Sept. 17, 1946. F. KEEST 2,407,786

COMBINATION CHAIR AND COT

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Fig. 1.

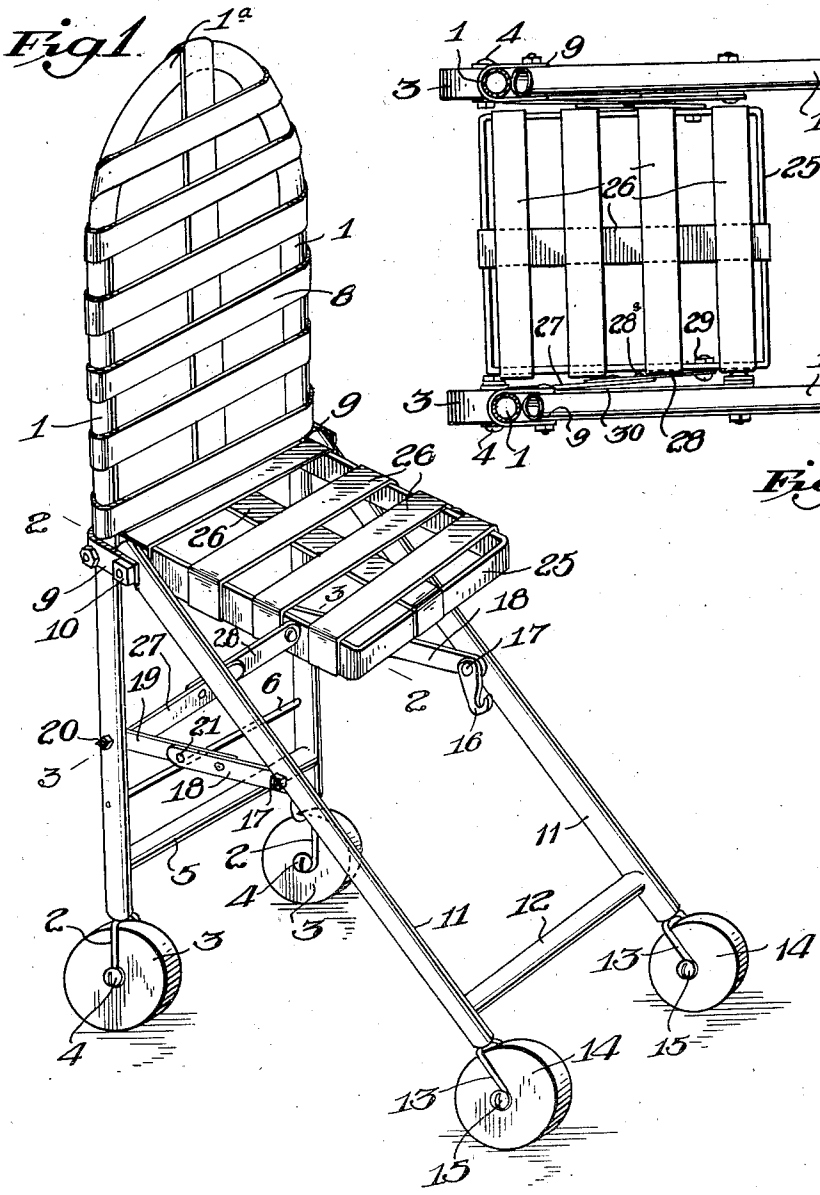


Fig. 2.

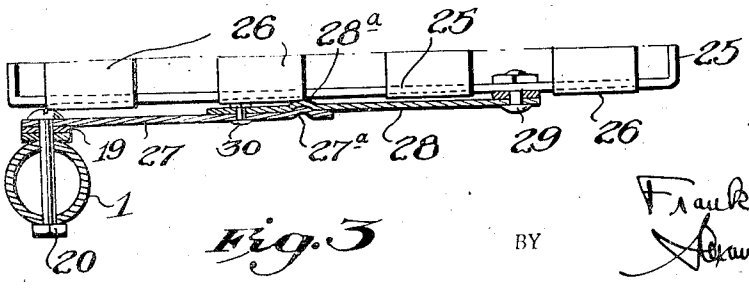


Fig. 3.

