

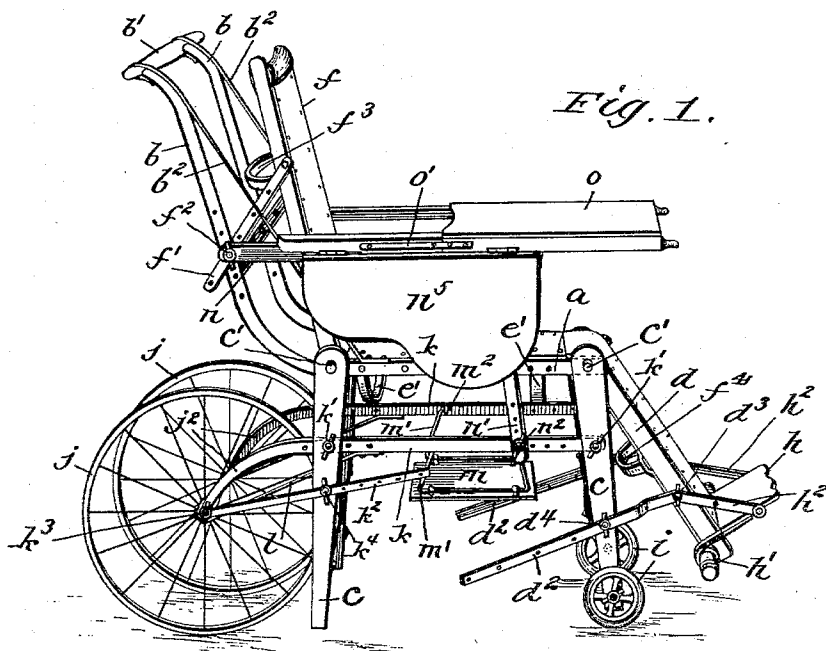
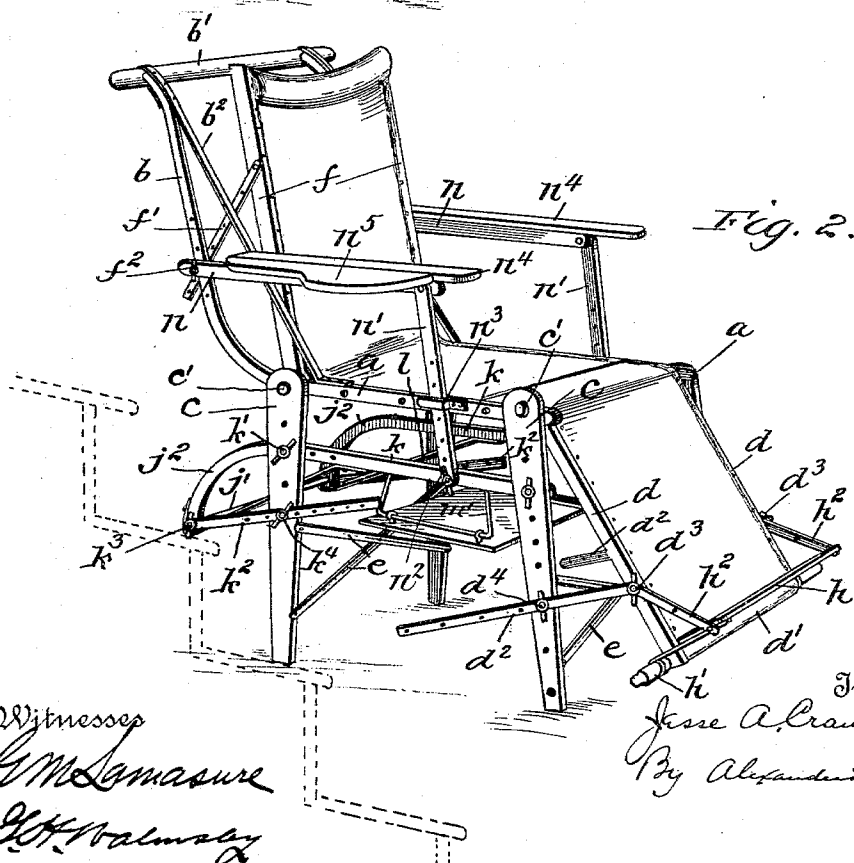
(No Model.)

3 Sheets—Sheet 1.

J. A. CRANDALL.
CONVERTIBLE INVALID CHAIR.

No. 597,878.

