A. E. McGILL.

FOLDING PERAMBULATOR.

APPLICATION FILED SEPT. 22, 1905.

1,053,422.

Patented Feb. 18, 1913.

5 SHEETS—SHEET 1.

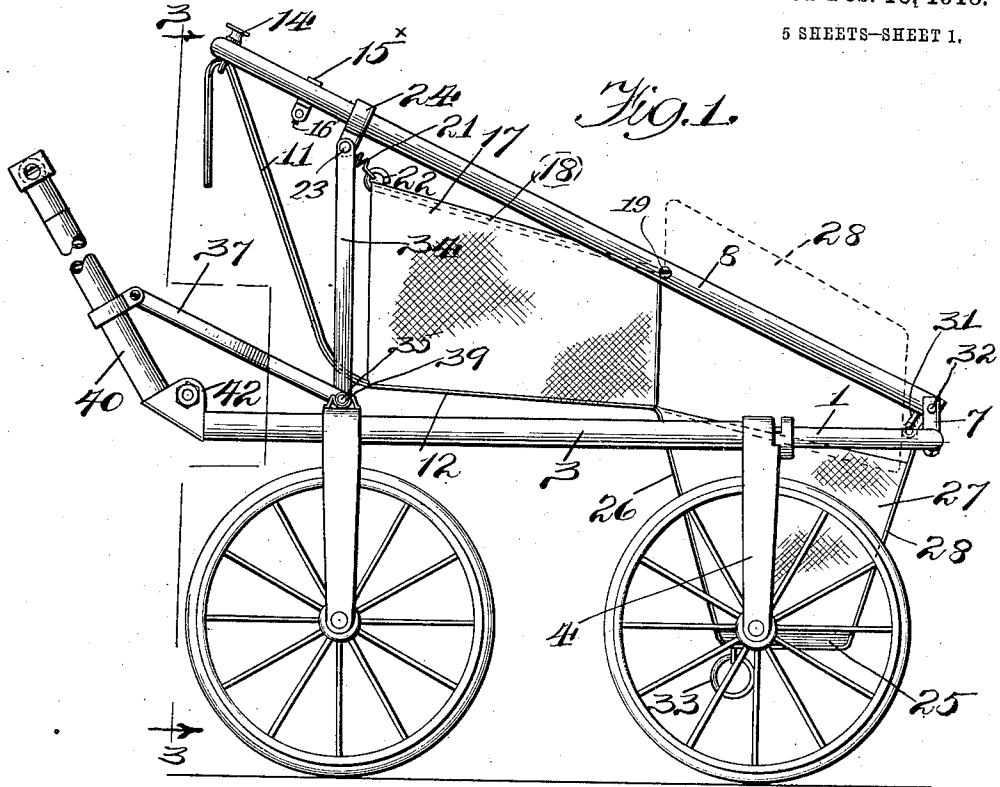


Fig. 1.

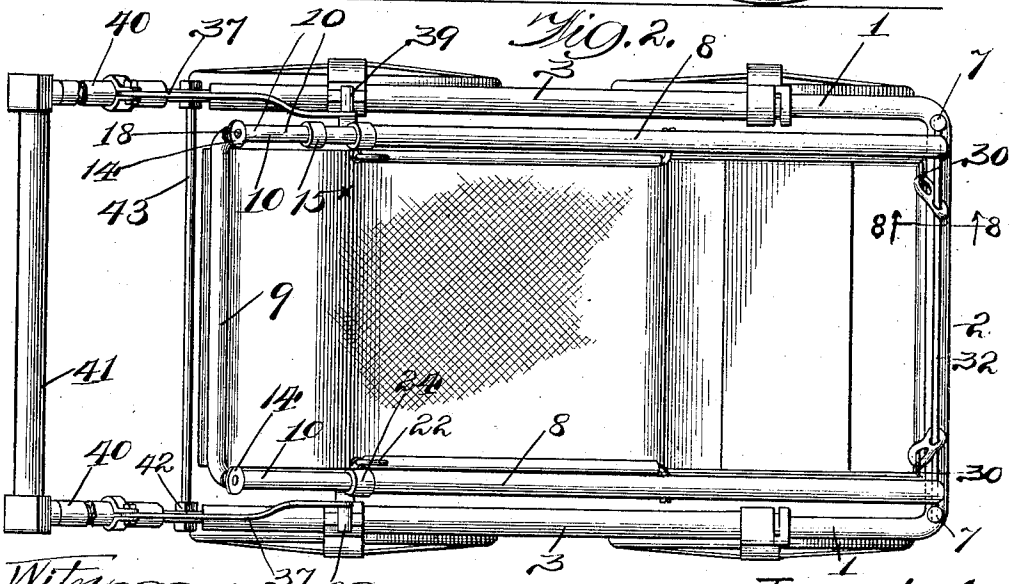


Fig. 2.

Witnesses:
J. B. Weir
G. V. Donahue.

