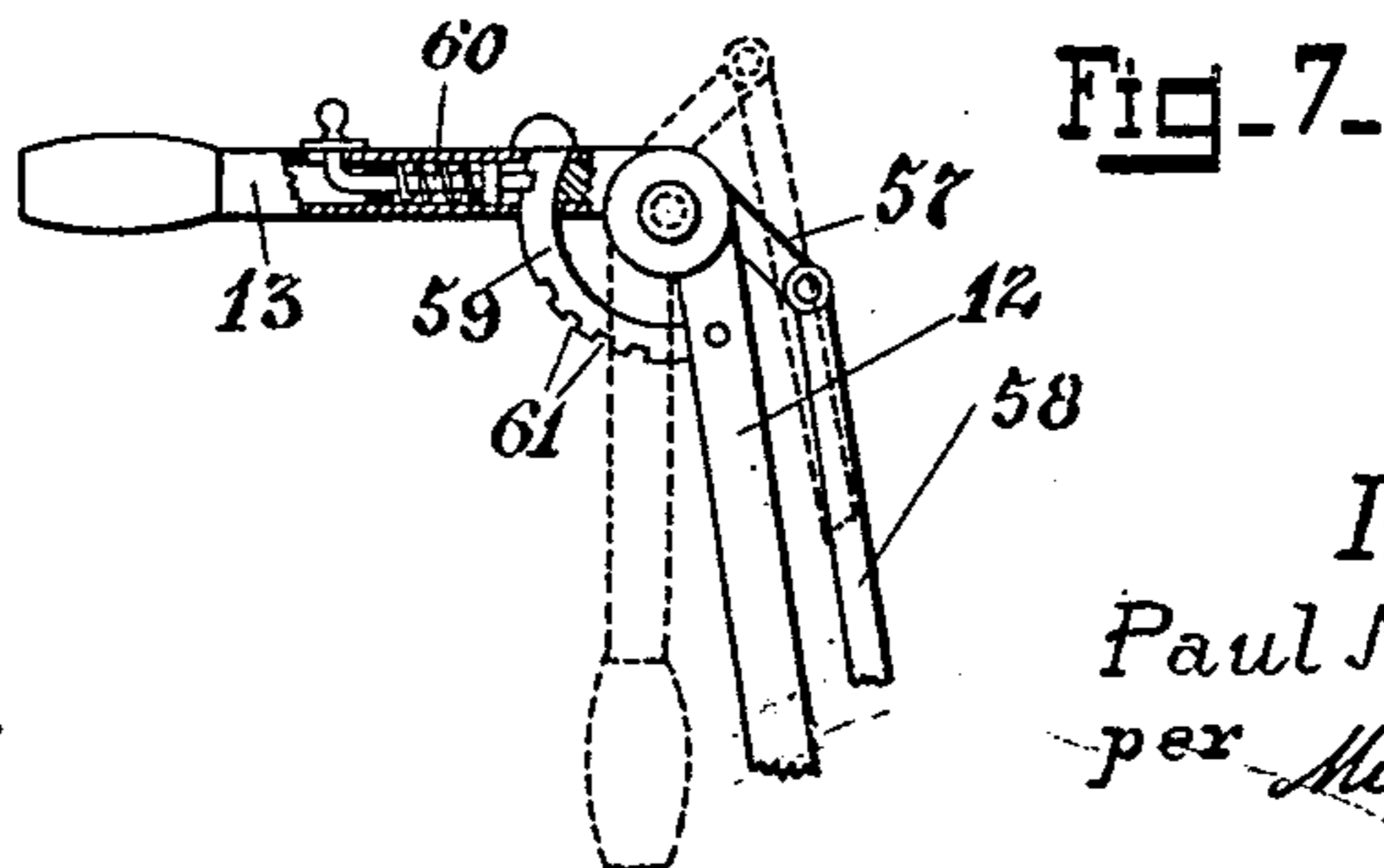
