

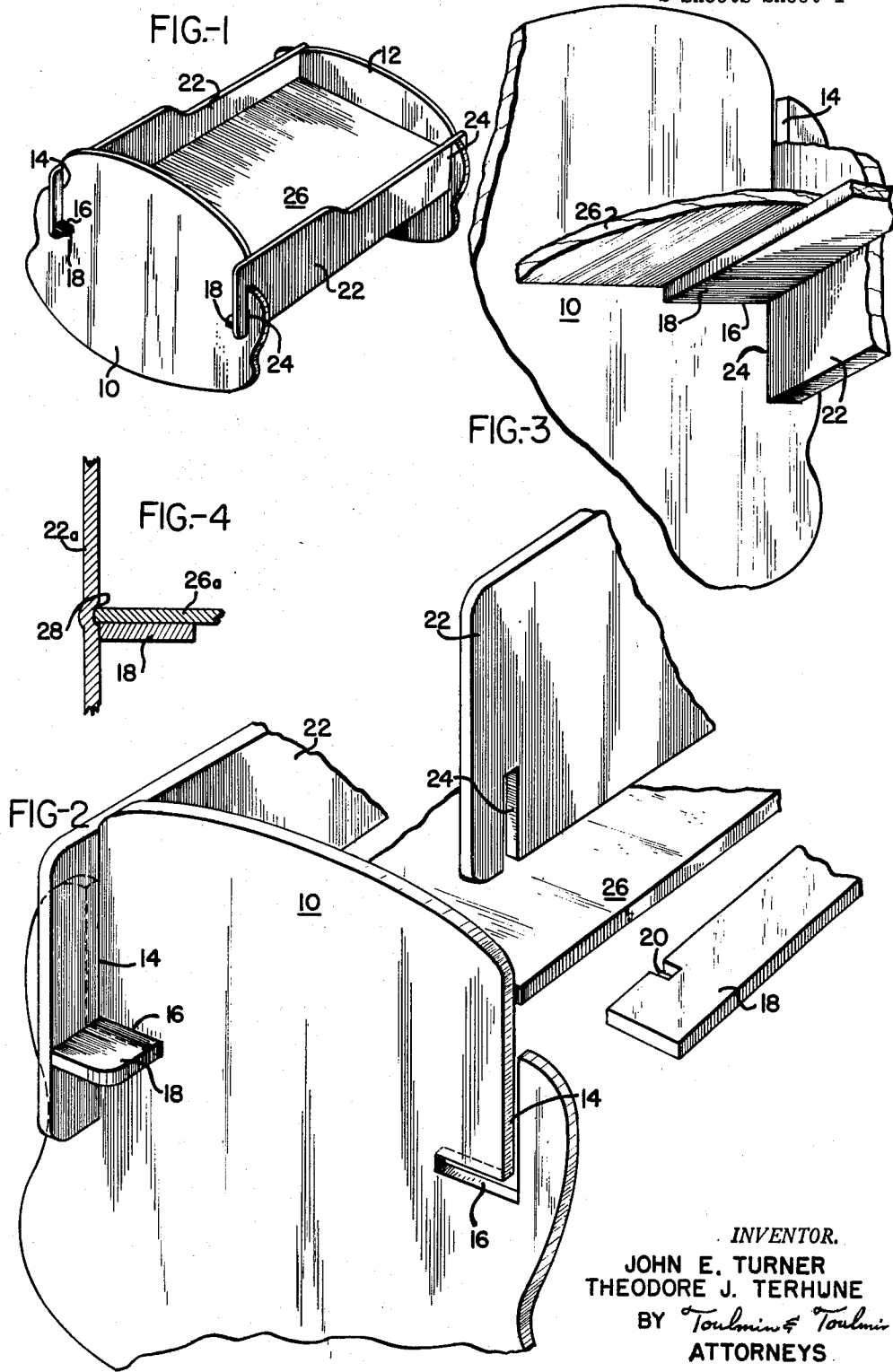
Oct. 11, 1955

J. E. TURNER ET AL  
KNOCK-DOWN FURNITURE

2,720,253

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

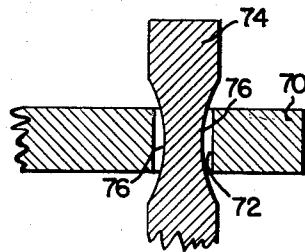
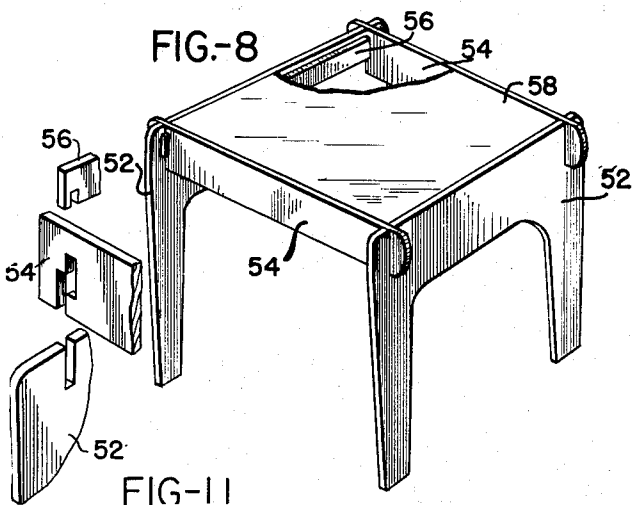
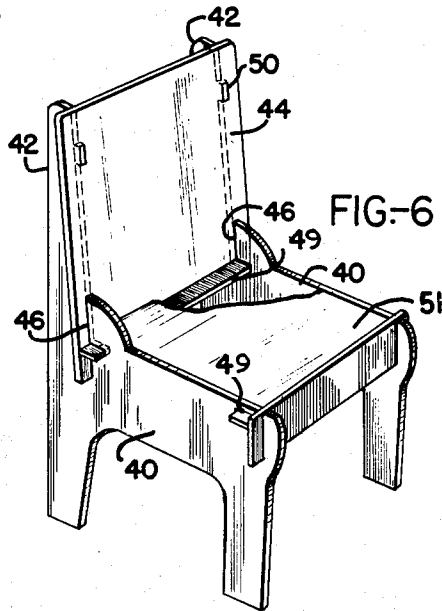
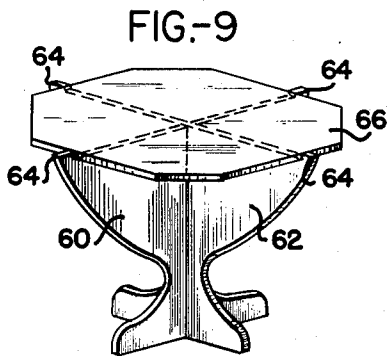
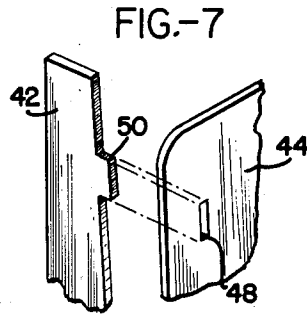
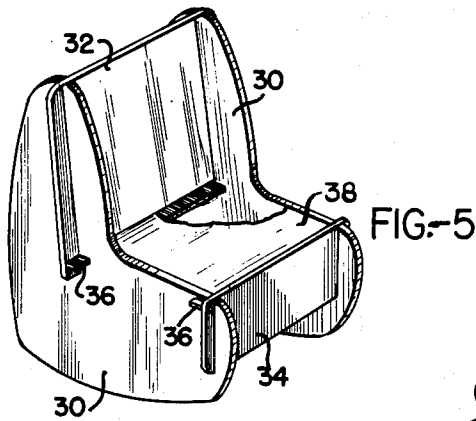


FIG-11

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2,720,253

## KNOCK-DOWN FURNITURE

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7 Claims. (Cl. 155—196)

This invention relates to articles of furniture and methods of manufacturing the same, and particularly to knockdown articles of furniture, especially toy furniture.

In the manufacture of furniture, particularly in the small sizes, such as is used for children's and toy furniture, the usual product is either quite expensive or is quite flimsy and subject to easy breakage. Also, such furniture is often difficult to ship properly because it cannot be knocked down or collapsed except in the case of certain special pieces. Further, in the case of articles of furniture of the nature referred to, if a part thereof becomes broken, it is difficult to effect replacement or repair thereof without going to considerable trouble and expense.

Having the foregoing in mind, it is a primary object of this invention to provide a furniture construction which eliminates the drawbacks referred to above.

A still further object is the provision of a furniture construction and a method of making a piece of furniture such that it can readily be knocked down completely and shipped flat in a small container.

A still further object of this invention is to provide an article of furniture and a method of making the same such that the article of furniture is extremely strong but, at the same time, is relatively inexpensive.

A still further object of this invention is the provision of a furniture construction which is adaptable to several different articles of furniture.

A particular object of this invention is to provide a furniture construction which will enable the article of furniture to be made of any fairly stiff material, such as cardboard, while still retaining ample strength in the piece of furniture for all practical purposes.