INVENTOR.
Frank Keest
BY Alexander Powell
ATTORNEYS

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Fig 4.

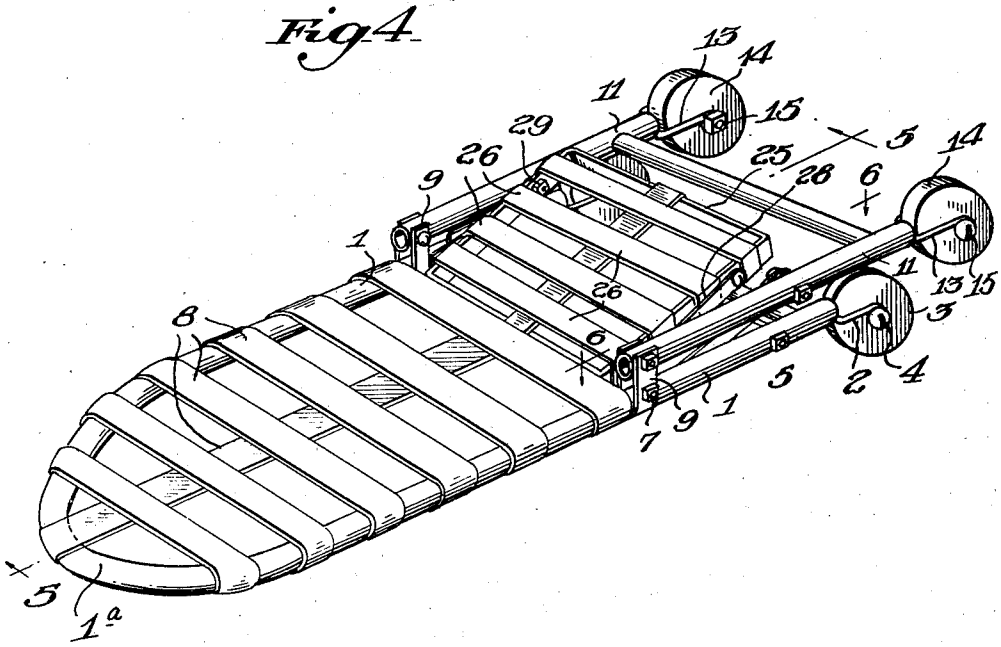


Fig 5.

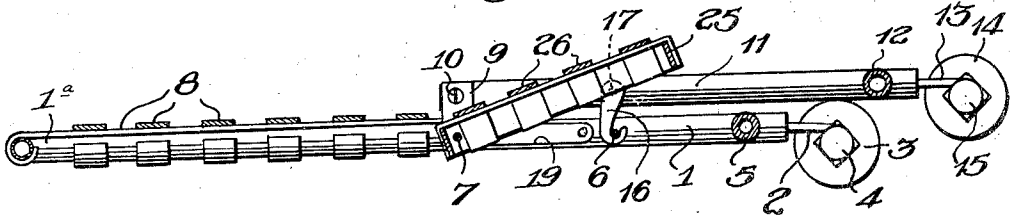
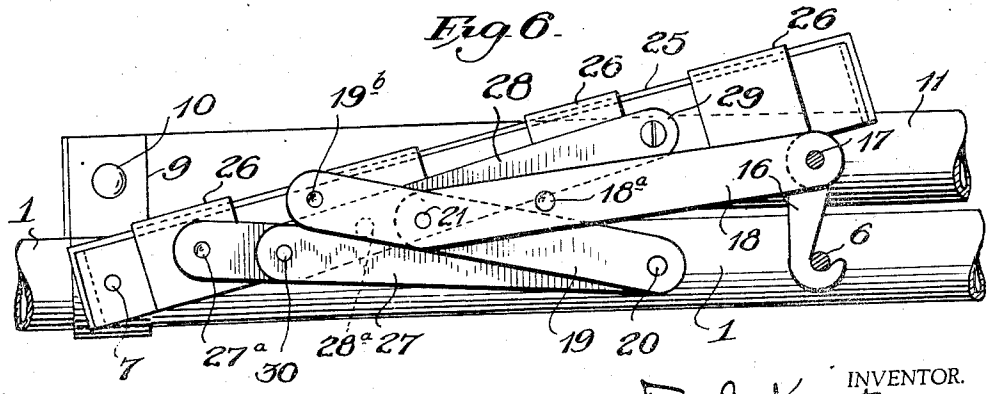


Fig 6.



