

D. R. COLLIER.

PERAMBULATOR.

APPLICATION FILED APR. 26, 1909.

Patented July 27, 1909.

929,560.

Fig. 1.

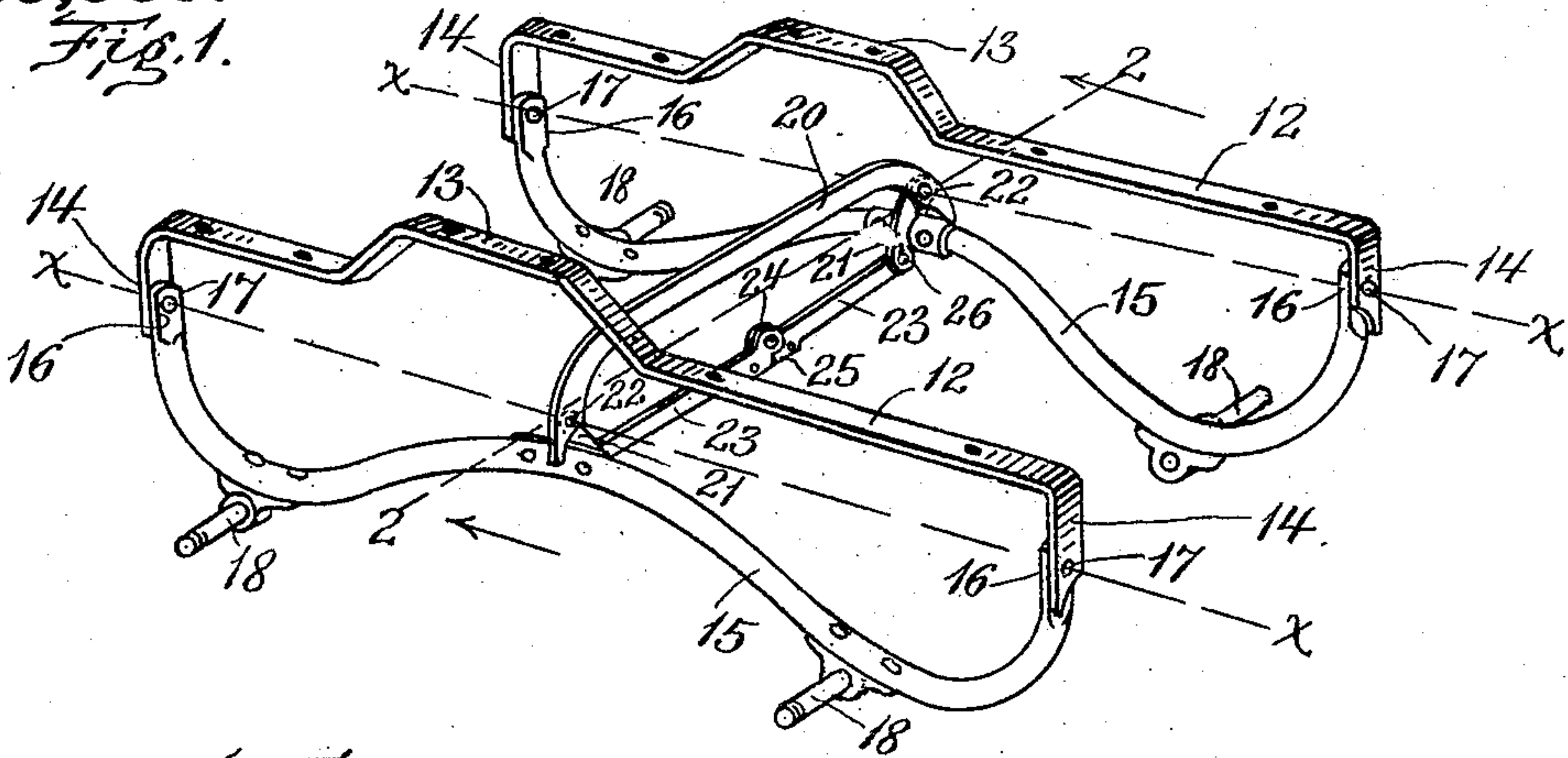


Fig. 2.

