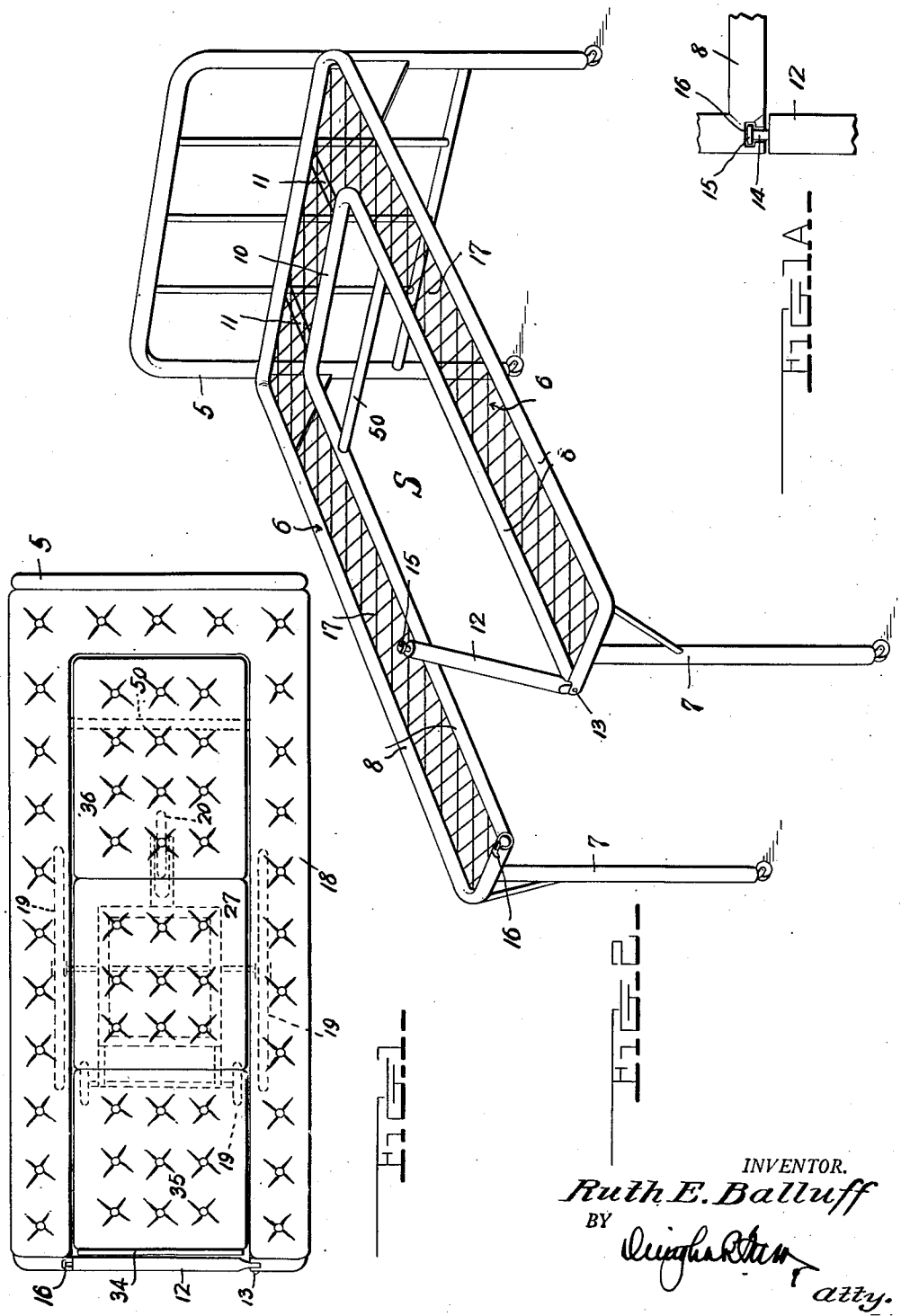
Aug. 26, 1952 R. E. BALLUFF 2,607,929

COMBINATION WHEEL CHAIR AND BED

Filed Nov. 23, 1948 2 SHEETS—SHEET 1



INVENTOR.
Ruth E. Balluff
BY
Dwight Stam
Atty.

