March 24, 1953 H. E. CORNISH 2,632,654

FOLDING PERAMBULATOR

Filed July 2, 1951 3 Sheets-Sheet 1

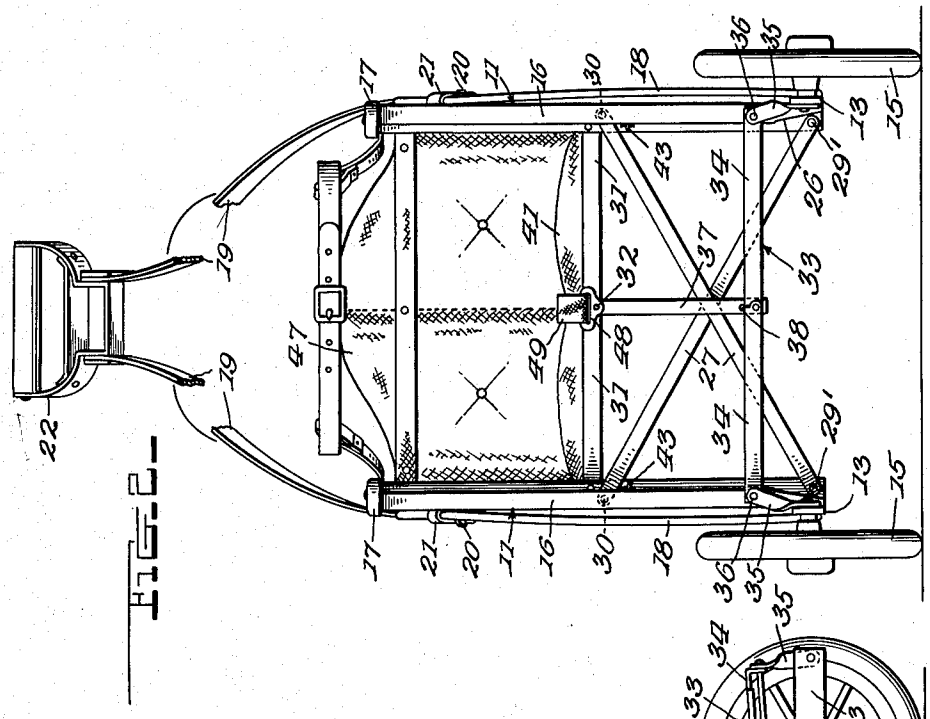


FIG. 2

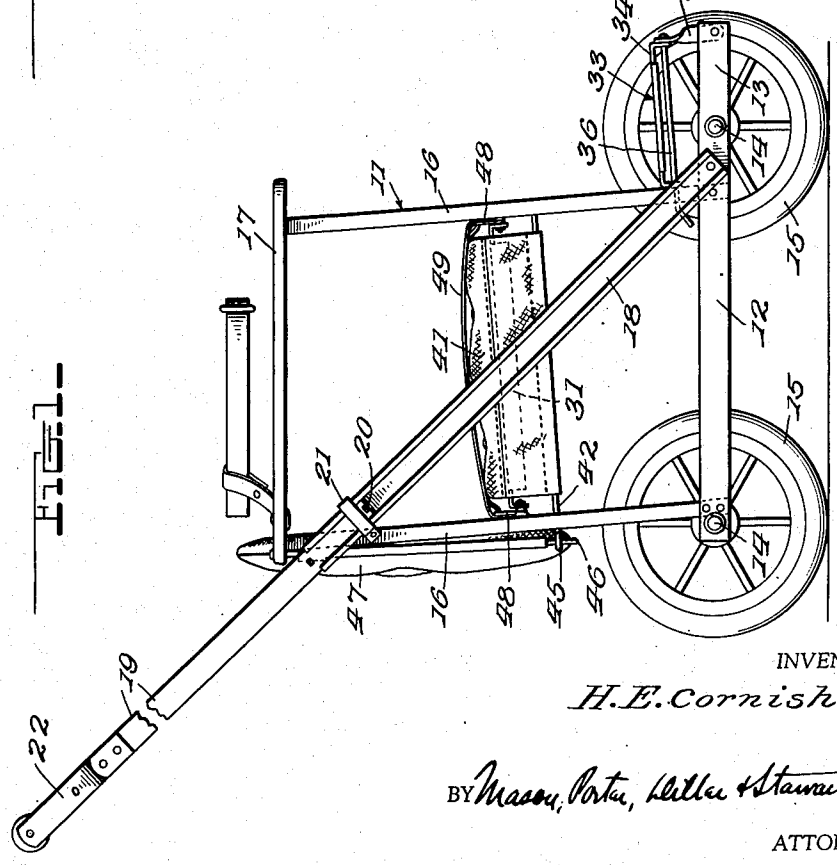


