

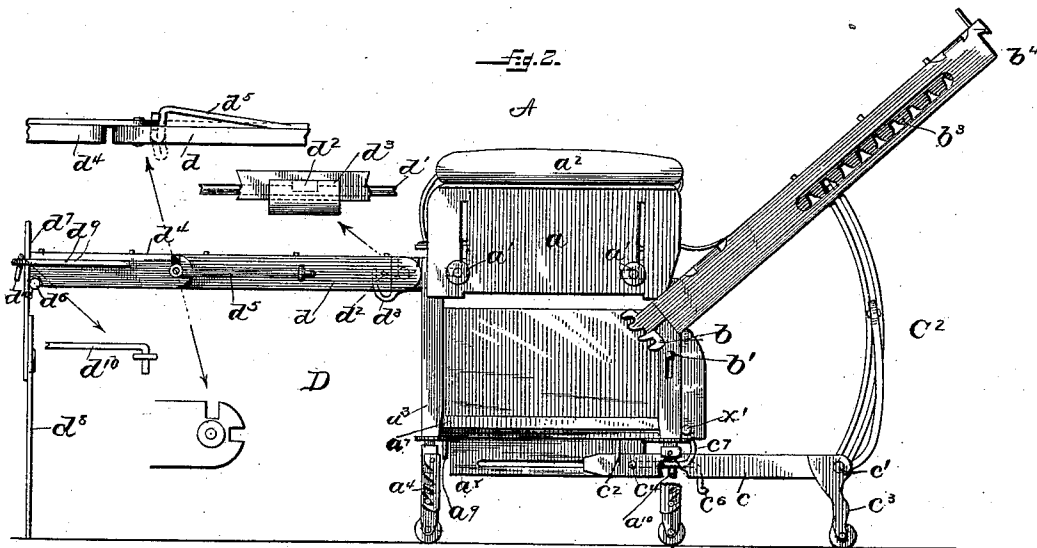
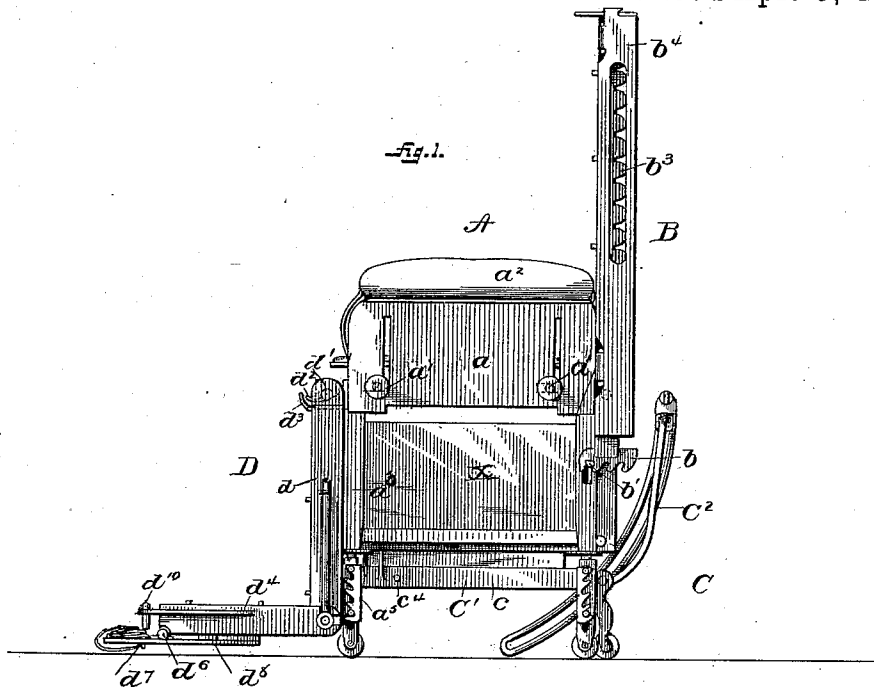
(No Model.)

3 Sheets—Sheet 1.

A. DE VOE.
INVALID CHAIR.

No. 360,764.

Patented Apr. 5, 1887.



