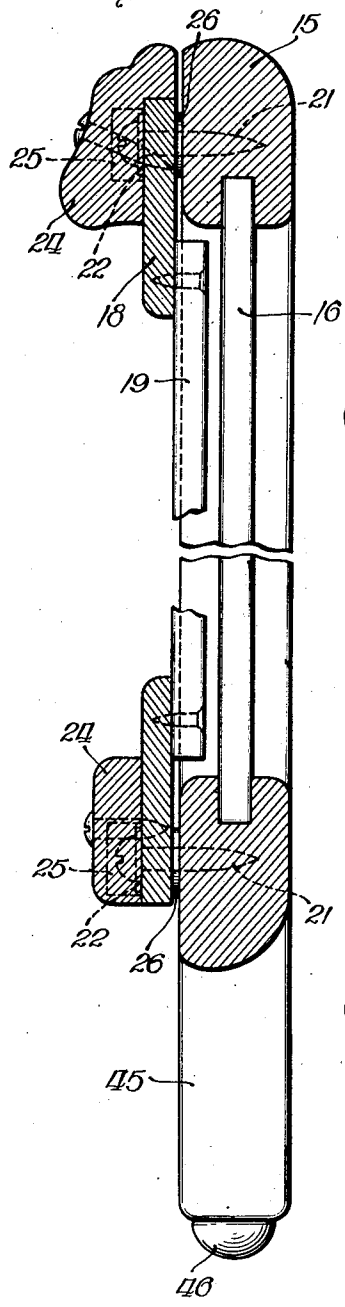


Fig. 10.

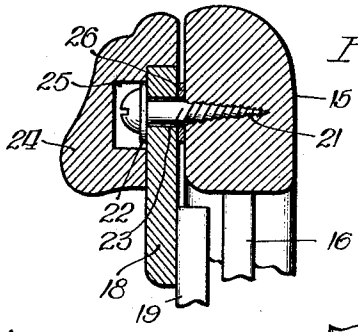


Fig. 11.

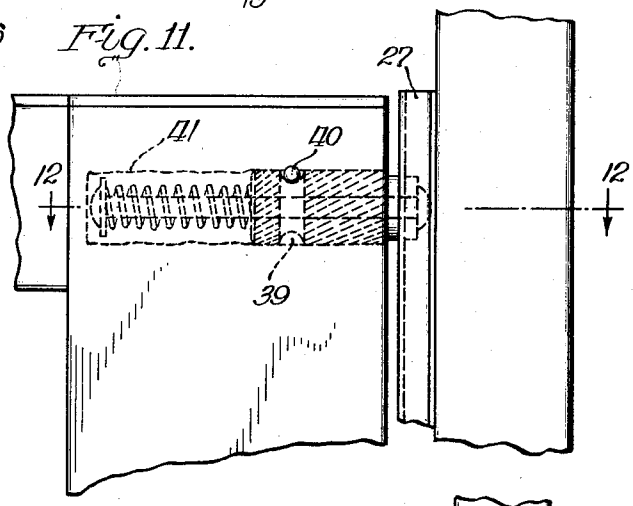
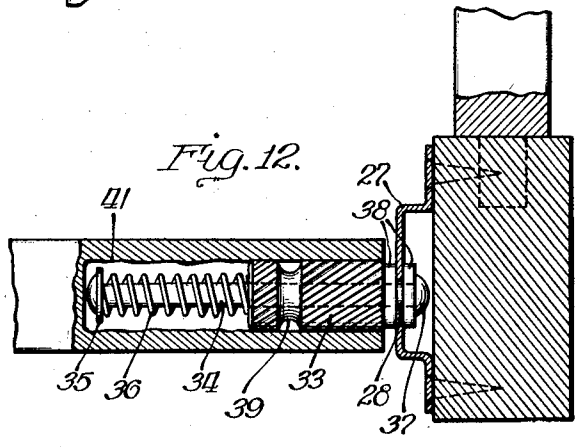


Fig. 12.



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UNITED STATES PATENT OFFICE

2,329,475

CHILDREN'S FURNITURE

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Application October 10, 1938, Serial No. 234,102

6 Claims. (Cl. 5—93)

The present invention relates to children's furniture and more particularly to cribs, play yards, or the like, in connection with which it is desirable to protect the child from drafts.

In illustrating a preferred embodiment of the invention a child's crib will be used for exemplification.

