

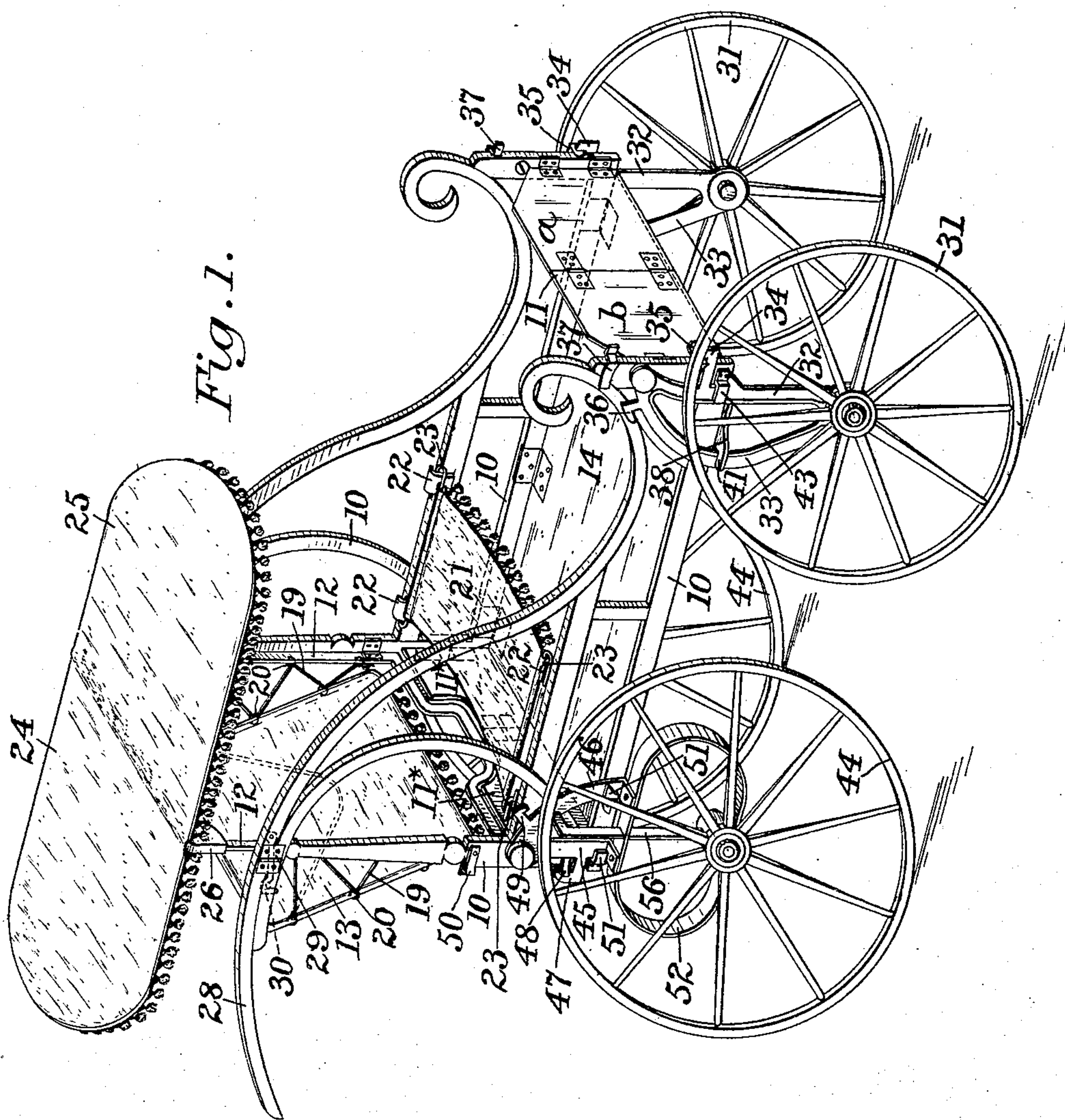
(No Model.)

F. BORNEMANN.
CHILD'S CARRIAGE.

3 Sheets—Sheet 1.

No. 482,779.

Patented Sept. 20, 1892.



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Fig. 2.

