Feb. 18, 1969

L. A. SWENSON

3,427,669

KNOCKDOWN FURNITURE

Filed May 16, 1967

FIG. 1

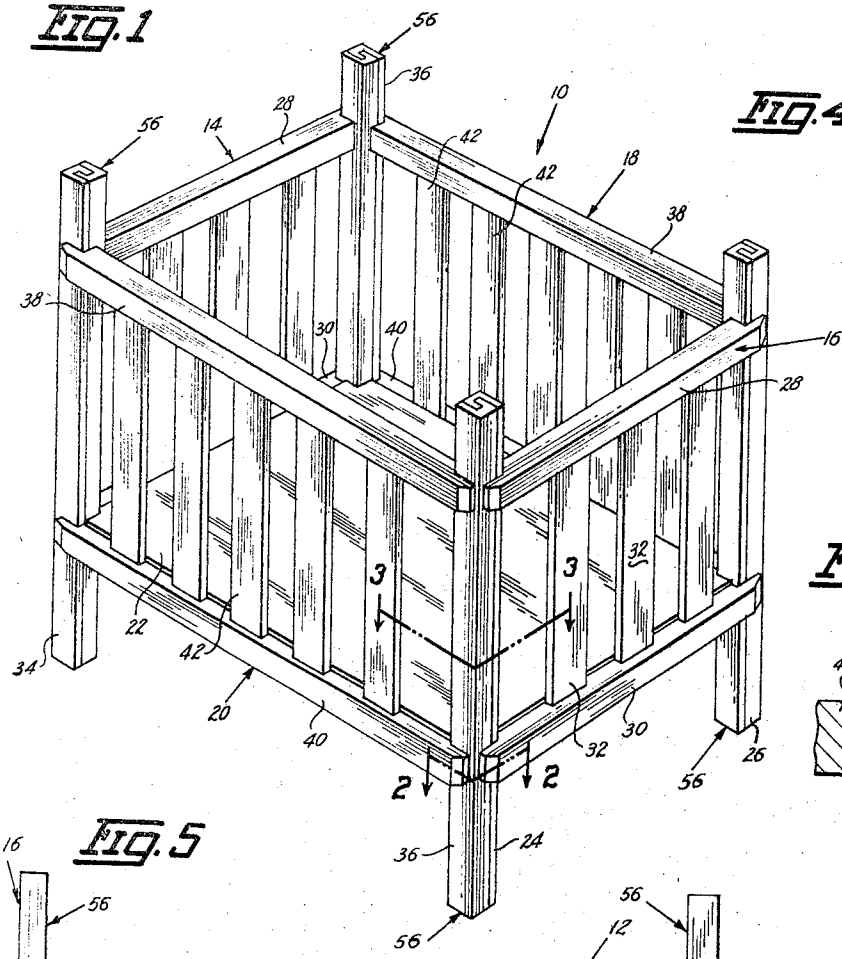


FIG. 4

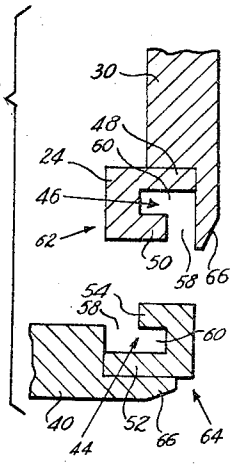


FIG. 2

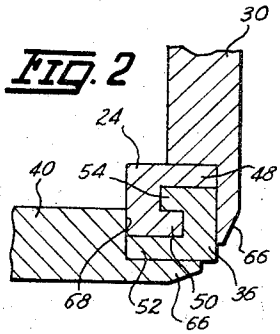


FIG. 5

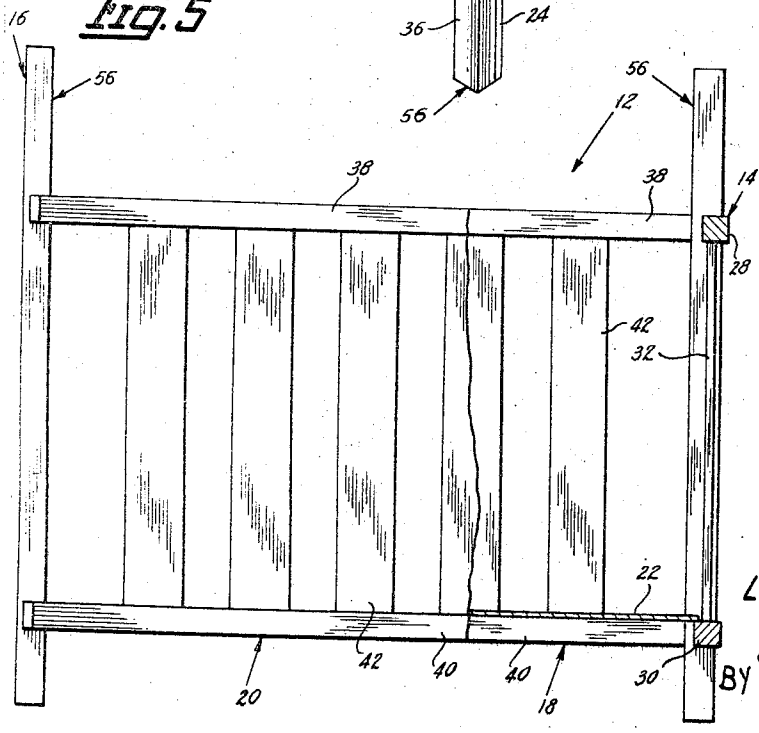
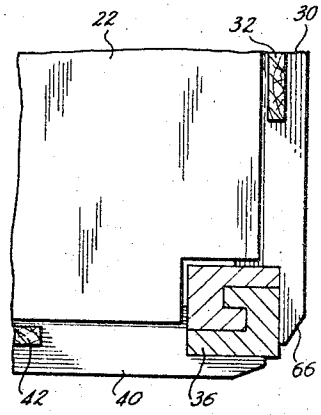


FIG. 3



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KNOCKDOWN FURNITURE

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U.S. Cl. 5—93 6 Claims
Int. Cl. A47d 7/00, 13/06

ABSTRACT OF THE DISCLOSURE

An article of furniture susceptible of assembly and disassembly by utilizing grooved legs or supports that are interlocked by longitudinal sliding engagement. Includes brace or rail components which overlie grooved sections to prevent lateral displacement of the interlocked components. Rigidity of assembled unit is accomplished without auxiliary or applied fastening elements.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to knockdown type furniture construction and will be described in relation to an article of furniture susceptible of use both as a baby bed or crib and as a playpen.

Description of the prior art

The concept of knockdown furniture is disclosed in many prior art patents and includes many types of detachable or collapsible furniture components. The use of interlocking slidable parts is old per se, but in those forms where the parts are completely separable, there is usually found some auxiliary or applied fastening elements that must be removed and thus are susceptible of becoming lost or damaged as well as frequently requiring the use of tools in their removal and application. In the collapsible type of furniture, the several parts generally remain attached to each other so that even in the collapsed state, the total weight of the article is involved in its transportation or movement to a storage area and this is frequently a disadvantage.

Summary

The present invention contemplates an article of furniture which will be illustrated in the form of a combined baby bed or crib and playpen, that may be completely assembled or disassembled easily and quickly without the use of any tools. The legs or supports are longitudinally grooved or rabbeted so that each corner component is formed by interlocking two such legs or supports. This is accomplished by sliding the legs with complementary grooves in longitudinal relationship to each other. Braces which hold two legs in spaced relationship and which also serve as siderails for the crib or playpen, are designed to extend transversely of the grooves at selected points so that once the legs are longitudinally introduced to each other, they cannot be laterally displaced and can only be separated by a further relative longitudinal movement.

A floor or bottom is fitted onto the assembled side and

end portions so that the erected unit is sufficiently rigid for its intended purpose and no auxiliary or applied fastening elements are required or necessary.

In its disassembled state, the several parts of this invention are completely detached from any other part to facilitate their transportation, movement or storage as desired.

The objects and purposes of this invention set forth, together with such further objects and advantages as may appear herein, or be hereinafter pointed out, will be more fully described and developed in relation to the detailed description of the accompanying drawing.

