Feb. 9, 1943. A. G. FELDMAN 2,310,734

FLOOR CONSTRUCTION

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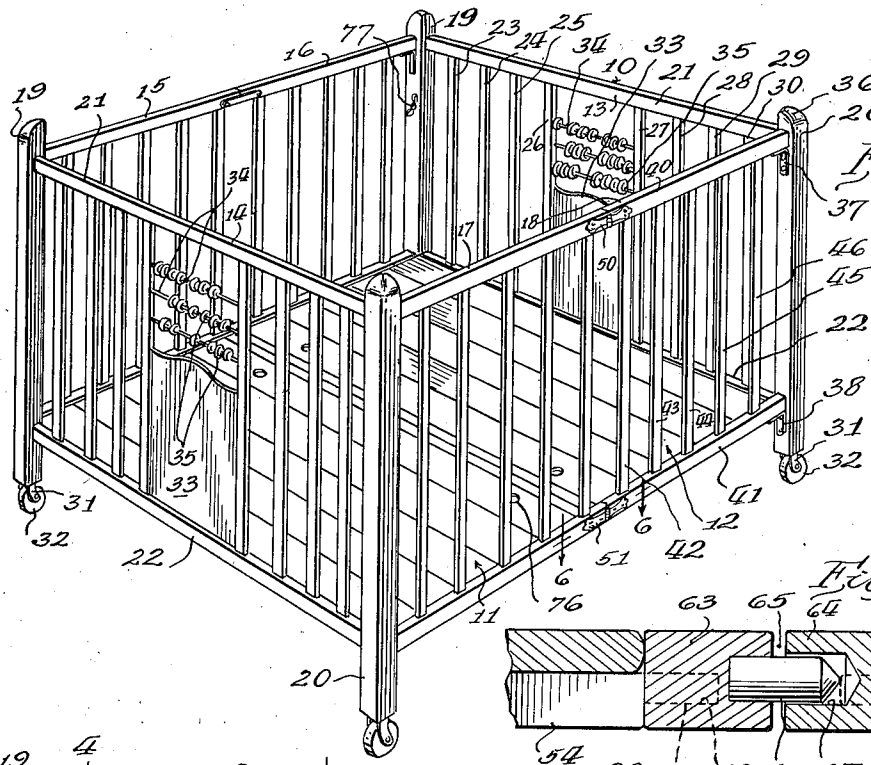


Fig. 1.

Fig. 3.

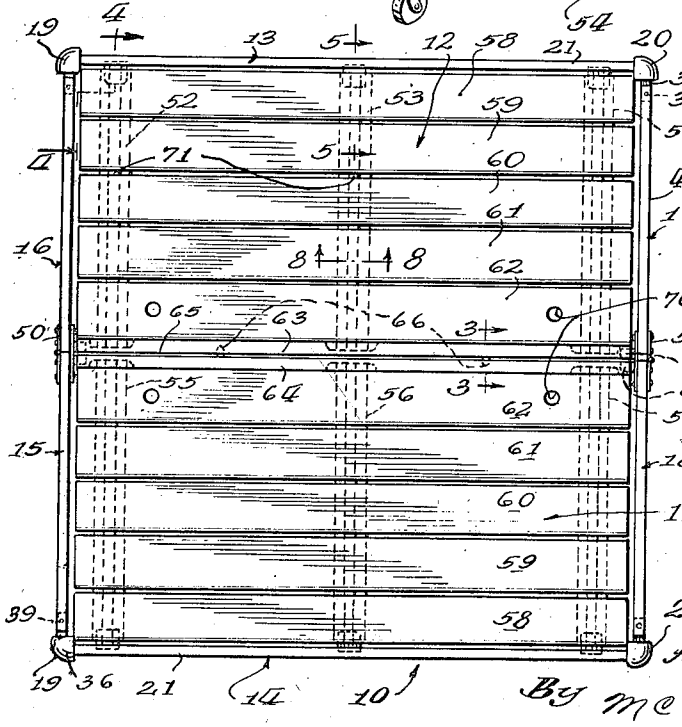


Fig. 2

Inventor.
Abraham G. Feldman
By McCaleb & Wendt
Attys.

