FOLDING BABY COT

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ABSTRACT

An adjustable folding cot for a baby consisting of two rectangular tubular members, one pivotally attached within the other, defining an X from the end, and a sheet suspended from one member to the other for holding the baby, has transverse braces, of adjustable length at each end of the cot, each brace being pivotally attached to one of the tubular members and each brace being adapted for easy attachment to the other tubular member to erect the cot with the sheet slack or taut and a fastener for securing each brace to the member to which it is pivotally attached when the cot is folded.

10 Claims, 8 Drawing Figures
FOLDING BABY COT

DISCLOSURE

This invention relates to a folding cot and more particularly to a folding cot with a suspended sheet between rigid members of the cot for holding a baby so that the baby can not roll or slide from the sheet.

Heretofore, folding cots have been provided for many purposes, including some for holding a baby. The folding cot is commonly constructed of tubular members which pivot to define and X when the cot is erected. In one structure, a cloth sheet is attached to each of the tubular members and when erected, the sheet is stretched across the members in tension and so limits the angle of the tubular members providing a firm structure by the very weight upon the sheet. This type of cot provides a flat carrying surface and without a barrier around the edges is not suitable for supporting a baby because the baby can roll off the cot easily or slide or crawl lengthwise off the end of the cot.

It is an object of the present invention to provide an improved folding cot for a baby.

It is another object to provide a baby's cot in which some of the above described disadvantages of prior cots of this type are avoided.

It is another object of the present invention to provide structure for bracing a folding baby's cot of the type which has two pivotally attached rectangular tubular members that define an X from the end with a sheet suspended loosely between the tops of the members, the brace serving to secure the cot when erected and which fold with the members when the cot is folded.

It is another object in conjunction with the above, that the braces attach permanently to at least one of the tubular members and are secured when the cot is folded so that the braces do not move or fall off when the folded cot is moved about and handled in the course of typical ordinary use.

It is a further object in conjunction with the above to provide such a folding cot wherein substantially no metal or hard surfaces are exposed to the baby in the cot.

It is a further object to provide such a folding baby cot wherein the suspended sheet which holds the baby is readily removed from the cot structure for cleaning or replacement.

In accordance with features of the present invention, a folding baby's cot is constructed of two substantially rectangular shaped tubular members, one slightly smaller than the other so that the smaller fits within and pivotally attaches to the larger. The tubular members pivot on an axis which extends the length of the members through substantially the middle of the shorter sides of the members so that when erected the members define an X as viewed from the side in the direction of the axis. A flexible sheet or cloth is suspended between the members to form a bed for a baby and transverse braces are provided at each end of the cot for making the structure rigid when erected even while the flexible sheet remains slack. The braces are adjustable in length and each is pivotally attached to one of the members and adapted for quick connection and disconnection to the other member when the cot is erected. When folded, each brace disconnects from the other member and folds against and is secured to the member to which it is pivotally attached so that during ordinary handling when folded, the braces are unlikely to come loose and flop around.

In the embodiment of the present invention providing a baby's cot, the suspended sheet is sufficiently slack when the cot is erected to provide sides over which the baby contained in the sheet can not roll or climb and so fall off the cot. The amount of slack in the sheet is determined by the length the braces are adjusted to. The sheet preferably has flaps at each end for covering and attachment to the braces so that the flaps provide front and back ends to the cot and the baby can not crawl or slide out of the end. The flaps cover the braces and the top of the tubular members are covered where the sheet attaches so that the baby is not exposed to any metal or hard surfaces.

The cot can also be erected with the flexible sheet taut by adjusting the braces to this full length. This provides a flatter surface useful for other purposes such as for a baby's dressing table.

These and other objects and features of the present invention are evident from the following specific description of an embodiment of the invention which represents the best known use of the invention. This description is taken in conjunction with the figures in which:

FIG. 1 is a perspective view of the cot erected with the transverse braces connected and showing the flaps at the ends of the suspended sheet available for connection to and covering the braces;

FIG. 2 is a side view of the erected cot with the flaps connected to the braces and a hood installed;

FIG. 3 is an end view of the cot fully erected as shown also in FIG. 2;

FIG. 4 is a perspective view of the folded cot with the canvas or sheet removed to illustrate the arrangement of the tubular members and braces when folded;

FIG. 5 is an enlarged cross section view of the tubular member connection including a connector hook and snap fastener;

FIGS. 6 and 7 are enlarged views of a brace showing a suitable construction of the hinge, disconnect connectors and spring button for adjusting length; and

FIG. 8 is a plan view of the sheet with end flaps and fasteners for attaching the sheet to the members and the transverse braces.

