April 21, 1936. L. LARSEN 2,037,986

BABY CARRIAGE

Filed Aug. 7, 1935 3 Sheets-Sheet 1

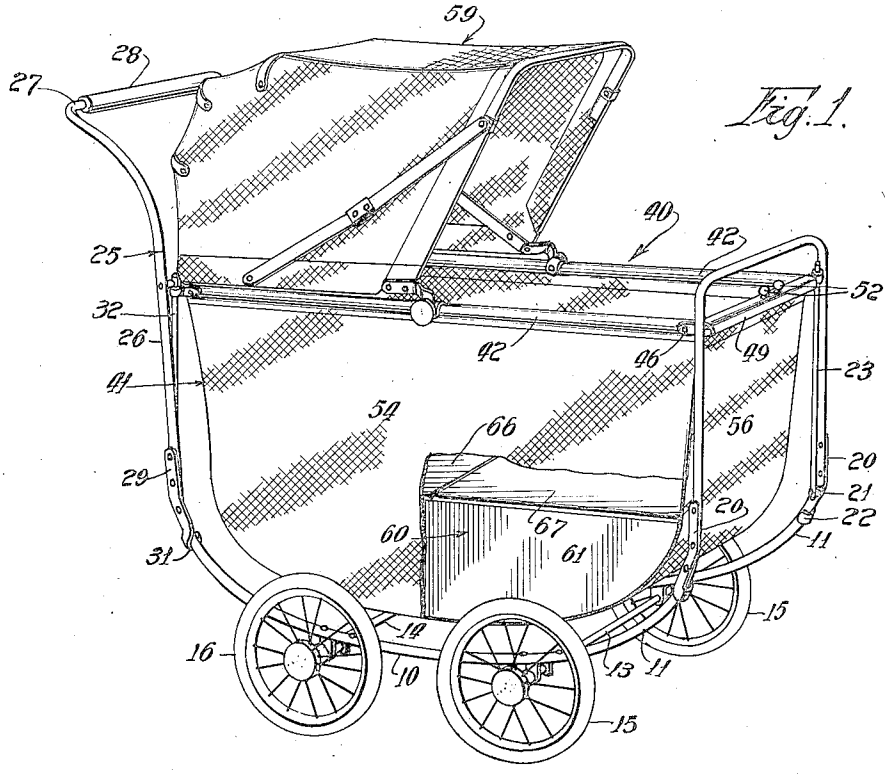
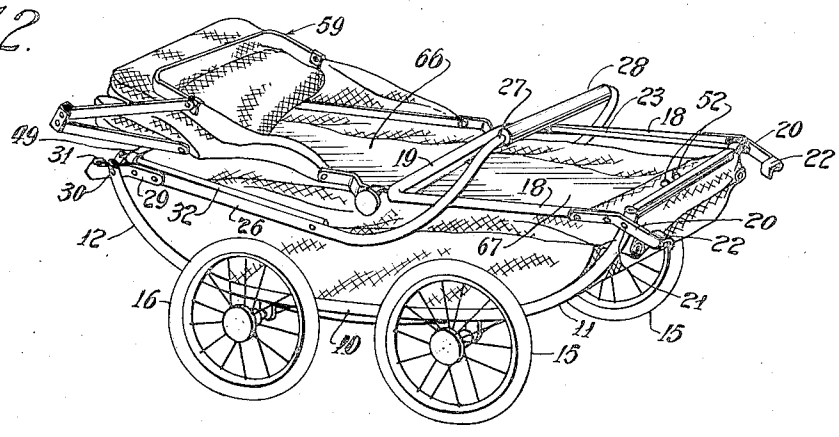


Fig. 1.

Fig. 2.



