Feb. 18, 1958 L. A. HAGELFELDT 2,823,390

FOLDABLE CRIB

Filed Nov. 12, 1954 2 Sheets-Sheet 1

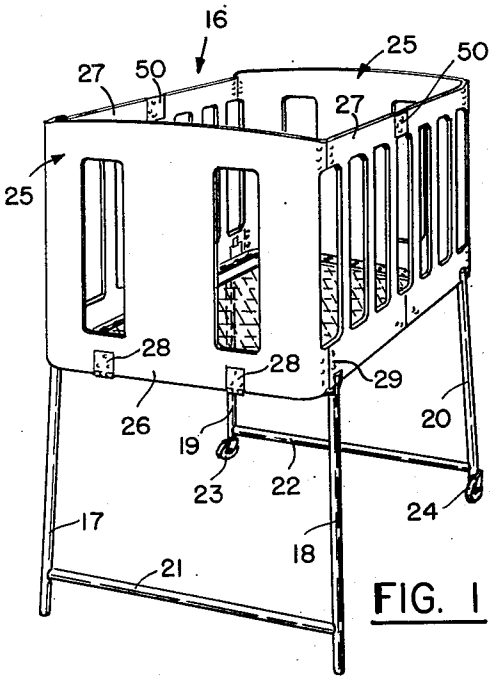


FIG. 1

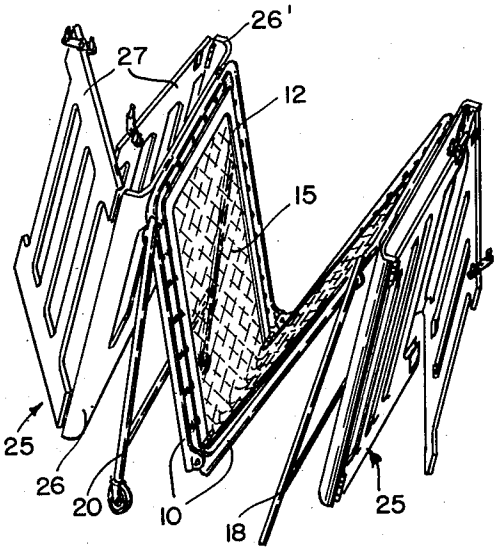


FIG. 3

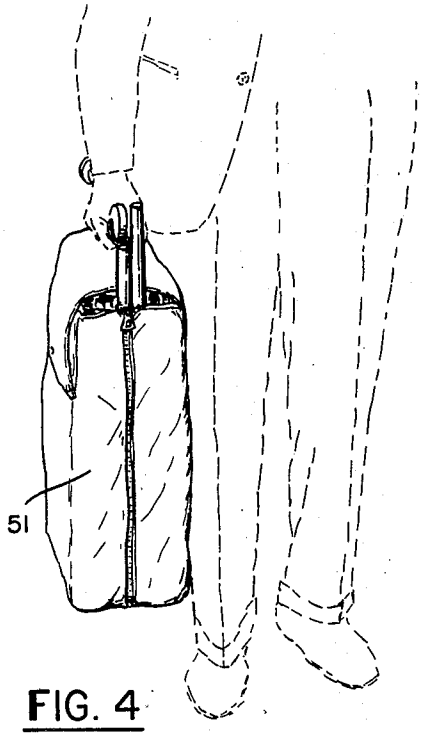


FIG. 4

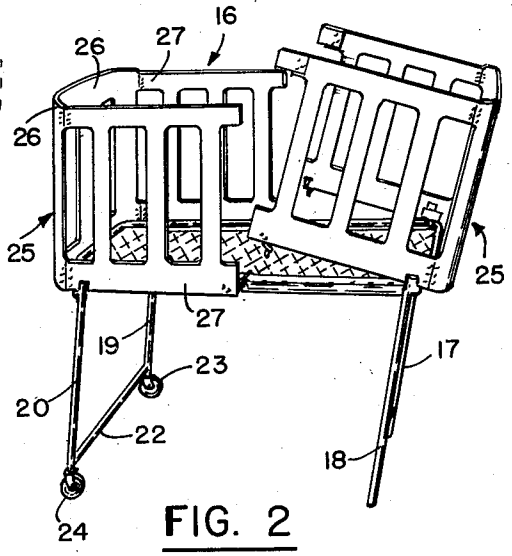


FIG. 2

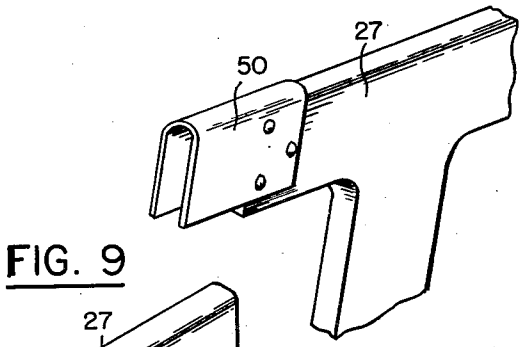
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FOLDABLE CRIB

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FIG. 9



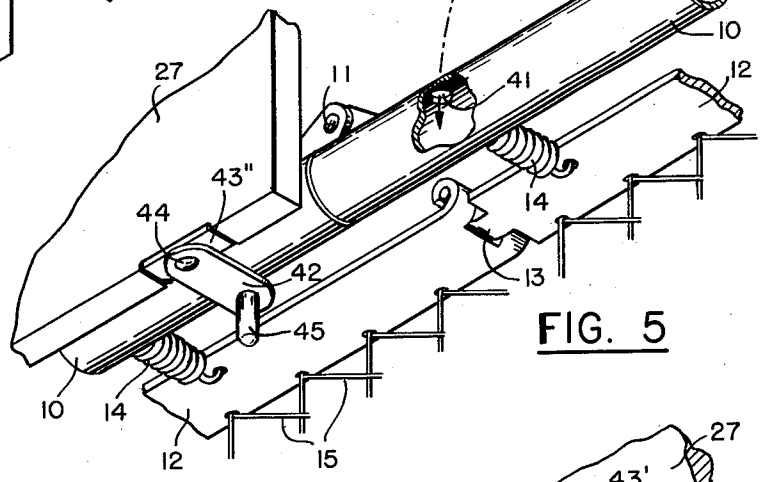


FIG. 5

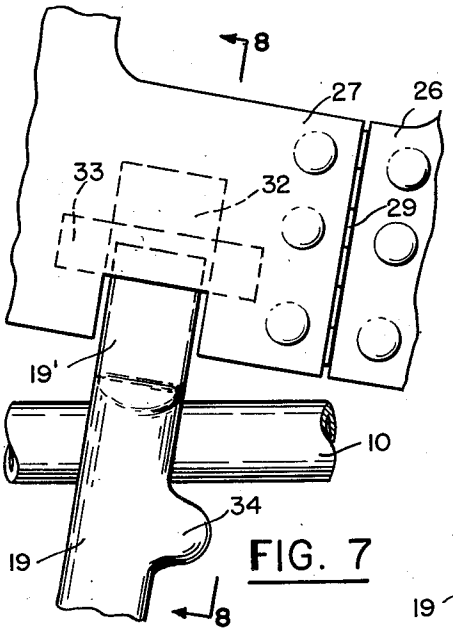


FIG. 7

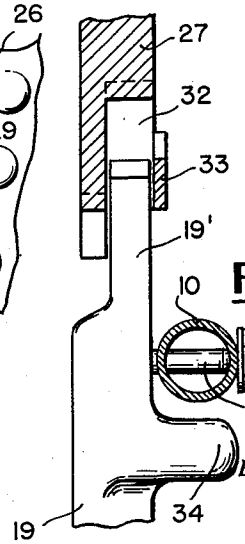


FIG. 8

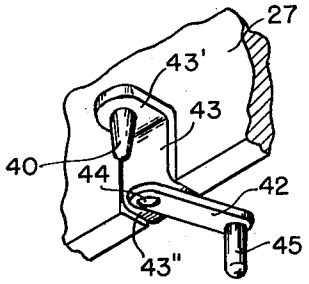


FIG. 6

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FOLDABLE CRIB

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5 Claims. (Cl. 5—99)

The present invention relates to beds and cribs for babies and infants.

The crib according to the present invention constitutes a further improvement on the cribs according to my prior United States Patents 2,659,903 and 2,672,627.

One of the objects of the invention is to provide a novel and improved crib of the general class above referred to, which combines extreme simplicity in design and inexpensiveness of manufacture with safety and comfort in use and which can rapidly be set-up and folded without requiring special skill or tools.

