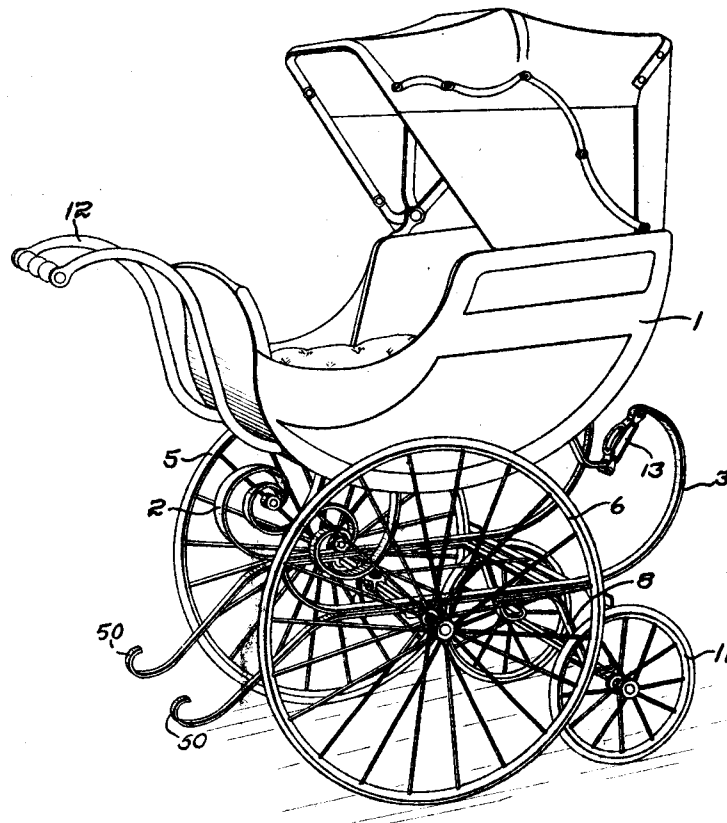


1,036,117.

Fig. 1.



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PERAMBULATOR.
APPLICATION FILED JUNE 2, 1911.

1,036,117.

Patented Aug. 20, 1912.
2 SHEETS—SHEET 2.

Fig. 2.

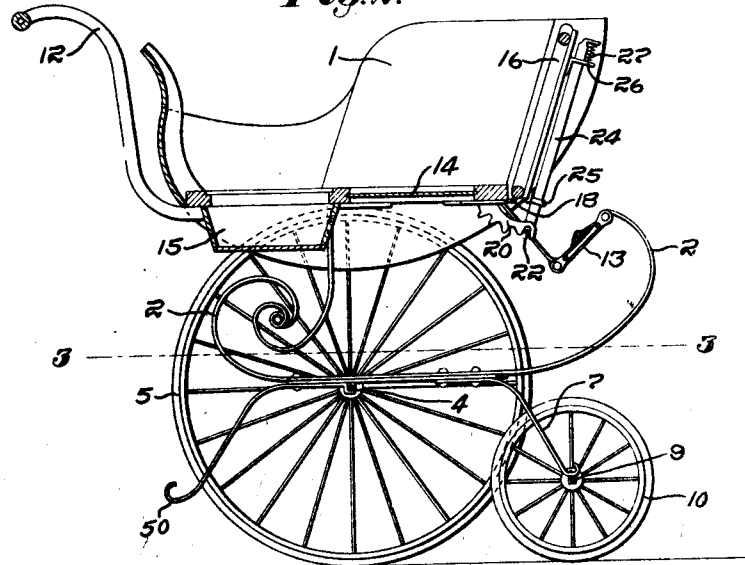


Fig. 3.

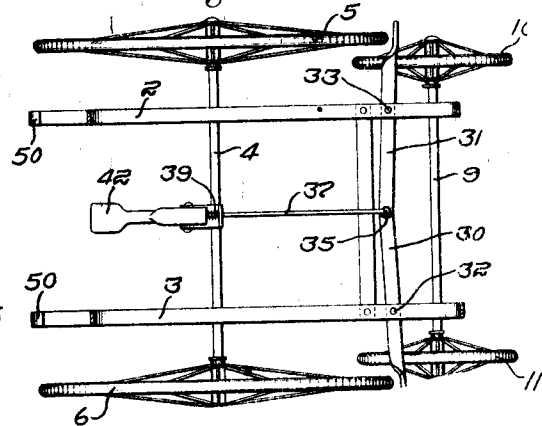


Fig. 4.