Inventor:
A. E. McGill
by Brown Dosley & Hopkins
Attys

A. E. McGILL.

FOLDING PERAMBULATOR.

APPLICATION FILED SEPT. 22, 1905.

1,053,422.

Patented Feb. 18, 1913.

5 SHEETS—SHEET 2.

Fig. 3.

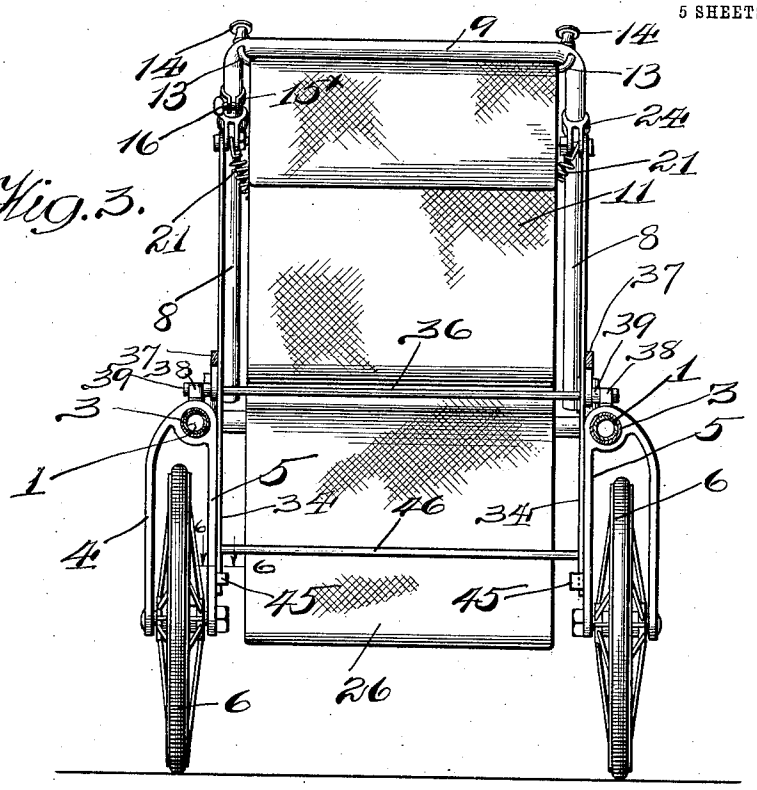


Fig. 6.

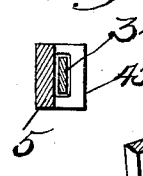


Fig. 5.

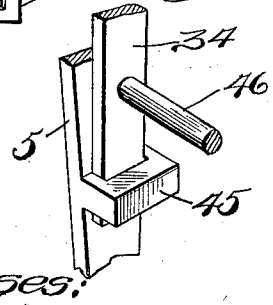
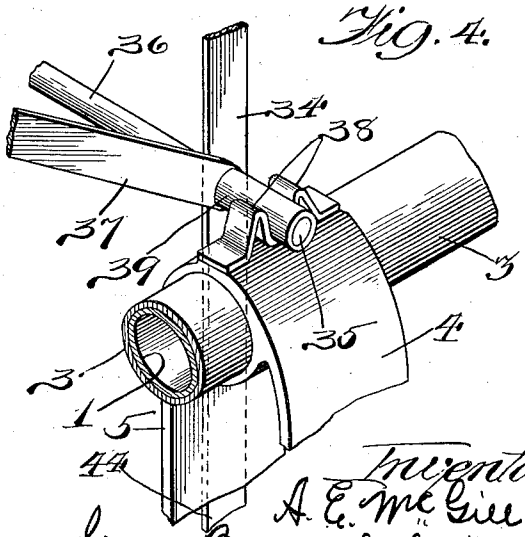


Fig. 4.



Witnesses:
J. B. Weir
G. W. Donaroe.

Inventor
A. E. McGill
by Brown Darley Hopkins
Attys.

A. E. McGILL.

FOLDING PERAMBULATOR.

APPLICATION FILED SEPT. 22, 1905.

1,053,422.

Patented Feb. 18, 1913.

5 SHEETS—SHEET 3.

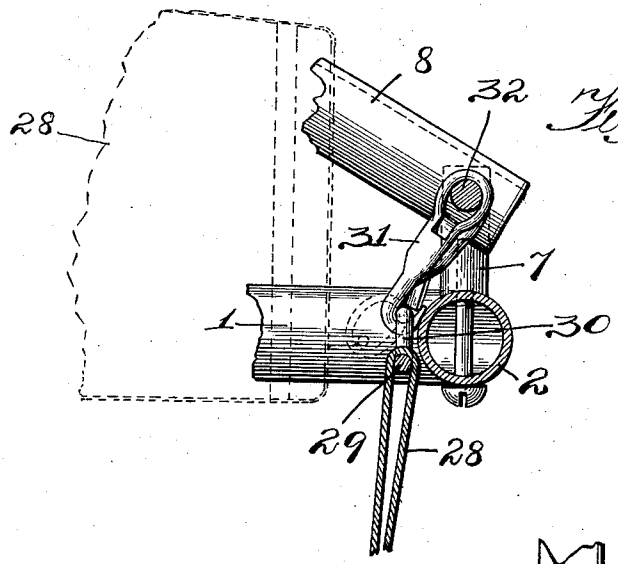


Fig. 8.