Another object of the invention is to provide a novel and improved crib of the general class above referred to, which is very light for its size and can be folded into a comparatively small and compact package that may be easily placed in a carrying bag for transport or storage or in the luggage compartment of a car.

Still another object of the invention is to provide a novel and improved crib, all the parts of which are linked together and foldable one upon the other. This affords the advantage that there are no loose parts which may be misplaced.

A further object of the invention is to provide a novel and improved crib, the legs and walls of which lock each other in the set-up position of the crib by common and simple locking means thereby greatly facilitating the setting-up and folding of the crib.

A further object of the invention is to provide a novel and improved crib, the legs and walls of which lock each about a median axis and which is equipped with easily operable locking means for locking the frame in its extended position and the side walls of the crib to the frame.

A still further object of the invention, associated with the next preceding one, is to provide legs foldable against the frame and locked in the extended position by the aforementioned locking means.

Other further objects, features and advantages of the invention will be pointed out hereinafter and set forth in the appended claims forming part of the application.

In the accompanying drawing a preferred embodiment of the invention is shown by way of illustration and not by way of limitation.

In the drawing:

Fig. 1 is an isometric view of a crib according to the invention in its set-up position.

Fig. 2 is an isometric view of the crib showing the same in an initial stage of folding.

Fig. 3 is an isometric view of the crib showing the same in a more advanced stage of folding.

Fig. 4 is a view of the crib fully folded and placed in a carrying bag.

Fig. 5 is a fragmentary view of the crib structure, showing in particular the locking means for locking the side walls and the legs in position.

Fig. 6 is an isometric detailed view of the locking means of Fig. 5.

Fig. 7 is a fragmentary isometric view of the leg arrangement of the crib.

Fig. 8 is a section taken on line 8—8 of Fig. 7, and

Fig. 9 is a fragmentary isometric view of the side walls of the crib and of locking means for holding the upper edges of the side walls in alignment.

Referring now to the figures in detail, the exemplified crib according to the invention comprises a main frame preferably made of metal tubing. This frame is formed by two symmetrical U-shaped members **10** joined by suitable hinges **11**. The main frame supports a mattress frame also formed by two symmetrical U-shaped members **12** joined by hinges **13**. The mattress frame is suitably mounted within the main frame, generally by a plurality of coil springs **14**. It serves as frame of a conventional mattress spring **15** which in turn serves to support the soft mattress and other bedding. The crib further comprises side walls generally designated by **16** and rests on four legs **17, 18, 19** and **20** which are preferably paired by cross-bars **21** and **22**. Legs **19** and **20** are shown as being equipped with coasters **23** and **24** to facilitate movement of the crib.

The side walls of the crib which are made of any suitable material such as wood or plastic, are formed by two symmetrical halves or units **25**. Each unit comprises an end wall **26** and two side walls **27**. The length of the side walls corresponds to the length of the side branches of frame members **10**. Each end wall **26** is hinged to the base branch of the corresponding frame member **10** by hinges **28** and each side wall **27** is hinged to its end wall by hinges **29**. To permit folding of the side walls back upon the end wall, the latter is preferably curved along its side edges at **26'** as can best be seen in Fig. 3. This figure also shows how both the side walls may be folded against the inside of the end wall when the latter is turned downwardly.

Each leg is pivotally mounted on a side branch of the respective frame member **10** by any suitable means such as a bolt **30** and a nut **31**, for pivoting the legs either into the erected position as shown in Fig. 1 or into the folded position as shown in the right half of Fig. 3. To retain the legs in the erected position, each leg is provided with a preferably set-off or shouldered extension **19'** which coacts with a receiving opening in the corresponding side wall. This opening is formed by a recess **32** at the inside of each side wall **27** which recess is at least partly covered by a strip **33** to form a receiving pocket for the leg extension **19'**. Figs. 7 and 8 illustrate the coaction between a leg and its receiving pocket. As appears from this figure, the leg extension will enter the pocket when the respective wall unit is tilted from the right hand position as shown in Fig. 2 into the left hand position. Each leg is preferably further provided with a lateral arm or bracket **34** which in the fully set-up position of the crib underlies the respective side branch of frame member **10** and supports the same. The purpose of bracket **34** is to strengthen the crib and to increase its stability in general. In this connection it may be mentioned that Figs. 7 and 8 show the wall units and legs in an intermediate position of assembly or disassembly in which leg extension **19'** has not yet fully entered its receiving pocket or slot **32**. Accordingly, bracket **34** and frame member **10** have not yet reached the relative position in which the bracket supports the frame member.

