

Jan. 19, 1965

A. C. ABAJIAN

3,165,760

INFANT'S CRIB

Filed May 8, 1961

FIG. 8.

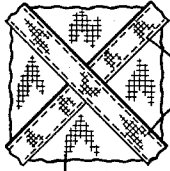


FIG. 7.

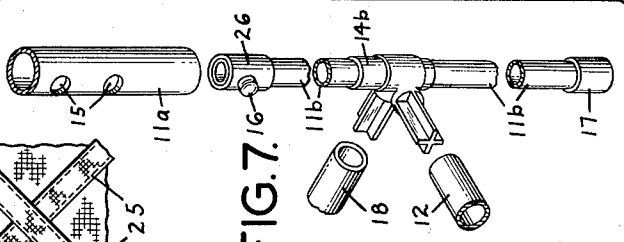


FIG. 6.



FIG. 1.

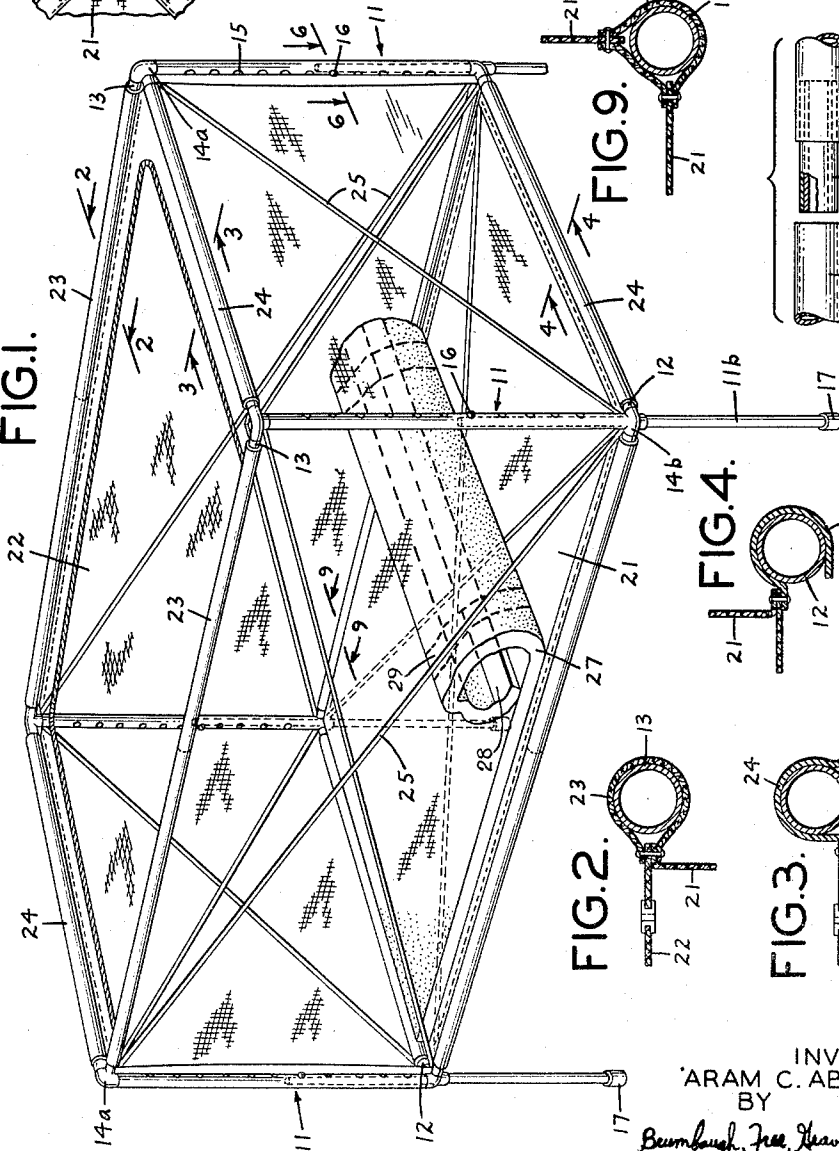


FIG. 9.

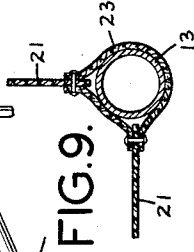


FIG. 5.