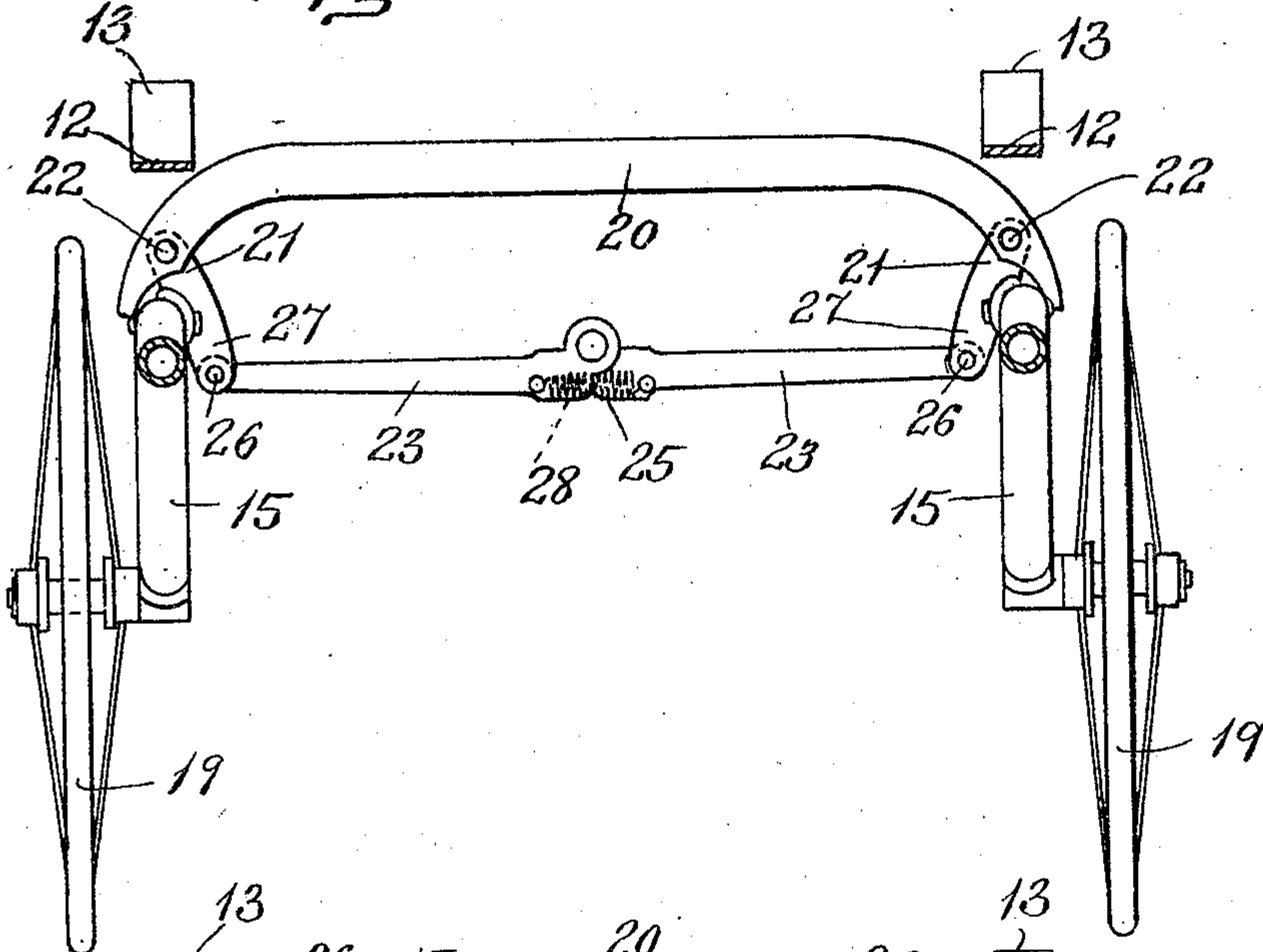


Fig. 3.

