A. T. WANNENWETSCH.

FOLDING CHILD'S CARRIAGE.

APPLICATION FILED APR. 21, 1915.

1,215,085.

Patented Feb. 6, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

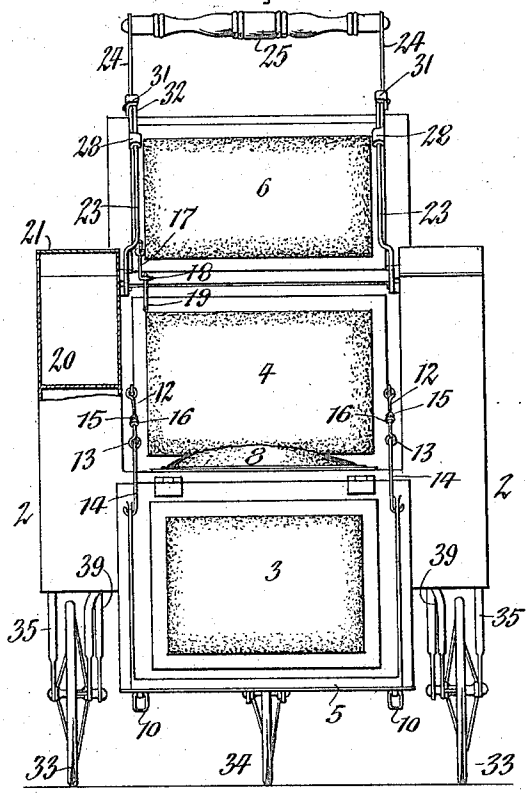


Fig. 4.

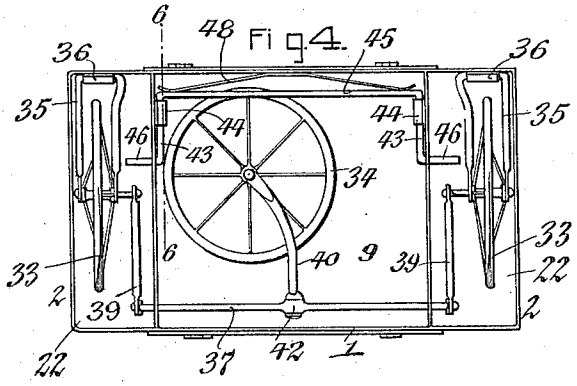
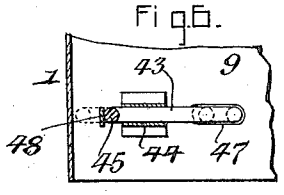


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 7.

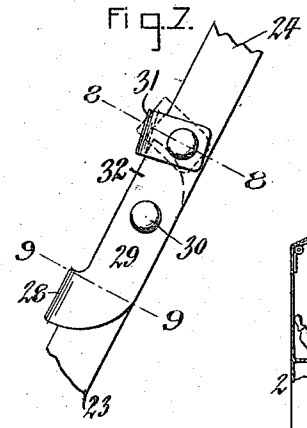


Fig. 2.

Fig. 10.

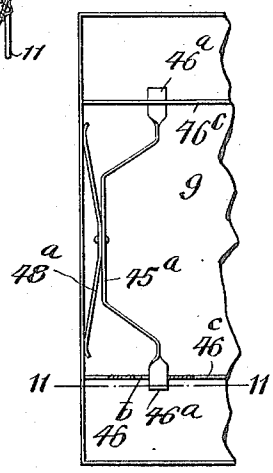


Fig. 8.

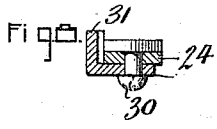


Fig. 9.

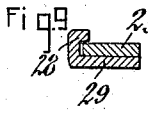


Fig. 11.



Fig. 3.