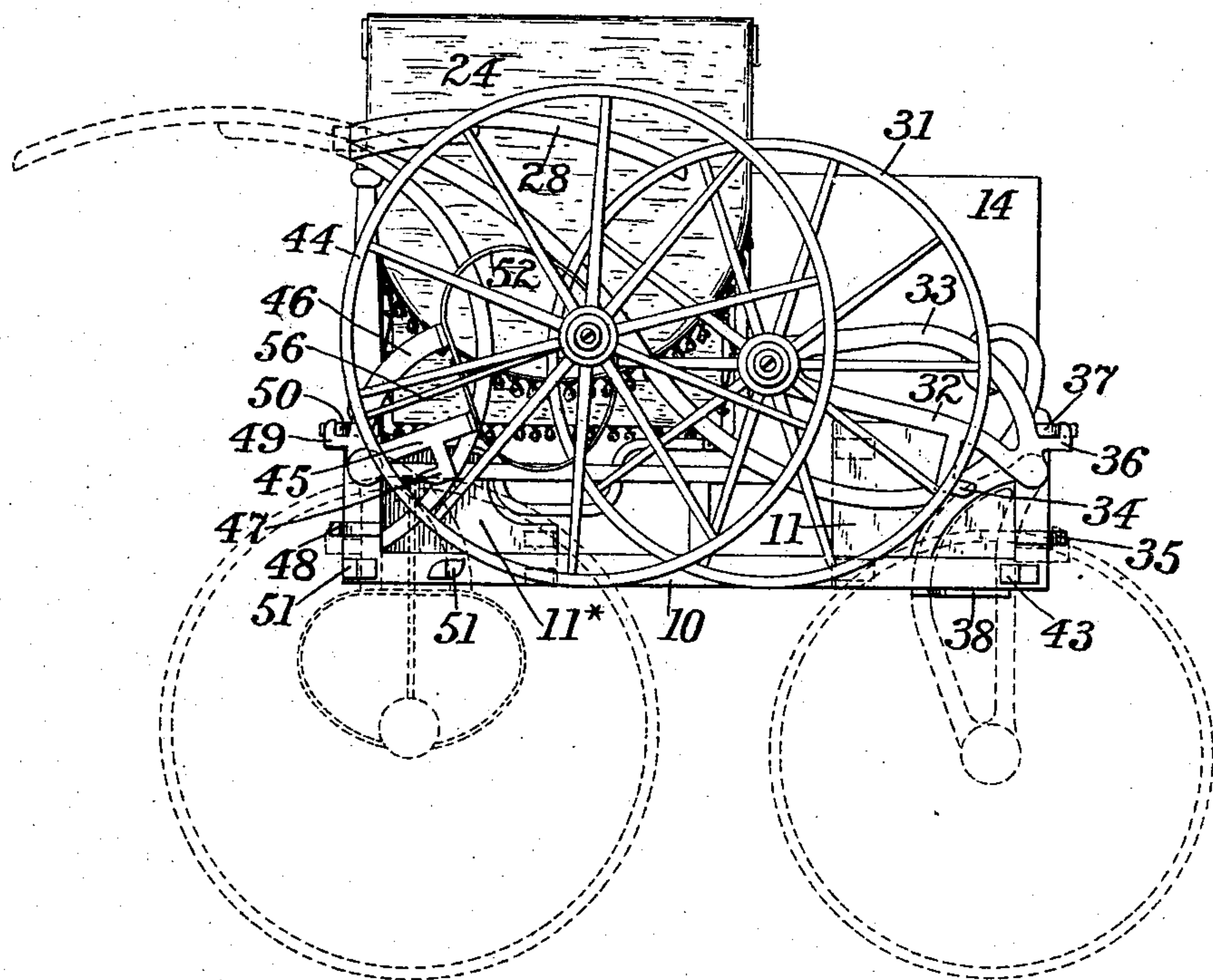


Fig. 3.