Aug. 26, 1952 R. E. BALLUFF 2,607,929

COMBINATION WHEEL CHAIR AND BED

Filed Nov. 23, 1948 2 SHEETS—SHEET 2

FIG. 4

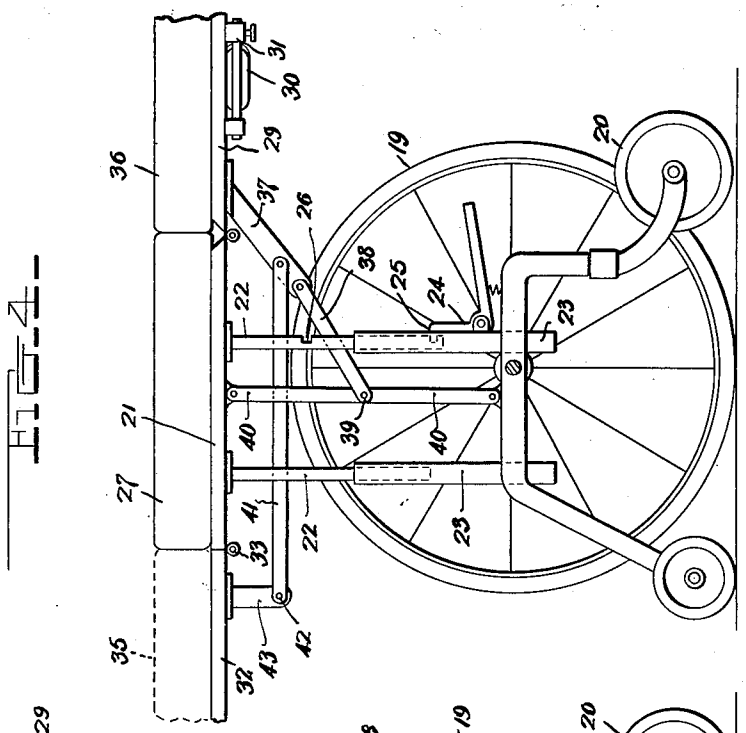
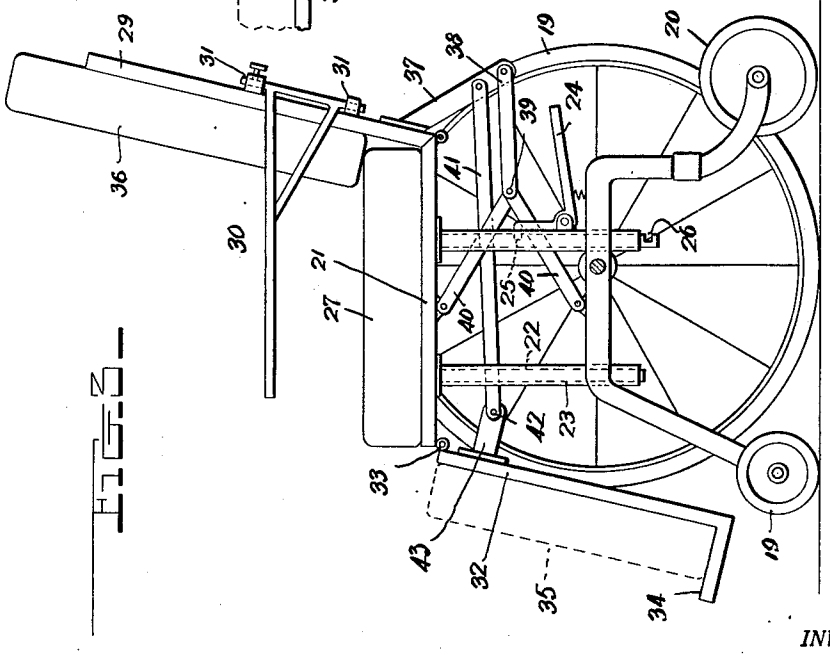


FIG. 5



INVENTOR.

Ruth E. Balluff

BY

Dwight R. Stan

atty.

Patented Aug. 26, 1952 2,607,929

UNITED STATES PATENT OFFICE

2,607,929

COMBINATION WHEEL CHAIR AND BED

Ruth E. Balluff, Staunton, Va.