WITNESSES
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H. H. Green

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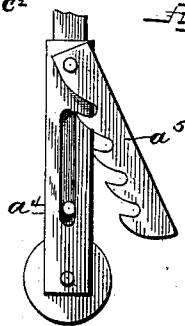
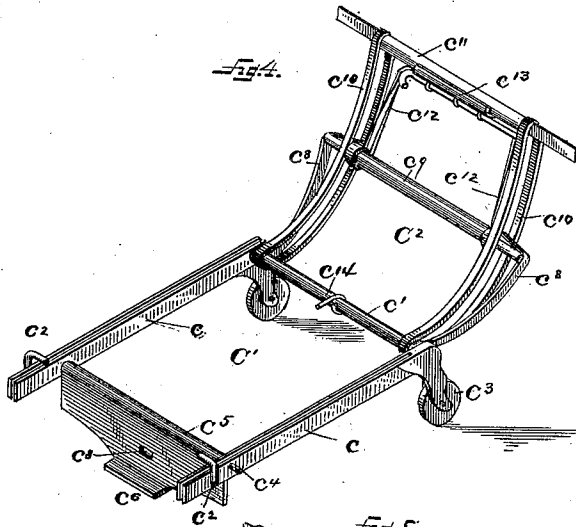
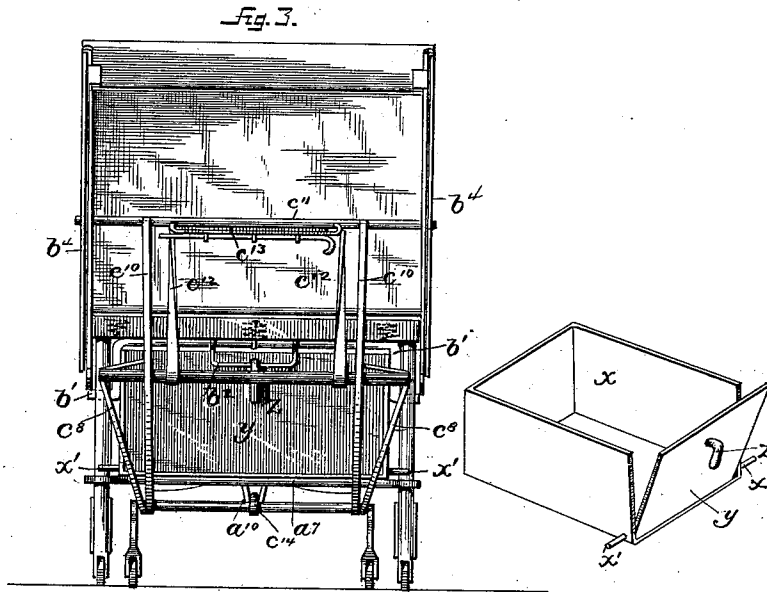
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3 Sheets—Sheet 2.

A. DE VOE.
INVALID CHAIR.

No. 360,764.

Patented Apr. 5, 1887.



WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

A. DE VOE.
INVALID CHAIR.

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Fig. 5.

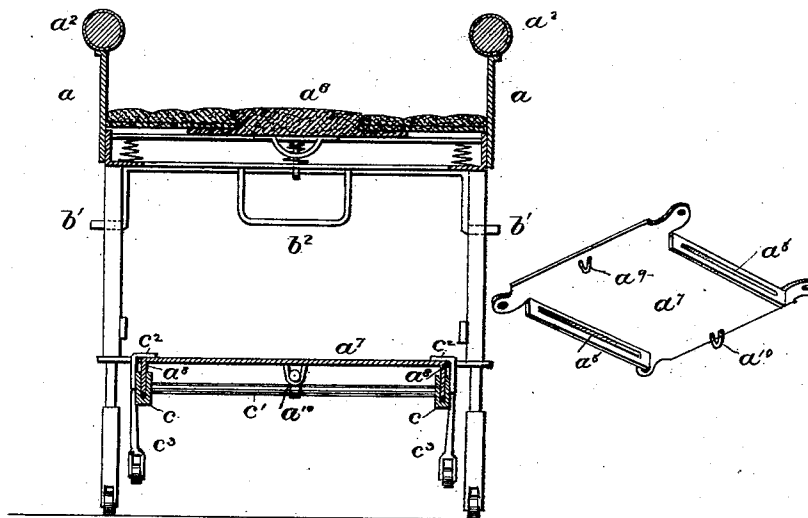
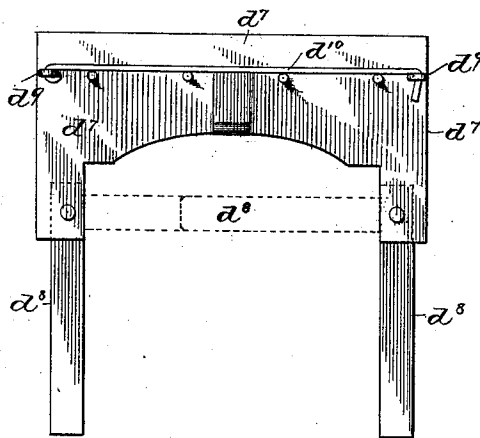


