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D. GLÄSER ET AL
BED FOR BABY CARRIAGE

3,466,677

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2 Sheets-Sheet 1

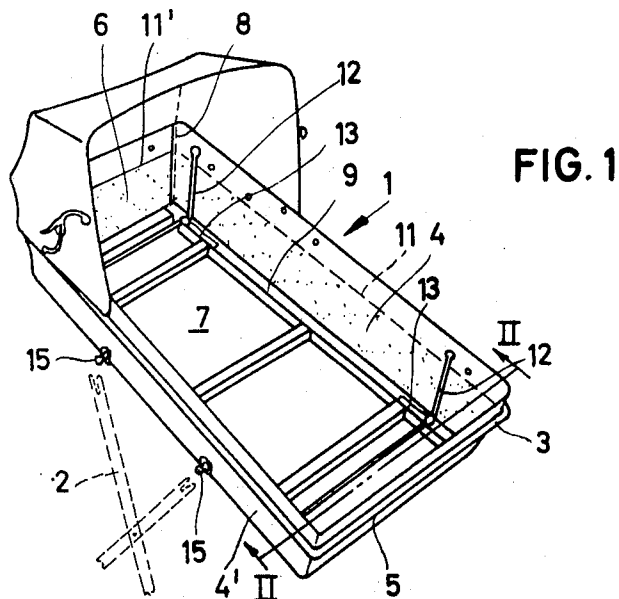


FIG. 1

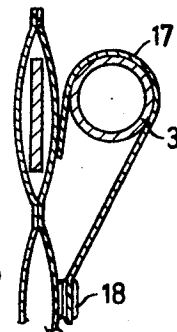


FIG. 5

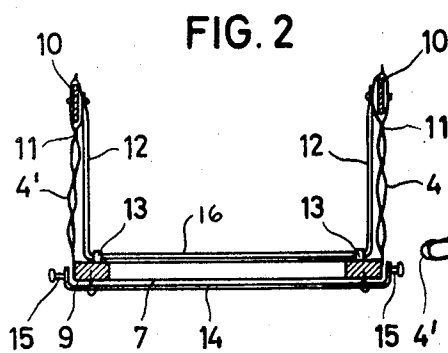
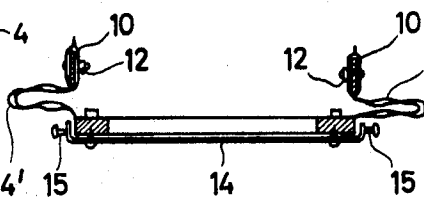


FIG. 2

FIG. 3



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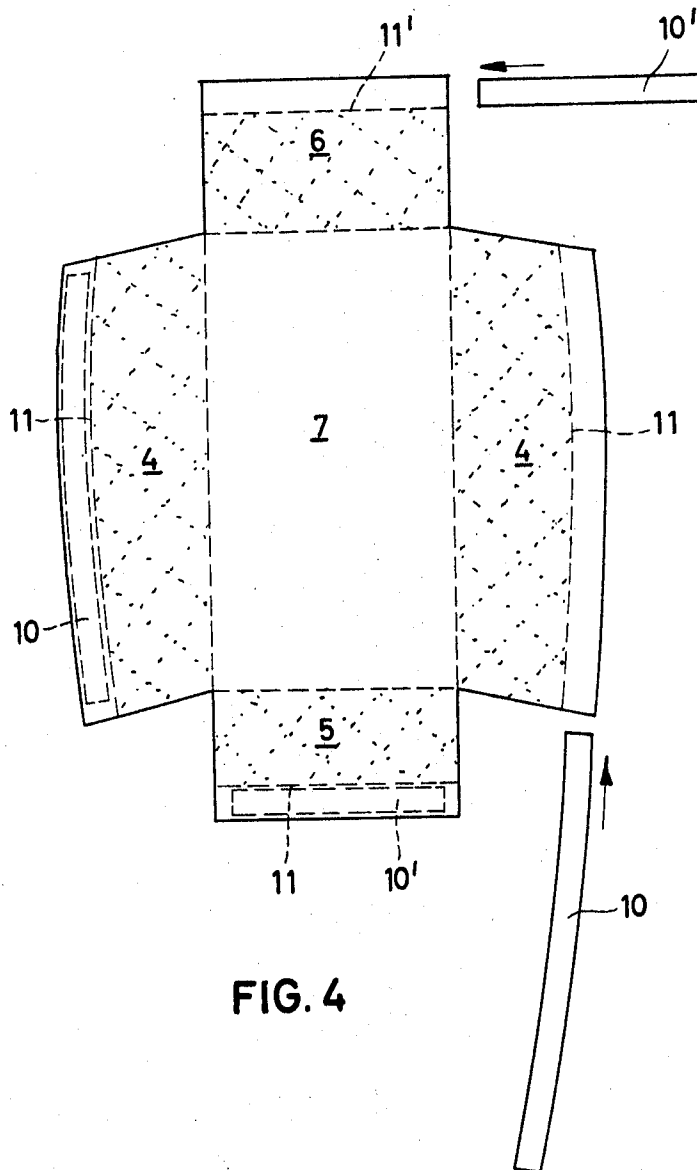


