

BABY CARRIAGE

The present invention relates to foldable baby carriages.

Heretofore, a variety of basic constructions
5 for baby carriages have been proposed and put into practical use. One of these is a chair type construction. A foldable version of a baby carriage of chair type construction has also been proposed.

10 However, foldable baby carriages of chair type construction still have some points which remain to be improved. More particularly, conventional carriages of this type, when folded, may be bulky. Further, when they are folded, the four wheels,
15 front and rear, may not be on a level with each other, so that it is impossible for the folded baby carriage to stand up by itself. Nor does this conventional type of baby carriage necessarily have a simple folding operation.

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The present invention at least in its preferred form provides a baby carriage of chair type construction, which folds small and can stand by

itself when folded and which has a simple folding operation, for example, to the extent that it can be folded by one hand.

5 The configuration of the preferred embodiment is such that it can be supported on the user's arm when folded, being substantially reduced in height on folding to assume a small bar form. Alternatively, the user can walk along, pulling
10 the folded baby carriage after her, rolling on its wheels. The baby carriage has a lightweight construction so that it does not become a burden during such transport.

15 According to this invention, there is provided a baby carriage comprising a pair of front legs each having a wheel; a pair of rear legs each having a wheel; connecting members for maintaining said front legs in spaced relation and said rear legs in
20 spaced relation; means for folding the carriage including a pair of push rod supports each of which has a lower portion pivotably connected to a respective one of said pair of rear legs and is pivotable rearwardly of the associated leg, and a
25 pair of generally upwardly extending push rods

pivotably connected to upper portions of said push rod supports and operable to fold said upper portions downwardly about the pivots between said push rod supports and said rear legs; and linkage means responsive to operation of said folding means when said upper portions are folded downwardly to bring said front legs towards one another, said rear legs towards one another and said connecting members towards one another and to fold said front legs and said push rods towards said rear legs.

In a preferred embodiment, the linkage means comprise a pair of arms which have front portions pivotally connected to the front legs and the rear legs and which have rear portions pivotally connected to the push rods at points spaced a predetermined distance from the lower ends of the push rods. The connecting members comprise foldable connecting rods between the front legs and between the rear legs. And, the linkage means operates during folding as follows:

When the push rod supports are turned rearwardly by the push rods and the arms are turned to bring them substantially into alignment with the

rear legs, said linkage means acts to draw the front legs toward the rear legs and folds or bends the connecting rods for the front and rear legs.

5 The linkage means may comprise connecting rod turning members each axially slidably fitted on an associated front leg in the central portion of the latter, bar links each connected between an associated connecting rod turning member and the
10 front portion of an associated arm, and pivotally supported bars each extending inwardly of an associated front leg. Further, the linkage means may include folding operative connecting rods each connected between an associated push rod support
15 and an associated front leg.

 The baby carriage may also include a hammock having a reclinable back rest. Preferably, the hammock is provided with a head guard associated
20 with the back rest and arranged to be movable to and from a functional position according to the position of the back rest.

 Additionally, the baby carriage may have a

basket attached thereto which is adapted to be folded in association with the folding of the baby carriage.

5 The described baby carriage, when folded, has a substantially reduced height, width and longitudinal dimension, and is only small in bulk. It is possible for the user to carry the folded carriage or to pull it along on its wheels and, being of
10 lightweight construction, it will not become a burden for conveyance.

In addition, the baby carriage described below is designed so that when it is folded, the four
15 wheels, front and rear, are on a level with each other, thus allowing the baby carriage to stand up by itself in its folded state.

Furthermore, the described baby carriage is
20 easy to fold and unfold and the folding and unfolding operation can be carried out by one hand.

Accordingly, the baby carriage as described herein is convenient for use.

The invention will be described further, by way of example with reference to the accompanying drawings, in which:

5 Fig. 1 is a perspective view of a baby carriage embodying the present invention in its opened state;

 Fig. 2 is a right-hand side view of the baby carriage of Fig. 1;

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 Fig. 3 is a right-hand side view of the baby carriage of Fig. 1 in its folded state;

 Fig. 4 is a perspective view, as seen from
15 the rear, of connected portions of an arm, a front leg, and a front leg connecting rod shown in Figs. 1 and 2;

 Fig. 5 and 6 are diagrammatic views illustrating
20 the movement of the items shown in Fig. 4;

 Fig. 7 is a perspective view, as seen from the rear, of connected portions of a rear leg connecting rod and a central connecting rod shown
25 in Figs. 1 and 2;

Fig. 8 and 9 are perspective diagrammatic views illustrating the movement of the items shown in Fig. 7;

5 Fig. 10 is a diagrammatic view, as seen from one side, showing the relation between a folding operative connecting rod, the central connecting rod and tie rods shown in Fig. 9;

10 Fig. 11 is a partly exploded perspective view illustrating one example of operating means, including an operating lever, and a push rod shown in Figs. 1 and 2;

15 Fig. 12 is a fragmentary perspective view of the operating lever of Fig. 11;

Fig. 13 is a section taken along the line III-III of Fig. 11;

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Fig. 14 is a longitudinal section of an arrangement associated with a sleeve shown in Fig. 11;

Fig. 15 is a perspective view of another example of operating means, including an operating bar, and the push rod of Figs. 1 and 2;

5 Fig. 16 is a section taken along the line VI-VI of Fig. 15;

Fig. 17 is a section taken along the line VII-VII of Fig. 15;

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Fig. 18 is a section taken along the line VIII-VIII of Fig. 15;

15 Fig. 19 is a section taken along the line IX-IX of Fig. 15;

Fig. 20 is a section taken along the X-X of Fig. 15;

20 Fig. 21 is a perspective view of the parts extending from the operating bar of Fig. 15 to a sleeve on the push rod;

Fig. 22 is a perspective view of a portion of

the rear leg connecting rod pivotally connected to
a rear leg;

Fig. 23 is a front view of the items shown in
5 Fig. 22;

Fig. 24 is a perspective view of a portion of
the central connecting rod pivotally connected to
the folding operative connecting rod;

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Fig. 25 is a fragmentary view of the items
shown in Fig. 24;

Fig. 26 is a perspective view of a first
15 connecting rod and a second connecting rod of a
reclining mechanism for a hammock;

Fig. 27 is a perspective view of a locking
member used in combination with the connecting rods
20 shown in Fig. 26;

Fig. 28 is a perspective view of a cover to
receive the connected portions of the first and
second connecting rods of Fig. 26;

Fig. 29 is a section through the connected portions of the first and second connecting rods of Fig. 26;

5 Fig. 30 is a side view showing a back rest retaining rod for a back rest of the hammock, said rod being in a raised state;

Fig. 31 is a side view showing the back rest
10 retaining rod in a lowered state;

Fig. 32 is a detail of a portion of Fig. 30;

Fig. 33 is a detail of a portion of Fig. 31;
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Fig. 34 is a view similar to Fig. 32, illustrating a portion of the hammock with a head guard attached thereto;

20 Fig. 35 is a view, similar to Fig. 33, of the items shown in Fig. 34;

Fig. 36 is a further view of some of the parts shown in Fig. 35;

