No. 873,196. PATENTED DEC. 10, 1907.

W. C. WILLETS.

RUNNING GEAR SUPPORT FOR BABY CARRIAGES.

APPLICATION FILED JUNE 11, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

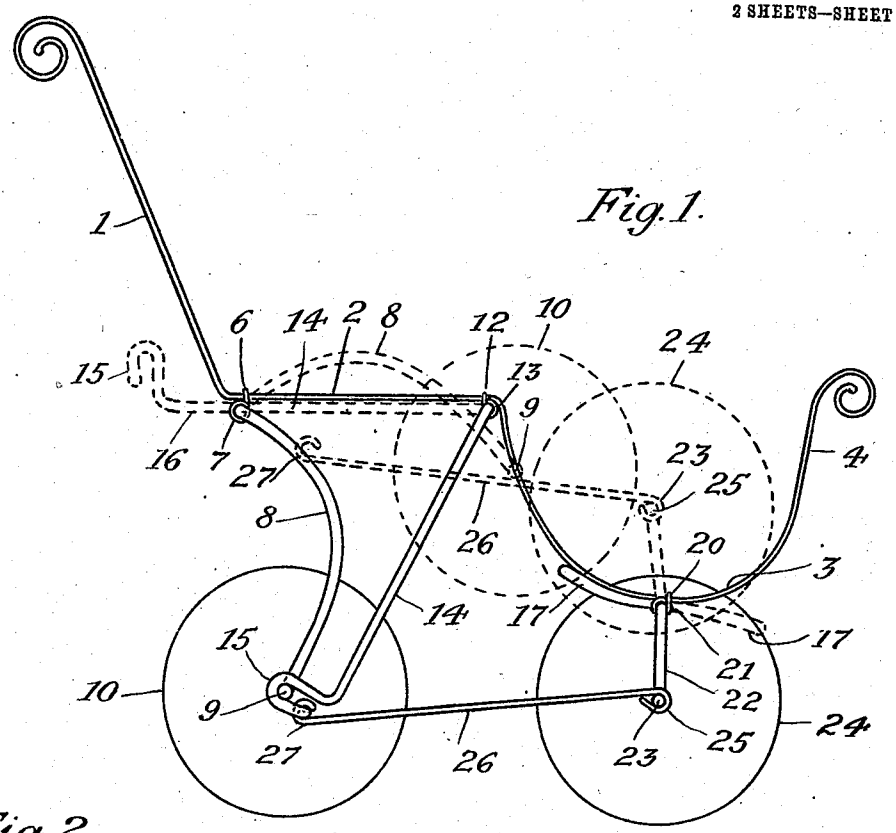
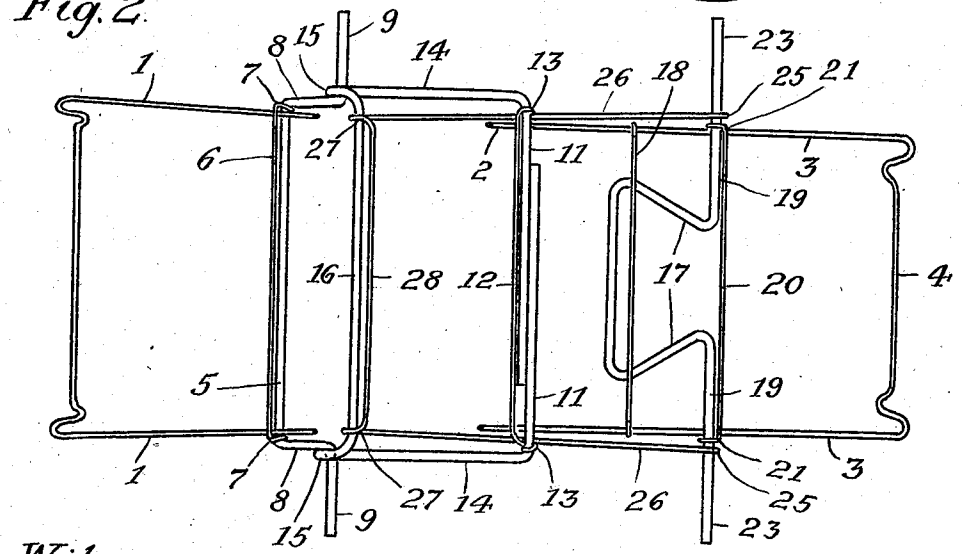


Fig. 2.