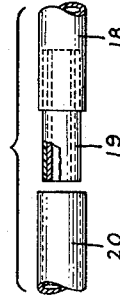


FIG. 4.



FIG. 2.

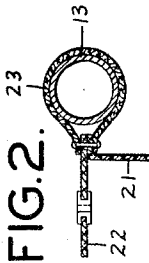
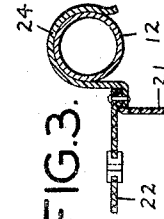


FIG. 3.



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INFANT'S CRIB

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10 Claims. (Cl. 5-97)

This invention relates to a crib and more particularly to an infant's crib that can be readily disassembled.

Some of the disadvantages of conventional infant's cribs include excessive weight and size, lack of ease in assembling, lack of rigidity and durability (in the case of "take-apart" cribs), and non-adaptability to use in automobiles. Furthermore, difficulties have been experienced with permanent rigid cribs from the infant injuring itself by falling against the rigid sides and ends of the crib.

Accordingly, it is an object of this invention to provide an infant's crib which is durable, safe, light in weight and easy to assemble and disassemble.

It is another object of the invention to provide a crib which will protect the infant from insects, animals, wind-blown leaves, and other blown or falling objects.

Another object of the invention is to provide a crib which is adjustable in height, has the ability to support the infant's weight on the top thereof and is adapted for use in automobiles and other vehicles.

Another object is to effect an improvement whereby the infant is protected from possible injury by falling against the corner posts and other rigid members of the crib.

Still another object is to provide an infant's crib which can be disassembled into a compact, easily portable device.

These and other objects and advantages of the invention are accomplished by providing a structure having a rectangular frame composed of horizontal and vertical tubular members, a fabric net portion which includes partial tubular flexible members attached to the net and adapted to clip onto the four horizontal end members of the frame, and sleeves adapted to receive the horizontal longitudinal members of the frame. The clip-on members serve to "lock" the end assemblies of the frame to the remainder of the structure. In addition, the clip-on members produce desired tension in the top and bottom panels so as to impart rigidity and strength to the assembled structure and at the same time keep the netting removed from the frame as much as possible.

Strips of nylon fabric tape are preferably distributed in an overlapping diagonal crosswise arrangement on the side, end and bottom panels of the netting. The tension produced by the clip-on members is largely carried by the strips. This feature still further increases the strength and rigidity of the frame and the netting, thereby protecting the child as described above.

For further comprehension of the invention and of the advantages thereof, reference will be made to the following description and accompanying drawings in which:

FIG. 1 is a perspective view of the crib and netting in the assembled position;

FIG. 2 is a view of a section taken on a plane represented by the lines 2-2 of FIG. 1 and looking in the direction of the arrows;

FIG. 3 is a view of a section taken on a plane represented by the lines 3-3 of FIG. 1 and looking in the direction of the arrows;

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FIG. 4 is a view of a section taken on a plane represented by the lines 4-4 of FIG. 1 and looking in the direction of the arrows;

FIG. 5 is a sectional view of one of the longitudinal tubular members forming a side portion of the frame;

FIG. 6 is a view of a section taken on a plane represented by the lines 6-6 of FIG. 1 and looking in the direction of the arrows;

FIG. 7 is an exploded view of a lower corner of the frame; and

FIG. 8 is a view from the inside of the crib showing the stitched overlapping arrangement of the crosswise nylon tape; and

FIG. 9 is a view of a modified flexible sleeve arrangement in accordance with the present invention taken on a plane represented by the lines 9-9 of FIG. 1 and looking in the direction of the arrows.

Referring to the drawings in detail, FIG. 1 shows the rectangular frame of the crib having four vertical adjustable corner posts 11 made of aluminum tubing, four tubular aluminum supports forming the horizontal end sections 12 of the frame and four aluminum tubular members forming the longitudinal side sections 13 of the frame, said sections being inter-connected by means of four plastic fittings 14a at the upper corners and four plastic fittings 14b at the lower corners.

