

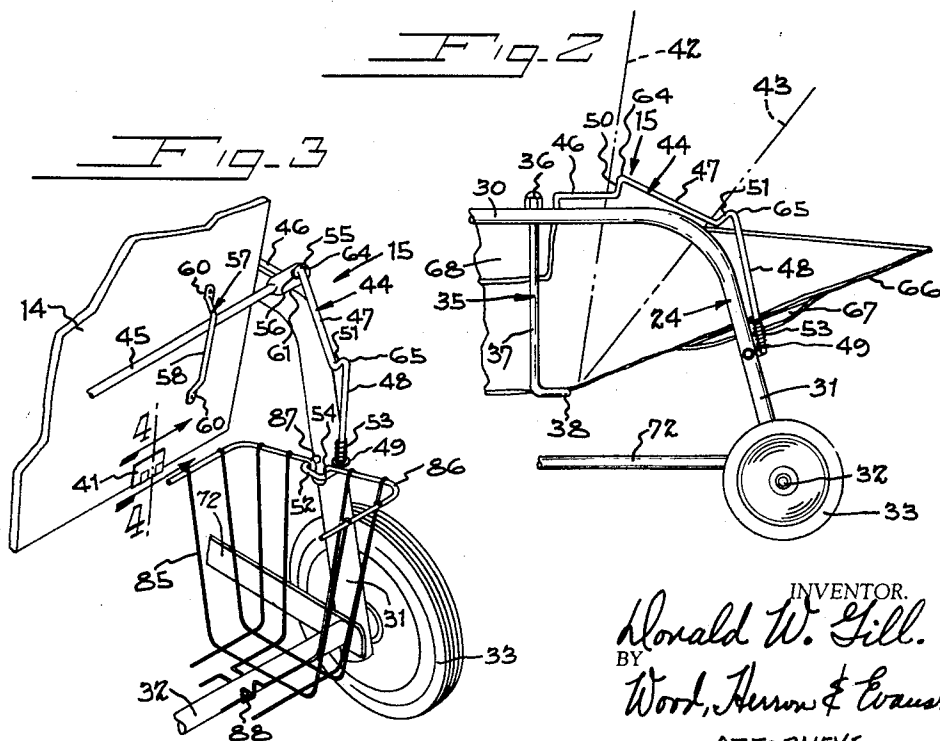
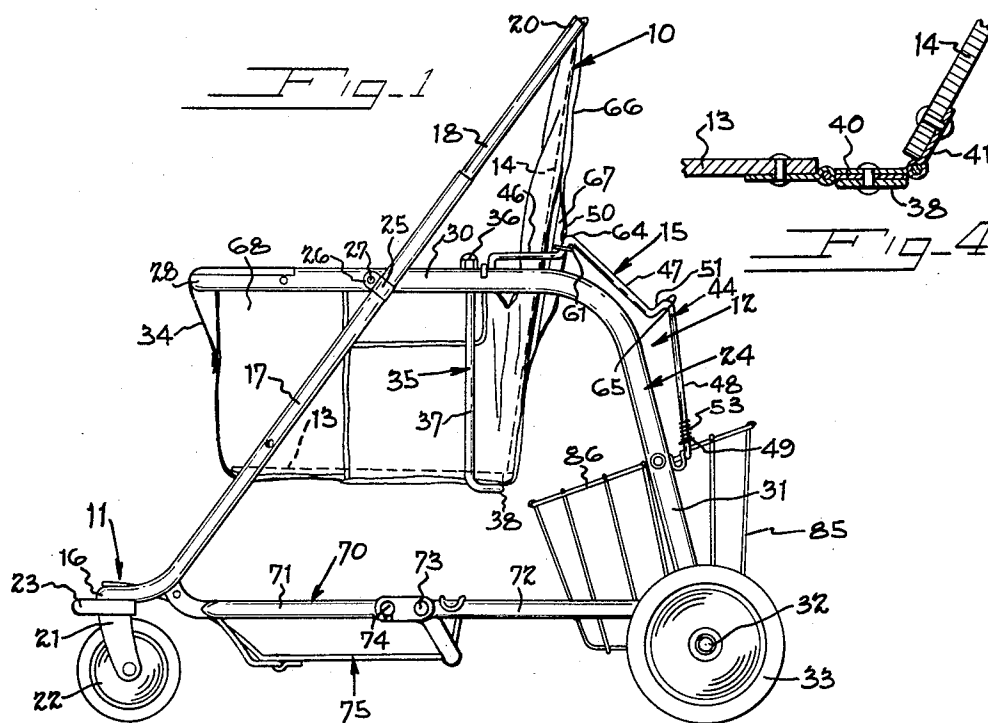
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COLLAPSIBLE STROLLER

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2,917,316

COLLAPSIBLE STROLLER

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3 Claims. (Cl. 280—41)

This invention relates to collapsible strollers for babies and is particularly directed to a collapsible walker-stroller having a shiftable back rest adapted to support an infant in either a sitting or a reclining position.

