Dec. 30, 1958 R. D. VANDERMINDEN 2,866,208

FOLDABLE COT

Filed Nov. 27, 1957

Fig. 1.

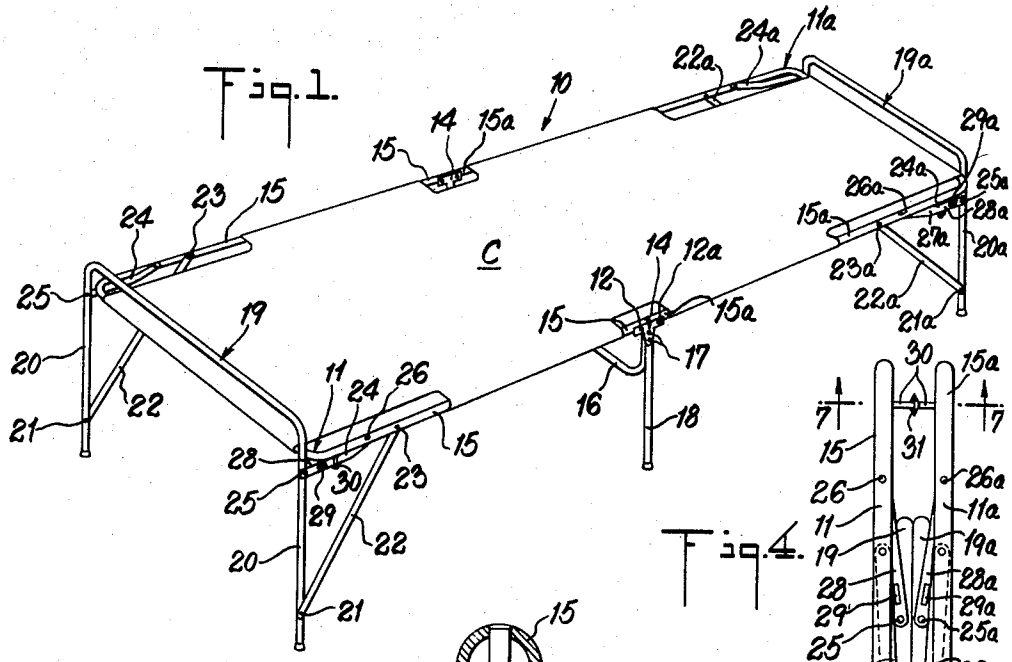


Fig. 4.

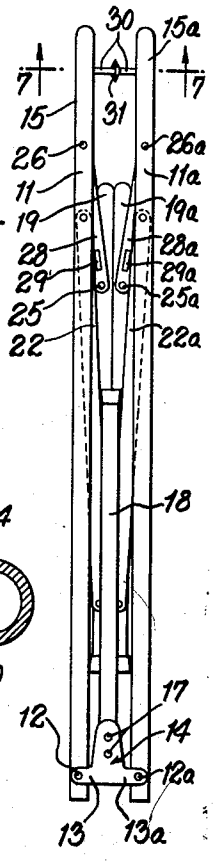


Fig. 5.

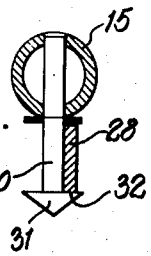


Fig. 2.

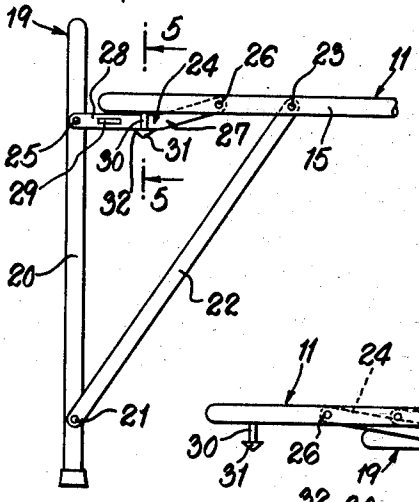


Fig. 6.

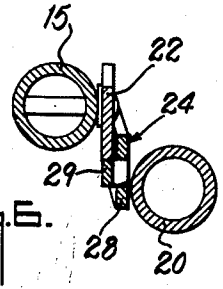


Fig. 3.

