June 10, 1952 J. G. FISCHER 2,600,104

FOLDING COT

Filed March 4, 1949

Fig. 1.

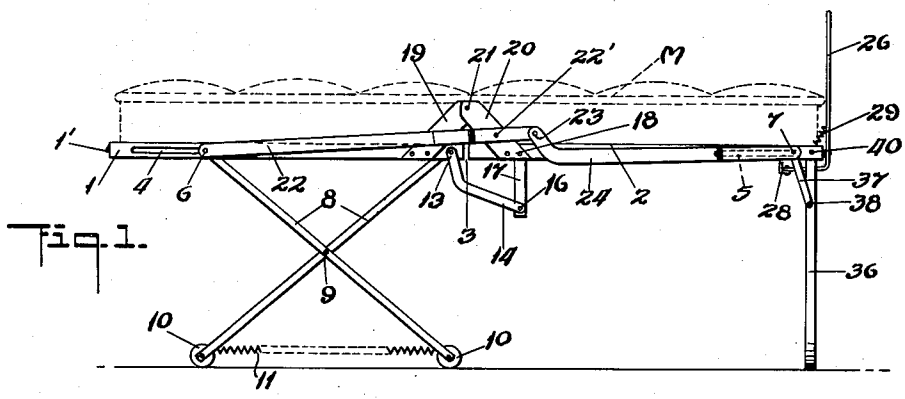


Fig. 2.

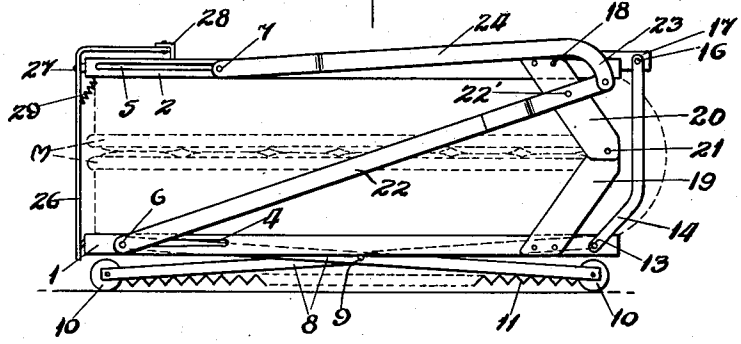


Fig. 4.

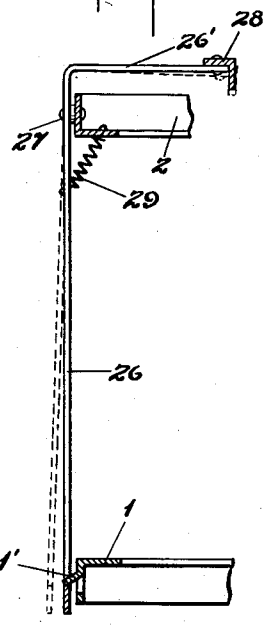


Fig. 3.

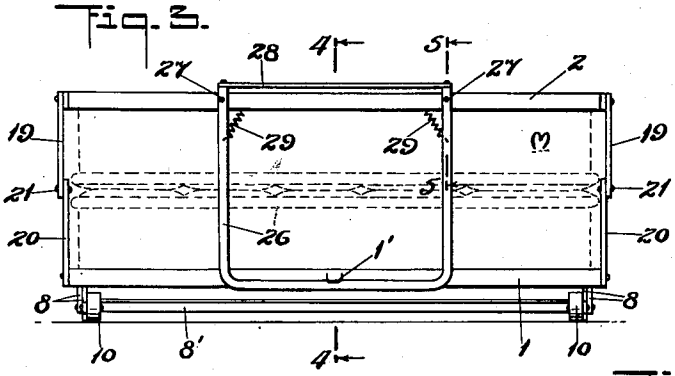


Fig. 6.