These and other objects and advantages will become more apparent upon reference to the following description taken in connection with the accompanying drawings, in which:

Figure 1 is a perspective view of a cradle constructed according to my invention;

Figure 2 is an enlarged perspective view of one end of the cradle of Figure 1 showing the cradle partially disassembled;

Figure 3 is a perspective view looking at one end of the cradle of Figures 1 and 2 from the inside;

Figure 4 is a fragmentary view showing a modification that would be made in the cradle structure in order to construct it of a heavy cardboard or the like;

Figure 5 is a perspective view showing a rocking chair made according to the construction employed for the cradle for the preceding figure;

Figure 6 is a perspective view showing a straight chair constructed according to this invention;

Figure 7 is a fragmentary view showing the manner in which the back and the legs of the chair of Figure 6 are interlocked;

Figure 8 is a perspective view showing a table constructed according to this invention;

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Figure 9 shows another form of table construction according to the present invention;

Figure 10 is a sectional view showing the manner in which a joint can be made for a piece of furniture according to this invention, particularly where the furniture is constructed of cardboard; and

Figure 11 is a perspective view showing the construction of the joint of the table of Figure 8.

Referring to the drawings somewhat more in detail, and particularly to Figures 1 through 3, there is shown therein a cradle comprising headboard 10 and footboard 12, and each of which comprises a pair of slots 14 at the opposite side edges thereof which are preferably generally vertical, although not necessarily exactly vertical, as illustrated in the drawings. At the bottom of each slots 14 is an inwardly extending slot 16, whereby each slot 14 and its corresponding slot 16 forms an L-shaped slot.

The slots 16 are all of a size to receive the support rails 18 which are provided with notches 20 adjacent the ends thereof. The rails 18 are inserted endwise into slots 16 until notches 20 register with the pertaining head or footboard, and the rails are then moved inwardly so that the notches engage the said head or footboard, and at which time the outer edges of the rails 18 will register with the inner edges of slots 14.

Side boards 22 are provided on the opposite sides of the cradle adapted for being received in the slots 14 and the side boards have notches 24 in their lower edges adapted for engaging the head and footboards at the bottoms of slots 14.

A bottom 26 is receivable within the confines of the head, foot, and side boards, and is supported on the side rails 18. The assembling of the cradle is now complete and the structure is rigid and strong. It is proposed that the various boards will be made of plywood or pressed wood or relatively heavy stiff cardboard. In the event of constructing the members of cardboard, an advantage would be obtained in connection with supporting the bottom therein by forming the sideboards as illustrated in Figure 4, wherein the sideboard 22a is formed with a groove 28 pressed therein which receives the edge of the bottom 26a. This groove assists in holding the bottom in place and also assists in making the entire assembly rigid.

In any case, the article can be shipped knocked down and can readily be assembled by anyone and, furthermore, can be again knocked down for installation. Since all of the pieces of the furniture are flat and of relatively simple shape, any thereof that might become broken for any reason can readily be replaced merely by using the old piece as a pattern and cutting a new one with ordinary cutting tools. The assembled article of furniture can also be glued together, if desired, making a permanent structure.

In Figure 5 there is shown an arrangement substantially identical with the cradle described, except in place of having head and footboards and side boards, the chair has the side panels 30, a back 32, and a front board 34, with the rails 36 running between the sides 30 for supporting the bottom 38. In all essential details the arrangement of Figure 5 is identical with that of Figures 1 through 3.

In Figure 6 I show a straight chair constructed according to this invention, and which straight chair consists of the cut-out side members 40 which have upwardly extending parts 42 serving as a support for the back panel 44. The back panel 44 is received in slots 46 in the side members 40 and is apertured as at 48, as will best be seen in Figure 7, for receiving tongues 50 on the portions 42 of the side members. The tongues 50 serve to interlock back member 44 with portions 42 to retain the chair in rigid assembled relation.

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The transverse rail members 49 are provided, which correspond to rail member 36 in Figure 5, and rail members 18 in Figure 1, and which provide support for panel 51 forming the bottom of the chair.

In Figure 8 there is shown a table structure constructed substantially identically with the articles of furniture previously described, in that it consists of the two end members 52 having slots adapted for receiving the front and back sideboards 54 and also receiving the rails 56. Rails 56 provide support for a panel 53 forming the table top.

Figure 9 shows a somewhat modified table construction in which two members 60 and 62 are provided which are slotted so as to fit together, and which, at their upper ends, have the upwardly projecting portions 64 which form means for confining a top member 66 resting on the upper ends of members 60 and 62.