Application November 23, 1948, Serial No. 61,591

2 Claims. (Cl. 5—66)

1

This invention is a bed designed for the accommodation and comfort of invalids, and seeks the combination of an especially designed bed with a conventional wheel chair in such manner that the chair may be associated with the bed to provide sleeping accommodations for the patient, or may be removed from the bed structure and utilized in its capacity as a wheel chair.

An object of the invention is to provide the combined structures referred to in such manner as to obviate the necessity of removing the patient from a bed to a wheel chair when it is desired that the patient be wheeled about, as well as to obviate the usual procedure of lifting the patient from the chair when it is desired to put him to bed.

A further object of the invention is to so combine the bed structure with the wheel chair as to greatly facilitate the care and comfort of the patient, as the necessity for lifting the patient is entirely overcome.

With the foregoing objects in view, together with others which will appear as the description proceeds, the invention consists of the novel construction, combination and arrangement of parts, all as will be described more fully hereinafter, illustrated in the drawings, and particularly pointed out in the claims.

In the drawing:

Fig. 1 is a top plan view of a combined wheel chair and bed in assembled position for sleeping purposes,

Fig. 2 is a perspective view of the bed structure by itself,

Fig. 1a is an enlarged detail view showing the latch structure used in connection with the foot piece of the bed frame,

Fig. 3 is a sectional side elevation of a conventional form of wheel chair used in connection with the bed structure, and

Fig. 4 is a similar view showing the wheel chair with its parts in elevated position as for use as a bed.

The bed structure includes a head piece indicated at 5, to which is permanently attached the horizontal frame 6 having legs 7 supporting the forward end of the frame and acting as a foot piece. The bed frame includes parallel horizontally disposed bars 8 arranged in pairs at each side of the bed and providing a space indicated at S between the pairs. This space is closed at the head end of the bed by a transverse bar 10 firmly secured to the main bed frame by bars 11. The inner longitudinal bar 8 of each of the pairs is secured firmly in the frame at the foot of the bed,

2

and a swinging bar 12 pivoted as at 13 to one side of the bed frame may be utilized to close the open end of the space S at the foot of the bed. Any desired type of latch or securing means may be used for maintaining the bar 12 in closed or horizontal position. In the present instance, for purposes of illustration merely, the free end of the bar 12 is provided with a reduced projection 14 having a head 15 at its outer end to seat and firmly rest in a similarly shaped opening 16 at the opposite side of the bed frame.

The spaces between the bars 8 at each side of the bed frame, as well as the space between the parallel bars at the head of the frame, are provided with bed spring fabric represented at 17, and an elongated U-shaped mattress 18 rests upon these portions of the horizontal bed frame. This mattress corresponds in size and shape with the bed spring of the bed frame.

The wheel chair for use in connection with the bed frame above specifically described is shown more particularly in Figs. 3 and 4 of the drawings. This chair includes the usual chasis supported by the main wheels 19 and a caster wheel 20. The seat portion 21 of the chair is so arranged upon the chassis as to be capable of being raised or lowered, and to this end, and for purposes of illustration only, the seat is equipped with spaced depending posts 22 operating in upstanding hollow posts or socket members 23 rigidly secured to the chassis. A spring controlled latch member 24 carried by the chassis has a detent 25 at one end to engage within recesses 26 arranged in spaced relation upon one of the posts 22 to maintain the seat member 21 firmly in either raised or lowered position. When in raised position, the seat with its cushion 27 will be in true horizontal alignment with the bed frame 6 and the mattress 18 supported thereon.

Hingedly connected to one end of the seat 21 is the back rest 29, having arms 30 hingedly connected as at 31 to the side portions of the back rest so as to be capable of being swung rearwardly upon and across the back 29.

The foot and leg support for the chair is indicated at 32 and is hingedly connected as at 33 to the forward end of the seat 21. This leg rest is provided at its lower end with a foot rest 34, and is also equipped with a cushion indicated at 35. The back rest, similarly, is provided with a cushion 36.

The swinging back 29 is provided with a rearwardly and downwardly extending arm 37, to the free end of which is pivotally secured a link

38 extending forwardly and beneath the seat and pivotally connected as at 39 to toggle links 40. One of the links 40 is pivoted to the chair chassis while the other is pivoted to the seat 21.