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Fig. 37 is a diagrammatic perspective view of a mounting arrangement for a basket shown in Fig. 1;

Fig. 38 is a right-hand side view of a
5 modification of the baby carriage shown in Fig. 1
in an opened state;

Fig. 39 is a right-hand side view of the baby carriage of Fig. 38 in a folded state;

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Fig. 40 is a perspective view of the middle region of the baby carriage of Fig. 38;

Fig. 41 is a perspective view of parts mounted
15 on the folding operative connecting rods permitting
extension of the seat of the baby carriage of Fig.
38;

Fig. 42 is a perspective view of the front
20 portion of an arm of the baby carriage of Fig. 38
adapted to carry a torso guard;

Fig. 43 is a perspective view of an insert for
a recess shown in Fig. 42;

- 12 -

Figs. 44 and 45 are plan views, partly in section, illustrating the operation of an arbor included in the torso guard; and

5 Fig. 46 is a sectional view showing the manner in which the insert is fitted in the recess when the torso guard is removed.

 An embodiment of the invention will now be
10 described in detail with reference to the accompanying drawings. The embodiment will first be described generally with reference to Figs. 1 through 3 for a better understanding, rather than going into detail at the outset.

15 Fig. 1 is a perspective view of a baby carriage embodying the present invention in its opened state; Fig. 2 is a right-hand side view of the same; and Fig. 3 is a right-hand side view of said
20 baby carriage in its folded state. Basically, the baby carriage comprises a pair of arms 1, a pair of front legs 3 and a pair of rear legs 4 which are pivotally supported on support leg pivot pins 2 in relatively forward or intermediate

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regions of said arms, a pair of push rods 6 pivotally supported on push rod pivot pins 5 disposed on the rear ends of the arms 1 at a predetermined distance from the lower end, a front leg connecting rod 8 which is foldable only downwardly (as indicated by arrows 7) for connecting said pair of front legs 3, a rear leg connecting rod 10 which is foldable only downwardly (as indicated by arrows 9) for connecting said pair of rear legs 4, and a handle 12 which is foldable only forwardly (as indicated by arrows 11) for connecting said pair of push rods 6. The push rods 6 and handle 12 constitute a push frame 13.

15 According to the invention, in such basic construction, the lower ends of the pusher rods 6 and the rear legs 4 are foldably connected together by push rod supports, in the form of angle bars 14, and pivot pins 15 and 16. The angle bars 14 are
20 rotatable on the pins 16 in the direction of the arrow 17 and depending upon whether the angle bars 14 are turned to extend partially along the upper halves of the rear legs 4 (Figs. 1 and 2) or partially along the lower halves of the rear legs 4

(Fig. 3), the lower ends of the push rods 6 will be positioned either higher or lower relative to the rear legs 4. When the lower ends of the push rods 6 are in the higher position relative to the rear legs 4, the arms 1, the lower portions of the push rods 6 and the upper portions of the rear legs 4 define a triangular configuration establishing the opened condition of the baby carriage. The shape and construction of the related members are so selected that when the lower ends of the push rods 6 are in the lower position relative to the rear legs 4, the arms 1, push rods 6 and rear legs 4 are substantially parallel to each other, thereby establishing the folded condition of the baby carriage.

A folding operative connecting rod 18 is installed between each push rod support angle bar 14 and the associated front leg 3 and is pivotally connected thereto at its opposite ends by pivot pins 15 and 19. Connected between the pair of folding operative connecting rods 18 is a central connecting rod 21 which is foldable only forwardly (as indicated by arrows 20).

The basic construction of the foldable baby carriage has thus been completed.

5 The various parts will now be described in detail.

Fig. 4 is a perspective view of the connected portions of one arm 1, front leg 3 and front leg connecting rod 8, as seen from rear. Figs. 5 and 6 are diagrammatic views illustrating the movements of the components shown in Fig. 4. Referring to Figs. 1 through 6, the front leg connecting rod 8 is pivotally connected at its ends to connecting rod turning members 23 by pivot pins 22. Each connecting rod turning member 23 is provided with a socket portion 24 of inverted U-shaped cross-section which fits over an end portion of the front leg connecting rod 8. The connecting rod turning member 23 is axially slidably fitted on the associated front leg 3 in the middle region thereof. A bar link 25 is connected between the connecting rod turning member 23 and the front end of the arm 1. An L-shaped bar 26 extends inwardly from the front leg 3 and has one end pivotally connected to the leg by a pivot pin 26a. The front leg connecting rod 8 is

pivotally supported on pivot pins 27 each carried at the other end of the associated bar 26 and positioned at a predetermined distance from the associated end of the front leg connecting rod 8.

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With this arrangement, as shown in Figs. 4 to 6, if the arm 1 is turned around the axis of the pivot pin 2 in the direction of arrow 28, the connecting rod turning member 23 is made to slide on the front
10 leg 3 in the direction of arrow 29. In response, the bar 26 is turned in the direction of arrow 26b, while the front leg connecting rod 8 is turned around the axes of the pivot pins 27 in the direction of arrows 7 and is thereby downwardly folded (Fig. 6).

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The reverse movement of the front leg connecting rod 8 of Fig. 6 from its folded position is effected by turning of the arm 1 in the opposite direction to cause the bar link 25 to depress the
20 connecting rod turning member 23. The force exerted by this movement acts to turn the front leg connecting rod 8 from the Fig. 6 condition to straighten the same while turning the bar 26 downwardly, thereby establishing the Fig. 5 condition.

When the front leg connecting rod 8 is in the straightened condition as shown in Fig. 5, that is when the baby carriage is in its opened condition, the application of a downward force on the arm 1 (which force is produced, for example, by the weight of a baby placed on a hammock attached to the arms 1) causes the bar link 25 to force the connecting rod turning member 23 downwardly (in the direction opposite to the direction of arrow 29), thereby forcing downwardly the end portion of the front leg connecting rod 8 received in the socket portion of the connecting rod turning member 23 and inhibiting the front leg connecting rod 8 from turning in the direction of arrows 7. That is, the greater the load applied, the more firmly the baby carriage is maintained in its opened condition.

Fig. 7 is a perspective view of the connected portions of the rear leg connecting rod 10 and central connecting rod 21, as seen from the rear. Figs. 8 and 9 are perspective diagrammatic views illustrating the movement of the portion shown in Fig. 7; and Fig. 10 is a diagrammatic view, as seen from one side, showing the relation between

one folding operative connecting rod 18, the central connecting rod 21 and tie rods 30 shown in Fig. 9.