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Fig. 4.

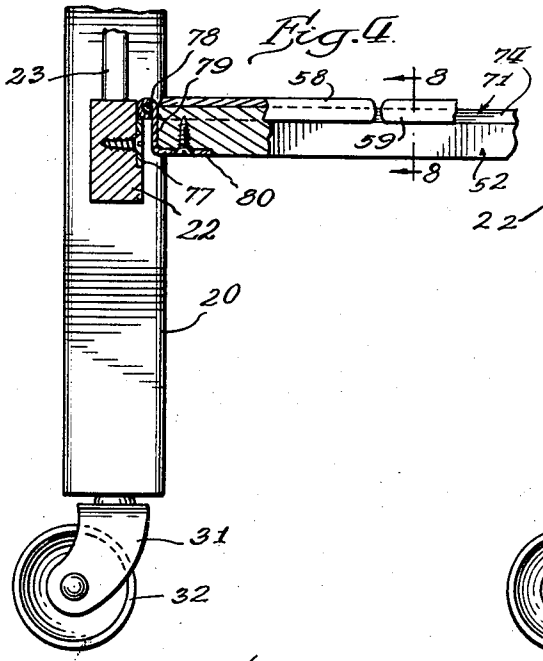


Fig. 5.

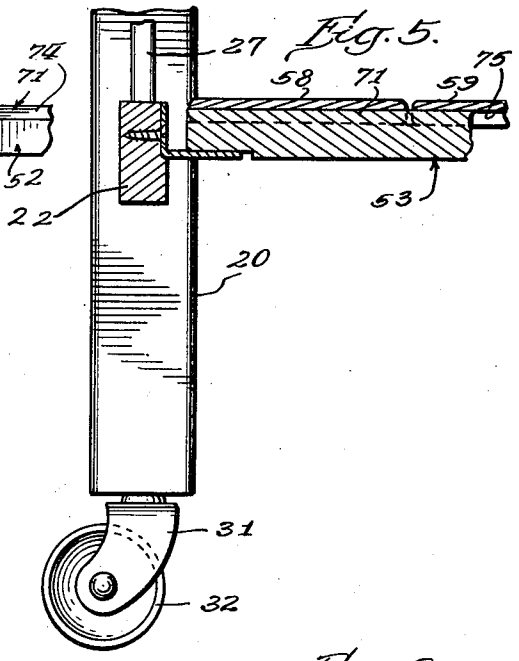


Fig. 6.

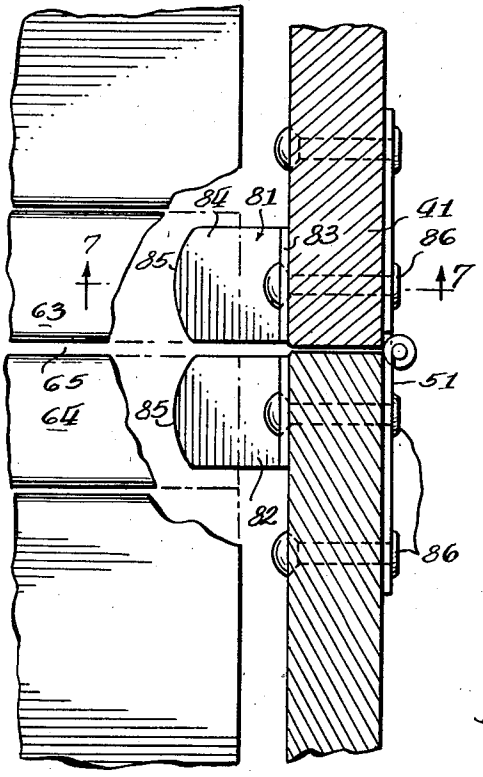


Fig. 8.