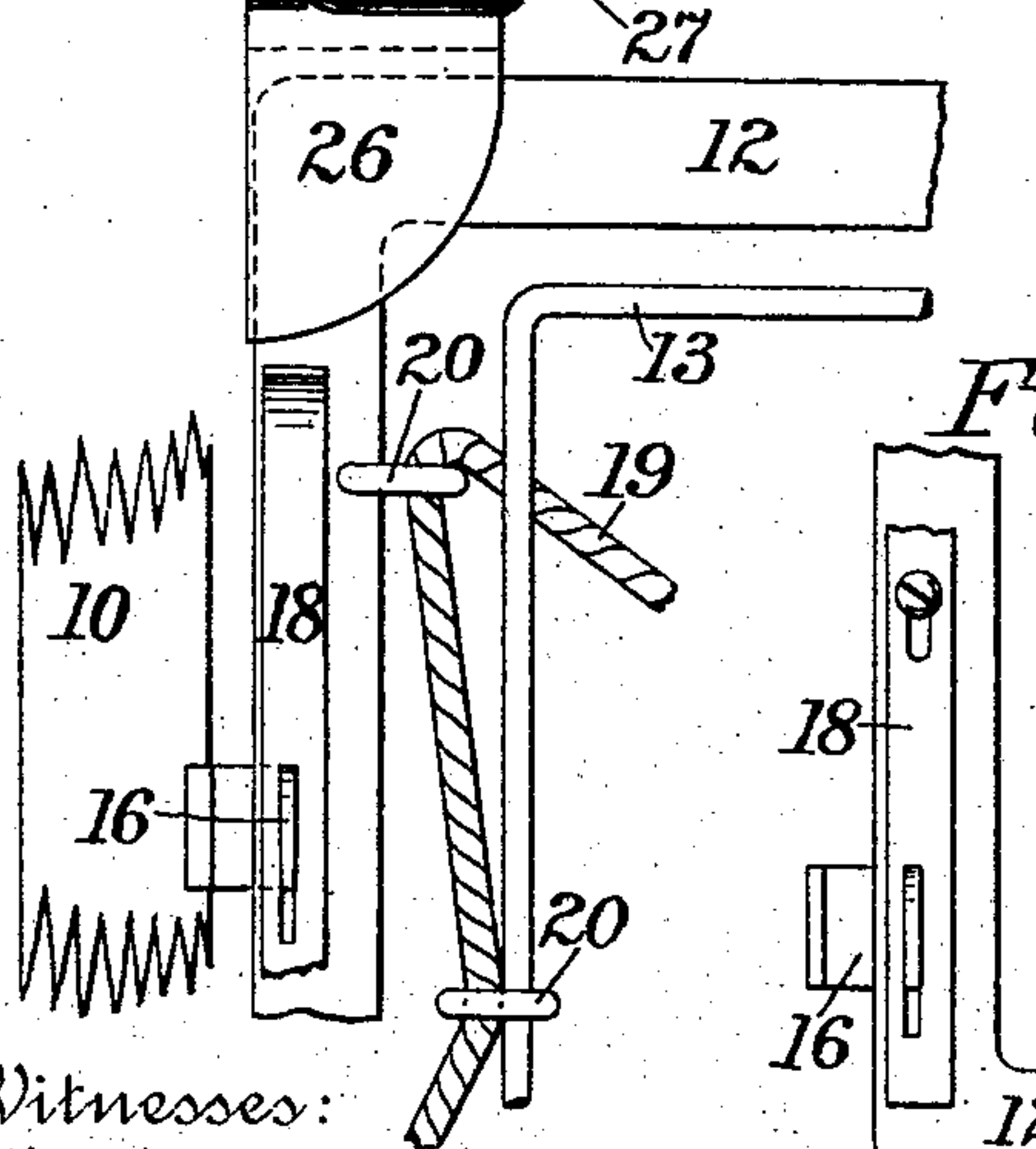


Fig. 5.