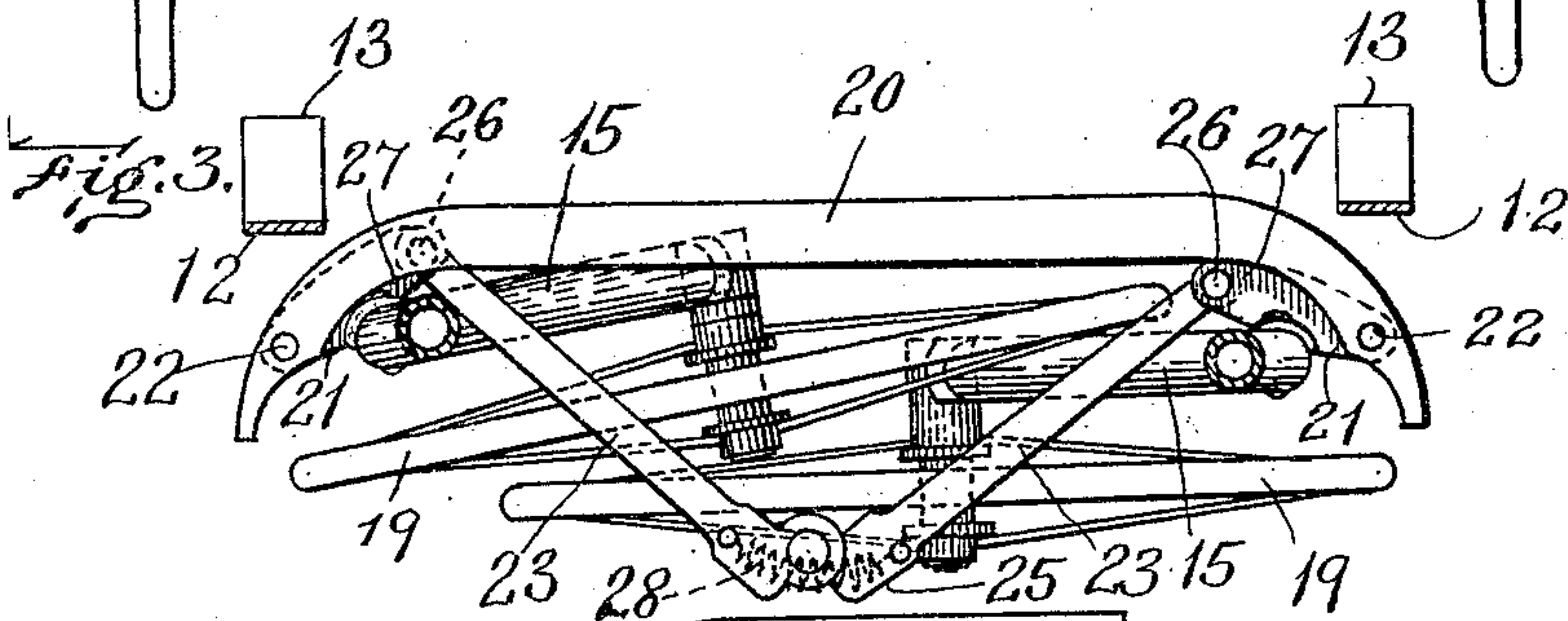