FIG. 4

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BED FOR BABY CARRIAGE

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11 Claims

ABSTRACT OF THE DISCLOSURE

A bed adapted to be supported on a baby carriage and having walls constructed from a double layer of flexible material such as cloth or fabric. A rigid base frame is mounted on the flexible base with a rigid outer frame being positioned adjacent the upper edges of the sidewalls and extending therearound. The double layer of flexible material is interconnected and the upper edges of the sidewalls are folded over to form channels into which are received reinforcement bars. Spreader bars are pivotally connected to the sidewalls adjacent the upper edge with the lower ends being adapted to engage the base frame for holding the sidewalls in an upright tensioned position. Removal of the lower ends of the spreader bars from the base frame permits the sidewalls to be folded into a position adjacent the base frame. Each layer of flexible material is preferably formed from a flat blank having the flexible sidewalls integrally connected to the respective edges of the base for facilitating manufacture of the bed.

This invention relates to a baby carriage and, in particular, to a bed supported on a baby carriage. The bed has a base frame and a rigid outer frame extending all around the bed in the area of its upper edge. The base and the sidewalls of the bed are made in double layers out of fabric or plastic foil with the sidewalls being connected at their lateral edges.

Baby carriages with beds of the above-mentioned type are known, wherein the beds have the frame arranged between the fabric or foil layers forming the walls. Manufacture of these known beds is very difficult. In a known bed, the inner layers of the walls must first be connected at their lateral edges, for example by sewing. The outer layers of the walls must then be connected in the same manner. Thus, two fabric or foil tubes with an almost square cross section are obtained. The tube of the inner layers is then guided into the tube of the outer layers and both tubes are then connected, for example by sewing, at the edge forming the upper edge of the bed. A rigid closed frame is then moved from underneath between both layers into the tube which was sewn together at its upper edge and which forms a double layer. The frame is moved up into said tube until the frame extends between both layers directly underneath the upper edge of said tube. The frame cannot be seen from outside. After insertion of said frame, the lower edges of the walls of the bed are secured to a separately manufactured bed plate, for example by riveting. Securing the lower edges of said walls to the base plate is extremely complicated and must be done essentially by hand. A securing by machine is very expensive and requires very complicated special machines because the walls of the bed are reinforced to a three-dimensional structure by the frame provided therein. Said structure is very difficult to handle during the securing of the lower edges of the walls to the bed plate and cannot be inserted in commercial machines, for example in sewing machines. The time-consuming manual labor required for the manufacture of the known bed is very disadvantageous due to the lack of workers today and

prevents a manufacture of the beds in large quantities. Thus, manufacture of the known bed is not economical.

Thus, the basic purpose of the invention is to manufacture a baby carriage with a bed of the above-disclosed type, which bed is simple in construction and which bed can be manufactured easily, particularly suitable for rapid machine manufacture, and which bed is of a light weight.

To attain said purpose, the invention provides that the walls are connected at their lower edges to the edges of a base also made of fabric or plastic foil. The bed plate or bed frame is inserted into the bed from above and rests on said base. A further frame extending all around said bed is constructed in the area of the upper edge as an outer frame extending on the outside along said sidewalls around said bed and which frame has mounted thereon the sidewalls by means of fastening elements.