A folding baby's cot incorporating all features of the present invention is illustrated fully erected by the side view in FIG. 2 and the end view, taken from the head end of the cot, in FIG. 3. FIG. 1 shows the frame or rigid parts of the cot erected and the support sheet or canvas suspended in a slack manner between the principal members and ready for attachment of the flaps at the foot and head ends of the sheet to the transverse braces of the structure. As shown in these figures, the support structure for the sheet consists of two generally rectangular shaped tubular members which pivotally connect with one inside the other at axles through the shorter sides. The outside rectangular tubular member 1 is slightly longer than the inside rectangular tubular member 2 and so the sides 3 and 4 of member 1 are slightly longer than the corresponding sides 5 and 6 of the inside member 2. The tubular member 2 pivotally connects pivotally connects inside of member 1 at axles 7 and 8 at the foot and head, respectively, of the cot and when erected as shown in FIG. 1 the two rectangular members define an X as viewed along the axles.
X structure is the principal support for supporting the slack flexible sheet 9 which attaches to the long sides 4 and 6 of the members 1 and 2, respectively. The slack sheet 9 maybe attached to the sides 4 and 6 by, for example, loops such as 11 and 12 at the side edges of the sheet into which the tubular sides 4 and 6 of the members are inserted when these sides of each member are disconnected at 13 and 14, respectively. These loops can be a permanent part of the sheet and stitched into it or they may be formed when the sheet is attached as described herein with reference to FIG. 5. If the loops are permanent, removal of the sheet for replacement or cleaning can only be accomplished by disconnecting each of the tubular members 4 and 6 at 13 and 14 and sliding the sheet off of these members. As an alternate to this, the sheet can be equipped with fasteners on side flaps of the sheet, as shown in FIG. 5. Attachment is made by looping the side flaps about the tubular sides 4 and 6 of the rectangular members and fastening the flaps to the sheet with fasteners such as snap fasteners. This construction of the sheet (shown in FIG. 5) is discussed in more detail hereinafter.

Transverse braces 15 and 16 are provided at the foot and head ends of the cot and preferably are close to the level of the sides 4 and 6 so that the sides and the end braces define a substantially rectangular barrier as viewed from the top and the slack sheet 9 which carries the baby is suspended below this barrier so that the baby is not likely to roll, slide or climb over the barrier and fall out of the cot. The sheet denoted generally 9 is preferably equipped with end flaps such as the foot and head end flaps 17 and 18 which are looped over the end braces 15 and 16, respectively, and attached thereto as shown in FIGS. 2 and 3. The flaps serve a dual purpose in as much as they provide foot and head ends for the sheet 9 and also cover the transverse braces 15 and 16 and so protect the baby from the hard surfaces of these braces.

Each of the transverse braces pivotally attaches to one of the tubular rectangular members at one end of the brace and each brace is adapted at the other end for quick connection and disconnection to a corresponding position on the other tubular rectangular member. For this purpose, hinges 19 and 20 connect the brace 15 and 16 to the short sides 23 and 24 of the inside member 2. A quick connect-disconnect connector is provided at the other end of each brace for connection to the outside rectangular tubular member 1 at a corresponding position. For this purpose, connectors 25 and 26 are provided for quickly connecting and disconnecting the braces 15 and 16 to the sides 27 and 28 of the outside rectangular tubular member 1.

The braces 15 and 16 are preferably adjustable in length and so the depth and width of the cot are adjustable. For this purpose each of the braces be of adjustable length and, as shown in FIG. 1, consist of two members, an outside tube 29 and an inside tube or rod 30 which slides in and out of the tube 29 to adjustable positions. The tube 29 connects by the hinge 20 to the side 24 of the inside member and the end of the tube 30 that projects from this tube connects to the side 28 of the outside member. The position of the tube 30 in the tube 29 is adjustable at two different fixed positions and locks in position by engagement of the spring mounted button 31 carried within tube 29, with one of two holes 32 or 33 in the tube 29. The length of the brace is adjusted by pressing the button 31 and sliding the inner tube 30 in or out of the tube 29 until the button engages the other one of the holes and locks at that position.