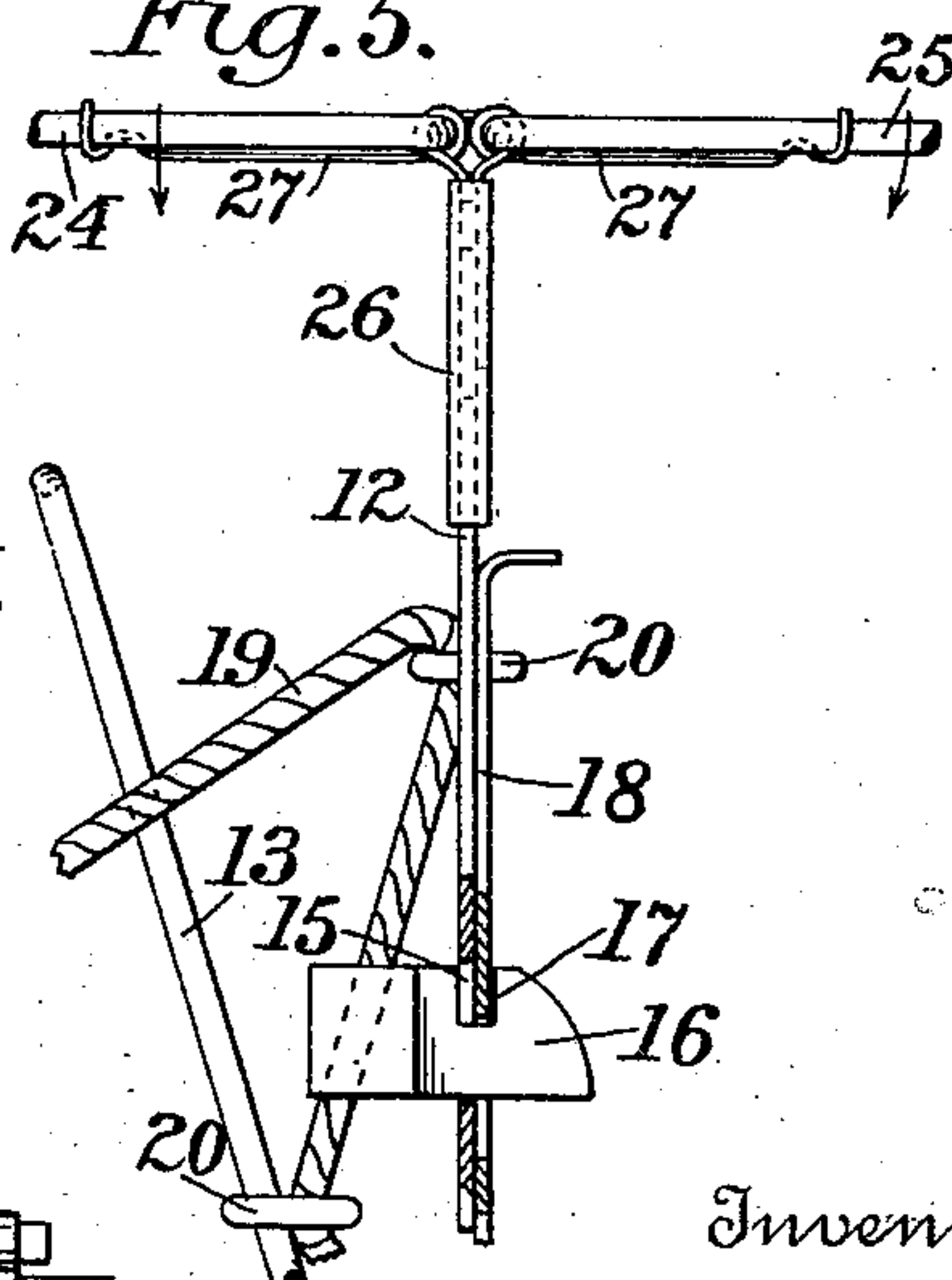
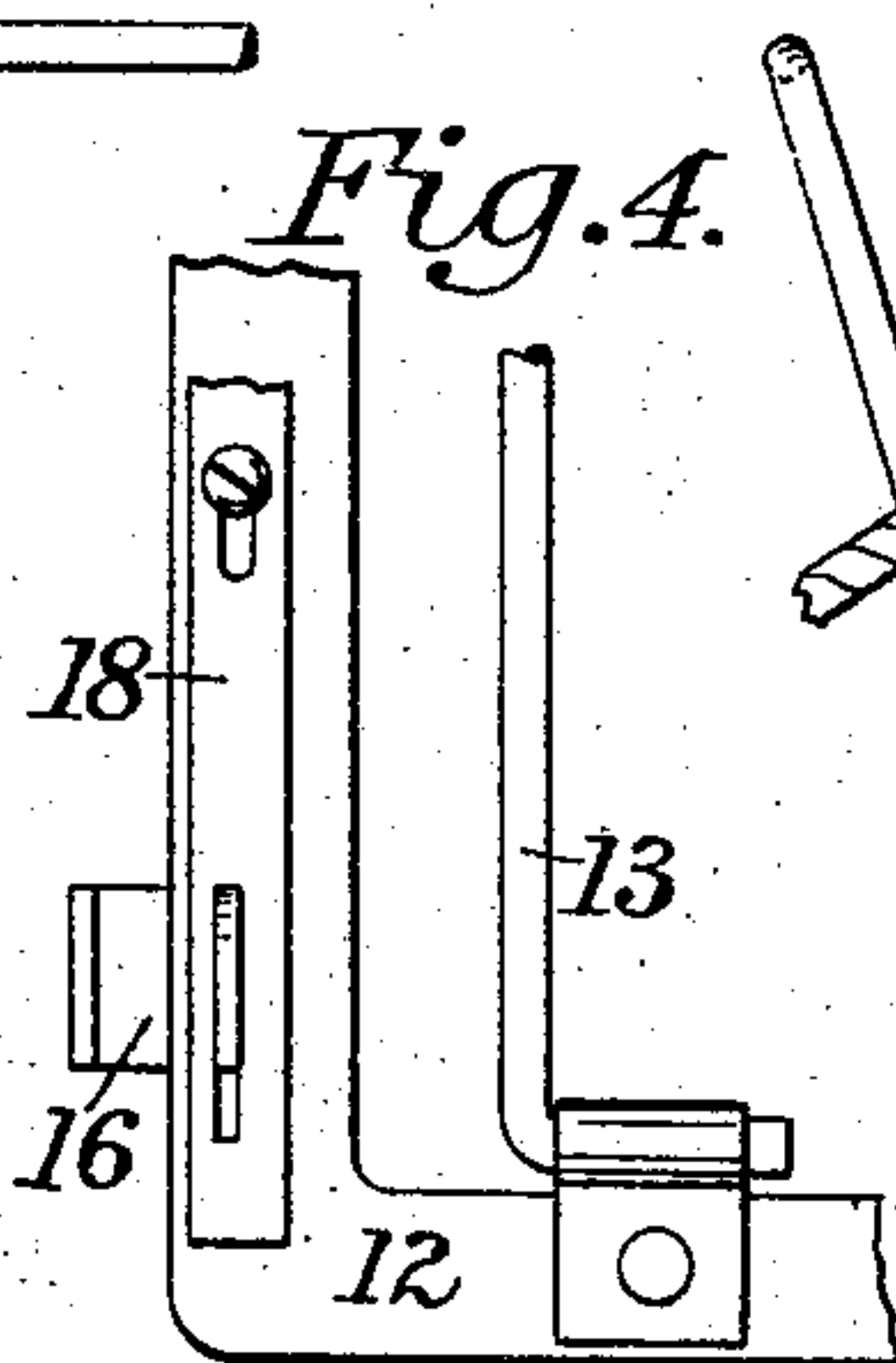


