

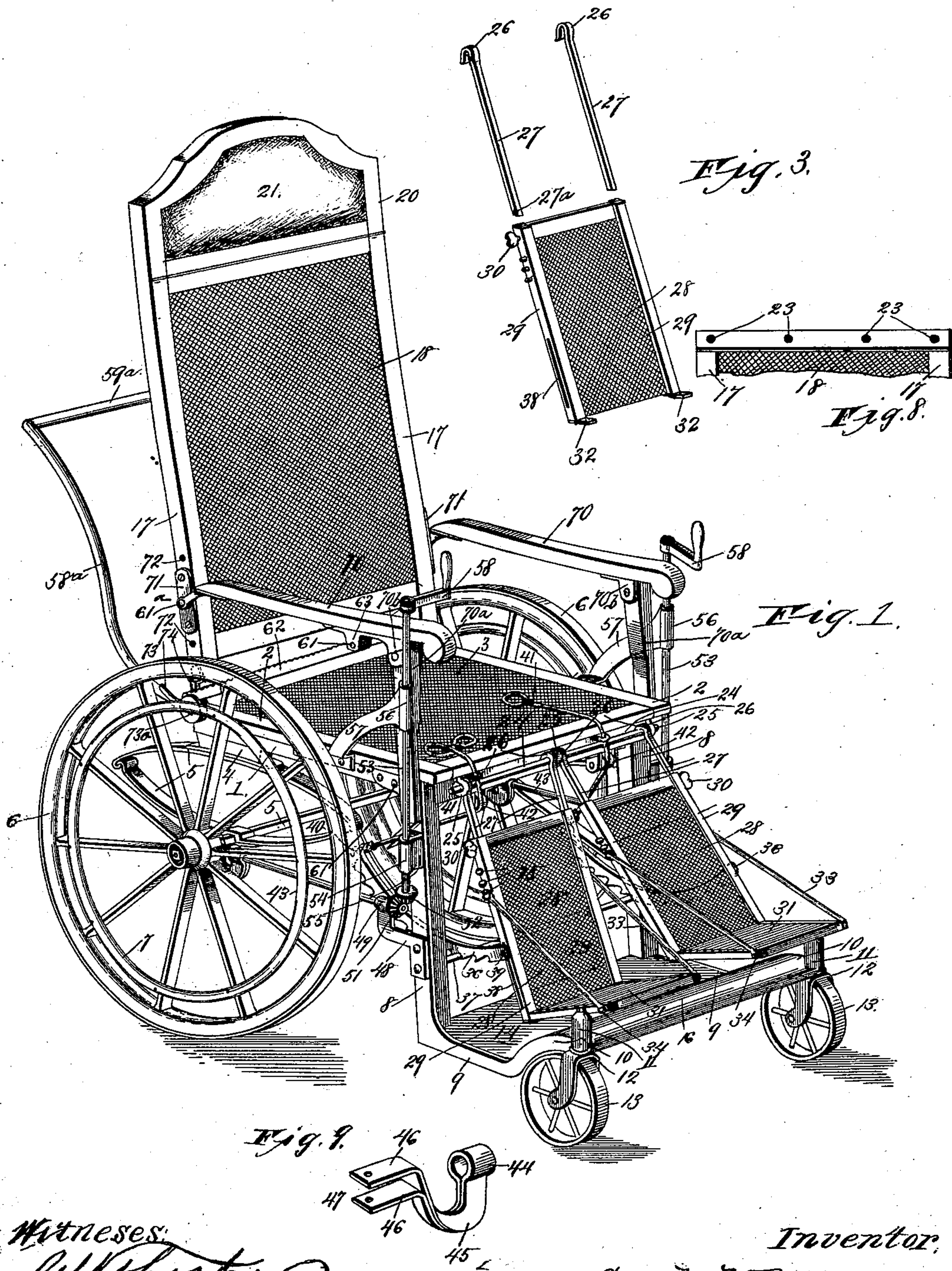
(No Model.)

2 Sheets—Sheet 1.

S. A. POTTER.  
INVALID CHAIR.

No. 531,330.

Patented Dec. 25, 1894.



Witnesses:  
*Wm. L. Coudrow.*

Inventor,  
*Sarah A. Potter.*  
By *Hipson & Hipson*  
Attys.