Fig. 7.



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UNITED STATES PATENT OFFICE.

AMANDA DE VOE, OF BROOKLYN, NEW YORK.

INVALID-CHAIR.

SPECIFICATION forming part of Letters Patent No. 360,764, dated April 5, 1887.

Application filed January 26, 1886. Serial No. 189,813. (No model.)

To all whom it may concern:

Be it known that I, AMANDA DE VOE, 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 Invalid-Chairs; 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.

This invention relates to invalid-chairs.

The object of the invention is to produce a chair which shall be simple in construction, easily operated, and capable of being converted by few adjustments to serve as a chair, commode, lounge, or bed, and present in the truest sense an invalid's rest or friend and nurse's assistant.

With these objects in view, my invention consists in a chair made up of a seat portion, a back pivotally attached thereto and capable of being adjusted to any desired angle relative to it, and an adjustable frame connected to the seat portion and capable of being arranged to support the back at any desired angle.

Furthermore, the invention consists in a chair made up of a seat portion and back pivoted thereto, an adjustable frame connected to the seat portion and capable of being arranged to hold the chair at any desired angle, and a foot and leg rest provided with folding legs and capable of being adjusted to any desired angle relative to the seat of the chair, or to form a continuation thereof to make a bed or lounge.

Furthermore, the invention consists in a chair made up of a seat portion provided with legs capable of vertical adjustment to raise or lower any desired part of the seat, and provided with vertical adjustable arms capable of being moved out of the way when a patient is to be placed upon or taken from the chair, a back pivotally attached to the seat portion and capable of being adjusted to and held at any desired angle in relation to the seat portion, an adjustable frame attached to the seat portion capable of being arranged to support the back at any desired angle, and a foot and leg rest provided with folding legs and capable of adjustment to any desired angle relative to the seat portion, or to form a continuation of the seat portion when the chair is to be used as a bed or lounge; and, finally, the invention consists in various novel details of construction,

whereby the various adjustments of the parts are facilitated and stability and strength are given the structure.

In the accompanying drawings, in which like letters of reference indicate corresponding parts, Figure 1 is a side elevation, the parts being in the position assumed by them when the chair is not in use, showing a movable arm-cushion and one of the movable arms, the headed bolts attached to a fixed portion of the chair passing through slots in the arm which have an upper vertical portion and a lower horizontal portion enabling the adjustment; also showing the side of the commode-box, which box is slid under the seat from behind, and one of the stops against movement of the box too far forward; also showing a downward-projecting side of the bottom plate of the seat-frame; also showing the adjustable legs; also showing the back of the chair and one of the racks, which are at the lower ends of the sides thereof, engaged by one of its notches with one of the ends of the spring-bar to hold the back in a desired position for rest while sitting; also showing one of the racks which are at the rear of the sides of the back to engage the upper cross-bar of the upward-extensible portion of the adjustable supporting-frame to hold the back in a desired position for rest while reclining, and one of the hinged side pieces or wings, which are slotted to engage and hold the ends of the upper cross-bar in notches of this rack and serve as side rests for the head of a patient while sitting; also showing the upward-extensible portion of the adjustable supporting-frame unextended, the inner swinging frame (not shown) not being swung up to support the upper cross-bar; also showing the trundle portion of the adjustable supporting-frame with legs to support its outer end, this portion being pushed under the chair and so pulling the upward-extending portion against the rear of the chair; also showing one of the rods that project upward from the side bars of the trundle portion of the adjustable supporting-frame laterally along the downward-projecting sides of the bottom plate, and then bend inward at a right angle over the sides upon the bottom plate, forming catches or hooks to hold up the inner end of the trundle portion of the adjustable supporting-frame; also showing, close to a catch, one end of a rod that extends through the side bars of the trundle portion of the supporting-