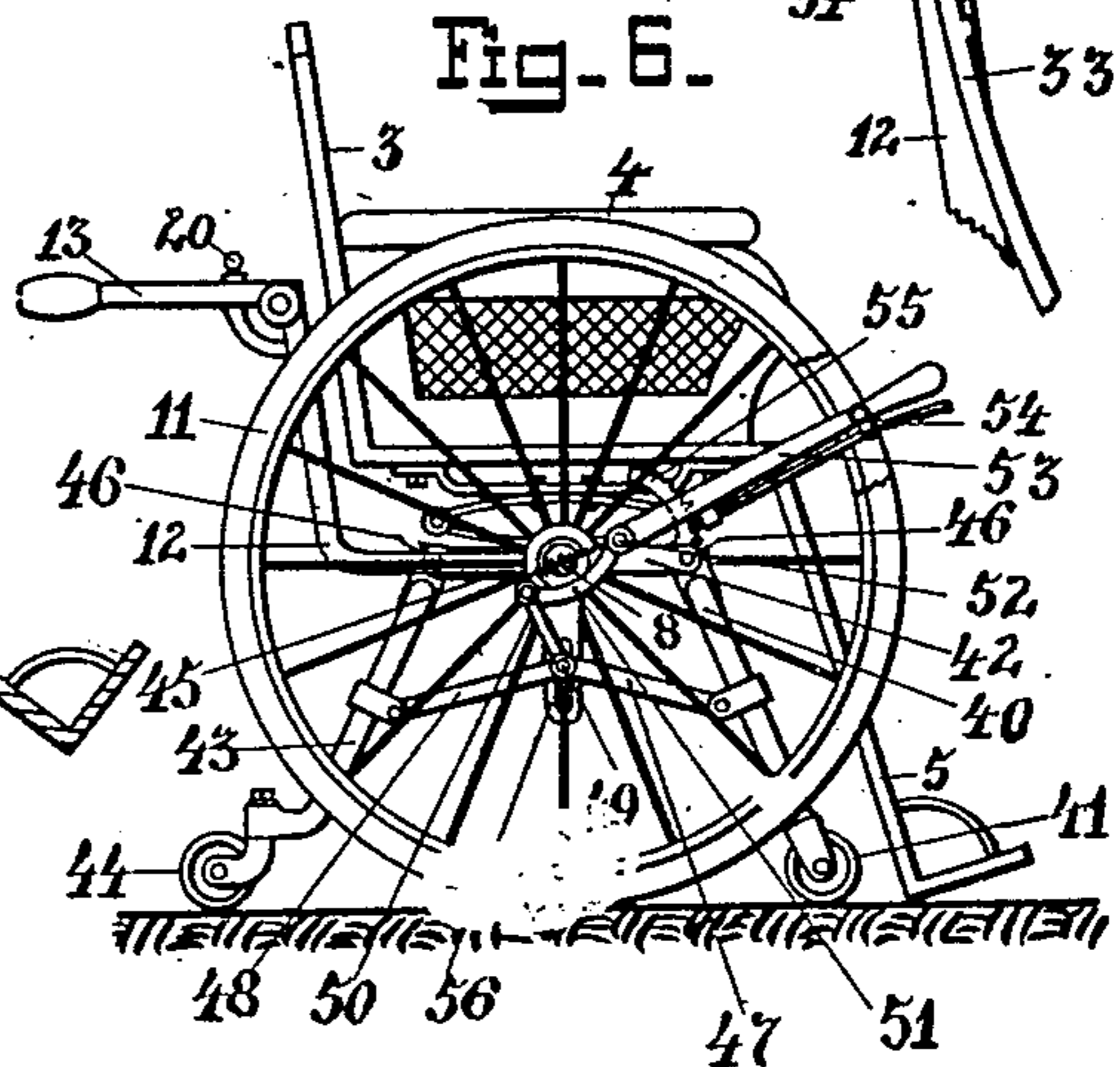
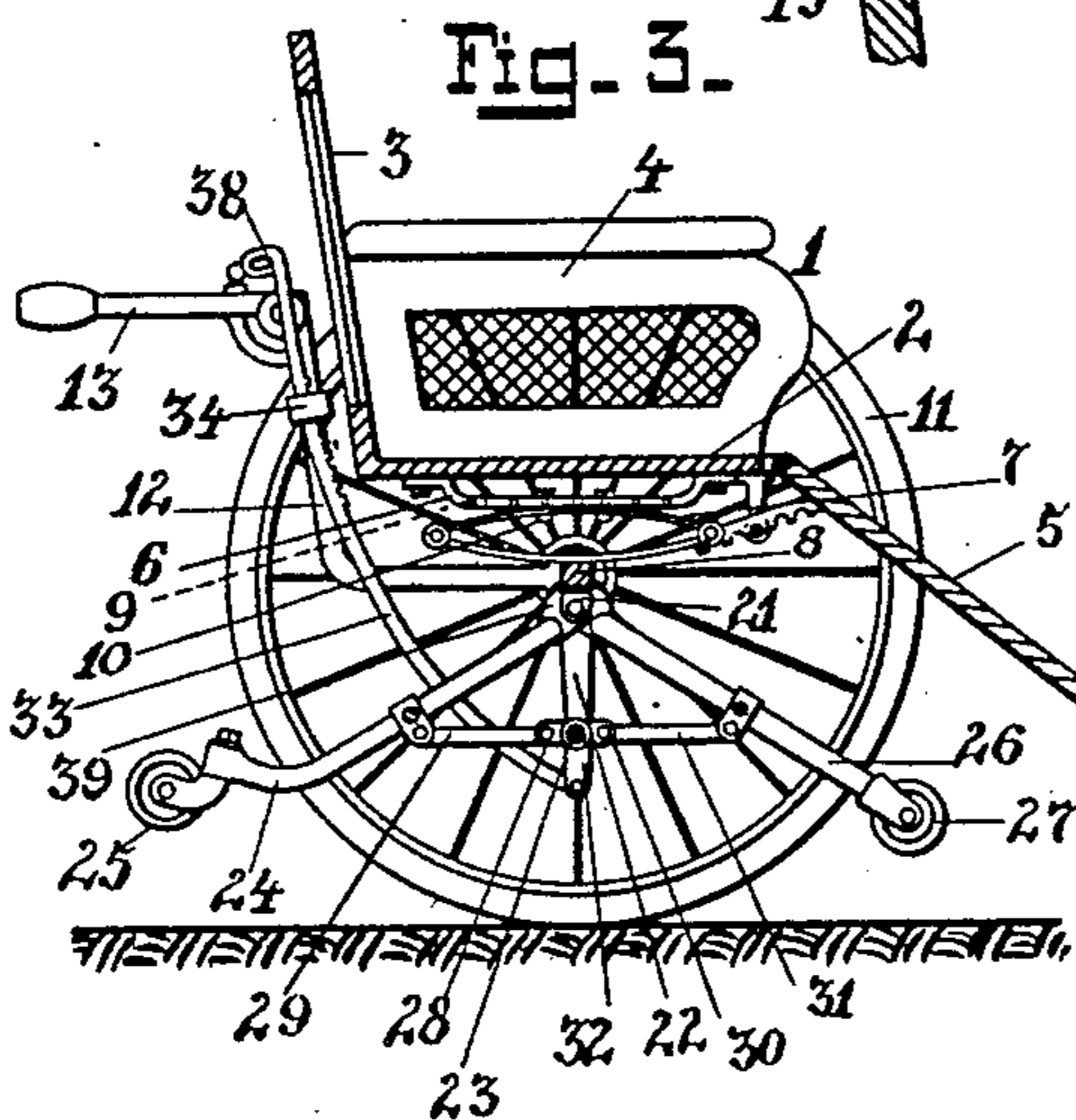
