

No. 661,037.

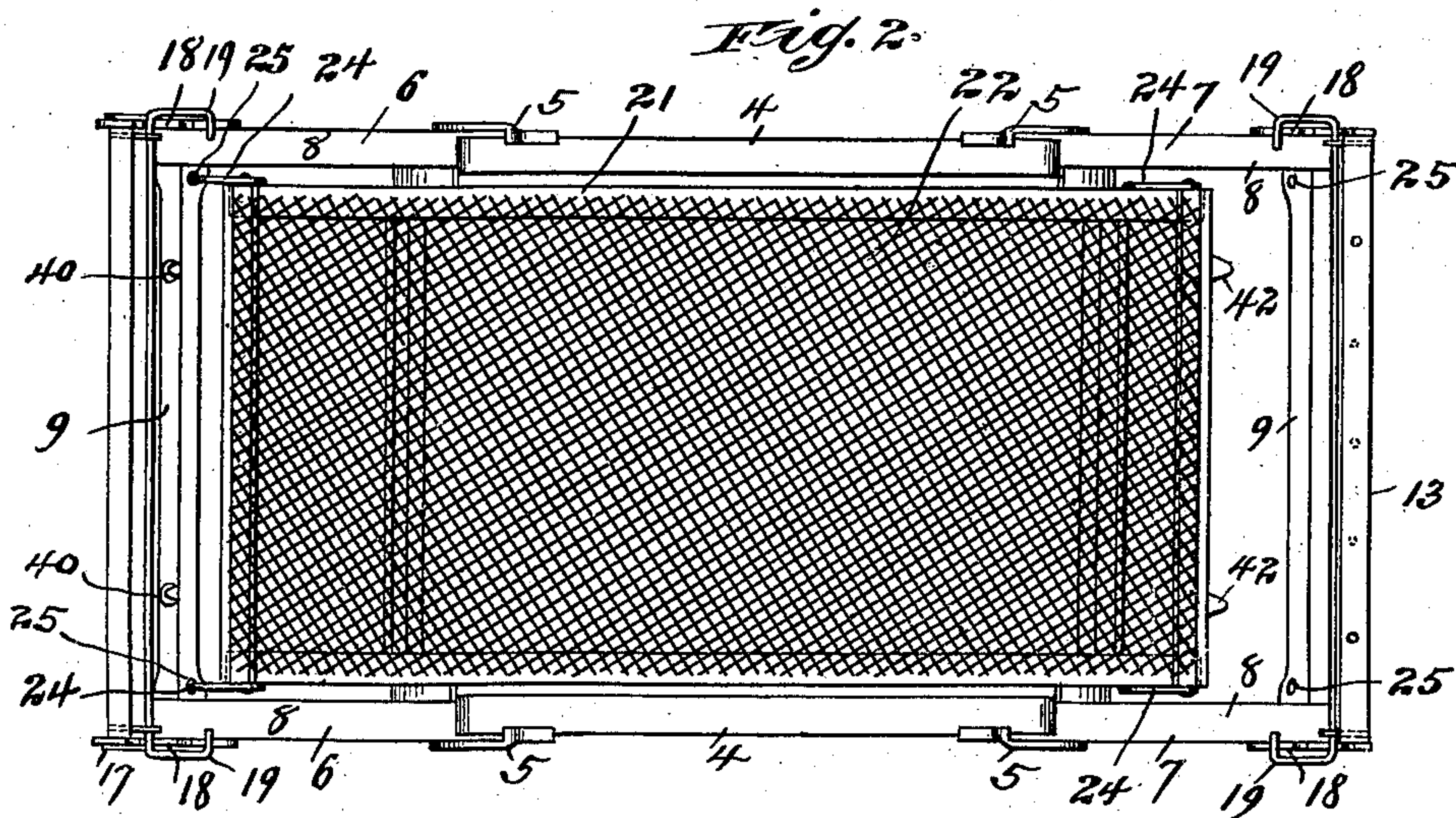
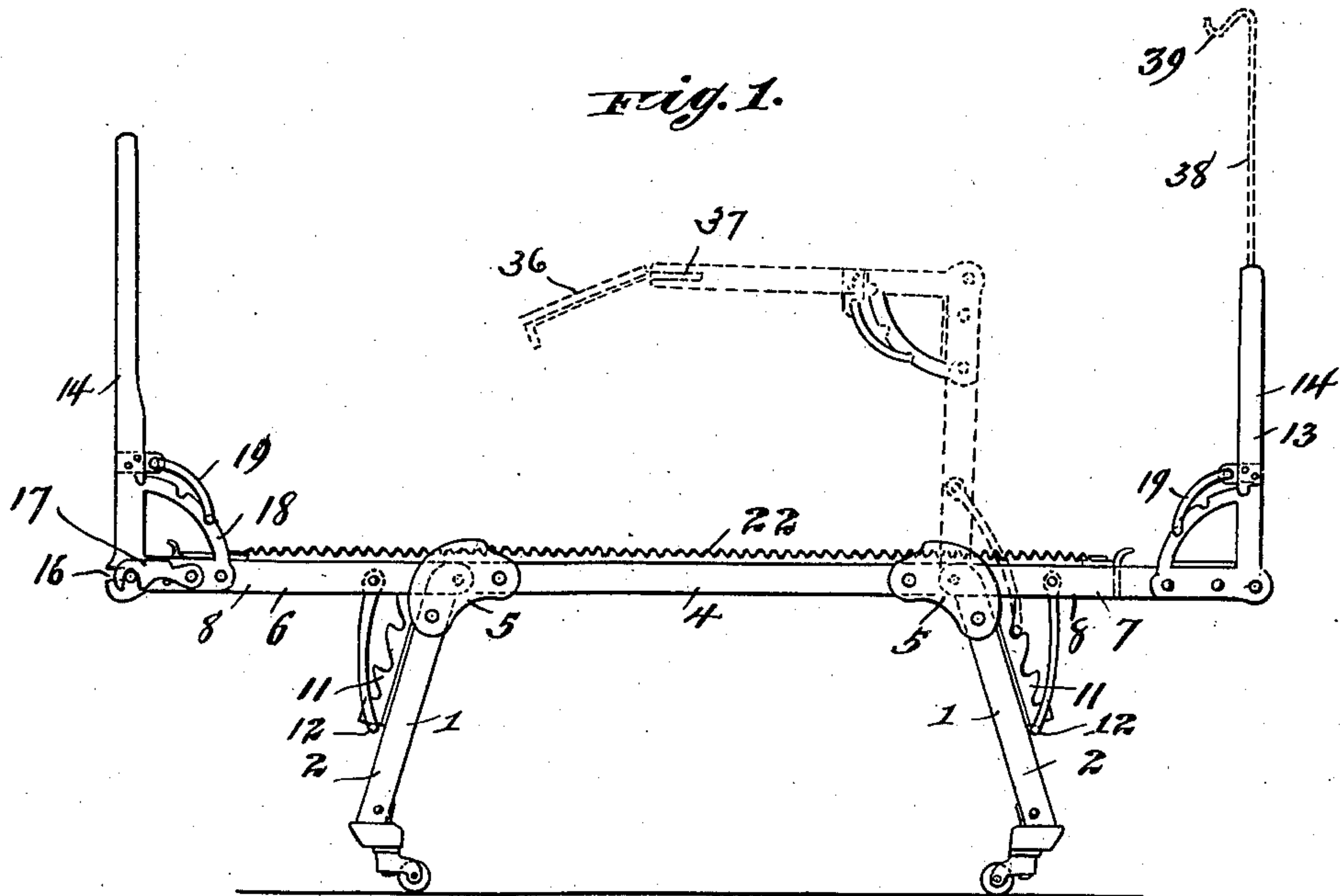
Patented Nov. 6, 1900.