frame, as well as through the downward-projecting sides of the bottom plate, and supports a swinging hasp (not shown) that catches over staples at the front (shown) and rear (not shown) underneath the bottom plate to fasten the supporting-frame in a closed or in an extended position; also showing the adjustable and removable foot and leg rest, hung by a rod between the sides of its upper portion on projections from the front of the seat portion of the chair, an upward-curved tongue which projects outward from the central part of the rod passing through a slit in the front plate of the seat portion of the chair, and the hinge so formed being covered by a guard; also showing one of the spring-rods with spring-stop at the middle joint of the leg-rest; also showing one of the spring-rods which extend from the middle section of the leg-rest to its outer end and are provided with loops that catch over the foot-board when this is up and likewise serve to support a hook-rod which holds the foot-board in position when this is up; also showing the foot-board down and how it may serve as a support for the removable cover when the foot and leg rest is detached and the cover is rolled up or folded. Fig. 2 is a side elevation of the chair in position for use, with features of the front end of the chair-seat, of the front end of the foot and leg rest, and of the middle hinge between portions of the leg-rest in detail, showing downward-projecting side of bottom plate of seat-frame slotted to permit movement on such side of side bar of the trundle portion of the adjustable frame through which and the downward-projecting sides of the bottom plate passes the rod supporting the swinging hasp; also showing the back of the chair with rack at lower end of side disengaged from spring-bar, and rack at rear of side engaged with upper cross-bar of adjustable supporting-frame to hold the back in a desired position for rest while reclining, the wings holding the cross-bar in position; also showing the upward-extensible portion of the adjustable supporting-frame extended, the inner swinging frame (not shown) having been swung up to support the upper cross-bar; also showing the trundle portion of the adjustable supporting-frame pulled out from under the chair and so pushing out the upward-extending portion; also showing the adjustable and removable foot and leg rest extended with position of tongue and peculiar stop at middle joint; also showing a spring-rod at the end with hook-rod having hook in its loop and bearing against foot-board; also showing foot-board up and its folding legs. Fig. 3 is a rear elevation of the chair, showing the back tilted backward beyond engagement with the spring-bar and supported by the adjustable supporting-frame, the same being shown extended with the inner swinging frame raised into position to support the upper cross-bar and with it its extensible frame, the inner frame swinging on a second cross-bar as a pivot and the outer frame carrying the inner frame swinging upon a bot-

tom cross-bar at the trundle portion of the frame; also showing the rear staple; also showing a projection from the central portion of the lower cross-bar that passes into the rear staple when the frame is pushed under the chair, and so holds the rear end of the trundle portion of the adjustable frame up when the hooks are over the inner ends of the bottom plate; also showing the handle to depress the spring-bar and disengage it from the racks at the lower ends of the side pieces of the back, and also showing the back end or door of the commode-box under the seat with handle, the end capable of being held shut and the box capable of being held in position by the handle of the spring-bar being caught over the handle of the box end. Fig. 4 is a perspective view of the adjustable supporting-frame capable of connection with the seat portion of the chair and of supporting the adjustable back thereof, showing the construction of the frames, the side bars slitted longitudinally from above downward to take upon the downward-projecting sides of the bottom plate of the seat portion, showing also the swinging hasp on its rod, and, finally, the hooks. Fig. 5 is a side elevation of the foot portion of one of the chair-legs, showing in detail the means of adjusting the length of the legs, the lower end of the leg proper with a stop, the slotted sleeve upon this lower end with the stop in its slot, and the obliquely-notched pivoted plate. Fig. 6 is a vertical cross-section through the seat portion of the chair, showing the commode with the cover having flexible material around it, so that it may easily be slid under or out from the bars which keep it in place and be taken out and put in from the under side, also the side bars of the trundle portion of the extensible frame slitted longitudinally from above downward, taking upon the downward-projecting sides of the bottom plate of the seat portion, and the hooks from the side bars catching over the bottom plate. Fig. 7 is a front view of the foot-rest, showing in full lines the legs extended and in dotted lines the legs folded, also showing a hook-rod, the loop-ended spring-rods, and pins on the front of the foot-board for an elastic cord to hold the removable cover.

