

No. 632,018.

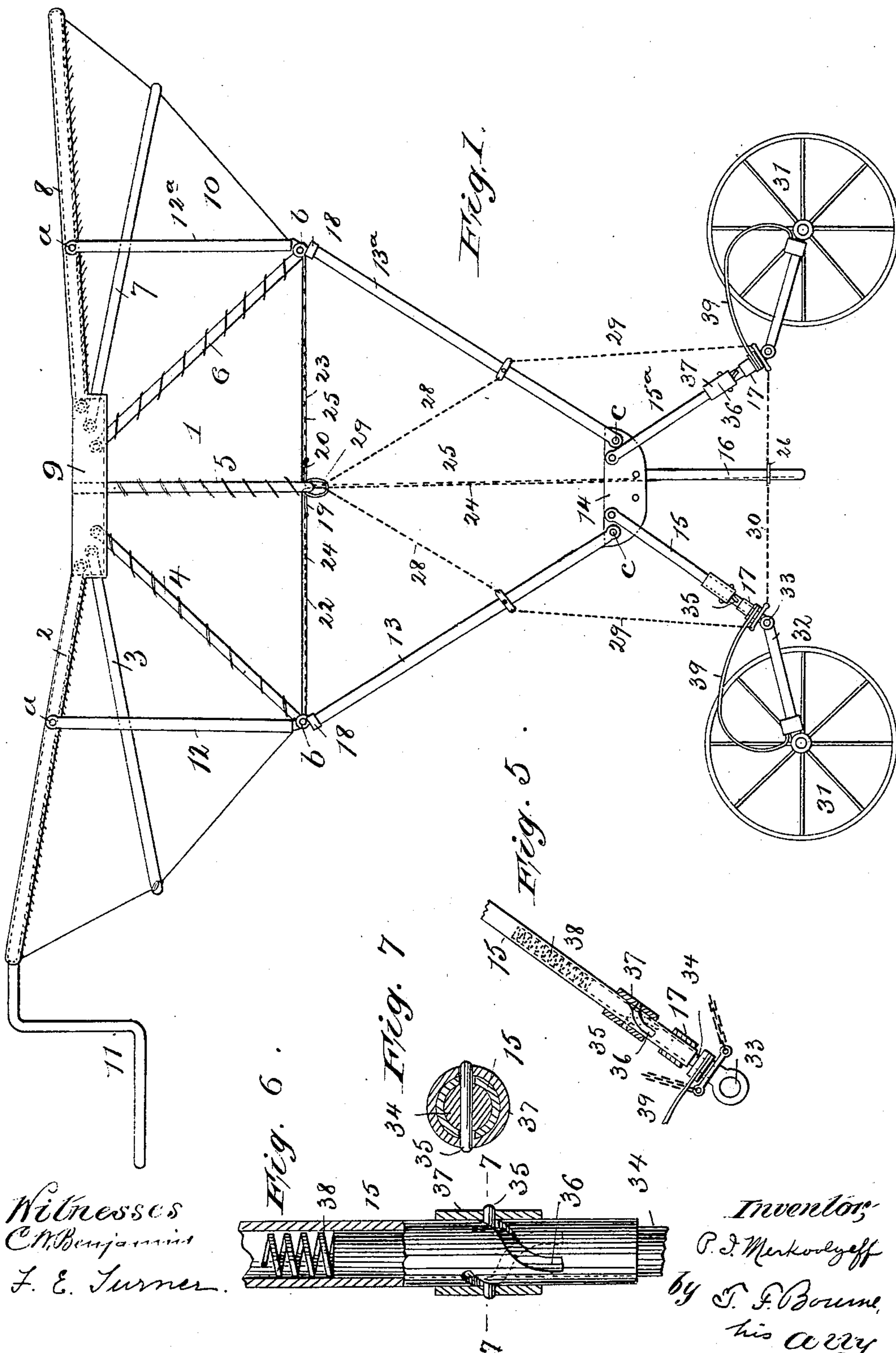
Patented Aug. 29, 1899.

P. I. MERKOOLYEFF.
FOLDING BABY CARRIAGE.

(Application filed Apr. 17, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
C. M. Benjamin
F. E. Turner.

Inventor;
P. I. Merkovyeff
by T. F. Bourne,
his atty

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2 Sheets—Sheet 2.