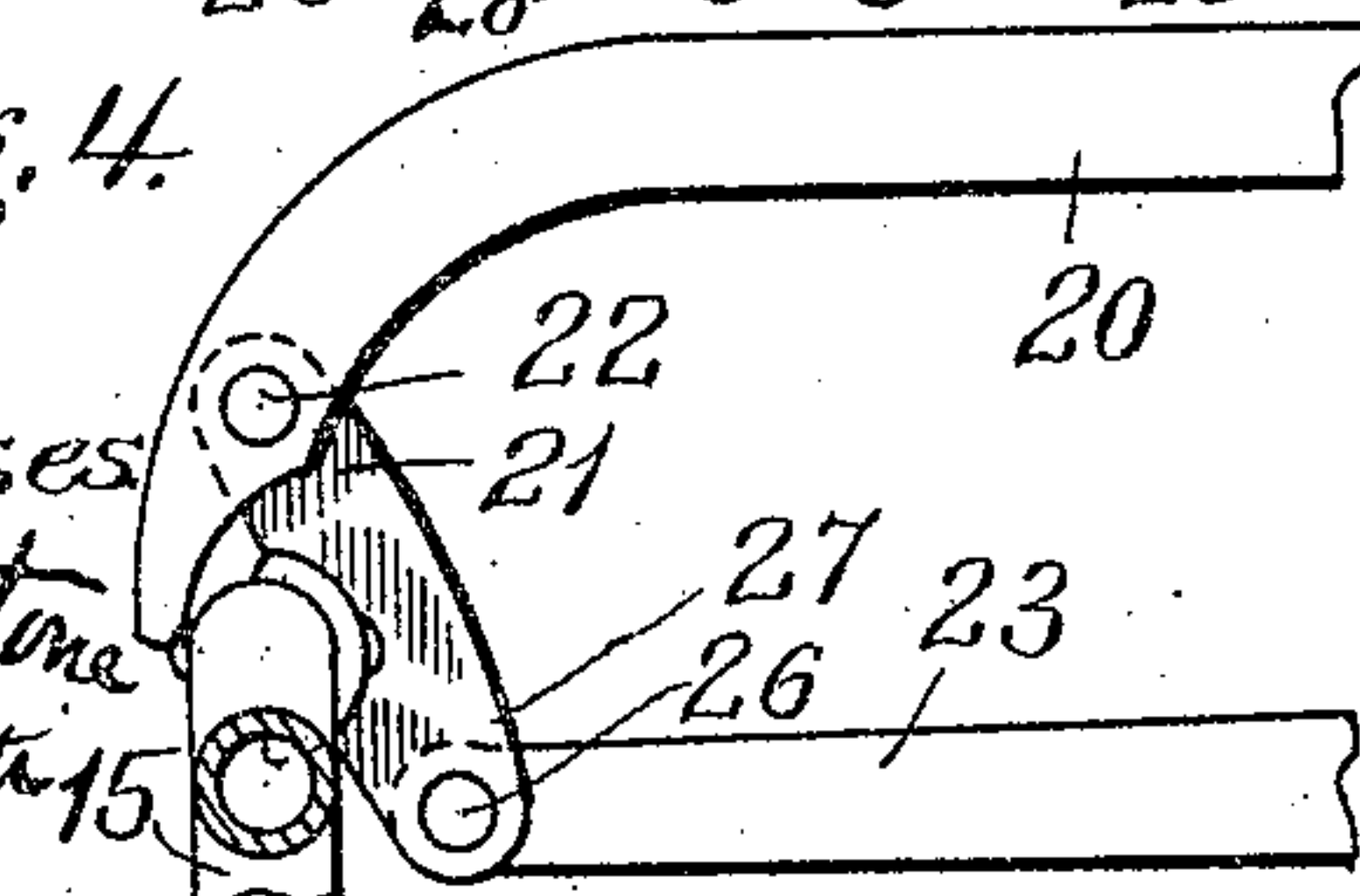