Referring to Figs. 1 through 3 and 7 through 10,
5 the central connecting rod 21 is disposed at a level different from that of the rear leg connecting rod 10. The manner in which the central connecting rod 21 is folded in the direction of arrows 20 is, preferably, not such that it is folded in a plane
10 containing the pair of folding operative connecting rods 18 but such that it folds in a direction somewhat upward relative to the plane containing the folding operative connecting rods 18. This is best seen from Figs. 3, 9 and 10. In order that
15 folding of the central connecting rod 21 in the direction of arrows 20 may be operatively associated with the folding of the rear leg connecting rod 10 in the direction of arrows 9, a pair of tie rods 30 are provided. The tie rods 30 have their ones
20 ends connected to the folding section of the rear leg connecting rod 10 and their other ends connected to the central connecting rod 21 on opposite sides of the folding section of the latter and at predetermined distances from said folding section.
25 The central connecting rod 21 is provided with

tongues 33 each extending laterally of a rotatable sleeve 32. Thus, the tie rods 30 are connected at their one ends to the tongues 33.

5 The arrangement described above with reference to Figs. 7 to 10 is such that the ends of the rear leg connecting rod 10 are urged toward the ends of the central connecting rod 21 when the rear leg connecting rod 10 folds in the direction of arrows
10 9 (downwardly) and the folding operative connecting rods 18 move toward each other, so that the tie rods 30, each turning in the direction of arrow 34, cause the central connecting rod 21 to fold in the direction of arrows 20 (forwardly).

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What should be noted here is the relative movements of the rear leg connecting rod 10, central connecting rod 21 and tie rods 30. When the rear leg connecting rod 10 and the central connecting
20 rod 21 move toward each other, it will be understood that the rear leg connecting rod 10 and the central connecting rod 21 fold away from one another, namely, in the directions of arrows 9 and 20, respectively, simply as a result of the rigidity of the tie rods
25 30. However, another movement also takes place.

In response to folding of the central connecting rod 21, in the direction of arrows 20, the pair of shafts 31, sleeves 32 and tongues 33, respectively, move toward each other. This results in the turning of the tie rods 30 each in the direction of arrow 34. Such turning of the tie rods 30 increases the length of the space defined between the tie rods 30. If the tie rods 30 were arranged not in a V-form but parallel to each other, the connecting rods 10 and 21 could be folded only to an extent corresponding to the movement of the rear leg connecting rod 10 and central connecting rod 21 toward each other. In contrast, the arrangement of the tie rods 30 in V-form as shown in Fig. 7 and other figures allows the folding of the connecting rods 10 and 21 to an extent which corresponds to the movement of the rear leg connecting rod 10 and central connecting rod 21 toward each other plus an amount determined by rotation of the tie rods 30 each in the direction of arrow 34. Thus, this arrangement provides an increased degree of folding for the rear leg connecting rod 10 and central connecting rod 21, which means that the width of the foldable baby carriage in folded condition can be decreased. Further, it

should be noted that the mechanism for performing the operation described above is very simple.

The reverse operation is likewise carried out based on the inter-relationship which is established by the tie rods 30.

Further, the described arrangement, wherein the folding direction of the central connecting rod 21 is selected to face somewhat upward from the plane containing the folding operative connecting rods 18, assures that during the folding movement of the rear leg connecting rod 10 and central connecting rod 21 there is a time, at least for an instant, when the plane containing the central connecting rod 21 in its folded state coincides with the plane containing the pair of tie rods 30 or crosses this plane at a very small angle A (Fig. 10). Consequently, the plane in which the tie rods 30 act substantially coincides with the plane in which the central connecting rod 21 is folded, providing efficient transmission of the forces exerted by the tie rods 30 on the central connecting rod 21.

In this embodiment, the moment when substantial coincidence occurs is when the central connecting rod 21 is close to its maximum folded condition. That is, said coincidence takes place when the folding
5 of the baby carriage is almost completed. This is advantageous because in the folding and unfolding operation to be described later in the initial stages of bringing the baby carriage from its folded to its opened condition and in the final
10 stages of bringing the baby carriage from its opened to its folded condition, the operator may find difficulty in applying a strong unfolding or folding action.

15 More particularly, this foldable baby carriage can be folded by urging the push rods 6 downwardly toward the ground in such a manner as to turn the push rod support angle bars 14 in the direction of arrows 17 (Figs. 1 and 2), but when it is to be
20 opened, the push rods are raised to utilize the weight of the baby carriage for effecting the unfolding operation. In this case, because the weight of the baby carriage is limited, especially since the baby carriage is preferably constructed

to be lightweight, only a limited force is applied in the unfolding operation. Therefore, in the initial stages of the unfolding condition, as shown in Figs. 3 and 9, if the direction of action of the tie rods almost coincides with the direction of folding of the central connecting rod 21, it will be understood that the central connecting rod 21 can be unfolded with a relatively small amount of force. Further, in the final stages of folding, attainment of the properly disposed condition of the parts shown in Fig. 3 will need a relatively large amount of force. In this case, also, it will be understood that the arrangement represented by this embodiment is very advantageous.

Figs. 11 through 14 are views illustrating one example of operating means associated with the push rods 6. Fig. 11 is a partly exploded perspective view of the arrangement in the region of an operating lever; Fig. 12 is a fragmentary perspective view of the operating lever; Fig. 13 is a sectional view taken along the line III-III of Fig. 11; and Fig. 14 is a longitudinal section of an arrangement in the region of a sleeve.

The upper end of each push rod 6 is formed with a guide 73. The latter receives an end of the handle 12. The handle 12 is formed from a round pipe or bar and is turnable within the guide 73 around the axis of the latter. The lateral surface of the guide 73 is formed with an elongated guide opening 74 extending through about 90 degrees for receiving a guide pin 75 which is fixed to the handle 12. The guide 73 is formed with a bracket 76 having bores 77 formed therein. An operating lever 78 has a bore 79. With the bores 79 and 77 aligned with each other, a shaft (not shown) is inserted into said bores, so that the lever 78 is rotatable supported in the guide 73. The operating lever 78 has a recess 80 therein on its downwardly directed surface. The portion where said recess 80 is formed has the upper end of a rod 81 attached thereto, the lower end of said rod 81 being attached to a sleeve 44.

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The sleeve 44 is slidably fitted on the lower portion of the push rod 6. Adjacent the sleeve 44, the push rod 6 is formed with an elongated opening 45 and a pin 46 which extends through said elongated opening 45 is fixed to the sleeve 44.

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The co-operative action of the elongated opening 45 and pin 46 defines the range of the sliding movement of the sleeve 44. A spring 47 is installed inside the push rod 6 between the pins 5 and 46 and resiliently urges the sleeve 44 downwardly at all times. As a result, the lower end surface of the sleeve 44 is urged into engagement with the end of the push rod support angle bar 14 to secure the opened condition of the baby carriage (Figs. 1 and 2).

The operating lever 78 has the dual function of releasing the sleeve 44 from the push support angle bar 14 and keeping the handle 12 from turning relative to the push rod 6. When the operating lever 78 is turned downwardly, the guide pin 75 is received in the recess 80 (Figs. 12 and 13), thereby inhibiting the handle 12 from turning relative to the guide 73. If the operating lever 78 is turned in the direction of arrow 82, the rod 81 is displaced in the direction of arrow 83, releasing the sleeve 44 from the push rod support angle bar 14, while the guide pin 75 comes out of the recess 80, enabling the handle member 12 to turn.