Patented Jan. 25, 1898.



Witnesses
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J. H. Walmsley

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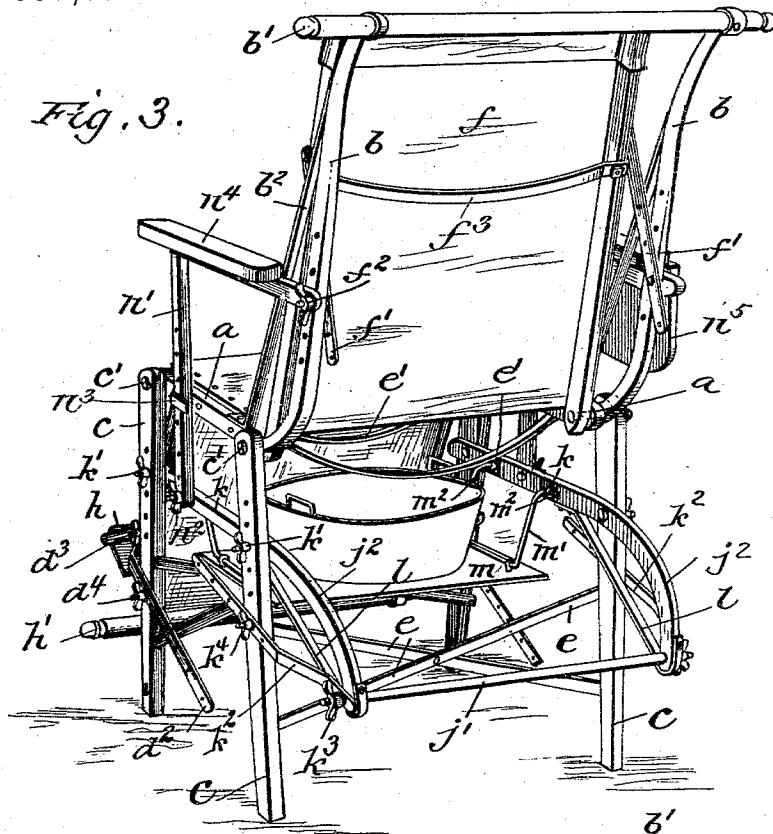
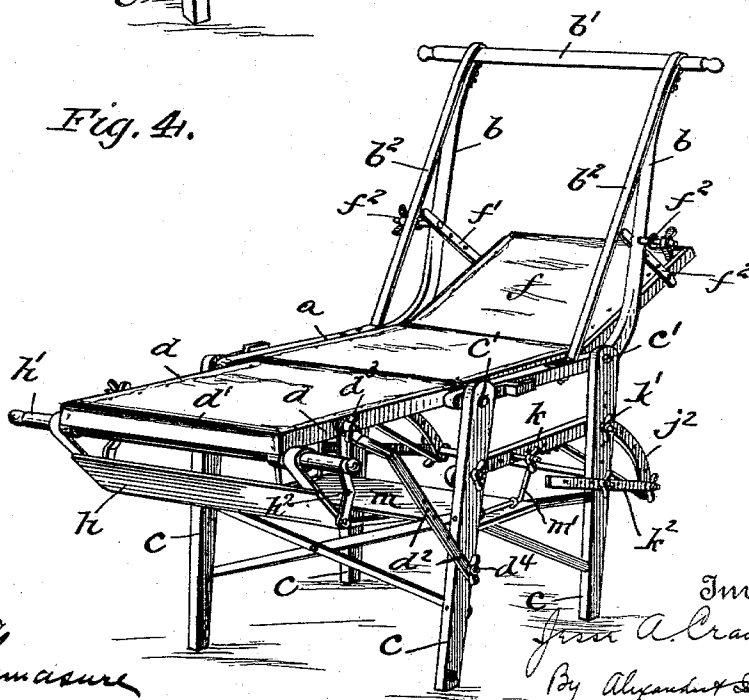
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3 Sheets—Sheet 2.

J. A. CRANDALL.
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Patented Jan. 25, 1898.



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3 Sheets—Sheet 3.

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Fig. 5.