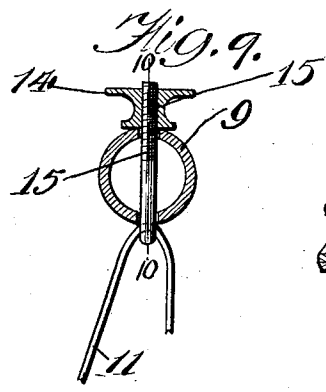


Fig. 9.

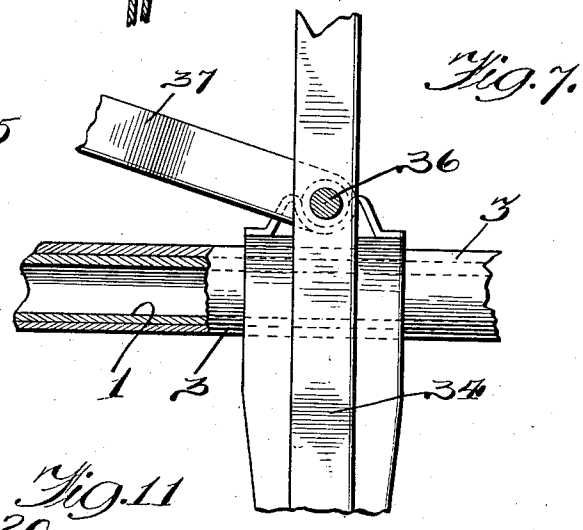


Fig. 7.

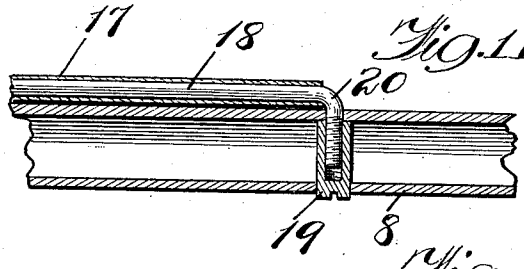
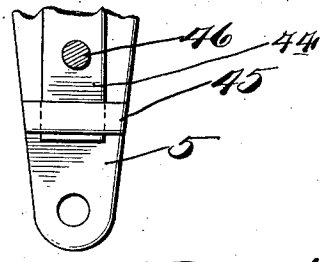


Fig. 11



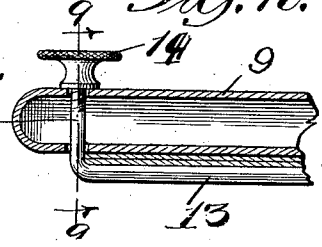


Fig. 10.

Witnesses:
J. B. Weir
G. W. Dorsey.

Inventor:
A. E. McGill
by Brown Hanley & Hopkins
Attys

A. E. McGILL.

FOLDING PERAMBULATOR.

APPLICATION FILED SEPT. 22, 1905.

1,053,422.

Patented Feb. 18, 1913.

5 SHEETS—SHEET 4.

Fig. 12.