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Fig. 2.

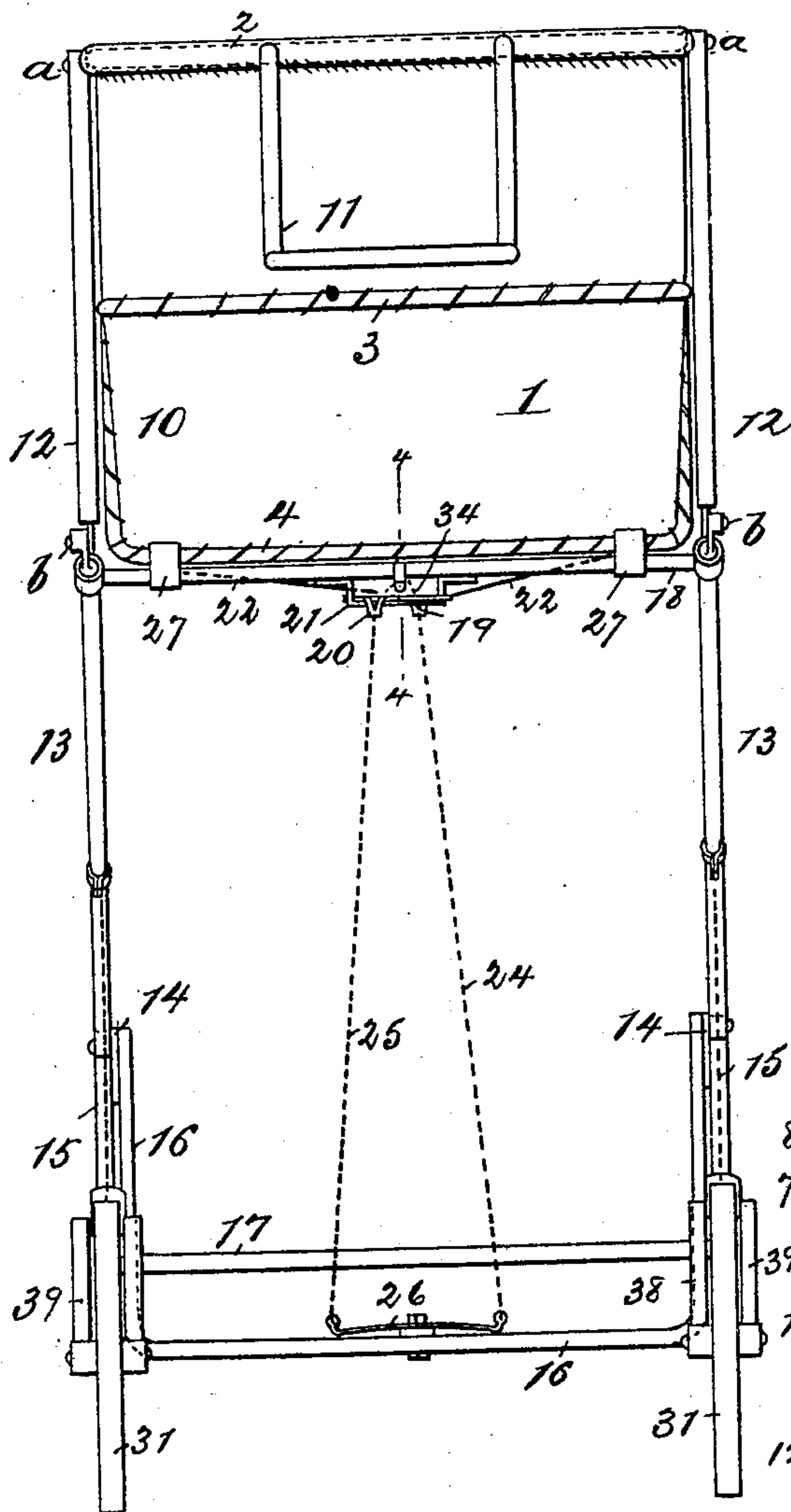


Fig. 3.

