United States Patent [19]

Miller

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[54] **SELF-LOCK TYPE ADJUSTABLE WIDTH BEDFRAME**

[75] Inventor: **Richard A. Miller,** Bedford Heights, Ohio

[73] Assignee: **Rusco Industries, Inc.,** Los Angeles, Calif.

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[52] **U.S. Cl.** **5/201,** 5/185, 5/285

[51] **Int. Cl.** **A47c 19/04**

[58] **Field of Search** 5/181, 184, 185, 5/201, 285, 286, 202; 248/407, 423; 108/144

[56] **References Cited**

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Primary Examiner—Bobby R. Gay
Assistant Examiner—D. F. Marquette
Attorney—Albert H. Oldham et al.

[57] **ABSTRACT**

A bedframe which may be easily adjusted for use as a single, double, or queen size bed. The frame has a pair of side rails and first and second cross rail sections connected to each side rail. One of the cross rail sections has a pair of upwardly projecting shoulder rivets and the other side rail section has, preferably, three pairs of L-shaped notches with the notches of each pair being spaced apart by a distance equal to the separation of the rivets of the other cross section and with the pairs being separated by distances equal to the differences in the desired width of the frame.

4 Claims, 3 Drawing Figures

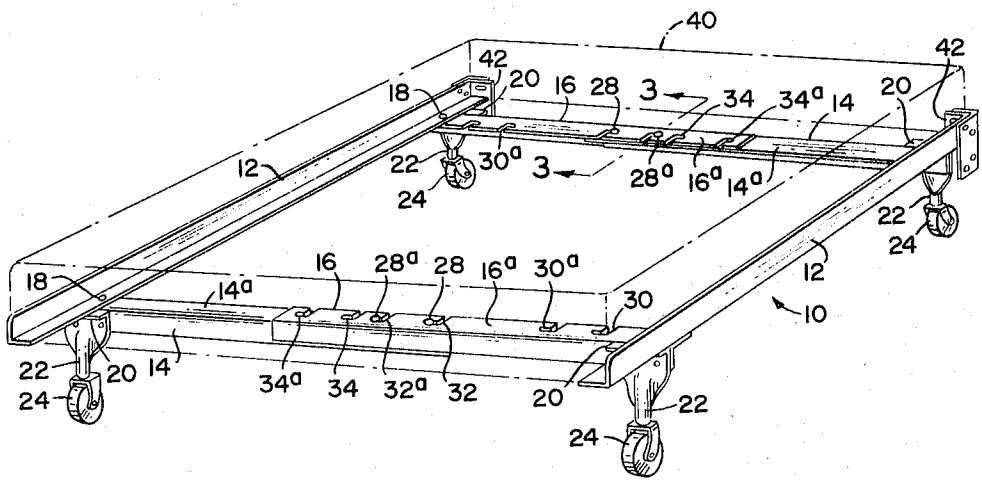
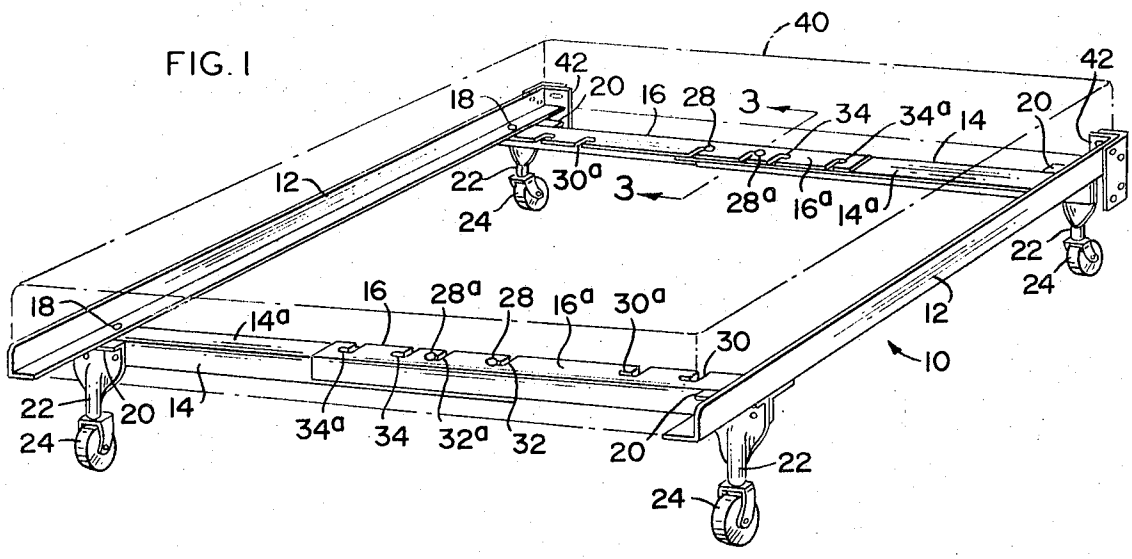