Walker-strollers of the present type are extremely versatile vehicles. They are adapted for use as a walker in which the infant is supported in a sitting position and propels the vehicle by pushing against the ground with his feet. Alternatively, the vehicle can be used as a stroller in which the infant is seated in the vehicle with his feet supported clear of the ground and is pushed by his mother or nurse. Additionally, the present walker-stroller can also be employed as a sleeper or carriage in which the infant is supported in a prone position and is pushed in a conventional manner.

More particularly, a walker-stroller comprises a wheeled frame having a stationary seat for the infant and a removable foot rest mounted beneath the seat, the foot rest being shiftable into an elevated position in which it forms a forward continuation of the seat. The walker-stroller further includes an adjustable back rest which cooperates with the rigid seat to support the baby. The back rest is selectively adjustable and can be disposed in an erect position, in a fully reclining position, or in an intermediate partially reclining position.

The principal object of the present invention is to provide a novel means for adjustably supporting a back rest so that the back rest can be quickly and easily shifted from one position to another and will be stable in any position in which it is set.

A further advantage of the present construction is that the back rest can readily be shifted from one position to another. When lowering the back rest, the latching rod is easily manipulated by the touch of a finger; and in order to raise the back rest, it is only necessary to lift it upwardly since the latching bar automatically passes over the latching rods.

Another advantage of the present stroller is that it provides a cushioned ride for the infant when the stroller is being used as a sleeper or carriage. This cushioning is provided by springs mounted above the lowermost abutment, the springs being adapted for compression between that abutment and the cooperating latch bar when the back rest is in its fully reclined position.

Another advantage of the present construction is that it is extremely simple and economical to manufacture. Moreover, the adjusting mechanism is very rugged and capable of withstanding severe usage.

These and other objects and advantages of the present invention will be more readily apparent from a further consideration of the following detailed description of the drawings illustrating a preferred embodiment of the invention.

In the drawings:

Figure 1 is a side elevational view of a walker-stroller provided with an adjustable back rest constructed in accordance with the present invention;

Figure 2 is a partial side elevational view generally

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similar to Figure 1 but showing the back rest in a lowered position;

Figure 3 is a partial perspective view of the back rest support, the back rest cover being removed to show details of construction.

Figure 4 is a cross sectional view taken along line 4—4 of Figure 3.

The general construction of the walker-stroller disclosed herein is similar to that shown in my copending U.S. patent application Serial No. 544,111, filed November 1, 1955, now U.S. Patent No. 2,798,733, for "Collapsible Walker-Stroller for Children." The present invention is primarily concerned with a novel back rest supporting construction, not shown in that copending application.

As shown in Figure 1, the present walker-stroller 10 comprises a front frame 11, a rear frame 12, a seat 13, a back rest 14 and means indicated generally at 15 for adjustably positioning the back rest.

In the preferred embodiment, front frame 11 is formed of a length of tubular material bent in a generally U shape to form a cross member 16 and two upwardly extending legs 17. The upper ends of leg portions 17 telescopically receive arm portions 18 of a generally U shape tubular handle member 20. Suitable latches are provided for securing the handle member in assembled relationship with front frame member 11.

The forward portion of front frame 11 pivotally supports wheel mounting brackets, or forks, 21, the details of which constitute no part of the present invention. Brackets 21 in turn rotatably journal wheels 22. A front bumper 23 extends across the forward portion of the stroller and is secured in any suitable manner, such as by riveting to frame 11.