The single layers of the walls of the bed according to the invention can be connected by commercial machines, for example sewing machines, in a simple time saving and work saving manner because flat workpieces which are easy to handle are used. The connection of the single walls of the bed and the connection of said walls to the base can be done by commercial machines because the bed of the invention does not have a closed frame inserted between the layers of its sidewalls and thus no three-dimensional workpiece exists. After connecting of the single fabric or foil parts, the bed of the invention forms an upwardly open box into which a bed plate or a base frame for reinforcing the base can be inserted from above. For reinforcing the upper edge of the bed, an outer frame is pulled over the bed from above after said bed has been completed. The frame extends around the bed in the area of the upper edge of said bed along the outer side of the sidewalls. The sidewalls of said bed are secured to the outer frame, for example by screws or are suspended by means of loops on the frame. In this manner a very light and good looking structure which is easy to manufacture is obtained. The bed, the base frame and the outer frame can each be manufactured alone by machine and can be assembled thereafter. Thus, the bed of the invention can be manufactured economically in large quantities.

An advantageous embodiment of the bed of the invention is given by providing reinforcement inserts between the two fabric or foil layers in the area of the upper edge of each wall, at least at the points where the wall is mounted to the outer frame. Said reinforcement inserts can be constructed, for example, as rigid flat bars extending over the entire length of the respective wall, said flat bars for example being made of wood. Said reinforcement inserts do not form, in comparison to the known bed, a closed frame between the layers of the bed walls but each wall is reinforced separately by the insert or inserts arranged therein. Thus, after the reinforcement inserts are inserted, the walls form flat workpieces which are easy to handle and which for example can be easily guided into sewing machines.

A still further advantageous embodiment of the bed according to the invention is given by providing spreading supports inside the bed, each of said spreading supports being pivoted at its upper end to the area of a reinforcement insert of a wall and extending along said wall. The spreading supports are pivotable into a support position in which their lower ends are supported on the bed plate or base frame whereby the spreading supports hold the walls of the bed in a tensioned position. The spreading supports can also be moved to a raised position whereby the upper edges of said walls and the outer frame can be guided or folded to the base of the bed. The pivotable spreading supports are used in their essentially vertical support position to maintain the walls

of said bed under tension and to keep the upper edge of said bed with the outer frame at a certain space from the base of said bed. A bed constructed in this manner has a rigid structure. Said structure can be placed with its base onto a carrier, for example an undercarriage of the baby carriage. The walls of said structure project upwardly without being supported from outside. Upon movement of the spreading supports to an essentially horizontal position, it is made possible to reduce the height of the bed of the invention considerably if this, for example for the purpose of transporting same, would be desired. After the spreading supports are moved upwardly, the upper edge of the bed drops downwardly to the base together with the outer frame under the weight of said frame and the flexible walls are folded at the same time. The outer edge thus comes close to the base of the bed so that a very flat structure which can be easily transported is obtained.

However, the bed of the invention can also be secured to the undercarriage of a baby carriage by means of its outer frame. The spreading supports can be deleted in this embodiment because the base of the bed is pulled downwardly by the weight of the bed plate or the base frame positioned on the base and because said base hangs on the walls which are then being tensioned by the weight of the base.

To assure economical manufacture, the bed of the invention is advantageously constructed according to the invention so that each layer of the walls and the base is a common flat blank for the walls and the base, made of fabric or plastic foil, in which blank each wall is connected in one piece with its lower edge to an edge of the base. The walls of this embodiment hang in one piece on the base so that expensive connecting operations are not needed. Each blank combining the base and the walls is a flat blank. Two of said blanks can therefore be placed one on top of the other and can be sewn together and thus form both layers of the bed.

The walls and the base of the bed are advantageously made of thermoplastic foil. It is then possible to connect the walls by plastic welding seams and also to connect the layers by plastic welding seams. Said plastic welding seams can be made in commercial welding devices.

Further characteristics of the invention are disclosed in the following description of one embodiment in connection with the drawings, wherein:

FIGURE 1 is a perspective view of a first embodiment of the bed of the baby carriage of the invention.

FIGURE 2 is a cross-sectional view of the bed in the position of use along the line II—II of FIGURE 1.

FIGURE 3 is a cross-sectional view according to FIGURE 1 showing the bed in the folded position.

FIGURE 4 is a top view of a blank for the manufacture of the bed in an intermediate stage during its manufacture.

FIGURE 5 is a fragmentary sectional view of a modified embodiment.