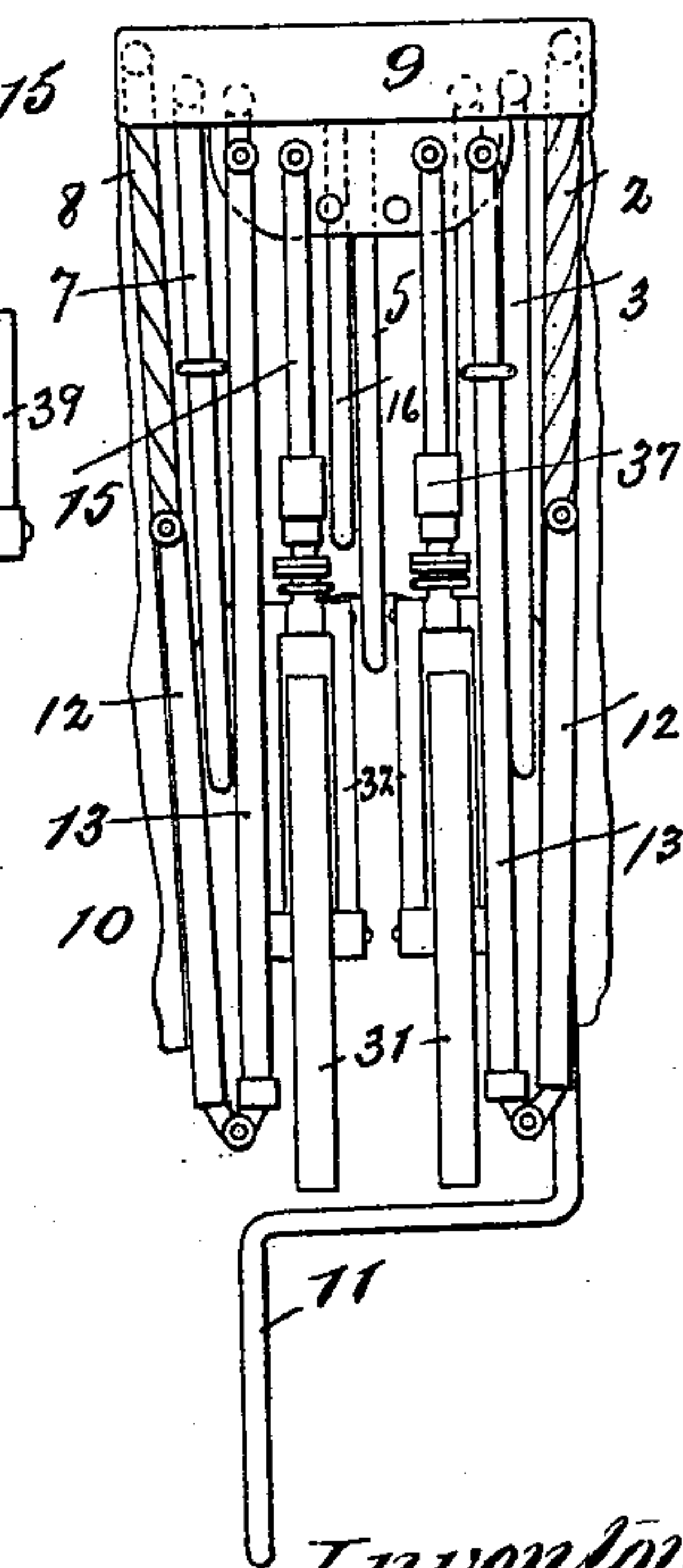
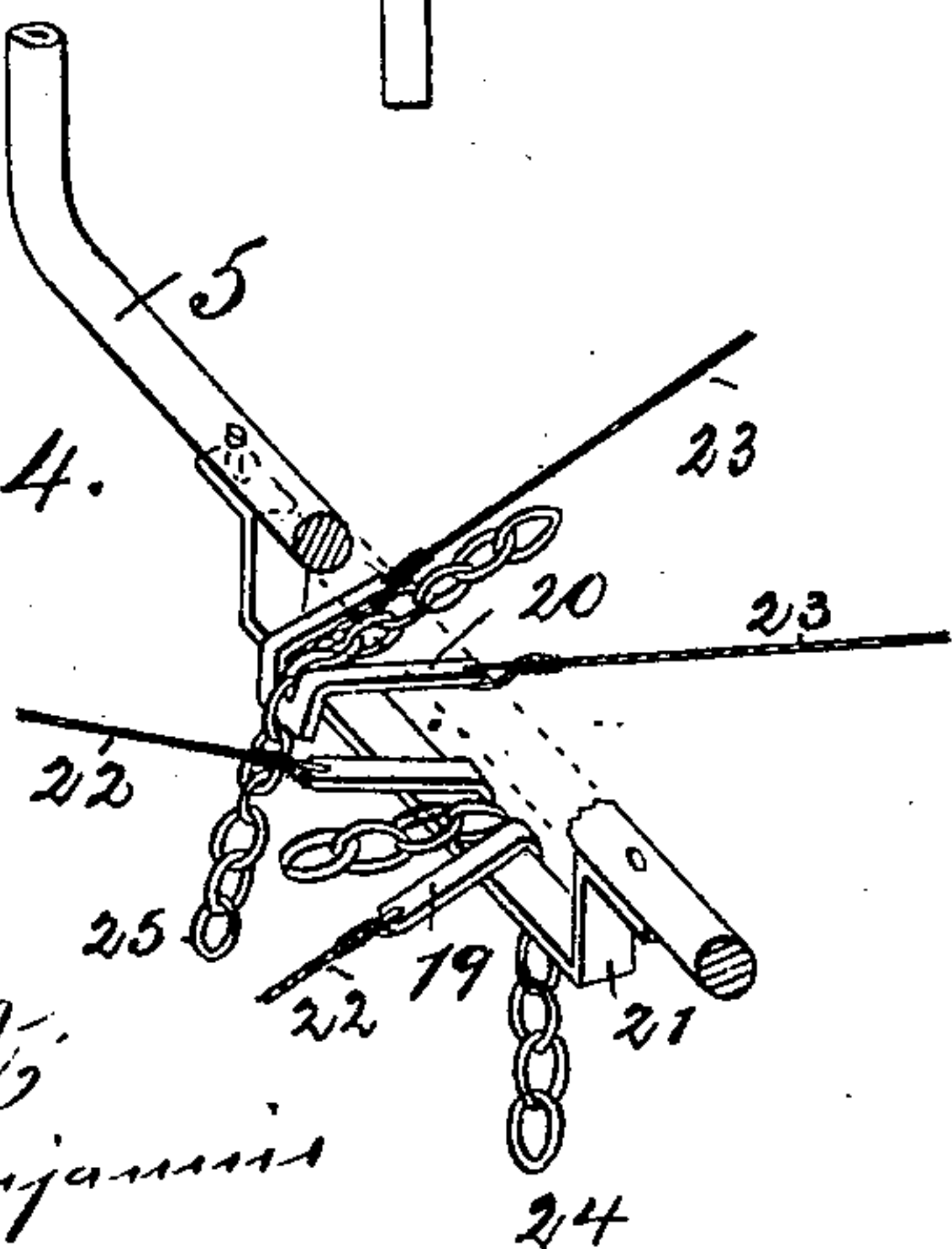


