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S. J. IMBER ET AL

2,851,702

BED FRAME

Filed March 23, 1956

FIG. 1

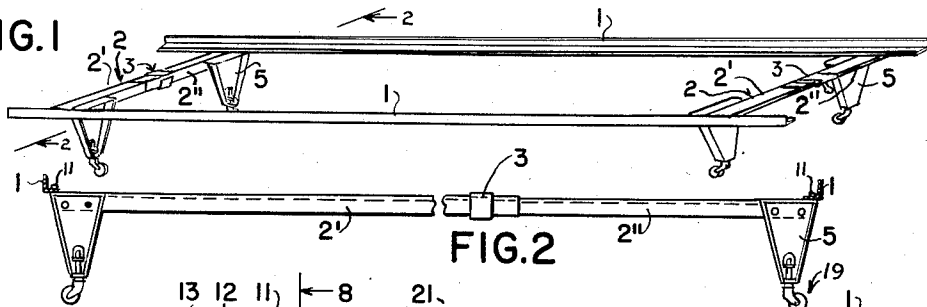


FIG. 2

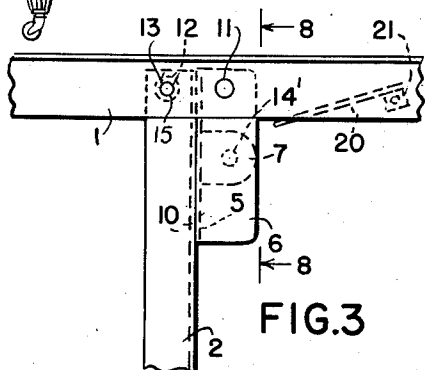


FIG. 3

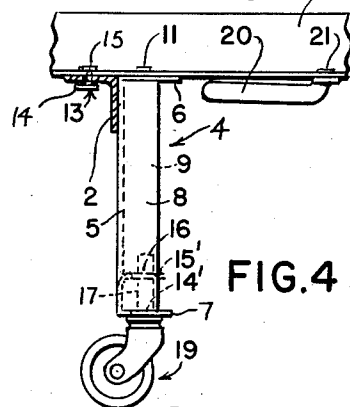


FIG. 4

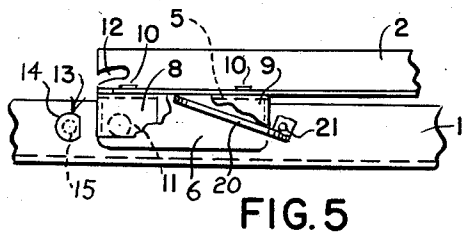


FIG. 5

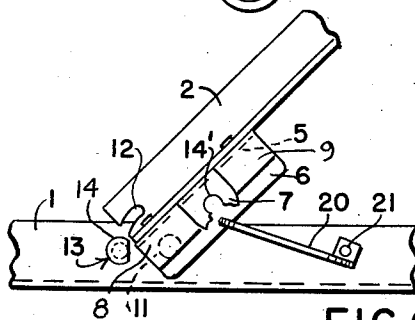


FIG. 6

FIG. 7

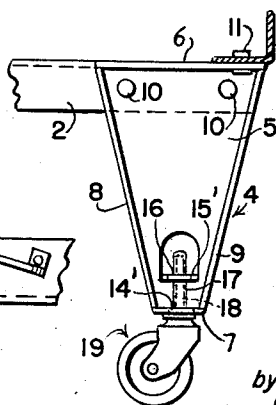
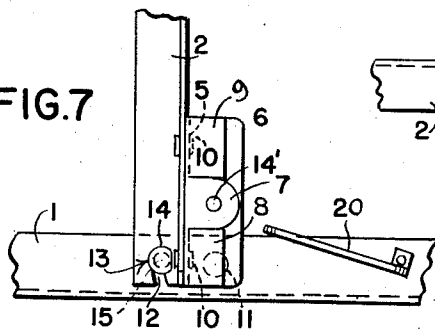


FIG. 8

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1

2,851,702

BED FRAME

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1 Claim. (Cl. 5—202)

The present invention relates to a bed frame and more particularly pertains to a bed frame of the knock-down, collapsible type comprising side rails and end rails formed of metal bars.