N. CLEMENT.
INVALID BED.

(Application filed Jan. 25, 1900.)

(No Model.)

4 Sheets—Sheet 1.



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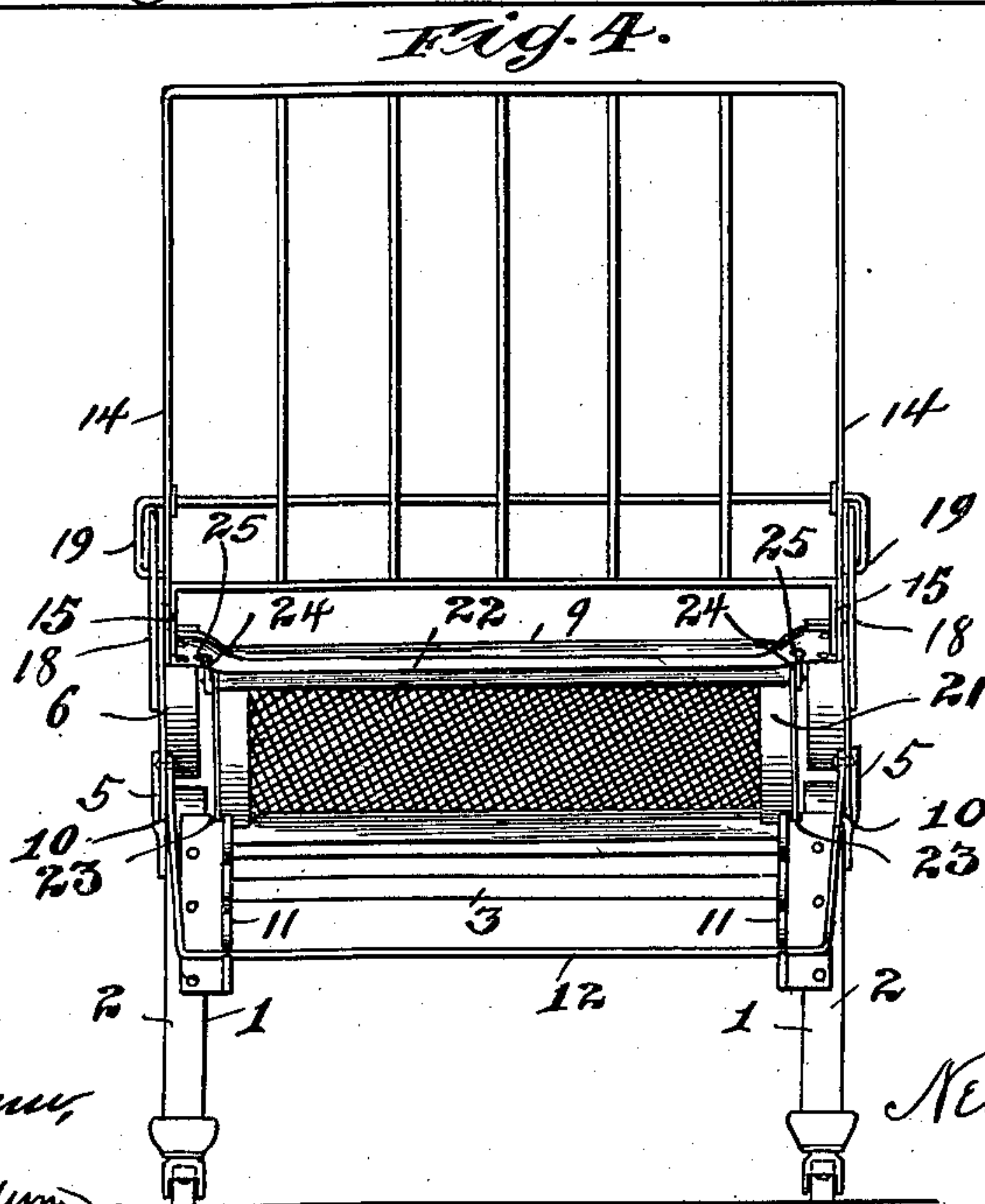
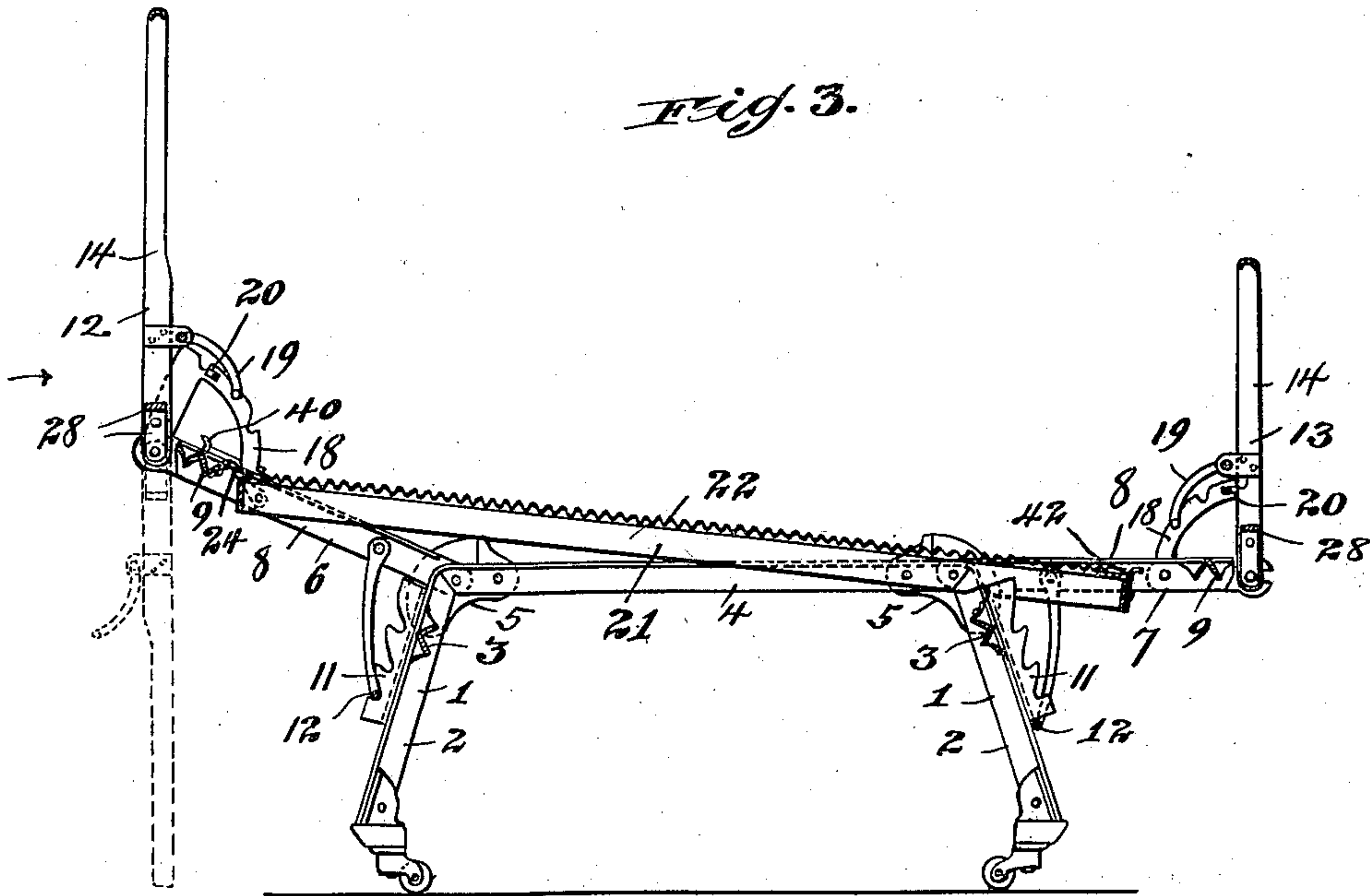
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4 Sheets—Sheet 2.