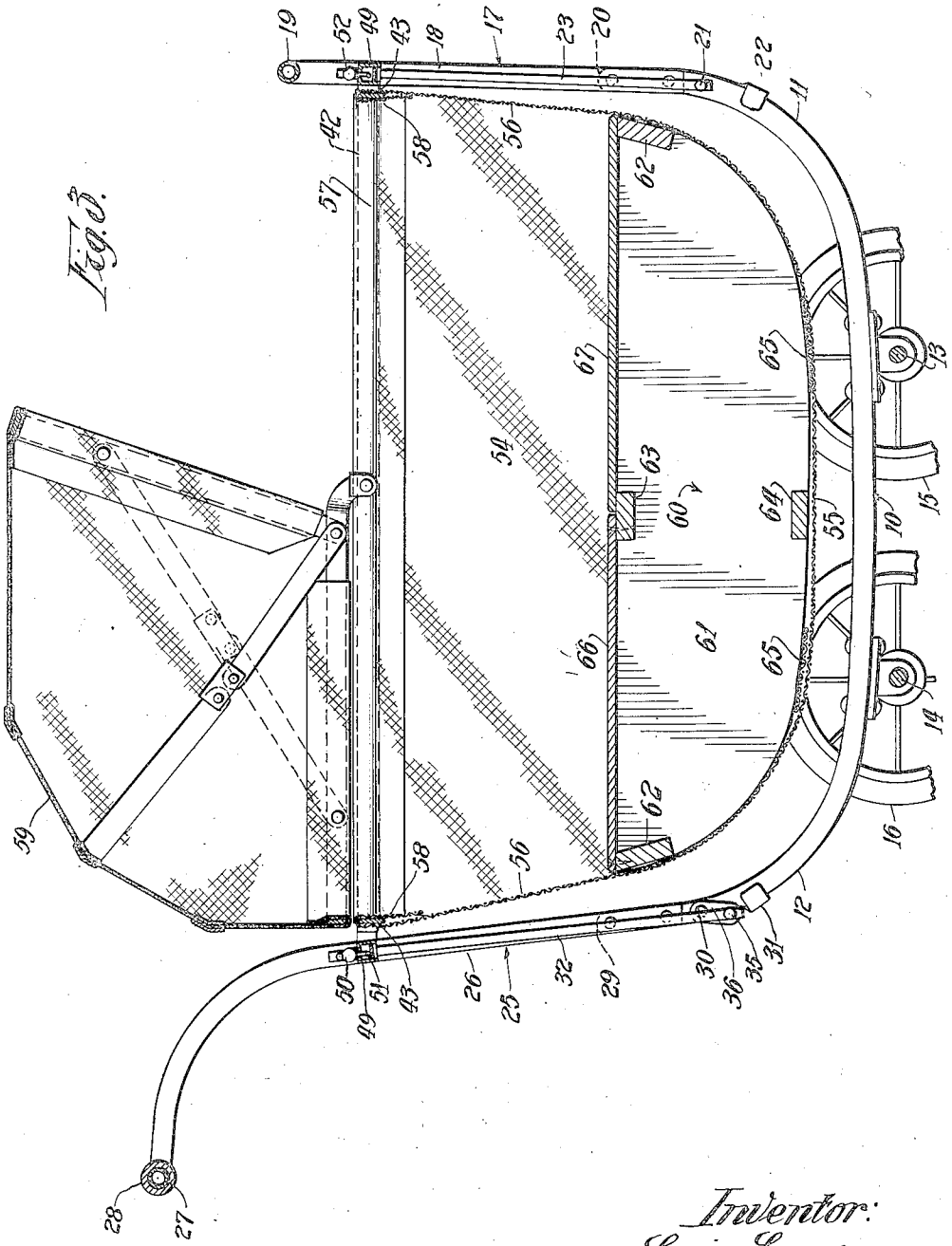
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April 21, 1936. L. LARSEN 2,037,986

BABY CARRIAGE

Filed Aug. 7, 1935 3 Sheets-Sheet 2

Fig. 5.



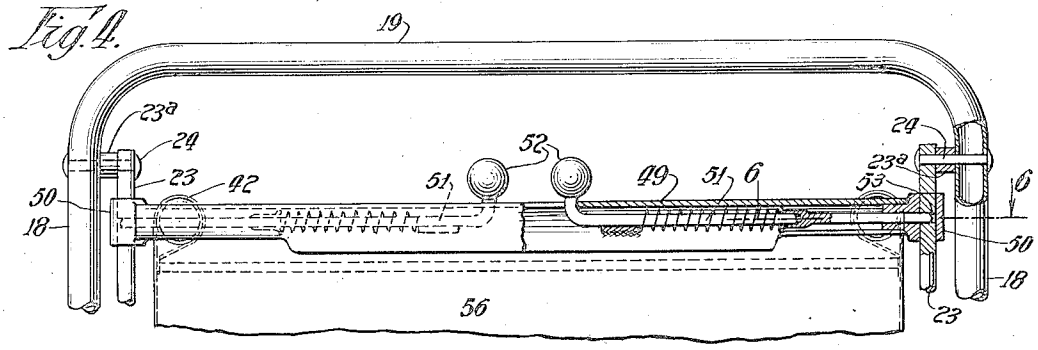
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April 21, 1936. L. LARSEN 2,037,986

BABY CARRIAGE

Filed Aug. 7, 1935 3 Sheets-Sheet 3

Fig. 4.