Fig. 4.

Witnesses
F. R. Ruckstone
C. H. Pizzetti



Inventor:
D. R. Collier
by Night Brown Quincy May
Attys

UNITED STATES PATENT OFFICE

DAVID R. COLLIER, OF GARDNER, MASSACHUSETTS, ASSIGNOR TO COLLIER-KEYWORTH COMPANY, OF GARDNER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PERAMBULATOR.

No. 929,560.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed April 26, 1909. Serial No. 492,117.

To all whom it may concern:

Be it known that I, DAVID R. COLLIER, of Gardner, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Perambulators, of which the following is a specification.

This invention relates to children's carriages or perambulators, adapted to be folded into compact form for storage or shipment, and particularly to a carriage of this character of the type shown in Letters Patent of the United States, No. 862,711, granted to me August 6, 1907. In said patented carriage, the body is supported by longitudinal side bars to which are hinged longitudinally extending wheel frames provided with axle arms on which the wheels are mounted, the said wheel frames being adapted to swing inwardly under the body of the carriage to retract the wheels when the carriage is folded, and to be swung outwardly to project the wheels when the carriage is in its operative condition.

The present invention has for its object to provide improved means for rigidly supporting the wheel frames against lateral or swinging movements when the carriage is in its operative adjustment, the means being of such character that they permit the ready swinging of the frames for the purpose of retracting and projecting the wheels.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification,—Figure 1 represents a perspective view of that portion of a carriage frame which includes the body-supporting side bars, the wheel frames, and the means embodying my invention for rigidly connecting or bracing the wheel frames, the wheels being removed. Fig. 2 represents a section on line 2—2 of Fig. 1, and an elevation of the parts at the left of said line, the wheels being shown in their operative adjustment. Fig. 3 represents a view similar to Fig. 2, showing the wheels retracted. Fig. 4 represents an enlargement of a portion of Fig. 2.

The same reference characters indicate the same parts in all the figures.

In the drawings,—12, 12 represent longitudinal bars which support the body of the

carriage, the latter being secured to the side bars in any suitable way. As here shown, the side bars have elevated portions 13 to which portions of the body are riveted. Other parts of the side bars 12 may support springs riveted to the side bars and suitably connected to the rear portion of the body. The side bars are preferably formed by bending flat-sided metal strips into the required shape, the ends of the strips being bent downwardly to form ears 14 which constitute hinge members.

15, 15 represent the wheel-carrying frames, each of which is preferably a length of tubing flattened at its ends to form ears or hinge members 16, which are connected by hinge pintles or studs 17 with the ears 14. Each wheel frame 15 is so formed that its end portions and its central portion are raised, there being two intermediate depressed portions between the central and the end portions, these depressed portions being provided with axle arms 18, on which the hubs of the wheels 19 are mounted. The axle arms are therefore located at a considerable distance below the axial line of the hinges connecting the ends of the wheel frames with the side bars. The dotted lines $x-x$, Fig. 1, indicate the axes on which the wheel frames are adapted to swing, said lines passing through the hinge pintles 17. The described construction permits the wheels to be operatively projected, as indicated in Fig. 2, and swung inwardly to retracted positions, as indicated in Fig. 3. To rigidly support the wheel frames when they are projected, I provide the means next described.

20 represents a rigid brace formed to extend across the space between the wheel frames and connected with the latter by means of ears or hinge members 21 attached to the raised central portions of the wheel frames, and hinge studs or pintles 22 connecting the end portions of the brace 20 with the ears 21. The hinge pintles 22 are substantially in alinement with the hinge pintles 17, as indicated in Fig. 1, where the line $x-x$ is here shown as passing through the pintles 22. This relative arrangement of the hinge centers enables the brace 20 to connect the two wheel frames without interfering in the least with swinging movements of the latter. While the brace 20 serves to prevent the raised central portions of the wheel frames

from moving outwardly away from each other, it does not prevent the inward swinging movements of the wheel frames, these movements being necessary to the folding of the carriage. I have provided additional means cooperating with the rigid brace 20 for rigidly locking the wheel frames against inward swinging movement toward each other, so that when the wheel frames are in their operative adjustment, they are rigidly supported against lateral movement in either direction. The said locking means in this embodiment of my invention includes a folding brace composed of two sections 23 connected at their meeting ends by a pivot 24, said meeting ends being provided with abutting shoulders 25 which meet when the folding brace is extended, the construction being similar to that of an ordinary rule joint. The outer ends of the sections 23 are connected by hinge pivots 26 with ears or hinge members 27 attached to the raised central portions of the wheel frames 15. The ears 27 are located below the raised central portions of the wheel frames, while the ears 21 to which the rigid brace 20 is hinged, are located above said raised portion. The ears 21 may therefore be termed upper hinge members to which the rigid brace is connected, and the ears 27 lower hinge members to which the folding brace is connected.