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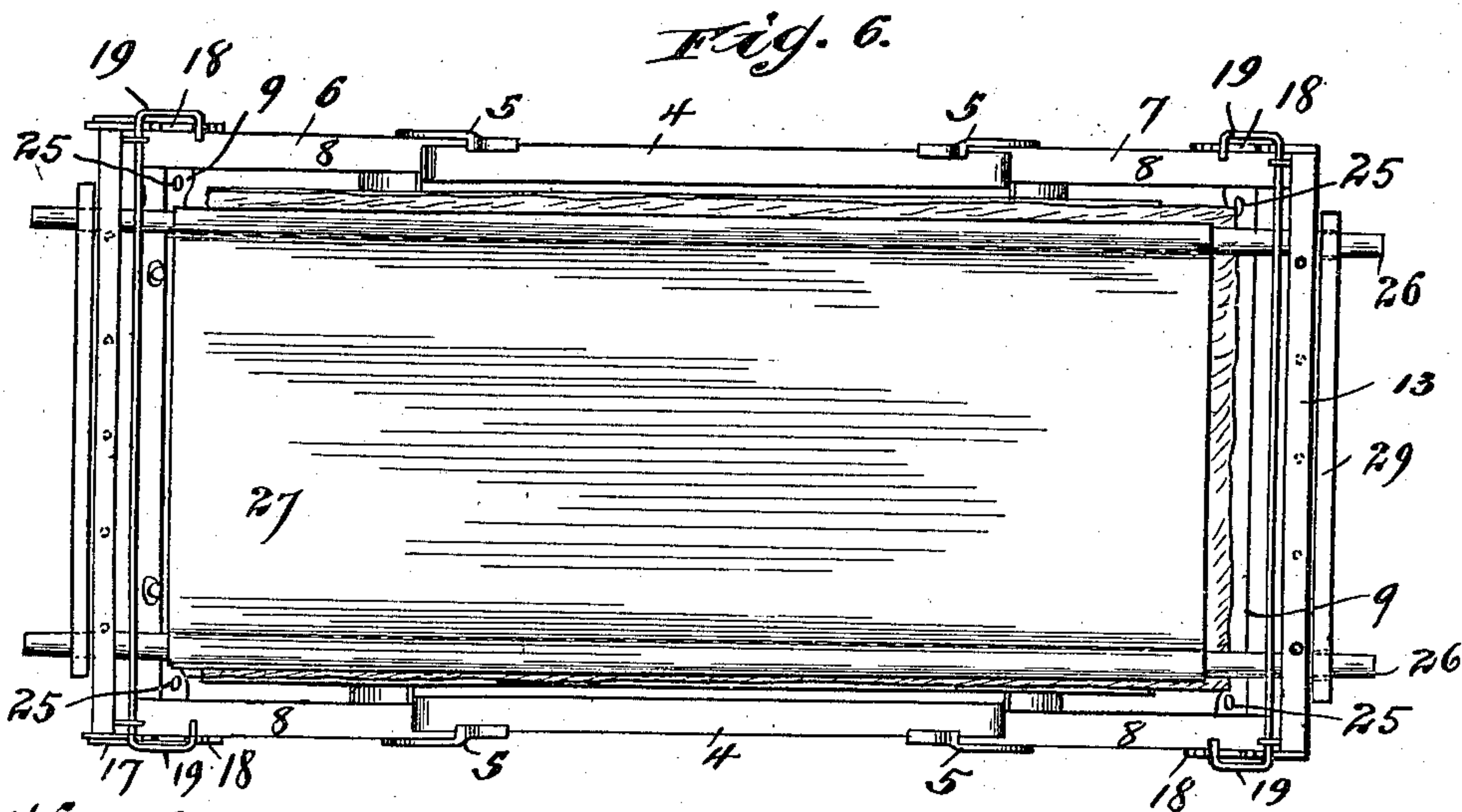
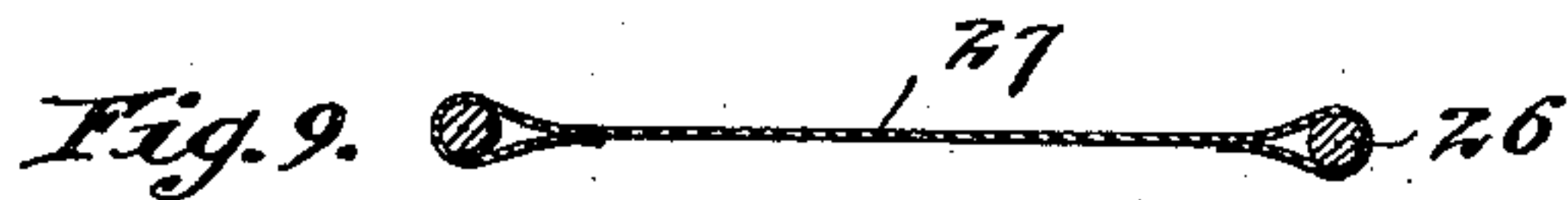