Rear frame 12 is also preferably constructed of tubular material bent in a generally U shaped configuration. Frame 12 comprises spaced legs 24 which cross legs 17 of the front frame and reside between them. Suitable means are provided for pivotally connecting the front and rear legs. As shown in Figure 1, legs 17 and 24 are pivotally interconnected by means of brackets 25, one bracket being disposed on each side of the stroller. Each bracket 25 embraces one leg 17 and includes a flattened flange portion 26 having a central opening formed therein. A pivot pin 27 passes through this aperture and through aligned openings formed in the rear legs. The pivot pin, legs and bracket are held in assembled relationship by means of suitable heads formed on the outer ends of the pin.

As best shown in Figure 1, rear legs 24 include longitudinally extending portions 30 which lie in a substantially horizontal plane when the stroller is set up and downwardly extending portions 31 which extend downwardly and rearwardly from portions 30. Rear frame 12 includes a forward cross piece 28 extending across the stroller above the forward edge of seat 13 and joining the forward portion of legs 24. The lower ends of downwardly extending leg portions 31 are bored to receive rear axle 32 which rotatably supports rear wheels 33.

Seat 13 is suspended from longitudinal portions 30 of rear legs 24; this seat may be formed of wood, fibreboard, or other suitable material and preferably includes a broad rear portion and a relatively narrow forwardly extending tongue (not shown). The spaces on opposite sides of the tongue between front legs 17 accommodate the child's legs. The forward end of the tongue is connected to the cross bar 28 of rear frame 12 by means of a strip of material 34 which is stitched to the fabric, or plastic covering, of seat 13 and is looped around cross bar 28; the free end of the strip being secured in place as by means of a snap fastener.

The rear portion of seat 13 is supported by means of a hanger 35 formed of wire rod or the like bent into a generally U shaped configuration. Hanger 35 includes two vertical suspension portions 37 joined by cross piece 38. The upper ends of suspension portions 37 pass upwardly through aligned openings formed in horizontal portions 30 of rear legs 24; these rod ends are threaded and secured in place by means of nuts 36. As best shown in Figure 4, cross piece 38 is provided with flat portions which support one leaf of a hinge 40, the other leaf of the hinge being riveted or otherwise joined to seat 13.

The present unit also includes a hinged back rest 14 which may be formed of a panel of wood, fibreboard, metal or the like. The lower end of this panel is carried by two hinges 41, each of the hinges having one leaf riveted or otherwise joined to the lower edge of the back rest and a second leaf joined to cross bar 38 of hanger 37.

Supporting means are provided for adjustably securing the back rest in any of three different positions. The first, or erect position, is shown in Figure 1 and is indicated by broken line 42 in Figure 2. The second position is an intermediate or partially reclining position and is shown by broken line 43 in Figure 2. The third position is the lowermost or fully reclining position, shown in full lines in Figure 2.

Supporting means 15 comprise latching rods 44 mounted upon each of the rear legs 24 of the stroller and a cooperating latching member or cross bar 45 carried by back rest 14. More particularly, each of the latching rods 44 comprises three elongated segments 46, 47, and 48 angularly offset from one another and interconnected by short abutment segments 50 and 51. The upper end of each latching rod 44 is press-fit or otherwise mounted in suitable openings formed in horizontal portion 30 of rear leg 24. The lower end of each latching rod is bent inwardly in generally a U shape, as indicated at 52 in Figure 3 and is press-fit or mounted in suitable openings formed in lower portions 31 of the rear legs.

It is to be noted that with reference to the pivotal mounting of the lower end of back rest 14, sections 46, 47 and 48 extend in directions generally parallel to the direction of movement of the back rest, while abutment segments 50 and 51 lie substantially parallel to the back rest, along a radial line from the pivot point, and at an angle to the direction of movement of the back rest. Each of the segments of latching rod 44 is disposed relatively close to rear leg 24, the lower end of section 48 terminating adjacent to the leg at approximately the same height as cross section 38 of hanger 35. A compression spring 53 is coiled around lowermost segment 48 of each of the guide rods and abuts a washer 49 fitted over the latching rod and in contact with horizontal abutment arm 54 of U shaped segment 52 of the latching rod.

Cooperating latching bar 45 is formed of rod stock or the like and extends transversely across the rear surface of back rest 14. Latching bar 45 includes two outwardly projecting end portions 55 extending beyond the sides of the back rest. These end portions are preferably flattened, as shown in Figure 3 and provided with enlarged openings 56 for loosely receiving latching rods 44. Latching bar 45 is mounted for sliding movement along the rear surface of back rest 14 by means of two spaced brackets or guides 57. Each of these guides includes an elongated portion 58 spaced from the surface of back rest 14 and two end sections 60 which are riveted or otherwise secured to the back rest.