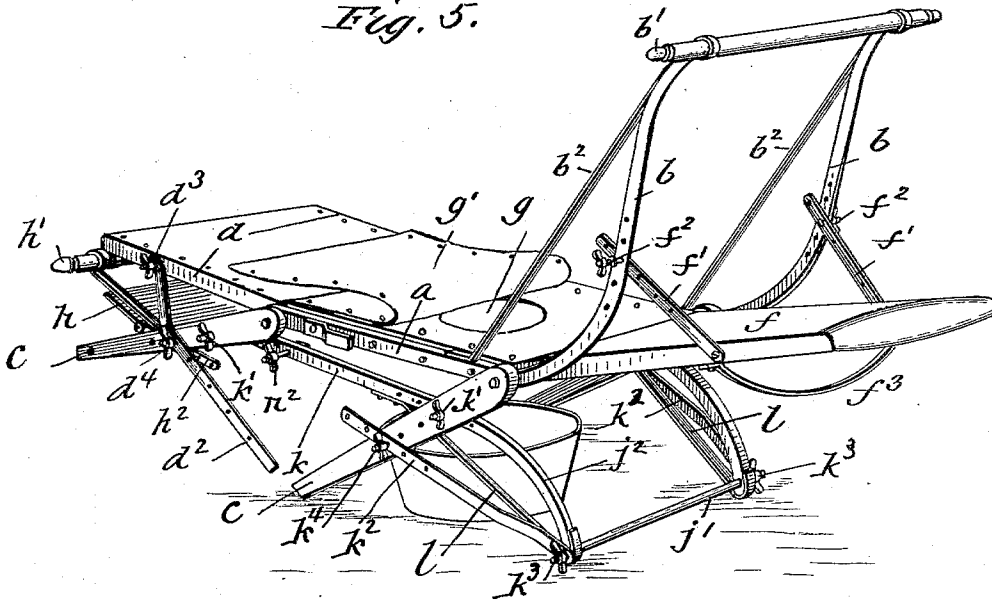
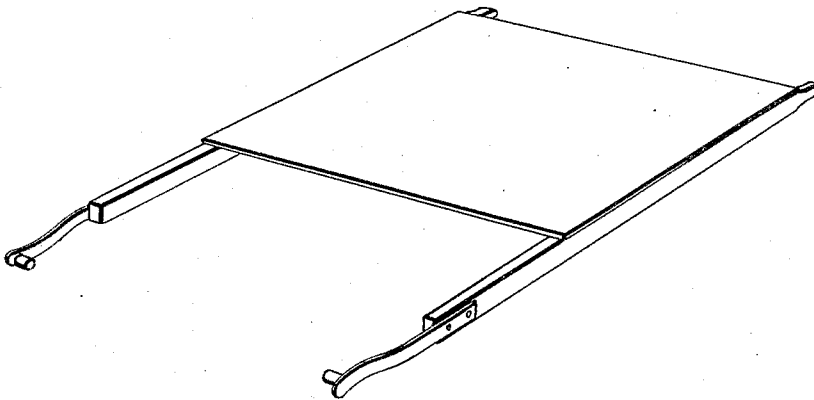


Fig. 6.



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UNITED STATES PATENT OFFICE.

JESSE A. CRANDALL, OF BROOKLYN, NEW YORK, ASSIGNOR OF TWO-THIRDS
TO CALVIN E. HULL AND FRANK E. CALDWELL, OF SAME PLACE.

CONVERTIBLE INVALID-CHAIR.

SPECIFICATION forming part of Letters Patent No. 597,878, dated January 25, 1898.

Application filed May 11, 1897. Serial No. 636,090. (No model.)

To all whom it may concern:

Be it known that I, JESSE A. CRANDALL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Convertible Invalid Chairs and Cots, of which the following is a specification, reference being had therein to the accompanying drawings.

In the drawings annexed, Figure 1 is a perspective view showing the chair supported on its transporting-wheels and provided with a table; Fig. 2, a perspective view showing the wheels and table removed and the book-rest or writing-board removed; Fig. 3, a perspective view of the same, taken from the rear; Fig. 4, a perspective view showing the chair converted into a cot; Fig. 5, a perspective view showing the cot adjusted low down or close to the floor, this being desired in some cases of sickness; and Fig. 6, a detail perspective of the table.