When the operating lever 78 is turned upwardly beyond dead centre it becomes stabilized.

The turning of the operating lever 78 in the direction of arrow 82 triggers the folding operation of the baby carriage to be described later. Downward turning of the operating lever 78 (which is encouraged by the spring 47) is effected when the baby carriage is fixed open.

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Figs. 15 through 21 are views illustrating another example of operating means associated with the push rods. Fig. 15 is a perspective view of an operating bar and its arrangement; Fig. 16 is a section taken along the line VI-VI of Fig. 15; Fig. 17 is a section taken along the line VII-VII of Fig. 15; Fig. 18 is a section taken along the line VIII-VIII of Fig. 15; Fig. 19 is a section taken along the line IX-IX of Fig. 15; Fig. 20 is a section taken along the line X-X of Fig. 15; and Fig. 21 is a perspective view of the parts extending from the operating bar to a sleeve.

Referring to Figs. 15 through 21, the upper end of each push rod 6 is formed with a guide 35.

The push rod 6 is formed from a square pipe or bar and is inserted at its upper end into a square sleeve portion 36 of the guide 35. The upper portion 37 of the guide 35 is cylindrical and receives one end of the handle 12. The portion of the handle received in the cylindrical portion 37 is axially aligned with the push rod 6. The handle 12, like the push rod 6, is formed from a square pipe or bar, but it is loosely received in the cylindrical portion 37, so that it can turn on the axis of the cylindrical portion. The lateral surface of the cylindrical portion 37 is formed with an elongated guide opening 38 extending through about 90° for receiving a guide pin 39 fixed to and extending from the side of the handle 12. Therefore, the handle 12 is rotatable within the range defined by the length of the elongated guide opening 38. The upper surface of the guide 35 is formed with laterally projecting grooves 40.

20 A square-apertured operating bar 41 is disposed coaxially with the push rod 6 and above the guide 35. The square-apertured operating bar 41 is formed with a square through aperture 42, in which the handle 25 12 is inserted, thereby allowing the square-

apertured operating bar 41 to slide axially along the handle 12 while inhibiting it from turning relative to the latter. The square-apertured operating bar 41 is formed with downwardly extending projections 43 adapted to fit in the grooves 40 when it is slid along the handle 12. This fit, when effected, inhibits the handle 12 from turning relative to the push rod 6. This means that the turning movement in the direction of arrow 11 in Fig. 1 is inhibited.

A wire 48 is installed between the square-apertured operating bar 41 and the sleeve 44 (see Figs. 11 and 14) to establish an interlocking relation therebetween. The interlocking through this wire 48 will now be described. The state shown in Fig. 21 corresponds to that shown in Figs. 1 and 2. If the square-apertured operating bar 41 is pulled up in the direction of arrow 49 as seen in Fig. 21, the sleeve 44 is moved upwardly by the wire 48. In response, the lower surface of the sleeve 44 leaves the end of the push rod support angle bar 14, thus establishing a state which allows the turning of the push rod support angle bar 14 in the direction of arrow 17, which will induce folding of the baby carriage. The resulting relation

between the square-apertured operating bar 41 and the guide 35 is such that, as shown in Fig. 15, the projections 43 are disengaged from the grooves 40. While maintaining this state, for example by slightly twisting the square-apertured operating bar 41 in the direction of arrow 50 to place the lower end surface of the projections 43 on the upper end surface of the guide 35, the square-apertured operating bar 41 is then turned around the axis of the push rod 6 in the direction of arrow 50, whereby the handle 12 is turned relative to the guide 35 to cause it to collapse in the direction of arrow 11 in Fig. 1. This operation also induces folding of the baby carriage.

If the square-apertured operating bar 41 is reversely operated to align the projections 43 with the grooves 40, the square-apertured operating bar 41 being urged downwardly through the wire 48 by the sleeve 44, which is loaded by the spring 47, assures that engagement between the projections 43 and the grooves 40 is automatically effected. The spring 47 also causes engagement between the lower end surface of the sleeve 44 and the end of the support angle bar 14.

Fig. 22 is a perspective view showing a connection between the rear leg connecting rod 10 and the rear leg 4; and Fig. 23 is a front view of said connection. The rear leg connecting rod 10 is pivotally connected to the rear leg 4 by a pivot pin 52 mounted in a U-shaped connector 51 fixed to the rear leg 4. Each end of the rear leg connecting rod 10 is formed with a rotation stop 53 including a surface which is normal to the direction in which the rear leg connecting rod 10 extends, thereby rendering the rear leg connecting rod 10 collapsible only in the direction of arrows 9, as already described.

Fig. 24 is a perspective view showing a connection between the central connecting rod 21 and the folding operative connecting rod 18; and Fig. 25 is a plan view, partly in section, of said connection. The connection shown in these figures has substantially the same operating principle as the connection shown in Figs. 22 and 23. Thus, the central connecting rod 21 is pivotally connected to the folding operative connecting rod 18 by a pivot pin 55 mounted in a connector 54 fixed to said rod 18 and has a

rotation stop 56 formed on the end thereof which allows the central connecting rod 21 to turn only in the direction of arrows 20.

5 The construction of one embodiment of the baby carriage and folding of the individual parts is described above. The overall folding operation will now be described.

10 Referring to Figs. 1 and 2, which show the opened condition of the baby carriage, the push rod support angle bars 14 in this condition follow the upper halves of the rear legs 4, with the result that the lower portions of the push rods 6 are in
15 their higher position relative to the rear legs 4. At this time, a triangular configuration is presented by each arm 1, the lower portion of the push rod 6 and the upper portion of the rear leg 4, whereby the opened condition of the baby carriage
20 is established.

Folding of the baby carriage proceeding from the Figs. 1 and 2 condition to the Fig. 3 condition is as follows: First, the operating lever 78 is

turned in the direction of arrow 82 (Fig. 12) until it is brought to an upwardly inverted position. Since the operating lever has passed its dead centre, it is maintained in this position in spite
5 of being urged downwardly by the spring 47. At this time, the guide pin 75 has come out of the recess 80 to render the handle 12 rotatable. Further, the pressure engagement between the sleeve 44 and the push rod support angle bar 14 has been
10 released. The operation described so far can be performed by successively manipulating the two operating levers 78 with one hand. Next, one side of the central foldable portion of the handle 12 is gripped by one hand and the push frame 13 is
15 tilted slightly forward while applying a twisting force to the handle in the direction of arrows 11, so as to cause the push rod support angle bars 14 to turn a little in the direction of arrows 17. Thereafter, the push frame 13 is downwardly thrust
20 by the hand which has grasped the handle 12. When this thrusting operation is performed, at least the rear wheels 72 are preferably engaged with the ground.