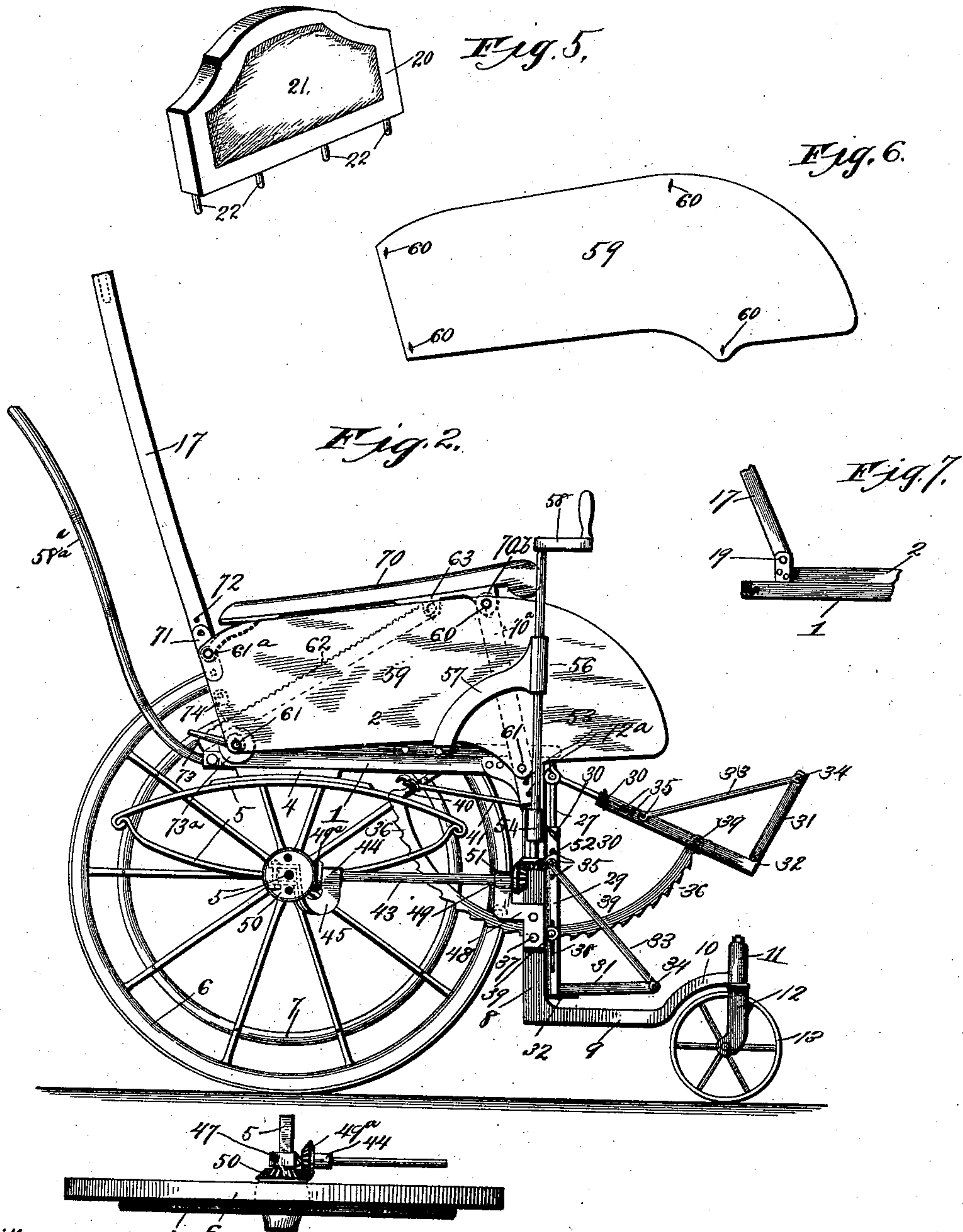
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Witnesses:  
*Geo. H. Hooper*  
*Geo. L. Condron*

*Fig. 1*

*Inventor.*  
*Sarah A. Potter*  
*By Hipeon & Hipeon*  
*Attys.*



# UNITED STATES PATENT OFFICE.

SARAH A. POTTER, OF HARPER, KANSAS.

## INVALID-CHAIR.

SPECIFICATION forming part of Letters Patent No. 531,330, dated December 25, 1894.

Application filed July 19, 1892. Serial No. 440,544. (No model.)

*To all whom it may concern:*

Be it known that I, SARAH A. POTTER, of Harper, Harper county, Kansas, have invented certain new and useful Improvements in Invalid-Chairs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to chairs for invalids, and more particularly to portable or perambulating invalid-chairs, and the object of my invention is to produce a perambulating chair which shall be simple, strong, durable and inexpensive in construction, and also easy to propel.