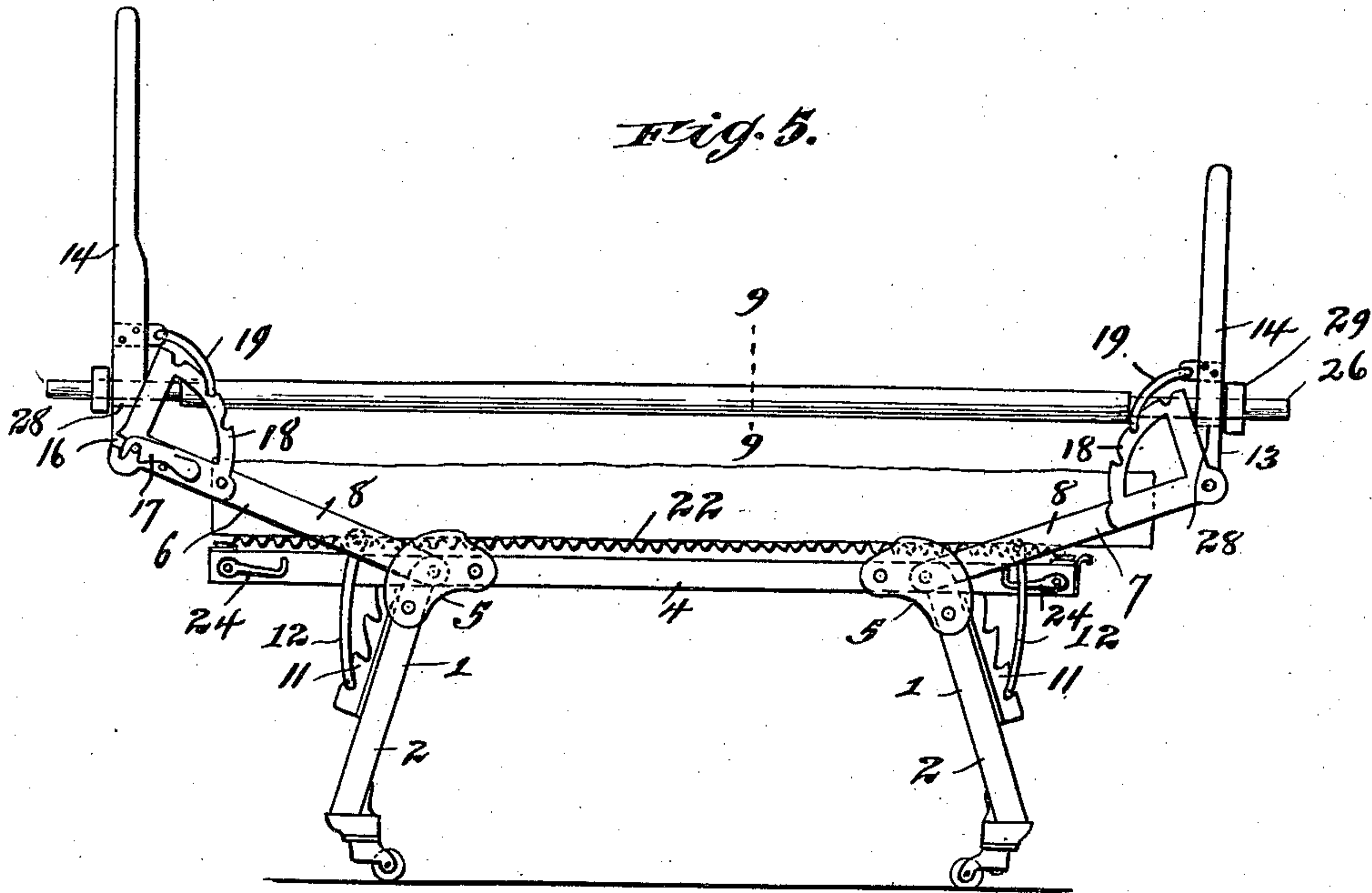
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4 Sheets—Sheet 3.