Witnesses:
Theo. Lagard.
H. A. Bowman.

Inventor:
William C. Willets.
By P. H. Gunckel
his Attorney.

THE NORRIS PETERS CO., WASHINGTON, D. C.

No. 873,196. PATENTED DEC. 10, 1907.

W. C. WILLETS.

RUNNING GEAR SUPPORT FOR BABY CARRIAGES.

APPLICATION FILED JUNE 11, 1906.

2 SHEETS—SHEET 2.

Fig. 3

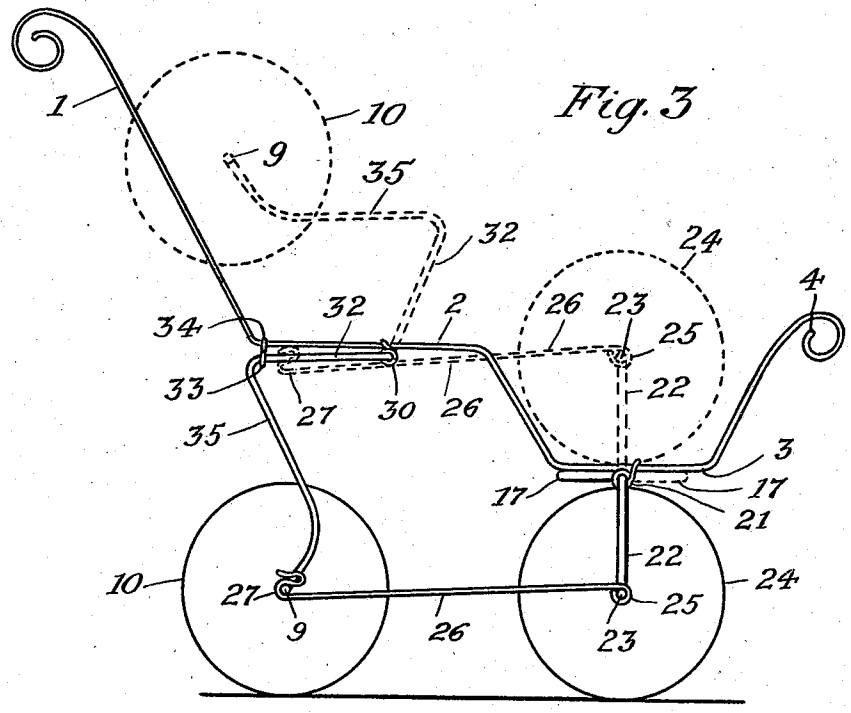
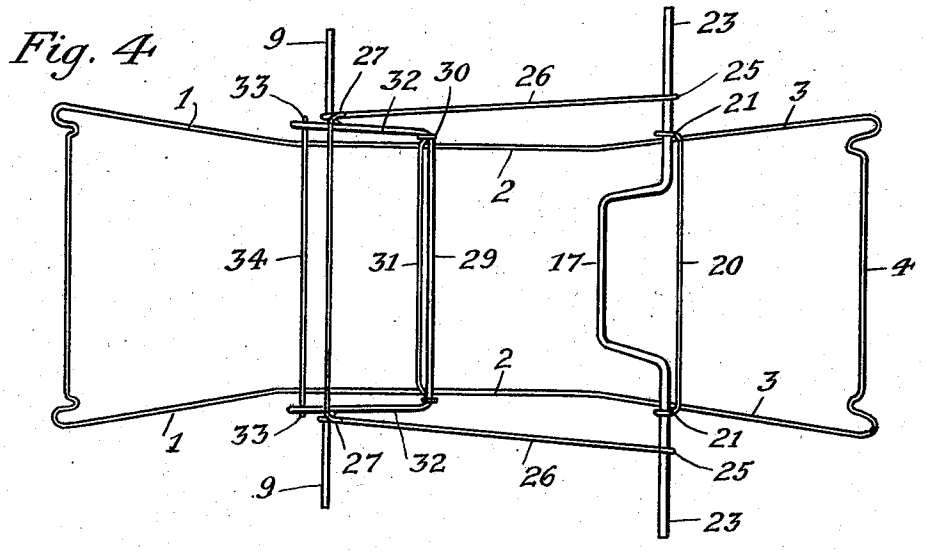


Fig. 4



Witnesses:
Theo. Lagaard.
H. A. Bowman.