Referring to the drawings by letters, *a* designates the side bars of the seat-frame, which are extended upward and backward at their rear ends and formed into the handles *b*, whose upper ends are connected by a cross-bar *b'* and are braced to the side bars *a* by the metallic straps *b²*. The four supporting-legs *c* are each pivotally connected to the side bars by bolts *c'*. The leg-rest consists of side bars *d*, pivoted on the forward pair of bolts *c'* and connected at their lower ends by a cross-bar *d'*. Connected to the leg-rest at each side thereof is a rod *d²*, this rod being connected to the leg-rest pivotally by a clamp-bolt *d³* and being extended backward and downward and clamped to the outer side of the adjacent forward leg by another clamp-bolt *d⁴*, the rod being provided with a series of holes to render it adjustable and permit the desired inclination to be given to the leg-rest.

Each pair of legs *c* is connected and braced by the crossed braces *e*, and the side bars *a* are braced and rigidly connected by the bows *e'*.

The back-rest frame *f* is pivoted at its lower end upon the rear pair of bolts *c'* and is supported by a pair of rods *f'*, pivoted to it above its middle and extended back and clamped

to the handles *b* by means of the clamp-bolts *f²*, the rod *f'* and the handles *b* being provided with a series of holes for adjustment purposes, enabling the back to be given the desired inclination. The side bars of the back-frame are connected by the bowed brace *f³*, and the side bars of the leg-rest are also connected by bowed brace *f⁴*.

The side bars of the seat-frame and leg-frame and back-frame are connected by a continuous piece of suitable fabric running the entire length from the head-rest of the back-frame to the lower end of the leg-rest. The canvas on the seat-frame is provided with an opening *g*, as shown in Fig. 5, which is covered by a removable flap *g'*, so that the occupant may use the commode without arising.

The foot rest or board *h* is pivotally connected to a transverse bar *h'*, extending across beneath the leg-frame at its lower end and having its ends extended to form convenient handles for use in lifting the chair from place to place. The foot-rest is supported by rods *h²*, one being pivotally connected at each end of the foot-rest and extended back and connected to the adjacent clamp-bolt *d³*, each clamp-bolt being made thereby to clamp both the rods *h²* and *d²* to the leg-frame.

On each of the forward legs is journaled a small removable wheel *i*, a stub-axle and thumb-nut being used to secure the wheel to the leg. A pair of large wheels *j* are mounted in rear of the chair upon an axle *j'*, supported at the rear ends of a pair of arms *j²*, these arms being downward-turned extensions of side rods *k*. The side rods *k* respectively connect the legs of each side rigidly together, but for the purposes of adjustment these rods are provided with a series of perforations where they intersect the legs, clamp-bolts *k'* being used to detachably connect the legs to the bar. The axle *j'* is readily removable, so that the wheels thereon may be removed when it is desired to convert the wheel-chair into a stationary chair. Clamped to the end of each extension *j²* is a rod *k²*, the clamping-nut *k³* on the end of the axle being employed for that purpose. These rods extend forward and are respectively clamped to the rear legs, being provided with a series of holes where they

intersect the leg for the purpose of adjustment. To brace each extension j^2 is a rod or strap l , which extends from the end of the extension forward and is fastened rigidly to the main part k at a point preferably in front of the rear legs, this strap where it connects with the end of the extension being bent up and fastened to the rear side thereof to form the journal of the axle j^2 . Swung under the seat is a shelf m for the support of a commode or other vessel, this shelf being supported by hangers m' , each of which consists of a spring-wire bent into a substantially U-shaped form, its free arms being bent laterally at their upper ends and sprung into eyes m^2 , carried by the bars k . The shelf and hangers may be readily removed by springing the arms of the hangers out of the eyes m^2 .

The arm-rests each consist of a horizontal bar or rod n and a vertical rod n' , the latter clamped at its lower end to the side bar k by clamp-screw n^2 and pivotally connected at its upper end to the rod n , and being confined to the outer side of the seat-frame by a keeper n^3 , open at its rear side. Each rod n extends back to the handle b , just in rear of it, and is connected thereto by the adjacent clamp-bolt f^2 . Secured on each of the bars n is an arm-piece n^4 , and hinged to one of these arm-pieces is a book-support or writing-board n^5 , which is adapted to fold down, as shown in Fig. 1, in the usual manner.

As shown in Fig. 1, a small table o may be fastened across the forward ends of the arm-pieces, this table being detachably secured to the arms by means of the rearwardly-extending flat springs o' , each spring being provided with a lateral pin adapted to enter a suitable recess in the outer edge of the adjacent arm-piece n^4 .