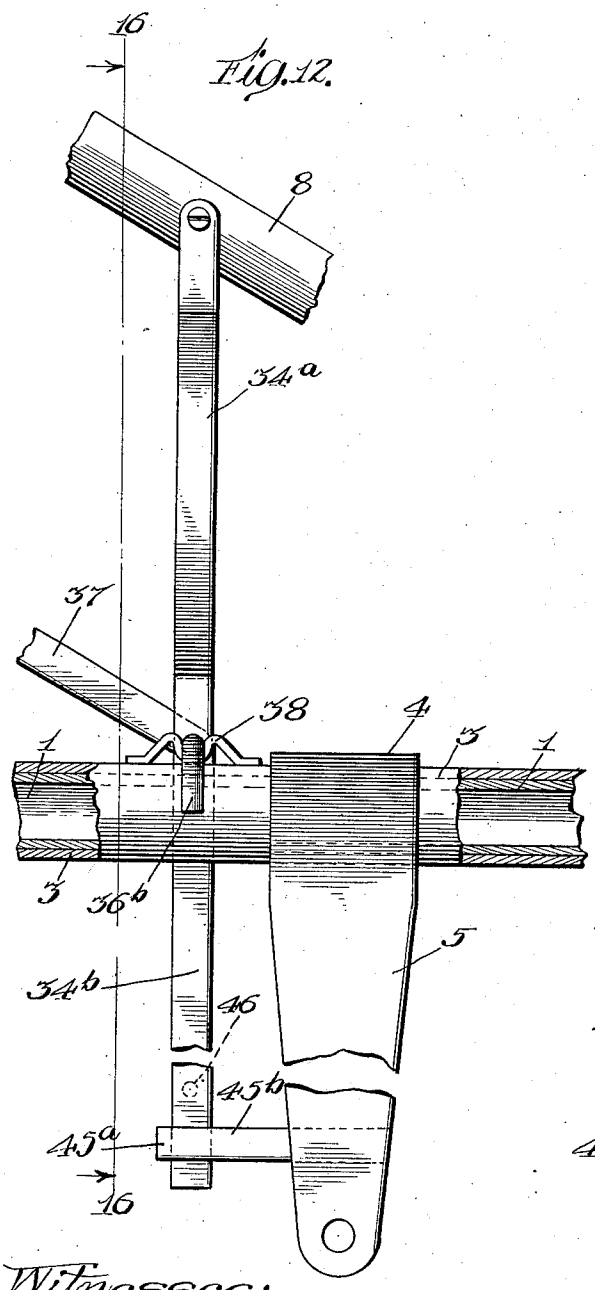
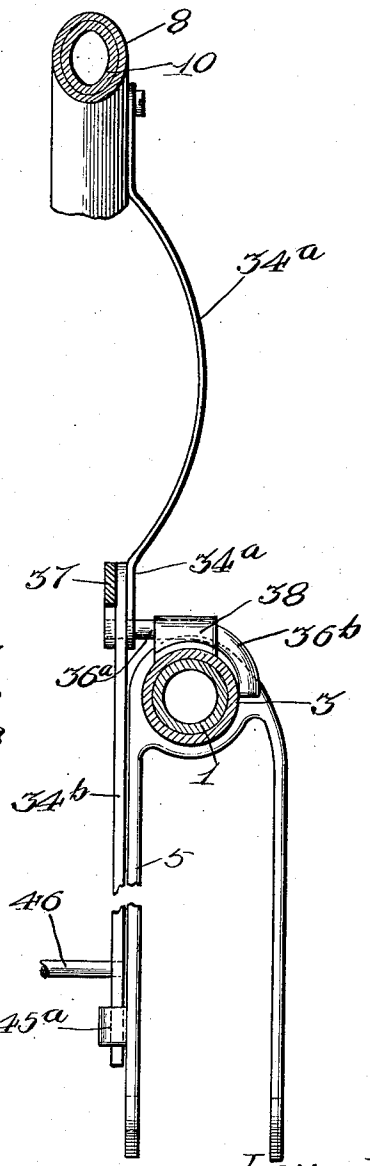


Fig. 13.



Witnesses:
J. B. Weir
G. V. Donahue.

Inventor
A. E. McGill
by Brown Sterling & Hopkins
Attys

A. E. McGILL.

FOLDING PERAMBULATOR.

APPLICATION FILED SEPT. 22, 1905.

1,053,422.

Patented Feb. 18, 1913.

5 SHEETS—SHEET 5.

Fig. 14.

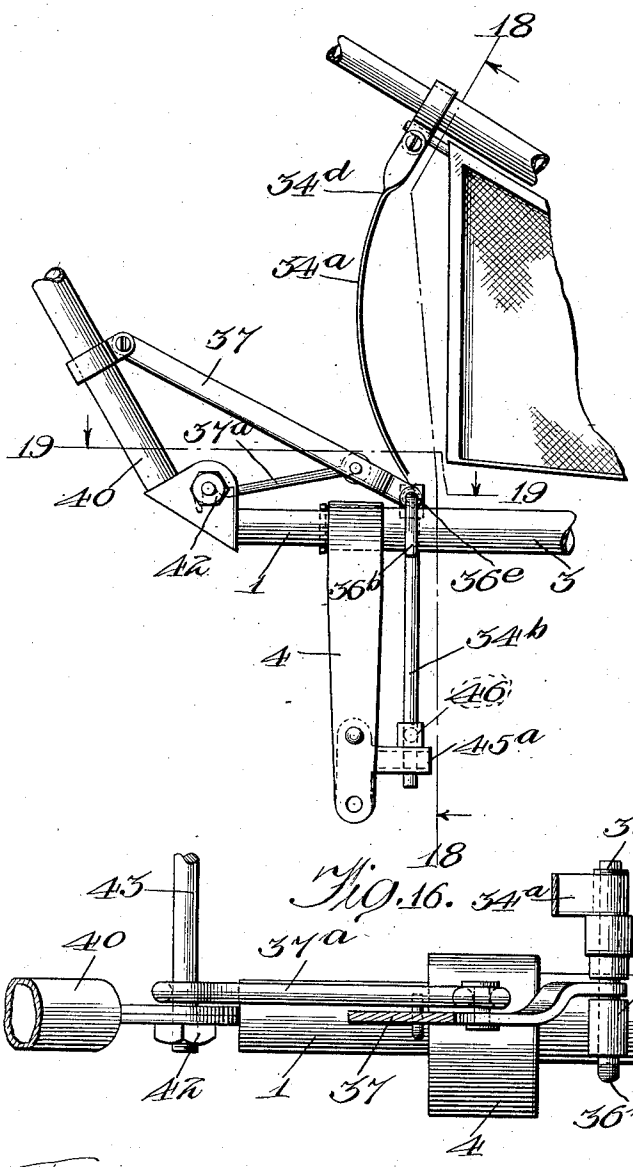


Fig. 15.