Small children, particularly babies, must be kept warm and comfortable and still must have an adequate supply of fresh air. Babies spend the greatest portion of their time in a bed or crib and it is of utmost importance that they be prevented from catching cold through drafts. Various expedients have been adopted for preventing drafts striking the baby, among them being the employment of blankets surrounding the crib or the setting up of screens or the removal of the crib to remote points in the room away from windows and the like. None of these expedients is desirable or entirely satisfactory. They are bothersome, unsightly and even in some cases unsanitary. They are at best makeshifts which the mother has been compelled to devise because of the construction of the furniture heretofore supplied for the use of the infant.

A principal object of the present invention is to provide a construction in which is incorporated means to provide adequate ventilation and which at the same time is of simple construction, easily operated, attractive in appearance and sanitary.

A further object of the invention is the provision of an improved method of mounting the sides on cribs, play yards and the like, so that they may be more conveniently and readily operated.

Other objects and advantages of the invention will be apparent upon an understanding of the accompanying drawings and the following specification. It is to be understood, however, that the drawings and description are illustrative only and the invention is not to be unnecessarily limited or restricted thereby as the true scope of the invention is defined in the appended claims.

Referring to the drawings:

Fig. 1 shows a view in side elevation of a crib structure embodying the invention;

Fig. 2 is a perspective view showing one of the side walls in lowered position;

Fig. 3 is a fragmentary detailed view of a portion of the side frame of a crib;

Fig. 4 is a detailed view showing the moulding removed from the side frame;

Fig. 5 is a view with a portion broken away showing the means for connecting the movable side frame to the ends of the crib;

Fig. 6 is a view showing in detail the means for releasing from a plunger a split washer in order that the movable side frames may be connected to the ends of the crib;

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 5;

Fig. 8 is a sectional view taken on the line 8—8 of Fig. 1;

Fig. 9 is a sectional view taken on the line 9—9 of Fig. 1;

Fig. 10 is a sectional view taken on the line 10—10 of Fig. 1;

Fig. 11 is a detailed view showing in dotted lines the arrangement of a plunger and securing means for retaining the side walls to the end walls of a crib; and

Fig. 12 is a sectional view taken on the line 12—12 of Fig. 11.

Referring to Figs. 1 and 2 of the drawings, it will be seen that the invention, as embodied in a crib, comprises two ends 11 and 12, respectively, which are connected by side members 13 and 14. The side members 13 and 14 are identical in construction with the exception that in general practice the side member 13 is firmly secured to the end walls, whereas the side member 14 is adapted to be raised and lowered in the manner and by the means hereinafter to be described. There is also provided the usual spring and mattress which may be of standard construction.

Referring to the side wall 14 shown in Fig. 1, it will be observed that the side walls comprise a frame member 15 in which is rigidly mounted a plurality of spaced slat members 16.

Slidably mounted on the frame 15 are subframes 17 and 18 respectively, which subframes are provided with a plurality of spaced slat members 19. It will be apparent that by movement of the subframes 17 and 18 the slat members 19 may be so positioned as to superimpose the slat members 16 or so as to partially or completely cover the spaces between the slat members 16. Positioned at the middle of the frame 15 is a wide slat member 20 which is approximately equal in width to two of the slat members 19. Consequently, in order to close the spaces between the slat members 16 the subframes 17 and 18 are moved apart or toward their respective ends of the crib and in order to open the spaces between the slat members 16 the subframes 17 and 18 are moved toward each other.

The side wall 13 is constructed of a similar frame and slat members and also of similar sub-

frames, these subframes and slat members being shown in Fig. 2 with the suffix character *a*.

Since each of the subframes is independent of the other they may be so manipulated that any quarter of the crib may be shut off, fully opened or, of course, partially opened. This arrangement permits of ventilation of the crib without a draft striking the infant's body.

The means for mounting the subframes 17 and 18 on to the main side frame 15 so as to permit sliding movement of the subframes is shown in detail in Figs. 3, 4, 9 and 10. Referring to these figures it will be observed that the main frame 15 is provided with pins 21 which have mounted at their outer ends washers 22. These pins project through slots 23 provided in the subframes. A moulding 24, having a groove 25 therein, which is adapted to receive the heads of the pin 21 and the washers 22, is mounted over the top and bottom portions of the subframes. For decorative purposes and ease of operation the moulding of the head portion may be differently shaped from that of the bottom. The top moulding, as shown in Fig. 9, is so shaped as to fit the fingers to permit easy grasping of the same to move the subframes relative to the main frame of the side wall and also to aid in raising and lowering the side wall 14.