FIGURE 1 illustrates the structure of the bed according to the embodiment. The bed 1 is removably mounted on a frame 2 of a baby carriage, said frame being indicated in dotted lines. The bed 1 comprises along its upper edge a rigid outer frame 3 extending all round said bed, the outer frame 3 being made of metal tubing. The sidewalls 4, 4', 5 and 6 and the base 7 are made of two layers of thermoplastic foil with the lower edges of the sidewalls being connected in one piece to the base 7. Seams 8 connect the sidewalls at their lateral edges. A base frame or bed plate 9 made of strips of wood is supported on the base 7, said base frame being inserted into the bed from above.

A rigid flat bar 10 or 10', for example made of wood, is provided as a reinforcement insert in the area of the upper edge of the sidewall between both layers of foil of each wall, said flat bar extending over the full length of the sidewall (FIGURES 2-4). Both plastic foil layers of each sidewall are connected at the upper edge and along

a line 11 or 11' extending parallel to and below said upper edge by a welding seam so that the layers form a channel in the area of the upper edge, said channel receiving the reinforcement bar 10 or 10'.

The sidewalls of the bed are screwed together with the outer frame 3 by means of screws which are guided through the reinforcement bars. However, it is also possible for example to connect the walls with the outer frame by means of rivets which also are guided through the reinforcement bars. Furthermore, it is possible to connect the walls with the outer frame by means of loops 17 (FIGURE 5) which are secured to the outer side of the walls and can be slung around said outer frame. The loops can be secured to the outer walls of the bed for example by means of snap fasteners 18 mounted to their ends.

Spreading supports or links 12 are provided inside the bed 1, each one of said spreading supports being pivoted with its upper end to one sidewall in the area of the reinforcement insert and extending along said wall. The spreading supports 12 which are opposite to each other and which are pivoted to the oppositely positioned sidewalls 4 and 4' of the embodiment illustrated in FIGURE 1 are connected at their lower ends by connecting rods 16 extending transversely to the bed across the base frame to form U-shaped frames. Thus, the opposite spreading supports 12 can be swung simultaneously. The spreading supports 12 can be brought to a support position as illustrated in FIGURES 1 and 2. The spreading supports when in said position are supported on the base frame 9 with their lower ends and keep the sidewalls of the bed tensioned. The spreading supports can be swung into a raised position (FIGURE 3), in which position the upper edges of the sidewalls can be guided downwardly to the base of the bed whereby the outer frame 3 and the walls of the bed are folded. Thus, the bed can be folded to a flat, easily transportable package. Fixed on the upperside of the base frame 9 there are provided hook-shaped fittings 13, the lower ends of the spreading supports 12 being supported on said fittings in their support position illustrated in FIGURE 1.

Transversely extending fittings 14 are provided underneath the bed plate of the bed in the illustrated embodiment, said fittings being screwed to the base frame 9 from underneath said bed plate 7 and through same. The ends of said fittings project laterally beyond the sides of the bed and carry pivots 15 at their ends, by means of which pivots, the bed can be releasably mounted on the undercarriage of the baby carriage.

At one end of the bed 13, a swivel hood is riveted on the upper edges of the walls in the area of the reinforcement inserts (FIGURE 1) as is well known.

As a lying surface for a baby to be placed in said bed, a further insert is provided which is placed into said bed from above and which covers the base frame and the horizontal connecting rods 16 of the spreading supports 12. Said insert is not illustrated in the drawings to assure a better understanding. Said insert can, for example, be manufactured of wood or of a hard board plate with a layer of rubber and a plastic foil cover.

The bed of the invention can be manufactured very economically. FIGURE 4 illustrates an intermediate stage of the manufacture of the bed illustrated in FIGURES 1 and 3. The bed is built of two layers of plastic. Each layer has the same shape as the blank illustrated in FIGURE 4 which blank forms the bed plate and also the sidewalls of the bed. Securing of the walls to the bed plate is therefore not necessary in the bed of the invention. Both blanks which form the layers are placed one on top of the other and are connected along connecting lines, for example as illustrated in FIGURE 4 by dotted lines. The connection can be performed by means of sewing or in the case of plastic foil advantageously by means of welding or bonding. Before connecting the two layers it is possible, for example in the area of the walls, to insert fill-