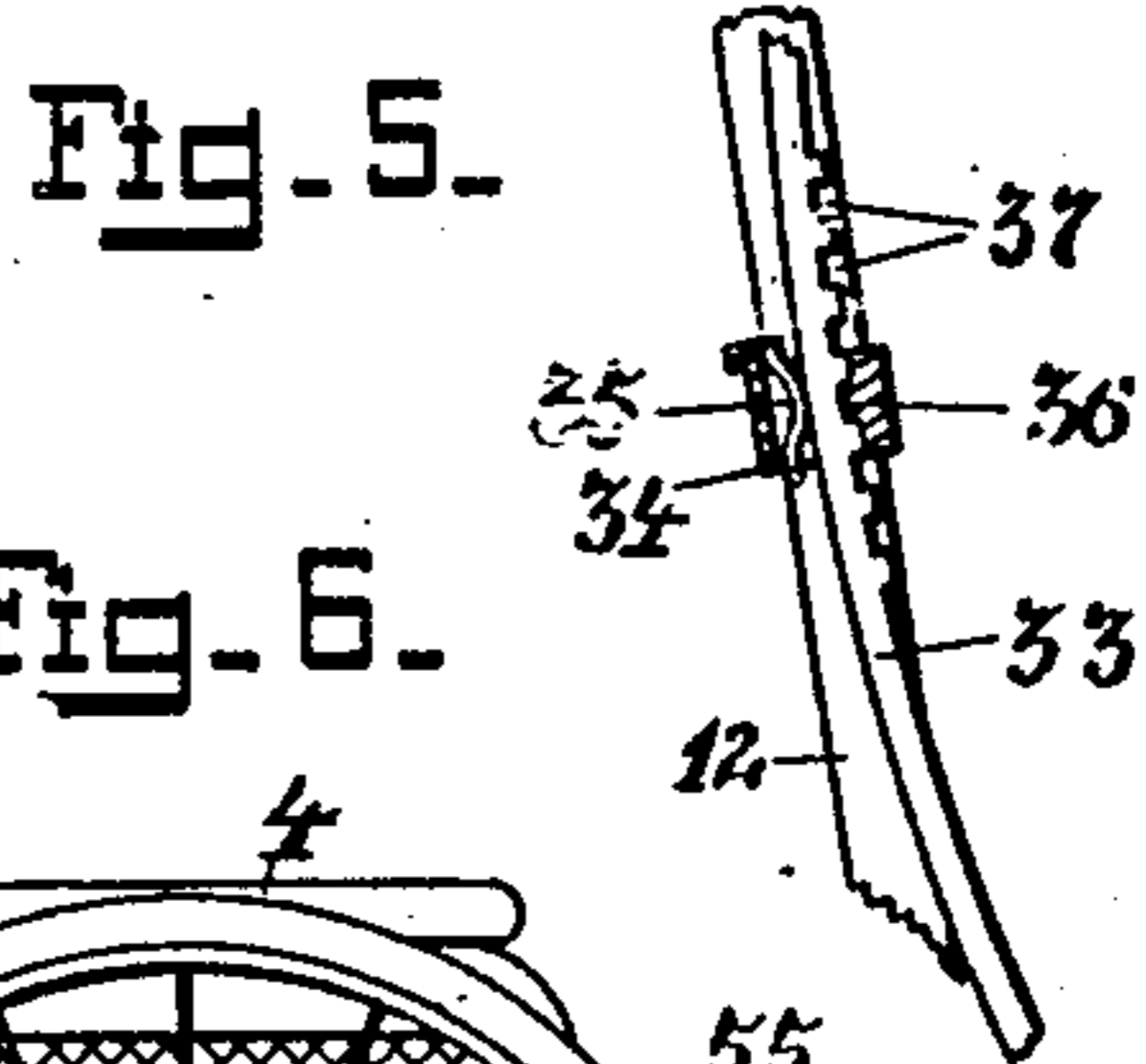