Fig. 4.



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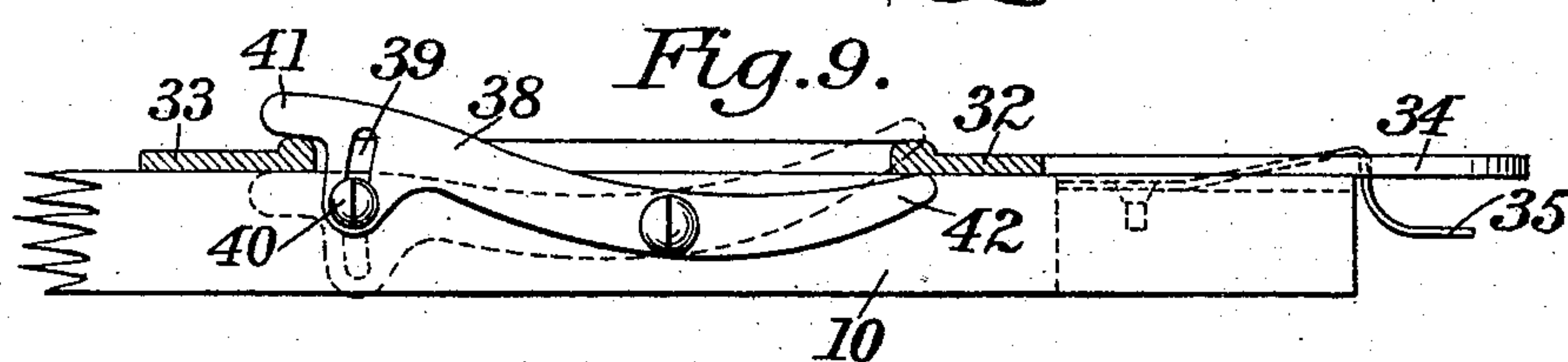
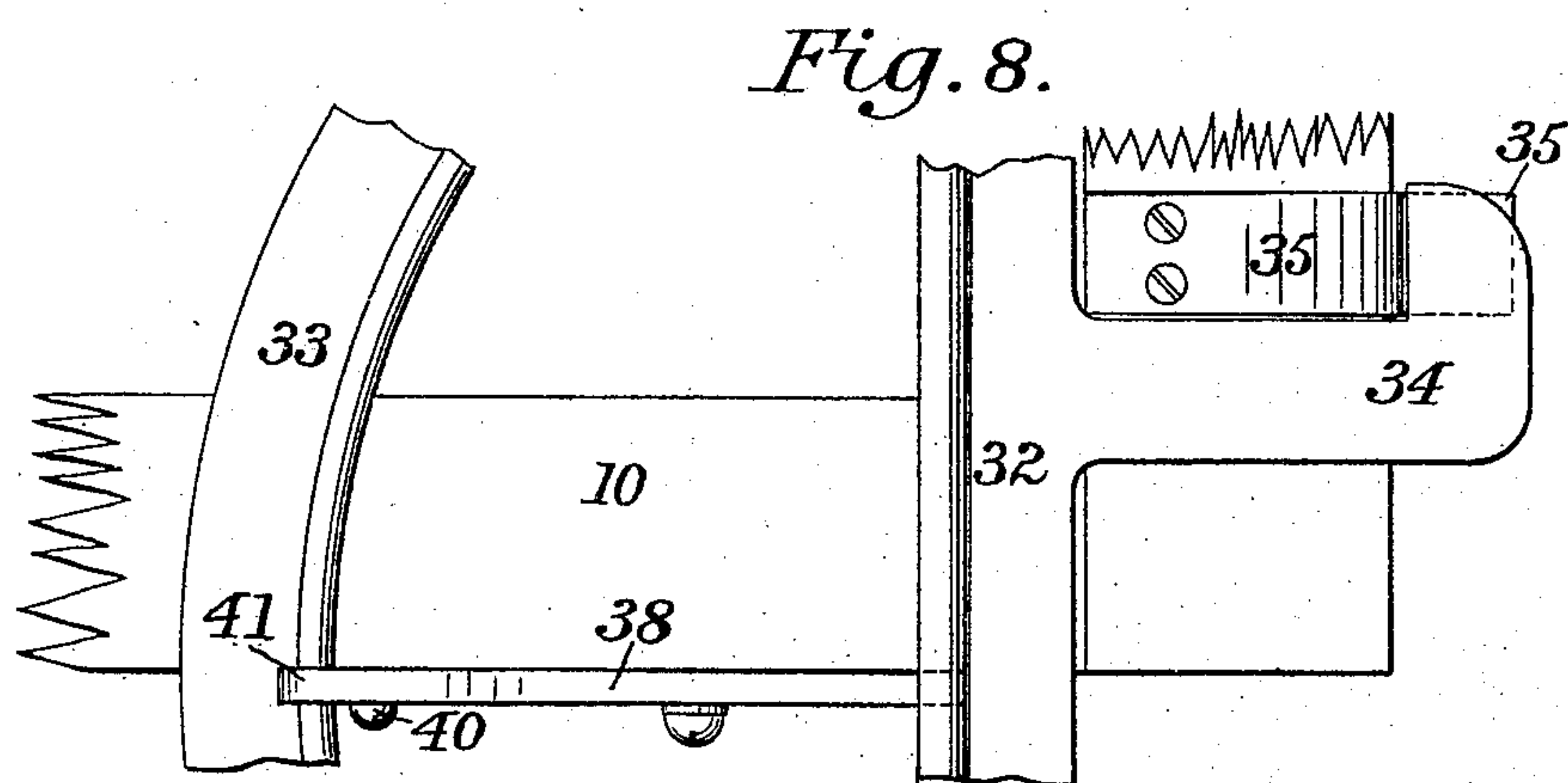