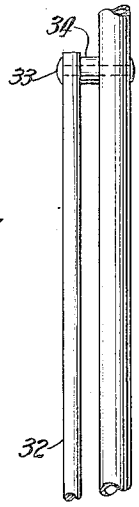
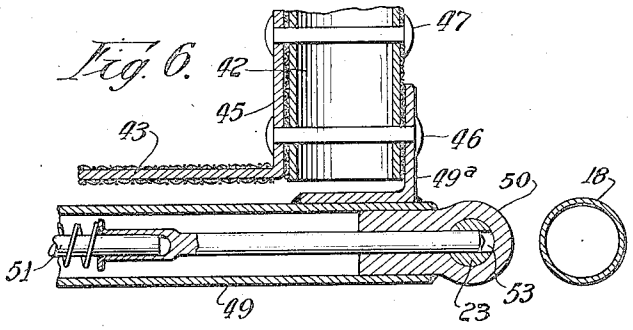


Fig. 5.

Fig. 6.



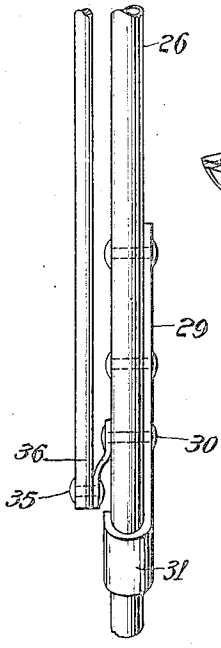
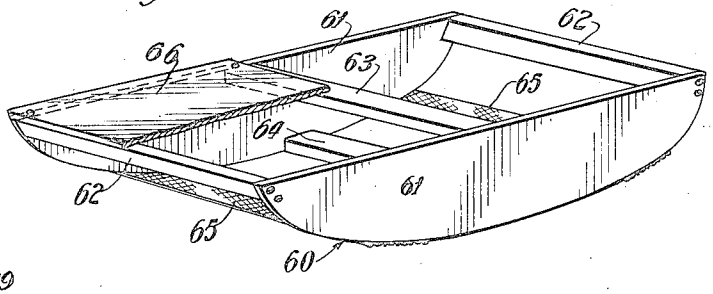


Fig. 7.



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UNITED STATES PATENT OFFICE

2,037,986

BABY CARRIAGE

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Application August 7, 1935, Serial No. 35,021

14 Claims. (Cl. 280—36)

This invention relates to improvements in baby carriages and it consists of the matters hereinafter described and more particularly pointed out in the appended claims.

One of the objects of the present invention is to provide a baby carriage of the so-called "coach" type, which may be quickly and easily folded when necessary, so as to occupy but minimum space, and may be as readily opened up for purposes of use.

Another object of the invention is to provide a carriage of this kind which includes foldable end frames and a collapsible body, the latter operating when in a position for use, to hold the end frames in their extended position and at the same time be supported in its extended condition by said end frames.

A further object of the invention is to provide a carriage of this kind having a body which by the actuation or release of simple locking means, collapses into its folded condition under gravity action.

Again, it is an object of the invention to provide a novel structural connection between the body top frame and end frames of a carriage of this kind, whereby the body frame has an easy sliding movement with respect to the end frames so that no binding action takes place in folding or extending the carriage.

The above mentioned objects of the invention, as well as others, together with the several advantages thereof, will more fully appear as I proceed with my specification.

In the drawings:

Fig. 1 is a perspective view of the improved baby carriage when extended or opened into its position of use, certain parts of the body thereof being shown as broken away to more clearly disclose the interior construction.

Fig. 2 is a perspective view of the carriage in its folded or collapsed condition.