To the above purpose my invention consists in certain peculiar and novel features of construction and arrangement, as will be hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a portable invalid-chair embodying my invention; the dust-guards of the chair being removed. Fig. 2 is a side elevation of the same, but with the rear wheel removed. Fig. 3 comprises detached perspective views of one of the leg supports or rests, and its two supporting arms. Fig. 4 is a detached plan view of one of the main carrying-wheels of the chair, and a corresponding end of the carrying-axle and also of the rear portion of one of the propelling-shafts and the gearing between the carrying-wheel and the shaft. Fig. 5 is a detached perspective view of the removable head-rest of the chair. Fig. 6 is a detached view, in side elevation, of one of the dust-guards. Fig. 7 is a detached view, in side elevation, of the rear part of the seat-frame and the lower part of the back of the chair; said view showing one of the hinges for connecting the back to the seat-frame. Fig. 8 is a detached plan view of the back-frame of the chair, showing the sockets for the dowel-pins of the removable head-rest.

In said drawings, 1 designates the bottom-frame of the chair; this bottom-frame being of open rectangular form, and being designed to receive and support the seat-frame 2, and this seat frame being also of correspondingly

rectangular form and having a seat 3 which is of plaited cane, or any other suitable or preferred material. At each side, near its rear end, the bottom-frame 1 of the chair is provided with a pendent block 4, which is suitably secured in position, and to the under sides of these two blocks are secured the upper parts of two elliptical springs 5; said springs being located beneath each side of the bottom frame, and being either of the precise structural type shown, or of any other suitable or preferred type. Each of these springs is secured at its lower portion, in customary manner to one of the end-portions of the carrying axle 5; this axle extending horizontally beneath the chair-bottom, and transversely thereof, as shown. Upon the ends of this axle 5 are mounted the two main-carrying-wheels 6 of the chair, said carrying-wheels being arranged to turn upon the ends of the axle 5, and being each preferably provided on its outer side with a circular hand-rail 7, by grasping which the occupant of the chair can propel said chair, when he or she so desires.

To the front of the bottom-frame 1, at opposite sides of the same, are bolted or otherwise suitably secured, two pendent standards 8 which extend downward at the front of the chair, and within a short distance above the ground or floor. The lower ends of these standards 8 are extended horizontally forward so as to form two brackets 9, the body-portions of which extend horizontally parallel with each other, and the outer or front ends of which are preferably extended upward and forward, as at 10. Upon the outer ends of these outwardly and upwardly curved portions 10 are formed or suitably secured two vertical sockets 11 in which work the upper vertical ends of two forks 12; two caster-wheels 13 being journaled in the lower ends of said forks, and said caster-wheels serving to support the front end of the chair. Between the two brackets 9 is secured a foot-board or platform 14 the front portion 16 of which curves upward and forward coincidently with the curvatures of the ends 10 of the brackets 9.

17 designates the frame of the back of the chair, this frame being also of oblong rectangular form, and being provided with a body-



portion 18 of plaited cane, or other suitable material. The lower end of this back-frame 17 is connected to the rear end of the bottom-frame 1 by two, or any other suitable number of hinges 19, these hinges being of either the precise type shown, or of any other suitable type which will permit the back-frame 17 to be moved backward and forward upon the bottom-frame. Upon the upper end of the back-frame 17 is mounted a head-rest or support 20 which is of approximately oblong rectangular form, excepting that the top of the rest or support is of arched shape. From the lower end of this head rest or support 20 depend four, or any other suitable or preferred number of dowel-pins 22, which enter removably into a corresponding number of sockets 23 in the top-bar of the back-frame. The arrangement is such that when the head rest or support 20 is in position, it is securely retained by the dowel-pins 22, and also such that the head rest or support may be removed bodily from the back-frame when desired.

70 designates the two arms of the chair, each of said arms being pivotally connected at its front end-portion to the upper end of the corresponding one of two standards 70<sup>a</sup> which rise from the front of the bottom-frame 1, at opposite sides of the same. The upper ends of the standards 70<sup>a</sup> are pivoted between two pendent lugs 70<sup>b</sup> which are secured to the under side of the front end of each arm 70. The rear end of each arm 70 is pivotally connected to the side of the back-frame 17 by the stud 61<sup>a</sup>; these studs projecting outwardly from the plates 71, which are secured to opposite sides of the back frame and near its lower end.