FIG. 1



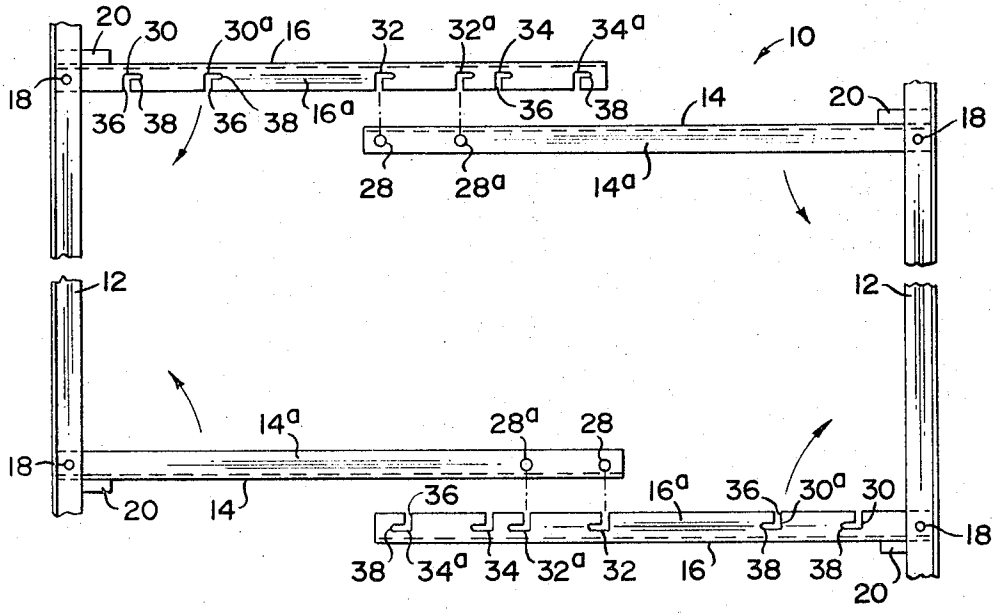


FIG. 2

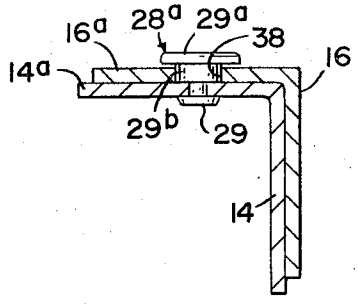


FIG. 3

INVENTOR.
RICHARD A. MILLER
BY
Oldham & Oldham
ATTORNEYS.

SELF-LOCK TYPE ADJUSTABLE WIDTH BEDFRAME

The present invention relates to adjustable bedframes and more particularly to an improved adjustable frame construction in which the frame may be readily adapted for use with different size bedding.

BACKGROUND OF THE INVENTION

Heretofore adjustable bedframes have relied either on clamps or on bolts and nuts to hold the cross rails together and to maintain the proper spacing between the side rails of the frame. A typical bedframe clamp is shown in U.S. Pat. No. 2,883,222. With such an arrangement there is no positive determination of the bedframe width and this width must be determined either by measurement or by trial and error. Also, if the clamp becomes loosened it is possible for the side frames to move apart. While bolts provide for the positive positioning and engagement of the cross rail sections, tools are required to assemble the bedframe and the bolts and nuts are easily lost or misplaced.