Known structures of such bed frames had the well known drawback that due to improper connection of the side rails to the end rails collapse of the frame occurred in comparatively many instances.

It is, therefore, one object of the present invention to provide a bed frame of the above character which is adapted to be easily and quickly assembled and disassembled and when disassembled may be arranged into a compact package which will occupy little space in storage or shipment and which may be readily handled and shipped, and when assembled the joint between the side rails and the end rails is of such nature that a collapse or breakage at the joining point is impossible for practical purposes.

Since the bed frames are shipped in disassembled position and the user himself is subjected to the task of assembling the bed frame, it occurs quite often that the inexperienced user bends the end rails relative to the side rails during the assembly operation instead of turning the side rails upon a connecting pivot, thereby rendering the entire bed frame inoperative.

It is, therefore, also another object of the present invention to provide means for preventing an improper bending of the end rails relative to the side rails and, thereby avoiding unnecessary damage to the bed frame during the assembly operation.

With these and other objects in view, which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of the bed frame in its assembled position;

Fig. 2 is a section along the lines 2—2 of Fig. 1;

Fig. 3 is a top plan view of the joint between one side rail and one end rail;

Fig. 4 is a side elevation of said joint;

Fig. 5 is a bottom plan view of the joint in disassembled position;

Fig. 6 is a bottom plan view of said joint in partly assembled position;

Fig. 7 is a bottom plan view of said joint in assembled position; and

Fig. 8 is a section along the lines 8—8 of Fig. 3.

Referring now to the drawing, the bed frame comprises two parallel disposed side rails 1 and two parallel disposed end rails 2 which are in assembled position substantially perpendicular to the side rails 1 and in disassembled position extend substantially parallel to the side rails 1. In order to use the same bed frame for beds of different width, the side rails 2 comprise in conventional manner two parts 2' and 2'' which partly overlap each other and are maintained in a predetermined position corresponding with the required width of the bed frame by means of a clamping member 3. The rails 1 and 2 are

2

preferably formed of metal bars and are shown in the present embodiment as having L-cross sections.

The bed frame rests on at least four leg members 4 which are secured to the respective rails in a manner which provides a very strong joint between the side rails 1 and the end rails 2, as will be more clearly set forth below.

Referring now to Figs. 3 to 8, it will be readily seen that the leg member 4 comprises a housing of preferably downwardly tapered shape and consists of a flat vertically disposed web 5 which is formed at the opposed upper and lower ends thereof with inturned flanges 6 and 7, respectively. In addition the web 5 is also equipped with inturned side flanges 8 and 9, so that the web 5 together with the flanges 6, 7, 8 and 9 forms a housing open at one side. The end rail 2 is secured to the upper portion of the flat web 5 by means of rivets 10, bolts or the like in such manner that one arm of the L-shaped end rail 2 lies flush with the flange 6 of the leg 4.

The leg member 4 is pivotally connected to the side rail 1 by providing a rivet 11 which extends through the horizontally disposed arm of the side rail 1 and projects through the flange 6 of the leg member 4. Due to the fact that the leg member 4 is pivotally secured to the side rail 1 and the end rail is permanently secured to the leg member 4, a turning of the leg member 4 relative to the side rails 1 will provide simultaneous turning of the end rail 2 relative to the side rail 1. It is quite apparent that there is no direct permanent connection between the side rails 1 and the end rails 2, the connection between said two rails being made rather through the intermediate leg member 4.