As shown more particularly in FIG. 7, the vertical tubular corner posts 11 each comprise an upper section 11a and a lower section 11b, the latter being of a smaller diameter so as to "telescope" within the upper section. The upper section 11a has evenly spaced holes 15 on both sides thereof, while the lower section 11b has a spring-actuated button 16 adapted to engage the holes and thus provide for the adjustable legs. The bottoms of the corner posts 11 are fitted with tips 17 made from a plastic material or other suitable substitute. Each longitudinal side support 13 is a two-piece structure wherein one of the pieces 18 has a tubular plastic fitting 19 at one end thereof which is received within an end 20 of the other of the two sections. The structure of the longitudinal supports is shown clearly in FIG. 5.

The netting portion 21 of the crib is of a rectangular box-like shape when in use. The netting is formed of a strong resilient fabric material such as nylon, is stitched with strong nylon thread, and has a zippered top 22 as shown in FIG. 1. Fastened to the longitudinal side portions of the netting are flexible sleeves 23 made of a strong fabric material such as canvas through which are inserted the longitudinal side supports 13 of the frame as shown in FIG. 9. An alternative embodiment is shown in FIG. 2 wherein the sleeves 23 are sewn or otherwise attached to the netting at a single point such as by the use of a single seam or grommet. These sleeves are somewhat larger than the diameter of the tubular longitudinal members of the frame to allow the tubing to be inserted quickly and easily in the sleeve. To the four ends of the box-like netting are attached partial tubular flexible plastic members 24 which clip onto the horizontal end members 12 of the frame as clearly shown in FIGURES 3 and 4. Strips of flexible nylon tape 25 are stitched in an overlapping crosswise arrangement on the side, end and bottom portions of the netting as shown clearly in FIG. 8.

The spring-actuated button 16 which provides the ad-

justable leg feature is depicted in detail in FIG. 6. The spring portion of the button is secured to the inner wall of the corner post 11b at its uppermost end. The button rides within a bearing ring 26 which surrounds the corner post 11b at its uppermost end and eliminates binding or squeaking. The bearing ring is preferably made of plastic although other suitable materials may be utilized.

This combination of frame and netting provides a strong, durable stressed skin construction in which the fabric is suspended away from the frame to diminish the chance of injury caused by the child hitting the frame of the crib. The partial tubular plastic members of the netting snap over the horizontal end supports of the frame thereby producing tension particularly in the top and bottom of the netting. This provides a strengthened crib by virtue of the stressed skin construction. The stressed construction also helps to hold the tubular members of the frame together with their co-operating corner members. Indeed, the top portion of the netting is strong enough to support an infant's weight and can be used as a bathinette.

The crosswise arrangement of nylon tape sewn in overlapping sections provides greater rigidity in the side, end and bottom panels of the netting. The nylon fabric tape, being sewed to the netting throughout its entire length, allows the assembly to function in a manner similar to a suspension bridge where a force applied to one point of the structure is evenly distributed throughout the assembly. When the zippered top is closed, it too will become tensioned due to the unique structure of the crib. This uniform stress distribution is aided by the construction of the flexible sleeves 23 since the inside dimensions of the sleeves are sufficient to allow movement of the netting in a direction which permits distribution of stresses from one panel to another.

It is to be understood that alternative means may be employed to provide for greater rigidity in the panels of the netting. For example, the crosswise tapes may be eliminated if the fabric of the netting contains a diagonal weave.

Thus, it can be seen that the netting not only prevents the frame of the crib from coming apart, but also imparts to the frame rigidity and the ability to withstand internal and external stresses.

In another embodiment of this invention, there is provided a novel mattress 27 comprising a double thickness of quilted plastic material covering resilient "Tufflex" padding and supported by sixteen locked-in white pine slats 28 taped together in parallel arrangement by a strong adhesive tape 29 at each end of each slat so as to space the slats about one-half inch apart. Each slat can move independently while at the same time a load on one slat will be distributed to the other slats as well as to the entire crib. The mattress thus supplements the over-all concept of distributing stresses throughout the entire assembly of the crib while simultaneously providing resiliency, shock-absorption and a certain rigidity to safeguard the body of the infant.

As an additional feature of this invention to emphasize the compactness and portability of the crib, the frame and net may be disassembled and stored in a compact carrying case having a shoulder strap and measuring, in one embodiment, 24" in length and 9" in diameter.