This chair may be divided into four principal parts—into a seat portion, a back portion, a supporting-frame portion, and a foot and leg rest portion.

In the drawings, A designates the seat portion, consisting of a suitable frame and having arms *a*, composed of plates of metal or pieces of wood provided with slots which have an upper vertical portion and a lower horizontal portion, through which slots pass headed bolts or pins *a'*, attached to a cross-piece of the frame of the chair, whereby the arms are made movable. Loosely attached to the side of the seat portion, as by cords, are cushions *a''*, and these cushions will rest upon the upper margins of the movable arms when these

are pushed up, and will lie loosely at the side of the seat when the arms are down.

An arm is fixed in its extended position by pushing it upward until the headed bolts are at the bottom of the vertical slots, and then pushing it horizontally until the bolts enter the horizontal slots, the corresponding cushion being raised upward to rest upon its margin.

An arm is lowered by pushing it horizontally until the headed bolts become disengaged from the horizontal slots and enter the vertical slots, and then pushing it downward until its upper margin is below or flush with the surface of the chair-seat, or allowing it to fall by gravity, the corresponding cushion being bent or laid over until it is flush with or below the surface of the chair-seat. It is obvious that instead of having cushions loosely attached to the seat they may be attached to the movable arms.

The purpose of having the arms and cushions movable is that when a patient is to be moved from a bed to the chair or from the chair to a bed an arm and cushion may be got out of the way and present no obstruction, while when seated in the chair one arm and cushion or both arms and cushions may be elevated to present a rest for the patient, and the construction by which this purpose is to be attained is strongly to be distinguished from anyone in which the arms of a chair are fixed at different heights by means of a clamping device, since, in the first place, by the construction shown in this application the arms are more ready of adjustment than by a clamping device, and, secondly, by having two or more horizontal and vertical slots and pins in the nature of bayonet-fastenings the arm will always be held in proper horizontal position.

The seat portion of the chair is supported by legs a^1 , which have foot portions of peculiar construction. These foot portions consist of the lower end of the leg having a pin or projection, and a sleeve, a^2 , upon the lower end of the leg and having a slot entered by the pin or projection and provided with a notched plate, a^3 , pivoted at its upper end, the notches being oblique and opening upward. The chair-roller is on the lower end of the sleeve. The purpose of this construction of the foot portion is to enable the chair readily to be raised and lowered.

The chair is raised by simply placing the hand under the seat and lifting it, when the lower portion of the leg will be raised in the sleeve, and the pin or projection will slip over the teeth of the pivoted plate until the desired height is attained, when, upon ceasing to lift, the pin will fall into an appropriate notch of the plate, which plate takes the necessary position by gravity, and the pin will be held in place by the weight of the chair.

To lower the seat, the pivoted plates are pulled away until their notches cease to engage the pin or projection upon the lower portion of the leg, when the chair sinks by gravity.

The seat of the chair should be suitably upholstered and have springs, and is provided with a suitable opening for a commode-seat. This opening is closed by a removable cover, a^4 , consisting of a plug of requisite size to fit the opening, and having flexible material projecting from it laterally. This cover is inserted from below, and is held in place by rods underneath the seat, the flexible material being slipped in over the rods. The purpose of this construction of cover is to be able to insert it and remove it from below, thus avoiding disturbing the patient, and the construction is to be distinguished from that of other covers which have been inserted from below for the same purpose in that the cover of this application is held by the flexible material and the rods, the flexible material being slipped in over the rods, and is not held by the plug nor hinged.

At a suitable distance below the seat of the chair is a bottom plate, a^5 , which serves to support a removable commode-box, x , provided with a door, y , at the rear, and having a handle, z , and has depending from its sides flanges a^6 , which are provided with suitable slots, for a purpose hereinafter to be explained. Also depending from this bottom plate, near the front and back thereof, and preferably near the median line from front to rear, are two staples, a^7 and a^8 , the purpose of which will be explained farther on.