Fig. 4.



Attest;
C. M. Benjamin
F. E. Turner.

Inventor;
P. I. Merkooleyeff.
by T. F. Bourne
his atty.

UNITED STATES PATENT OFFICE.

PHILIPP I. MERKOOLYEFF, OF NEW YORK, N. Y.

FOLDING BABY-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 632,018, dated August 29, 1899.

Application filed April 17, 1899. Serial No. 713,247. (No model.)

To all whom it may concern:

Be it known that I, PHILIPP I. MERKOOLYEFF, a subject of the Czar of Russia, residing in New York city, borough of Manhattan, State of New York, have invented certain new and useful Improvements in Folding Children's Carriages, of which the following is a specification.

The object of my invention is to provide a child's carriage that can be folded into a small compass to enable it to be readily carried around by hand and which can be conveniently opened out or extended into condition for use; and the invention consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a side elevation of my improved folding carriage ready for use. Fig. 2 is an end view thereof. Fig. 3 is an edge view of the same folded. Fig. 4 is an enlarged detail view showing the locking devices for keeping the carriage in the opened condition. Fig. 5 is an enlarged detail view, partly in section, of the wheel-support. Fig. 6 is an enlarged detail view, partly in section; and Fig. 7 is a cross-section on the line 7 7 in Fig. 6.