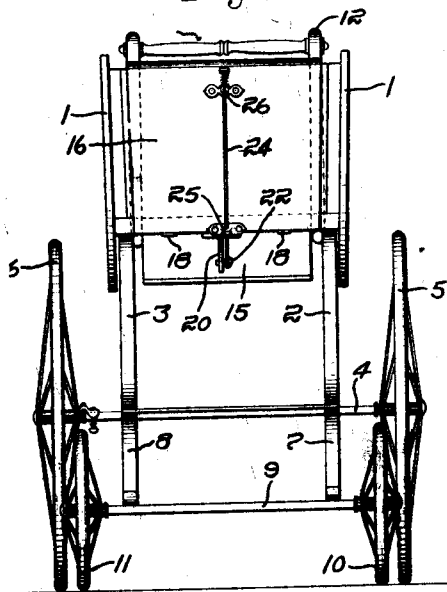
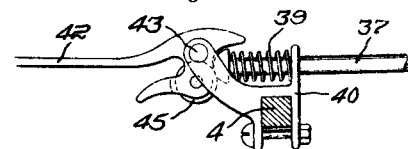


Fig. 5.



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PERAMBULATOR.

1,036,117.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed June 2, 1911. Serial No. 630,756.

To all whom it may concern:

Be it known that I, JOSEPH P. HOLMAN, a citizen of the United States, residing at Leominster, in the county of Worcester and State of Massachusetts, have invented an Improvement in Perambulators, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to perambulators or baby carriages and is intended, among other things, to provide a perambulator of maximum stability against accidental upsetting, which shall be at the same time most readily wheeled, turned, guided and otherwise manipulated, and which shall have various hygienic advantages.

The character of the invention may be best understood by reference to a practical embodiment thereof shown for illustration in the accompanying drawings, in which:

Figure 1 is a perspective view of the illustrative embodiment; Fig. 2 is a longitudinal, vertical cross section of the same; Fig. 3 is a horizontal section on the line 3—3 of Fig. 2; Fig. 4 is an end elevation as viewed from the right in Fig. 2; Fig. 5 is a detached detail of the brake lever hereinafter more fully described.

Referring to the drawings, the illustrative perambulator comprises a body portion 1 mounted upon springs 2 and 3. These springs in turn are appropriately mounted upon an axle 4 of the large wheels 5 and 6 and are suitably connected by tie rods or strips 7 and 8 with the axle 9 of the small wheels 10 and 11. The body 1 is provided with a handle 12 of any practicable construction which is preferably mounted upon the body or appropriately related thereto so as to partake of the spring support of the body whereby the jar and vibration imparted to the wheels when in motion, may be transmitted to the handle only through the springs which cushion such vibration and substantially eliminate it from the handle.

The arrangement of the springs 2 and 3 comprises various desirable convolutions affording a thoroughly yielding support for the body of the perambulator, and prefer-

ably one end of the latter is suspended by suitable straps 13 from flexible ends of the springs. This manner of supporting the body provides substantial resiliency both vertically and to a desirable extent horizontally.

The seat 14, which may be upholstered in any practicable manner, is preferably located at the opposite end of the perambulator from the handle 12; and the foot-well 15 may intervene between the seat 14 and the handle 12. The back 16, appropriately related to the seat, is adjustable to a plurality of positions between a more or less upright position and a more nearly horizontal position, permitting the occupant of the perambulator to recline. The edge of the seat 14 which is nearest the foot-well 15, is disposed preferably in, or substantially in, the vertical plane of the axle 4 of the large wheel, this being a desirable manner of balancing the perambulator to the best effect so that the center of gravity of the loaded vehicle shall be as far as necessary to the right of the vertical plane of the axle 4 in Fig. 2, while at the same time being near enough to said vertical plane to permit of easy manipulation of the vehicle by means of the handle 12. In other words, the perambulator as a whole is nearly balanced about the axle 4 so as to be readily turned upon the axis afforded thereby without requiring the attendant at the handle to sustain any material weight or to apply any substantial pressure thereto in order to move the vehicle about the axle 4. By the relation of parts just described, the manipulation of the vehicle is rendered very easy, and obviously the large diameter of the wheels 5 and 6 greatly facilitates the wheeling of the vehicle. As shown in the drawings, the center of gravity of the loaded vehicle will lie between the vertical planes of the axles 4 and 9, thereby contributing to the stability of the vehicle while at the same time said center of gravity will be high enough and near enough to the vertical plane of the axle 4 to facilitate the manipulation of the vehicle as described.