In order to enable the rear ends of the arms 70 to be raised or lowered, a vertical series of openings 72 is formed in each side of the back-frame 17, and the plates 71, are adapted to be adjusted vertically, the screws or pins securing said plates being adapted to enter one or another of these openings 72, so that the rear ends of the arms may be raised or lowered as required. The front ends of the arms 70 are also arranged to be raised and lowered, and for this purpose the lower end of each standard 70<sup>a</sup> is formed with a vertical series of holes 72<sup>a</sup> into one or another of which is inserted a pivot-pin 61, which also enters the front of the seat-frame.

In order to permit the required backward and forward adjustment of the back-frame 17 of the chair, a bar 62 is pivoted at its front end between two pendent lugs 63 which are secured to the under side of one of the arms 70. This arm is serrated on its upper edge to engage a pendent knife-edged stud 74 which is secured upon the corresponding side of the back-frame 17. A cam-wheel is journaled upon the stud 73<sup>a</sup> in the lower part of the corresponding side of the back-frame 17, and directly beneath the rear end of the bar 62. This cam carries a handle 73, and it will be seen that after the back-frame 17 has been

adjusted as desired, the cam is turned by means of its lever 73, so as to lift the bar 62 upward into engagement with the stud 74.

Across the front of the bottom-frame 1 extends a horizontal rod 24 the ends and middle of which extend through suitable loops or eyes 25. The end and middle portions of this rod are embraced by the upper hooked ends 26 of four supporting-rods 27 for the two leg rests or supports 28 of the chair. These leg rests or supports are each of oblong rectangular form, and the body-portions are composed of braided cane or other suitable material, and the frame of each support or rest is composed of a horizontal top-bar and two vertical side-bars 29. The side-bars 29 are hollow or tubular bars, and the supporting-arms 27 extend into the side-bars 29 through the upper ends of the same. A set-screw 30 is inserted into the outer side of each outer bar 29, near the upper end thereof, and the inner ends of these set-screws impinge upon the outer sides of the outer supporting-arms 27. The arrangement is such that the leg rests or supports 28 can be set higher up or lower down upon the supporting arms 27 so that the occupant's feet shall rest properly upon the foot-rests, whether the occupant's limbs be longer or shorter.

31 designates the two foot-rests which are carried by the leg rests or supports 28, the foot-rests consisting each of a board of rectangular form the rear edge or margin of which is secured by two hinges 32 to the lower ends of the side-bars 29 of the leg-rest. Each of the foot-rests 31 extends forwardly and more or less upwardly, as desired, from the leg rest or support 28, and is retained in its required position by two rods or straps 33 which are pivotally connected at their lower ends, as at 34, to the outer rods of the sides of the foot-rests. The upper ends of the rods 33 are hooked so as to removably engage one or another of a number of pins or studs 35 which project outwardly from the side-bars 29, at the upper end-portions thereof. Thus it will be seen that the rods 33 support the foot-rests 31 either in horizontal position, or in suitably upwardly inclined position, as desired.

In order to enable the occupant of the chair to readily move the lower ends of the foot-rests farther outward, as desired, a segmental rack-bar 36 is pivotally connected at its lower end, to the lower end of each one of the supporting-bars 27, the rack-teeth being formed on the outer side of the bars, and engaging a cross-bar 37 which extends horizontally between two pendent standards 8 above described. In order to admit of the pivotal connection of the ends of the rack-bars 36 to the lower ends of the supports 27, each of said rests is formed at its outer side with a longitudinal slot 38 in which works a pivot-pin 39 which is inserted transversely through the outer end of the corresponding rack bar and a socket 27<sup>a</sup> formed in the lower end of



each support 27. The inner or rear end of each rack-bar 36 is formed with a hook-like extension 40 to which is secured one end of a rope or cord 41, or an equivalent flexible connection. There are two of the flexible connections 41, one for each rack-bar 36, and these flexible connections extend forwardly beneath a pulley 42 which is journaled in the lower ends of two brackets which are bolted or otherwise secured to the front part of the seat-frame 1, at the under side thereof. It is to be understood that there are two of these pulleys 42, one at each side of the middle of the front of the seat-frame, and it will be seen that when the occupant pulls upward upon either one of the flexible connections 41, the corresponding rack-bar 36 is disengaged from the bar 37, and the corresponding leg rest may be allowed to automatically swing downward and rearward, or may be moved pivotally outward and raised as desired. As soon as the pull upon the flexible connection is removed, the rack-bar 36 automatically re-engages the bar 37.