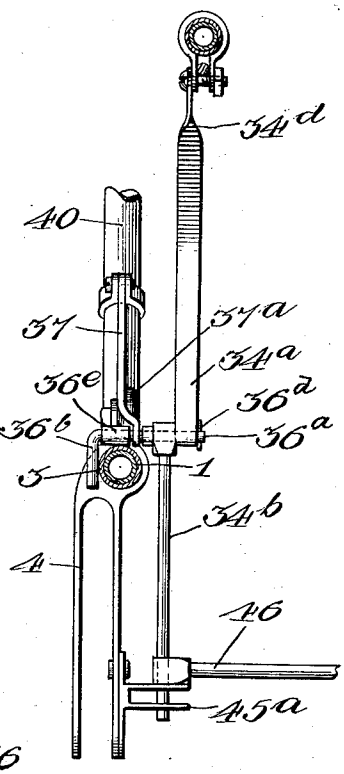


Fig. 16.

Witnesses:
F. B. Weir
G. V. Domarus.

Inventor:
A. E. McGill
by Brownell, Ley & Hopkins,
Attys

UNITED STATES PATENT OFFICE.

ALBERT E. McGILL, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALWIN MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FOLDING PERAMBULATOR.

1,053,422. Specification of Letters Patent. Patented Feb. 18, 1913.

Application filed September 22, 1905. Serial No. 279,577.

To all whom it may concern:

Be it known that I, ALBERT E. McGILL, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Folding Perambulators, of which the following is a specification.

This invention relates more particularly to that type of folding perambulators in which the wheel supports fold transversely under a substantially horizontal running gear frame carrying a foldable body structure and handle, and the invention has for its primary object to provide an improved, simple, efficient and inexpensive construction of folding perambulator of this type.

Another object of the invention is to provide an improved means for bracing the wheel supports and holding them against inward movement when in use.

Another object of the invention is to provide improved and simple means whereby the wheel support bracing means may be operated to fold automatically by the folding movement of the handle.

With a view to the attainment of these ends and the accomplishment of certain other objects, which will hereinafter appear, the invention consists in certain features of novelty in the construction, combination and arrangement of parts which will now be described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the drawings: Figure 1 is a side elevation of a folding perambulator embodying this invention. Fig. 2 is a plan view thereof. Fig. 3 is a vertical cross section on the line 3—3 of Fig. 1. Fig. 4 is an enlarged detail perspective view of the catch for holding the seat brace and the connecting parts. Fig. 5 is an enlarged detail perspective view of the inner side of one of the rear forks and the end of the brace bar. Fig. 6 is a detail horizontal section on the line 6—6 in Fig. 3, on an enlarged scale. Fig. 7 is an enlarged side elevation of one of the rear forks looking at the inner side thereof, showing also its correlated parts. Fig. 8 is an enlarged vertical section on the line 8—8 in Fig. 2. Fig. 9 is a detail transverse section on the line 9—9 of Fig. 10. Fig. 10 is a longitudinal section on the line 10—10 of Fig. 9. Fig. 11 is a detail longitudinal section of one of the side bars of the hinged seat frame and the means for supporting the upper edges of the seat fabric. Fig. 12 is a side elevation of a portion of the perambulator showing a modification hereinafter described. Fig. 13 is a vertical section thereof taken on the line 16—16 Fig. 12. Fig. 14 is an elevation of a portion of a side of the perambulator, showing still further modifications hereinafter explained. Fig. 15 is a section thereof on the line 18—18 Fig. 14. Fig. 16 is an enlarged section on the line 19—19 Fig. 14.

Like signs of reference indicate like parts throughout the several views.

The running gear frame is composed preferably of side bars 1 which are connected together at their forward ends by a cross bar 2, thereby constituting a U-shaped construction, and on each side of these side bars is rotatably mounted a sleeve 3, and these sleeves carry respectively the two pairs of wheel supports or forks which may be of the usual or any suitable construction, but which are preferably forked or bifurcated, as better shown in Fig. 3, each comprising two branches 4, 5, between which one of the four wheels 6 is journaled in any suitable way, the forks being rigidly secured to their respective sleeves 3 so that when one of them is turned in the act of folding the wheel under the running gear frame, the other will be similarly rotated.