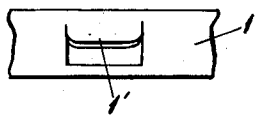
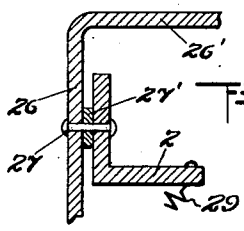


Fig. 5.



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FOLDING COT

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Application March 4, 1949, Serial No. 79,533

9 Claims. (Cl. 5—111)

1

This invention involves improvements in folding cots or beds of the type normally stored in folded condition.

This invention is concerned with means in folding cots or beds of this general type and more specifically in those such as disclosed in my copending application Serial No. 26,272, filed May 11, 1948, now abandoned.

The more important object of this invention is to provide a folding cot structure of the general type disclosed in my above mentioned application, but in the considerably modified form as herein disclosed.

A broad object of this invention is to provide an improved and simple form of latching means for locking folding cots or beds in collapsed position.

Another object of this invention is to provide an improved form of latching means for folding cots or beds adapted to very simple operations in latching them in collapsed position and unlatching them when they are to be opened for use.

A more specific object of the invention is to provide as a part of such latching mechanism a pillow or headrest.

Other and more detailed objects of the invention will be apparent from the following description of the embodiment of the invention selected for illustrating the idea thereof herein.

In the accompanying drawings,

Figure 1 is a side elevational view of a cot in accordance with this invention showing it in open position;

Figure 2 is a similar view showing the cot folded and latched closed;

Figure 3 is a lefthand elevational view of the structure as illustrated in Figure 2;

Figure 4 is a detailed, cross-sectional view of the latching mechanism taken on the line 4—4 of Figure 3;

Figure 5 is a still further detailed cross-sectional view on the line 5—5 of Figure 3; and

Figure 6 is an enlarged elevational view of the latch finger.

In the form of structure illustrated herein, although some of the parts thereof have been eliminated, many of the parts are of substantially the same construction as the corresponding parts of the structure illustrated in my above mentioned application. It follows, therefore, that the cot or bed frame as before comprises a pair of U-shaped frame members 1 and 2, which may be formed from single pieces of iron or other suitable material of proper structural shape, as for example angle iron.

2

As illustrated, each of these U-shaped frames is composed of a properly bent single piece of angle iron, but it will be readily appreciated by those skilled in the art that these frames can be made up of individual side and end members connected together at the corners in any suitable manner, as by welding, riveting, or the like, and reinforced by suitable bracing members when desirable.

As illustrated in Figure 1, when the cot is opened the U-shaped frame members 1 and 2 lie in the same plane with the free ends of their side arms lying in adjacent relation as indicated at 3 in Figure 1. These two frames are hingedly connected together at each side near the ends of the free side arms by pairs of hinged levers 19 and 20 which are respectively riveted to the frame members 1 and 2 and hingedly connected together by means of pivot pins 21.

The side arms of each of the U-shaped frame members 1 and 2 are provided near their closed ends with elongated slots 4 and 5. A pair of leg bars 8—8 are pivotally connected intermediate their ends at 9 and are provided at their lower ends with casters 10—10. There is a pair of these leg bars 8—8 at each side of the frame member 1 (see Fig. 3), which are connected by suitable cross-braces, one of which is indicated at 8' in the same figure, to give them the proper lateral rigidity. Tension springs 11 interconnect the lower ends of each of the leg bars 8—8, as shown. The upper end of one of the leg bars 8 of each of the pairs is slidably attached to the frame member 1 by means of a pin 6 which rides in a slot 4, and the upper end of the other leg 8 of each pair is pivotally connected to the same frame at 13 which provides fixed pivot points for these leg bars. Pivotally secured to the pivot pins 6 is a pair of links 22 which are also pivotally attached to the hinge plates 20 at 22'. The ends of the links 22 extend beyond the pivot points 22' and are pivotally connected at 23 to another pair of links 24 which are slidably connected to the frame 2 by means of the pivot pins 7 mounted in the slots 5.