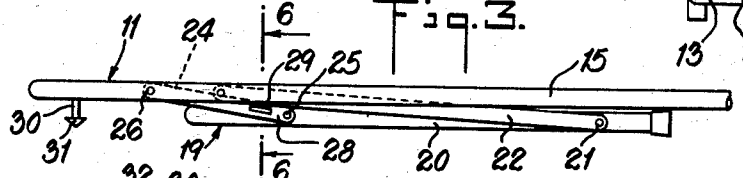
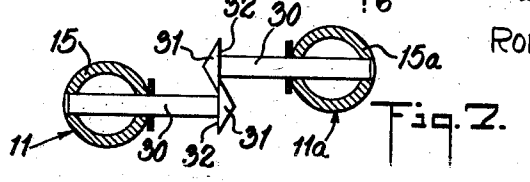


Fig. 7.



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FOLDABLE COT

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4 Claims. (Cl. 5—111)

This invention relates to folding furniture and particularly to folding cots whose components are joined by links and pivots and which may be readily folded together into a compact arrangement for storage and also, unfolded quickly and readily when required for use.

With devices of this character locking arrangements are required to maintain the device in its folded as well as in its open condition. It is important, in addition, that the arrangement include means that will prevent improper movement of components of the cot that may interfere with its opening when its use is required.

Principal objects and features of this invention are the provision of simple and effective locking structure which will function both as a lock for maintaining the cot in open or unfolded condition and for maintaining it locked in folded or closed condition.

Further objects and features of the invention are the provision of means to prevent improper folding movements of the cot components.

Other objects and features of the invention are the provision of simple effective means for effecting the foregoing objects that may be utilized with existing cot structure as well as with new cots and which is easily installed at low cost and is simple to use.

Further objects and features of the invention are the reduction in manufacturing costs as a result of eliminating the necessity for stocking and installing of more than a single type of locking element for use in the cot manufacture.

Other objects and features of the invention will become apparent from the following specification and accompanying drawing wherein:

Figure 1 is a perspective view of a cot equipped with the means of this invention in its unfolded or open condition, ready for use;

Figure 2 is an enlarged side elevational view of the disposition of a cot end in relationship to the horizontal frame parts of the cot in the unfolded condition of the cot, also illustrating the locking means performing its open cot maintenance function;

Figure 3 is a similar view of the same parts shown in Figure 2 in the folded or closed condition of the cot;

Figure 4 is a side elevation of the entire cot in its folded or closed condition illustrating the locking means performing its closed cot maintenance function;

Figure 5 is a section taken along line 5—5 of Figure 2;

Figure 6 is a section taken along line 6—6 of Figure 3; and

Figure 7 is a section taken along line 7—7 of Figure 4.

Referring to the drawing and first to Figure 1, the reference character 10 generally denotes a folding cot. This cot 10 comprises a pair of symmetrical substantially U-shaped frame sections 11 and 11*a* whose open ends are disposed facing each other and whose side rails are secured pivotally at 12 and 12*a* to oppositely extending arms 13, 13*a* of the T brackets 14 so that when the frame sections 11 and 11*a* are in open or unfolded condition, the said side rails 15 and 15*a* are aligned as shown in

Figure 1. The frame sections are spanned by a suitable covering C of canvas, synthetic fabric or the like.

A substantially U-shaped brace 16 spans the distance between the pair of oppositely located T brackets 14 and serves to maintain the spacing between side rails 15 and 15*a* of the respective frames 11 and 11*a* at their open ends. The brace 16 is secured at its respective ends to said T brackets 14 as by rivets 17 which extend through the vertical arms of said T brackets. The latter arms also carry center cot legs 18 which are secured by the same rivets 17 to said T bracket arms.

Oppositely located cot end pieces in the form of inverted U-shaped frames 19 and 19*a* are provided adjacent the closed end portions of the respective main cot frames 11 and 11*a*. The legs 20 and 20*a* of these end pieces serve as end legs for the cot in its open condition. The legs 20 and 20*a* of the end frames are secured pivotally at 21 and 21*a* to links 22 and 22*a* which in turn are joined by pivots 23, 23*a* to side rails 15 and 15*a* of the main cot frames 11 and 11*a*.

Shorter brace links 24 and 24*a* are secured by pivots 25, 25*a* respectively to the legs 20 and 20*a* and by pivots 26 and 26*a* respectively to the cot frame side rails 15 and 15*a*. These brace links have obtuse angular bends 27, 27*a* in their lengths as seen clearly in Figure 2 so that portions 28 and 28*a* thereof lie parallelly aligned with the respective side rails 15 and 15*a* of the main cot frames in the open condition of the cot. Lateral offsets or punched out abutments 29 and 29*a* are provided in portions 28 and 28*a* of the respective brace links 24 and 24*a*. These abutments 29 and 29*a* lie in the paths of swinging movement of the links 22, 22*a* when the respective cot ends 19 and 19*a* are swung from their open positions as seen in Figures 1 and 2 to their closed or folded positions as seen in Figures 3 and 4, and serve as limiting stops when they engage the respective links 22 and 22*a* (note Figure 3) at which time they thus prevent further or overtraveling movement in folding direction of the end frames 19 and 19*a* for example, beyond the lower plane of rail 15 to the upper plane on the opposite side of rail 15 of frame 11 as seen in Figure 3.