FIG. 1

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FIG. 4

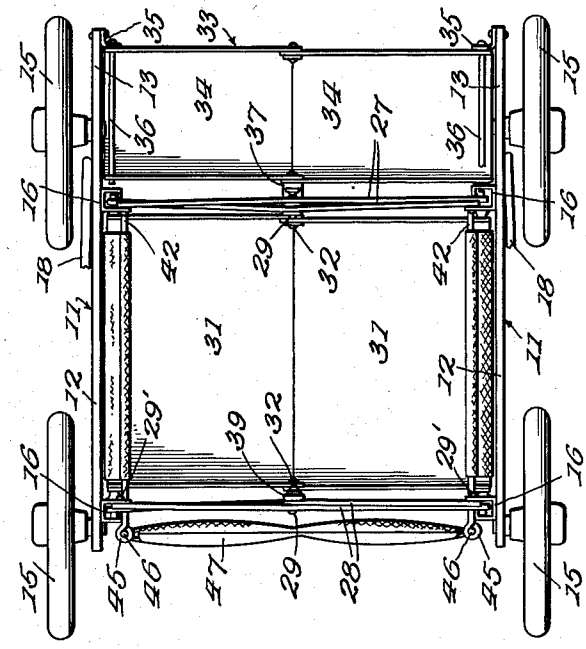
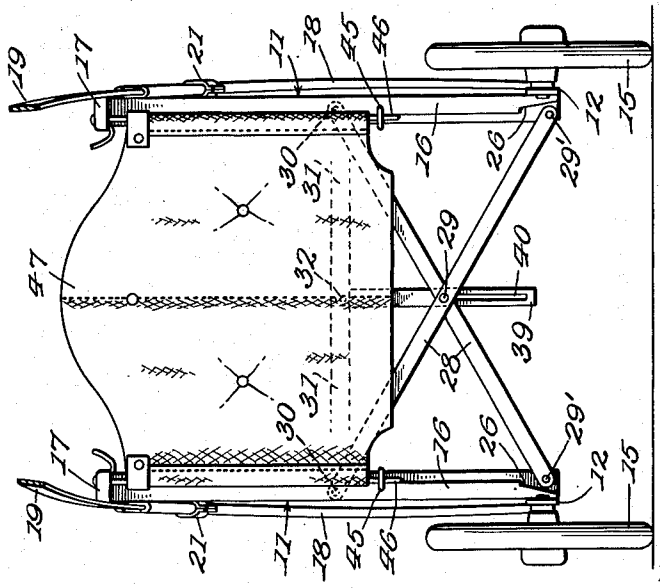