The hinges 19 and 20 each consist of, for example, a bracket such as 35 attached to the inside member and a projection 36 from the end of the tube 29, with a permanent pin 37 through aligning holes in the bracket and projection. The connector such as 26, at the other end of the brace may consist of a bracket 41 attached to the side of the outside member 1 having an eye through which a screw attached to the end of the inside tube 30, is inserted and secured to the bracket 41 by a wing nut threadably engaging the screw. Clearly, other structures such as shown in FIGS. 6 and 7 for quickly engaging and disengaging the brace to the outside member 1 could be substituted for the connection device 26 and serve effectively. For example, a snap fastener could be used having one part of the fastener attached to the bracket 41 and the other part attached to the end of the inner tube 30. Snap fasteners are available from many sources including Carr Fastener Company of Boston, Mass.

FIGS. 2 and 3 illustrate side and head views of the cot fully erected, with the end flaps of the sheet 9 attached to the braces 15 and 16 and with an optional hood attached. As illustrated in these figures, the end flaps 17 and 18 wrap over the braces 15 and 16, respectively, and are secured by snap fasteners such as 45 that are attached to the flaps. Each snap fastener consists of a male part 45a and a female part 45b which engage each other in a well known fashion. They connect with pressure supplied by the fingers and once connected hold sufficiently for the purposes described herein.

The hood 46 is attached above the head end of the cot by fasteners such as 47 and 48 that connect to the sides 4 and 6 of the members 1 and 2, respectively. These fasteners may be snap fasteners and consist of a male and female part, one part attached to the hood and the other attached to the side of the member. For example, fastener 47 may consist of a male part 47a attached to the hood and a female part 47b attached to the side 4 of member 1. Openings such as opening 49 are provided in the sheet 9 where the sheet loops over the tubular members to permit joining the parts of the hood fasteners. The hood may be constructed of flexible material such as cloth, on a wire frame to give it shape and the parts of the fasteners carried by the hood may be attached to the edges 51 and 52 of the hood.

The tubular members 1 and 2 of the cot fold as shown in FIG. 4 and the braces 15 and 16 fold against the sides of the outside frame 1 as shown. This figure shows the folded cot with the flexible sheet 9 removed to reveal the construction. Folding however, can be accomplished quite readily without removing the flexible sheet. When the cot is folded as shown in FIG. 4, the braces 15 and 16 are secured to the sides 23 and 24 of the inside member 2 by fasteners 53 and 54, respectively. These fasteners may be snap fasteners and so, for example, snap fastener 54 consists of a male part 54a attached to the end of the inner tube 30 of the brace 16 and a female part 54b attached to the side 24 of the inside member 2. When the cot is folded in this manner and the braces are secured to the sides by the fasteners 53 and 54, the cot can be handled and stored as a substantially flat package and the braces are not
likely to project from the package and incur damage.

Each of the tubular members 1 and 2 is made of a single length of tubing bent to the rectangular shape and joined. Tube 1 joins at 13 and tube 2 joins at 14. FIG. 5 shows an enlarged view of junction 13 in cross section. One end 61 of member 1 is pinched so that it fits into the other end 62. A bolt 63 through both ends and nut 64 secures them together and holds the hook plate 65 and one part 66 of a snap fastener to the member at the junction. A hook 67 attached to the plate and the fastener 65 are useful for attaching belts, toys and other items to the edges of the cot.

Details of one of the adjustable transverse braces 15 and 16 are shown in FIGS. 6 and 7. Also shown here are other suitable structures for the brace hinge 20 and connector 26. The spring button 31 includes a spring 68 inside tube 30 carrying the button through a hole 69 in the tube so that the button projects outside of this tube and through hole 32 or 33 in the outside tube 29. The brace is adjusted to its shorter length (as shown in FIG. 6) and is adjusted longer by depressing the button till it clears hole 32 permitting the inside tube 30 to slide out of tube 29 to the point where the button engages hole 33. Indents 70 and 71 at the holes 32 and 33 are provided to enable the button to be depressed sufficiently to clear these holes.