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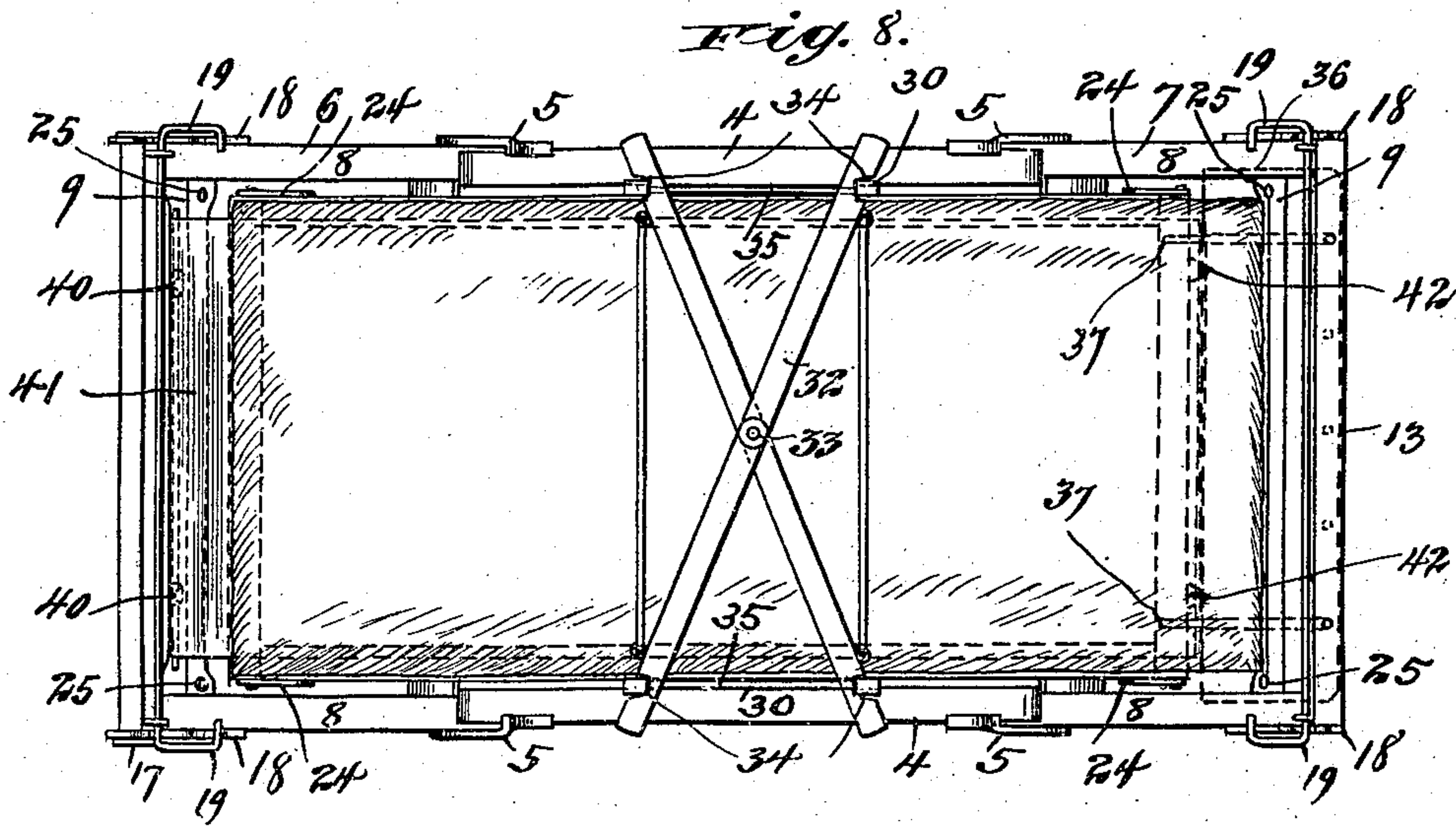
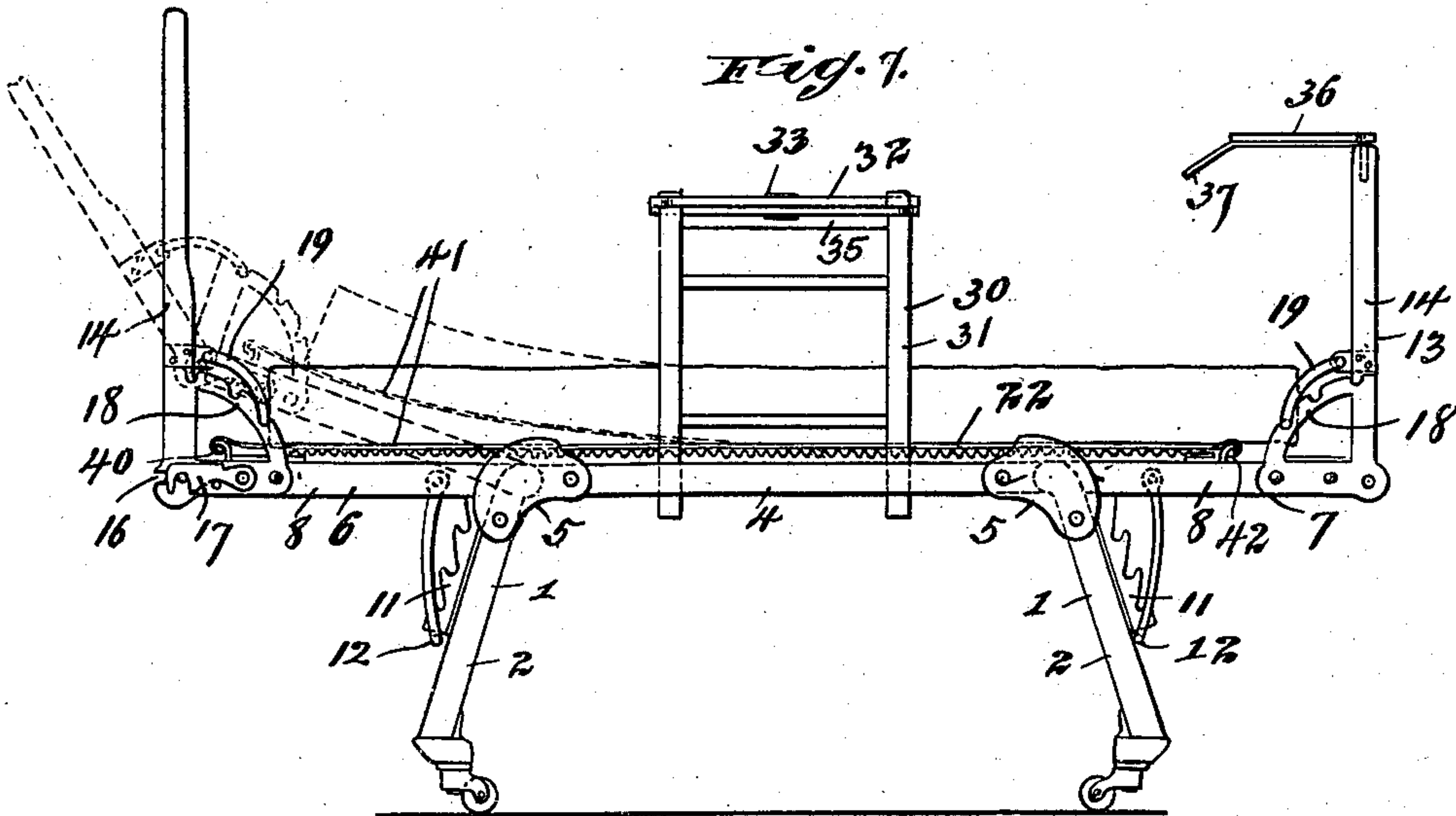
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