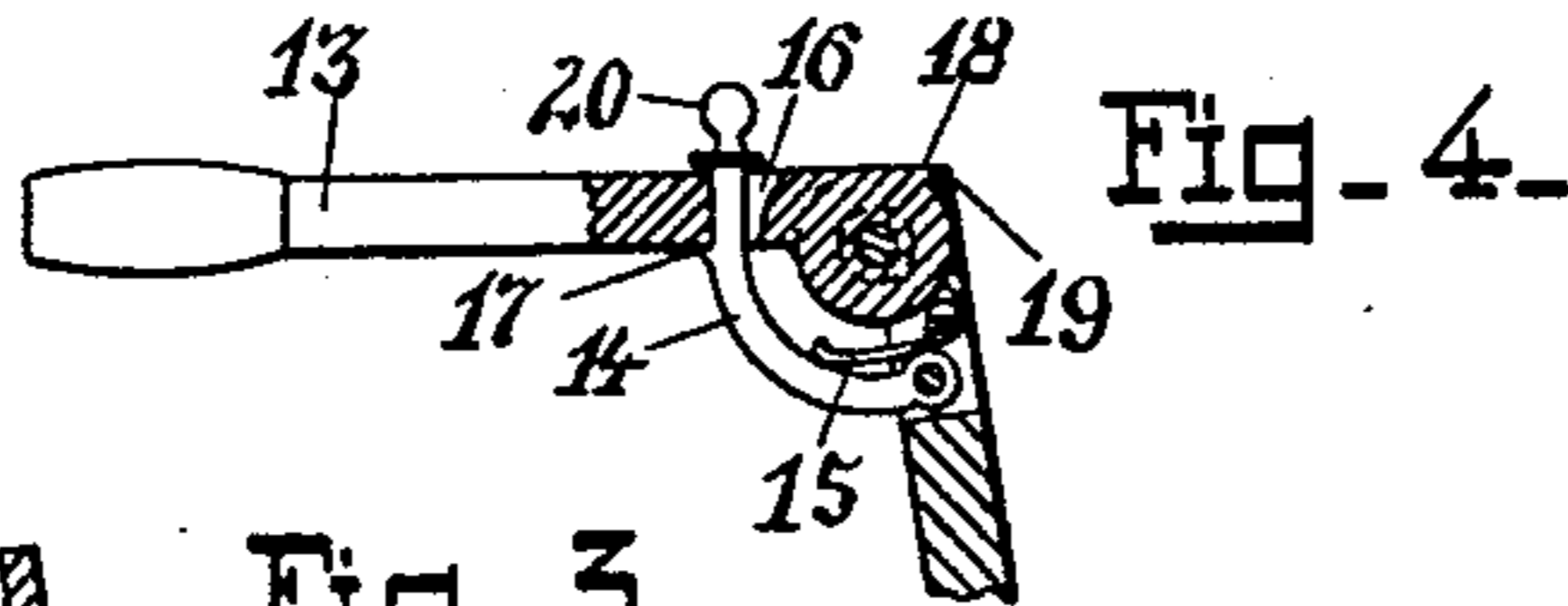
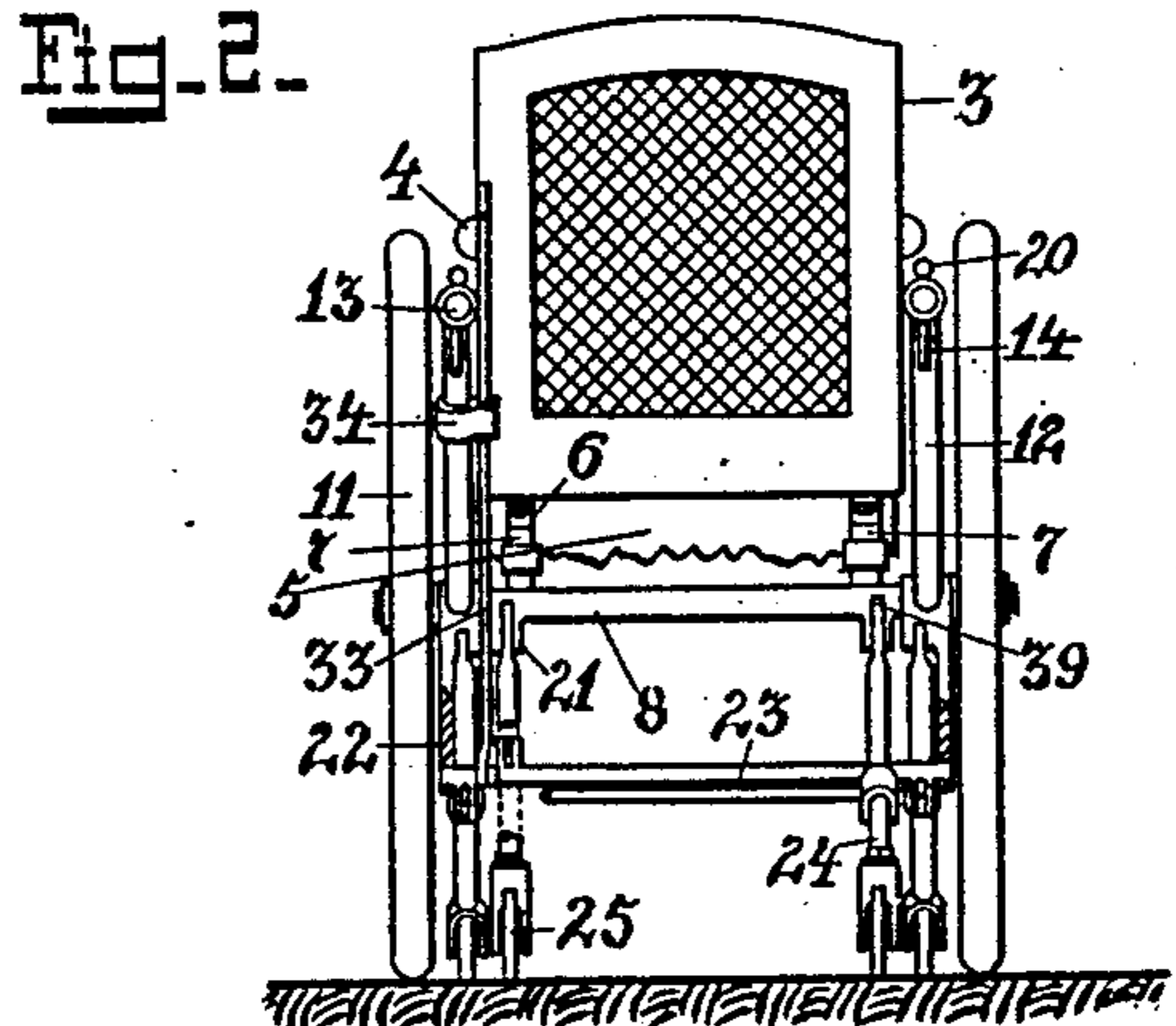