FIG. 3



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FIG. 5

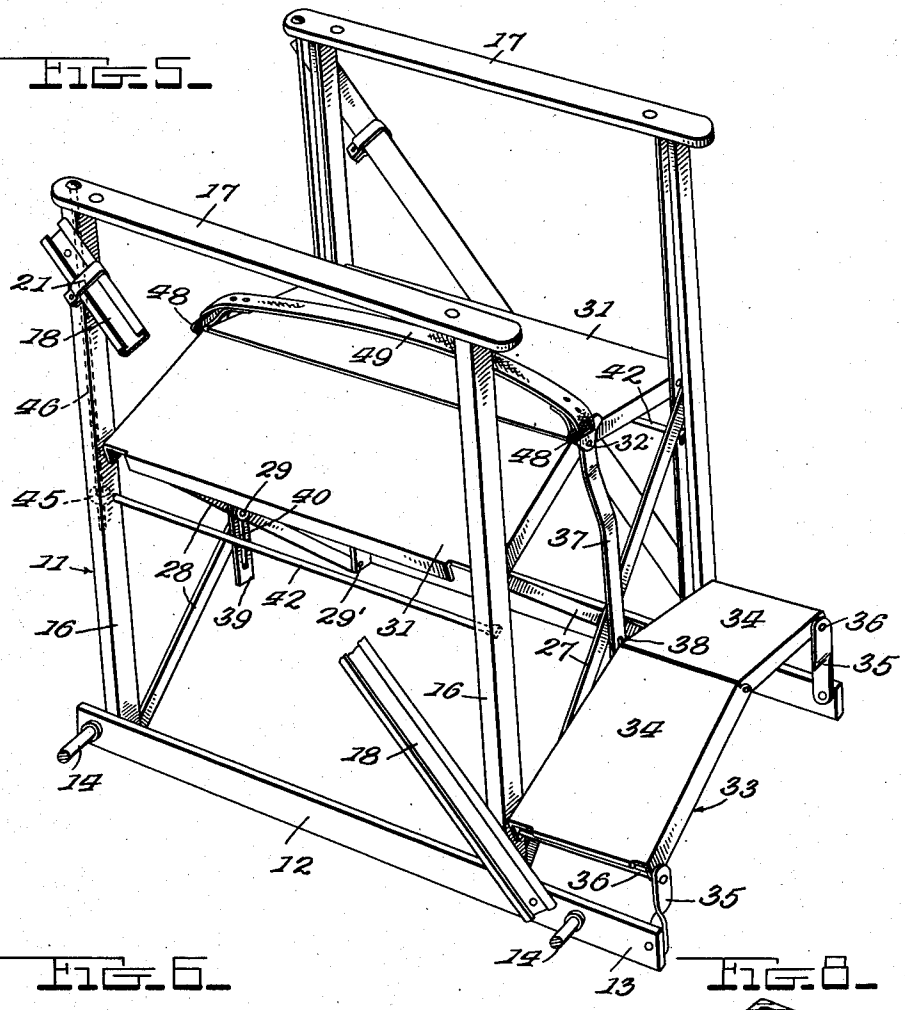


FIG. 6

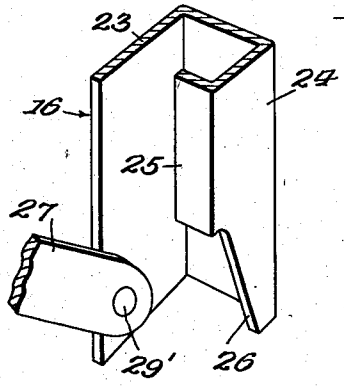


FIG. 7

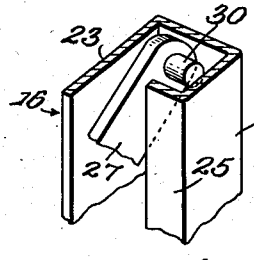
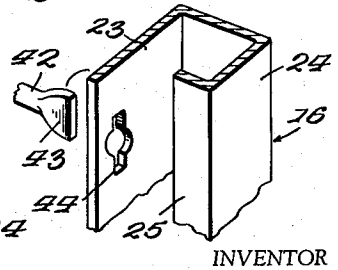


FIG. 8



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Patented Mar. 24, 1953 2,632,654

UNITED STATES PATENT OFFICE

2,632,654

FOLDING PERAMBULATOR

Harold Edward Cornish, Bankstown, New South Wales, Australia

Application July 2, 1951, Serial No. 234,696

9 Claims. (Cl. 280—42)

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The specification which follows relates to certain improvements in folding perambulators or baby carriages. It is a further development of the carriage disclosed in my prior United States patent granted March 13, 1951, No, 2,545,069.

