W. G. KENNEDY & B. W. TUCKER.

FOLDABLE DOLL CARRIAGE.

APPLICATION FILED OCT. 25, 1916.

1,238,524.

Patented Aug. 28, 1917.

3 SHEETS—SHEET 1.

Fig. 2

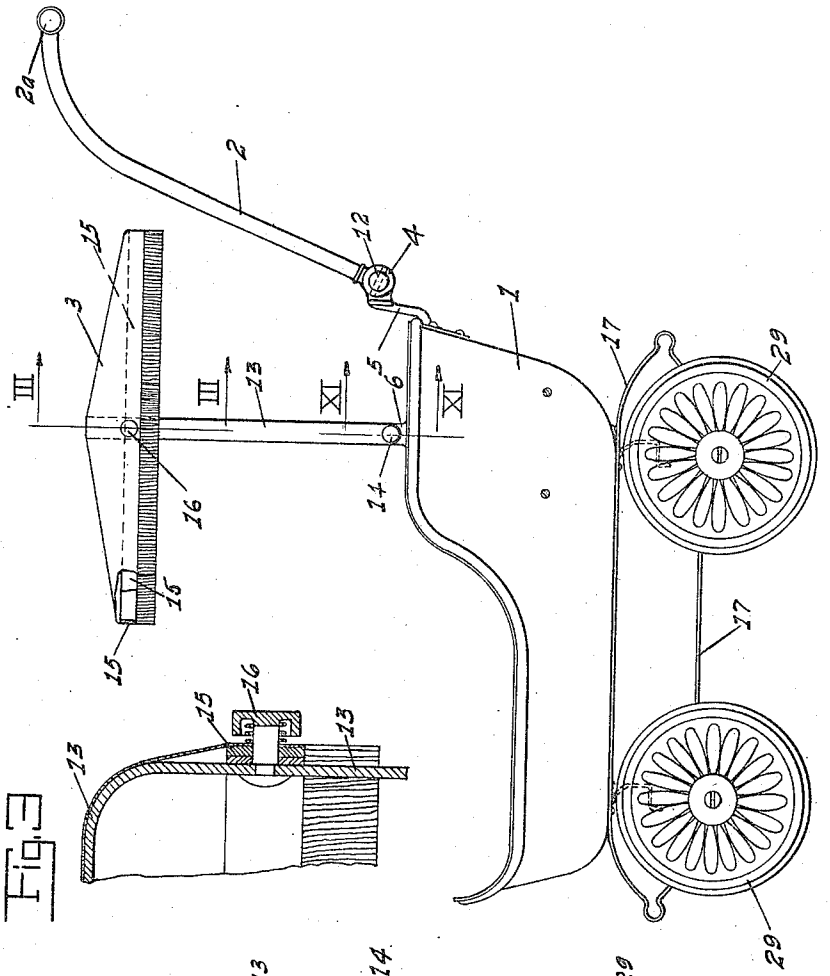
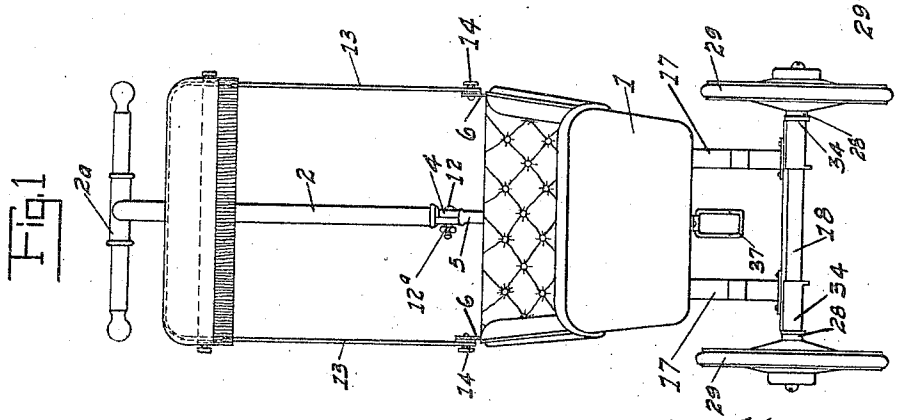


Fig. 3

Fig. 1



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3 SHEETS—SHEET 2.