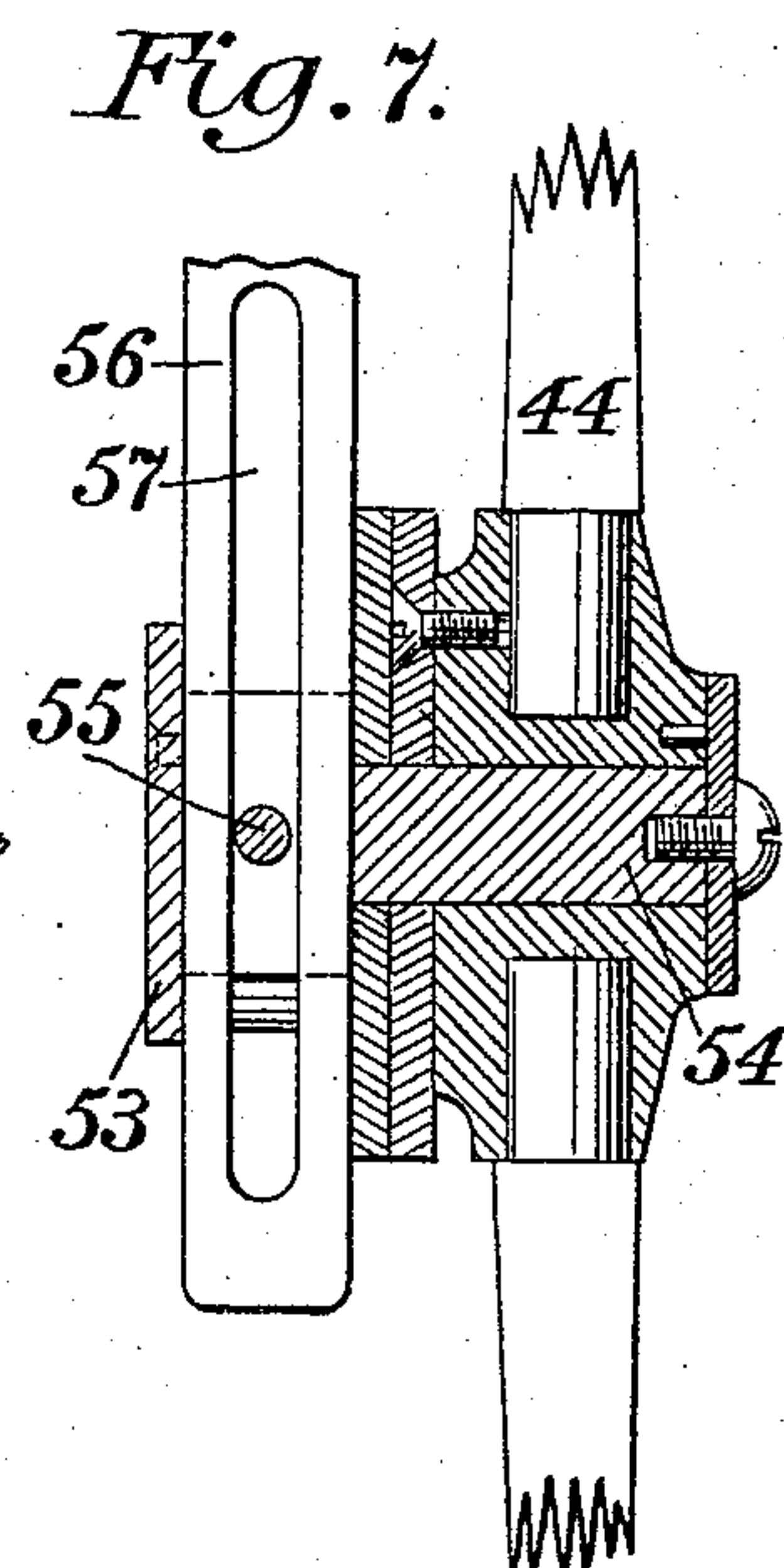
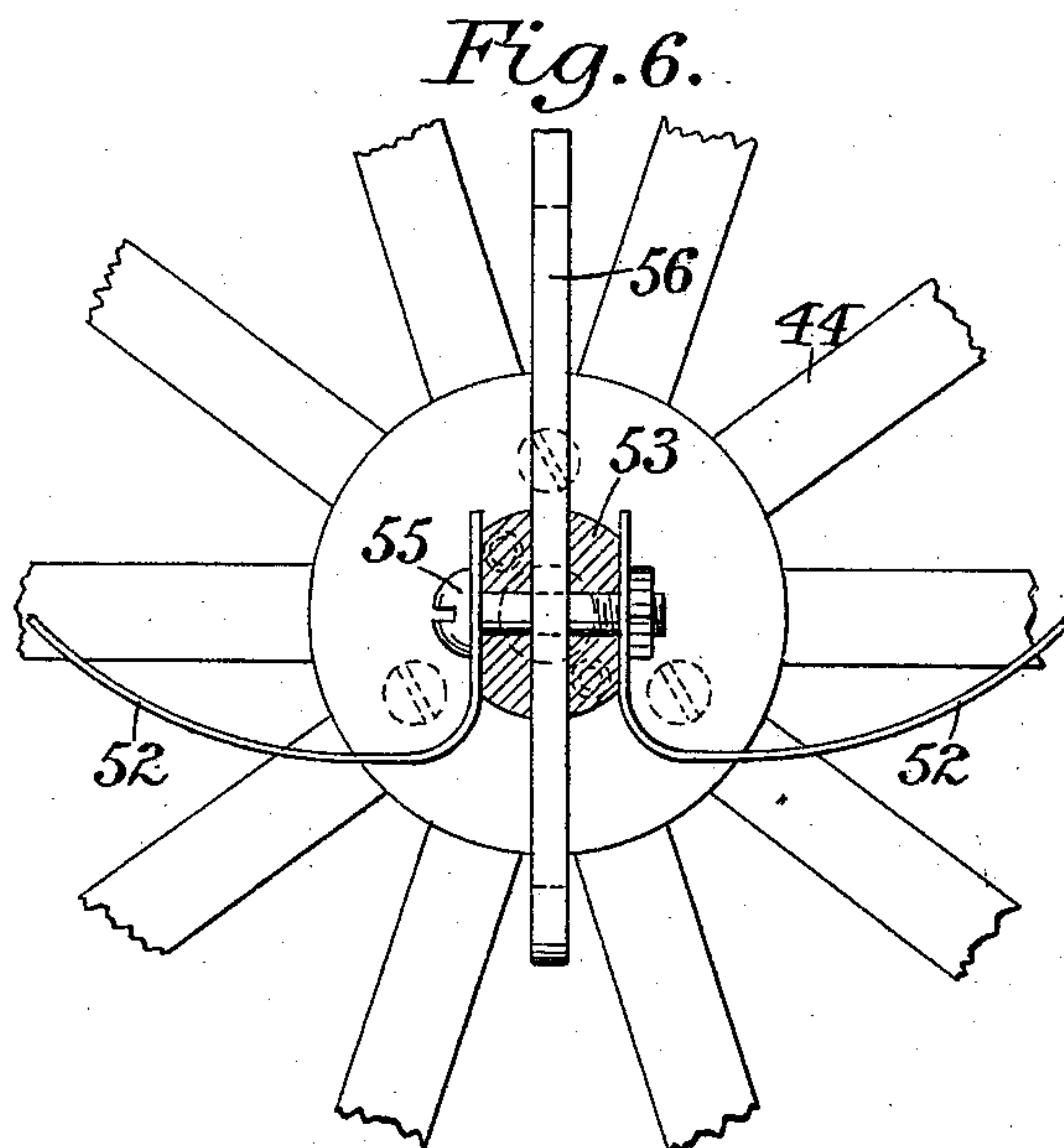
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