In order to provide, however, a releasable connection between the side rails of the bed frame, the horizontally disposed portion of the end rail 2 is equipped with a slot 12 at its extreme end and which is open at said end which is adapted to cooperate with a rivet 13 disposed in the horizontal arm of the side rail 1, which rivet 13 is longitudinally spaced apart from the pivoting rivet 11 at a distance which is equal to the median radius of the circular slot 12, said radius being taken from the center of the rivet 11. The rivet 13 is equipped with a special head portion 14, while its shank portion 15 is of a diameter chosen very close to the width of the slot 12. This is of importance in order to prevent any relative movement between the side rails 1 and the end rails 2 in assembled position of the bed frame. At the same time it is quite apparent that such arrangement provides a particularly solid and strong connection between the respective rails of the bed frame because not only the releasable connection by means of the slot 12 and rivet 13 but also the permanent pivotal connection between the leg member 4 through the rivet 11 and the side rails 1 provides a double rivet connection between the respective rails of the bed frame.

The leg member 4 is also equipped to receive at its lower end a caster and in order to bring this about the bottom flange 7 has a hole 14' and in addition a portion of the flat web 5 is stamped out and bent into horizontal position to form a flange 15' which also has a hole 16 coaxially arranged with the hole 14' of the flange 7. A sleeve 17 is inserted in both holes, which sleeve receives the stem 18 of the caster 19.

The bed frames are stored and shipped in disassembled position in which the end rails 2 are disposed substantially parallel to the side rails 1. In order to assemble the bed frame it is merely necessary to turn each portion 2' and 2'' of the end rails from the disassembled position shown in Fig. 5 into the assembled position shown in Fig. 7 by turning the leg member 4, and thereby, also the corresponding part of the end rails into position in which the end rails 2 form an angle of about 90° towards the

3

side rails 1. This turning movement performed upon the rivet 11 as pivotal axis brings about a locking between the side rails 1 and the end rails 2 immediately upon receiving the rivet 13 in the slot 12 of the end rails 2. This slot and rivet connection brings about not only a secure locking between these two elements, but the length of the slot operates simultaneously as abutment and limiting means for the turning movement of the leg member 4 together with the end rails 2.

In order to prevent, however, a turning of the end rails 2 relative to the side rails 1 upon an axis other than the pivotal axis of the rivet 11 a small arm 20 is secured to the horizontal arm of the side rails 1 by means of a rivet 21, welding or the like, which arm 20 extends slightly spaced apart from the horizontal arm of the side rails 1 in longitudinal direction preferably at a slight angle. If the leg member 4 together with the end rail 2 is disposed in disassembled position, the arm 20 engages the bottom face of the flange 6 and functions as an abutment or turning preventing means for the leg member 4 upon a horizontal axis. In this manner the user inexperienced in assembling the bed frame will be prevented from turning the leg member together with the side rails improperly and a bending and, thereby damage of the bed frame will thus be completely avoided. This arrangement permits only turning of the leg member 4 together with the side rails 2 upon the vertical pivotal axis of the rivet 11 leading automatically to the locking between the side rails 1 and the end rails 2 by means of the rivet 13 and the slot 12.

While I have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claim.

We claim:

4

A collapsible bed frame, comprising a side rail having a horizontal flange, a leg member having a horizontal flange, a vertically disposed pivot pintle interconnecting said horizontal flanges with that of said leg member beneath that of said side rail, an end rail secured to said leg member and connected to said side rail only through said leg member; said leg member and said end rail being adapted to extend substantially perpendicular to said side rail in the assembled position of said bed frame and to extend substantially parallel to said side rail in the collapsed position of the named parts; means comprising a headed stud extending vertically from said horizontal flange of said side rail and a cooperating curved slot in an end portion of said end rail adapted to engage said stud for additionally securing the parts together solely in the assembled position of said bed frame; and separate and distinct means effective solely in the collapsed position of the bed frame for preventing twisting of the named parts about any axis other than that of said pivot pintle, and comprising a rigid arm secured to said side rail and having a portion positioned to engage the underside of said horizontal flange of said leg member only when the latter is in its position substantially parallel to said side rail.

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