The hinge 20 connecting the brace to the side 24 of member 2 consists of a U-shaped bracket 72 fixedly attached to the end of tube 29 by, for example, rivets 73 and pivotally connected to side 24 by a pin 74.

The connector 26 connecting this brace to side 28 of member 1 consists of the flattened end 75 of inner tube 30 which has a clearance hole 76 for captured pin 77. One end 78 of this pin is shaped to facilitate gripping and the other end 79 has projections 80 which key to slots 81 from a clearance hole in receptacle 82 for this pin in the side 28 of frame 1. This connection is simple, rugged, all parts are captured and is easily connected and disconnected to erect or fold the cot.

The two lengths of the braces 15 and 16 are preferably such that the sheet 9 is slack as shown in FIGS. 1 and 2 when these braces are short and the sheet is taut when the braces are long. Thus, the cot can be erected with the sheet slack to provide a secure cot for a baby with substantial sides the baby can not climb or roll over, or the cot can be erected with the sheet taut to provide a substantially flat surface on which to attend or dress the baby.

FIG. 5 shows the sheet laid out flat. The body of the sheet denoted 9 which is suspended loosely between the tubular members 1 and 2 and also has flaps along the side edges for attachment to the sides 4 and 6 of the members. The flap 85 attaches to the side 4 of member 1 and the flap 86 attaches to the side 6 of frame 2. Snap fasteners are provided along the flaps 85 and 86 for attaching the sheet. These fasteners such as snap fastener 87 consist of two parts, a male part 87a and a female part 87b, both attached to the sheet. The sheet is attached to the tubular members as already described by fastening the side fasteners 87 and then the end flaps 17 and 18 are fastened to the braces 15 and 16 by the fasteners 45. The openings 49 in the sheet provide access to the fasteners 47 for attachment of the hood 46.

Having shown and described the preferred embodiment of the present invention which incorporates all of the features of the invention and also incorporates other features, it will be clear that certain structural changes, and substitutions could be made to provide a cot of the sort described herein without parting from the spirit and scope of the invention as set forth in the accompanying claims.

What is claimed is:
1. A folding cot for a baby comprising, two substantially rectangular shaped members, both substantially the same width and one slightly longer than the other, the shorter one fitting within the longer and pivotally attached to the sides of each, substantially midway between the ends of said shorter sides so that they pivot on an axis which extends the length of each member and through the shorter sides of each member,
a rigid transverse brace at each end of the cot, each pivotally attached at one end thereof to the same one of the rectangular members and each brace adapted at the other end thereof for connection to the other of the rectangular members, for each brace, an accommodating part on at least one of the members at a corresponding position to the said pivot attachment for the brace for connection to the other end of the brace to erect the cot,
a flexible sheet attached to a long side of member,
means for securing each brace when the cot is folded parallel to the short side of the rectangular member to which the brace is pivotally attached, whereby the members are pivoted to define an X as viewed along the axis and the transverse braces substantially resist tension and compression and are attached to provide a secure suspension of the flexible sheet for carrying a baby.
2. A folding cot as in claim 1 wherein, the flexible sheet is suspended slack between the members.
3. A folding cot as in claim 1 wherein, the braces are adjustable to at least two lengths, one at which the sheet is suspended slack and another at which the sheet is taut between the members.
4. A folding cot as in claim 1 wherein, the braces are pivotally attached to opposite ends of the same member at the tops of the sides thereof.
5. A folding cot as in claim 1 wherein, the braces are pivotally attached to opposite ends of the shorter member.
6. A folding cot as in claim 1 wherein, the braces are pivotally attached to opposite ends of the shorter member at the tops of said sides thereof.
7. A folding cot as in claim 4 wherein, the flexible sheet includes flaps at the ends thereof which are extendable over the braces and so cover the braces.
8. A folding cot as in claim 7 wherein, the flaps attach to the braces by snap fasteners.
9. A folding cot as in claim 1 wherein, each brace is composed of two telescoping parts, one part being pivotally attached to one member and the other part being adapted for attachment to the other member.
10. A folding cot as in claim 1 wherein, the means for securing each brace when the cot is folded includes a two part fastener, one part thereof on the brace and the other part thereof on the side of the same member to which the brace pivotally attaches.