It is a consideration of the greatest importance in a perambulator of the large-

wheel balanced type of that illustrated in the drawings, that the same shall be as stable as possible. Obviously, the balancing of the vehicle, as in relation to the axle 4, while facilitating manipulation by the handle 12, at the same time involves some danger of upsetting and the problem has been to reconcile this last named disadvantage, so far as possible, with the substantial advantages which reside in the balanced type of vehicle. For example, in perambulators of the balanced type, as heretofore made, the seat-back has not been adjustable; and when desired to place the occupant in a reclining position, it has been customary to cover the seat-well or otherwise to bring the bottom of the seat-well into substantially the horizontal plane of the seat so as to constitute a sort of continuous bed upon which the occupant could lie with his head substantially on the seat itself proximate the back. In moving the occupant from an erect position to this recumbent position, it is evident that the body of the occupant was generally moved toward the opposite end of the vehicle from the seat-back and thereby the center of gravity of the loaded vehicle was substantially shifted to increase in a dangerous degree the instability of equilibrium of the vehicle. For instance, if the construction of Fig. 2 did not have an adjustable back, the occupant in being moved to a reclining position, would cause the center of gravity of the loaded vehicle to shift very materially toward the left in Fig. 2 until it would be dangerously close to the vertical plane of the axle 4. In such a situation a very slight movement on the part of the occupant, or a very slight push, would suffice to overturn the vehicle in a counterclockwise direction about the axle 4. To avoid this difficulty the present invention provides an adjustable back 16 (the details of which will be presently explained) which moves preferably about an axis proximate the seat 14 in such a manner that when the occupant is moved into a reclining position, the back may be moved toward the horizontal so that the center of gravity of the loaded vehicle is shifted toward the right in Fig. 2 to substantially increase the stability of the vehicle, instead of toward the left, as would necessarily occur in the absence of the adjustable back. Furthermore, the shifting of the center of gravity toward the right in Fig. 2 also increases the weight of the occupant which is sustained through the straps 13 by the adjacent freely flexible end of the spring; and for this reason the maximum resiliency of the spring support is experienced at the time when it is most desired, *i. e.* when the occupant is reclining.

For the greatest advantage, the handle 12 is at the opposite end of the vehicle from

the adjustable back, and this is important for several reasons as will appear to those skilled in the art. For example, with the described arrangement, the vehicle as a whole constitutes a lever of the first class having its fulcrum (for example the axle 4) intermediate the center of gravity of the loaded vehicle and the handle at which the manipulating force is applied. As the center of gravity of the loaded vehicle is shifted toward the right of Fig. 2 upon the reclining of the occupant, effective leverage of this resistance is somewhat increased but is much more advantageously controlled by having the handle at the left of Fig. 2 than would be the case if the handle was at the right with the center of gravity moved nearer to it. The location of the handle on the opposite side of the fulcrum from the weight permits the carriage to be manipulated by downward pressure on the handle which is considerably easier for the attendant than would be lifting, necessitated when the handle is on the same side of the fulcrum as the weight. A further important advantage of having the adjustable back and the handle at opposite ends of the vehicle resides in the well recognized fact that the occupant of the perambulator when in a reclining position should travel head first.

The illustrative back 16 comprises a suitable hinge 18 connecting the seat frame 14 and the back, the latter being held in adjusted position by locking devices which comprise a segment 20 having a plurality of seats to receive a locking rod 22 secured at the lower end of a vertical slide bar 24. This bar 24 is mounted in brackets 25, 26 on the back 16 and a spring is interposed between the bracket 26 and an overhanging finger on the slide bar 24 so that said bar 24 is normally pressed upwardly so as to hold the locking rod 22 in whichever seat is desired. When it is desired to adjust the back, the bar 24 is pressed downwardly against the spring 27 to remove the locking rod 22 from the then engaged seat. Thereupon the back 16 is swung upon its hinge to the desired adjustment and the locking bar 22 introduced to a new seat by releasing the downward pressure on the bar 24 and permitting the spring 27 to force the rod 22 into the seat.