In some cases, the twisting force acting on the handle 12 in the direction of arrows 11 and the starting torque on the push rod support angle bars 14 in the direction of arrows 17 may be naturally produced by the weight of the baby carriage. More particularly, if the operator grips the handle 12 on one side of its central foldable portion with one hand and tilts the entire baby carriage rearwardly such that the front wheels 71 lift into the air while the rear wheels 72 remain in contact with the ground, the weight of the baby carriage may act to cause the other side of the handle 12 to sag through the intermediary of the central foldable portion. Thus a twisting force acting on the handle 12 in the direction of arrows 11 is produced. Further, the push rod support angle bars 14 and the push rods 6 may then collapse downwardly under the force of gravity. Thus, a force is produced which acts on each push rod support angle bar 14 to turn the latter in the direction of arrow 17. After the folding of the handle 12 and the turning of the push rod support angle bars 14 have been effected to some degree in this manner, the operator brings the baby carriage back to its original position and depresses the push frame 13 with the hand which

grasps the handle 12. As a result, the following operation is subsequently effected.

The push rod support angle bars 14 are turned
5 in the direction of arrows 17 until they extend
along the lower halves of the rear legs 4. In
response, the arms 1 are turned substantially
around the axes of the support leg pivot pins 2
in the direction of arrow 28, causing the bar links
10 25 to slide the connecting rod turning members 23
in the direction of arrow 29. As a result, the
front leg connecting rod 8 is folded in the
direction of arrows 7. This folding of the front
leg connecting rod 8 and the previously mentioned
15 folding of the handle 12 combine to decrease the
width of the baby carriage. Concurrently, the rear
leg connecting rod 10 is folded in the direction of
arrows 9, causing the tie rods 30 to fold the central
connecting rod 21 in the direction of arrows 20.
20 Further, in response to the turning of the push
rod support angle bars 14 in the direction of arrow
17, the folding operative connecting rods 18 draw
the front legs 3 toward the rear legs 4.

These folding operations proceed substantially simultaneously, until the push rod support angle bars 14 are positioned to extend along the lower halves of the rear legs 4. At this time, the front and rear legs 3 and 4 are brought together to extend substantially parallel to each other, and the arms 1 receive the rear legs 4 in spaces therein, the arms 1 and rear legs 4 being brought to substantially parallel positions. Further, the front leg connecting rod 8, rear leg connecting rod 10, handle 12 and central connecting rod 21 are fully folded, and the respective pairs of arms 1, front legs 3, rear legs 4, push rods 6, handles 12 and folding operative connecting rods 18 move toward each other until they are close to each other, resulting in the baby carriage being also widthwise contracted. In this folded condition, the two front wheels 71 and two rear wheels 72 are all at the same level, thus enabling the baby carriage to stand by itself.

When it is desired to change the folded state shown in Fig. 3 into the unfolded state shown in Fig. 1, this can be effected basically by reversing

the procedure described above, whereby the reversed operation takes place. In brief, the operator holds the handle 12 with one hand and raises it to lift the baby carriage into the air so as to cause the push rods 6 to turn the push rod support angle bars 14 counterclockwise as seen in Fig. 3. In response, the push rod support angle bars 14 are caused to extend along the upper halves of the rear legs 4, and the arms 1 are turned counterclockwise, causing the bar links 25 and connecting rod turning elements 23 to straighten the front leg connecting rod 8. Further, the folding operative connecting rods 18 move the front legs 3 away from the rear legs 4. Because of the resulting increase in the widthwise dimension, the rear leg connecting rod 10 and central connecting rod 21 are straightened in association by the action of the tie rods 30. When the condition shown in Figs. 1 and 2 has finally been attained, the operating levers 78 are turned downwardly to receive the guide pins 75 in the recesses 80 therein, thereby inhibiting folding of the handle 12, while the sleeves 44 are brought into pressure engagement with the push rod support angle bars 14, so that the folding of the push rod support angle bars 14 and push frame 13 is inhibited, thereby establishing

the firm, opened condition of the baby carriage.

Of Figs. 1 through 3 showing the frame of the entire baby carriage, only Fig. 2 shows the shape of a hammock. The hammock comprises a back rest 150 retained by retaining rods 106, and a seat 151 formed on a plane defined by the folding operative connecting rods 18 and central connecting rod 21. In this case, the arms 1 serve as arm rests. In addition, since flank plates 152 are installed vertically on opposite sides of the back rest 150 in Fig. 2, the back rest 150 does not clearly appear in Fig. 2. A reclining mechanism is incorporated in this hammock to permit the angle of inclination of the back rest 150 to be changed. This will now be described.

Figs. 26 through 33 serve to illustrate the hammock reclining mechanism. Fig. 26 is a perspective view showing first and second connecting rods; Fig. 27 is a perspective view showing a locking member; Fig. 28 is a perspective view showing a cover; Fig. 29 is a sectional view showing a connecting portion for the first and second connecting rods; Fig. 30 is a side view showing

a back rest holding rod for holding the hammock back rest (not shown) in a raised condition; Fig. 31 is a side view showing the back rest holding rod in lowered condition; Fig. 32 is a diagrammatic side view showing the principal portions of Fig. 5 30; and Fig. 33 is a diagrammatic side view showing the principal portions of Fig. 31.

Referring to Fig. 26, a first connecting rod 10 101 and a second connecting rod 102 are pivotally connected together by a pivot pin 103 so that they are foldable relative to each other. The respective ends of the first and second connecting rods 101 and 102 are provided with through holes 104 and 105, 15 respectively. The first and second connecting rods 101 and 102, as shown in Figs. 1 through 3, are connected between the push rod 6 and a back rest holding rod 106.

20 The back rest holding rod 106 is installed between the opposed surfaces of a connector 107 of U-shaped cross-section fixed to the lower end of the push rod 6 and is pivotally supported on a pivot pin 108. Holding the back rest holding rod 25 106 between the opposed surfaces of the connector

107 advantageously prevents the holding rod 106 from shifting transversely as said rod is turned.

The through holes 104 and 105 shown in Fig. 5 26 are used for connecting the first and second connecting rods 101 and 102 between the push rod and the back rest holding rod 106. Thus, the first and second rods are pivotally supported by the back rest holding rod 106 and push rod 6 through 10 pivot pins 109 and 110 inserted in the through holes 104 and 105, respectively.

The first connecting rod 101 is formed with a projection 111 having a through hole 112. The 15 second connecting rod 102 is bent and is formed with first and second locking portions 113 and 114. The first locking portion 113 has simply a flat surface extending from the second locking portion 102, but, in fact, it provides a locking function 20 as will be understood from the description given later. The second locking portion 114 has a notch.

Referring to Fig. 27, a locking member 115 25 is formed in the shape of a U. It is provided with

through holes 116 and 117 at its opposite ends.

Referring to Fig. 28, a cover 118 is substantially cup shaped and cylindrical. The lateral
5 wall of the cover 118 is formed with a cutout 119 extending through about 180°. The base wall of the cover 118 is formed with a recess 120. A through hole 121 is formed in the base wall in the recess 120 at a position to one side of the recess.