Fig. 5

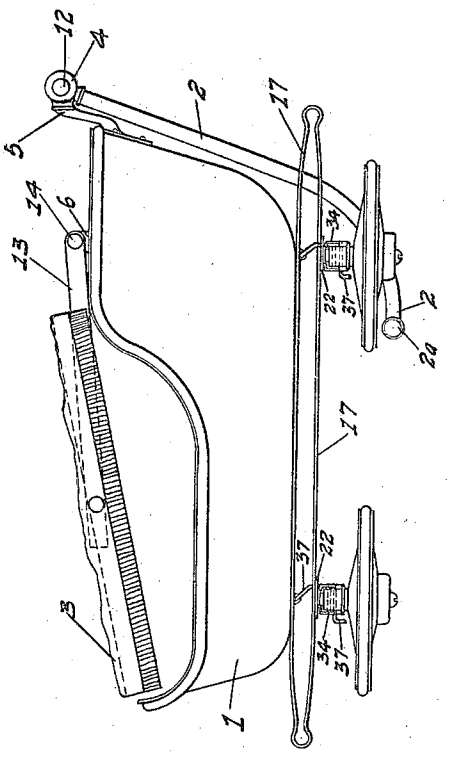
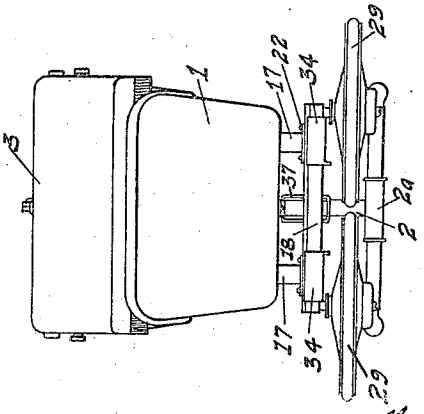


Fig. 4



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3 SHEETS—SHEET 3.