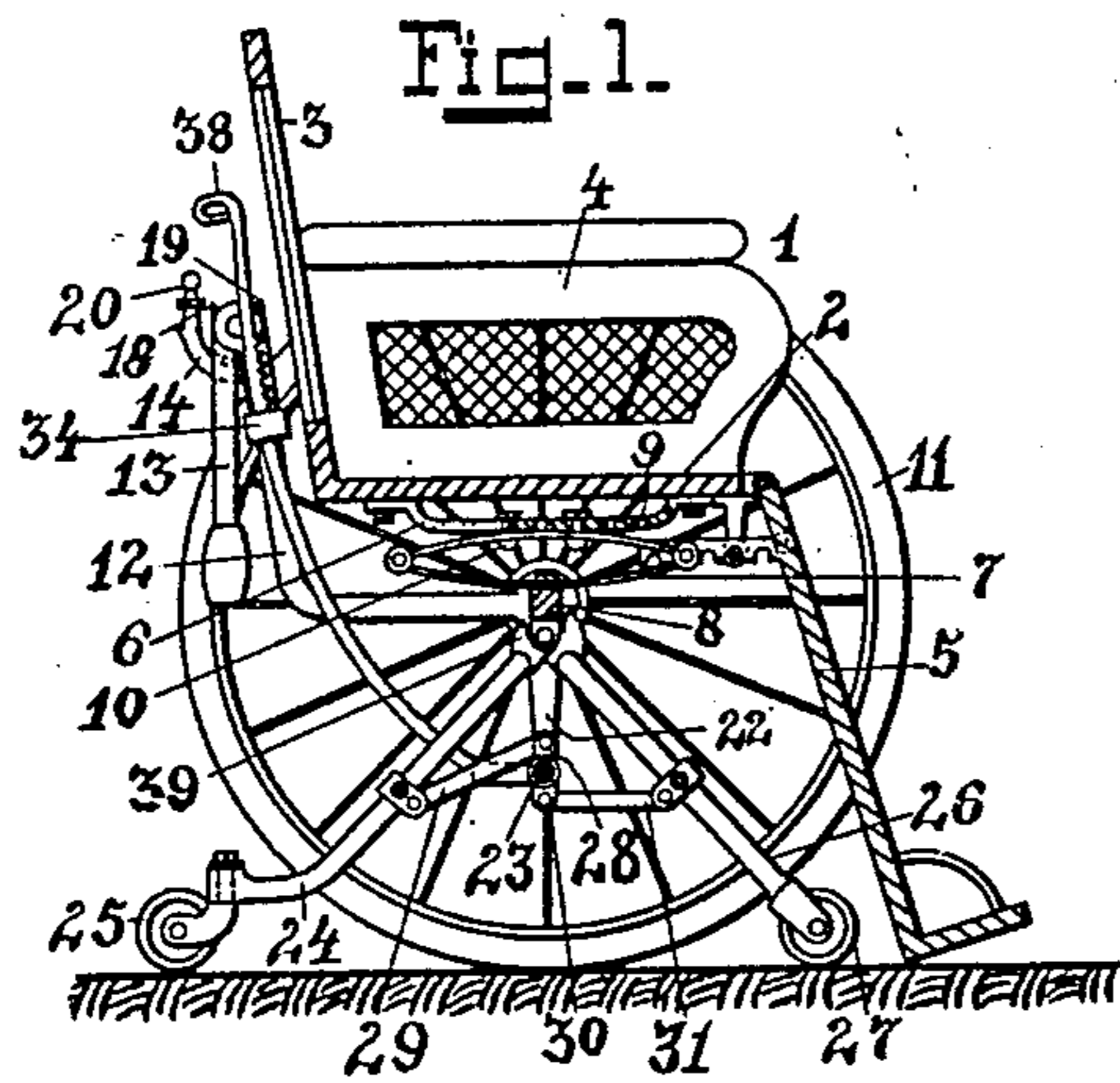