INVENTOR.

Frank Keest

BY

Howard Howell

ATTORNEYS

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UNITED STATES PATENT OFFICE

2,407,786

COMBINATION CHAIR AND COT

Frank Keest, Urbana, Ill.

Application June 18, 1945, Serial No. 600,139

4 Claims. (Cl. 155—45)

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This invention is a novel combined chair and cot or stretcher, particularly adapted for use in hospitals or the like, for carrying patients up and down stairs and around sharp corners; same consisting of a frame in the nature of a foldable chair in which the back and rear legs are formed integrally, the back having a cover sheet for engaging the back of the patient; the combined chair and cot including front legs hinged to the rear legs at about the seat level and normally projecting forwardly and downwardly at an angle thereto, the front legs being adapted to be folded down substantially parallel with the rear legs; each of the rear and front legs being provided with rollers or casters, and the combined chair and cot including a seat hinged to the back and adapted, when used as a cot, to be swung down substantially into the plane of the cover sheet of the back; means being provided for maintaining the seat and legs in normal chair forming positions, and for locking the front legs in position parallel with the rear legs when used as a cot or stretcher.

Another object of the invention is to provide a combined chair and cot which may be used for carrying patients, and in which the seat is pivotally mounted so as to be capable of being swung into substantially the plane of the back, when used as a cot; or while used as a cot the seat may be raised at substantially right angles to the back to keep the patient lying thereon from sliding down off the same when carrying the patient down stairs or inclines; also when used as a chair, the patient may be carried down steep and winding stairs; and into rooms or the like leading from narrow halls and into various difficult places where non-foldable cots could not readily be taken while carrying a patient.

I will explain the invention with reference to the accompanying drawings, which illustrate one practical embodiment thereof to enable others to adopt and use the same; and will summarize in the claims the novel features of construction, and novel combinations of parts, for which protection is desired.

In said drawings:

Figure 1 is a perspective view of my invention when the parts are in position for use as a chair.

Fig. 2 is a substantially horizontal section on the line 2—2, Fig. 1.

Fig. 3 is an enlarged detail section on the line 3—3, Fig. 1.

Fig. 4 is a perspective view of my invention

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when the parts are in position for use as a cot or stretcher.

Fig. 5 is a longitudinal section on the line 5—5, Fig. 4.

Fig. 6 is an enlarged detail section on the line 6—6, Fig. 4.

My invention provides a combination chair as shown in Fig. 1, and a cot as shown in Fig. 4, same comprising a substantially inverted U-shaped frame 1 preferably formed of pipe and having its top preferably rounded, as at 1a, the height of frame 1 corresponding with that of an ordinary chair. The legs of frame 1 have bifurcated yokes 2 at their lower ends in which rollers or casters 3 are journalled on pins 4 or the like. The frame 1 constitutes, when the device is used as a chair, the back of the chair and the rear legs thereof, the same being formed integrally.

The legs of the frame 1 adjacent the rollers 3 are connected together by a cross member 5 to brace and maintain the legs in spaced relation. Above the cross member 5 is a rod 6 having its ends secured to the legs, the member 6 being for the purpose hereinafter described. Above the rod 6 at the level of the seat of the chair is a rod 7 (Fig. 5) extending through the legs of the frame 1 and upon which the seat is pivoted, as hereinafter explained. Between the legs of frame 1 above rod 7 are longitudinal and vertical strips 8 spaced a convenient distance apart, forming the covering, strips 8 being preferably formed of metal and having their ends bent around the frame legs and secured thereto by welding or otherwise. The vertical strip preferably has its ends secured to the lowermost cross strip 8 and to the top of the frame 1, and is also secured to the horizontal strips 8 at their contacting faces.