Fig. 6

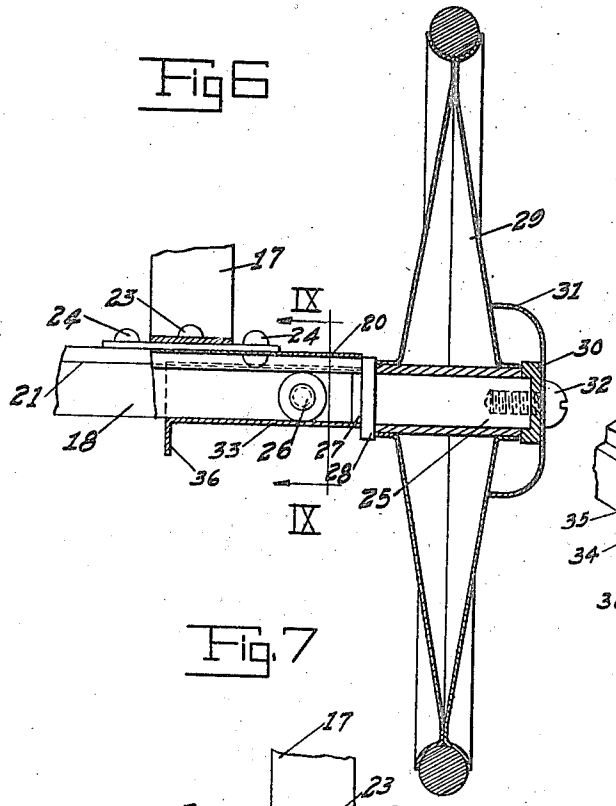


Fig. 11

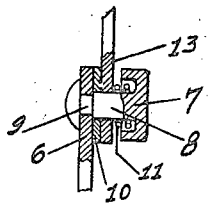


Fig. 8

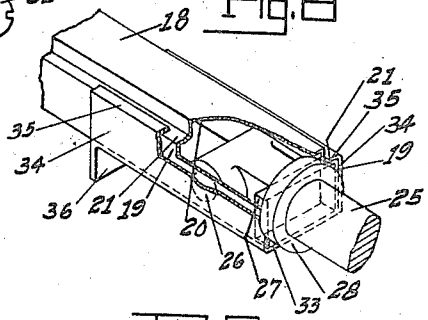


Fig. 7

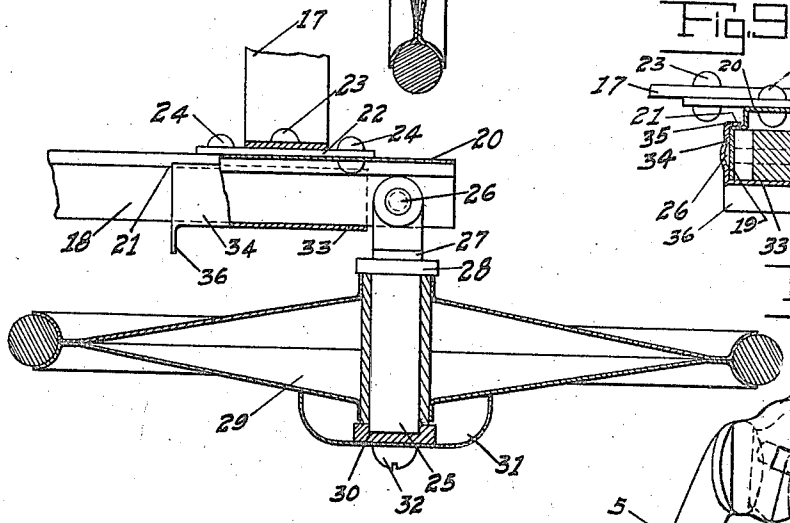
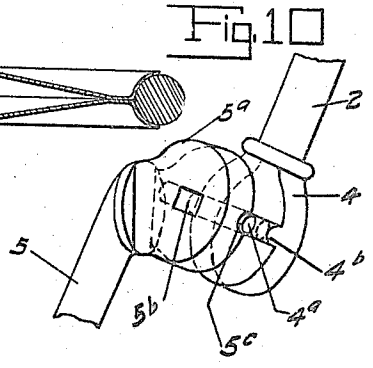


Fig. 9

Fig. 10



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UNITED STATES PATENT OFFICE.

WILLIAM GEORGE KENNEDY, OF NEW YORK, N. Y., AND BENJAMIN W. TUCKER, OF SOUTH ORANGE, NEW JERSEY.

FOLDABLE DOLL-CARRIAGE.

1,238,524. Specification of Letters Patent. Patented Aug. 28, 1917.

Application filed October 25, 1916. Serial No. 127,597.

To all whom it may concern:

Be it known that we, WILLIAM GEORGE KENNEDY and BENJAMIN W. TUCKER, citizens of the United States, and residents of the borough of Manhattan, city, county, and State of New York, and of South Orange, county of Essex, and State of New Jersey, respectively, have invented certain new and useful Improvements in Foldable Doll-Carriages, of which the following is a specification.

This invention relates to foldable doll carriages and one of the important objects of the invention is to provide a light and inexpensive doll carriage adapted to be compactly folded for storage and shipping purposes.

A further important object of the invention is the provision of a doll carriage adapted to be compactly folded without disconnecting any of the parts of the carriage.

A further object of the invention is to provide a folding doll carriage in which all of the parts are permanently connected together.

Another object of the invention is to provide a folding doll carriage adapted to be constructed of light stamped sheet metal.