10

Referring to Figs. 29 through 33, the assembly of said first and second connecting rods 101, 102, locking member 115 and cover 118 will now be described. The first step is to align the through
15 hole 112 in the first connecting rod 101, the through holes 116 and 117 in the locking member 115 and the through hole 121 in the cover 118. In this condition, the cover 118 shown in Fig. 28 has been turned over from the illustrated position. A pivot pin 122
20 is then inserted into the through holes 112, 116, 117 and 121. One limb of the locking member 115 now fits in the recess 120 in the cover 118, so that the locking member 115 and cover 118 are rotatable as unit. The first and second
25 connecting rods 101 and 102 also extend out through

the cutout 119 in the cover 118.

By comparing Figs. 30 and 32 with Figs. 31 and 33, the operation of the reclining mechanism will now be described. In Figs. 30 and 32, the first and second connecting rods 101 and 102 are in the first folded condition where they are folded to a maximum, with the locking member 115 engaging the locking portion 113. In this condition, since the first and second connecting rods 101 and 102 are fixed by the locking member 115 so as not to open any further, the back rest holding rod 106 is fixed substantially parallel to the push rod 6, i.e., with the back rest 150 of the hammock upright.

When it is desired to bring the back rest 150 of the hammock into a lowered condition, the locking member 115 is turned clockwise to disengage it from the first locking portion 113. This operation may be performed by gripping and turning the cover 118 since if it is turned clockwise the locking member 115 is turned integrally therewith. With the locking member

115 thus disengaged, the back rest holding rod 106 may be inclined to establish the second folded condition in which the first and second connecting rods 101 and 102 are straightened to their fullest extent. Even if the hand is then removed from the cover 118, the locking member 115 will be automatically engaged by the locking portion 114. This is because the cover 118 and locking member 115 are pivotally supported on the offset pivot pin 122 and the force of gravity tends to turn the same counterclockwise at all times. The manner of engagement between the locking member 115 and the second locking portion 114 is shown in Figs. 31 and 33.

15

In this condition, the back rest 150 of the hammock is in a reclining condition. When it is desired to return the back rest 150 of the hammock into an upright condition, the cover 118 is again gripped and turned clockwise to release the engagement between the locking member 115 and locking portion 114, and the back rest holding rod 106 is raised. In the final stage of this raising operation, as shown in Figs. 31 and 33, the force of gravity on the locking member 115

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and cover 118 produce a counterclockwise force on the locking member 115 to automatically engage it with the first locking portion 113. Instead of employing gravity, a spring may be used.

5

The first cover 118 has been described primarily as an operating knob, but it goes without saying that the cover, in itself, provides a safeguard by covering the connecting portions of the first and second connecting rods 101 and 102.

10

In a hammock having the above described reclining mechanism incorporated therein, there is a danger, if the back rest 150 is greatly inclined, of the baby in the hammock slipping headforemost out of the hammock should the entire baby carriage be tilted rearwardly to lift the front wheels 71, as when negotiating the baby carriage from a road onto a sidewalk. For this reason, it is desirable to provide a head guard on the upper end of the back rest 150 over the head of the baby.

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20

Such head guard, however, is not required when the back rest 150 is in its raised position: it may even be undesirable then since it may oppress the baby. Thus, the carriage preferably
5 has a head guard and a mechanism which brings the head guard into a position generally perpendicular of the back rest at its upper end, when the back rest 150 is reclined substantially, in response to the reclining action of the back rest. Such
10 a mechanism can be obtained merely by making a simple modification or adding a simple member to the reclining mechanism of the hammock described above. Such a mechanism with a head guard will now be described.

15

Figs. 34 through 36 are views illustrating a hammock having a head guard added thereto. Fig. 34 is an enlarged diagrammatic side view, showing a back rest retaining rod in its raised
20 position; Fig. 35 is an enlarged diagrammatic side view, showing the back rest retaining rod in its lowered position; and Fig. 36 is an enlarged diagrammatic side view which supplements Fig. 35.

A head guard retaining rod 130 is pivotally connected to the upper portion of the back rest retaining rod 106 by a pivot pin 131. This state is best shown in Fig. 36. The head guard retaining rod 130 is U-shaped, though this is not shown in Figs. 34 through 36 which are side views, and is foldable at the opposite ends and at the middle of the transverse portion of the U, the foldable portion in the middle being foldable in a direction indicated by the arrows 11 in Fig. 1. This arrangement permits the folding of the baby carriage. A first connecting rod 101 is fixedly connected to the head guard retaining rod 130 by a pivot pin 131 and a fixed pin 133. Although the head guard is not shown in Figs. 34 through 36, only the head guard retaining rod 130 alone be shown therein, the head guard may be constructed as an extension of the back rest 150. Its shape is not special and so an illustration thereof is omitted.

With reference to Figs. 34 and 35, the operation of the head guard retaining rod 130 will be described in connection with the tilting movement of the back rest retaining rods 106.

In the state shown in Fig. 34, the head guard retaining rod 130 is substantially aligned with the back rest retaining rod 106 as a result of the position of the first connecting rod 101. Accordingly, the head guard retained by the head guard retaining rod 130 extends in the same plane as that of the back rest and does not cover the head of the baby.

10 If the back rest retaining rod 106 is then lowered, the state shown in Fig. 35 is established. The first connecting rod 101 is now in a tilted state. In the tilted state of the first connecting rod 101, the head guard retaining rod 130
15 extends in a direction substantially perpendicular of the back rest retaining rod 106. The head guard carried by the head guard retaining rod 130 is now functional as a head guard for protecting a baby in the hammock from slipping
20 out headforemost.

As shown in Figs. 1 through 3, the baby carriage has a basket attached thereto below the back rest for containing baggage. Fig. 37 is a
25 diagrammatic perspective view of the frame of the

basket. This frame will now be described with reference to Figs. 1 through 3 and 37.

The frame of the basket is constructed, for example, from bent metal rods of suitable diameter. Thus, a pair of L-shaped lateral rods 202 are pivotally supported at pivot points 201 spaced a predetermined distance from the lower ends of the rear legs. Each L-shaped lateral rod 202 extends rearwardly from the pivot point 201 and then upwardly. The L-shaped lateral rod 202 has an upper side rod 204 pivotally connected thereto at a pivot point 203 on the upper end thereof. The upper side rod 204 extends forwardly and its front end is pivotally supported by the associated push rod 6 at a pivot point 205. The pivot points 201 and 205 are provided by bending each of the L-shaped lateral rod 202 and the upper side rod 204 at one end to form pivot shafts. The rear ends of the upper side rods 204 are bent inwardly and spaced relative to each other. This arrangement allows the folding of the baby carriage.

The basket shown in Fig. 2 is supported by the L-shaped lateral rods 202 and upper side rods 204 which constitute a frame thereof. More particularly, the basket is in the form of a bag 206 having an opening at the top, with strips of thick fabric extending along the edges of the bag for the purpose of retaining its shape, the surfaces of the bag being formed of a net. Therefore, the basket has pliability. This is for the purpose of allowing the folding of the baby carriage and also the basket itself.

In order to support the bottom of the bag 206 and regulate the shape of the bag 206, support members 207 extend rearwardly from the rear leg connecting rod 10. The support members 207 are useful particularly when relatively heavy baggage is received in the bag 206.