To support the back rest in the erect position, shown in Figure 1, the latching arm 45 is brought into engagement with the uppermost abutment segments 50 of rods 44. The latching bar is wedged between the back rest and abutment segment and cannot be accidentally shifted to release the back rest even under severe jolting or accidental brushing against the end of the latching bar. As best shown in Figure 1, the rear edge 61 of projecting portion 46 of the latching bar is caught in the vertex

between abutment segment 50 and elongated segment 47 which slopes downwardly relative to section 46.

In order to adjust the back rest to its intermediate reclining position, indicated by broken line 43, the user must lift and turn latching bar 45 so that it slides upwardly along back rest 14 and at the same time pivots in a clockwise direction (as viewed in Figure 1) around the junction 64 of connecting segment 50 and elongated segment 47. The back rest remains stationary during this manipulation so that it can readily be accomplished even though there is a substantial pressure on the back rest. After latching bar 45 passes over the junction 64 between segments 50 and 47, it slides downwardly along section 47 until it engages the intermediate abutment segment 51. There, the latching bar automatically stops no matter how rapidly the back is lowered. In this position, the latching bar is wedged between back rest 14 and abutment segment 51.

To adjust the back rest to its fully reclined position, the latch member 45 is again raised and rotated so that it passes over the junction 65 between segments 51 and 48 and then shifted downwardly along lower section 48 of the latching rods until the projecting portions 55 of the latching bar abut compression springs 53. In this position, the back rest is elevated only slightly above the seat, the elevation being sufficient however to prevent a baby from sliding rearwardly off the stroller. Since the back rest is supported in this position by springs 53, a substantial portion of any bumps or jolts is absorbed so that the baby is given a cushioned, comfortable ride.

To elevate the back rest, the user merely grasps the free end of the back rest and lifts it upwardly causing latching bar 45 to be shifted upwardly along segments 48 of the latching rod. Projecting portions 55 of the latching bar automatically pass around junction 65, pass along connecting segment 51 and the junction of that segment and elongated segment 47 so that the operator does not need to manually manipulate the cross bar during its upward movement. Finally, continued lifting of the back rest panel causes projecting endwise portions 55 to pass around junction 64 and to come into engagement with uppermost abutment segment 50. The back rest is thereafter automatically held in this position, as explained above.

In addition to the elements described above, the present stroller preferably includes suitable padding on the front face of the back rest and the upper surface of seat member 13. Also, a fabric or plastic panel 66 covers the rear surface of the back rest, this panel having endwise slits 67 for accommodating movement of latching bar 45. Additionally, fabric side panels 68 are secured in any suitable manner to horizontal arm portions 30 of the rear frame and to back rest 14. These side panels each include a foldable gusset for preventing a child from rolling off of the stroller when the back rest is in its reclined position. When the back rest is in an erect position, this gusset is folded flat against the back rest.

The stroller also includes stretchers 70, preferably formed of tubular material. These stretchers extend below the lower extremities of the front and rear legs. Each stretcher comprises a front link 71 and a rear link 72 pivotally interconnected by means of a pivot pin 73. The front link of each stretcher is pivotally connected to the lower portion of a front leg 17 while the rear links are pivotally connected to the lower portions 31 of rear legs 24. Rear links 72 are preferably joined by a cross piece 32 extending across the rear of the stroller. Each stretcher assembly also includes stop pins 74 projecting outwardly from the front links. The stop pins are located forwardly of pivot pins 73 and are adapted for engagement with a notch formed in the forward endwise portion of the rear links to lock the links in a horizontal position, as shown in Figure 1.

The stroller further includes a foot rest 75 preferably formed of wire grill work comprising a rectangular frame

supporting parallel bars. The details of construction of foot rest 75 constitute no part of the present invention. Consequently, this member will not be described in detail. It will suffice here to state that the foot rest can be positioned as shown in Figure 1 to support an infant's feet while the infant is sitting in the seat. Alternatively, the foot rest can be shifted to an upper position in which it extends substantially parallel with the seat. Or as a third alternative, the foot rest can be removed entirely.

In addition to foot rest 75, the stroller is preferably fitted with a basket 85 formed of wire. This basket includes an upper rim 86 having depending generally U shaped inserts 87 adapted to be secured within the U shaped sockets 52 formed by latching rods 44. Two adjacent bottom cross members of the basket are bent to form opposed clip sections 88 adapted to embrace rear axle 32. The basket is thus removably mounted upon the frame without the use of any additional brackets or the like.