In the drawings, Figure 1 is a front elevation of the carriage with the parts in position for use;

Fig. 2 a side elevation of the carriage with the parts in position for use;

Fig. 3 a detail sectional view on the line III—III of Fig. 2;

Fig. 4 a front elevation of the carriage with the parts in folded position;

Fig. 5 a side elevation of the carriage with the parts in folded position;

Fig. 6 a vertical sectional view through one wheel and a portion of one axle, showing the wheel in operative position;

Fig. 7 a view similar to Fig. 6 showing the wheel in folded position;

Fig. 8 a perspective view of an end of one of the axles, a portion of the axle and the wheel locking device being broken away;

Fig. 9 a vertical sectional view on the line IX—IX of Fig. 6;

Fig. 10 a detail perspective view of the carriage handle joints, the parts being separated; and

Fig. 11 a detail vertical sectional view on the line XI—XI of Fig. 2.

Referring to the various parts by numerals, 1 designates the body portion of the carriage and 2 the handle thereof.

We prefer to form the handle of a single tubular rod 2 provided with a cross bar 2^a at its upper end and having a flattened extension 4 at its lower end. The extension 4 of the handle is connected to a bracket 5 mounted on the rear wall of the carriage by a horizontally disposed bolt 12. The bracket 5 has a flattened outer end 5^a provided with a square central aperture 5^b, and the flattened extension 4 of the handle is provided with a circular aperture 4^a in alinement with the aperture 5^b in the bracket. The head of the bolt bears against the outer face of the part 5^a. The shank of the bolt adjacent the head thereof is square in cross-section and this squared portion passes through the square aperture 5^b and prevents the bolt from turning. The remaining portion of the bolt is cylindrical and passes through the aperture 4^a in the handle, and is screw-threaded adjacent its outer end to receive a wing-nut 12^a. The adjacent faces of the flat extensions 4 and 5^a are respectively provided with a diametrically extending rib 4^b and a complementary diametrically extending groove 5^c adapted to interlock when the nut 12^a is tightened. By loosening the nut 12^a the handle may be shifted laterally on the bolt 12 to release the rib 4^b from the groove 5^c and the handle 2 may be swung vertically. The rib and groove are so positioned that the handle may be positively locked against movement when it is folded beneath the carriage and also when it is swung upwardly in position for use in pushing the carriage.

After the nut 12^a is placed on bolt the end of the bolt shank is headed slightly to prevent the nut from being entirely removed from the bolt. Sufficient space is, of course, left to permit the nut to be unscrewed sufficiently to release the rib from the groove, as described. It will, of course, be understood

that if desired, a friction hinge joint similar to the joint 14, may be used between the handle members. The rod 2 of the handle is preferably curved rearwardly near its upper end as shown in Fig. 2 and made of such length that when the handle is folded downwardly against the rear wall of the carriage the cross bar 2^a will be beneath the carriage as shown in Figs. 4 and 5.

The carriage is preferably provided with a canopy supported above the body portion 1 and adapted to be folded downwardly upon the upper part of the body portion of the carriage. The covering 3 of the canopy is preferably formed of textile material and is supported upon and held taut by the top of a vertically disposed arch-shaped support 13 and a horizontally disposed rectangular spreader frame 15. The edges of the covering 3 are stretched over the spreader frame 15 and attached thereto in any suitable manner. The depending side arms of the arched support 13 are pivotally connected with the opposite side walls of the body portion 1 on horizontal pivots or friction hinges 14. The friction hinges 14 are preferably constructed as shown in Fig. 11. Each of the depending side members 13 of the arched support is connected to a bracket 6 mounted on the side of the carriage body by a horizontally disposed stud having an enlarged head 7 and a cylindrical shank 8 passing through an aperture in the side member 13, said shank having a reduced cylindrical extension 9 passing through an aperture in the bracket 6 and headed against the inner side thereof to lock the stud in place. The shoulder formed at the junction of the shank 8 and reduced extension 9 prevents the head 7 from being drawn inwardly against the side member 13 when the outer end of the shank extension 9 is headed against the bracket 6. This arrangement serves to always hold the head 7 at a fixed distance from the side member and bracket so that the spring 11 will exert a uniform pressure on the hinged parts. A washer 10 is interposed between the adjacent faces of the side member and bracket, and the coil spring 11 is interposed between the head 7 of the stud and the adjacent face of the side member 13. The springs 11 exert sufficient pressure against the hinged members to normally hold the canopy in its raised position. The rectangular spreader frame 15 is pivotally connected, at points intermediate the ends of its longitudinally extending side members, with the side bars of the support 13 a short distance below the arched top cross bar of the support, by means of horizontally disposed pivots or friction joints 16. These joints 16 are preferably of the same construction as the friction joints 14. The arched top of the support 13 extends above the horizontal spreader frame 15 when the parts are in the position shown in Figs. 1 and 2 and serves as a distending and supporting device for the covering 3. When the parts are folded as shown in Figs. 4 and 5 the support 13 and frame 15 are in the same plane, and the covering 3 collapses and lies loosely upon the top of the folded supporting members.