The arm 37 also has pivotally secured thereto a link 41, extending forwardly beneath the seat and pivotally connected as at 42 at its forward end to an arm 43 secured to the pivoted leg rest 32.

The construction and arrangement of parts is such that the arm rests 30 may be swung rearwardly and folded upon the rear face of the head rest 29 in an out of the way position when it is desired. Upon releasing the latch 24 and pulling rearwardly upon the back rest 29, the toggle structure 38—40 will cause the seat 21 to be raised and at the same time the link structure 41—42—43 will cause the leg and foot rest to swing upwardly to horizontal position. The construction and arrangement of the linkage or toggle structure is such that when the back 29 is horizontally aligned with the seat 21, the leg rest 32 will be similarly aligned and the entire supporting structure will be elevated to the same horizontal plane as the horizontal bed frame. When in this position, the back 29 will rest upon the cross bar 50 connecting the innermost bars 8 of the bed frame.

In use, the wheel chair, in horizontal position, is accommodated within the space S with its body supporting parts in horizontal position and elevated to the same plane as the bed frame. The arms will have been moved rearwardly upon the back 29 in an out of the way position, and the back will be supported by the cross bar 50. The chair parts in extended position will be substantially equal to the length of the space S, and the bar 12 is dropped to horizontal position to hold the chair and the bed frame against relative movement. The latch 24 will maintain the parts firmly in position. The chair and bed frame thus assembled provide a bed surface upon which the patient may comfortably rest, and the patient may be turned from side to side when required to adjust the draw sheet or other mattress protectors or covers.

Should it be desired to remove the patient from the bed in horizontal position, it is but necessary to adjust the bed clothing accordingly, raise the bar 12 and wheel the chair from within the U frame. When it is desired to wheel the patient from the bed in sitting or semi-inclined position, it is but necessary to properly locate the patient upon the cushions of the wheel chair, after first having properly cared for the bed clothing, and elevate the back 29, whereupon the parts will assume the position shown in Fig. 3. After lifting the retaining bar 12 the patient may be removed from the bed frame to secure the benefits of the wheel chair.

From the foregoing, it is apparent that I have constructed a bed frame in such manner that a wheel chair may be readily associated therewith and to combine in the two elements a bed which will prove most comfortable and practical, at the same time affording wheel chair service without the necessity of lifting the patient. The wheel chair here disclosed is but one type of chair possible for use in connection with the specific bed frame described, as it will be understood that other mechanisms for bringing about the coaction of the seat, head and leg rests may be employed if desired.

I claim:

1. In a bed structure, the combination with a bed frame disposed in spaced horizontal relationship above the floor and having an opening extending inwardly from one end thereof, of a chair chassis disposed within said opening, seat, back rest and leg supporting sections mounted on said chassis in interconnected relationship, means on said chassis for moving said sections into horizontal alignment with one another and into the same horizontal plane with said bed frame, the length and breadth of said sections when in horizontal position being substantially equal to the length and breadth of said opening so as to snugly interfit therein, means carried by said bed frame and disposed within said opening to support said back rest when the latter is in horizontal position, and means on said bed frame holding said chassis within the latter.

2. In a bed structure, the combination with a bed frame mounted in horizontal position and having an opening extending inwardly from one end thereof; of a chair chassis disposed within said opening, seat, back rest and leg supporting sections mounted on said chassis in interconnected relationship, means on said chassis for moving said sections into horizontal alignment with one another, means on the chassis for moving said aligned sections into the same horizontal plane with said bed frame and within said opening, a gate member for holding said chair chassis within said opening and to maintain the bed frame and chair together as a unit, whereby the said chair is incapable of movement with respect to the bed frame when the chair sections are in horizontal positions.

RUTH E. BALLUFF.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
396,607	Saunders	Jan. 22, 1889
1,289,959	Taylor	Dec. 31, 1918
1,787,380	Iplicjian	Dec. 30, 1930
2,275,973	Marchbanks	Mar. 10, 1942

FOREIGN PATENTS

Number	Country	Date
381,163	France	Oct. 30, 1907
578	Great Britain	1852