B represents the back of the chair, which is pivoted at a convenient point to the rear side of the seat portion, and in such manner as to be capable of movement to any desired angle relative thereto. This back has the usual side pieces, and these side pieces have at their lower extremities racks b , which are engaged by the ends of a spring-bar, b' , which is mounted and capable of sliding vertically in the frame of the chair, and engages any suitable notch of the rack to hold the back at the angle desired by a person sitting in the chair. The spring-bar is provided with a handle, b^2 , both the spring-bar and the handle being at the rear of the chair, and by this handle the bar is drawn down to disengage the rack and allow the back to be adjusted outward. This handle of the spring-bar may also serve, by being caught over the handle z of the commode-box, to keep the box in place from movement outward, while stops x' , striking against the legs of the chair, will prevent the box from being moved too far inward.

The rear faces of the notches of the rack b slant or are curved forward, and the front faces thereof are straight, so that the back can be moved to a forward position relative to the seat by simply pushing it with the hand, while it is retained against backward movement, except upon disengagement of the spring-bar.

Besides serving as a rest for a person while sitting the back may serve as a rest for a person while reclining, and in this case it is released from engagement with the spring-bar and turned back; but when it is so released it

is necessary that it should be supported by other means than those previously described and be supported at different angles of inclination. To this end, therefore, the side pieces, 5 in addition to being provided with racks at their lower extremities, have racks b^3 upon their rear edges, and these racks are constructed to engage with a top bar of a suitable frame extended under the back, and in order 10 that when such top bar has become engaged with notches in these racks it may be held there. The sides of the back are provided with hinged wings b^4 , the hinges being at their front edges, thus enabling them to be swung 15 forward, and having longitudinal slots which correspond to, or nearly to, the situation of the teeth when the wings are closed, so that when the wings are closed the slots in them will be over the ends of the top bar holding 20 it in place. The hinged wings also serve as protection and as side rests for the head when a person is sitting in the chair, and perhaps not able to hold the head up.

C designates an extensible frame, which consists of a trundle portion, C', and an upward-extending portion, C". The trundle portion consists of side bars, c , held together by a cross-bar, c' . The side bars are grooved above to receive the lower edge of the depending 30 flange a^8 of the bottom plate, and are provided with small rods, c^2 , which extend upward from their sides and are bent at a right angle to take over the upper surface of the bottom plate, forming hooks or catches to support the 35 inner ends of the bars, the outer ends being supported by feet c^3 .

Extending from one bar to the other, near the hooks and through the downward projections of the bottom plate, is a rod, c^4 , carrying 40 a swinging hasp, c^5 , having lateral projections c^6 and c^7 , which catch over one end or the other of the bottom plate when the trundle portion of the extensible frame is pushed in or pulled out, and a perforation, c^8 , which is pushed 45 upon the staple a^9 or the staple a^{10} , according as the frame has been pushed in or pulled out, and it is desired to fasten it in the one situation or the other. As the rod c^4 passes through the downward projection a^8 of the bottom 50 plate, in order to be able to move the trundle portion out or in the downward projection is slotted, as before described.

The upward-extending portion of the frame C" consists of three distinct frames—a lower 55 frame, a longitudinally-extensible frame, and an inner frame. The lower frame consists of the bars c^{15} , pivoted upon the rod c' , which then constitutes the lower bar of the upward-extending portion of the entire supporting-frame, and a tie-rod, c^9 , between them, which 60 then constitutes the middle bar of the upward-extending portion of the entire supporting-frame. The middle frame consists of slotted arms, loops, or links c^{10} , curved upward and inclosing the outer ends of the bars c' and c^9 , 65 upon which they are free to move longitudinally, and a rod, c^{11} , fixed at the upper end of

the links, which rod then constitutes the top bar of the upward-extending portion. This top bar extends laterally beyond the frame, 70 and has its ends suitably formed to engage with the racks b^3 of the back of the chair. The inner frame consists of bars c^{12} , pivoted upon the middle bar of the upward-extending portion and joined at their upper ends by a pillow-bar, c^{13} , which, when the links are pulled 75 out, is swung underneath the top bar, and so holds them extended. As the lower frame is pivoted on the bar c' , and the other frames are about and upon this lower frame, it follows 80 that the entire upward-extending portion c' is free to swing with the lowermost frame.