Fig. 3 is a longitudinal vertical sectional view through the carriage when extended or opened as shown in Fig. 1.

Fig. 4 is a fragmentary view in elevation, on an enlarged scale, of the top portion of the front end of the carriage when in its open or extended position.

Fig. 5 is a fragmentary view in elevation of a side portion of the rear end of the carriage when in its open or extended position.

Fig. 6 is a detail horizontal sectional view through a part of the carriage on a further enlarged scale as taken on the line 6—6 of Fig. 4.

Fig. 7 is a perspective view of a frame employed in the bottom of the carriage body and upon which the baby occupant is placed and which frame holds the bottom of the body to shape when the carriage is in its open or extended position.

Referring now in detail to that embodiment of the invention, illustrated in the accompanying drawings, the carriage includes a wheel frame comprising a pair of substantially horizontal, longitudinal frame members 10—10 having upturned front and rear ends 11 and 12 respectively. The frame members are held in spaced relation by means of front and rear axles 13 and 14 carrying the usual pairs of wheels 15 and 16 respectively. As the specific structure whereby the axles are connected to the frame members 10 and 11, forms no part of the present invention, the same is not illustrated or described in detail.

17 indicates the front end frame of a generally inverted U shape and including side members or legs 18—18 and a top connecting member 19. The bottom end of each side member 18 has a clip strap 20 secured to the outside thereof. Each strap extends a suitable distance beyond the extremity of its associated side member and is pivotally connected to the extremity of an upturned frame member end 11 by means of a pin 21. The extremity of each clip strap is bent to form a hook 22 to engage a part of the associated frame end 11 so as to limit the pivotal or swinging movement of the front end frame in one direction, to a substantially upright extended position as best shown in Figs. 1 and 3.

Extending parallel with and along the inside of each member 18 of the frame 17 is a rail 23. The bottom end of each rail is operatively secured in place by the pivot 21 and the top end of each rail is operatively secured in place by a pin 24 passing through the associated side member 18 near the cross member 19. Each rail is held in spaced relation from its associated member 18 by means of washers 23a disposed upon the respective pins 21—24 as best shown in Fig. 4.

From the construction above described, it is apparent that the end frame may be swung from its folded or collapsed position wherein it is disposed substantially horizontal as best shown in Fig. 2, to its unfolded, open or extended, substantially upright position as shown in Fig. 1, and vice versa. It is to be understood, however, that the upright position is determined by the engagement of the hooks 22 of the clip straps,

with the associated upturned end 11 of the wheel frame side members 10—10.

25 indicates the rear end frame also of a generally inverted U shape. It includes side members or legs 26—26 and a top connecting member 27. The side members 26—26 of said frame are of a length greater than the corresponding members of the front end frame. The top ends of said side members are curved rearwardly so as to bring the cross member 27, when said rear end frame is in its extended position, into an elevation convenient for use as a push handle. A hand grip 28 may be employed on the cross member for this purpose. The top curved ends of the side members are also spread slightly outwardly so as to permit this frame to fold down upon the front end frame 17 into a more compact folded condition as best shown in Fig. 2.

The bottom end of each side member 26 has a clip strap 29 secured to the outside thereof and which clip strap is similar to the clip strap 20 before mentioned in connection with the front end frame 17. Each clip strap 29 extends a suitable distance beyond the extremity of its associated side member and is pivotally connected to the corresponding end 12 of the member 10 by a pin 30. The extremity of each clip strap is bent to form a hook 31 to engage a part of the associated end 12 so as to limit the pivotal or swinging movement of the rear end frame, in one direction to a substantially upright extended position as shown in Figs. 1 and 3. In this so-called upright extended position, the bottom straight ends of the side members do not extend truly perpendicular but lean slightly rearwardly thereof as this gives a better push angle for the frame in pushing the carriage in the conventional manner.

Extending substantially parallel with and along the inside of the straight bottom portion of each member 26 of the rear end frame 25 is a rail 32. The top end of each rail is secured in place with respect to its associated side member 26 by means of a pin 33, a washer 34 on said pin holding this end of the rail in the desired spaced relation with respect to the side member. The bottom end of each rail 32 is pivotally connected as at 35 to one end of a link 36 the other end of which is mounted on the pin 30 before mentioned. This link arrangement permits a limited amount of swinging movement of the bottom end of the rails 32 for a purpose to appear later.