Projecting forwardly (Fig. 1) from the legs of frame 1 at the height of rod 7 are U-shaped clips 9 curved to fit the frame 1, the rod 7 passing therethrough to rigidly lock the clips 9 in position; however, said clips may be rigidly secured to the legs of frame 1 by welding or otherwise.

Between the legs of each of the U-shaped clips 9 is pivotally mounted, as at 10, the upper ends of the front legs 11, which are connected together adjacent their lower end by cross bar 12; the lower ends of the legs carrying bifurcated yokes 13 for front rollers 14 journalled in the yokes on pins 15 or the like, said front legs being adapted to support the frame 1 in vertical position when used as a chair, the legs 11 being also adapted to be swung on pivots 10 to lie substantially parallel with the legs of frame 1. Legs 11 have hooks 16 (Fig. 6) pivoted thereon as at 17

and adapted to engage the cross rod 6 of the frame 1 when the front legs 11 are swung into parallel relation with frame 1 as in Fig. 4, thus preventing upward swinging movement of the front legs 11 when the device is used as a cot.

Links 18 are respectively pivoted on the pivots 17 of hooks 16, and other links 19 are pivoted on pivots 20 on the legs 1 at about the level of the pivots 17. Links 18 and 19 are pivoted together as at 21. Preferably links 19 extend beyond the pivots 21, and have detents 19b therein (Fig. 6) adapted to engage offset knobs 18a (Fig. 6) on the links 18 when the links 18, 19 are aligned as in Fig. 1, to yieldably maintain the links 18, 19 in alignment when the front legs 11 are in their extended position shown in Fig. 1. When, however, the front legs 11 are swung into parallel relation with respect to the frame 1, the links 18, 19 will be folded as shown in Fig. 6.

The seat preferably comprises a rectangular frame 25 formed of metal strips, the rear end of the seat being hinged upon the cross rod 7 and the seat fitting between the legs of frame 1 and centered by means of spacing collars or the like so that when in cot forming position the seat may be swung downwardly from the position shown in Fig. 1 to the position shown in Fig. 4, in which the seat forms substantially a continuation of the back cover strips 8 of frame 1, the downwardly swinging movement of the seat, however, being limited by the cross rods 6. The frame 25 is preferably also covered with spaced strips 26 extending transversely and longitudinally, strips 26 being similar to the strips 8 of frame 1. The seat frame 25 is held in substantially horizontal position shown in Fig. 1 by means of links 27 having their rear ends pivoted on the pivots 20 of the links 19. Links 28 are pivoted as at 29 on the sides of the seat frame 25 adjacent its outer end, said links 27 and 28 being pivotally connected together as at 30 (Fig. 6). Links 27 overlap the links 28 when same are aligned, and links 27 are provided with detents 27a adapted to engage corresponding depressions 28a in the links 28 when the parts are aligned, as shown in Fig. 1 to yieldably maintain the links so aligned, said construction being more clearly illustrated in Fig. 3 and Fig. 6. When, however, the links 27 and 28 are disaligned, the seat 25 may be swung from the position shown in Fig. 1 to the position shown in Figs. 4 and 5, in which the seat would be substantially aligned with the back strips 8 of frame 1 limited by its contact with the cross bar 6.

By the above construction the device may be used as a chair for a patient when the parts are in the position shown in Fig. 1, and the chair carrying the patient may be wheeled on the rollers 3 and 14 from place to place in the manner of an ordinary wheel chair; or the front legs 11 and seat 25 may be hinged downwardly into substantially the plane of the frame 1, as shown in Figs. 4 and 5, in which position the frame 1 may be used as a cot or stretcher with the patient lying thereon. When so used, if it is necessary to turn sharp corners or to get into narrow halls or other places into which the device when used as a cot can not readily enter, the seat 25 may be raised and the front legs 11 swing outwardly to support the patient in a substantially sitting position, the patient seated on the seat 25, and the device with the patient hereon worked through narrow spaces or sharp angles; or when descending stairs or the like used as a cot with the patient thereon, the seat alone may be swung upwardly into the position shown in Fig. 1 to keep the patient from sliding down off of the device used as a cot.