From the foregoing, the construction and operation of the device will be readily understood. Since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described and accordingly, all suitable modifications and equivalents may be resorted to. For example, instead of using rust-proof anodized aluminum for the frame, light-weight steel tubing could be substituted. Also, the netting portion may be made of any suitable material and in various sizes.

I claim:

1. A crib comprising in combination:

- (1) a rectangular take-apart frame including:
  - (a) four vertically disposed corner post members,
  - (b) two upper and two lower longitudinal members forming the sides of the crib,
  - (c) two upper and two lower lateral members forming the ends of the crib, the longitudinal and lateral members being connected to the vertical corner posts thereby forming a parallelepipedon, and
- (2) a one-piece body portion of flexible sheet material completely covering said frame and having six rectangular panels forming the sides, ends, top and bottom panels of the crib, the combination of frame and body portion providing when assembled a strong, durable stressed skin construction in which each of the six rectangular panels of the body portion is under tension thereby holding the frame together under compression and imparting rigidity and strength to the crib.
2. The crib recited in claim 1, wherein at least the side and end panels of the sheet material have diagonally arranged means for reinforcing said frame.
3. The crib as recited in claim 2, wherein the diagonally arranged means comprises strips of flexible material distributed in an overlapping arrangement on said panels.
4. A crib comprising in combination when assembled:
  - (1) a rectangular take-apart frame composed of:
    - (a) four vertically disposed tubular corner post members,
    - (b) two upper and two lower longitudinal tubular members forming the sides of the crib,
    - (c) two upper and two lower lateral tubular members forming the ends of the crib, the longitudinal and lateral members being connected to the vertical corner posts thereby forming a parallelepipedon, and
  - (2) a one-piece fabric net portion completely covering the frame and having:
    - (a) six rectangular panels forming the sides, ends, top and bottom panels of the crib,
    - (b) partial tubular flexible members clipped onto the lateral end members of the frame,
    - (c) sleeves receiving the longitudinal side members of the frame, the combination of frame and fabric net portion providing when assembled a strong, durable stressed skin construction in which each of the six rectangular panels of the fabric net portion is under tension thereby holding the frame together under compression and imparting rigidity and strength to the crib.
5. The crib recited in claim 4, wherein at least the side and end panels of the net have diagonally arranged means for reinforcing said frame.
6. The crib recited in claim 4, including plastic corner fittings adapted to interlock the tubular members.
7. The crib as recited in claim 4 also including a mattress composed of a double thickness of quilted plastic which covers resilient padding material and is supported by locked-in white pin slats taped together in a parallel arrangement by a strong adhesive tape at each end of the individual slats so as to provide a space of about one-half inch between each slat.
8. In a crib comprising when assembled, a net portion and a rectangular take-apart frame having four vertically disposed corner post members, two upper and two lower longitudinal members forming the sides of the frame and two upper and two lower lateral members forming the ends of the crib wherein the longitudinal and lateral members are connected to the vertical corner posts forming a parallelepipedon, the improvement comprising a one-piece fabric net portion, including:
  - (a) partial tubular flexible members clipped onto the lateral end members of the frame,
  - (b) sleeves receiving the longitudinal side members of the frame,

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- (c) six rectangular panels forming the sides, ends, top and bottom panels of the crib, and
- (d) a zippered top, the combination of frame and body portion providing when assembled a strong, durable stressed skin construction in which each of the six rectangular panels of the fabric net portion is under tension thereby holding the frame together under compression and imparting rigidity and strength to the crib.
9. The crib of claim 8 wherein at least the side and end panels of the net portion have diagonally arranged means for reinforcing said structure.
10. The structure of claim 9 wherein the diagonally

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arranged means comprises strips of reinforcing material distributed in an overlapping crosswise arrangement also on the bottom panel of the net.

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,165,760

January 19, 1965

Aram Christian Abajian

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 47, for "relilient" read -- resilient --;  
column 4, line 59, for "pin" read -- pine --.

Signed and sealed this 1st day of June 1965.

(SEAL)

Attest:

ERNEST W. SWIDER

EDWARD J. BRENNER  
Commissioner of Patents