

(No Model.)

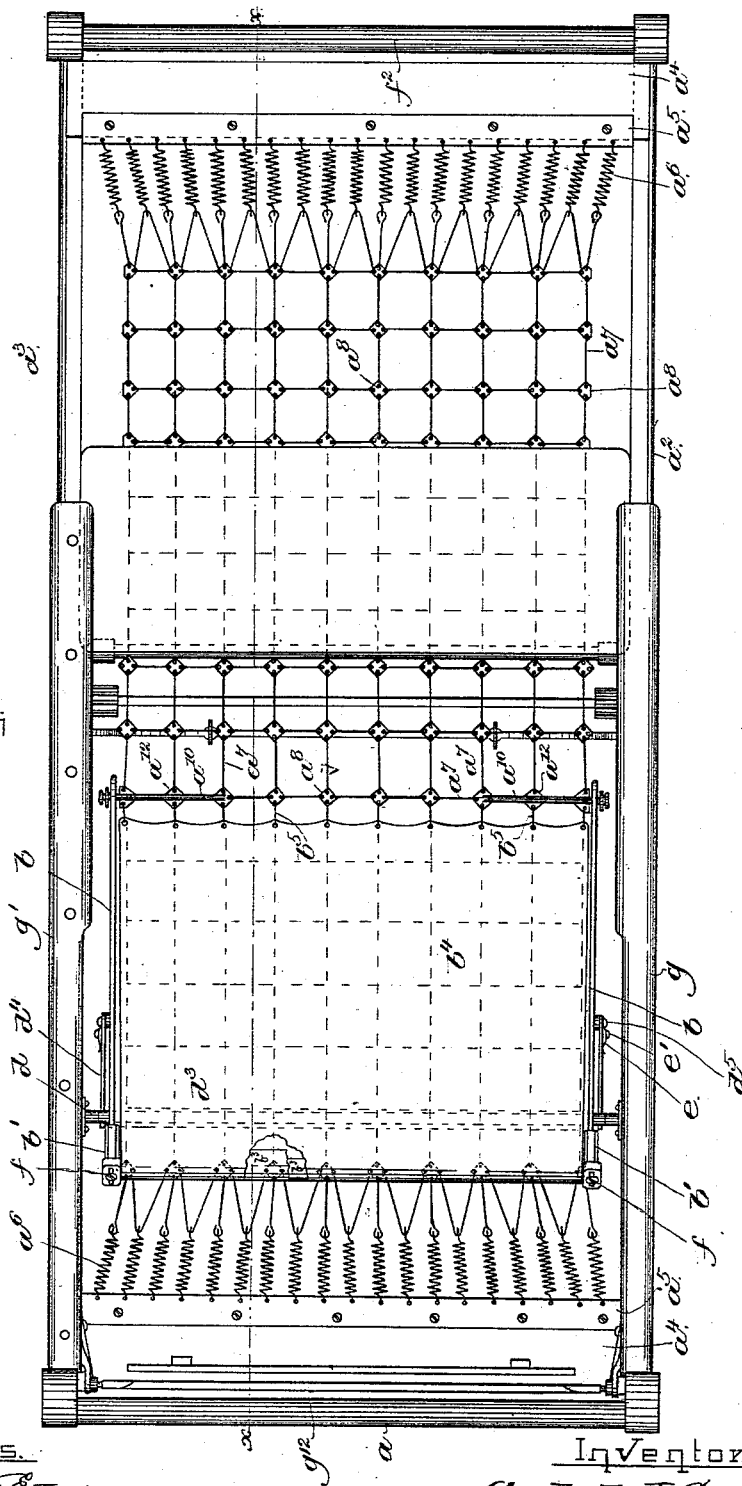
2 Sheets—Sheet 1.

A. J. GOODWIN.
INVALID BED.

No. 420,197.

Patented Jan. 28, 1890.

Fig. 1.



Witnesses.

Howard H. Eaton.

Frederic S. Greenleaf.

Inventor.