NELSON CLEMENT, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
MRS. M. H. GIBSON, OF SAME PLACE.

INVALID-BED.

SPECIFICATION forming part of Letters Patent No. 661,037, dated November 6, 1900.

Application filed January 25, 1900. Serial No. 2,713. (No model.)

To all whom it may concern:

Be it known that I, NELSON CLEMENT, of Chicago, Illinois, have invented certain new and useful Improvements in Invalid-Beds, of which the following is a specification.

This invention relates to improvements in invalids' beds and refers more specifically to a bed so constructed as to be capable of a great variety of adjustments to enable it to be so manipulated as to accommodate and facilitate the handling of invalids under all usual conditions and circumstances.

The object of the invention is to provide a simple, strong, and convenient structure of the character referred to; and the invention consists in the matters hereinafter described, and more particularly pointed out in the appended claims.

The invention may be readily understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a bedstead embodying my invention, the parts being adjusted into the position in which the bed will be most commonly used. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation similar to Fig. 1, showing one of the adjustable ends elevated slightly, so as to hold the mattress-frame in a slightly-inclined position. Fig. 4 is an end view of the bed adjusted as shown in Fig. 3 and looking toward the elevated end thereof. Fig. 5 is a side elevation of the bed, showing both adjustable ends elevated somewhat and a stretcher supported by the elevated end pieces, illustrating more particularly the manner in which an invalid may be lifted bodily above and free from the bedding. Fig. 6 is a plan view of the bed equipped and adjusted as shown in Fig. 5. Fig. 7 is a side elevation showing the bed restored to the position shown in Fig. 1, changed positions of certain of the parts being indicated in dotted lines and the bed being shown as equipped with an auxiliary bedding-support. Fig. 8 is a plan view of the parts shown in Fig. 7. Fig. 9 is a transverse sectional view of the stretcher, taken on line 9 9 of Fig. 5.

Referring to said drawings, 1 1 designate as a whole two leg-frames of the bedstead,

each comprising a pair of legs 2, suitably spaced apart and made rigid with each other by means of cross-bars 3, (see Fig. 3,) said legs and cross-bars being desirably, and as shown herein, constructed of angle-iron, as affording a suitable rigid structure with a minimum amount of metal.

4 4 designate side rails connecting the leg-frames and made rigid with the latter by means of corner-plates 5, which not only serve to hold the legs and side bars in proper angular relation to each other, but are extended upwardly above the side bars to form guide-plates, and are further provided with shoulders which serve as stops to hold certain parts of the frame in position, as will hereinafter more fully appear.

6 7 designate as a whole the adjustable extensions pivotally attached to the respective ends of the main bed-body and each comprising a pair of side bars 8, having their inner ends pivotally secured between the side plates 5 and the main bed-body (see Fig. 3) and made rigid with each other at their opposite ends by means of cross frame-pieces 9, extending between said side bars at points a short distance inwardly from their outer ends. Said adjustable extensions are adapted to be held or supported rigidly in horizontal position or in alinement with the main bed-frame by means of shoulders 10, conveniently formed upon the inner surfaces of the side plates 5, (see Fig. 4,) which engage the lower edges of the vertical flanges of the angle-iron bars of which the side bars of the adjustable extensions are formed. In order to hold said adjustable extensions in any desired position from a slightly upwardly inclined position to a vertical position, pairs of notched bars 11 are secured to each leg-frame at the outer sides thereof, which notched holding-bars are adapted to cooperate with supporting-bails 12, pivotally attached to the adjustable extensions at suitable distances from the pivotal axes of the latter, as indicated clearly in the several figures of the drawings, and adapted to engage said notches.

13 13 designate as a whole end frames, for convenience of description hereinafter designated "head" and "foot" pieces, respectively, each desirably consisting of a skeleton

frame the side bars 14 of which are extended downwardly some distance beyond the main body of the frame to form pivot-ears 15, which are pivotally engaged with the outer ends of the adjustable extensions of the respective ends of the bed.

As a convenient construction which enables the head or foot pieces to be removed or detached from the bed-frame at will the pivot-pins, whereby they are engaged with the extensions, are rigidly seated in the ears 15, one pivot-pin of each end frame being engaged with a corresponding aperture formed through the side bar 8, while the opposite pivot-pin is engaged with an open-ended slot or recess 16, formed in the opposite side rail 8, (see Fig. 1,) and is held therein by means of a latch-hook 17. Obviously when the latch-hook is lifted out of engagement of the pivot-pin the end frame may be swung outwardly at that end sufficiently to disengage it from the slot, whereupon its pivot-pin at the opposite side may be withdrawn from the aperture in the opposite side bar. In order that said end frames may be held adjustably at different angles with relation to the extension-frames, notched segment-pieces 18 are rigidly secured to each outer corner of said extension-frames to stand in vertical parallel planes, with which cooperate holding-bails 19, pivotally attached to the respective head and foot pieces in position to engage said notches. In order to hold said end frames positively against movement inwardly beyond a position at right angles to the end extensions, so as to preclude accidental falling of the end frames upon the invalid in case the bails should become disengaged from the notches of the segments, I provide shoulders or stops 20 upon the inner faces of the several segments 18, located in the paths of movement of the side bars of said end frames, as indicated most clearly in Fig. 3.