FREDERICK BORNEMANN, OF NEW YORK, N. Y.

CHILD'S CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 482,779, dated September 20, 1892.

Application filed November 27, 1891. Serial No. 413,196. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK BORNEMANN, of New York, in the county and State of New York, have invented certain new and useful Improvements in Folding Children's Carriages; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, making a part of this specification.

My invention relates to children's carriages which are adapted to be folded into a small space for convenience in storage or in transportation and which when expanded may be commodious and practically as rigid as ordinary carriages.

Particularly does my invention relate to that type of folding carriages which is shown in Letters Patent of the United States granted to me April 14, 1891, and numbered 450,362; and it is my present object to improve various features of the construction therein set forth, whereby the carriage may be reduced in weight, adapted to be folded into a smaller compass, and made generally more convenient, comfortable, and rigid when in use.

The various features of my invention are more specifically set forth hereinafter.

In the accompanying drawings, Figure 1 is a perspective view of the improved carriage, showing it ready for use. Fig. 2 is a view of the same, folded for transportation, the extended position of the wheels and handles being also indicated in dotted lines. Figs. 3, 4, and 5 are detail views illustrating features of construction which pertain to the back and folding top. Figs. 6 and 7 are sectional views showing details of the rear wheels and springs, and Figs. 8 and 9 are side and horizontal sectional views showing the means for holding the front wheels firmly in position.

The side frames 10 may be of any suitable size and shape and have hinged thereto severally at their front ends the sections *a* and *b* or the front frame of foot-board 11. Said sections are hinged to the side frame in such manner that they may swing inwardly as the carriage is folded, and they are also hinged together at their adjacent edges, as clearly shown in Fig. 1. The back frame is composed of a rectangular frame 12, which is

hinged to the rear end of one of the side frames in such manner as to swing inwardly, and of an adjustable back 13, secured to said frame, as hereinafter described. The rear ends of the side frames may also be united by an inwardly-folding frame or board 11*, similar to the front or foot board 11. The bottom of the carriage consists of a rectangular hinged frame or thin board 14, which is hinged to the bottom of one of the side frames and rests upon suitable stops, (not shown,) which are fixed to the other side frame. The bottom frame is of such size as to fit snugly between the sides and between the front and back when the body is expanded and to maintain them in a fixed relation to each other.

As stated above and as shown in my said patent, the frame 12 is hinged to one of the side frames. It is also provided with slots 15 to engage catches 16, fixed to the other side frame, as in my said patent; but in the present case I have formed the catches 16 with notches 17, which may be engaged by a sliding slotted latch-bar 18, as shown in Figs. 3, 4, and 5. The adjustable back piece 13 is hinged to the bottom of the frame 12, as in my said patent; but instead of being supported at the upper edge only, as by the limiting-chains, I prefer to support it at different points along its edges by cords 19, each of which on its own side passes alternately on the frame 12 and on the back piece 13. The cords may be tied together to maintain the back piece in any desired position.

The seat consists of a simple frame, or, as shown, a piece of fabric 21, which is connected by loops and hooks 22 23 with the side frames. As the seat need not be removed bodily, but only turned up against one side frame, the hooks on that side may be closed, thus constituting virtually a hinge-joint on that side.

The top of canopy consists, preferably, of two leaves 24 and 25, which may be hinged directly to the top of the frame 12, but preferably are hinged to clips 26, which are adapted to fit snugly over the corners of the frame 12, to permit of the removal of the canopy altogether, when so desired. Springs 27 are fitted to the hinges to throw the leaves into the position shown in Fig. 1 as soon as they are released from the position into which they

are forced against the stress of the springs when the carriage is folded.

In the present case I have provided handles 28 of convenient length, and in order that they may not interfere with the folding of the carriage into a small space and at the same time be strong and stiff enough to permit of lifting and guiding the carriage they are hinged to the side frames, as at 29, to fold outwardly, and are provided on the inner side with latches 30, one of which is shown in dotted lines in Fig. 1, to maintain them in extended position.

Each front wheel 31 is mounted on a stud-axle carried by an arm, which is pivoted to the side frame. For lightness and strength the arm is composed, preferably, of two bars 32 and 33. The bar 32 is formed with a flat hook 34 (see Figs. 8 and 9) for engagement with a spring-catch 35, fixed to the side frame to retain the arm in its extended position. A second hook 36 may be formed on the bar 33 for engagement with the spring-catch 37 to retain the arm and wheel in the position shown in Fig. 2. Upon the underside of the side frame is pivoted a latch 38, which is slotted, as at 39, for the reception of a pin 40 to limit its movement, and is formed with a nose 41 and a tail 42. The latch is so shaped and so placed as that when the wheel-supporting arm is in extended position the nose 41 stands out from the side frame and is held firmly against the bar by the pressure of the bar 32 against the tail 42 of the latch. When the arm is folded it throws the latch into the position shown in dotted lines in Fig. 9, and as the latch is held with some friction it will remain in that position until the tail is struck by the bar 32, when the arm is next extended and the nose is thrown out to receive the bar 33. By these means the arm is free to be moved, but is held firmly against the side frame when extended. A fixed clip 43 may be attached to the side frame to receive and hold the bar 32. The rear wheels 44 are carried by arms also pivoted to the side frames. Said arms do not directly support the stud-axle upon which the wheel rotates, but preferably as hereinafter described. Each arm is composed preferably of two bars 45 and 46, the bar 45 being formed with a hook 47 for engagement with a spring-clip 48 and the bar 46 with a hook 49 for engagement with a spring-catch 50 to retain the arm and wheel in extended and folded positions respectively. Clips 51 may be fixed to the side frame to receive and hold the bars 45 45 from lateral movement.