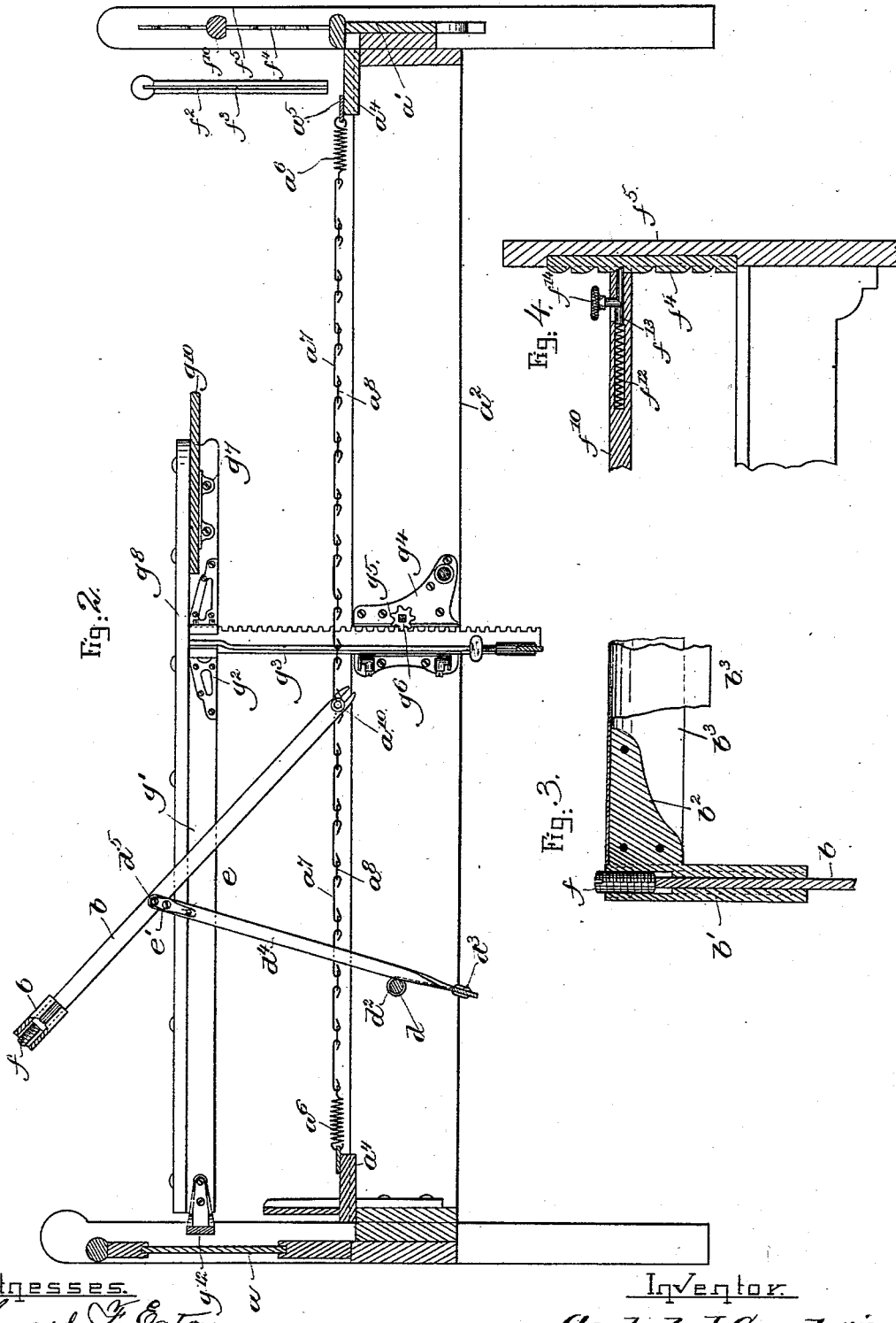
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UNITED STATES PATENT OFFICE.

ASAHEL J. GOODWIN, OF BROOKLINE, MASSACHUSETTS.

INVALID-BED.

SPECIFICATION forming part of Letters Patent No. 420,197, dated January 28, 1890.

Application filed February 27, 1888. Serial No. 265,401. (No model.)

To all whom it may concern:

Be it known that I, ASAHEL J. GOODWIN, of Brookline, county of Norfolk, State of Massachusetts, have invented an Improvement in Invalid-Beds, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to beds especially adapted for hospital and invalid purposes, it having for one of its objects to provide the said bed with an adjustable back-supporting frame, by means of which a firm support is obtained for the back of the patient when in a sitting or reclining posture.