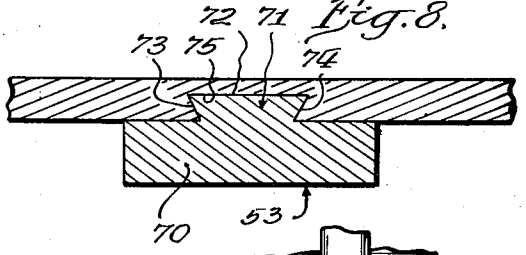
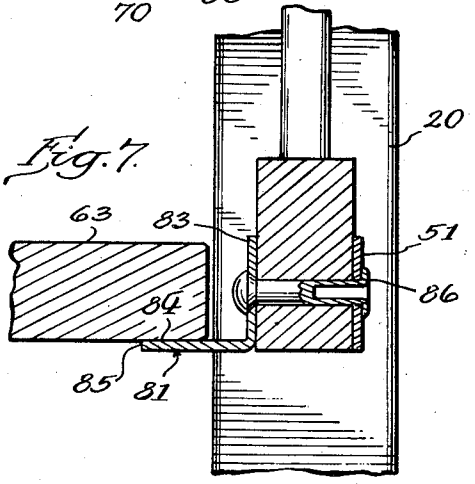


Fig. 7.



Inventor
Abraham G. Feldman
By McCaleb & Trust
Attys.

Patented Feb. 9, 1943 2,310,734

UNITED STATES PATENT OFFICE

2,310,734

FLOOR CONSTRUCTION

Abraham G. Feldman, Chicago, Ill., assignor to Storkline Furniture Corporation, Chicago, Ill., a corporation of Illinois

Application May 22, 1940, Serial No. 336,560

1 Claim. (Cl. 20—8)

The present invention relates to floor construction and is particularly concerned with the construction of floors for the type of furniture called a play pen for infants.

One of the objects of the invention is the provision of an improved floor construction which is characterized by the complete elimination of the use of nails or other fastening devices which pass through the floor and might at some time be loosened in such manner that they might project from the top of the floor.

Another object of the invention is the provision of an improved floor construction for play pens which is absolutely safe for use of small infants by reason of the fact that there is no possibility of any nails or other fastening devices projecting upward from the floor at any time.

Another object of the invention is the provision of an improved play pen construction which is firm, capable of use for a long period of time without repair, foldable, and which is adapted to be manufactured at a lower cost than the devices of the prior art, thereby placing the structure within the means of a greater number of purchasers.

Another object of the invention is the provision of an improved floor construction which is adapted to support the infant at a point spaced from the ground when the play pen is used outside, so as to minimize the possibility of invasion of the play pen by crawling insects from below.

Another object of the invention is the provision of an improved floor construction which can only be disassembled by moving the parts in one particular way, thereby assuring its firm assembly for a long period of use.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings, in which similar characters of reference indicate similar views throughout the several views.

Referring to the drawings,

Figure 1 is a view in perspective of a play pen equipped with a floor constructed according to the present invention;

Figure 2 is a top plan view of the play pen;

Figure 3 is a fragmentary sectional view taken on the plane of the line 3—3 of Figure 2 looking in the direction of the arrows;

Figure 4 is a fragmentary sectional view taken on the plane of the line 4—4 of Figure 2 looking in the direction of the arrows;

Figure 5 is a fragmentary sectional view taken on the plane of the line 5—5 of Figure 2 looking in the direction of the arrows;

Figure 6 is a fragmentary sectional view taken on the plane of the line 6—6 of Figure 1 looking in the direction of the arrows;

Figure 7 is a fragmentary sectional view taken on the plane of the line 7—7 of Figure 6 looking in the direction of the arrows; and

Figure 8 is a fragmentary sectional view taken on the plane of the line 8—8 of Figure 2 looking in the direction of the arrows.

The present floor construction is preferably embodied in a play pen, of a type such as exemplified by Figure 1, indicated in its entirety by the numeral 10. In this embodiment the floor proper consists of a pair of sections 11 and 12 which are hingedly mounted upon the fence sections 13 and 14 which form a part of the play pen fence.