In the accompanying drawings similar numerals and letters of reference indicate corresponding parts in the several views.

1 indicates generally a folding or collapsible body adapted to receive a child and which may be made in any suitable manner. The body I have shown is composed of a plurality of bail-like ribs or bars 2 3 4 5 6 7 8, pivotally connected at their ends to a plate or support 9, there being one of said plates at each side of the body, and 10 is a fabric or other suitable material attached to said ribs or bars to form a receptacle. The fabric may be connected with said ribs by stitches, loops, or in any other suitable manner, so that when the ribs are spread apart said fabric will be stretched or drawn to form an open receptacle, as shown in Fig. 1, and when the same is to be folded said fabric will permit said ribs to assume the positions shown in Fig. 3. 11 is a handle shown secured to the rib 2, which handle may be of any suitable shape and is

designed for use in propelling the carriage and in carrying the same when it is folded. (See Fig. 3.)

The folding body above described is carried by a folding and extensible frame, to which the wheels are attached. This frame is constructed as follows: On each side of the body 1 a pair of bars 12 12^a are pivoted to the bails or ribs 2 8, as at *a*, and said bars are pivotally connected, as at *b*, with bars 13 13^a, which are in turn pivoted to plates 14 on each side of the frame, as at *c*. To the plates 14 are also pivoted bars or tubes 15 15^a, to which the wheels are connected, as hereinafter explained. The respective pairs of bars 15 and 15^a on opposite sides of the frame are firmly united by cross-bars 17, which act to brace the lower portion of the frame, and a yoke or bail 16 depends from the plates 14 and likewise assists in bracing the frame, the yoke or bail 16 lying between the cross-bars 17. Near the joints *b* the pairs of bars 13 and 13^a are connected by cross-bars 18, suitably attached to the bars 13, whereby the middle part of the frame is braced transversely. It will be seen that the parts 12 13 and 12^a 13^a constitute toggle-levers extending between the bars 2 and 8 of the carriage-body and the plates 14 of the frame, and it will be understood that when said bars are moved toward each other the parts 2 and 8 will be moved upwardly and outwardly to stretch the body 1, while at the same time the plates 14 will be moved downwardly to extend the frame. To lock the frame in this extended position and to conveniently enable it to be unlocked, so that it can be collapsed and folded, I have provided the following arrangement: 19 20 are hooks adapted to engage a bar 21, carried by and depending from the cross-arm of bail or rib 5, (or said hooks could directly engage said arm,) and the hooks 19 20 are respectively connected by guys 22 23 with the cross-bars 18. (See Figs. 1 and 4.) The hooks 19 20 are also attached to chains or other connections 24 25, that at one end are connected with the corresponding cross-bars 18 and pass over the bar 21 (or arm 5) and depend therefrom and are connected with the cross-bar or bail 16, but by preference are connected to the ends of a spring 26, that is secured to bail 16. (See Fig. 2.) The bars 18 near their

ends have projections 27 on their outer sides, which are adapted to abut against the cross-arms of the ribs or bails 4 and 6 when the frame is extended. The distance of the hooks 19 20 from the cross-bars 18 (which is permitted by the length of the guys 22 23) is such that when the frame is opened and the bars 18 are pushed toward each other until the projections 27 encounter the ribs or bails 4 6 the hooks 19 20 will slip over the bar 21, and thus the frame will be braced—that is to say, the hooks and guys and the projections 27 in this position connect the bars 18 with the central rib 5, so that the toggle-arms 12 13 12^a 13^a cannot be pushed any nearer together and cannot spread any farther apart, and the chains 24 25, that connect the hooks with the bail 16, prevent the plates 14 from descending any farther, and thus the whole frame is braced firmly in the extended position. When the parts are in this position, it will be seen that the toggle-arms, having a fulcrum at the plates 14, push upwardly on the bars 2 8 of the carriage-body, and thus the latter is extended and held rigidly in the open position, all as shown in Fig. 1.