Brief description of the drawing

FIG. 1 is a perspective view illustrating this invention arranged as a baby bed or crib,

FIG. 2 is a cross sectional view taken on the line 2—2 of FIG. 1,

FIG. 3 is a cross sectional view taken on the line 3—3 of FIG. 1,

FIG. 4 is an exploded view of FIG. 2, and

FIG. 5 is an elevational view, partly in section, illustrating this invention inverted from the position shown in FIG. 1 for use as a playpen.

Description of the preferred embodiment

Referring to the drawings, an article of furniture embodying the principle of this invention is shown generally at **10** in FIG. 1 as a baby bed or crib and at **12** in FIG. 5 as a plyapen. The construction for both uses is the same and includes the opposed end sections, **14** and **16**, the opposed side sections **18** and **20** and a bottom or floor **22**. Each of the end and side sections are similarly constructed and a detailed description of end section **16** and side section **20** as best seen in FIG. 1 will be sufficient for an understanding of this invention.

End section **16** includes a pair of spaced parallel vertical leg or support components **24** and **26** that are secured together by a pair of horizontal, vertically spaced and parallel top and bottom rails **28** and **30**, respectively, with vertically disposed spaced and parallel slats **32** secured between rails **28**. Side section **20** has like parts which include the leg or support components **34** and **36**, top and bottom rails respectively, **38** and **40**, and slats **42**.

Each of the leg components, as for example, members **24** and **36** are elongated, substantially rectangular in cross section and are provided with like respective longitudinal grooves **44** and **46** that extend into such leg components parallel to their longest cross sectional dimension as best seen in FIG. 4. The portion of each leg component at one side of said groove is shortened so that member **24**, for example, includes a long side **48** and a short side **50**, with member **36** having the corresponding sides **52** and **54**.

One of the novel features of this invention is the manner of attachment of the top and bottom rails to the leg components and the slidable interlocking engagements of two such components to form a complete corner post **36** which is accomplished as follows.

Each end of each horizontal rail is provided with an L-shaped notch which can be best illustrated by reference to FIG. 4 where like numerals are applied to the

ends of rails **30** and **40** as shown to designate the short side **58** and the long side **60** of such notch. Each notched end of a rail is secured as by gluing or the like to one of the leg components in one of two arrangements designated generally at **62** and **64** in FIG. 4. In the arrangement shown at **62**, the corner of the notch in the rail **30** embraces the end of the long side **48** of the grooved end of leg component **24** so that the long side **60** of the notched rail end extends transversely of the end of side **48**, groove **44** and the short side **50** of such leg component. The short side **58** of the notch in the rail end abuts and is secured to the long side **48** of leg component **24**. In this position, it is pointed out that the long side **60** of the notched rail end extends transversely past the short side **50** of leg component **24** and in spaced relationship thereto to define a projection **66**.

In the arrangement shown at **64**, the corner of the notch in the rail end also embraces the end of the long side **52** of the grooved end of leg component **36** but is arranged so that the relative positions of the short and long sides **58** and **60**, of the notch in the rail end are reversed from that shown in **62**. Thus, in **64**, it is the short end **58** of the notch which extends transversely of the long side **52** of leg component **36** and partially transversely of groove **46** to form the shoulder **68** but not transversely of the short side **54** of the leg component **36** which is the case of part **60** relative to part **50** in **62**. Likewise, in **64** it is the long side **60** of the rail notch which abuts and is secured to the long side **52** of leg component **36** whereas in **62**, the short side **58** of said notch abuts the long side **48** of the leg segment **24**. By thus reversing the position of attachment of the notched rail end to different of the like grooved leg components, an effective locking means for the assembled leg components results from projection **66** on one rail and shoulder **68** on another rail as follows.

In the formation of a corner post **56**, two leg components, such as **24** and **36** for example, can be introduced in endwise alignment and then be slid longitudinally relative to each other for interlocking or meshing relationship as seen in FIGS. 2 and 3. Each post **56** comprises one leg component on which the side rails are attached in the manner shown at **62** in FIG. 4 and the other leg component as shown at **64**. The resulting post **56** is thus substantially square in cross section and the joined leg components cannot be laterally separated because of the respective shoulder **68** and projection **66** on opposite sides of the post and the overlapping relationship of the short sides or arms **50** and **54** in the leg components **24** and **36**. It will, of course, be understood that both leg components of one end section may be joined as described simultaneously with a leg component from the two side sections and once the four corner posts are assembled, the floor or bottom **22** is designed to fit within the confines of the formed frame and to merely rest on the bottom rails inside of the several slats. Floor **22** is notched at the corners to fit the posts **56** in an obvious manner and in addition to its primary purpose, it serves to add rigidity to the assembled sides and ends against sway.