Inventor:
William C. Willets.
By P. W. Gruncke
his Attorney.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM C. WILLETS, OF MINNEAPOLIS, MINNESOTA.

RUNNING-GEAR SUPPORT FOR BABY-CARRIAGES.

No. 873,196. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed June 11, 1906. Serial No. 321,184.

To all whom it may concern:

Be it known that I, WILLIAM C. WILLETS, a citizen of the United States, residing at Minneapolis, county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Running-Gear Supports for Baby-Carriages, of which the following is a specification.

My invention relates to the means for supporting the running-gear of baby carriages, go-carts, and the like.

The objects of the invention are to combine the axle with the support and to make the latter folding or detachable, in order that the articles may be nested or packed without occupying unnecessary space. These objects I accomplish by providing wires suitably bent to form the supports as well as the axles, and connecting them to the body in a way that will enable them to be easily swung, or folded against the body.

My improvements are illustrated in the accompanying drawings, in which—

Figure 1 shows a side view in outline of the body portion of a go-cart or baby carriage equipped with the preferred form of my improved folding running-gear supports; Fig. 2 is a plan view of the same; and Figs. 3 and 4 are similar views of a modification.

Heretofore, in the manufacture of baby carriages, go-carts, and the like, of wire, it has been customary, so far as I am aware, to rigidly attach the axle supports to the body of the structure. Such construction not only prevented nesting the articles, or otherwise reducing their bulk for packing, but necessitated the use of flat or angular pieces of metal that spoiled the symmetry of the article as a whole.

Stated in a general way my improvement consists in forming the axle supports of wires and in making them folding.

In the drawings the frame of the body of the go-cart or baby carriage is shown as formed of a heavy wire or wires bent to extend along both sides, the reference figures 1 designating the opposite portions forming the back sides, 2 those forming the seat sides, 3 those forming the foot-rest sides, and 4 those forming the dash-board sides.

In the preferred construction, the running-gear supports are so shaped and connected as to give them a tendency to spring outward whereby when they are placed in position for service such tendency serves to lock them firmly together.

In the construction shown in Figs. 1 and 2 the rear support consists of a bent piece of heavy wire, the straight middle portion 5 of which is pivotally connected to the rear portions of the opposite seat sides 2 by a cross-wire 6 having eyes 7 at its ends through which the wire 5 passes loosely. From these points of pivotal connection the wire is bowed forward and downward, as shown at 8, and its end portions are thence bent horizontally outward to form the axles 9 for the hind wheels 10.

A brace for the hind axles is provided and consists, preferably, of a single wire bent and secured as follows: The end portions 11 of the wire extend horizontally and overlap beneath the forward portion of the seat and are pivoted to the sides 2 by means of a cross-wire 12 having eyes 13, so as to be capable of swinging freely. The side portions 14 may be straight to a point near the axles 9. Here they are bent sharply rearward and slightly upward, as shown at 15, and the middle portion 16 of the wire extends horizontally from side to side of the frame. The loops 15 embrace the upper and rearward sides of the axles 9 between the wheel-hubs and the support sides 8, and thus prevent looseness of the parts in lateral direction. And this brace serves the further function of stiffening the seat frame at the angle of its junction with the frame of the foot-rest.

The front axle-support consists of a piece of similar wire, bowed laterally at the middle, as shown at 17, to form a relative-wide and flat bearing against the under surface of the wire fabric, or other material (not shown), which spans the space between the frame wires, or against a cross-wire 18. The straight horizontal portions 19 of this support wire are hinged at the under side of the foot-rest frame by means of a cross-wire 20 provided with eyes 21, so as to swing freely. The outer portions 22 are bent to extend vertically downward and the ends are extended outwardly to constitute the axles 23 for the front wheels 24.

To connect the rear and front supports a single wire has its ends formed into eyes 25 which engage the front axles between the wheel-hubs and the vertical supports 22, so as to be capable of being swung thereon. Straight portions 26 extend rearward to the hind axles where the wire is bent upward into about half circles at the opposite sides, as indicated at 27, and the middle portion 28

extends from side to side. This connecting brace lies inside the two braces 14 so as to allow the hook-shaped parts 27 to engage the horizontal parts 16 of the rear brace. But the construction and arrangement of the parts should be such that, before the hooks 27 are made to engage the brace member 16 their normal and natural position is slightly (preferably about an inch) forward of the part 16; so that to cause them to engage and lock around the latter it is necessary to exert moderate rearward tension in line with the straight connections 26 and against the resistance of the rear brace arms 14 and that of the cross-brace 18 to the upward pressure of the angular arm 17. It is obvious that rearward tension upon the front axles will turn their supports in the eyes, or fulcrums, 21 and thus press the arm 17 upward against the body fabric or the brace provided to resist it. In this way the tendency of the front and rear supports to spring apart serves to lock them firmly together and to the body and obviates looseness in the structure as a whole.