Situated above the running gear frame is a body structure of suitable form for accommodating the child and bedding. This embodies suitably supported side bars which fold in relation to the running gear frame and in this example of the invention constitute a seat frame for supporting the seat bottom and seat back. The seat frame when in use occupies an inclined position, as shown in Fig. 1; but when the device is folded occupies a position close to the running gear frame and substantially parallel therewith, as will be understood, but inwardly with respect to the side bars 1 of said running gear frame, as indicated in the plan view Fig. 2. This seat frame is also preferably composed of side bars 8, whose free ends are pivoted to the standards 7, while their rear ends are connected together by a cross bar 9, constituting a continuation of the two stems 10 which are telescoped with the side bars 8 respectively, so that the seat frame may be elongated when desired

for lengthening out the back extension 11, which is preferably composed of a strip of leather or any other suitable fabric extending from the lower portion or bottom 12 of the seat and passing over a clamping bar 13 secured to the underside of the cross bar 9 by means of thumb screws 14 and threaded stems 15 passing upwardly through the cross bar 9 and serving to clamp the back extension 11 to the underside of said cross bar. When it is desired to have the child sit upright on the seat 12, the stems 10 are forced inwardly as far as desired into their respective tubes 8 and the end of the extension 11 is drawn tightly over the clamping bar 13 until all the slack therein is taken up and it assumes a substantially perpendicular position, whereupon it may be clamped in place by means of thumb screws 14. When it is desired that the child shall recline or lie down, the cross bar 9 is pulled outwardly to the extent desired, the thumb screws 14 having been first loosened, so that the back extension 11 will assume a more or less inclined position, according to the degree which it is desired to have the child recline, and it may be locked in this position by any suitable means for preventing the stems 10 from sliding downwardly in their tubes 8. Such, for example, as collar 15ˣ, adjustably held in position on one of the stems 10, by clamp screw 16.

The sides of the bottom or seat 12 are provided with flexible upward extensions 17 which may be composed of leather or any other suitable fabric, and which are supported at their upper edges by rods 18. The forward end of each of these rods is pivotally attached to one of the side bars 8 of the hinged seat frame by any suitable means as, for example, the device shown in Fig. 11, consisting of a nut 19, passing through one side of bar 8 and engaging a threaded stem 20 on the rod 18 which passes through the opposite side of the bar 8. The opposite end of each of the rods 18 is preferably sustained by elastic means from its side bar 8 of the seat frame. A convenient expedient for accomplishing this is that which is shown in Fig. 1 and consists of a coiled spring 21, having its lower end engaging a hook or eye 22 on bar 18 and its upper end engaging a screw 23 which also serves as a means of clamping or supporting collar 24 to the bar 8.

At the forward side of the seat is arranged a foot rest 25, which is preferably supported by a bag-like extension of the bottom portion of the seat, comprising a back portion 26 continuing downwardly from the bottom 12, side portions 27, and a front portion 28, being provided at its upper edge with a cross bar 29 having eyes 30 at each end, or any other suitable means whereby the forward portion 28 may be suspended from the seat frame. Such suspension of this part is preferably effected by a pair of snap hooks 31 having their hook ends engaging in the eyes 30 respectively and their other ends flexibly connected in any suitable way with cross bar 32 arranged over cross bar 2, longitudinally thereof, and if desired constituting also the pivotal support for the forward ends of the side bars 8. All of the side portions of the bag-like extension, which supports foot rest 25, are preferably constructed of leather or any other suitable fabric, so as to be capable of folding up with the various hinged members of the device; and when in use as a foot rest, it assumes the position shown in Fig. 1, supported at its forward edge by the snap hooks 31; but when it is desired that the child assume a reclining position or lie down, the foot rest 25 is elevated into position shown in dotted lines in Figs. 1 and 8, the hooks 31 being detached from the eyes 30 and hooked into any suitable attachment on the bottom of the foot rest 25, preferably one or more rings 33 secured to the rear edge thereof. Thus it will be seen that when this bag-like extension which supports the foot rest is elevated to its horizontal position, it constitutes an inclosure or covering for the child's feet and for the wraps or bedding that might be used in the carriage, and when so positioned constitutes a continuation of the sides 17, thus completely housing the child while lying down and avoiding the possibility of the child rolling out. It will also be seen that when the bag-like extension which supports the foot rest is in its lowered position, it houses the feet and the lower limbs of the child and precludes the possibility of the child inserting its feet between the spokes of the front wheels.

The rear end of the seat frame is supported by standards 34, which are pivoted at their upper ends to the collar 24, on the body structure side bars 8, and when in their upright position are supported on the running gear frame by the projecting ends 35 of a cross rod 36, which secures the standards 34 together and which cross rod also constitutes the means for pivotally connecting the forward ends of the braces 37 to the standards 34. When the standards 34 are in their upright position, the extensions 35 are held in place in notches or catches on the running gear frame preferably constituted by a pair of lugs 38 on the upper end of each of the rear wheel forks and between which the projections 35 are seated. In the particular example of the invention shown in the drawing, the braces 37 are provided with sleeves or elongated bearings 39 in which the extensions 35 are journaled, and which serve for the direct support of the extensions in the seat constituted by the lugs

38. The rear ends of the braces 37 are pivotally connected in any suitable way to the side bars 40 of a handle which is constituted by said bars and a cross bar 41, and which is pivoted to the rear ends of the running gear frame bars 1 by suitable hinges 42, connected together by a cross brace 43, so that when the supports 35 are unseated, allowing the standards 34 to move forwardly at their lower ends, the folding body structure including the hinged seat frame and the handle may be folded together, the braces 37 being so proportioned and arranged with relation to the standards 34 that they push the standards 34 forwardly as the handle is turned downwardly and return the standards 34 to their upright or working positions when the handle 40 is raised to its operative position.