21 designates as a whole the mattress-frame or bed-support conveniently, and as shown herein, consisting simply of the usual rectangular frame having a suitable covering or bedding support—as, for example, a woven-wire fabric 22. The width of the mattress-frame is such as to enable it to fit between the side frame members of the bed and rest upon shoulders or notches 23, formed in the upper parts of the notched bars 11 (see Fig. 4) when the end extensions are located in horizontal position, while its length is somewhat less than the full length of the bed-top, so that either end of the mattress-frame may swing downwardly between the side bars of the adjustable extensions when the opposite end is elevated, the supporting notches or shoulders 23 serving in such case as fulcrum-points upon which the mattress-frame pivots. In order that the mattress-frame may be engaged with either one of the adjustable extensions, so as to be lifted up with the latter, it is provided at each of its corners with pivoted hooks 24, which are severally adapted to engage or hook into apertures 25 in the

cross-bars of the adjustable frames, the mattress-frame being illustrated with one of its ends thus engaged in Fig. 3.

As an auxiliary feature which may be used in conjunction with the mattress or not, as desired, I provide a flexible sheet of fabric 41, preferably canvas, of suitable size and shape to cover said mattress-frame and to extend at one end some distance beyond the same. At one end the mattress-frame is provided with a plurality of hooks 42, with which the end margin of said mattress-cover is adapted to be engaged, and upon the cross-bar 9 of the opposite or head end of the bed I provide similar hooks 40, with which the opposite end of the canvas may be engaged, said canvas being of such length as to be held taut when engaged with the hooks, as best indicated in Fig. 7. As a desirable construction for affording a ready means of engaging and disengaging the canvas I secure round rods or bars to the end margins thereof, which are of suitable size to properly engage said hooks and hold the canvas stretched therebetween.

As an auxiliary feature adapted for use in conjunction with the bed constructed as described I provide a stretcher of suitable length to extend from one end frame to the other and desirably comprising a pair of straight rods or bars 26, to which are removably attached the side margins of a flexible support 27, desirably a sheet of canvas somewhat narrower than the width of the bed-top and conveniently of a length approximately equal to that of the mattress-support. These stretcher-bars are adapted to rest at their ends upon the lower cross-bars 28 of the end frames and are shown as held separated from each other in such manner as to hold the stretcher fabric taut by means of cross-pieces 29, provided at their ends with apertures through which the ends of the stretcher-bars extend, the intention being that these end bars may be removed when it is desired to adjust the stretcher beneath the invalid or to collapse it for storage or otherwise.

As a further auxiliary feature I provide a removable bedding-support comprising a pair of rectangular end frames, (designated as a whole by the numeral 30,) the side frame-pieces 31 of which are adapted to fit snugly at their lower ends between the side rails of the bed-top and the mattress-frame and are provided with shoulders which overhang and engage the upper surfaces of the side rails to limit the distance to which they may be inserted downwardly between said parts. These end frames 30 are connected at their upper ends by means of a detachable and collapsible frame 32, desirably, and as herein shown, consisting of a pair of bars pivoted together centrally of their lengths, as indicated at 33, and each provided at each end with a notch 34, adapted to engage the respective corner-posts of the end frames when adjusted between said corner-posts, as indicated in Fig. 8,

the frame being supported by means of the uppermost cross-piece 35 of the end frames and held separated by means of elastic tapes 35'.

As a still further auxiliary feature I provide a detachable table 36, (see Figs. 1, 7, and 8,) consisting simply of a board provided at its under side with a pair of transversely-arranged bars or rods 37, rigidly connected with the board and extending at each end beyond the side margins of the latter at different angles with relation thereto. These projecting ends of the rods 37 are adapted to be inserted in corresponding apertures formed in the upper ends of the pivoted end frames of the bed, it being obvious that the angle at which the table stands may be adjusted at will by inserting either the one pair or the other of the rod ends and by adjusting the angle of the pivoted end frame to which the table attachment is applied.

38 designates a detachable rod or standard adapted to be inserted in an aperture in the upper edge of the footpiece, so as to stand vertically therein, and provided at its upper end with a gooseneck-hook 39, from which may be suspended a water-bag or syringe-bag, or it may be used for any other desired purpose to which it is adapted.

The operation and use of the bed constructed as described will probably be entirely obvious from the foregoing description, but some of the principal adjustments may be briefly referred to as follows: When it is desired to support either end of the bed in an inclined position, this may be done by hooking the mattress-frame fast at the desired end and thereafter lifting the hinged extension up and securing it at the desired height by means of the supporting-bail 12. Should it be desired to elevate the bedding-support at both ends, so as to retain the patient in a horizontal position, but at a higher level than the normal height of the bed, both end extensions may be elevated and secured in this position and both ends of the mattress-frame thereafter engaged with the cross-bars by means of the supporting-hooks. In case it becomes desirable to lift the invalid or patient bodily from the bed either for the purpose of changing or rearranging the bedding or otherwise this may be readily accomplished by removing one of the stretcher-bars from the stretcher fabric and inserting that side of the stretcher fabric beneath the patient while the bed-body is in its normal lowered position, thereafter returning the bar to place and passing the ends of both stretcher-bars out over the lower cross-bars of the end frames, whereupon either or both ends of the stretcher may be elevated by simply lifting up the pivoted end extension or extensions and securing them at the desired height. Should it be desirable that the end frames be temporarily thrown out of the way—as, for example, in case of performing a surgical operation or the like—this may be most readily accomplished either by removing the end frames bodily in the man-

ner hereinbefore described or by simply disengaging the holding-bails thereof and swinging said end frames outwardly and downwardly, as indicated in the dotted lines at the left-hand end of Fig. 3. By reason of the pivoted connection at the foot-end extension the latter may obviously be lifted up into vertical position, while the end frame is retained locked at right angles thereto, in which position of the parts the table attachment may be applied, as indicated in dotted lines in Fig. 1, to form an inclined reading-table, which will then be located in a convenient position for an occupant sitting up in the bed with his back supported by the head-piece. In case it be desired to use the table attachment for supporting medicines or the like it may be applied to the footpiece in the manner indicated in dotted lines in Fig. 7, in which position it stands horizontal. In case it be desired to elevate one end of the bedding without changing the position of the mattress-frame I elevate the head-end extension, the cross-bar of which is provided with the hooks 40, into the position indicated in dotted lines in Fig. 7 and attach one end of the canvas cover 41 thereto, while the opposite end is attached to the similar hooks 42 upon the foot end of the mattress-frame, thus holding the bedding elevated at the head end of the bed, but yieldingly or hammock fashion and much more comfortably than would be the case were the rigid mattress-frame inclined at the same angle.