The folding operation on the basket will now be described in connection with the folding operation on the baby carriage. When the baby carriage is folded, the push rod support angle bars 14 are turned in the direction of arrow 17 until they extend along the lower halves of the

rear legs 4. If attention is given to this operation, it will be understood that the distance between the pivot points 201 and 205 decreases. Accordingly, as can be seen from a comparison between Figs. 2 and 3, the upper side rods 204 are turned counterclockwise around the pivot points 203, thus drawing the L-shaped lateral rods 202 toward the push rods 6. This state, as is clear from Fig. 3, is such that the basket thus folded is substantially within the confines of the space for the folding of the baby carriage. Further during the folding of the baby carriage, the pair of push rods 6 and the pair of rear legs 4 respectively approach each other while reducing the width. This movement is not obstructed by the structure associated with the basket since the pair of upper side rods 204 are separated from each other. Further, the support members 207 are displaced with the rear legs 10 and brought to a position as shown in Fig. 3, being substantially within the confines of the space for the folding of the baby carriage. In addition, since the bag 206 is of pliable material, it will advantageously follow the movement or displacement of the L-shaped lateral rods 202 and upper side rods 204

and will be suitably deformed.

The baby carriage of basic construction described so far may have various fittings, in addition to the basket described above, and an example of such a modification is described below.

Fig. 38 is a right-hand side view of a carriage which is basically the same as that of Fig. 1 but which has an extendible seat, and a torso guard attached to the basic structure. Fig. 39 is a right-hand side view of the baby carriage in its folded state. Fig. 40 is a perspective view diagrammatically showing the middle region of the baby carriage. As shown in these figures, it is possible to attach seat extending means and a torso guard to the basic construction shown in Figs. 1, etc.

20

First, the seat extending means will be described. Fig. 41 is a perspective view of folding operative connecting rods 18 and the parts permitting extension of the seat of the baby carriage of Fig. 38. Referring to Figs. 38

25

through 41, folding operative connecting rods
18 are hollow. Each folding operative connecting
rod 18 has a bar slider 301 slidably inserted
therein. The front end of the slider 301 is
5 formed with a head 302 to enable the operator
to draw out the slider 301 or push it the slider
301 back to its retracted position. In addition,
in order to allow the slider 301 to slide within
the folding operative connecting rod 18, the
10 latter is formed with a bracket 303 and said
pivot pin 19 is inserted through said bracket 303.

A reinforcing belt 304 is stretched between
the front ends of the two sliders 301. Further,
15 a reinforcing belt 305 is also stretched between
the two folding operative connecting rods 18
forwardly of the central connecting rod 21. A
web 306 extending in a direction which crosses
the belts 304 and 305 is fixed to these and about
20 the central connecting rod 21. When the sliders
301 are not drawn out, there is a sag 307 in the
web 306. The length of the web 306 is determined
such that, when the sliders 301 are drawn out, the
sag 307 is straightened out. The seat 151

described above is formed on these belts 304,
305, 306 and the central connecting rod 21. As
best shown in Fig. 38, the seat 151 includes
a seat extension 308 hanging from the front end
5 thereof.

The seat extension 308 is for use when the
back rest 150 of the hammock is lowered into a
reclining form, as shown in phantom lines in
10 Fig. 38. It is more comfortable for the baby to
straighten its legs when reclining, and if the
sliders 301 are then drawn out by means of the
heads 302, the seat extension 308 is supported
on the belt 304 and the front end of web 306
15 and extends horizontally. This allows the baby to
straighten its legs on the seat extension 308.
If the back rest 150 of the hammock is raised
upright into a chair form, the seat extension 308
becomes unnecessary. In this case, if the sliders
20 301 are pushed in by means of the heads 302, the
seat extension 308 is brought into its hanging
state, thus allowing the baby to lower its legs
or place its feet on the foot rest.

25 The torso guard 401 will now be described.

Fig. 42 is a perspective view of an arm 1, for explanation of the torso guard 401. Fig. 43 is a perspective view of an insert 412 adapted to fit in a recess 404 in the arm shown in Fig. 42.

5 Figs. 44 and 45 are plan views, partly in section, illustrating the operation of an arbor 402 included in the torso guard 401. Fig. 46 is a sectional view showing the manner in which the insert 412 is fitted in the recess 404 when the
10 torso guard 401 is removed.

Referring to Figs. 38 through 40 and Figs. 42 through 46, the torso guard 401 comprises an arbor 402 and a cushion member 403 placed on the
15 arbor 402 to cover the latter. The cushion member 403 is made of a material which is elastic and foldable, such as urethane foam. The arbor 402 is connected between the front ends of the arms 1.

20

Referring to Fig. 42, a recess 404 is formed in the front end of each arm 1. The recess 404 has a portion of its opening closed by a wall 405 having a predetermined size. The upper surface
25 of the front end of the arm 1 is formed with a

recess 406 which is, for example, rectangular.
In the bottom of the recess 406 there is a circular
through hole 407. A circular through hole 408
is formed in the lower wall of the recess 404
5 coaxially with said circular through hole 407.
The stem 410 of a flanged pin 409 is insertable
into the circular through holes 407 and 408.
The flange 411 of the flanged pin 409 then fits
intimately in the recess 406. Therefore, the
10 flanged pin 409 will not easily be dislodged, and
if it is desired to withdraw it, the lower end
of the stem 410 may be struck with a hammer or
the like. In addition, the direction of the
common axis of the through holes 407 and 408, that
15 is, the direction in which the stem portion 410
extends, is not perpendicular to the horizontal
upper surface of the arm 1 but is slightly
inclined with respect to the same.

20 Referring to Fig. 43, an insert 412 has a
shape adapted to suit said recess 404. More
particularly, the insert is formed externally
with a notch 413 for receiving said wall 405.
A second notch 414 is formed at a position

diametrically opposite to the notch 413. The function of this second notch 414 will be described later. The insert 412 has an opening extending substantially over two out of four
5 sides and its interior is substantially hollow. The upper and lower walls of the insert 412 are provided with circular through holes 415 and 416 arranged on a central axis thereof. One edge of the opening extending substantially over
10 two sides of the insert 412 is defined by a wall 417, from which a wall 418 projects into the interior of the insert 412.

The insert 412 may be fitted in the recess
15 404 shown in Fig. 42, with the wall 405 received in the first notch 413 so that the insert 412 does not project beyond the recess 404. The four circular through holes 407, 415, 416 and 408 are then aligned with each other on a single
20 axis.

In Figs. 44 and 45, the insert 412 is shown thus fitted in the recess 404 and with the associated end of the arbor 402 mounted in the
25 insert 412. The end of the arbor 402 is formed

with a circular through hole 419 and, with said through hole 401 aligned with said through holes 407, 415, 416 and 408, the stem 410 of the flanged pin 409 may be inserted therein to pivotally support the arbor 402 thereon.

The arbor 402 has foldable portions 420 at two places. The structure of the foldable portions is such as to allow only folding from the Fig. 44 state to the Fig. 45 state. Further, the arbor is constructed to extend along a slightly forwardly curved line when the foldable portions 420 are extended to the maximum degree.