The earlier structure dealt with rigid side frames capable of being laterally separated to provide a seat, back and foot-rest, with an appropriate handle for pushing and guiding the vehicle.

The present invention is directed to further improvements and developments in the seat and foot-rest as well as minor structural details.

It is an object of my invention to provide for conjoint operation of the seat and foot-rest.

It is a further object of my invention to provide an improved handle means for collapsing the seat and foot-rest and carrying the vehicle in folded condition.

Among the objects of my invention is the provision of adequate support from below of the seat in its operating position.

A still further object of my invention is the provision of improved mounting for the foot-rest.

An object of the invention is also the provision of fastening the seat cushion and locking the fastening means against disengagement.

More particularly, the invention contemplates the assembly of a child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, the members having inner side flanges and outer side flanges with inturned edges, a pair of cross-bars pivoted at their lower ends to the inner flanges of each side member and having studs at their upper ends slidably confined within the inturned edges of the outer flanges in the opposite channel members, a seat having its side edges pivotally held at each side on the inner flanges of the channel members and having a central longitudinal hinge, a foot-rest pivotally held at its sides on the outer flanges of the channel members, said foot-rest having a central longitudinal hinge and a link connecting the front of the seat hinge with the rear of the hinge of the foot-rest.

On the accompanying drawings I have shown the invention in its several details of construction.

In the drawings

Fig. 1 is a side elevation of the improved perambulator opened for use;

Fig. 2 is a front elevation of the same;

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Fig. 3 is a rear elevation;

Fig. 4 is a bottom view;

Fig. 5 is a perspective view of the perambulator partially collapsed;

Fig. 6 is a fragmentary detail view in perspective of a channel member and the pivoted cross-bar;

Fig. 7 is a like view of the channel member and the upper end of the cross-bar and

Fig. 8 is a fragmentary detail view in perspective of the mode of fastening the rods for holding the edges of the seat cushion.

By way of example, and as illustrating the preferred form of my invention, I have shown on the drawings a folding perambulator or baby carriage built up from two side frames 11, constructed of rigid metal parts. These side frames can be drawn together into a compact arrangement, such as is shown in my earlier patent above referred to.

Each frame has a lower horizontal bar 12, the forward end of which has an extension 13. These bars 12 each have two stub shafts 14 on which wheels 15 are mounted.

The side frames also include two vertical channel members 16, rigidly riveted or otherwise attached to the lower horizontal bars. The channel members are connected at the top by arm rests 17, also rigidly attached. The frames therefor form parallelograms. Diagonal guide members 18 extend from the front of the horizontal bars 12 to the top of the rear channel member 16. These guide members are channeled, and receive flexible metallic arms 19. Each arm 19 carries a tooth 20 at the lower end, which strikes a rigid collar 21 clamped across the upper end of the member 16 to limit the backward extension of the arms.

The rear ends of the arms are connected by a D-handle 22. This provides a spacing between the arms 19 when the frame is collapsed. In this way, the handle when brought down serves with the arms to prevent undesired opening of the structure.

Each channel member 16 has an inner straight flange 23, and an outer flange 24. The outer flange has an inturned edge 25 which is cut away at the bottom, as shown at 26, for facilitating assembly.

The rigid side frames are held in parallelism by means of two pairs of cross-bars 27, 28. One pair of cross-bars connects the front channel members 16, while the other pair of cross-bars 28 connects the rear pair of channel members 16.