Another feature of my invention consists in providing the foot-board with a removable section adapted to be removed to permit a foot-bar to be substituted therefor, for a purpose to be hereinafter described.

Other features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 is a top view of an invalid-bed embodying my invention; Fig. 2, a longitudinal section of Fig. 1 on line $x x$, with part of the foot-board removed and with the foot-bar substituted therefor, the said figure showing next the foot end of the bed the portion of the foot-board which has been removed; and Figs. 3 and 4 are details to be referred to.

The bedstead herein shown as composed of the head-board a , connected by suitable sides a^2 to a foot-board having a fixed section a' and a removable section f^2 , may be of any usual or well-known construction. The sides a^2 have screwed or otherwise secured to them, as herein shown, end boards or slats a^4 , to which are screwed, as shown, metal strips a^5 , having eyes to be engaged by springs a^6 , forming part of a suspension-mattress, the body portion of which is herein shown as composed of links a^7 , united by squares or plates a^8 , preferably of metal.

On opposite sides and near the longitudinal center of the wire mattress two of the links a^7 are replaced by rods or bars a^{10} , having ears a^{12} , to which the links a^7 are attached to complete the mattress. Each rod or bar a^{10} , beyond the side of the mattress, is embraced, as shown, by the slotted end of a bar b , having at its opposite end a hollow casting b' , provided with a lug or ear b^3 , extended laterally from it, (see Fig. 3,) and the said

bars on opposite sides of the mattress are joined together by a cross-bar b^3 , riveted or otherwise secured to the said lugs.

The side bars b and cross-bar b^3 , preferably made of bent sheet-steel, constitute a frame, to which is secured a covering b^4 , of canvas or other material—such as wire-netting—the said canvas being secured, as shown, to the cross-bar b^3 , and having its opposite end fastened by links b^5 to the bars a^{10} and plates a^8 , extended across the mattress in line with the said bars.

The frame and covering or back of canvas or other material constitute a support for the back and head of the patient, and the said support may be raised from a horizontal to an inclined position, or vice versa, as shown, by means of a windlass composed of a shaft d , having attached to it one end of a chain or chains d^2 ; or it may be a rope, only one of which is shown in Fig. 2, the other end of the said chain or chains being secured to a cross-bar d^3 , having secured to or forming part of it bars, as d^4 , provided with holes at their ends to engage studs d^5 on the side bars b of the supporting-frame. The bars d^4 are locked to the side bars b , preferably, by spring-catches, herein shown as pieces e of sheet metal, pivoted, as at e' , and having their ends shaped to engage the stud d^5 , to thus firmly secure the bars d^4 to the side bars b of the supporting-frame.

It is a great desideratum to maintain the yielding back of the supporting-frame taut or under tension at all times and in all positions of the said frame, so as to present a substantially rigid support for the back of the patient. This feature of my invention I have accomplished, as shown, by providing an adjusting-screw f for each casting b' , the said screw being extended into a threaded socket in the said casting and normally abutting against the end of the side bar b . It will thus be seen that the tension of the supporting-back may be varied to suit the requirements of the case by turning the screws in the castings to move the cross-bar b^3 toward or away from the mattress.

The bars a^{10} will preferably be equal in length to two links a^7 , to impart additional stiffness to the wire mattress at its sides, so that when the back-supporting frame is inclined to substantially an angle of forty-five degrees the downward strain of the side bars

b on the wire-netting of the mattress will be sustained, thus preventing sagging of the said mattress at the sides.

The upper portion or section *f*² of the foot-board is made removable, it having grooves, as *f*³, in its ends to engage notched ribs or bars *f*⁴, secured to the posts *f*⁵ of the said foot-board. Normally the removable section *f*² will be placed on and form a part of the foot-board; but in case of sickness, as when a patient has sustained a fracture of the leg and it is desired to maintain the injured member perfectly still, (which in practice is usually accomplished by means of a weight secured to the said injured member,) the said section will be removed and a bar *f*¹⁰ substituted therefor.