The play pen fence also includes the fence sections 15—18 (Fig. 2) and the fence sections are preferably so arranged that they may be folded together for the purpose of collapsing the entire play pen framework.

The end fence sections 13 and 14 may be similar in construction. Each one consists of corner posts 19, 20, an upper rail 21, a lower rail 22, and a plurality of balusters 23—30. The upper and lower rails are preferably formed with sockets for receiving the reduced ends of the balusters 23—30 which are glued in their sockets, and the corner posts 19 and 20 are also preferably formed with sockets for receiving the reduced ends of the upper and lower rails 21 and 22 which are also glued in their sockets.

The corner posts are all preferably provided with casters 31 rotatable on a vertical axis and provided with a roller 32. The two centrally located balusters 26 and 27 may serve to support a decorative center panel 33 and a plurality of wires 34 having pierced wooden balls 35 of different colors forming an abacus for use of the occupant.

The corner posts 19 and 20 are preferably squared in section and provided with an upper rounded end 36 and on the side toward the sections 16 and 17 they are provided with the metal bearing brackets 37 and 38. These bearing brackets are fixedly secured to the corner posts by rivets, screws, or other convenient fastening means. Each bearing bracket has a vertically extending attaching flange and a horizontally extending flange provided with a pin 39 (Fig. 2) engaged in a hole in the upper and lower rails 40 and 41 of the sections 16 and 17.

The structure at the other side 14 of the play pen may be substantially the same. The sec-

tions 17 and 18 are similar to each other and to the sections 15 and 16. Each of these sections comprises an upper rail 40 and a lower rail 41. These rails are joined by a plurality of balusters 42—46 joined to the rails in the manner just described with respect to the other balusters and rails. By virtue of the brackets 37, 38 and pins 39, the upper and lower rails 40, 41 are pivotally mounted on the corner posts 19 and 20.

The sections 17 and 18 are hinged together by means of metal hinges at 50, 51 in such manner that the two sections move inward as they pivot, and are fixedly held against further movement by the abutment of their ends when they reach the position of Fig. 2.

The two sections 15, 16 are arranged in a similar way, thereby making up the complete fence.

Each of the floor sections 11 and 12 preferably comprise a plurality, in this case three, transversely extending frame members 52—57. The floor frame members 52—54 secure together the floor boards 58—62 of the floor section 12, and the other frame members secure together the floor boards of the other section 11.

Thus the frame members 52—57 are long enough to extend only half way across the floor of the play pen when combined with the end rails 63, 64 of the floor sections, which are located at the middle of the floor, and which have a clearance 65 between them.

The two floor sections 11 and 12 may be identical in construction, except that one has the pins 66 of wood or metal fixedly secured in a rail 63, while the other has enlarged cylindrical sockets 67, which receive these pins in the other rail 64.

The clearance of the socket 67 over the pin 66 is such that the pins are permitted to pivot upward in the sockets as the two floor sections are folded upward until the pin moves out of the socket.

Each of the floor frame members 52–57 has a reduced end portion 68 of rectangular cross section which is adapted to be received in a socket 69 of similar form in the rails 63, 64.

The frame member has its end glued in its socket. Each of the frame members 52–57 is of the shape shown in section in Fig. 8, having a body portion 70 of substantially rectangular cross section and an upwardly extending rib 71 of dove-tailed shape; that is, the upwardly extending rib preferably has a flat upper face at 72 and outwardly beveled side faces at 73, 74.

Each of the floor boards 58–62 is preferably provided with a dove-tailed socket 75, complementary in shape to the rib portion 71, and having a close frictional fit on the rib. Each of the floor boards preferably has its edges and ends rounded and free of any slivers or splinters of any kind, and the wood is particularly chosen for its straight grain and lack of tendency to splinter. The varnish also serves to minimize any tendency toward splintering.