It is the primary object of the present invention to provide an adjustable bedframe in which the width of the frame is precisely determined and maintained when the bed is assembled.

It is also an object of the present invention to provide an adjustable bedframe which does not require the use of tools in assemblying the frame and which has no loose or separate components which might become lost.

Other objects of the present invention are the provision of an adjustable bedframe in which a secure, locked condition is obtained when the frame is assembled, to provide sturdy positive means to vary the width of a bedframe of the Hollywood type, and to provide a practical, easily adjusted width bedframe.

SUBJECT MATTER OF THE INVENTION

The above and other objects of the invention which will become apparent in the following detailed description are achieved by providing an adjustable bedframe which consists, essentially, of a pair of side rails, first and second cross rail sections connected to each side rail at the opposite ends thereof, a pair of shoulder rivets or the like in spaced relation on the first cross rail section, and a plurality of pairs of L-shaped slots on the second cross rail section, the slots of each pair being spaced apart by a spacing equal to that of the rivets of the first cross rail section and the pairs of slots being spaced from one another by distances equal to the differences in the desired width of the bedframe.

For a more complete understanding of the invention and the objects and advantages thereof reference should be had to the following detailed description and the accompanying drawing wherein there is shown a preferred embodiment of the invention.

In the drawing:

FIG. 1 is a perspective view of the bedframe of the present invention;

FIG. 2 is a top plan view of the bedframe of FIG. 1, showing the cross rail sections in their disengaged relation; and

FIG. 3 is a transverse sectional view taken along the line 3—3 of FIG. 1.

The bedframe, designated generally by the reference numeral **10**, has a pair of side rails **12** which extend the entire length of the bed. A first cross rail section **14** is connected adjacent one end of each of the side rails **12** and a second cross rail section **16** is connected to the side rails **12** at the opposite end thereof, the cross rail sections **14** and **16** being opposite one another so as to form a pair of first and second cross rail sections at the head and foot of the bedframe when the side rails **12** are positioned adjacent one another. Each of the cross rail sections **14** and **16** is connected to its respective side rail by a rivet or other connection **18** which permits pivotal movement so that the respective cross rail section may be folded in under or against the side rail, as indicated by the arrows in FIG. **2**, so that the bed frame may be easily moved or stored. Legs **22** and casters **24** of suitable known construction are provided in each of the corners of the bedframe. These legs **22** preferably have top flanges **20** and they are secured to and reenforce the cross rail sections and usually limit the arcuate movement thereof.

As can be seen from FIG. **2**, as an important feature of the invention, the first cross rail sections **14** are each provided with a pair of shoulder rivets or similar means **28, 28*a*** spaced longitudinally from one another along and suitably secured to the cross rail section adjacent the outer end thereof. The rivets are illustrated clearly in FIG. **3**. Each rivet has an end portion **29** which is secured to the cross rail section top flange **14*a***. The head or shoulder portion **29*a*** of the rivet extends upwardly through the cross rail section **16** and secures this section in the required position. The length of the shoulder portion **29*b*** between the head **29*a*** and section **14*a*** is at most slightly greater than the thicknesses of section **16*a*** of the cross rail sections **16**.

Each of the second cross rail sections **16** has a plurality of pairs of L-shaped slots or notches **30, 30*a*, 32, 32*a***, and **34, 34*a***. The slots or notches are provided in the top flange portion **16*a*** of the cross rail section **16** and have a first portion **36** which extends inwardly at right angles to the longitudinal axis of the cross rail section **16** to approximately the midpoint of the rail section and a second portion **38** extending at right angles to the first portion **36**. The width of each of the portions **36** and **38** is slightly greater than the diameter of the shoulder portion (**29*b***) of the rivets. The two notches of each pair are spaced apart by a distance equal to the spacing of the rivets **28** and **28*a***, thus, the two notches, or slots **30** and **30*a*** of the first pair of notches are spaced apart so that the rivets **28** and **28*a*** can be received simultaneously in these two notches. The first pair of notches **30** and **30a** are located on the cross rail section **16** so that when the rivets **28** and **28*a*** are engaged in the inner portions **38** of these notches **30** and **30*a*** the side frames **12** are spaced apart by the width of a single bed. Likewise, slots or notches **32** and **32*a*** are so located that when the pair of rivets **28, 28*a*** are positioned in these notches the frame is suitable for use as a double bedframe while the notches **34** and **34*a*** permit the frame to be used as queen sized bedframe. The rivets **28** may be of any suitable construction and their end portions or heads **29*a*** engage the upper cross rail to retain the bedframe in an operative position until the box spring is placed thereon.