A pair of links 14 is also pivotally mounted at 13 on the frame 1 and are pivotally connected at 16 to a U-shaped yoke 17, which yoke in turn is pivotally mounted at 18 adjacent the free ends of the side members of the frame member 2 (see Fig. 1). The yoke 17 provides a strengthening cross-brace for the mattress frame. The pivot pins 18 may also serve to attach the hinged plates

20 to the frame 2, or may be separate pivot pins for the yoke 17.

Secured to the bight of the U-shaped frame 2 is a U-shaped frame 26 comprising a head or pillow rest which may be formed from a single bar of suitable material such as strap iron by bending into the form clearly shown in Figure 3 with the terminal ends of the side arms of the frame being extended laterally, as indicated at 26', so as to underlie the frame 2 when the parts are in the position shown in Figure 1. The free terminal ends of the offset extensions 26' are connected together by a cross-brace 28 which may be of angle iron, as shown in Figure 4, and which is attached thereto by welding, rivets, bolts, or the like. The frame 26 is attached to the cross-member of the U-shaped frame 2 by means of headed pins, bolts or the like 27, and is slightly spaced therefrom by means of washers 27' best shown in Figure 5. The contact area of the washers 27' with the frame 2 and the frame 26 permits a rocking or clockwise motion when the cross-brace 28 is pushed or pulled for a purpose to be explained later. A pair of tension springs 29 is connected between the side arms of the frame 26 and the mattress frame 2.

The legs for the head end of the mattress frame may be of any suitable construction, as for example a U-shaped frame 36 which is pivotally mounted at its free ends to the frame 2 by means of pivot pins 40 (see Fig. 1). Bracing links 37 pivotally connected to the sides of the frame 36 are mounted at their other ends on the sliding pins 7.

The bight of the U-shaped frame 1 is provided with a struckout latching lip 1', as clearly shown in Figures 4 and 6.

The rectangular frame resulting from the positioning of the U-shaped frame members 1 and 2 in the same plane as illustrated in Figure 1, is provided with the usual spring tensioned strap or wire foundation for the mattress M. This mattress is, of course, of the type adapted to be readily folded about a transverse medial line so that it may assume either of the positions shown in Figures 1 and 2.

The cot is folded from the position shown in Figure 1 to the position shown in Figure 2 by lifting upwardly on the head end of the frame 2 which causes it to pivot on the frame 1 about the hinge pins 21. As this pivoting occurs the links 22 and 24 pivot on their pivotal connection 23 and on the pivot pins 22'. As they pivot the pins 6 and 7 slide in the slots 4 and 5 respectively from their positions as shown in Figure 1, to the positions shown in Figure 2. As this occurs the hingedly connected leg members 8 collapse, placing the tension spring 11 under greater tension. As the pivot pins slide from one extreme position to the other the leg frame 36 is caused to fold down within the frame 2. As the folding progresses, the links 14 cause cross-bracing yoke 17 to fold down substantially into the plane of the frame 2, as is clear from Figure 2.

As the cot reaches fully folded position the latching finger 1' engages over the edge of the cross member of the headrest frame 26, as clearly shown in Figure 3. The length of the frame 26 is proportioned so that some pressure must be applied to compress the sections of the mattress M at the time latching occurs, so as to insure a compact unit when folded. The natural compressibility of the mattress provides the desired coaction of the latching members. The springs 29 urge the headrest frame 26 towards the latching lip 1' so that no manual operation other than a downward pressure on the head end of the frame 2 is necessary to cause latching engagement of the frame 26 with the latching lip 1'.

The folded cot is now securely locked in this position and is adapted to be rolled out of the way into a storage space or under a bed or other article of furniture, or into a chair or sofa if it form a part of such an article of furniture.