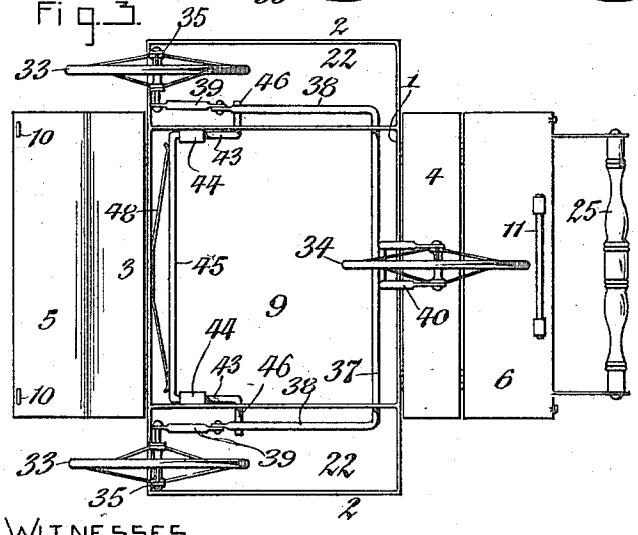
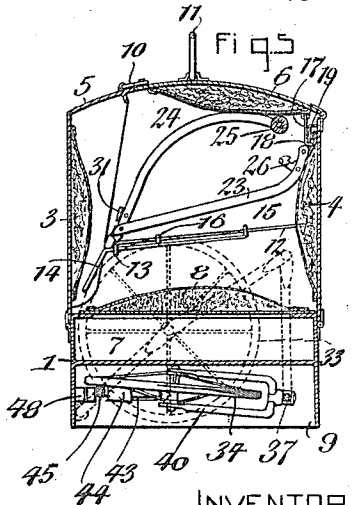


Fig. 5.



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FOLDING CHILD'S CARRIAGE.

1,215,085. Specification of Letters Patent. Patented Feb. 6, 1917.

Application filed April 21, 1915. Serial No. 22,800.

To all whom it may concern:

Be it known that I, ANDREW T. WANNENWETSCH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Folding Children's Carriages, of which the following is a specification.

This invention relates to a folding child's carriage similar to that shown in Letters Patent of the United States #1,076,087, granted to myself October 21, 1913.

The object of the present invention is to improve the locking mechanism whereby the wheels are held in their folded and unfolded positions and also to improve the carriage in other details of construction.

In the accompanying drawings:

Figure 1 is a front elevation, partly in section, of a folding child's carriage embodying my improvements and showing the same in an unfolded position ready for use. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a bottom plan view thereof. Fig. 4 is a bottom plan view of the same with the wheels folded. Fig. 5 is a vertical longitudinal section similar to Fig. 2 but showing the parts folded. Fig. 6 is a fragmentary vertical longitudinal section, on an enlarged scale, taken in line 6—6, Fig. 4. Fig. 7 is a fragmentary side elevation, on an enlarged scale, of the joint between the upper and lower sections of one of the handle bars. Figs. 8 and 9 are cross sections in the correspondingly numbered lines in Fig. 7. Fig. 10 is a fragmentary bottom plan view, partly in section showing a slightly modified construction of the locking device for holding the wheels in a folded or unfolded position. Fig. 11 is a fragmentary sectional elevation of the same taken in line 11—11, Fig. 10.

Similar characters of reference indicate corresponding parts throughout the several views.

In its general organization this folding child's carriage is so constructed that when the same is folded or collapsed it resembles a traveling case. For this purpose the body of the carriage comprises a lower section 1, two upright end sections 2, 2 projecting upwardly from opposite longitudinal ends of the lower section, a front section 3 adapted to extend across the front of the space between the end sections, a rear section 4 adapted to extend across the rear of the space between the end sections and two top sections 5, 6 adapted to extend across the space between the end sections and the front and rear sections at the upper edges of the latter.

The lower section of the body has its upper part constructed in the form of a receptacle or compartment 7 which has an opening in its top through which articles may be introduced into this receptacle or removed therefrom, this opening being normally closed by a vertically swinging cover 8 hinged at its rear edge to the body and forming a seat for the child when the carriage is in use. The lower part of the lower section of the body forms a pocket or compartment 9 which opens downwardly and is adapted to receive part of the running gear of the carriage as will presently appear.

The front section of the body is pivoted at its lower edge to the lower body section so that it can be swung either into an upright position for folding the carriage, as shown in Fig. 5, or the same can be swung forwardly and downwardly into an inclined position for forming the leg rest of the carriage. At its outer or free edge the leg rest has connected therewith the laterally projecting front top section 5 so that the latter serves as a foot rest in the unfolded position of the carriage.

The rear body section 4 is pivoted at its lower edge to the lower body section so that this rear section may be swung forwardly into an upright position for folding the carriage, as shown in Fig. 5, or the same may be swung into an inclined position, as shown in Fig. 2, so that the same forms a back rest for the child when occupying the seat. The rear section 6 of the top is pivotally connected at its rear edge with the upper edge of the back rest so that the same may either form a closure for the upper rear part of the space between the end body sections, or the same may be swung upwardly and rearwardly into an inclined position, as shown in Fig. 2, for serving as a head rest for the child occupying the carriage. When the carriage is folded the upper front and rear sections are detachably connected by means of catches 10 and the upper side of the upper rear section 6 is provided with a handle 11 for convenience in carrying the same.