In order that there may be means for rigidly bracing the wheel supports and holding them apart, and that the same may be operated by the standards 34 to fold up out of the way of the wheel supports into a position substantially lengthwise of the running gear frame when the handle is folded downward, I provide connected side members which in this form are shown as extensions 44 and are supported by, but when in use project below, the running gear frame to a point removed below the level of the pivotal points of the wheel supports where they carry cross bar 46, and engage the rear wheel supports by the aid of sockets or keepers 45 formed on or secured to the inner sides of the latter respectively, and into which keepers the members 44 enter when the supports 35 are being lowered into their seats 38. Thus there is provided a wheel support bracing means embodying the side members 44 which swing forward and back in planes perpendicular to that of the running gear frame, and an operating means for such bracing means embodying the standards 34 which are also supported on the running gear frame but project upward therefrom and each is pivotally connected to and supports one of the side bars 8, of the collapsible body structure, and both the side bars 8 and the standards 34 are flexibly connected with the folding elements 40 to effect the aforesaid folding movements of the body structure elements 8, standards 34 and wheel support bracing means 44, 46, as a consequence of folding the handle. The substantial function of bracing the wheel supports to prevent inward collapse is performed in greater part by the cross bar 46, and the side members 44, while lending to this function in proportion to their degree of rigidity, serve more as a part of the means for suspending and operating the bracing bar 46.

In the form of the invention shown in Figs. 12 and 13 a portion of the standards corresponding to the standards 34, which are rigid in the first form described, are made of bowed springs 34^a to enable the seat to yield under its load and are attached to side members 34^b of the wheel support bracing means in any suitable manner, or constructed in any other way whereby the standards will be flexible and the said side members reasonably rigid. In this modification, it is also seen that the cross bar 36 which extends entirely across the running gear frame in Fig. 1 is omitted so as to avoid the possibility of the child striking against it during the springing action of the seat, and in lieu of this rod a short pivot 36^a is employed on each side of the machine, these pivots being rigidly secured to the standards 34^b in any suitable way and their ends are projected outwardly and downwardly to engage over the side bars 1 to prevent inward or lateral movement of the standards 34^b. In this instance the seats 38 are carried to the rear of the wheel supports or forks 4, 5, and are supported directly upon the sleeves 3 and this necessitates carrying the sockets 45 also to the rear which is done by the aid of an extension or arm 45^b which carries the socket 45^a at its end, the arm 45^b being secured to or formed on the inner branch 5 of the wheel fork.

In the form of the invention shown in Figs. 14 and 16, the springs 34^a are given a half turn or twist at 34^d, so that as they bend, their extension will be rearwardly instead of laterally, and their lower ends have pivotal connection with the side members 34^b of the wheel support bracing means instead of being rigidly secured thereto as in Figs. 12 and 13. This pivotal connection is effected by means of the pins 36^a which are rigidly secured to the members 34^b, and on the inner ends of which the lower ends of the springs 34^a are held by means of cotters 36^d, whereby the springs may readily be detached when desired and substituted by springs of greater or less tension, accordingly as the child to be carried is heavier or lighter, thus providing a means for having resiliency of the springs at all times suitable to the weight of the child. In order that the upper ends of the standards 34^a may be held from moving forward or backward, any suitable stops or locks may be employed, such for example as hooks 37^a, which are pivoted at one end to the braces 37 and have their other ends detachably engaged with cross bar 43 of the running gear frame. The pins 36^a may, if desired, be provided with anti-friction rollers 36^e where they bear on the upper sides of the sleeves 3 and in this form, if desired, the seats or notches 38 may be omitted as the standards 34^a will be amply held by the hooks 37^a.

The extensible head rest 9, 10 shown herein constitutes the subject matter of the

claims in my pending application Serial No. 235,529, filed December 5, 1904, and the foot rest forms the subject matter of the claims of my pending application Serial Number 671,745, filed January 17, 1912.

What is claimed as new is:—

1. In a folding perambulator, the combination of a running gear frame, suitable supports therefor, a seat frame, a seat having side extensions, rods secured to the upper edges of said side extensions, means pivotally connecting the forward ends of said rods with the seat frame, and springs connecting the rear ends of said rods with the seat frame.