The construction of the folding brace is such that it is adapted to be flexed in a downward direction, as indicated in Fig. 3 to permit the retraction of the wheel frames. The pivot 24 connecting the members of the folding brace, is located above the hinge centers 26 which connect the ends of the folding brace with the lower hinge members, so that when the folding brace is extended, as shown in Figs. 1 and 2, the pivot 24 will be "off center", and the folding brace will be free from liability to be accidentally flexed, the brace being further maintained in its extended position by a spring 28.

It will be seen that the folding brace located below the axes on which the wheel frames swing, is adapted when extended to prevent inward swinging movements of the wheel frames, the rigid and the folding braces cooperating in rigidly locking the wheel frames against side movement in either direction.

The end portions of the rigid brace 20 are depressed below the main body, so that space is afforded between the ends of the rigid brace for the reception of one of the wheel frames, as indicated in Fig. 3.

I claim:

1. A folding carriage comprising body-supporting side bars, wheel frames, each having raised end portions hinged to the side bars, a raised central portion and depressed intermediate portions provided with axle arms, a rigid brace hinged to the raised cen-

tral portions of the wheel frames and extending across the space between the same, the hinges connecting the brace with the wheel frames being substantially in alinement with the hinges connecting the ends of the wheel frames with the side bars, whereby the wheel frames are adapted to swing inwardly under the brace to retract the wheels carried by said frames, and means cooperating with the brace in locking the wheel frames in their projected positions.

2. A folding carriage comprising body-supporting side bars, wheel frames, each having raised end portions hinged to the side bars, a raised central portion and depressed intermediate portions provided with axle arms, a rigid brace hinged to the raised central portions of the wheel frames and extending across the space between the same, the hinges connecting the brace with the wheel frames being substantially in alinement with the hinges connecting the ends of the wheel frames with the side bars, whereby the wheel frames are adapted to swing inwardly under the brace to retract the wheels carried by said frames, and a folding brace hinged to the raised portions of the wheel frames at points below the hinges that connect the rigid brace with said frames, said folding brace when extended cooperating with the rigid brace in locking the wheel frames in their projected positions.

3. A folding carriage comprising body-supporting side bars, wheel frames, each having raised end portions hinged to the side bars, and a raised central portion provided with an upper hinge member in substantial alinement with the end hinges, and a lower hinge member below the line of the end hinges, said wheel frames having depressed wheel-carrying intermediate portions, a rigid upper brace pivoted at its ends to the upper hinge members, and a folding lower brace pivoted at its ends to the lower hinge members.

4. A folding carriage comprising body-supporting side bars, wheel frames, each having raised end portions hinged to the side bars, and a raised central portion provided with an upper hinge member in substantial alinement with the end hinges, and a lower hinge member below the line of the end hinges, said wheel frames having depressed wheel-carrying intermediate portions, a rigid upper brace pivoted at its ends to the upper hinge members, and a lower brace composed of two sections connected by a rule joint, and pivoted at their outer ends to the lower hinge members.

5. A folding carriage comprising body-supporting side bars, wheel frames, each having raised end portions hinged to the side bars, and a raised central portion provided with an upper hinge member in substantial alinement with the end hinges, and a lower

hinge member below the line of the end
hinges, said wheel frames having depressed
wheel-carrying intermediate portions, a rigid
upper brace pivoted at its ends to the upper
5 hinge members, and a lower brace composed
of two sections connected by a rule joint, and
pivoted at their outer ends to the lower
hinge members, the ends of the rigid brace
being depressed below the intermediate por-

tion of the same, to provide a wheel frame 10
and wheel-receiving space.

In testimony whereof I have affixed my
signature, in presence of two witnesses.

DAVID R. COLLIER.

Witnesses:

THATCHER B. DUNN,
FLORENCE L. MOORE.