40 indicates as a whole, the body of the carriage which includes a body fabric 41 and a rigid top frame comprising the side members 42 and end members 43. The main end members 43 each have end portions 45 bent to engage the side members 42 and secured thereto by rivets or pins 46—47. Parallel with but spaced outwardly from each end member 43, is a channel bar 49 of inverted U shaped cross section. This bar carries end brackets 49a which are pivotally connected to the associated top frame members 42 by the pins 46 before mentioned.

The extremity of each bar 49 is made as a sleeve 50 embracing the rails 23 and 32 so as to have a sliding engagement thereon. In each bar 49 is a pair of spring pressed plungers 51—51, the inner ends of which are bent to extend through slots in the top side of said bar and there be provided with knobs 52. The outer end of each plunger slides through a hole in the sleeve to engage in a recess 53 in the top end of the respective rails 23 and 32. The recess 53 appears best in Fig. 4.

The body fabric 41 includes side walls 54, bottom wall 55 and end walls 56, suitably secured together at the margins. The top margin of the side and end walls are formed to provide pockets 57 and 58 respectively to receive the side bars 42 and end bars 43 of the body top frame and whereby the body fabric is operatively secured as a whole to the top frame.

The side walls of the body are cut to such pattern that when said body is in its open or extended condition, it substantially follows the contour of the wheel frame members 10 and the front end frame and the bottom portion of the rear end frame.

The top frame for the body is of such length that when the carriage is in its unfolded open position, it exerts an outward pressure (forwardly and rearwardly) on the end frames to slightly tension the clip straps 20 and 29 so that said frames are somewhat tensioned to rigidify the frame structure, as a whole.

Associated with the body is a foldable hood 59 of any approved form that is pivotally connected to the side members of the body top frame, at a point about midway the ends thereof.

The body fabric being flexible, there is provided within the bottom of the body, a frame 60 best shown in perspective in Fig. 7, which not only holds the body bottom to form, but which supports the usual cushioning material for the baby occupant.

The body bottom frame comprises spaced side members 61 preferably of wood, and rigid connecting end and top and bottom bars 62—63 and 64 respectively, there being flexible connecting straps 65 between the end and the bottom center bars. The bottom edges of the side members 61 are cut on a curve substantially to conform to the cut of the bottom of the fabric body to hold the same to shape.

The top rear end half of the body bottom frame has a seat member 66 rigidly secured to one end bar 62 and a part of the top center bar 63. A closure member 67 is provided for the front end half of the body bottom frame and which closure member is removably engaged on the other end bar 62 and the other part of the top center bar. Both the seat member 66 and associated closure member 67 may be suitably padded and when in place upon the frame, provide the support upon which the usual carriage robes and pillows may be placed for the baby. The space within the body bottom frame provides a convenient storage compartment for desired articles of use, and which space is accessible by the removal of the closure member 67.

Assume that the carriage is in its extended position and it is desired to fold the same for storage or for transport as in an automobile. The operator grasps the two knobs 52 associated with the bar 49 of the front end frame and moves said knobs toward each other. This retracts the ends of the plungers 51 from the recesses 53 in the rails 23. The gravitation effect of the front end of the body causes it to slide down the rails 23 to collapse this end of the body fabric 41 after which the front end frame 17 is swung inwardly and downwardly upon the front end of the body top frame. In this downward movement of the end frames 17, the bar 49 pivots about the pins 46, and forces the associated end of the body downwardly into a more compact folded condition.

The knobs 50 associated with the rear end frame are then grasped and moved toward each other and this retracts the plunger rods 51 from

the recesses 53 in the rails 32 so that the gravitation effect causes the rear end of the body to slide downwardly on said rails to collapse the rear end of the body fabric after which the rear end frame 25 is swung inward and downward upon the folded down front end frame 17. In this downward movement of the body, its bottom first comes to rest upon the axles 13 and 14, the side walls and end walls folding into pleats as best appears in Fig. 2. Due to the inclination of the end frame 25, as the rear end of the body slides down the rails 26, the bottom ends of the rails 32 swing rearwardly, the link connection before mentioned, for the bottom ends of said rails, permitting this movement so that no binding action can cramp the downward folding action of the rear end of the body. As the rear frame swings downwardly, it operates through the associated bar 49 to force this end of the body into a more compact folded condition.