A pair of longitudinally extending elliptic springs 17 are riveted or otherwise attached to the bottom of the body portion 1 of the carriage, and these springs are preferably formed of a continuous spring metal strap, as shown in Figs. 2 and 5. Any other suitable form of spring may, however, be employed. A pair of axles 18 are rigidly connected to the lower leaves of the springs 17. The axles 18 are formed of channel shape comprising side members 19 and a top connecting web 20, the side members being bent inwardly to form longitudinally extending shoulders 21 at each side of the axle. Plates 22 are secured to the lower leaves of the springs 17 near each end of the springs by means of suitable rivets or other fastening devices 23. Said plates are in turn riveted to the webs 20 of the axles by means of rivets 24 as shown in Figs. 6, 7 and 9.

The stub axles 25 are mounted in the outer ends of the channel shape axles 18 on horizontal pivots 26 which pass through bearings in the inner ends of the stub axles and the depending walls 19 of the axles 18. The outer ends of the pivot pins 26 are preferably headed against the outer surfaces of the walls 19 of the axles 18, as shown in Fig. 9. Each of the stub axles 25 is formed with a squared portion 27, the side walls of which are adapted to engage the inner surfaces of the depending walls 19 of the axle 18 to prevent lateral play of the stub axles, and the upper surface of which is adapted to contact with the under faces of the shoulders 21 to limit the upward movement of the stub axle. Each of these stub axles is provided with a cylindrical collar 28 against which the inner edge of the hub of the wheel 29 abuts. The wheel is held on its stub axle by means of a cap 30 fastened to the outer end of the stub axle by a screw or other suitable fastening device 32. The outer end of the hub is preferably covered by an ornamental cap 31 secured to the stub axle by the screw 32 which holds the cap 30 in place.

The under side of each channel shape axle 18 is open and the stub axles 25 are, therefore, adapted to swing downwardly to fold the wheels beneath the body portion of the carriage, the wheels lying in a horizontal plane below the axles 18. Any suitable means may be employed for locking the stub axles 25 in alinement with the axles 18 to hold the wheels in a vertical plane in posi-

tion for use. The preferred form of holding or locking device shown in the drawings, is a frictionally held slide comprising a bottom wall 33 extending across the open bottom of the channel shape axle 18, and upwardly extending side walls 34 frictionally engaging the side walls 19 of the axle 18, said walls 34 being provided with inwardly extending flanges 35 slidably engaging the upper faces of the shoulders 21. The slide or locking member thus formed is preferably provided with a thumb piece 36. It will be observed that when the locking member is in the position shown in Figs. 6 and 8 it closes the opening in the under side of the channel shape axle 18 and holds the stub axle in horizontal position in alinement with axle 18, the under side of the squared portion 27 of the stub axle bearing on the upper surface of the bottom wall 33 of the locking slide.

To fold the wheels beneath the carriage, it is only necessary to grasp the thumb pieces 36 of the locking slides and move the slides inwardly along the axles 18 until the outer ends of said slides are beyond the inner ends of the stub axles. The stub axles will then swing downwardly and inwardly until the wheels 1 is in a horizontal plane.