Positioned between the subframe 18 and the main frame 15 are provided washers 26 which prohibit any frictional engagement between the subframes and the main frame and are conducive to easier operation of the subframes on the main frame. The grooved portions 25 of the subframe moulding 24 are generally so shaped that the washer 22 tends to ride against these grooved portions and to rotate so that as the subframe is moved the washers act as bearings and feels as though the subframe were mounted on ball-bearings. The movement of the subframe relative to the main frame, of course, is limited by the length of the slot 23, this slot being of just sufficient length to permit the subframe being moved so as to superimpose slats 19 on the slats 16 in one direction and in the opposite direction to permit the slats 19 to completely cover the spaces between the slats 16.

The structure described is extremely simple from a mechanical standpoint, is readily assembled in a production line and from the standpoint of the user is extremely easy to manipulate. Furthermore, due to its compactness it is pleasing in appearance and neat, the design of the crib being not interfered with in any way due to the mechanical structure involved.

It is to be observed that all of the slats, both those mounted in the subframes 17 and 18 and those mounted in the main frame 15, are rigidly secured at both ends and there is no movement of the slats other than as a unit in the subframes. Thus the structure is strong and there is no way in which slats can get out of alignment or for the mechanism to bind or stick.

As has heretofore been pointed out, the side member 13, shown in Fig. 2, is generally rigidly secured to the head and foot portions 11 and 12 of the crib. It is desirable, however, that the side member 14 be so mounted that it may be readily raised or lowered. The means employed for permitting raising and lowering of the side walls 14 consist of a pair of channel members 27 mounted on the head and foot members 11 and 12 respectively. These channel members, as shown in detail in Fig. 8, are provided with elongated slots 28 which slots are hook-shaped at their upper portion 30 and are provided with an enlarged opening at the base as indicated by the reference character 31.

The slots 28 are adapted to receive the heads of plungers 32, which plungers are shown in detail in Figs. 11 and 12. Referring to the last mentioned figures it will be observed that the plungers consist of head portions 33 which are provided on their periphery with helical-shaped grooves, as shown in Figs. 11 and 12. Slidably mounted in the head portion 33 is a pin 34, the inner end of which pin is provided with a flanged portion 35. Between the head portion 33 and the flanged portion is a compression spring 36. On the outer end of the pin 34 is a head 37 and between the head 37 and the head portion 33 of the plunger are a pair of washers 38 which washers are preferably constructed of fibre, Bakelite or some similar material.

The head portion 33 of the plunger is provided with an annular groove 39 which has cooperating with it a locking pin 40 as shown in Fig. 11.

In the manufacture of the device holes 41 are drilled into the sides at appropriate points as shown in Figs. 1 and 2. These holes are preferably slightly smaller than the head portion 33 of the plunger assembly. The plunger assembly is then forced into the holes. The plunger assembly will turn into the holes like a screw since it is provided with helical projections. This arrangement assures a tight fit of the plunger assembly in the side walls. To prohibit any movement of the plunger assembly the locking pin 40 is driven into the side walls and is so positioned that it will be in the annular groove 39. The foregoing construction provides a stout, simple and effective means of positively locking and maintaining the plunger assembly in the side walls of the crib.

In order to facilitate fastening the side wall 14 to the end walls the plunger assembly, as shown in Figs. 5, 6 and 7, is provided with a split washer 42 which is inserted between the washers 38. As shown in Fig. 5 the projecting portion of the plunger assembly is then inserted in the enlarged portion 31 of the slot 28 so that the split washer 42 is in line with the edges of the slot 28. As shown in Fig. 6, as the side wall is moved upwardly the edges of the slot 28 will strike the split washer 42 and force it from between the washers 38, the washers 38 will engage the side walls of the slot 28 and the split washer 22 will drop downwardly and out.

The compression spring 36 will tend to draw the head 37 of the pin 36 inwardly and to force the washers 38 to firmly engage each side of the walls forming the slot 28. All of the plunger assemblies are inserted in the slot 28 in the same manner and when the side wall 14 has thus been mounted in the ends of the crib the enlarged portion 31 of the slot 28 is closed up by putting a plug therein, as indicated by the reference character 42 in Fig. 8. The plug 43 may be held by a screw or nail 44. It will be apparent that upon closing of the enlarged portion 31 by the closure member 43 the side walls cannot be removed from the end walls without removal of the closure member as the washers 38 are of greater width than the slot 28.