To the bars 45 and 46 is secured a flat spring 52, which is bent in a substantially elliptical form and has its ends secured to the hub 53 of the stud-axle 54 by a bolt 55, which passes through the hub and through the ends of the spring. The hub is slotted vertically to permit the free passage of a stiff arm 56, which is rigidly secured to the wheel-supporting arm and passes through the upper portion of

the spring. The lower end of the arm 56 is slotted, as at 57, to straddle the bolt 55. Freedom of vertical movement of the body is thus secured while the wheel is held rigidly against lateral displacement.

If the carriage has been opened for use and it is desired to fold it up, the seat is turned up against the side frames, the leaves of the canopy are folded down against the back, and the latter is swung on its hinges against the side frame. The bottom is then swung up and the end boards are folded in, drawing the two side frames together. In this condition the carriage may be readily taken up or down stairs or through a narrow door or hallway. If it is desired to reduce still farther the space occupied by the carriage and to bring it to a form in which it may be conveniently carried in the hand, the spring-catches 35 and 48 are withdrawn from their respective hooks and the wheels and arms are swung inwardly into the position shown in Fig. 2, when the hooks 36 and 49 will engage with their respective spring-catches to retain the wheels in place. To open the carriage again for use, the foregoing operations are reversed. Should it be preferred to use the carriage without the canopy, the latter may be removed easily by slipping the clips 25 from the frame 12, and may be restored to place with equal ease. The handles of the carriage may be folded against the body or may be held securely in extended position by the catches 36.

I am aware that heretofore a folding carriage has been provided with a seat which consists of a riser hinged to a rigid bottom board and having hinged to itself the seat proper, whose rear end is supported by projections from the side frames; but in that case the bottom and the seat together must be removed bodily from the carriage before it can be folded and must be a special care in transporting the carriage or moving it from one place to another while folded. I do not seek to claim such a construction, as in my carriage the seat is entirely independent of the bottom and both may be turned up against the side frame without being detached from the carriage.

I am also aware that a carriage has been provided with wheel-supporting arms pivoted upon the side frames, which with the end pieces turn inward and overlies one another upon the bottom, and neither do I seek to cover such construction. By hinging both the bottom and the seat independently to one of the side frames, hinging the end pieces to the said frames, and pivoting the wheel-supporting arms to the side frames I am enabled not only to secure a very rigid structure in use, but to reduce materially the space occupied by the folded carriage.

I claim as my invention—

1. In a folding carriage, the combination of rigid side frames, a front or foot board composed of two sections hinged to the side frames and to each other and adapted to be folded

inwardly, a rigid bottom piece adapted to be turned upwardly against said side frame, and a rigid back frame hinged to one of said side frames and adapted to engage the other of said side frames, substantially as shown and described.

2. In a folding carriage, the combination of rigid side frames, inwardly-folding end pieces, a rigid bottom piece adapted to be turned up against one of said side frames, and an independent seat secured to one of said side frames, so that it may be turned up against the same and adapted to engage the other of said side frames, substantially as shown and described.

3. In a folding carriage, the combination of rigid side frames, inwardly-folding end pieces hinged to said side frames, a rigid bottom piece hinged to one of said side frames and adapted to be turned up against the same, and wheel-supporting arms pivoted upon said side frames to swing in a plane parallel therewith, substantially as shown and described.

4. In a folding carriage, the combination of a folding body having rigid side frames, handles hinged to said frames to fold laterally thereon, and means to maintain said handles in extended position, substantially as shown and described.

5. In a child's carriage, the combination of side frames, a back frame supported thereby, an adjustable back hinged at its lower edge to said back frame, eyes on the lateral edges of said back and frame, and cords passed alternately through the eyes on said frame and those on said back, substantially as shown and described.

6. In a folding carriage, the combination of rigid side frames, a back frame hinged to one of said side frames and adapted to engage the other, a canopy supported at the top of said

frame to swing down against it, and means to maintain it in elevated position, substantially as shown and described.

7. In a child's carriage, the combination of side frames, a back frame supported thereby, clips to engage the upper corners of said frame and removable therefrom, and a canopy carried by said clips, substantially as shown and described.

8. In a folding carriage, the combination of the side frames of the body, wheel-supporting arms pivoted thereto and having hooks formed thereon and spring-catches carried by said side frames above and below the pivots of said arms and adapted to engage said hooks to maintain the arms in the desired position, substantially as shown and described.

9. In a folding carriage, the combination, with the side frames of the body, of a wheel-supporting arm pivoted thereto, said arm consisting of two bars, as described, and a latch pivoted to said frame and having a nose to engage one of said bars to hold it against lateral movement and a tail to rest against the other of said bars, substantially as shown and described.

10. In a carriage, the combination of a stud-axle having a hub slotted vertically, a flat spring secured to the body of the carriage and having both its ends secured to said hub by a bolt, and a rigid arm secured to said body and projecting downwardly through the slot in said hub, substantially as shown and described.

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

FRED. BORNEMANN.

Witnesses:

A. N. JESBERA,

W. B. GREELEY.