A further important contribution to the stability of the vehicle results from the arrangement of the brake mechanism next to be described. The illustrative brake comprises two beams 30, 31, pivoted respectively at 32 and 33 on the supporting springs of the vehicle. The adjacent ends of the beams 30 and 31 have a common pivot pin 35 to which is attached a link 37. The latter is pressed toward the left in Figs. 3 and 5 by a spring 39 interposed between a head on the

link 37 and part of a bracket 40 secured to the axle 4. The effect of this spring 39 is to rock the brake beams 30 and 31 about their pivots 32 and 33 in such a manner as to remove the brake shoes from contact with the wheels. The brake shoes are moved into braking contact with the wheels by means of a lever 42 fulcrumed at 43 on the bracket 40 and having a suitable toe or other part such as a roller 45 arranged to engage the head of the link 37 and force the latter toward the right in Figs. 3 and 5, as the lever 42 is rocked contraclockwise in Fig. 5. It is especially preferred that this brake shall act upon the large wheels of the vehicle, particularly in order to secure the greater stability which results from the illustrative arrangement. Referring to Fig. 2, when the brake 31 is applied, it in effect locks the entire frame and superstructure of the vehicle to the wheel 5. The effect of this is to prevent rotation of the vehicle about the axle 4 which, in the absence of the brake, would constitute the axis on which the vehicle would be most likely to tip over in a contraclockwise direction in Fig. 2. The brake thus preventing the overturning of the vehicle on the axle 4, the vehicle cannot tip over in a contraclockwise direction in Fig. 2 except about an axis at the point of tangency between the wheels 5 and 6 and the ground. In other words, the application of the brake shifts what may be called the tipping-over axis from the axle 4 to the point of tangency of the large wheels and the ground. If now the vehicle starts to tip contraclockwise in Fig. 2, this tipping-over axis will move toward the left as the large wheels roll in the tipping movement, it being obvious that when the brakes are on, the vehicle cannot tip as described without rolling the large wheels, and this tipping-over axis at the point of tangency between the large wheels and the ground moves rapidly toward the left, while in the tipping-over movement the center of gravity of the rotated vehicle also moves toward the left; and obviously the center of gravity must move a substantially greater distance before the vehicle as a whole reaches a position of unstable equilibrium. For these reasons the arrangement of the brake as described, materially reduces the danger of upsetting of the vehicle in the direction in which it is most likely to upset by reason of its balanced type. As a further precaution the vehicle may be provided with stop feet 50 which would prevent the entire overturn of the vehicle; these are, however, of substantially less importance in view of the various arrangements for stability which have been described above.

It is to be understood that the specific construction hereinbefore described is disclosed merely for illustration and the scope of the

invention is not essentially limited to the details thereof. On the contrary, the specific construction is susceptible of wide variation within the proper scope of the sub-joined claims.

Claims:

1. A perambulator comprising, in combination, a superstructure comprising a seat; a running gear comprising wheels of large diameter disposed on a common axis lying in substantially the vertical plane of the front edge of the seat, and additional wheels of small diameter disposed on a common axis located beyond the back end of the seat, whereby the center of gravity of the loaded vehicle lies in a vertical plane intermediate the respective axes of the large and small wheels and near the vertical plane of the axis of the large wheels thereby substantially balancing the perambulator about said axis; a freely flexible spring-end supporting the back end of the seat above the small wheels; an adjustable back for the seat movable toward the horizontal whereby the center of gravity of the loaded vehicle is moved away from the vertical axial plane of the large wheels and toward the vertical plane of the spring suspension, as the occupant and seat-back are adjusted to a recumbent position; a handle for manipulating the vehicle, located at the front of the perambulator on the opposite side of the vertical axial plane of the large wheels, from the adjustable back; the vertical plane of the common axis of said large wheels lying substantially midway between the handle and the adjustable seat-back; and means for locking the superstructure as a whole to the large wheels to increase the stability of the vehicle.

2. A perambulator comprising, in combination, a superstructure comprising a seat; a running gear comprising wheels of large diameter disposed on a common axis lying in substantially the vertical plane of the front edge of the seat, and additional wheels of small diameter disposed on a common axis located beyond the back end of the seat, whereby the center of gravity of the loaded vehicle lies in a vertical plane intermediate the respective axes of the large and small wheels and near the vertical plane of the axis of the large wheels thereby substantially balancing the perambulator about said axis; a freely flexible spring-end supporting the back end of the seat above the small wheels; an adjustable back for the seat movable toward the horizontal whereby the center of gravity of the loaded vehicle is moved away from the vertical axial plane of the large wheels and toward the vertical plane of the spring suspension, as the occupant and seat-back are adjusted to a recumbent position; a handle for manipulating

ing the vehicle, located at the front of the
perambulator on the opposite side of the
vertical axial plane of the large wheels, from
the adjustable back, the vertical plane of the
5 common axis of said large wheels lying sub-
stantially midway between the handle and
the adjustable seat-back.

In testimony whereof, I have signed my
name to this specification, in the presence
of two subscribing witnesses.

JOSEPH P. HOLMAN.

Witnesses:

M. F. PHELPS,

ETHEL H. DIVOLL.