When the back of the chair is released from engagement with the bottom racks b and is 85 tilted backward, and the middle frame is pulled out and the inner frame swung up, so that its upper cross-bar is under the top bar, forming a pillow or rest therefor, and the ends of the top bar are engaged with the racks b^3 , the back may thereby be supported at any 90 angle with the seat, from its last engagement with the bottom racks, b , to a perfectly horizontal position of the back.

As before said, the ends of the upper bar, c^{11} , may be in any notch of the racks b^3 , and 95 may be retained there by turning the slotted wings down over the ends of the bar.

If it is not desired that the back should be at a greater inclination than can be afforded 100 by the racks b and spring-bar b' , the supporting-frame may be moved out of the way by swinging down the inner frame, which will allow the middle frame to sink by gravity, and then pushing in the trundle portion, which 105 will bring the upward-extending portion close behind the seat of the chair. The outer end of the trundle portion will then be supported by a projection, c^{14} , on the lower bar, c' , taking into the staple a^{10} .

When not needed, the commode-box may be 110 removed, whereby it is more easily cleansed, and whereby, also, the general appearance of the chair may be improved.

D designates the foot and leg rest portion of the chair, and consists of three distinct 115 portions—an inner portion, a middle portion, and an outer portion. The inner portion consists of side pieces, d , joined above by a rod, d' , having at its middle part and extending outward a curved tongue, d^2 . This portion is 120 hinged to the seat portion of the chair by its rod d' , hanging upon suitably-shaped projections at the front and sides of the chair, the tongue d^2 passing through an opening in a front plate of the chair-seat to form an additional 125 hinge and holding device. This tongue-hinge is protected by a guard, d^3 .

The middle portion of the foot and leg rest consists of the side bars, d^4 , which are hinged 130 at their upper ends to the side bars, d , and are fixed at any desirable angle thereto by spring-rods d^5 upon the bars d taking into notches upon the upper ends of the middle portion, forming a spring-stop. To release the middle

section from the inner one and allow it to be turned up or down, the spring-rods are compressed against the sides d , when their ends, which may be of any suitable shape, will be pushed inward beyond engagement with the notches on the inner ends of the middle portion. The outer ends of the side bars, d' , are connected by a rod, d'' .

The outer portion of the foot and leg rest consists of a foot-board, d' , having depending from and pivoted to it legs d'' . The foot-board is pivoted upon the rod d'' , and is held in place partly by spring-rods d'' , having loops on their ends which catch over the edges of the foot-board, and partly by a hook-rod, d'' , which is linked at one end in one loop and hooks at the other end into the other across the outer face of the foot-board. A removable cover may be spread over the foot and leg rest, and be fastened at the upper end thereof upon hooks d'' upon the legs of the chair, and extend over the arms where it is buttoned or otherwise fastened, and so, if desired, over the back.

The entire chair has a permanent cover of canvas or other suitably strong material, double if required, and the removable cover may be of any suitable material. The removable cover may be removed and replaced in a very short time, and it turns over the foot-board and can be folded there when desired. To this end the foot-board is capable of being turned down, as shown in Fig. 1, forming, when detached, a support for the removable cover.

To turn the foot-board down, the rod is unhooked and the spring-rods are pulled outward, when pressure outward upon the board will bring it down to the desired position. Before the board is thus turned down the pivoted legs may be folded. After the board has been turned down the hook of the rod may again be placed in its loop of the spring-rod. Upon the front of the foot-board there are also pins, buttons, or the like to attach the removable cover by an elastic cord or by elastic cords, and the cover may then be passed up over the foot and leg rest and extend over the arms, where it is buttoned or otherwise secured, and thence pass up on the back and there likewise be secured.

For transportation, the back should be folded over the seat and the foot and leg rest portion be held flat upon it.

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

1. The combination, with the seat portion of a chair having headed bolts projecting laterally therefrom, of a piece or slab of metal or wood provided with slots having a longitudinal and a horizontal portion which take upon the headed bolts and constitute movable arms, substantially as described.

2. The combination, with the seat portion of a chair having headed bolts projecting laterally therefrom, of the movable arms having

slots, as described, and the movable cushions, substantially as and for the purpose set forth.

3. In combination with a chair-leg having at its lower part a pin or projection, a slotted sleeve provided with a pivoted plate notched to engage the pin which projects from the leg through the slot, constituting an adjustable foot portion, substantially as described.