The preferred means shown in the drawings for holding the leg and back rests in position when the carriage is unfolded com-

prise two retaining bars which are arranged on opposite sides of the seat, leg rest and back rest and each of which comprises a rear section 12 which is pivotally connected at its rear end with the central part of the back rest adjacent to one of its vertical edges while its front end is provided with a downwardly projecting guide loop 13, and a front section 14 pivotally connected at its front end with the leg rest adjacent to one of its vertical edges and provided at its rear end with an upwardly projecting eye or loop 15, said front eye of the rear section embracing the intermediate part of the front section and the eye of the front section embracing the intermediate part of the rear section. A stop 16 is arranged on the intermediate part of the rear section and adapted to be engaged by the front side of the eye on the front section for the purpose of limiting the unfolding movement of the back rest and the leg rest relatively to each other. This means of connecting the leg rest and back rest is very simple in construction and the same does not encroach to an objectionable extent on the seating space of the carriage.

The head rest is held in its proper position relatively to the back rest by means of a retaining link 17 pivoted at its upper end to the inner side of the head rest adjacent to one of its vertical edges and provided at its lower end with a guide eye 18 which slides upon a guide rod or bar 19 secured at its upper and lower ends to the inner side of the back rest adjacent to the corresponding vertical edge thereof. Upon swinging the head rest upwardly and backwardly the retaining link 17 slides upwardly on the guide rod 19 until it reaches the upper end thereof where its further movement in this direction is arrested and the head rest is supported in a position in which it forms an upward extension of the back rest. Upon folding the head rest the link merely slides downwardly on the guide rod 19 to the required extent to permit the head rest to assume its proper position relatively to the back rest and the end sections of the body.

The upper part of each of the end sections 2 is preferably constructed to form a compartment 20 the top of which may be opened and closed by means of a lid 21 hinged to the body preferably at its front end, thereby enabling this compartment to be used for storing various nursery, toilet or other articles. By hinging this lid at its front end the same cannot be readily opened by a child occupying the seat of the carriage. The lower part of each end section of the body is constructed to form a downwardly opening compartment or pocket 22 in which other parts of the running gear are stowed away when the carriage is not in use as will be hereinafter fully described.

Although the carriage may be propelled in any suitable manner this is preferably accomplished by means of a handle which can be either folded into the space between the end body sections when the carriage is not in use or unfolded so as to project rearwardly from the body so that the carriage may be operated when in use. In its preferred form this handle comprises two side bars each of which consists of a lower section 23 pivoted on the inner side of one of the end sections adjacent to its rear edge and an upper section 24 pivotally connected at its lower end with the upper end of the lower section. The upper ends of the upper handle bars are connected by a transverse grip or hand piece 25. The lower sections of the handle bars may be held in an upright position by various means, for instance, by catches 26 pivoted on the lower sections of these bars and engaging with pins 27 on the adjacent parts of the end body sections. The upper and lower sections of each handle bar may also be either locked in their unfolded position for use or unlocked so that they may be folded relatively to each other. The means for this purpose which are shown in the drawings comprise a laterally projecting stop lug 28 arranged on a downwardly extending locking arm 29 of the upper handle bar section below the pivot 30 which connects the upper and lower bars and engaging with the front edge of the companion lower handle bar section for the purpose of limiting the unfolding movement of these bars relatively to each other when they are lengthwise in line. A vertically swinging catch or latch 31 is pivoted on the upper handle bar section above the pivot 30 and engages with the front edge of an upwardly extending locking arm 32 of the companion lower handle bar section above the pivot 30, as shown by full line in Fig. 7. Upon swinging the catch upwardly into the position indicated by dotted lines in Fig. 7, the same will be disengaged from the upper locking arm of the lower handle bar section and the handle bars will be free to be folded within the space between the end body sections, as shown in Fig. 5.

Although the running gear of the carriage may be provided with different numbers of wheels and various arrangements of the wheels the number and arrangement shown in the drawings is suitable and as there shown this running gear comprises two front end wheels 33, 33 which support the front part of the carriage at opposite ends thereof, and a rear central wheel 34 which supports the rear part of the body midway between the ends thereof. These wheels are so mounted that the front wheels may either be stowed in the lower pockets or compartments of the end body sections and the rear wheel may be stowed in the lower pocket or compartment of the lower body section when the

carriage is folded compactly for transportation, or these wheels may be removed downwardly out of their respective pockets, so that they project from the lower part of the body and form a rolling support for the carriage.