When the baby carriage is folded, the pair of arms 1 approach each other and the arbor 402 is folded at the foldable portions 420 until the lateral surface of the arbor 402 adjacent each end thereof abuts against the wall 405 and the projecting wall 418. In this folded state, the cushion member 403 is likewise bent to conform to the shape of the arbor 402 being made of a bendable material. The torso guard 401 in its folded state, as shown in Fig. 39, extends inwardly from the arms 1 and is advantageously

stored within the confines of the folded baby carriage. This is because, as already described, the direction in which the stem 410 of each flanged pin 409 extends is not perpendicular to the upper surface of the arm 1 but is slightly inclined with respect to the same.

When this baby carriage is opened, the pair of arms 1 move away from each other and the arbor 402 assumes its most extended state, as shown in Fig. 44. The lateral surface of the arbor 402 adjacent the end thereof then abuts against the wall 417 to define this state.

The torso guard 401 is also arranged so that it can be removed when it becomes unnecessary. This may be achieved simply by extracting the flanged pins 409 and separating the arbor 402 of the torso guard 401 from the arms 1. Such simple removal of the arbor 402, however, would leave open the recess 404, which is undesirable from the standpoint of external appearance and also of safety as it may be liable to cause nipping of the baby's fingers. For this reason, as shown in Fig. 46, the insert 412, once

extracted from the recess 404, may be turned through 180° around the common axis of the circular through holes 415 and 416 and fitted again in the recess 404. In this state, the closed sides
5 of the insert 412 cover the opening in the recess 404 and the wall 405 is received in the second notch 414 to establishing a snug fit. The stem 410 of the flanged pin 409 is then inserted so as to fix the parts in this stage.

86



59

CLAIMS:

1. A baby carriage comprising:

a pair of front legs each having a wheel;

a pair of rear legs each having a wheel;

connecting members for maintaining said

front legs in spaced relation and said rear legs in spaced relation;

means for folding the carriage including a pair of push rod supports each of which has a lower portion pivotably connected to a respective one of said pair of rear legs and is pivotable rearwardly of the associated leg, and a pair of generally upwardly extending push rods pivotably connected to upper portions of said push rod supports and operable to fold said upper portions downwardly about the pivots between said push rod supports and said rear legs; and

linkage means responsive to operation of said folding means when said upper portions are folded downwardly to bring said front legs towards one another, said rear legs towards one another and said connecting members towards one another and to fold said front legs and said push rods towards said rear legs.



2. A baby carriage as claimed in claim 1, wherein said linkage means include a pair of arms which have front portions pivotally connected to said pair of front legs and said pair of rear legs and rear portions pivotally connected to said push rods points spaced a predetermined distance from the lower ends of said push rods.

3. A baby carriage as claimed in claim 1, wherein said connecting members comprise a front leg connecting rod between the front legs and a rear leg connection rod between the rear legs.

4. A baby carriage as claimed in claim 2, wherein said linkage means comprises:

a pair of connecting rod turning members each slidably fitted on an associated front leg in the central region thereof;

a pair of bar links connected between said pair of connecting rod turning members and said front portions of said pair of arms; and

a pair of bars extending inwardly from said pair of front legs and pivotally installed;

and wherein said connecting members include a front leg connecting rod adapted to be downwardly foldable at the middle and pivotally supported at its opposite ends by said connecting rod turning members and also pivotally supported by said bars at pivot points spaced a predetermined distance from each end of said front leg connecting rod.

88



- 61

5. A baby carriage as claimed in claim 2 or 4, wherein said linkage means include a pair of folding operative connecting rods pivotally supported at their opposite ends by said front legs and said pusher rod supports.

6. A baby carriage as claimed in claim 5, wherein said connecting members include a rear leg connecting rod adapted to be downwardly foldable at the middle and pivotally supported at its opposite ends by the lower portions of said pair of rear legs.

7. A baby carriage as claimed in claim 6, wherein said linkage means includes:

a central connecting rod adapted to be forwardly foldable at the middle and pivotally supported at its opposite ends by the central portions of said pair of folding operative connecting rods, and

a pair of tie rods arranged in a V shape between the foldable portion of said rear leg connecting rod and pivot points spaced a predetermined distance from the foldable portion of said central connecting rod on each side thereof.



8. A baby carriage as claimed in any of the preceding claims, further including sleeves axially slidably fitted on lower end portions of said pair of push rods, and means urging said sleeves into engagement with said upper portions of said push rod supports to thereby fix the angular relationship between said push rod supports and said push rods.

9. A baby carriage as claimed in claim 8, further including operating means for disengaging said sleeves from said upper portions of said push rod supports.

10. A baby carriage as claimed in any of the preceding claims, further including a foldable handle having handle attachment portions which are pivotally connected to said pair of push rods and which are aligned with the axes of said push rods.

11. A baby carriage as claimed in claim 10, further including means for inhibiting pivoting of said attachment portions with respect to said push rods.

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63

12. A baby carriage as claimed in any of the preceding claims, further including a hammock including a back rest and a seat, and a reclining mechanism for supporting said back rest in such a manner as to permit adjusting the reclining angle.

13. A baby carriage as claimed in claim 12, wherein said reclining mechanism includes back rest retaining rods which retain said back rest and which have lower ends pivotally supported at lower regions of said push rods, and connecting means connected between said back rest retaining rods and said push rods at positions spaced predetermined distances from their lower ends for determining the angle of inclination of said back rest retaining rods

14. A baby carriage as claimed in claim 13, wherein said connecting means include first and second connecting rods pivotally connected together, and a locking member pivotally supported by said first connecting rod for fixing the angle formed between said first and second connecting rods, said second connecting member being provided at different locations with first and second engagement means selectively engageable by said locking member to retain said first and second connecting rods in first and second folded conditions respectively.



15. A baby carriage as claimed in claim 14, further including a cover for covering the connected portions of said first and second connecting rods and said locking member, said cover being attached to said locking member so as to turn integrally with the latter.

16. A baby carriage as claimed in claim 14 or claim 15, further including a head guard formed on the upper end of said back rest, and a head guard retaining rod pivotally supported by upper portions of said back rest retaining rods and fixedly secured to said first connecting rod, whereby, in said first folded condition, said back rest retaining rod is in a raised position with said head guard being substantially aligned with said back rest retaining rod, and, in said second folded condition, said back rest retaining rod is in a lowered position with said head guard retaining rod extending in a direction which crosses said back rest retaining rod.



. 65

17. A baby carriage as set forth in any of the preceding claims, further including a basket which comprises a pair of L-shaped lateral rods pivotally supported at pivot points spaced a predetermined distance from the lower ends of said rear legs and extending rearwardly and then upwardly, a pair of upper side rods pivotally supported at their ends by the upper ends of said L-shaped lateral rods and the central portions of said push rods, and a pliable material which is retained by said L-shaped lateral rods and said upper side rods and whose opposite lateral surfaces are defined by said L-shaped lateral rods and said upper side rods.

18. A baby carriage substantially as hereinbefore described with reference to the accompanying drawings.

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