In order to provide means which shall enable the occupant of the chair to propel the same, I have provided the following attachments: 43 designates two horizontal shafts which are located at opposite sides of the chair, directly beneath the seat-frame and adjacent to the inner sides of the main carrying-wheels 6 thereof. Each of these shafts extends longitudinally of the chair, from the main axle 5 forward nearly to the pendent standards 8, and the rear end portion of each shaft is journaled in a bearing 44 which is formed at the outer end of a U-shaped bearing-bracket 45. This bracket is preferably formed by bending a single bar at its middle, so as to form the bearing 44, and then bringing the two body-portions of the bar side by side, and rendering them of the described U-form. The opposite extremities of the bar are bent outward parallel with each other, so as to form two arms 46 which embrace the end-portion of the axle 5 between them; a bolt 47 being passed vertically through the rear ends of the arms, 46, so as to retain said arms securely upon the end-portion of the axle. The front end-portions of the shafts 43 are journaled in bearings 49 which are formed at the upper ends of two brackets 48; these brackets being of approximately L-form and secured at their outer ends, each to the outer side of one of the pendent standards 8. At its rear end each shaft 43 carries a beveled gear-pinion 49<sup>a</sup> the teeth of which mesh with a beveled gear-pinion 50; the said gear-pinions 50 being rigidly secured to the inner ends of the hubs of the carrying-wheels 6. At its front end each shaft 43 carries a beveled gear-pinion 51 the teeth of which mesh with the teeth of a beveled gear-pinion 52. Each beveled gear-pinion 52 is carried by the lower end of a vertical actuating-shaft 53. There are two of these shafts 53, one at each side of the front end of the seat-frame 1, and the

lower end-portion of each of said shafts works through a vertical bearing 54 which is formed at the outer end of a bracket 55; these two brackets being secured to the outer sides of the pendent standards 8, at a point about midway of the length of said standards. The upper end-portion of each shaft 53 is journaled in a vertical bearing 56 which is formed upon the upper end of a bracket 57; the lower ends of said brackets being secured to the outer sides of the seat frame, and said brackets extending obliquely upward and forward from said frame. At their upper ends, the shafts 53 carry each a crank arm and handle 58; these handles being thus conveniently located for manipulation by the occupant of the chair.

From the foregoing construction it is apparent that the seat-frame may reciprocate vertically upon the springs 5, without in the least disturbing the power or propelling mechanism, as the bearings carried by the seat-frame and the pendent standards move loosely upon the vertical shaft 53.

The chair is provided at each side with a dust-guard 59 which is of canvas, rubber or of any other suitable or preferred material, and which is of approximately oblong rectangular form, so as to extend from the back of the chair outward at the front of the same. While the dust-guards 59 have been described as of approximately oblong rectangular form, such is not precisely the preferred shape of the guards, the upper margin of the front end of each guard being of segmental form, and said front end of the guard projecting outwardly at the front of the chair. These dust-guards are retained removably in position by the pivotal studs connecting the standards with the seat-frame, and the pivotal studs connecting the arms with the standards and the back, and the studs upon which the cams for operating the bars 62 are mounted, as shown.

In order to adapt the chair to be propelled by an attendant, in cases where the occupant of the chair is incapable of propelling it, two side-standards 58<sup>a</sup> are provided, the lower ends of these standards being suitably secured to the under side of the rear part of the bottom-frame 1. These standards 58 project upwardly and rearwardly and are connected together by a cross-bar 59<sup>a</sup> which is to be grasped by the hands of the attendant.

From the above description it will be seen that I have produced an invalid-chair which is simple, strong, durable, and inexpensive in construction, and easy of propulsion.

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

In an invalid chair, the combination with a wheeled frame, springs carried thereby, gear-pinions upon the axle of the frame, bearings carried by said axle, a seat-frame mounted upon said springs and provided with depending standards, horizontal and vertical bearing-brackets carried thereby, horizontal shafts



mounted in said horizontal bearing-brackets  
and in the bearings carried by the axle, and  
provided at either end with gear-pinions, the  
rear ones meshing with the axle gear-pinions,  
5 bearing-brackets carried by the seat-frame  
proper, vertical shafts journaled therein and  
in the vertical bearing-brackets of the said  
standards, and provided at their upper ends  
with crank-handles and at their lower ends  
10 with gear-pinions which mesh with the gear-

pinions at the front end of the horizontal  
shafts, a hinged back, and arm-rests pivotally  
carried by the seat-frame and said back, sub-  
stantially as set forth.

In testimony whereof I affix my signature in 15  
the presence of two witnesses.

SARAH A. POTTER.

Witnesses:

WILL C. SHUGART,  
JULIA A. MILLER.