As appears from the previous description, the wall units, when in the left hand position of Fig. 2, lock the legs in the erected position but the wall units themselves are not positively held in position. To lock the wall units in their set-up positions and simultaneously to effect a positive locking of the legs, the locking means according to Figs. 5 and 6 are provided. These locking means, one of which is provided for each side wall, basically comprise a pin **40** or similar protrusion engageable with a hole **41** in the respective side branch of frame member **10** when wall units are placed in their fully set-up position and a clamping arm **42** underlying the respective side

branch when the side walls are in the said set-up position. Each pin **40** depends downwardly from a branch **43'** of a Z-shaped angle member **43**. As can best be seen in Fig. 6, the web of the angle member is secured to the inside of the respective side wall and branch **43'** extends inwardly from the side wall. The second branch **43''** abuts against the lower edge of the side wall and supports clamping arm **42** pivotally mounted thereon by a pivot pin **44**. A handle **45** is preferably provided to facilitate manipulation of clamping arm **42**. The length of branch **43'** and the location of pin **40** are such as to accommodate the respective side branch of frame member **10**.

The right hand side of Fig. 5 shows a side wall in progress of being placed in its set-up position and the left hand side wall is shown fully set-up and clamped. As is apparent, arm **42** is movable by means of handle **45** into a position in which it is out of the way of the frame. After pin **40** has engaged its hole **41**, the arm is pivoted into the position in which it underlies the frame thereby tightly holding the side wall and with it the entire wall unit in the set-up position, at the same time also positively locking the legs in the erected position.

As is further apparent from Fig. 5 and also Figs. 1 and 2, the arrangement of the locking means is such that the side walls in the set-up position completely conceal the frame thereby giving the crib a neat appearance and also avoiding any sharp edges which possibly may injure an infant.

The locking means described in connection with Figs. 5 and 6 engage the side walls at the lower edges thereof. While this engagement assures secure locking and stability of the crib, it is advantageous to provide additional locking means which serve to hold the upper edges of the side walls in alignment. Such locking means are shown in Fig. 9. They comprise a generally U-shaped member **50** made of sheet metal or other suitable material and secured to the upper edge of two of the side walls. Each U-member engages the upper edge of the corresponding adjacent side wall when the crib is in its set-up condition.

A crib as hereinbefore described, may be folded and set-up as follows:

Let it be assumed that the crib is set up as is shown in Fig. 1 and that it is desired to fold the crib.

After removing the bedding placed upon the mattress spring **15**, all four clamping arms **42** are turned out of their positions underlying the side branches of frame members **10**. The two wall units can now be swung backwardly. When they reach a position of tilt somewhat further advanced than the position of the right hand wall unit of Fig. 2, leg extensions **19'** will leave the respective slots **32**. As a result, the side walls of each wall unit can be folded back upon the respective end wall and the legs are released. The two frame members **10** and **12** forming the main frame and the spring frame, respectively are then folded toward each other so that the aforementioned components of the crib occupy substantially the position of Fig. 3. The frame members **10** and **12** are finally pressed toward each other so that a compact package is formed which, if desired, can be inserted in a carrying bag **51** as shown in Fig. 4.

As will be noted, all the parts of the crib remain linked to each other so that there is no danger of misplacing one of the parts. Furthermore, it is not necessary to loosen or tighten any screws or other parts.

When it is desired to set up a folded crib, the aforedescribed operations are carried out in reverse order. Again, no screws need be tightened or loosened. All that is necessary to lock the crib in its set-up position, is to swing clamping arms **42** into the positions shown at the left side of Fig. 5.