To open up or extend the carriage into a position of use, the rear frame 25 is first swung upwardly into its substantially upright position and then the front end frame may be swung upwardly into its substantially upright position. An upward lift on first one bar 49 and then the other, will cause the body to be opened up or extended, the plungers 51 of said end bars snapping into the recesses in the top end of the rails 23—32. The top frame of the body is of such length as to force the end frames slightly outwardly so that the associated clip straps are somewhat tensioned to have a tight engagement with the ends 11 and 12 of the side members of the wheel frame. Thus the body top frame holds the end frames in the upright extended condition and in turn is supported in an extended condition by said end frames. This provides a structure which in its extended position is extremely strong and rigid.

While in describing the invention, I have referred in detail to the form, arrangement and construction of the various parts thereof, the same is to be considered only in the illustrative sense so that I do not wish to be limited thereto except as may be specifically set forth in the appended claims.

I claim as my invention:

1. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including a pair of members pivotally connected to the ends of said side members so as to be swung downwardly and inwardly toward each other from a substantially upright position to a position substantially parallel with said side members, a collapsible body having a rigid top frame slidably mounted at its ends with respect to said end frame members, and means for releasably locking the ends of the top frame of the body to the associated end frames so as to hold the latter in their substantially upright position and so that said body is supported thereby in its extended condition.

2. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including a pair of members pivotally connected to the ends of said side members so as to be swung downwardly and inwardly toward each other from a substantially upright position to a position substantially parallel with said side members, a collapsible body having a rigid top frame slidably mounted at its ends with respect to said end frame members, and means carried by each end of the top frame of the body for releasably locking said ends of the body frame to the associated end frames so as to hold the latter in their substantially upright position and so that said body is supported thereby in its extended condition.

3. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including a pair of members pivotally connected to the ends of said side members so as to be swung downwardly and inwardly toward each other from a substantially upright position to a position substantially parallel with said side members, a collapsible body having a rigid top frame slidably mounted at its ends with respect to said end frame members, and releasable spring pressed plungers carried by each end of the top frame of the body for engaging parts of the associated end frames to lock the latter in their substantially upright position and so that said body is supported thereby in its extended condition.

4. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including side members, means providing a pivotal connection between the side members of the end frames and the ends of the side members of the wheel frame, coacting means on the side members of the end frame and on the side members of the wheel frame, which limit the upward and outward swinging movement of the end frames to a substantially upright position, a collapsible body having a rigid top frame slidably mounted at its ends with respect to the side members of said end frames, and means for releasably locking the ends of the top frame of the body to the associated end frames so as to hold the latter in their substantially upright position and so that said body is supported thereby in its extended condition.

5. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including a pair of side members pivotally connected to the ends of said side members and having a substantially upright extended position, a collapsible body having a relatively heavy rigid top frame, means for slidably connecting the ends of the top frame with respect to portions of the side members of the end frames at a point spaced upwardly from the pivotal connection therefor, and means for releasably locking the ends of the body frame to the associated end frames so as to hold them in their upright extended position and to be supported thereby in its extended condition, said body frame having such weight as to operate by gravity when unlocked, to slide down said side members of the end frames into a collapsed condition so that said end frames may be swung inwardly and downwardly into a folded position substantially parallel with the side members of the wheel frame.

6. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including a pair of side members pivotally connected to the ends of said side members and having a substantially upright extended position, a collapsible body having a relatively heavy rigid top frame, means for slidably connecting the ends of the top frame with respect to portions of the side members of the end frames at a point spaced upwardly from the pivotal connection therefor, and means for releasably locking the ends of the body frame to the associated end frames so as to hold them in their upright extended position and to be supported thereby in its extended condition, said

body frame having such weight as to operate by gravity when unlocked, to slide down said side members of the end frames into a collapsed condition so that said end frames may be swung inwardly and downwardly into a folded position substantially parallel with the side members of the wheel frame, one of said end frames being wider at one end than the other end frame to fold down outside said other end frame when the latter is in its folded position.