The clothing-supporting-frame attachment may be variously employed, it being noted that this frame is adjustable longitudinally of the bed throughout the length of the side rails thereof. For example, this attachment may be used to support the coverings at the central portion of the bed entirely free from the patient, while the ends of the blankets are permitted to drop down, so as to sufficiently protect the patient, or this frame may be used to form a table from which an invalid may eat.

The foregoing are a few only of the different adjustments and different uses to which the bed is adapted.

While I have herein shown and described what I deem to be a preferred embodiment of my invention, yet it will be understood that the invention may be otherwise embodied, and I do not therefore wish to be limited to the details of construction shown herein except as made the subject of specific claims.

I claim as my invention—

1. In an invalid-bed, the combination of a main rigid bed-frame, provided with supporting-legs, an extension pivotally connected to one end thereof, means for holding said extension at various angles with relation to said main frame, and an end frame pivotally engaged with the adjustable extension.

2. In an invalid-bed, the combination of a main rigid bed-frame, provided with supporting-legs, an extension pivotally connected

to one end thereof, means for holding said extension at various angles with relation to said main frame, and an end frame detachably engaged with said adjustable extension.

5 3. In an invalid-bed, the combination of a main rigid bed-frame, provided with supporting-legs, an extension pivotally connected to one end thereof, means for locking said extension at various angles with relation to
10 said main frame, an end frame pivotally engaged with said adjustable extension, and means for locking said end frame rigid with the extension in various angles with relation thereto.

15 4. In an invalid-bed, the combination of a main bed-frame, provided with supporting-legs, a series of notches arranged at intervals apart upon one of said supporting-legs, an extension pivotally connected to one end of
20 the main frame, and a holding link or bail pivotally engaged with the extension and adapted to cooperate with the notches upon the supporting-leg, to lock said extension at various positions with relation to the main
25 bed-frame.

5. In an invalid-bed, the combination of a main rigid bed-frame, provided with supporting-legs, a series of notches upon one of said legs arranged at vertically-separated intervals, an extension pivotally connected to
30 one end of said main frame, a supporting link or bail pivotally connected with said extension and adapted to cooperate with said notches, an end frame pivotally engaged with the swinging end of the adjustable extension,
35 a notched segment rigidly secured to one of said last-mentioned members, and a cooperating detent mounted upon the opposite member, and adapted to cooperate with the
40 notched segment, to hold the end frame in various angles of adjustment with relation to the extension.

6. In an invalid-bed, the combination of a main bed-frame, provided with supporting-
45 legs, an extension pivotally connected to one end thereof, means for holding said extension at various angles with relation to said main frame, a mattress-frame adapted to fit and rest upon said main frame, and means for positively, but detachably, engaging one end of
50 said mattress-frame with the extension whereby it will be lifted or lowered with the latter.

7. In an invalid-bed, the combination of a main rigid bed-frame, provided with supporting-
55 ing-legs, an adjustable extension pivotally connected at each end thereof, means for holding said adjustable extensions at various angles with relation to said main frame, a mattress-frame adapted to extend from one
60 adjustable extension to the other, and means for positively, but detachably, engaging each end of said mattress-frame with the corresponding adjustable extensions, whereby the mattress may be supported bodily above the
65 main bed-frame by means of the adjustable extensions.

8. In an invalid-bed, the combination of a

main rigid bed-frame, provided with supporting-legs, an extension pivotally connected to one end thereof, means for holding said ex- 70
tension at various angles with relation to said main bed-frame, a mattress-frame adapted to rest upon said bed-frame, provided at one end with a plurality of holding devices, a flexible sheet adapted to cover said mattress- 75
frame, provided with means for engaging it with said holding devices upon the end of the mattress-frame, and holding devices upon the adjustable extension at the end of the mattress-frame remote from the end of the 80
latter engaged with the flexible sheet, adapted for engagement with the opposite end of said flexible sheet, whereby said sheet may be suspended free from the mattress-frame at one end in hammock fashion. 85

9. The combination with an invalid-bed, comprising a rigid bed-frame, provided with supporting-legs, and a pivotally-connected frame at each end thereof, each of said pivotally-connected frames comprising a hori- 90
zontal cross-bar, and means for locking said pivotally-connected frames in various angles with relation to the main frame, a stretcher comprising a pair of supporting-bars adapted to extend between and rest upon said cross- 95
bars, a flexible fabric extending between said stretcher-bars, and means for holding the stretcher-bars separated laterally, so as to hold the stretcher fabric distended, comprising cross-bars detachably connected with the 100
ends of the stretcher-bars at each end of the latter.

10. The combination with an invalid-bed, comprising a main rigid bed-frame, provided with supporting-legs, and a mattress-frame 105
adapted to rest upon said main frame, of a detachable clothing-support comprising a pair of end frames, each provided with legs or extensions adapted to be inserted between the mattress-frame and bed-frame to hold 110
the frame in vertical position, and a horizontal cross-frame extending between said end frames and detachably engaged with the latter.

11. The combination with an invalid-bed, 115
comprising a main rigid bed-frame, provided with supporting-legs, and a mattress-frame adapted to rest upon said main frame, of a detachable clothing-support comprising a pair of end frames, each provided with legs 120
or extensions adapted to be inserted between the mattress-frame and bed-frame to hold the frame in vertical position, and a horizontal cross-frame extending between said end frames and detachably engaged with the lat- 125
ter, comprising a pair of bars pivotally connected to each other at points intermediate of their lengths, and provided with notches at their ends adapted for engagement with the end frames, substantially as described. 130

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Witnesses:

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