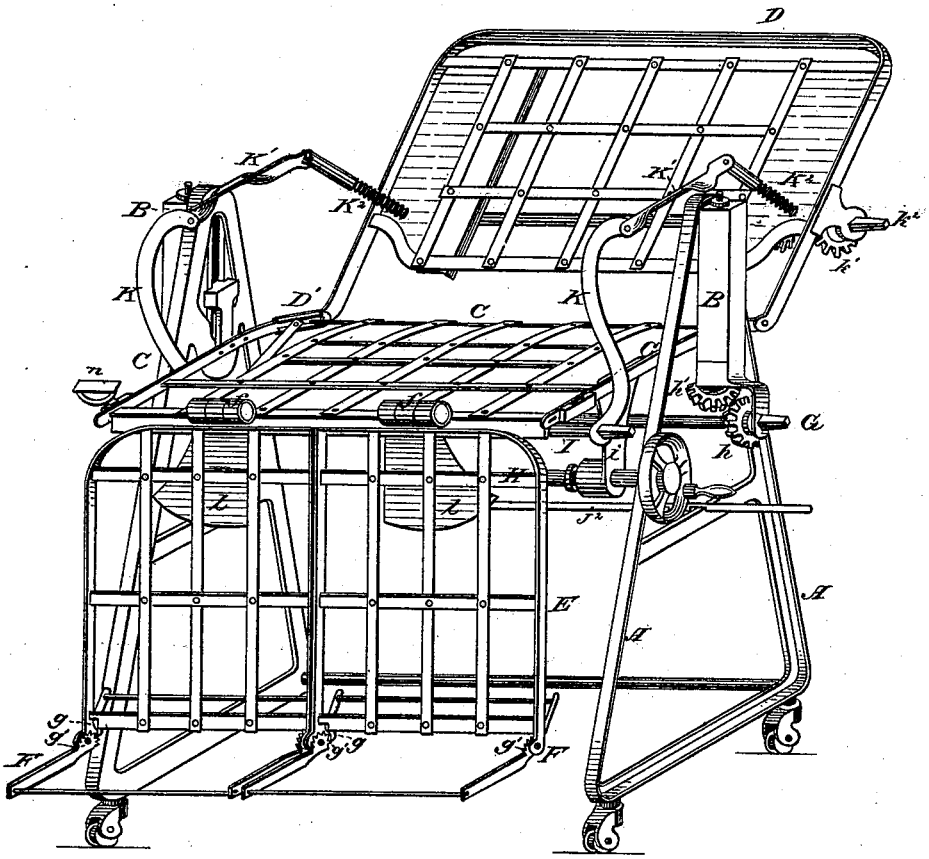
G. WILSON.
Invalid-Chair.

No. 206,379. Patented July 23, 1878.

Fig. 1



Attest:
R. T. Dyer
L. M. Seely.

Inventor:
George Wilson
by Geo. W. Dyer & Co
attys.

G. WILSON.

Invalid-Chair.

No. 206,379. Patented July 23, 1878.

Fig. 4.

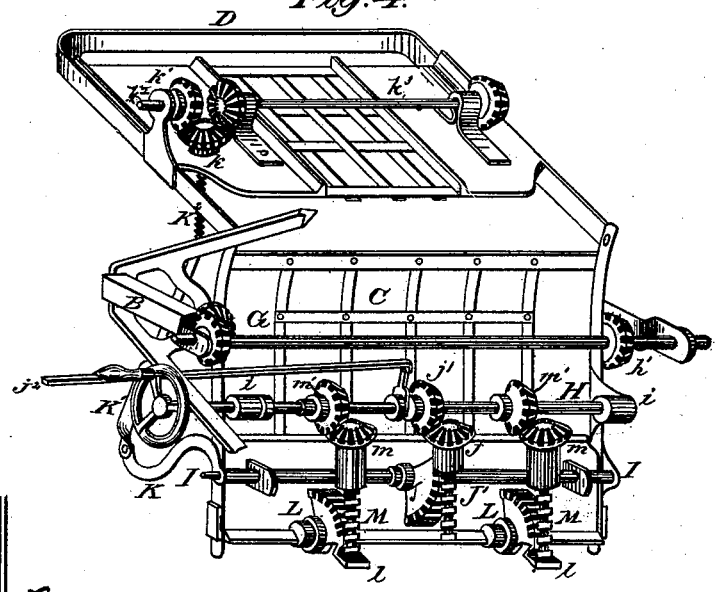


Fig. 5

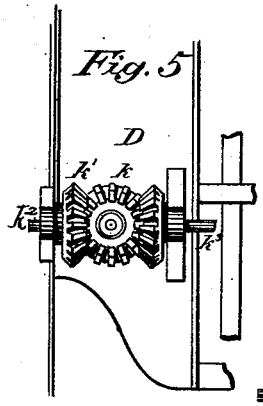


Fig. 3.