A pair of depending latching hooks 37 are pivotally connected to the bottom of the body portion of the carriage at points above the axles 18. These latch hooks 37 are adapted to engage beneath the axles 18 when the springs 17 are compressed, as shown in Figs. 4 and 5, for the purpose of holding the axles closely adjacent the bottom of the carriage body, to form a more compact arrangement when the carriage is folded for storing or shipping.

By the arrangement and construction of parts shown and described, an inexpensive, light and durable doll carriage is provided, which may be rapidly and very compactly folded for storing or shipping purposes, without the necessity of disconnecting any of the parts.

A feature of importance is the provision of a folding toy carriage in which all of the parts are permanently connected together. This arrangement insures the proper setting up of the toy and prevents loss of parts in shipment. It also effectually prevents dismantling of the carriage and loss of parts thereof by children in using the toy.

Another important feature of the invention is the construction and arrangement of the parts whereby provision is made for folding the canopy in flattened condition upon the top of the body portion, with the wheels folded in a horizontal plane beneath the body portion, and the handle folded downwardly against the rear wall of the carriage body with the cross bar beneath the carriage, the springs being compressed to bring the axles and wheels closely adjacent to the bottom of the carriage where they are locked in place. By this arrangement the carriage is foldable into a very compact and substantially rectangular package.

What we claim is:

1. In a folding doll carriage, the combination of a body portion, front and rear axles connected to said body portion, stub axles pivotally connected with said front and rear axles, wheels journaled on said stub axles and adapted to swing therewith so as to be folded under the body portion in a substantially horizontal plane, and a handle pivotally connected to said body portion and adapted to be swung downwardly against the rear wall of said body portion.

2. In a folding doll carriage, the combination of a body portion, a handle connected to said body portion and adapted to be folded thereagainst, and a folding canopy supported above said body portion and adapted to be swung downwardly thereupon, said canopy comprising an arch-shaped support the depending ends of which are pivotally connected to the side walls of the body portion, a rectangular frame pivotally connected to the side members of the arch-shaped support adjacent the upper end of said side members, and a covering having its edges attached to said frame and adapted to be distended by the arched top of said support.

3. In a folding doll carriage, the combination of a body portion, front and rear axles, springs interposed between said body portion and axles, wheels journaled on said axles, latching devices adapted to hold said axles closely adjacent to the body portion with the springs compressed, and a handle connected to the body portion and adapted to be folded thereagainst.

4. In a folding doll carriage, the combination of a body portion, front and rear axles, springs interposed between said axles and the body portion, stub axles connected to the ends of the front and rear axles on horizontal pivots, wheels journaled on said stub axles and adapted to swing downwardly into a horizontal plane, means for holding said wheels in a vertical plane, and means for holding the front and rear axles closely adjacent to the body portion with the springs compressed.

5. In a folding doll carriage, the combination of a body portion, front and rear axles, springs mounted on said axles and supporting said body portion, stub axles connected to the ends of the front and rear axles on horizontal pivots, wheels journaled on said stub axles and adapted to swing therewith so as to be beneath the carriage in a substantially horizontal plane, means for holding said wheels in a vertical plane,

means for holding the front and rear axles closely adjacent the body portion with the springs compressed, and a handle connected to the body portion and adapted to fold thereagainst.

6. In a folding doll carriage, the combination of a body portion, front and rear axles, springs mounted on said axles and supporting said body portion, stub axles connected to the ends of the front and rear axles on horizontal pivots, wheels journaled on said stub axles and adapted to swing therewith so as to be beneath the carriage in a substantially horizontal plane, means for holding said wheels in a vertical plane, means for holding the front and rear axles closely adjacent the body portion with the springs compressed, a handle connected to the body portion and adapted to fold thereagainst, and a canopy supported above the body portion and adapted to fold downwardly thereupon.