The device thus described is therefore useful in hospitals, funeral homes, airplanes, passenger coaches, automobiles, ships, or the like, and other similar uses for transporting patients from room to room and floor to floor. The seat 25 may be raised or lowered independently of the front legs 11 to keep the patient from sliding down on the device when used as a cot and when descending stairs. When used as a chair, it forms a convenient means for carrying the patient down steep and winding stairs or around sharp turns, or for negotiating other difficult places where an ordinary cot could not be so used.

I do not limit my invention to the exact form shown in the drawings, for obviously changes may be made therein within the scope of the claims.

I claim:

1. A combined chair and cot, comprising a frame adapted to form the rear legs and back of a chair; a seat frame hinged to the frame and adapted to be swung from position substantially normal to the frame into a position substantially aligned therewith, a front leg frame having its upper end pivoted on said first frame and adapted to be swung from a position substantially parallel with the first frame into a position inclined with respect thereto; means connecting the first frame and front leg frame for maintaining said front leg frame in inclined position; means for locking the front leg frame in position parallel with the first frame; and separate means connecting the seat frame and first frame for maintaining the seat frame substantially normal to the first frame.

2. A combined chair and cot, comprising an inverted U-shaped frame adapted to form the rear legs and back of a chair; spaced back rest strips extending between the legs of the frame above the seat level; an open seat frame of less width than the distance between legs of the first frame, said seat frame being hinged to said first frame and adapted to be swung from position substantially normal to the first frame into a position substantially aligned with the back rest strips; other spaced strips secured to opposite sides of the seat frome; a U-shaped front leg frame of greater length than the height of the seat level having the upper ends of its legs pivoted on said first frame; said front leg frame being adapted to be swung from a position substantially parallel with the first frame into a position inclined with respect thereto; means connecting the front leg frame and first frame for maintaining said front leg frame in inclined position; means for locking the front leg frame in position parallel with the first frame; and separate means connecting the seat frame and first frame for maintaining the seat frame substantially normal to the first frame.

3. A combined chair and cot, comprising an inverted U-shaped frame adapted to form the rear legs and back of a chair; a rod extending between the legs of the frame at the seat level; spaced back rest strips extending between the legs above said rod; an open seat frame of less width than the distance between legs of the frame, said seat frame being hinged on said rod and adapted to be swung from position substantially normal to the first frame into a position substantially aligned with the back rest strips; other spaced strips secured to opposite sides of the seat frame; U-shaped clips on the legs of the U-frame transfixed by the ends of the rod and

carrying pivot bolts; a U-shaped front leg frame of greater length than the height of the rod and having the upper ends of its legs pivoted on said bolts; said front leg frame being adapted to be swung from a position substantially parallel with the first frame into a position inclined with respect thereto; means for maintaining said front leg frame in inclined position; means for locking the front leg frame in position substantially parallel with the first frame; and separate means for maintaining the seat frame substantially normal to the first frame.

4. A combined chair and cot, comprising an inverted U-shaped frame adapted to form the rear legs and back of a chair; rear rollers journaled in the lower ends of the frame; a rod extending between the legs of the frame at the seat level; spaced back rest strips extending between the legs above said rod; an open seat frame of less width than the distance between legs of the frame, said seat frame being hinged on said rod

and adapted to be swung from position substantially normal to the first frame into a position substantially aligned with the back rest strips; other spaced strips secured to opposite sides of the seat frame; U-shaped clips on the legs of the U-frame transfixed by the ends of the rod and carrying pivot bolts; a U-shaped front leg frame of greater length than the distance between the rod and rear rollers having the upper ends of its legs pivoted on said bolts; front rollers journaled in the lower ends of the legs of the front leg frame; said front leg frame being adapted to be swung from a position substantially parallel with the first U-frame into a position inclined with respect thereto; means for maintaining said front leg frame in inclined position; means for locking the front leg frame in position substantially parallel with the first frame; and separate means for maintaining the seat frame substantially normal to the first frame.

FRANK KEEST.