Each pair of cross-bars has its lower ends riveted, as shown at 29', to the inner straight flange 23 of the channel member 16. These form pivots controlling the movement of the cross-bars 27, 28. Each pair of cross-bars is pivoted together at the mid-point by means of rivets 29 or the like.

At the top, each cross-bar carries a stud 30. This stud slides vertically in the channel member and is confined within the channel by means of the inside inturned edge 25. This is clearly shown in Fig. 7.

I have provided a hinged seat made of two rigid metal portions 31, 31. These have a center hinge 32 established by riveting the portions 31 together at the front and rear. The opposite sides of the portions 31 are riveted to the inner flanges 23 of the channel members 16. In each instance, the riveting permits the parts to have pivotal movement.

A foot-rest 33 is also provided of two metallic portions 34, 34. These also are riveted together at front and rear along the center line to permit movement as a hinge.

The front portions 13 of the horizontal bars 12 are provided with vertical extensions 35, 35. These are rigidly attached to the bars. Pivot rods 36 extend horizontally between the vertical extensions 35, and the outer flanges of the forward channel members 16. These pivot rods carry the portions 34, 34 and permit the latter to take a horizontal position mutually braced at the center hinge and supported at the outer sides. A link 37 extends downwardly from the front of the center hinge 32 of the seat. This link is offset, so that it is in front of the forward pair of cross-bars 27. The lower end of the link 37 is slotted, as shown at 38. The rear pivoting rivet of the foot-rest passes through this slot, so that the link may rest upon the pivot when the foot-rest is horizontal, or may allow a certain degree of relative movement when the structure is collapsed or folded.

A link 39 is riveted to the hinge at the rear of the seat, as shown in Fig. 3. This link has a long slot 40 which receives the pivot of the rear pair of cross-bars 28. Here again, the seat and cross-bars are capable of relative movement. However, the seat, when horizontal, rests upon the link 39 which in turn is supported by the pivot of the cross-bar.

A cushion 41 of filled fabric is provided to rest upon the side portions 31. This cushion is held down by means of two rods 42, 42. These rods extend substantially horizontally between the channel members 16. The front end of each rod 42 is provided with a key 43 which can be inserted through a slot 44 in the inner flange 23. A quarter-turn of the rod then locks it from accidental removal. The rear end of the rod 42 has an eyelet 45 which is horizontal when the key is locked.

The rods 42 are threaded through the sides of the cushion 41 in assembly.

The rods are prevented from disengagement by means of vertical rods 46. These run vertically behind the rear channel members 16. At the bottom, they pass through eyelets 45, and at the top they are riveted to the arm rests. These rods 46 are threaded through the sides of a back cushion 47.

Slotted plates 48, 48 are also part of the pivots at the front and rear of the center hinge 32 of the seat. A strip of webbing 49 extends loosely between the slotted plates. This forms means

for holding the cushion down at the center when the seat is spread out. Also, when the carriage is folded, the strip is brought up into the same plane with the arm rests 17. As the arm rests are spaced apart, they do not form a satisfactory carrying grip or handle. However, the intermediate strip 49 can be used as a handle. It will also apply the lifting force to the center of the seat both in the folding operation and in carrying. This prevents the seat from opening up when not desired.

In the arrangement set out, the structure in the prior patent has been altered to provide manifested advantages and improvements. The rigid side frames when separated or extended bring the seat portions into a horizontal plane and distend the seat cushion. At the same time, the foot-rest is spread out and connected by a link to the seat portions. Likewise, the rear pair of cross members are connected to the seat portions in such a way as to form a positive central support.

To fold or collapse the device it is only necessary to draw up on the webbing 49. This causes the seat portions to fold, and at the same time folds the foot-rest.

The seat cushion is locked into place by the same means which supports the back cushion.

There results a convenient and compact vehicle which is rugged and easy to manufacture.

While I have described the preferred form of the invention and illustrated it on the accompanying drawings, it will be apparent that numerous changes in proportions, materials and structural details may be carried out without departing from the scope of the invention as defined in the following claims.