7. In a folding doll carriage, the combination of a body portion, channel shape front and rear axles having open under sides and ends, stub axles supported in the ends of said front and rear axles on horizontal pivots secured in the depending side walls of said channel shape axles, wheels journaled on said stub axles and adapted to swing therewith so as to fold beneath the carriage, and plates slidably mounted on said front and rear axles at each end and adapted to confine the inner ends of said stub axles within the channel shape axles to hold the wheels in a vertical plane, said plates being adapted to slide inwardly along the front and rear axles to release the stub axles.

8. In a folding doll carriage, the combination of a body portion, channel shape front and rear axles having open under sides and ends, springs interposed between said axles and the body portion, stub axles pivotally mounted in the ends of said front and rear axles on horizontal pivots, wheels journaled on said stub axles and adapted to swing downwardly and inwardly therewith so as to lie in a horizontal plane, plates slidably mounted on said front and rear axles at each end and adapted to confine the inner ends of said stub axles within the channel shape axles to hold the wheels in a vertical plane, said plates being adapted to slide inwardly along the front and rear axles to release the stub axles, means for holding the front and rear axles closely adjacent the under side of the body portion with the springs compressed, and a handle pivotally connected to said body portion and adapted to fold thereagainst.

9. In a folding doll carriage, the combination of a body portion, channel shape front and rear axles, having open under sides and ends, springs interposed between said axles and the body portion, stub axles pivotally mounted in the ends of said front and rear axles on horizontal pivots, wheels journaled on said stub axles and adapted to swing downwardly and inwardly therewith so as to lie in a horizontal plane, plates slidably mounted on said front and rear axles at each end and adapted to confine the inner ends of said stub axles within the channel shape axles to hold the wheels in a vertical plane, said plates being adapted to slide inwardly along the front and rear axles to release the stub axles, means for holding the front and rear axles closely adjacent the under side of the body portion with the springs compressed, a handle pivotally connected to said body portion and adapted to fold downwardly against the rear wall thereof, and a canopy supported above said body portion and adapted to fold downwardly thereupon.

10. In a folding doll carriage, the combination of a body portion, front and rear axles connected to said body portion, stub axles pivotally connected with said front and rear axles, wheels journaled on said stub axles and adapted to swing therewith so as to be folded under the body portion in a substantially horizontal plane, a handle pivotally connected to said body portion and adapted to be swung inwardly alongside the rear wall of the body portion, and a canopy supported above said body portion and adapted to be swung downwardly upon the body portion.

11. In a folding doll carriage, the combination of a body portion, front and rear axles connected to said body portion, stub axles pivotally connected with said front and rear axles, wheels journaled on said stub axles and adapted to swing therewith so as to be folded under the body portion in a substantially horizontal plane, means for holding said wheels in a vertical plane, a handle pivotally connected to said body portion and adapted to be swung inwardly alongside the rear wall of the body portion, means for locking the handle in its folded and extended positions, and a canopy supported above said body portion and adapted to be folded downwardly upon the body portion.

12. In a folding doll carriage, the combination of a body portion, front and rear axles, springs interposed between said body portion and axles, stub axles pivotally connected with said front and rear axles, wheels journaled on said stub axles and adapted to be folded beneath the body portion in a substantially horizontal plane, means for holding said front and rear axles closely adjacent to the body portion with the springs compressed, an upwardly and rearwardly curved handle pivotally connected to the rear wall of the body portion and adapted

to be folded downwardly and inwardly with its outer end extending beneath the body portion, and means for holding the handle in its folded and extended positions.

13. In a folding doll carriage, the combination of a body portion, axles connected thereto, wheels journaled on said axles, an upwardly and rearwardly curved handle pivotally connected to the rear wall of the body portion adjacent the upper edge thereof and adapted to fold downwardly and inwardly toward the rear wall of the body portion with its outer end extending beneath the body portion, and a canopy pivotally held to the body portion adjacent the rear end thereof and adapted to be folded forwardly and downwardly upon the body portion.

This specification signed this 21st day of October, A. D. 1916.

WILLIAM GEORGE KENNEDY.
BENJAMIN W. TUCKER.

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