7. A folding baby carriage having wheel frame portions and end frame portions pivotally connected thereto so as to be swung from a substantially horizontal folded position into a substantially upright extended position, a collapsible body having a rigid top frame including end members, bars parallel with each end member of the top frame and each slidably mounted with respect to an associated end frame, and means for releasably locking said bars to the upper portions of the associated end frames when the latter are in their upright extended position for holding said end frames in said upright position and for holding said body in its extended condition, said top frame when said bars are unlocked from said end frames, operating through gravity to slide down said end frames into a collapsed condition so that said end frames may be swung inwardly and downwardly into a folded condition upon the collapsed body.

8. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including side members pivotally connected to the ends of said side members of the wheel frame so as to be swung from a substantially horizontal folded position to a substantially upright extended position and vice versa, a rail carried by each side member of the said end frames, a collapsible body including a top frame, means providing a sliding engagement of portions of said top frame with said rails, and means for releasably locking said portions of the top frame to upper portions of said rails when said end frames are in their extended position so that said top frame holds said end frames in said upright position and in turn is supported thereby to hold the body in its extended condition.

9. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including side members pivotally connected to the ends of said side members of the wheel frame so as to be swung from a substantially horizontal folded position to a substantially upright extended position and vice versa, a rail carried by each side member of the said end frames, a collapsible body including a top frame having end members with portions engaged on the rails of the associated end frame for a sliding guided movement, and means carried by said end members for releasable engagement with the upper portion of said rails when said end frames are in their upright extended position so that said top frame holds said end frames in their extended position and in turn is supported thereby to hold the body in its extended open condition.

10. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including side members pivotally connected to the ends of said side members of the wheel frame so as to be swung from a substantially horizontal folded position to a substantially upright extended position and vice versa, a rail carried by each side member of the said end frames, a collapsible body including a top frame having end members with portions engaged on the rails of the associated end frame for a sliding guided movement, and spring pressed plungers carried by said end members retractably engaged with upper portions of said rails when said end frames are in the upright extended position to hold said end frames in said last mentioned position and at the same time be supported thereby and to hold the body in its extended condition.

11. In a folding baby carriage embodying therein a wheel frame including substantially horizontal side members, an end frame including side members pivotally connected to the ends of said side members of the wheel frame, means on the side members of one frame for engaging the side members of the other frame for limiting the upward swinging movement of the end frame into an upright extended position, a rail carried by each side member of the end frame, a collapsible body having a rigid top frame, means carried by the end of the top frame and slidably engaged on the rails, and devices also carried by the last mentioned means for entering a part of said rail to releasably lock the end of said top frame to the top end of the end frame when the latter is in its upright extended position.

12. In a collapsible baby carriage, a collapsible body including a frame comprising side and end bars and a body fabric operatively secured to said side and end bars, a member arranged parallel with the end bar and also connected to the side bars, an end frame pivoted at its bottom end for a swinging movement in the direction of the length of said side bars and including side members, a rail carried on the inside of each side bar of the end frame, means slidably engaging the ends of said member parallel with the end bar upon said rails, and spring pressed plungers carried by said member and adapted to engage a part of each rail to lock said member thereto.

13. A folding baby carriage embodying therein a wheel frame including substantially horizontal side members, end frames each including side members pivotally connected to the ends of said side members of the wheel frame so as to be swung from a substantially horizontal folded position to a substantially upright extended position and vice versa, a rail associated with each side member of said end frames, means for securing said rail in spaced relation with respect to the associated side member, a collapsible body including a top frame, means providing a sliding engagement of portions of said top frame with said rails, and means for releasably locking said portions of the top frame with respect to upper portions of said rails when said end frames are in their extended position so that said top frame holds said end frames in said upright position and in turn is supported thereby to hold the body in its extended condition.

14. In a folding baby carriage, the combination of a wheel frame including substantially horizontal side members, an end frame including side members pivotally connected to the ends of the side members of the wheel frame so as to be swung from a substantially folded position to a substantially upright extended position and vice versa, a rail associated with, but spaced laterally from each side member of the end frame, means

providing a pivotal connection between one end of each rail and its associated side frame member, means providing a swingable link connection between the other end of each rail and its associated side frame member, a collapsible body including a top frame, means providing a sliding bearing engagement between one end of said top frame and said rails, and means carried by said top frame and releasably engaging one end of each rail to lock the end frame in its upright extended position.

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