2. In a folding perambulator, the combination of a running gear frame, wheel supports rotatable with respect to the frame, a folding seat support on the frame, braces for supporting said seat support in its operative position, extensions on said braces extending downwardly below said running gear frame, and means connected with the wheel supports for receiving and holding said extensions.

3. In a folding perambulator, the combination of a running gear frame, wheel supports rotatable with respect to the frame, a folding seat support on the frame, braces for supporting said seat support in its operative position, extensions on said braces extending downwardly below said running gear frame, and means connected with the wheel supports for receiving and holding said extensions, said downward extensions being connected together contiguous to their points of engagement with the last said means.

4. In a folding perambulator, the combination of a running gear frame embodying side bars, rotatable wheel supports adapted to fold transversely of said bars, bracing means for holding said wheel supports apart supported by the running gear frame and depending below said bars, means for detachably connecting said bracing means with the wheel supports at points removed from their pivot points, said bracing means embodying side members depending below and adapted to be moved into position substantially lengthwise of said side bars, and arranged one at each side of the running gear frame, and a cross connection extending from one side of the perambulator to the other between said side members, and a folding handle foldable with relation to said bracing means and operatively connected therewith for folding and unfolding the same as the handle is folded and unfolded.

5. In a folding perambulator, the combination of a running gear frame embodying side bars, rotatable wheel supports adapted to fold transversely of said side bars, a folding brace for holding the wheel supports apart, supported by the running gear frame and depending from the side bars thereof, means for detachably securing the brace to the wheel supports, a folding handle connected with the running gear frame, and means operatively connecting said brace with the handle whereby the brace will be moved into and out of operative position as the handle is unfolded or folded, said brace comprising depending side members and a cross member connecting the side members together.

6. In a folding perambulator, the combination of a running gear frame, rotatable wheel supports adapted to fold transversely of said frame, a folding body structure supported by said frame and embodying side bars and pivotal braces supporting said side bars at one end on the frame and having extensions below the frame adapted to brace the wheel supports.

7. In a folding perambulator, the combination of a running gear frame, rotatable wheel supports adapted to fold transversely of said frame, pivotal side bars arranged over the frame and adapted to be lowered into close relation therewith when the perambulator is folded, and pivotal braces supporting said side bars at one end upon the running gear frame and having extensions below the running gear frame adapted to brace the wheel supports.

8. In a folding perambulator, the combination of a running gear frame, rotatable wheel supports adapted to fold transversely of said frame, pivotal side bars arranged above the running gear frame and adapted to be lowered into close relation therewith when the perambulator is folded, and pivotal braces supporting said side bars at one end upon the running gear frame and having extensions projecting below the running gear frame and connected together near their lower ends for bracing the wheel supports.

9. In a folding perambulator, the combination of a running gear frame, rotatable wheel supports adapted to fold transversely thereof, pivotal side bars arranged above the running gear frame and adapted to be lowered into close relation therewith when the perambulator is folded, pivotal braces supporting said side bars at one end upon the frame and having extensions projecting below the frame for bracing the wheel supports, and a hinged handle operatively connected with said braces and side bars for causing the braces and side bars to move into and out of folded position as the handle is turned on its hinge.

10. In a folding perambulator, the combination of a running gear frame embodying side bars, rotatable wheel supports adapted to fold transversely of said side bars, bracing means for holding the wheel supports apart, supported by the running gear frame and

depending below said side bars for bracing the wheel supports at points removed from their pivotal points, said bracing means comprising side members depending below and adapted to be moved into position substantially lengthwise of the side bars, a folding handle and a link connected with the handle and also with said bracing means for causing the bracing means to be automatically moved into and out of position lengthwise of the running gear frame.

11. In a folding perambulator, the combination of a running gear frame embodying side bars, rotatable wheel supports adapted to fold transversely of said side bars, bracing means for holding the wheel supports apart, depending below said side bars for bracing the wheel supports at points removed from the level of their pivotal points, said bracing means embodying side members deflectable forwardly and rearwardly at their lower ends with relation to the said wheel supports and depending below and adapted to be moved into a position substantially lengthwise of said side bars, and a folding handle pivotally connected with said bracing means for moving the bracing means into and out of folded position with relation to the handle and said side bars.

12. In a folding perambulator, the combination of a running gear frame embodying side bars, rotatable wheel supports adapted to fold transversely of said side bars, bracing means for holding the wheel supports apart depending below said side bars for bracing the wheel supports at points removed from the level of their pivotal points, said bracing means embodying side members perpendicular to the plane of the running gear frame, and deflectable forwardly and rearwardly at their lower ends with relation to the said wheel supports, and depending below and adapted to be moved into a position substantially lengthwise of said side bars, and means connecting said side members together transversely of the running gear frame, and a folding handle pivotally connected with said bracing means for moving the same into and out of folded position with relation to the handle and said side bars.

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

ALBERT E. McGILL.

Witnesses:
FRANCIS A. HOPKINS,
ERNEST A. BAUGHMAN.