4. In combination with the chair-seat having an opening, a cover consisting of a plug to fit such opening, having a lateral extension of flexible material, whereby, the cover being inserted and removed from below, it will be held in place by rods or portions of the frame, substantially as described.

5. In combination with a chair-back having racks b at the lower ends of its sides, the spring-bar b' , provided with a looped handle, b'' , depending from the bar and located between the ends, substantially as described.

6. In combination with the bottom plate and legs of the seat portion of the chair, a commode-box provided with stops against movement of the box too far forward, with a door at the back opening inward, and a hooked handle by which it may be attached to a portion of the chair-seat to hold the door shut and retain the box in proper position against movement outward, substantially as described.

7. A chair-back pivotally attached to the seat portion of a chair and provided with a rack or racks, in combination with a frame consisting of a sliding or trundle portion and an upward-extending portion, the frame extensible from the rear of the chair and engaging with the rack, substantially as described.

8. In combination with the seat portion of a chair, a back provided with two kinds of racks, one kind fixed at the lower ends of the sides of the back, engaging with a stop to enable the back to be held at an inclination suitable for rest while sitting, and the other kind at the rear of the back, engaging with an extensible support at the rear of the chair, to be able to continue the inclination and enable the back to be held at an angle suitable for rest while reclining, substantially as described.

9. The combination, with the back having a rack or racks at its rear and provided with slitted wings at its sides, of a cross-bar upon a supporting-frame, the ends of which are held in engagement with the rack or racks by the slots in the wings taking over such cross-bar, substantially as described.

10. The combination, with a chair having a hinged back, of the movable supporting-frame consisting of the trundle portion C' and the upward-extending portion C'' , substantially as described.

11. In combination with the bottom plate of the seat portion of the chair having downward-projecting sides, the bars c , longitudinally slitted, the slits being entered by the downward projections from the sides and provided with rods c' , bent at their upper ends to form catches upon the bottom plate to hold up the

inner ends of the bars, the upward-projecting portion, and a hinged chair-back, substantially as described.

12. The combination, with a chair having a hinged back and a bottom plate provided with staples, of a sliding back-support having side bars, c , carrying the hasp c^5 , provided with an opening, c^8 , substantially as described.

13. The combination, with a chair having a hinged back and a bottom plate having a rear staple, of a supporting-frame having a trundle portion, the rear end of which is provided with a projection, c^{14} , substantially as and for the purpose set forth.

14. In combination with a chair having a hinged back and a supporting-frame consisting of the lower bar, c' , side bars, c^8 , and cross-bar c^9 , constituting the lower frame, the links c^{10} and cross-bar c^{11} , constituting the middle frame, and the bars c^{12} upon the bar c^9 , and having the cross-bar c^{13} , constituting the inner frame to support the middle frame, substantially as described.

15. The combination, with the back B, provided with the rack b^3 , of the movable supporting-frame C, consisting of the trundle portion C' and the upward-extending extensible portion C'', substantially as and for the purpose described.

16. In combination with the seat portion of a chair having a curved tongue, d^2 , projecting from its front, the extensible and adjustable foot-rest D, hinged at its upper section to

the chair upon projections therefrom at the sides of the front, the upper cross-rail of the upper section having an opening through which the tongue d^2 passes, forming a tongue-hinge or tongue-joint, substantially as shown and described.

17. The combination of the upper portion, d^2 , and the middle portion, d^1 , of the foot-rest D, the portions having at their juncture the spring-stop joint, substantially as shown and described.

18. The combination, with the middle section of the adjustable foot and leg rest, of the foot-board d^7 , pivoted to said section, held in place by spring-rods d^9 , and capable of being turned down, substantially as shown and described.

19. In combination with the foot-rest of a chair, a foot-board pivoted to said foot-rest and held in place by looped rods d^8 and hook-rod d^{10} , substantially as described.

20. The combination, with the foot-board d^7 of the adjustable foot and leg rest D, provided with pins or buttons and having the hook-rod d^{10} , held in the loops of the spring-stops d^9 , and fastening devices for the removable cover, substantially as and for the purpose described.

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

AMANDA DE VOE.

Witnesses:

CHAS. L. COZINE,

WILLIAM S. BENNETT.