The floor boards 58–62 are assembled with the frame members 52–54 by having the rib portions 71 passed endwise into the sockets 75 of the floor boards. The sockets are located on the lower sides of the floor boards, and thus the upper sides of the floor boards are smooth and free of obstructions of any kind.

The width of the floor boards is preferably such that there is a slight crack or clearance between each pair of floor boards. The floor also has its center floor boards 62 provided with a finger aperture 76 for use in raising the floor sections to the folded position.

Two of the corner posts, such as, for example, corner post 19 (Fig. 1) may be provided with a turn-buckle 77 for holding the floor section 12 in upright position against the adjacent fence section when the pen is to be folded.

The floor sections 11, 12 are preferably pivotally secured on the fence sections 14 and 13, respectively. Thus the lower rail 22 (Fig. 4) may be provided with a hinge, having a flat attaching flange 77, a pintle 78, and a downwardly extending flange 79, and also a horizontally extending attaching flange 80 for the floor section 11.

The attaching flange 80 is preferably secured to one of the frame members 55 and 57, and hinges are preferably employed between each of these frame members and the lower rail 22.

It will be apparent that as the pintle 78 is located near the top of the floor, the floor sections can fold up flatly against the fence sections 14 and 13, to be secured by the turnbuckles 77.

At the joint between the floor sections the floor is preferably supported by a pair of angle iron brackets 81, 82. These brackets are made of sheet metal, having two flanges, one flange 83 extending vertically, and one flange 84 extending horizontally. Both flanges preferably have their ends rounded at 85, and the vertical flanges are secured to the lower rail 41 of the side sections 17 and 18, and 15 and 16, by means of the same rivets 86, which secure the hinges 51 to these sections.

The height of the horizontal flanges 84 of these brackets 81, 82 is such that they engage the lower side of the end rails 63, 64 of the floor sections and support the floor in horizontal position.

Similar brackets are provided for supporting both ends of the rails 63 and 64 of the floor sections, and thus the floor is firmly supported at the center by means of the side fence sections 15–18.

The side fence sections serve as trusses for supporting the central portion of the floor, and the lower rails 41 are placed in tension, while the upper rails 40 are in compression. By this means the floor is supported in spaced relation to the ground, and the possibility of crawling insects reaching the interior of the play pen is minimized.

The play pen may also be used where the ground is damp, without possibility of the floor becoming damp also, as it is wholly supported by the four corner posts of the play pen.

It will thus be observed that I have invented an improved play pen construction, having a floor which is assembled wholly without the aid of any nails that might loosen and project from the top of the floor. No metallic securing devices of any kind need be employed on the floor, and the floor is thus adapted to be maintained smooth and in harmless condition throughout its entire life.

The floor can only be taken apart by moving the floor boards longitudinally on the dove-tailed rib portions 71, and thus there is no possibility of the floor coming apart. Glue may be employed, if necessary, in securing the separate floor boards to the frame members at the dove-tailed groove, or the dove-tailed groove may hold the floor boards in fixed position by virtue of its structure and the frictional fit.

My floor construction can be manufactured at a much lower cost than any of the devices of the

prior art on account of the fact that there is no necessity for handling the large number of nails which would otherwise have to be employed.

The floor may be assembled with a minimum amount of labor, and when assembled it is accurately square and adapted to fit the play pen and determine its contour.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claim.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

In a floor construction for play pens for infants, the combination of a plurality of transverse frame members, said frame members being provided with a large body section engaging below floor boards and with an upwardly extending dove-tailed formation of substantially uniform cross section throughout its length and a plurality of floor boards, said floor boards being provided with complementary dove-tailed shaped grooves on their lower sides for slidably receiving and frictionally holding the dove-tailed formations on said frame members, the floor boards being assembled with the frame members and held in predetermined position with respect to each other by frictional fit of said grooves and formations, said floor also having an end rail provided with sockets, and said frame members being provided with reduced end portions for fixed reception in said sockets whereby the end rail is secured to said frame members.

ABRAHAM G. FELDMAN.