ing material between the layers, for example rubber blanks. In this manner, well-cushioned walls are obtained for the bed of the invention. To prevent the rubber layers from moving and to assure a good appearance, the layers, in the area of the walls, can be connected by intersecting quilting seams or welding seams as illustrated in FIGURE 4. FIGURES 2 and 3 illustrate cross-sectional views of walls constructed in this manner. During all above-discussed operations, the superimposed blanks are a flat workpiece which can be easily guided into commercial sewing machines or welding machines. Before the walls are turned up and connected at their lateral edges, the reinforcement bars 10 or 10' can be inserted into the channels provided for same. Insertion of the reinforcement bars can, for example, take place before the quilting seams are applied since the reinforcement bars extend also in the plane of the blank and therefore do not hinder further operations. FIGURE 4 illustrates two reinforcement bars 10 or 10' in their position before being moved between the layers of the walls, while two reinforcement bars are illustrated in their inserted position.

After the blanks are treated as a flat workpiece in the manner as disclosed above, the walls are bent and then connected at their adjacent lateral edges. This connection can also be performed by means of commercial machines because the bed, in this stage, can still be folded to a flat structure because the reinforcement bars in each wall of the bed are not connected. As soon as an upwardly open box is formed by connecting the lateral edges of the walls, the base frame 9 or a bed plate is placed into said bed from above. The base frame can, for example, be glued to the base 7 or, as illustrated in FIGURES 2 and 3, can be screwed to the base from below by means of fittings 14. Lastly, the outer frame 3 is moved over the bed and is connected to the walls in the area of the upper edge of said bed.

As disclosed above, manufacture of the bed is possible in a simple and economical manner by means of commercial machines so that a very economical mass production can take place.

This invention is not limited to the disclosed embodiment. For example, in place of a plastic foil cloth can be the material of the layers for the sidewalls and the base. It is also possible to use a different fabric or a different foil for the outer layer and the inner layer.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A bed for releasable securement to an undercarriage of a baby carriage, comprising:
 - a base and a plurality of sidewalls, said sidewalls connected to each other and said base along adjacent edges thereof, said base and said sidewalls being comprised of flexible material, each of said sidewalls having channels adjacent the upper edges thereof extending the full length of each of said sidewalls;
 - reinforcing insert members insertable into each of said channels and extending the entire length of each of said sidewalls;
 - an external rigid frame member positioned adjacent the upper edges of said sidewalls; and

fastening means for securing the upper edges of said sidewalls to said external rigid frame member.

2. The bed defined in claim 1, wherein said fastening means includes screws which secure said sidewalls and said rigid frame member to said reinforcing insert members.

3. The bed defined in claim 1, wherein said fastening means includes loops which are connected to the upper edges of said sidewalls in the area of said reinforcing insert members, said sidewalls being connected to the rigid frame member by said loops.

4. The bed defined in claim 1, including a base frame mounted on said base and engaging said sidewalls.

5. The bed defined in claim 4, including fittings on said bed for releasably securing same to the undercarriage of a baby carriage, said fittings being mounted on said base frame.

6. The bed defined in claim 1, wherein said sidewalls and said base comprise two layers of flexible material and wherein said two layers of flexible material defining said sidewalls are connected together adjacent the longitudinal edges thereof.

7. The bed defined in claim 4, including spreading supports inside the bed, each of said spreading supports being pivoted at its upper end to a sidewall in the area of a reinforcing insert member, said spreading supports being pivotable into a support position in which their lower ends are supported on the base frame and hold the sidewalls of the bed tensioned, said spreading supports being pivotable into a raised position in which said sidewalls can be folded and the upper edges of said sidewalls together with said rigid frame can be positioned adjacent said base of said bed.

8. The bed defined in claim 6, wherein both layers of each sidewall are connected at their upper edges and along a line spaced below the upper edge parallel to said edge so that the layers form a channel in the area of the upper edge, said channel receiving said reinforcing insert member therein.

9. The bed defined in claim 6, wherein the sidewalls and the base of the bed are made of thermoplastic foil with the layers being connected by plastic welding seams.

10. The bed defined in claim 1, including a pivotable hood mounted to the upper edges of the sidewalls in the area of the reinforcement inserts.

11. The bed defined in claim 1, wherein the outer frame is constructed of metal tubing.

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