The positions of the various parts when the carriage is ready for use are shown by full lines, and the broken lines in Fig. 1 show the parts when folded for storage or shipment. To make the change from the former to the latter condition, the first step is to disconnect the longitudinal brace by freeing the hooks 27 from the cross-brace rod 16 and raise them to about the position shown by the broken lines 27, 26. The front axle support may then be turned upward by swinging its lateral arm 17 forward, which will place the parts in approximately the positions shown by the broken lines 17, and 23. Then the brace for the hind axle support is swung upward to position parallel with the seat sides 2; and lastly the support itself is then turned on its hinges forward and upward as far as the horizontal portions 11 of the rear brace will permit its side members 8 to rise. When thus arranged all of the parts are in relatively compact shape and the bulk of the article is greatly reduced; and, when thus folded, the articles can be nested, or packed without occupying much space.

In the modification shown in Figs. 3 and 4 the construction of the support for the front axles and of the brace connecting the front and hind axles is substantially the same as the corresponding parts in Figs. 1 and 2. In this instance, however, the hooks 27 engage the hind axles between the wheel hubs and their supports. An independent brace for the support for these axles is dispensed with, and the brace is supplied by a part of the support itself, in the same manner as the front axle support is braced. This rear support has its straight middle portion 29 hinged in the eyes 30 of a cross-wire 31, and it has horizontal rearward arms 32 that rest in hooks 33 on the ends of another cross-wire 34; and nearly perpendicular downward extensions 35 support the hind axles. In this instance, as in the former, the normal position of the hooks 27 before engagement is sufficiently forward of the axle to require moderate force to be exerted to seat the axles in them. The resistance results from the stiffness of the wire and its bearings in the eyes 30 and hooks 33, and serves to retain all of the parts rigidly together when the connecting brace is attached. To fold the parts, the connecting brace is disengaged and the front-wheel support is then turned in forward direction about a half circle, and the brace is raised to the under side of the seat, as shown by the broken lines. Then the rear support may be swung backward and upward to the position indicated by broken lines, or a less distance if desired. In this way the parts are capable of folding into a relatively compact article.

Having described my invention, what I claim and desire to secure by Letters Patent is—

1. In an article of the class described, the combination with a body-frame, of running-gear supports comprising a hinged support for the front axles arranged to swing forward and upward past the front of the frame, a hinged support for the hind axles arranged to swing rearward and upward past the back of the frame, and a brace for detachably connecting the two supports, substantially as set forth.

2. In an article of the class described, the combination with a body-frame, of running-gear supports comprising a hinged support for the front axles arranged to swing forward and upward past the front of the frame, a hinged support for the hind axles arranged to swing rearward and upward past the back of the frame, a diagonal brace hinged to the frame and adapted to be removably connected to the rear support, and a brace for detachably connecting the two supports, substantially as set forth.

3. In an article of the class described, the combination with a body-frame, of running-gear supports comprising a hinged support for the front axles formed of a suitably bent wire arranged to swing forward and upward, a hinged support for the hind axles formed of a suitably bent single wire, and a brace for detachably connecting the two supports, substantially as set forth.

4. In an article of the class described, the combination with a body-frame, of running-gear supports comprising a hinged support for the front axles formed of a suitably bent wire arranged to swing forward and upward, a hinged support for the hind axles formed of a suitably bent single wire, a diagonal brace formed of a suitably bent wire hinged to the frame and adapted to be removably connect-

ed to the rear support, and a brace for detachably connecting the two supports, substantially as set forth.

5. In an article of the class described, the combination with a body-frame, of running-gear supports comprising a hinged support for the front axles formed of a suitably bent wire arranged to swing forward and upward and to bear against the frame in use, a hinged support for the hind axles formed of a suitably bent single wire, and a brace for detachably connecting the two supports, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses this 24th day of May, 1906.

WILLIAM C. WILLETS.

Witnesses:
P. H. GUNCKEL,
H. A. BOWMAN.