To unlatch the folded cot so that it may be opened it is only necessary to press down on the cross-bar or handle 28. This pressure will further compress the sections of the mattress M and at the same time will impart sufficient clockwise rotation, as indicated in Figure 4, to the head rest frame 26, to cause it to disengage the latching lip 1'. As this pressure is released the natural resiliency of the mattress will cause the frame sections 1 and 2 to move apart so that the pillow frame 26 moves out of engaging relation with respect to the latching lip 1'. The bed may then be easily opened by swinging the upper U-shaped frame 2 in clockwise direction, Fig. 2, to the position shown in Figure 1, during which movement the legs 8—8 will be returned to extended position aided by the tension spring 11, the leg frame 36 will move out to right angle relation with the U-shaped frame 2 and the links 22, 24 and 14 and the yoke 17 will return to their normal extended position.

In review then it will be seen that by a rather simplified structure there has been provided a readily foldable bed or cot which can be opened and closed by one person, and which may be easily latched in folded position and unlocked when it is to be opened.

The construction of the latch is such that the latching frame 26 has an additional useful function in that it serves as a resilient back or headrest. The fact that the latching frame 26 may rock on the end of the frame section 2 restrained by the springs 29 provides a yieldable support for the pillow. In other words, this frame under the restraint of the springs 29 may yield backwardly or in a clockwise direction (see Fig. 1) when a person leans against it, permitting him to assume a more comfortable position.

Those skilled in the art will readily appreciate that some details of the construction herein illustrated may be varied while still employing the novel subject matter herein disclosed and claimed. I do not, therefore, desire to be restricted to the single illustrative embodiment herein set forth.

What is claimed is:

1. A folding cot comprising a mattress supporting frame including at least two frame sections pivotally interconnected, leg members pivotally mounted on each frame section, a linkage system interconnecting the leg members and one of said frame sections for causing said leg members to fold or unfold as the frame sections are pivoted with respect to each other, and means comprising a head rest and a latching finger mounted on opposite ends of the frame sections for self-latching cooperation when the frame sections are folded in parallel relation.

2. In the combination of claim 1, said head rest being pivotally secured to the end of one frame section.

3. In the combination of claim 1, said head rest being pivotally secured to the head end of one frame section, and spring means for biasing said head rest in a latching direction.

4. In the combination of claim 1, said head

rest including a frame pivotally secured to the head end of one frame section, and spring means for biasing said head rest frame in a latching direction, said frame including a handle for rotating said head rest frame in the opposite direction for unlatching operation.

5. In the combination of claim 1, said head rest comprising a pillow frame pivotally mounted on one frame section, and a latching projection secured to the end of the other frame section.

6. In a folding cot having a mattress frame comprising at least two frame sections connected for relative hinged movement whereby said sections may assume a parallel spaced relation, a latching mechanism for locking said frame sections in such relation consisting of a head rest frame attached to the outer end of one frame section, and a cooperating latch finger attached to the outer end of the other frame section.

7. In the combination of claim 6, said frame consisting of a U-shaped frame having its free ends bent inwardly and a cross-brace connecting said bent ends, and means for attaching said frame to said one frame section to permit rocking movement thereof.

8. In the combination of claim 6, said frame consisting of a U-shaped frame having its free ends offset laterally and a cross-brace connecting the terminal ends of said offset ends, means for attaching said frame to said one frame section to permit rocking movement thereof, and spring means for urging said frame in a latching direction when said frame sections are in parallel relation.

9. In a folding cot a mattress, a mattress frame comprising at least two frame sections pivotally connected together whereby said sections when folded lie in parallel spaced relation with the mattress folded between them, a latching mechanism for locking said frame sections in such relation consisting of a latching arm pivotally mounted to the outer end of one frame section, means for biasing said latching arm in latching direction when the frame sections are folded into parallel relation, and a cooperating latching finger attached to the outer end of the other frame section, whereby said latching arm automatically engages said latching finger when the frame sections move into folded position.

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