From the foregoing, it will readily be apparent that the present walker-stroller is extremely flexible. Thus, by elevating the back rest to its erect position and removing foot rest 75, the unit is converted to a walker. By replacing the foot rest, the device is adapted for use as a stroller. Additionally, by elevating the foot rest and shifting the back rest to its intermediate or fully reclined position, the device can be utilized as a sleeper, or carriage.

The stroller can conveniently be collapsed by applying downward pressure on the rearward cross bar 32; thus, forcing the stretchers upwardly toward a collapsed position. The collapsing operation is then completed by applying force forwardly upon the U shaped handle 20, while engaging the cross bar with the user's foot, thus, pivoting frames 1 and 2 in a scissors fashion until the front wheels and rear wheels are almost in abutment with one another. To open the stroller from a collapsed position, downward pressure is applied to handle 11 causing frames 11 and 12 to pivot about pins 27. At the same time, the stretcher members are straightened out and extended to their self-locking position, as shown in Figure 1. It will readily be appreciated that the hinged back rest and its positioning means 15, in no way interfere with the collapsibility of the stroller.

Having described my invention, I claim:

1. In a child's stroller having a frame, transport wheels mounted upon said frame and a seat carried by said frame, the combination of a back rest, means pivotally supporting the lower portion of said back rest, means for adjustably securing said back rest in an erect position and in a substantially horizontal position, said means comprising latching rods rigidly carried by said frame, one of said latching rods being disposed adjacent to one side of said back rest, each of said latching rods being configured to form a first abutment section disposed on the upper portion of said rod, and a second abutment section formed on the lower portion of said rod, an elongated latching bar, means carried by said back rest for mounting said latching bar for slidable and rotatable movement relative to said back rest, said last named means comprising two spaced bracket members mounted upon the rear surface of said back rest, each of said bracket members comprising an elongated portion extending substantially parallel to the surface of said back rest in spaced relationship therewith and endwise portions adapted for abutment with said back rest, said elongated latching bar extending across the rear of said back rest and including flattened projecting por-

tions extending outwardly beyond the sides of said back rest, each of said projecting portions having an opening formed therein for loosely receiving one of said latching rods.

2. In a child's vehicle having a frame, transport wheels supported by said frame and a seat carried by said frame, the combination of a back rest, means pivotally supporting the lower portion of said back rest, means for adjustably securing said back rest in an erect position, in a substantially horizontal position and in an intermediate position, said means comprising latching rods rigidly carried by said frame adjacent to each side of said back rest, each of said latching rods comprising an upper abutment segment extending at an angle to the direction of movement of said back rest, a first elongated segment extending rearwardly and downwardly from said first abutment segment, a second abutment segment interconnected to said first abutment segment and extending at an angle to the direction of movement of said back rest, a second elongated segment extending rearwardly and downwardly from said second abutment segment, a lowermost abutment disposed below said second abutment, and a cooperating latching member carried by said back rest and in slidable engagement with each of said latching rods, said latching member extending across the rear of said back rest and including flattened endwise projecting portions extending outwardly beyond the ends of said back rest, each of said flattened projections having an enlarged opening for receiving one of said latching rods, and a compression spring mounted upon each of said second elongated sections above said lowermost abutment.

3. In a child's vehicle having a frame, transport wheels supported by said frame and a seat carried by said frame, the combination of a back rest, means pivotally supporting the lower portion of said back rest, means for adjustably securing said back rest in an erect position, in a substantially horizontal position, and in an intermediate position, said means comprising latching rods rigidly carried by said frame adjacent to each side of said back rest, each of said latching rods comprising an upper abutment segment extending at an angle to the direction of movement of said back rest, a first elongated segment extending rearwardly and downwardly from said first abutment segment, a second abutment segment interconnected to said first abutment segment and extending at an angle to the direction of movement of said back rest and a second elongated segment extending rearwardly and downwardly from said second abutment segment, a lowermost abutment disposed below said second abutment and an elongated latching bar, means carried by said back rest for mounting said latching bar for slidable and rotatable movement relative to said back rest, said latching bar extending across the rear of said back rest and including flattened projecting portions extending outwardly beyond the sides of said back rest, each of said projecting portions having an opening therein for loosely receiving one of said latching rods.

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