In the several arrangements described where one panel or member engages another by being placed in a slot therein, the Figure 10 arrangement may be employed, particularly where the material being used is cardboard. In Figure 10, member 70 is provided with a slot 72 for receiving member 74 which is somewhat thicker than the width of the said slot. Member 74, according to this invention, is advantageously provided with the groove means 76 which may be cut therein if the member is of wood, but which may readily be pressed therein if the member is made of a heavy cardboard.

It will be apparent that the present invention provides for a knockdown article of furniture which is, at the same time, extremely strong when set up and also provides a method of assembling the furniture such that once it is set up, it will not accidentally become disassembled.

The furniture construction of this invention is adaptable to many other types of furniture and, in any case, is characterized by being inexpensive and capable of being produced by mass production methods adapted not only to rigid materials, such as wood, plastic, pressed wood, and the like, but also to more flexible materials, such as cardboard.

It will be understood that this invention is susceptible to modification in order to adapt it to different usages and conditions, and, accordingly, it is desired to comprehend such modifications within this invention as may fall within the scope of the appended claims.

We claim:

1. In an article of furniture; spaced generally vertically extending leg elements having slots near the ends with lateral offsets therein, rail elements fitting and substantially filling the offset portions of said slots while leaving said slots open, other members fitting in said slots abutting the sides of said rail elements and serving to retain the rail elements in position, a horizontal panel supported by said rail elements, and means preventing endwise movement between the leg elements and the said rail elements and other members.

2. In an article of furniture; a leg element having an L-shaped slot therein, a rail element receivable endwise in the foot of said slot and being notched so as to be laterally movable in the slot to expose the entirety of the other portion of said slot, a member receivable in said other portion of said slot so as to overlap the end of said rail element, said member being slotted to embrace said leg element below the bottom of said L-shaped slot, and a panel resting on said rail element.

3. In an article of furniture; a vertical leg element having a vertical slot therein with a horizontal slot intersecting the vertical slot, a rail member in said horizontal

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slot having a notch engaging said leg element, said rail member being disengageable from the leg element only by availing of said vertical slot, a side member in said vertical slot normally retaining said rail element in interlocking engagement with said leg element, and a panel resting on said rail element, said side member being slotted for engagement with said leg element and extending both above and below said rail element.

4. In an article of furniture; a vertical leg element having a vertical slot therein with a horizontal slot intersecting the vertical slot, a rail member in said horizontal slot having a notch engaging said leg element, said rail member being disengageable from the leg element only by availing of said vertical slot, a side member in said vertical slot normally retaining said rail element in interlocking engagement with said leg element, and a panel resting on said rail element, said side member being slotted for engagement with said leg element and extending both above and below said rail element, the upper edge surface of said side member being flush with the upper surface of said panel.

5. In a knockdown table, cradle, or chair; spaced vertical leg elements each having a vertical slot at each side and a horizontal slot intersecting each vertical slot, a pair of rail elements each having its ends in the horizontal slots of said leg elements and having notch means engaging said elements, said rail elements being detachable from said leg elements only by availing of said vertical slots, side members in said vertical slots locking said rail elements in said horizontal slots, and also having slots receiving said leg elements, and a panel resting on said rail elements, said leg elements projecting upwardly a substantial distance above said panel at one side, and the said side member adjacent the projections on said leg elements also projecting upwardly along the said projections, and means interlocking said side member and the said projections.

6. In an article of furniture; spaced elements providing leg means, said leg means being provided with slots, notched rail elements in said slots, other members in said slots locking said rail elements in place, and a panel extending between said leg elements and said members and supported on said rail elements, and at least said members having grooves therein along the top edges of said rail elements for receiving the side edges of said panel.

7. In an article of furniture; spaced elements providing leg means, said leg means being provided with slots, notched rail elements in said slots, other members in said slots locking said rail elements in place, a panel extending between said leg elements and said members and supported on said rail elements, at least said members being thicker than the width of said slots, and there being groove means in said members to receive the side edges of the slots in the leg means.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

1,645,336	McGlothorn	Oct. 11, 1927
1,910,089	Chomik	May 23, 1933
1,979,566	Morse	Nov. 6, 1934
2,034,830	Peffley	Mar. 24, 1936
2,235,290	Exline et al.	Mar. 18, 1941
2,360,963	Meiselman	Oct. 24, 1944
2,518,955	Stelzer	Aug. 15, 1950
2,522,774	Bower	Sept. 19, 1950
2,570,609	Taylor	Oct. 9, 1951