What I claim is:

1. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, two pairs of cross-bars, each pair pivoted together at their mid-points and also pivoted at their lower ends to a channel member and having their upper ends slidably confined in the opposite channel members, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, a supporting link connecting the rear of the seat hinge with the pivotal mid-point of the adjacent cross-bars, and a foot-rest pivotally held at its sides on the side frames and having a central longitudinal hinge.

2. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, two pairs of cross-bars, each pair pivoted together at their mid-points and also pivoted at their lower ends to a channel member and having their upper ends slidably confined in the opposite channel members, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, a supporting link pivoted to the rear of the seat hinge and having its lower end longitudinally slotted to rest on the pivotal mid-point of the adjacent cross-bars, and a foot-rest pivotally held at its sides on the side frames and having a central longitudinal hinge.

3. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, a pair of

cross-bars pivoted at their lower ends to each channel member and having their upper ends slidably confined in the opposite channel member, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, the side frames having horizontal lower bars extended forwardly of the front channel members, a rigid vertical extension on the front of each said bar, and a foot-rest pivotally held by the bar extensions and adjacent front channel members and having a central longitudinal hinge.

4. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, a pair of cross-bars pivoted at their lower ends to each channel member and having their upper ends slidably confined in the opposite channel member, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, the side frames having horizontal lower bars extended forwardly of the front channel members, a rigid vertical extension on the front of each said bar, a foot rest pivotally held by the bar extensions and adjacent front channel members and having a central longitudinal hinge and a link connecting the front of the seat hinge with the rear of the hinge of the foot rest.

5. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, a pair of cross-bars pivoted at their lower ends to each channel member and having their upper ends slidably confined in the opposite channel member, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, a foot-rest pivotally held at its sides on the side frames and having a central longitudinal hinge, a seat cushion, and tie rods therefor running horizontally between the front and rear channel members.

6. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, a pair of cross-bars pivoted at their lower ends to each channel member and having their upper ends slidably confined in the opposite channel member, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, a foot-rest pivotally held at its sides on the side frames and having a central longitudinal hinge, a seat cushion, tie rod therefor running horizontally between the front and rear channel members and a longitudinal strap attached to the seat over the cushion.

7. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, a pair of

cross-bars pivoted at their lower ends to each channel member and having their upper ends slidably confined in the opposite channel member, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, a foot-rest pivotally held at its sides on the side frames and having a central longitudinal hinge, a seat cushion, horizontal tie rods extending from the front channel members through the rear channel members, eyelets on the rear ends of the tie rods and vertical rods on the frame behind the rear channel members for passing through the said eyelets.

8. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, a pair of cross-bars pivoted at their lower ends to each channel member and having their upper ends slidably confined in the opposite channel member, a seat having its side edges pivotally held at each side on the channel members and having a central longitudinal hinge, a foot-rest pivotally held at its sides on the side frames and having a central longitudinal hinge, a seat cushion, horizontal tie rods extending from the front channel members through the rear channels, eyelets on the rear ends of the tie rods, a back cushion, vertical rods on the frame behind the rear channel members for holding said back cushion, said vertical rods passing through the said eyelets.

9. A child's foldable perambulator comprising a pair of rigid side frames having stub shafts and wheels thereon, each side frame having front and rear spaced vertical channel members, the members having inner side flanges and outer side flanges with inturned edges, a pair of cross-bars pivoted at their lower ends to the inner flanges of each side member and having studs at their upper ends slidably confined within the inturned edges of the outer flanges in the opposite channel members, a seat having its side edges pivotally held at each side on the inner flanges of the channel members and having a central longitudinal hinge, a foot-rest pivotally held at its sides on the outer flanges of the channel members, said foot-rest having a central longitudinal hinge and a link connecting the front of the seat hinge with the rear of the hinge of the foot-rest.

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