Each of the front wheels is arranged between the arms of a fork 35 which latter is provided on the free ends of its arms with an axle upon which the respective front wheel is mounted while the upper ends of these arms are pivoted at 36 to the inner side of the front wall of the lower pocket of the respective end section, whereby this fork together with its front wheel may be swung either upwardly into the companion pocket, as shown by full lines in Fig. 4 and by dotted lines in Fig. 5, or this fork and its front wheel may be swung downwardly into an operative position, as shown by full lines in Figs. 1, 2 and 3. This movement of the front wheels and their forks is preferably accomplished by means of a transverse rock shaft 37 journaled horizontally in suitable bearings in the rear lower part of the lower body section so as to be arranged within the lower end and central compartments 9, 22 and provided at its opposite ends within the lower end compartments 22 with forwardly projecting rock arms 38 each of which is connected at its free end with the free end of the companion front wheel fork by means of a link 39. By rocking this shaft 37 forwardly in the direction of the arrow in Fig. 2, both front wheel forks will be moved downwardly out of their pockets into an operative position while upon turning this rock shaft rearwardly or in a direction opposite to that indicated by the arrow in Fig. 2, the front wheels will be raised into their pockets.

The rear wheel is arranged within a rear fork 40 which latter is provided at the lower ends of its arms with an axle upon which the rear wheel is mounted. At its upper end the rear fork is provided with an upright or wrist 41 which is journaled at right angles to the axis of the rock shaft in a bearing 42 formed on the central part of this shaft, so that this rear fork and its wheel are not only caused to rock vertically with the shaft as the front wheels are moved into and out of their pockets but the rear wheel and fork are also capable of turning about the axis of the pivot pin 41 for the purpose of causing the rear wheel and its fork to lie flatwise or in a substantially horizontal plane within the central wheel compartment of the body, when the front wheels are moved upwardly into the end wheel pockets and are arranged in a vertical plane therein.

My invention comprehends improved means for holding or locking the wheels securely in their folded and unfolded positions which means are best shown in Figs, 2, 3, 4, 5 and 6 and preferably constructed as follows:

43 represents two longitudinally and horizontally movable guide bars which slide in guides or sleeves 44 arranged on the inner side of the longitudinal walls of the central wheel compartment. The front ends of these guide bars are connected by a horizontal transverse locking bar 45 which is arranged at a suitable distance below the top of the central wheel compartment to permit the rim or peripheral portion of the rear wheel to be engaged over the same when the latter is in its fully folded horizontal position, as shown in Figs. 4 and 5. At its rear ends the guide bars 43 are provided with horizontal laterally projecting locking arms or pins 46 which extend through longitudinal horizontal slots 47 in the partitions or walls which separate the central wheel compartment from the end wheel compartments. Each of these locking pins or arms 46 is adapted to engage with the upper side of the rock arms 38 for holding the front wheels and their forks in their lowered operative position, as shown in Figs. 2 and 3, or these locking arms may be withdrawn from said rock arms so as to permit the front wheels and their forks to be moved into their inoperative position within the front wheel pockets. The locking bar, guide bars and locking arms are yieldingly held in their rearward operative position preferably by means of a leaf spring 48 secured to the front wall of the central wheel compartment and bearing at opposite ends against the front side of the locking bar. While the locking arms are in their rearmost position the same are in engagement with the upper sides of the rock arms and hold the front wheels in their depressed operative positions and at the same time the locking arms also serve to hold the rear wheel downwardly in its operative position. When moving these locking arms forwardly sufficiently to clear the rock arms the latter may be turned upwardly and rearwardly with the rock shaft for the purpose of raising the front wheels into their respective pockets and also raising the rear wheel into the central pocket.

While the front wheels are being raised into their pockets and the rear wheel is being raised into its respective pocket, the latter is given a quarter turn about the axis of the pivot 41 which connects the same with the rock shaft so that the wheel lies horizontally within the central wheel pocket of the compartment. While the rear wheel is in this position the front part of its rim is engaged over the locking bar 45 which latter is yieldingly held in engagement with the underside of the wheel by means of the spring 48, thereby confining the rear wheel

within the central pocket and also confining the front wheels in their respective pockets by reason of the rock shaft and its arms serving as a connecting medium between the rear and front wheels. During the downward movement of the rock arms and links out of the end pockets the same deflect the locking pins in opposition to the stress of the spring until the rock arms pass below these pins at which time the latter are automatically projected by this spring over the rock arms and lock the front wheels in their operative position.