While the invention has been described in detail with respect to a certain now preferred example and embodiment of the invention it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention, and it is intended, therefore, to cover all such changes and modifications in the appended claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A foldable crib comprising two substantially symmetrical sections each including a substantially U-shaped rigid frame member, a pair of joined legs each pivoted to one corner of the frame member for placing the legs in a folded position and an erected position respectively, and a wall unit having an end element hinged to the base branch of the U-member and two side elements each corresponding in length substantially to a side branch of said frame member and hinged to the end element for placing the side elements in a set-up position alongside the side branches and for folding the side elements back upon the end element respectively, retaining means for each leg to prevent rotation of said legs out of an erected position, each of said retaining means including a receiving opening formed in the side element juxtaposed with the respective leg and a leg extension engageable by said receiving opening in the set-up position of the respective side element, and a locking means at the lower edge of each side element for positively locking the respective side element to the corresponding side branch of the respective frame member in its erected position, each of said locking means including a coacting protrusion on said side element and a protrusion receiving opening in said side branch of the respective frame member respectively for preventing rotatable displacement of said side element about said hinged connection to said end wall, and a clamping means on said side element underlying said protrusion receiving opening in the corresponding side branch of the respective frame member, said clamping means in the set-up position of the side element preventing rotatable displacement of said wall unit about said hinge connection of said base branch.

2. A foldable crib comprising two substantially symmetrical sections each including a substantially U-shaped rigid frame member, a pair of joined legs each pivoted to one corner of the frame member for placing the legs in a folded position and an erected position respectively, and a wall unit having an end element hingedly connected to the base branch of the U-member and two side elements each corresponding in length substantially to a side branch of said frame member and hingedly connected to the end element for placing the side elements in a set-up position alongside the side branches and for folding the side elements back upon the end element respectively, a retaining means for each leg on each of said side elements engageable with the respective leg in the set-up position of the corresponding side element for retaining the legs in the erected position and a locking means at the lower edge of each side element for positively locking the respective side element to the corresponding side branch of the frame member in its erected position, each of said locking means including a coacting protrusion on said side element and a protrusion receiving opening in said side branch of the frame member for preventing rotatable displacement of said side element about said hinged connection to said end wall, and a clamping means on said side element underlying said protrusion receiving opening in said side branch of the frame member, said clamping means in the set-up position of the said side element preventing rotatable displacement of said wall unit about said hinge connection to said base branch, each of said retaining means including an open recess formed in an inner wall portion of the respective side wall element at the lower edge thereof and a cover strip secured to said inner wall portion for at least partly covering said recess so as to form said retaining means, and a set-off extension on the respective leg protruding beyond the pivot point thereof, said extension fitting said retaining means in the erected position of the leg, and each of said legs having a lateral arm positioned

to underlie the respective side branch of the frame member in the erected position of said legs.

3. A foldable crib comprising two substantially symmetrical sections each including a substantially U-shaped rigid frame member, a pair of joined legs each pivoted to one corner of the frame member for placing the legs in a folded position and an erected position respectively, and a wall unit having an end element hingedly connected to the base branch of the U-member and two side elements each corresponding in length substantially to a side branch of said frame member and hingedly connected to the end element for placing the side elements in a set-up position alongside the side branches and for folding the side elements back upon the end element respectively, a retaining means for each leg on each of said side elements engageable with the respective leg in the set-up position of the corresponding side element for retaining the legs in the erected position, and a locking means at the lower edge of each side element for positively locking the respective side element to the corresponding side branch of the frame member in its erected position, each of said locking means including a coacting protrusion on said side element and a protrusion receiving opening in said side branch of the frame member for preventing rotatable displacement of said side element about said hinged connection to said end wall, and a clamping means on said side element underlying said protrusion receiving opening in said side branch of the frame member, said clamping means in the set-up position of the said side element preventing rotatable displacement of said wall unit about said hinge connection to said base branch, each of said locking means including an angle member secured with one flange to the inner wall of the respective side member, the end edge of said flange being situated substantially flush with the lower edge of the said side member, the other flange of the angle member laterally extending from said inner wall, a nose downwardly extending from said lateral flange, the corresponding side branch of the respective frame member being formed with said opening for receiving the nose, and a clamping arm pivoted to said respective side member at the end edge thereof in parallel relationship with said lateral other flange, the perpendicular distance between the lateral other flange and the plane of said arm being approximately equal to the cross sectional thickness of said side branch of the frame member, said arm being pivotal into a clamping position underlying the said side branch and a reverse position disengaged therefrom.

4. A crib according to claim 3, wherein the said angle member further comprises a third flange to form a Z-member, said third flange hugging the bottom edge of the said side element and the said clamping arm being in sliding engagement with said third flange.

5. A crib according to claim 4, wherein a handle is secured to said clamping arm downwardly extending therefrom to manipulate the arm for the purpose aforesaid.

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