For the purpose of additional bracing of the frame I have shown chains or connections 28, extending from a suitable keeper 29 (attached to bail or rib 5) to the bars 13 13^a, to which they may be suitably attached, and from the bars 13 13^a chains or connections 29 extend to and are connected with the bars 15 15^a, so as to draw upon the same when the frame is extended to move them into the operative position, as shown in Fig. 1. The bars 15 are also joined by chains or connections 30 with the bail 16, so as to brace said bars and resist the tension of chains 29, whereby when the frame is extended the bars 15 will be firmly held and braced, as shown in Fig. 1. The connection of chains 28 with the bail 5 and bars 13 13^a limits the upward movement of bail 5, and thus enables the toggle-arms to act on bails 2 and 8 to stretch the carriage-body and hold it in a rigid position.

In order to enable the wheels 31 to extend transversely of the frame when the latter is folded to produce a compact structure, I have provided the following arrangement: 32 are forks pivotally connected at 33 with stems 34, so that the forks can have vertical oscillations. The stems 34 pass into bores in the bars 15 15^a, whereby the fork is swiveled to the latter, and to cause the wheels to assume a position parallel with the length of the carriage when the same is to be used or transversely thereof when the same is to be folded the stems 34 are each provided with a pin 35, which passes through opposed cam-grooves 36 in the walls of the bars 15 15^a, and the ends of the pins are secured to sleeves 37, mounted on bars 15 15^a. 38 is a spring within the bore of bar 15 or 15^a and pressing at one end against an abutment therein and at the other end against stem 34 to push the stem outwardly, and the arrangement of the groove is

such that when the frame is loosened for the purpose of folding it and it is lifted to free the wheels the springs 38 will push the stems 34 downwardly, and the action of the pins 35 and grooves 36 will cause the wheels to turn transversely of the frame in the position shown in Fig. 3. The chains 29 30 are connected to the stems 34 on opposite sides thereof, and the arrangement is such that when the frame is extended said chains will draw upon the stems and rotate them to a normally operative position, whereupon the pin 35 will pass through grooves 36 to assist in turning the wheels to the operative position, as in Fig. 1. Thus the wheels are doubly braced—that is to say, the chains 29 30 hold the bars 15 15^a in a set position and keep the wheels straight, and the pin and groove also have the last-mentioned effect. 39 are springs attached at one end to the fork 32 and at the other end to the stem 34 and serve to impart resiliency between the wheels and the frame.

To adjust the carriage for use, the arms 2 and 8 of the body are first drawn upwardly and then the toggle-bars 12 13 and 12^a 13^a are pushed toward each other at their joints *b*, whereupon the bars 2 8 are pushed farther upwardly and the plates 14 are pushed downwardly, and as the latter descend the chains 24 25 are drawn upon, which pull the hooks 19 20 over the bar 21, and the chains 29 draw the bars 15 15^a outwardly, and thus also turn the wheels to the operative position, and the whole device will now be braced in condition for use. To fold the carriage, the hooks 19 20 are released from the bar 21 by drawing upon the chains 24 25 at the portion under the body, the spring 26 bending to permit such movement of the hooks, the bars 18 are drawn apart, the plates 14 are pushed upwardly to the plates 9, the bars 15 15^a fold toward each other, the bars 13 13^a turn on their hinges *b c* into a position substantially parallel with bars 12 12^a, the wheels 31 turn transversely of the frame, and the bars of the body fold about the wheels, all as shown in Fig. 3.

I do not limit my invention to the precise details of construction shown and described, as they may be varied without departing from the spirit thereof, and when I use the term "chains" I mean it to include any suitable connection.

Having now described my invention, what I claim is—

1. The combination of a folding body, with a folding frame pivotally connected therewith, and means to join said frame, when extended, to said body for holding the frame in an extended position to thereby hold the body extended, substantially as described.
2. The combination of a folding body, with a folding frame connected therewith, means for holding the frame in an extended position to thereby stretch and hold the body extended, wheels carried by said frame, and means to cause said wheels to extend both trans-

versely and longitudinally of the frame, substantially as described.

3. The combination of a folding body having a plurality of bails or ribs pivotally connected, and a fabric attached thereto, with a folding frame pivotally connected with certain of said bails or ribs, means for holding said frame extended, and connections between a bail of the body and the frame to limit the movement of the frame relatively to the body, substantially as described.

4. The combination of an outwardly-extensible folding body, with a folding frame pivotally connected therewith, means for holding said frame extended, and connections between said frame and body to limit the outward movement of the frame relatively to the body to cause the frame to hold the body extended, substantially as described.