The bar *f*¹⁰ is provided at each end, as shown, with a socket, in which is located a spring *f*¹², adapted to bear against the end of a rod or pawl *f*¹³, having a stud *f*¹⁴ extended through a slot in the said bar, and by which the said bar may be moved to compress the spring, the said pawl engaging a notch in the bar *f*⁴ to secure the foot-bar in place at any desired height.

The bed herein shown is provided with a stretcher-frame composed of side bars *g* *g'*, having secured to them brackets *g*², engaged by the ends of rack-bars *g*³, movable in guides *g*⁴, secured to the sides of the bedstead, the said rack-bars being made to travel, as shown, by a pinion *g*⁵ on a shaft *g*⁶, rotated in practice by a handle from outside the bed.

The side bars *g* *g'* of the stretcher-frame have secured to them brackets *g*⁷, which form with the top rail *g*⁸ of the side bars grooves or guideways to receive the ends of a board *g*¹⁰, constituting a table for the use of the patient. The side bars *g* *g'* of the stretcher-frame are joined near the head-board *a* by a cross-bar *g*¹², the said stretcher-frame being not herein claimed broadly, as it forms part of the subject-matter of another application, Serial No. 265,365, filed by me February 25, 1888.

I claim—

1. The combination, with the bedstead and a suspension-mattress supported thereby and provided on opposite sides with rods or bars projecting therefrom, of a back-supporting frame pivoted upon said rods or bars, with means, substantially as described, to raise and lower the said frame on its pivotal points, as and for the purpose specified.

2. The combination, with the bedstead and a suspension-mattress supported thereby, of an adjustable back-supporting frame pivotally secured to the sides of said mattress near its longitudinal center, bars *d*⁴, detachably secured to said frame between its upper end and pivotal point, and means, substantially as described, independent of the mattress, to raise and lower the said bars, to thereby alter the inclination of the said adjustable frame with relation to the mattress, substantially as described.

3. The combination, with the bedstead and mattress supported thereby and provided with projecting rods or bars *a*¹⁰, of an adjustable back-supporting frame secured to the said mattress, and comprising side bars *b*, slotted at their lower ends to embrace the outer ends of said rods or bars, and the cross-bar *b*³, having secured thereto at its ends an adjustable hollow casting *b'*, adapted to receive the upper ends of the side bars *b*, substantially as described.

4. The combination, with the bedstead and a suspension-mattress supported thereby, of an adjustable back-supporting frame pivotally secured to the sides of said mattress, and comprising side bars *b*, having studs *d*⁵ thereon, cross-bar *b*³, and an adjustable casting *b'*, secured to either end of said cross-bar and adapted to receive the ends of the side bars *b* *d*⁵, the bars *d*⁴, having holes at their ends to engage the studs *d*⁵, shaft *d*, and flexible connections intermediate said bars and shaft, and with a locking device attached to said bars *d*⁴ to secure them to the side bars *b*, substantially as described.

5. In an invalid-bed, a foot-board having its posts provided with notched or rack bars *f*⁴, combined with a foot-bar *f*¹⁰, having a pawl to engage the said rack-bar, substantially as described.

6. In an invalid-bed, a foot-board having its posts provided with notched or rack bars *f*⁴, and a removable section *f*², having grooves to engage said rack-bar, combined with a foot-bar *f*¹⁰, substantially as described.

7. In an invalid-bed, the sides *a*², having brackets *g*⁴ secured thereto, rack-bars *g*³, and a stretcher-frame provided with the top rails and supported by the rack-bars, and brackets *g*⁷, secured to the said stretcher-frame, combined with a table *g*¹⁰, having its ends inserted between the said brackets and top rail, substantially as described.

8. In a bedstead, a suspension-mattress, combined with an adjustable back-supporting frame, comprising side bars *b*, pivoted to the mattress, cross-bar *b*³, covering *b*⁴, secured to the said cross-bar and to the suspension-mattress, and an adjusting device to move the cross-bar toward or away from the pivotal point of the said frame to vary the tension of the covering *b*⁴, the device consisting of the hollow castings *b'*, rigidly attached to the ends of the cross-bar, said castings being provided with a threaded socket having an adjusting-screw *f* extended therein and normally abutting against the end of the side-bar *b*, extended into the casting, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ASAHEL J. GOODWIN.

Witnesses:

JAS. H. CHURCHILL,
J. C. SEARS.