In the manipulation of the side wall, the wall is raised to the point where the top plunger mechanism engages the hooked portion 30 of the slot 28 and when dropped into the hooked portion it is obvious that the side wall will stay in ele-

vated position until it is raised out of the hooked portion and again lowered.

It is to be observed that the movable side wall **14** is held firmly in position relative to the end walls through the action of the compression springs **36** found in each of the plunger assemblies. This arrangement offers many advantages because it is obvious that in a crib structure it would be impossible to make it so rigid that the end walls would always be perfectly aligned. Consequently, unless some yielding means are provided there would be a tendency to, and in fact the side wall would, stick during the raising and lowering operations. However, any misalignment between the head and foot is compensated for by the compression springs; thus ease of operation of the side wall is insured at all times. Furthermore, due to the use of the compression springs as distinguished from any attempt at a rigid construction the end walls are able to give slightly under the action of the springs with the result that the tendency normally existing in such structures of the end walls pulling their retaining fittings out of place is overcome. This feature is of particular importance on the side of the crib which is adapted to slide up and down for the reason that in ordinary crib structures loosening of the fastening means tends to cause disalignment which results in a device that is hard to operate.

Another feature of the construction just described is that it permits the designer to locate the plunger assemblies at practically any point in the side walls. Likewise, the members **27** may be of any desired length. Consequently, when the side member is dropped to its lowered position the downwardly projecting end portions **45** are brought adjacent the floor so that the rubber stops **46** actually engage the floor as shown in Fig. 2. This feature is of importance because the side member of the crib is down only when it is desirable to remove the infant therefrom or to work with the infant in the crib and since the rubber stops **46** engage the floor they prevent the crib from skidding or moving on its casters and rolling away from the mother or nurse. Furthermore, if it is desirable to place the crib alongside an ordinary bed with the side member down there is positive assurance that the crib cannot move away from the bed and permit the child to fall between the bed and the crib.

It will be apparent that the foregoing structure has many advantages, particularly in that it is simple in construction, sturdy, easily operated and provides for adequate ventilation and protection from drafts which has been heretofore pointed out as of utmost importance.

We claim:

1. An article of children's furniture of the class described having four side walls, one of said side walls comprising a frame, a plurality of spaced slats rigidly mounted in said frame, a subframe slidably mounted on said frame, a plurality of spaced slats rigidly mounted in said subframe in adjacent relation to the slats in said main frame.

2. An article of children's furniture of the class described comprising an inclosure made of vertical side walls, said walls including a fixed set of regularly spaced slats and a set of regularly spaced movable slats connected together and mounted on the wall structure for movement in unison to cover or uncover the spaces between the fixed slats.

3. An article of children's furniture of the class described comprising four side walls, one of said side walls comprising a frame, a plurality of slats mounted in said frame, the center one of said slats being wider than the others, a pair of subframes slidably mounted on said main frame, a plurality of spaced slats rigidly secured to said subframe, said frames being so arranged that movement of said subframes toward each other will leave openings in said side wall.

4. An article of children's furniture of the class described comprising four side walls, one of said side walls comprising a frame, spaced members mounted on said frame, a subframe slidably mounted on said frame, said slidable mounting means comprising a pin fixed to one of said frames and passing through a horizontally elongated opening in the other of said frames.

5. An article of children's furniture of the class described having four side walls, one of said side walls comprising a main frame, a plurality of slats rigidly mounted in said main frame, subframes, means for slidably mounting said subframes on said main frame, said slidably mounted means comprising a pin having a head thereon fixedly secured to said main frame and passing through a horizontally elongated opening in said subframe, a roller member mounted on said pin to engage said subframe and means for covering said elongated opening.

6. An article of children's furniture of the class described having a side wall comprising a main frame with fixed horizontally spaced vertical slats, a pair of subframes each mounted to slide horizontally and independently in a plane laterally adjacent the main frame and having fixed horizontally spaced vertical slats, each of said subframes having a horizontal guiding and limiting slot, pins fixed in the main frame and extending into the slots, and anti-friction bearing members between the pins and subframes, whereby the subframes may be moved horizontally to bring the slats of one frame into and out of register with the spaces between the slats of the other.

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