No. 865,514.

PATENTED SEPT. 10, 1907.

P. MÜLLENMEISTER.
SICK AND INVALID CARRIAGE.
APPLICATION FILED DEC. 4, 1906.



Witnesses:
F. G. Harder.
A. Frank.

Inventor:
Paul Müllenmeister.
per Martin Schmetz.
Attorney.

UNITED STATES PATENT OFFICE.

PAUL MÜLLENMEISTER, OF AIX-LA-CHAPELLE, GERMANY.

SICK AND INVALID CARRIAGE.

No. 865,514.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed December 4, 1906. Serial No. 346,295.

To all whom it may concern:

Be it known that I, PAUL MÜLLENMEISTER, merchant, a subject of the King of Prussia, residing at Aix-la-Chapelle, No. 17 Leonhardstrasse, in the Kingdom of Prussia, Empire of Germany, have invented certain new and useful Improvements in Sick and Invalid Carriages; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to a two-wheeled carriage which may be employed with the best advantage by the sick and invalid and besides this may be used for other purposes, as for instance wheeling persons from place to place on exhibition grounds.

The object in view is to equip a carriage of this kind with devices by means of which either the attendant or the person occupying the carriage may transform the latter by a simple motion of a rod or lever at a moment's notice from a nimbly moving carriage into a wheeled chair, which as such may be utilized stationary or moved about on an even surface, as for instance the floor of a room, corridor and the like. This feature is particularly of great importance when the carriage is employed for wheeling about sick persons, as the transformation of the carriage into a chair, and vice versa, can be effected without necessitating a change in the position of the sick person, so that the comfort of the latter need not be disturbed.