As will be seen in Fig. 4, to convert the chair into a cot or bed it is simply necessary to let down the back-frame through or between the handles and clamp it at the desired point by the clamp-bolts f^2 and elevate the leg-rest and hold it at the desired point by supporting-rods d^2 . If desired, the foot-rest may be turned under the leg-rest, as shown, the rods h^2 being of course detached from the bolts d^3 to permit the footboard to swing around, the rods h^2 being again clamped on bolts d^3 when the foot-rest is swung under. The arm-rests are detached for convenience. If desired, the transporting-wheels may be secured in place to permit the cot to be readily moved about.

When it is desired to drop the cot to near the floor, as shown in Fig. 5, the front pair of legs are swung forward and upward and are held in that position by the bars d^2 , the adjustment at the clamping-bolt d^4 being of course changed and the rear ends of said bars being permitted to rest upon the floor and serve as supports, the front legs being thereby held aloof from the floor. The clamp-bolts k' are also loosened, and the rod k^2 is detached from the rear legs, thereby permitting the

legs to swing on the bolts k' as pivots and let the rear of the cot down until the ends of arms j^2 rest upon the floor. When the cot is thus lowered to the desired position, it is held by the rods k , which are clamped against the legs by the bolts k^4 . It will thus be seen that besides the rear legs proper the cot is also supported upon the bars d^2 and arms j^2 . If desired, the shelf m and its hangers may be removed, as shown. It will thus be seen that I provide an invalid-chair having unusual and eminently advantageous features of construction, rendering it of great value in the sick-room and the hospital.

An advantage of the rearward-extending arms j^2 is that when the wheels are removed they will serve to assist in carrying the chair up and down stairs. As shown in dotted lines in Fig. 2, the chair may be brought up or down, step by step, the ends of the arms j^2 serving as supports by resting on the step next above the one on which the rear legs rest. The person will grasp the chair at each end, the one in front using the extensions of the rod h' and the one in the rear using the handle-bar b' . In this way the invalid may be carefully and quietly carried up or down the stairway.

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

1. In an invalid-chair, the combination of a seat-frame and supporting-legs, a back-rest and handles, removable wheels attached to the front legs, a pair of arms projecting rearward from the rear legs, and a pair of wheels removably supported on said arms, as and for the purposes set forth.

2. In an invalid-chair the combination of a seat-frame and supporting-legs, a leg-rest, a back-rest, operating-handles, wheels carried by the front legs and removable therefrom, and bars connecting the legs on each side and extending rearward and downward, and a pair of removable wheels supported on the ends of the extensions, substantially as described.

3. In an invalid-chair, the combination of a seat-frame and legs pivoted thereto, a leg-rest swung from the seat-frame and adapted to be raised to a position approximately level therewith, a pair of handles attached to the frame and a back-frame swung from the seat-frame and adjustably connected to the handles, and a fabric stretched over the back-frame, seat-frame and leg-rest, substantially as described.

4. In a convertible invalid-chair, the combination of a seat-frame, legs secured thereto, a leg-rest swung from the front edge of the seat-frame and carrying an adjustable foot-rest at its free end, adjustable bars h^2 and d^2 connecting the foot-rest to the leg-rest and the leg-rest to the supporting-legs, a back-rest pivoted to the rear end of the seat-frame, a pair of handles projecting upward from the rear end of the seat-frame, between which

the back-rest may be adjusted, adjustable arms *f'* connecting the back-rest adjustably to the handles, substantially as and for the purpose set forth.

5 5. In a convertible invalid-chair, the combination of a seat-frame and supporting-legs, an adjustable leg-rest, a pair of handle-bars projecting up rearward from the seat-frame, a swinging back-rest carried by the seat-frame
10 and adapted to swing back between said handles, adjustable devices connecting the back-rest to the handles, and removable arm-pieces carried by said seat-frame, substantially as described.

15 6. The combination of a seat-frame and legs pivoted thereto, and an adjustable back-rest,

an adjustable leg-rest, rods *d*² connecting the leg-rest to the front legs and projecting rearward therefrom, said rods being connected detachably and adjustably to the legs, side
20 bars *k* connecting the legs on each side and extending rearward and downward, said side bars and rods *d*² serving as supporting-legs when the chair is converted into a low-down
25 cot, substantially as described.

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

JESSE A. CRANDALL.

Witnesses:

NOAH TEBBETTS,

WM. H. CUNNINGHAM.