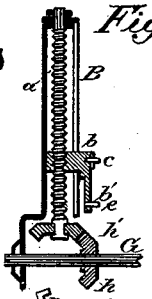


Fig. 2.

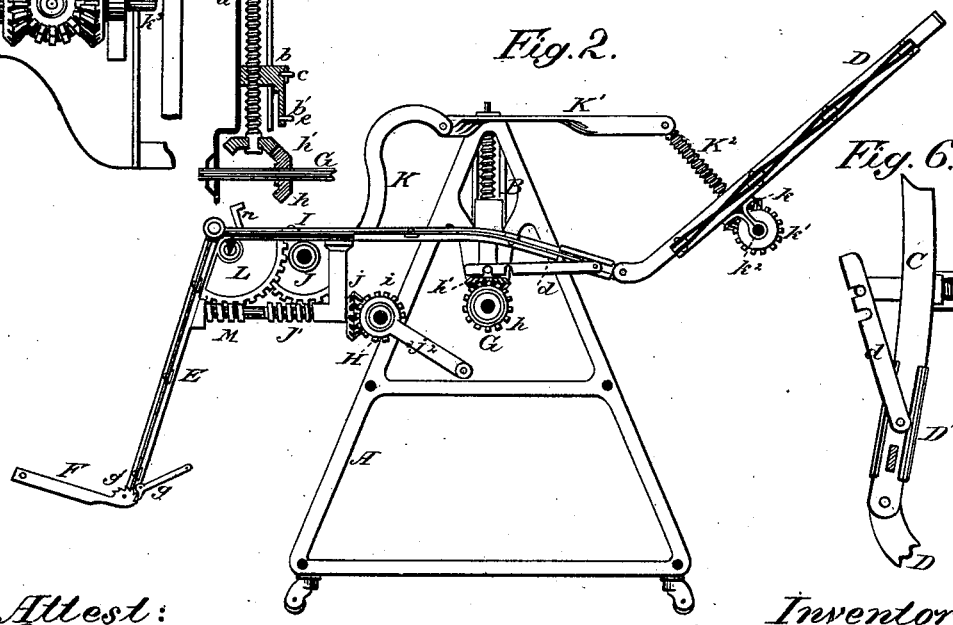
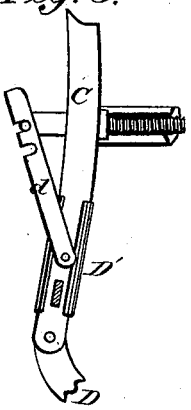


Fig. 6.



Attest:
R. T. Dyer.
E. M. Selly.

Inventor:
George Wilson
by Geo. W. Dyer & Co
Attys.

UNITED STATES PATENT OFFICE.

GEORGE WILSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN INVALID-CHAIRS.

Specification forming part of Letters Patent No. **206,379**, dated July 23, 1878; application filed February 19, 1877.

To all whom it may concern:

Be it known that I, GEORGE WILSON, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Adjustable Surgical and Invalid Chairs, of which the following is a specification:

The object I have in view is to provide a metallic chair-frame the various parts of which can be adjusted into a great variety of positions, for the convenience of the surgical operator and the comfort of the invalid occupant.

The invention consists in the means for raising and lowering the seat; in the combination of parts for adjusting the angle of the back-frame; in the devices for adjusting the leg-frame; and, further, in removable stirrups placed at the forward corners of the seat-frame, all as fully hereinafter explained.

Figure 1 is a perspective view. Fig. 2 is a longitudinal vertical section. Fig. 3 is a vertical section through one of the standards, showing the geared screw and nut for raising and lowering the chair. Fig. 4 is a bottom perspective view of the seat and leg sections, showing the gearing for adjusting the latter, and that for shifting the angle of the back. Fig. 5 is a partial elevation of the rear side of the back-section, showing the gearing for giving it an independent angular adjustment. Fig. 6 is a sectional elevation of the seat-frame at one side, showing the manner of adjusting the back to or from it.