5. The combination of a folding body, with a frame comprising opposed pairs of toggle-levers pivotally connected at one end with said frame and pivotally connected at their opposite ends, and having their joints between their connection with the frame and their connection with each other and means for holding said frame in an extended position, substantially as described.

6. The combination of a folding body, opposed pairs of toggle-levers pivotally connected at one end therewith and pivotally connected at their other ends and having their joints between their connection with the frame and their connection with each other, connections between said body and levers to limit the outward movement of the levers relatively to the body, and means for holding said levers in the extended position, substantially as described.

7. The combination of a folding body, opposed pairs of toggle-levers pivotally connected at one end therewith and pivotally connected at their opposite ends, hooks connected with said levers and adapted to be connected with said body, and means for drawing said hooks into connection with said body, substantially as described.

8. The combination of a folding body, opposed pairs of toggle-levers pivotally connected at one end therewith and pivotally connected at their opposite ends, hooks connected with said toggle-levers adapted to be connected with said body, means to limit the inward movement of said toggle-levers, and connections extending from said hooks and connected with said frame at the lower part thereof, whereby when the frame is extended the hooks will be drawn into connection with the body, substantially as described.

9. The combination of a folding body, pairs of toggle-levers pivotally connected at one end therewith and pivotally connected to plates at their opposite ends, a bail or bar connected with said plates, hooks connected with said toggle-levers and adapted to connect with the body, and connections extending from said hooks to said bail or bar for

drawing the hooks into engagement with the body when the frame is extended, substantially as described.

10. The combination of a folding body, pairs of toggle-levers pivotally connected at one end therewith and pivotally connected to plates at their opposite ends, a bail or bar connected with said plates, hooks connected with said toggle-levers and adapted to connect with the body and connections extending from said hooks to a spring connected with said bail or bar, said connections also extending to the toggle-levers, whereby when the frame is extended the hooks will be drawn into connection with the body and the springs will allow said hooks to be withdrawn from such connection, substantially as described.

11. The combination of a folding body, pairs of toggle-levers connected at one end therewith, plates connected with the opposite ends of said levers, projections carried by said levers to engage the ribs of the body, hooks connected with said toggle-levers to make connection with said body, and other connections between the hooks and the frame for drawing said hooks into engagement with the body when the frame is extended, substantially as described.

12. The combination of a folding body having ribs or bails, with pairs of toggle-levers pivotally connected at one end therewith and pivotally connected at their opposite ends, cross-bars connecting the pairs of levers, projections carried by said cross-bars to engage the body, hooks connected with said levers to make connection with the body, and connections extending from the lower part of the frame to the hooks and also connected with the levers, substantially as described.

13. The combination of a folding body, with a folding frame pivotally connected therewith, means for holding the frame in an extended position, bars pivotally connected with said frame, wheels connected with said bars, and connections between the frame and bars for bracing the latter when the frame is extended, substantially as described.

14. The combination of a folding body, with a folding frame pivotally connected therewith, bars pivotally connected with said frame, wheels pivotally connected with said bars, connections extending from said frame from above downwardly to said bars to spread the bars apart when the frame is extended, and connections between said bars to limit the outward extension thereof, substantially as described.

15. The combination of a folding body, with a folding frame pivotally connected therewith, bars pivotally connected with said frame, wheel-forks pivotally connected with said bars, and means for causing said wheels to turn transversely of the frame when the wheels are lifted, substantially as described.

16. The combination of a folding body, with a folding frame pivotally connected therewith, bars pivotally connected with said frame,

forks having stems pivotally connected with said bars, cam-grooves and pins connecting said stems and bars, and means for spreading said bars apart and bracing them when the frame is extended, substantially as described.

17. The combination of a folding body, with a folding frame pivotally connected therewith, bars pivotally connected with said frame, means to brace said bars, forks pivotally connected with said bars, and springs uniting said forks to their supports, substantially as described.

18. The combination of a folding body, with a folding frame pivotally connected therewith, bars pivotally connected with said frame, forks having stems pivotally connected with said bars, wheels carried by said forks and springs uniting the outer parts of said forks with said stems, substantially as described.

PHILIPP I. MERKOOLYEFF.

Witnesses:

I. A. HOURWICH,
T. F. BOURNE.