Studs 30 having conical heads 31 are secured to the side rails 15 and 15*a*. These studs are secured to said side rails and are positioned to lie respectively between the pivots 26 and 26*a* and the closed ends of frames 11 and 11*a* so that when the cot is in its unfolded condition, the portions 28 and 28*a* of the brace links will be engaged by the stud shoulders 32 as seen in Figures 2 and 5, thus locking the respective end frames 19 and 19*a* against collapse when the cot is in open condition. To unlock the end frames and fold the cot to its closed condition, it is merely necessary to displace the end frames 19 and 19*a* laterally sufficiently to cause members 28 and 28*a* to clear shoulders 32. The braces 24 and links 22 are sufficiently yieldable for such clearance movement of the frames.

When the two main cot frames 11 and 11*a* are swung or folded on their pivots 12 and 12*a* to the closed condition of Figure 4, the headed studs 30 on the two frames move into substantial juxtaposition and their tapered heads 31 slide past each other so that their shoulders 32 engage and lock with each other as seen in Figure 7, thus causing the frames 11 and 11*a* to become locked in folded condition. This prevents accidental opening of the cot during its transportation while in its closed or folded condition. The frames 11 and 11*a* are sufficiently yieldable to permit disengaging displacement of the shoulders 32 of the studs 30 when it is desired to unfold the cot.

The identical studs 30 on the two main cot frames 11 and 11*a* serve a double function of locking the cot frames 11 and 11*a* in folded condition by interengagement of the shoulders 32 of their heads 31 and of locking the end frames in open condition when the cot is unfolded by

their engagement with the respective brace link portions 28 and 28*a*. This simple arrangement eliminates the necessity for separate locking devices for open and closed cot conditions and hence reduces manufacturing costs considerably.

While a specific embodiment of the invention has been disclosed, variations in structural detail within the scope of the appended claims is possible and is contemplated. There is no intention, therefore, of limitation to the exact details shown and described.

What is claimed is:

1. In a cot having foldable main frame parts, end frame parts and links securing the latter pivotally to said main frame parts, identical headed pins secured to the main frame parts, said pins being positioned thereon to interlock with each other when said main frame parts are in folded cot condition and to engage individual links when said cot is in open unfolded condition to then maintain the end frame parts against collapse.

2. In a cot having foldable main frame parts, end frames, links securing the latter pivotally to said main frame parts, brace links pivotally joined to said main frame parts and to said end frames, identical headed pins secured to the main frame parts and having shoulders, said pins being positioned on said main frame parts so that their shoulders interlock with each other when said main frame parts are in folded condition and lock the cot in this condition and respectively also being engageable with individual brace links when said cot is in unfolded, open condition, serving then to lock said end frames against collapse.

3. In a cot having foldable main frame parts, end frames, links pivotally secured both to the main frame parts and to the end frames so that the latter may be moved relative to the main frame parts to closed and open cot positions, brace links also pivotally joined to the main frame parts and to the said end frames, said brace links having laterally offset portions lying in the paths of travel of the first-named links to provide limit stops to movements of the end frames toward closed condition and prevent overtravel thereof in such movement, and identical members on the main frame parts which are interengageable with each other to lock the main frame parts in folded, closed cot condition and interengageable respectively with brace links to lock and maintain the latter and the end frames against collapse when the cot is in unfolded, open condition.

4. In a cot having foldable main frame parts, end frames, links pivotally secured both to the main frame parts and to the end frames so that the latter may be moved relative to the main frame parts to closed and open cot positions, brace links also pivotally joined to the main frame parts and to said end frames, means lying in the path of travel of the first-named links to provide limit stops to movements of the end frames toward closed condition and prevent overtravel thereof in such movement, identical headed pin members secured on the main frame parts and having shoulders which are interengageable with each other to lock the main frame parts in folded, closed cot condition, and interengageable respectively with different brace links to lock and maintain the latter and the end frames associated therewith against collapse when the cot is in unfolded, open condition.

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