In Figs. 1–9, the guide bars 43, locking arms 46 and locking bar 45 are made of a piece of round metal which necessitates employing the guides 44 for holding these parts in the proper position relatively to the rock arms 38. If desired, the locking arms and the connection between the same may be made of a piece of flat metal, as shown in Figs. 10 and 11 in which case the central part of this flat bar is turned vertically on edge to form the locking bar 45^a and the opposite ends of this bar are bent rearwardly and twisted a quarter turn to form two locking arms 46^a. The latter slide in longitudinal slots 46^b in the adjacent longitudinal walls 46^c of the body and are adapted to engage with the rock arms 38 either in the folded or unfolded position of the wheels. Instead of securing the spring 48 to the body and engaging the same with the locking bar this spring, as shown at 48^a in Fig. 10 may be secured to the locking bar 45^a and bear against the body of the carriage.

My improvements in folding children's carriages materially simplifies the construction and reduces the cost of the same and the parts are also neater in appearance and more easily operated.

I claim as my invention:

1. A folding children's carriage comprising a body having a lower section, a rear section pivoted on the lower section to form a back rest, a front section pivoted on the lower section to form a leg rest, and means for holding said leg and back rests in position relatively to each other comprising front and rear retaining bars which are pivoted respectively to said leg and back rests and each of which is provided with a guide eye which embraces the other and a stop which is arranged on the rear section in rear of its guide eye and which is adapted to be engaged by the front side of the guide eye on said front section.

2. A folding child's carriage comprising a body having a back rest, and a head rest pivoted to the back rest, and means for limiting the relative movement of said back and head rests comprising a guide bar mounted on one of said body members and a link pivoted on the other body member and having an eye sliding on said bar.

3. A folding children's carriage comprising a body, and a handle for operating said body comprising two side bars each of which has a lower section pivoted to the body, an upper section pivotally connected to the lower section, said lower section having an arm arranged above said pivotal connection and said upper section having an arm arranged below said pivotal connection, a stop lug arranged on one of said arms and engaging with the adjacent edge of the other handle bar section, and a catch adapted to engage the corresponding edge of the other arm and pivoted on the adjacent handle bar section.

4. A folding children's carriage comprising a body having a pocket on its underside, a rock shaft journaled on said body, a fork pivoted on said shaft, a wheel mounted on the fork, and means for locking said wheel in a folded position in said pocket comprising a locking bar arranged transversely in said pocket and adapted to engage with the underside of said wheel and having longitudinal guide rods at its opposite ends, guides which are arranged on the body and on which said rods slide, and a spring operating to hold said locking bar yieldingly in engagement with said wheel.

5. A folding children's carriage comprising a body having pockets at opposite ends of its underside, two vertically swinging forks arranged in said pockets and pivoted on the body, wheels mounted on the forks, a rock shaft journaled on the body and provided at opposite ends with rock arms, links connecting said rock arms and forks, and means for retaining said wheels in an unfolded position comprising two longitudinally movable guide rods slidably mounted on said body, locking arms arranged on the guide rods and adapted to engage over the upper side of or with said rock arms, a cross bar connecting said guide rods, and a spring for holding said locking arms yieldingly in engagement with said rock arms.

6. A folding children's carriage comprising a body provided on its underside with a central pocket and end pockets, end wheels movable into and out of said end pockets, a central wheel movable into and out of said central pocket, forks pivoted on said body and carrying said end wheels, a rock shaft journaled on said body and arranged within said central pocket and provided with rock arms in said end pockets, links connecting said rock arms with said forks, a fork pivoted on said shaft at right angles to the axis thereof and carrying said central wheel, and means for retaining said wheels in a folded or unfolded position comprising a single locking device adapted in the unfolded po-

sition of the wheels to engage said rock arms and in the folded position of the same to engage said central wheel.

7. A folding children's carriage comprising a body provided on its underside with a central pocket and end pockets, end wheels movable into and out of said end pockets, a central wheel movable into and out of said central pocket, forks pivoted on said body and carrying said end wheels, a rock shaft journaled on said body and arranged within said central pocket and provided with rock arms in said end pockets, links connecting said rock arms with said forks, a fork pivoted on said shaft at right angles to the axis thereof and carrying said central wheel, and means for retaining said wheels in a folded or unfolded position comprising two longitudinal guide rods slidingly mounted on the body, two locking arms arranged on said rods and adapted to engage the upper sides of said rock arms in the unfolded position of said wheels, a transverse locking bar connecting said rods and adapted to engage the underside of said central wheel in the folded position of said wheels, and a spring operating to hold said rods and locking bar and arms yieldingly in their operative position.

Witness my hand this 27th day of March, 1915.

ANDREW T. WANNENWETSCH.

Witnesses:
THEO. L. POPP,
ANNA HEIGIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."