As hitherto the carriages employed for similar purposes were generally three- or four-wheeled they required a considerable force to move them about on account of the great friction. Another source of annoyance was formed by the small third or pilot-wheel, which for reasons of the difficulties encountered in advantageously journaling it, and on account of its extremely hard usage, was very sensitive and therefore caused numerous repairs and a lot of trouble. Besides this these older carriages were unnecessarily long for reasons of the pilot-wheels, so that their employment as sick-chairs in a room or on narrow corridors or passages was limited, because they required so much space to be wheeled round or turned back upon their own tracks.

All these drawbacks are avoided by the present invention, since in absence of the third and fourth wheel the friction is reduced considerably and the steering-qualities greatly enhanced. Besides this, the novel construction of this new carriage makes it possible to wheel the latter with the least exertion from the street pavement onto the side-walk without turning the carriage around and then draw it backwards over the edge of the side-walk, as hitherto usually practiced; and a further advantage is offered by this new carriage by its feature, that in wheeling it uphill or downhill the carriage-seat can retain its horizontal position, and that

the casters arranged to the rear of the axle may be utilized as a brake when an exceptionally steep hill is descended.

In the accompanying drawing:—Figure 1 is a vertical sectional view of the carriage adjusted to be utilized as a chair. Fig. 2 is a rear-view of the carriage when adjusted as shown in Fig. 1. Fig. 3 is a vertical sectional view of the carriage ready for street use. Fig. 4 is an enlarged sectional view, which shows the spring-actuated catch for locking the handle-bars in operative position. Fig. 5 is a similar view of the adjusting-rod for lowering or raising the stay-frames provided with casters or rollers. Fig. 6 is a side elevation of a modification of the carriage. Fig. 7 is an enlarged sectional view of a mechanism, which shows a combination of the locking-device for the handle-bars and the adjusting-rod for lowering or raising the stay-frames.

The carriage-body 1, which consists of the seat 2, the back 3, cushioned arm-rests 4 and the adjustable foot-rest 5, may be constructed in any suitable manner. Below the seat 2 bars 6 are secured and connected with the springs 7 carried by the carriage-axle 8. In order to place the center of gravity of the occupant of the seat as near as possible vertically over the axle 8 the bars 6 are provided with a series of holes 9 through which the bolts 10 may be pushed to secure the seat in the desired position on said springs.

The ends of the axle 8 are supported by the carriage-wheels 11 and to the axle are secured the pole-shafts 12, to which the handle-bars 13 are hinged and automatically locked thereto when the carriage is to be wheeled about, but are unlocked and swung downward to save space when the carriage is used as a chair. In order to let this joint assume a rigid form when the carriage is wheeled about a curved arm 14 is likewise hinged to each pole-shaft 12 and steadily pressed outward by a spring 15, whereas the free end of this curved arm 14 passes through a slot 16 of the handle-bar 13 and is provided on its convex side with a nose 17 which supports said handle-bar 13 and is held in this position by means of the spring 15 when the handle-bar assumes its horizontal position. To prevent the handle-bar from being swung too far upwards it is provided with a projection 18 which coacts with the shoulder 19 of the pole-shaft 12, Fig. 4. To lower the handle-bar the button 20 of the arm 14 is pushed back against the spring 15, until the nose 17 can enter the slot 16, which manipulation is made possible by the curved form of the arm 14 and a minimum play in the joint of the pole-shaft 12 and the handle-bar 13. Besides these pole-shafts the axle 8 is provided with a series of double lugs or arms 21 and with a pair of hangers 22 in which is journaled a shaft 23. To said lugs are hinged the rearward stay-frame 24 provided with the casters 25, and the forward stay frame 26 which is provided with two guide-rollers 27. This arrangement is chosen to

prevent lateral sway of the carriage and its occupant when the carriage is wheeled from the street pavement upon the side walk or down hill. The frame 24 is linked to forked arms 28 of the shaft 23 by means of the links 29, and the forward frame 26 to the forked arms 30 of the same shaft by means of the links 31. To bring the guide-rollers and the casters into contact with the ground, or to raise them off the ground, in accordance with the purpose for which the carriage for the time being is to be employed, the shaft 23 is also provided with a longer arm 32 to which the adjusting-rod 33 is hinged. The latter passes through an eye 34 attached to or integral with one of the pole-shafts 12 and is provided with a flat spring 35 and a tooth 36, which can be brought into engagement with any of the notches 37 of the adjusting-rod 33.