As seen in FIG. 1, the length of the posts **56** above the top rails is much less than the length of said posts below the bottom rails so that in the arrangement of FIG. 1, I refer to the post portions above the upper rails as the short legs and the post portions below the lower rails as the long legs. Thus because this article is supported on its long legs in FIG. 1, bottom **22** is sufficiently high enough from floor level for purposes of a baby bed or crib. In FIG. 5, the entire structure is merely inverted and supported on its short legs, with bottom or floor **22** being placed on the lowermost rails where it is relatively close to floor level for use as a playpen.

The assembled structure illustrated as quite adequate and rigid for its intended purposes and requires no auxiliary or applied fastening deice to maintain this article in full usable condition. It can be easily and quickly disassembled by first removing the floor or bottom **22** and then merely sliding the end and side sections apart in the reverse manner in which they were installed. Once the parts are separated, it will be appreciated that each part can be carried separately, if necessary and that all of the component parts can be stored in a minimum of space. Also the several parts by being entirely separable, can be stored in different places should space conditions require, or arranged as space may permit, for example, in transportation by car. It will thus be appreciated that the physical handling and storing of the knockdown furniture described is considerably facilitated and simplified over foldable or collapsible type furniture where even though the overall size may be reduced, the bulk and weight remain and may be a considerable burden for many to handle conveniently.

From the foregoing it is thought a full understanding of construction and operation of this invention will be had and the advantages of the same will be appreciated.

It will be understood that the phraseology employed herein is for the purpose of description and not for limitation and that modifications and changes in the construction and arrangement of this invention can be made within the scope of what is claimed, without departing from the spirit and purpose thereof.

I claim:

1. A knockdown baby bed comprising:
a pair of end sections and a pair of side sections,
each of said sections including,
a pair of vertically disposed spaced parallel leg components,
a pair of horizontal vertically spaced rails secured at respective ends to each respective pair of leg components,
each leg component being provided with a like longitudinal groove,
each end of each rail disposed to overlie the groove on one of said leg components, and
each leg component capable of being interlocked with another leg component by endwise introduction and longitudinal sliding movement relative thereto whereby said interlocked leg components define a corner post and said leg components cannot be laterally displaced by reason of the overlying portions of said rails.

2. A baby bed as defined in claim **1** including a plurality of vertically disposed spaced and parallel slats secured between the upper and lower rails on each section.

3. A baby bed as defined in claim **1** including a bottom member adapted to removably nest within the confines of the assembled side and end sections and to be supported by the lowermost rails and abutting said slats.

4. A device as defined in claim **3** wherein:
the distance from the top of the upper rails to the top of said corner posts is considerably less than the distance from the bottom of the lower rails to the bottom of said corner posts to define the respective short and long corner posts,
said article when supported on said long posts defining a baby bed, and
said article when inverted and supported on said short posts and with said bottom member supported on the lower rails in inverted position defining a playpen whereby the bottom of said playpen is substantially closer to floor level than is the bottom when this article is used as a bed.

5. A baby bed as defined in claim **1** wherein:
one side portion of each leg component formed by said groove defines a short side and the other side portion defines a long side,
each end of each rail is provided with an L-shaped

notch defining a long and short side respectively, and

on each corner post, the long side of said notch on the rails on one leg component extend transversely of the long side of said leg component and the short side of said notch on the rails on the other interlocking leg component extend transversely of the long side of said other leg component.

6. A baby bed as defined in claim 4 wherein:

the cross sectional shape of said leg components are rectangular, and

the cross sectional shape of said corner posts after the interlocking of two leg components is square.

References Cited

UNITED STATES PATENTS

2,586,251	2/1952	Peebles	5—99 X
2,884,296	4/1959	Moilinger et al.	312—263
3,021,187	2/1962	Mitchell	312—263
3,195,968	7/1965	Freeman	312—263 X
3,218,037	11/1965	Corley	5—99 X
3,354,475	11/1967	Martin	5—99 X

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U.S. Cl. X.R.

312—263; 5—11