In the drawing, A represents a pyramidal metal frame mounted on casters, and having a hollow standard, B, secured to the apex of each side, and slotted on the inner face, as shown. Within each standard a screw, *a*, is journaled, carrying a nut, *b*, having a pendent lug, *b'*, projecting through the slot, with a pin, *c*, at its top, on which is pivoted the side frame of the seat-frame C, which may oscillate thereon, when not locked at any desired inclination by a hook, *d*, on the rear end of said bar engaging with the pin *e* at the lower end of the lug *b'*. The hooks *d* at either side are connected by a rod which operates both of them simultaneously.

D is the back-frame, whose side bars are hinged at the lower ends to sleeves D' sliding on the side bars of the seat-frame, which enables the operator to lengthen or shorten the seat.

E E are leg-sections, each half the width of, and hinged at *f* to the front edge of, the seat-frame. To the lower edge of each is pivoted a foot-rest, F, which may be folded under the cushion, extended to form a prolongation of the leg-section when the chair is used as a couch, or be locked at any angle by two connected pawls, *g*, engaging with ratchets *g'*, cut on the circular rear ends of the side bars at their pivotal points. The spaces between the outer bars of the frames of the several sections are filled with crossed sheet-metal straps to support the cushions of the chair.

Through lugs pendent from the standards B the ends of a shaft, G, are journaled, and are squared to receive a key or hand-wheel. Two bevel-gears, *h*, are keyed on the shaft, each meshing with a bevel-pinion, *h'*, keyed on the lower end of the adjacent screw *a*, so that by rotating said shaft the chair may be lowered or raised in plane.

H is a shaft journaled through hangers *i*, pendent from the sides of the seat-frame, having longitudinal play therein, and provided with a hand-wheel.

I is a counter-shaft, transversely journaled close under the front edge of the seat-frame, and carrying at the middle a segment of a worm-wheel, J, with which meshes a worm, J', journaled in a hanger and provided with a bevel-pinion, *j*, with which may mesh a bevel-gear, j^1, sliding on the shaft H. The gear j^1 is thrown into or out of mesh by a clutch-lever, j^2, extending through to the operating side of the chair-frame. To the ends of the counter-shaft the lower ends of the levers K, one at each side, are connected, the upper end of each being pivoted to the front end of the arm K^1, to whose rear end is pivoted a screw, K^2, passing through a hole in the chair-back, where it receives a geared wheel-nut, *k*, to which motion is given by a pinion, k^1, mounted on a short shaft, k^2, squared at the outer end to receive a key or hand-wheel, with which to rotate it. A shaft, k^3, extends across the back, and, being geared to the two wheel-nuts *k*, in the rotation of the shaft k^2 both of them are rotated, so that the back can be independently adjusted to any angle

with relation to the seat by the worm and segment J J′, while, if the seat be lengthened or shortened, by sliding the sleeves D′ on the side bars of the seat-frame, the back can be kept at the same relative angle by means of the back-screws K².

The leg-sections may be adjusted to the required inclination in the following manner: Behind each a worm-quadrant, L, is journaled under the front edge of the seat, with an extended bearing-plate, *l*, at the front edge for the leg-section to rest upon. A worm, M, longitudinally journaled in a hanger under the seat meshes with the quadrant L, and is provided with a bevel-pinion, *m*, at its rear end, with which a bevel-gear, *m′*, on the shaft H may mesh when the shaft H is pushed in for that purpose, so that in the rotation of the latter the worm-quadrants L are turned on their axes to raise or lower the leg-sections.

By providing each shaft with a hand-wheel the occupant of the chair can adjust it to any desired position without getting out of it.

At each front corner of the seat a stirrup, *n*, is removably inserted in sockets provided to receive them, for speculum purposes and pelvic operations.

Preferably the leg-section is made in two parts, as shown, to permit of one being raised independently of the other, which will be found convenient for an occupant having a broken or sore lower limb; but, if desired, it can be in one piece.

What I claim as my invention is—

1. In an invalid-chair, substantially as described, the combination of the geared screws and their seat-suspending nuts with the main frame, for raising and lowering the seat in plane, substantially as set forth.

2. The combination of the shafts H I, worm-wheel J, worm J′, gears *j j*¹, levers K, and arms K¹, connected with the back-frame D, for adjusting it to an angle with relation to the seat-frame C, substantially as described.

3. The combination of the shaft H, worm-quadrants L, worms M, and gears *m m′*, for adjusting the leg-sections E with relation to the seat-frame C, substantially as described.

4. The combination, with the seat C, of the stirrups *n* at the corners thereof, for the purpose set forth.

GEORGE WILSON.

Witnesses:
H. L. LOHMEYER,
ROBERT SMEATON.