It can be seen that to disconnect the cross rail sections **14** and **16** the cross rail sections must be pushed toward one another to move the rivets into alignment with the outer portions **36** of the notches before the cross rail sections can be disengaged from one another. When a box spring **40** is positioned on the bedframe,

as is shown in phantom outline in FIG. **1**, the box spring serves to prevent the side rails **12** from moving toward one another and thus assures that the cross rail sections **14** and **16** remain locked together. The provision of a pair of rivets and a pair of slots assures that the cross rail sections **14** and **16** will remain aligned with one another and provides a secure connection between the two rail sections.

It is seen that preferably each of the side rails **12** has one cross rail section **14** and one second cross rail section **16** secured thereto but at different axial ends of the side rails to achieve a locked engagement position.

The side rails **12** and the cross rail sections **14** and **16** may all be formed of angle stock and end plates **42** may be provided at one end of the side rails **12** for securing a head board to the bedframe, all in the conventional manner. The slots **30** and **34** etc. extend to edges of the cross rail sections and are open in opposite directions as shown in FIG. **2**.

It will be understood that while only the best known embodiment of the invention has been illustrated and described in detail herein the invention is not so limited. Reference should therefore be had to the appended claims in determining the true scope of the invention.

What is claimed is:

1. An adjustable width bedframe, comprising:

a pair of side rails,

a first cross rail section for each side rail, the first cross rail section being connected at one end thereof to the side rail adjacent a first end of the side rail, the first cross rail section having two spaced upwardly projecting headed rivet means located adjacent the free end of the section, said rivet means including shank portions, the two said first cross rail sections being positioned at opposite ends of the individual said side rails to which the individual cross rail section connects,

a second cross rail section for each side rail, the second cross rail section being connected at one end thereof to the side rail adjacent the second end of the side rail, the second cross rail section having at least two spaced pairs of notches adjacent the free end of the section for receiving the rivet means of the first cross rail section whereby the first cross rail sections of each side rail can be connected to the second cross rail sections to form a pair of cross rails extending across the frame at opposite ends thereof to form an adjustable width bed frame of standard sizes, said rivet means heads engaging the upper surface of the second cross rail sections to retain the cross rail sections in engagement, the second cross rail sections each having a horizontal flange, the notches being substantially L-shaped slots of substantially uniform width throughout that extend inwardly from an edge of the horizontal flange of each second cross rail section and then laterally outwardly of its associated side rail, the width of said shank portions being substantially equal to the width of said slots, and

the substantially L-shaped notches all being open to an edge of a second cross rail section but with the notches open ends facing in opposite directions longitudinally of the frame when the frame is operatively positioned, the distance between the centers of said shank portions being equal to the distance between the centers of said notches open ends of each of said pair of notches, engagement of the headed rivet means with the substantially L-shaped notches requiring relative movement of the first and second cross rail sections longitudinally and then transversely outwardly of the frame.

2. A bedframe as in claim **1** where a plurality of pairs of notches or slots are provided at spaced positions of the second cross rail sections to provide an adjustable width frame having a plurality of standard sizes.

3. A bedframe as in claim **1** where the open ends of the notches face inwardly of the assembled frame, and the frame side rails are adapted when operatively assembled to engage a standard width box spring so as to be prevented thereby from moving toward each other and thereby retaining said frame and cross rails in assembled position.

4. A bedframe as in claim **2** where the open ends of the notches face inwardly of the assembled frame, and the frame side rails are adapted, when operatively assembled, to engage a standard width box spring so as to be prevented thereby from moving toward each other and thereby retaining said frame and cross rails in assembled position.

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