Presuming that the carriage for the time being assumes the position shown in Fig. 1 and is to be transformed for street use as shown in Fig. 3, it will be only necessary to raise the handle-bars 13 until the noses 17 can slip under the under-side of the handle-bars, and then pull the adjusting-rod 33 by means of the handle 38 downwards. To do this the rod is first drawn back against the spring 35 to get it free of the tooth 36, then raised until the guide-wheels and casters have attained the desired height over the ground, and finally pushed forward to let the tooth 36 enter into the nearest notch 37. If the carriage is to be used as chair again, these manipulations must be executed in the reverse way. If now the casters 25 or the guide-rollers 27 are brought under pressure, the former when the carriage is wheeled down-hill, and the latter when wheeled upon a side-walk, a severe strain is put on the links 29 and 31, and to prevent this in the interest of the sick or invalid person wheeled about, the frames 24 and 26 are provided with noses 39 which contact at such times with the axle 8 and thus release the links 29 and 31 of the greater part of the strain.

Fig. 6 shows a modification of the carriage, in which the frame 40 with the guide-rollers 41 is hinged to the arms 42 which extend laterally from the axle 8, and in a similar manner the frame 43 with the casters 44 is hinged to the arms 45 which likewise extend laterally from the axle 8. The ends of the frame 40 which project over the arms 42, and the ends of the frame 43, which project over the arms 45, are each provided with a nose 46, to prevent that these frames swing too far outwards, when for instance the frame 40 is employed as support when the chair is wheeled upon a side-walk, or when the casters 44 of the frame 43 are utilized as brakes when the carriage is wheeled down-hill. The links 47 and 48 connect the frames 40 and 43 with the shaft 49, which is carried by the links 50 attached to the levers 51 of the shaft 52 journaled in the arms 42. At the one end of this shaft, preferably at the right hand side of the occupant of the seat, a hand lever 53 is secured and provided with the well known latch-mechanism 54 which coacts with the notched segment 55 secured to the arms 42 to hold the frames 40 and 43 in the desired positions. To assure a faultless working of this mechanism the ends of the shaft 49 are guided in the

slotted hangers 56 secured to the underside of the axle 8.

Instead of operating the handle-bars and the stay frames independent of each other these two motions may be executed simultaneously as follows: One of the handle-bars 13 is provided with an arm 57, which arm may be secured to said handle-bar in any suitable way, or form an integral part thereof. To the free end of said arm 57 the upper end of the adjusting-rod 58 is movably connected, which rod is identical with the adjusting-rod 33 of Figs. 1, 2, 3 and 5. The curved arm 59, identical with the arm 14 of Figs. 1 and 3, is connected with the handle-bar by means of the spring-actuated latch-bolt 60 and is provided with notches 61, which serve the same purpose as the notches 37 shown in Fig. 5, namely to maintain the guide-rollers and casters at the desired height above the ground, when the latch-bolt 60 is placed in the one or the other of these notches.

I claim:

1. A sick- and invalid-carriage, comprising an axle having transporting-wheels at its outer ends, a carriage body resiliently supported by said axle, a stay-frame hinged to said axle, casters arranged at the free ends of said frame, a second stay-frame likewise hinged to said axle, guide-rollers journaled in the free end of the last-named frame, means for simultaneously raising and lowering said stay-frames, and collapsible means for steering said carriage.

2. A sick- and invalid-carriage, comprising a carrying axle having wheels at its ends, springs carried by said axle, a carriage body, bars fixed to said carriage-body and adjustably connected with said springs, forked arms on said axle, stay-frames hinged to said axle-arms, adjustable means for simultaneously raising the free ends of said frames when moved in one direction and lowering them when moved in the opposite direction, noses on said frames for limiting their upward motion, pole-shafts attached to said axle, handle-bars pivotally attached to said pole-shafts, and means for automatically and rigidly locking said handle-bars to said pole-shafts when said handle-bars attain their operative position.

3. In a carriage of the kind described the combination with the carriage-axle, of a series of arms carried by said axle, stay-frames hinged to said arms, hangers carried by said axle, a shaft held by said hangers, link-connections between said frames and said shaft, means for operating said shaft and simultaneously therewith lowering the free ends of said frames when moved in one direction and raising them when moved in the opposite direction, and means for locking said operating means in either position.

4. In a carriage of the kind described, the combination with the carriage-axle, of forked arms carried by said axle, wheeled stay-frames hinged to said arms, hangers carried by said axle, a shaft held by said hangers, links connecting said stay-frames with said shaft, an adjusting-rod operatively connected with said shaft, pole-shafts secured to said carriage-axle, a handle-bar pivotally connected with each pole-shaft, a lever arranged as an extension of one of said handle-bars and connected with said adjusting-rod, a curved arm carried by each pole-shaft and passing through a slot of a handle-bar hinged to the same pole-shaft, a spring pressed latch-bolt locking said handle-bar to said pole-shaft when it has reached its upward limit, and notches in said arm for receiving the latch-bolt for locking said wheeled stay-frames in different positions.

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

PAUL MÜLLENMEISTER.

Witnesses:

HENRY QUADFLIEG,
ELISE KALBUSOH.