No. 787,162. PATENTED APR. 11, 1905.

W. C. FEELY.

INVALID BEDSTEAD.

APPLICATION FILED NOV. 19, 1903.

4 SHEETS—SHEET 1.

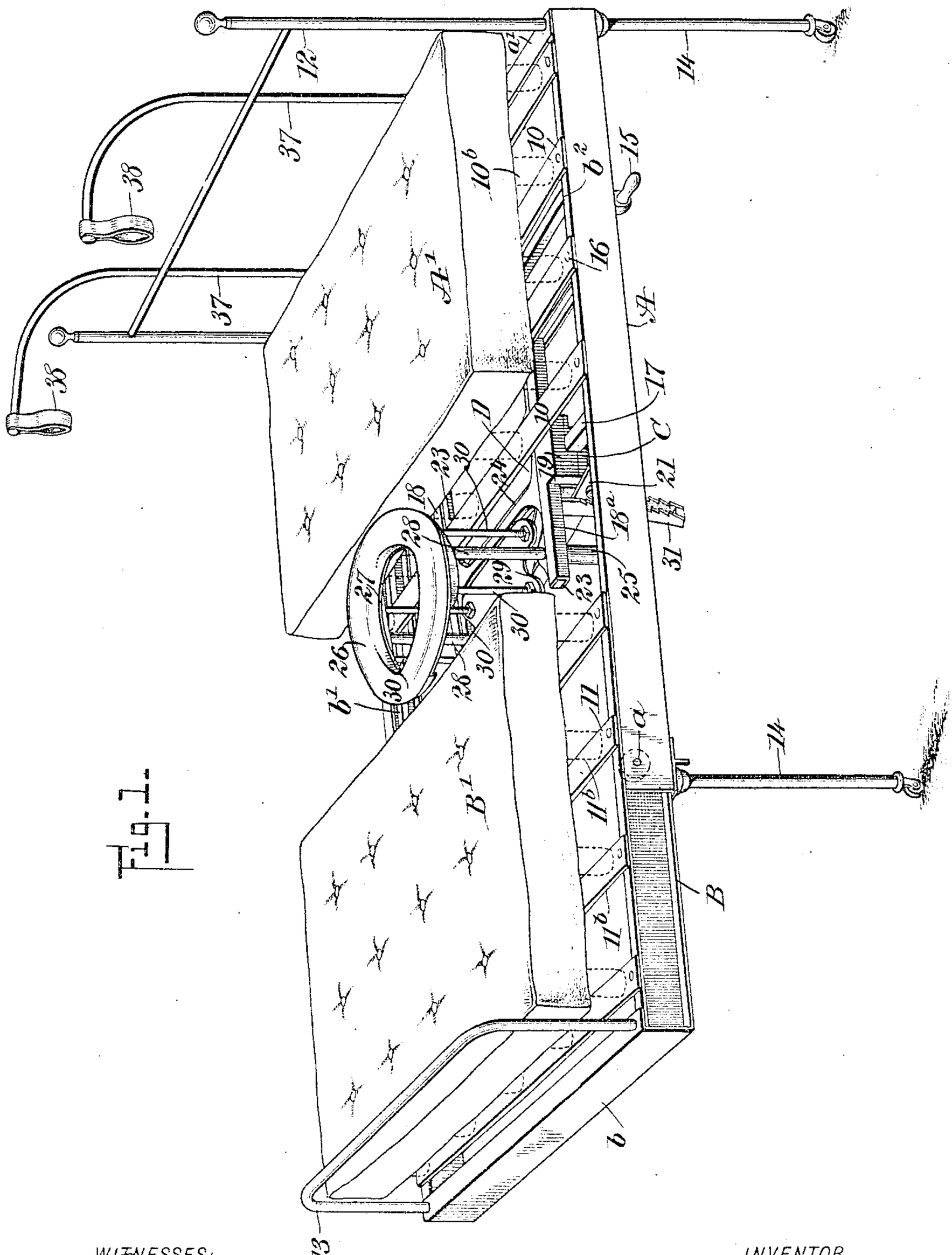

Fig. 1.

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4 SHEETS—SHEET 2.

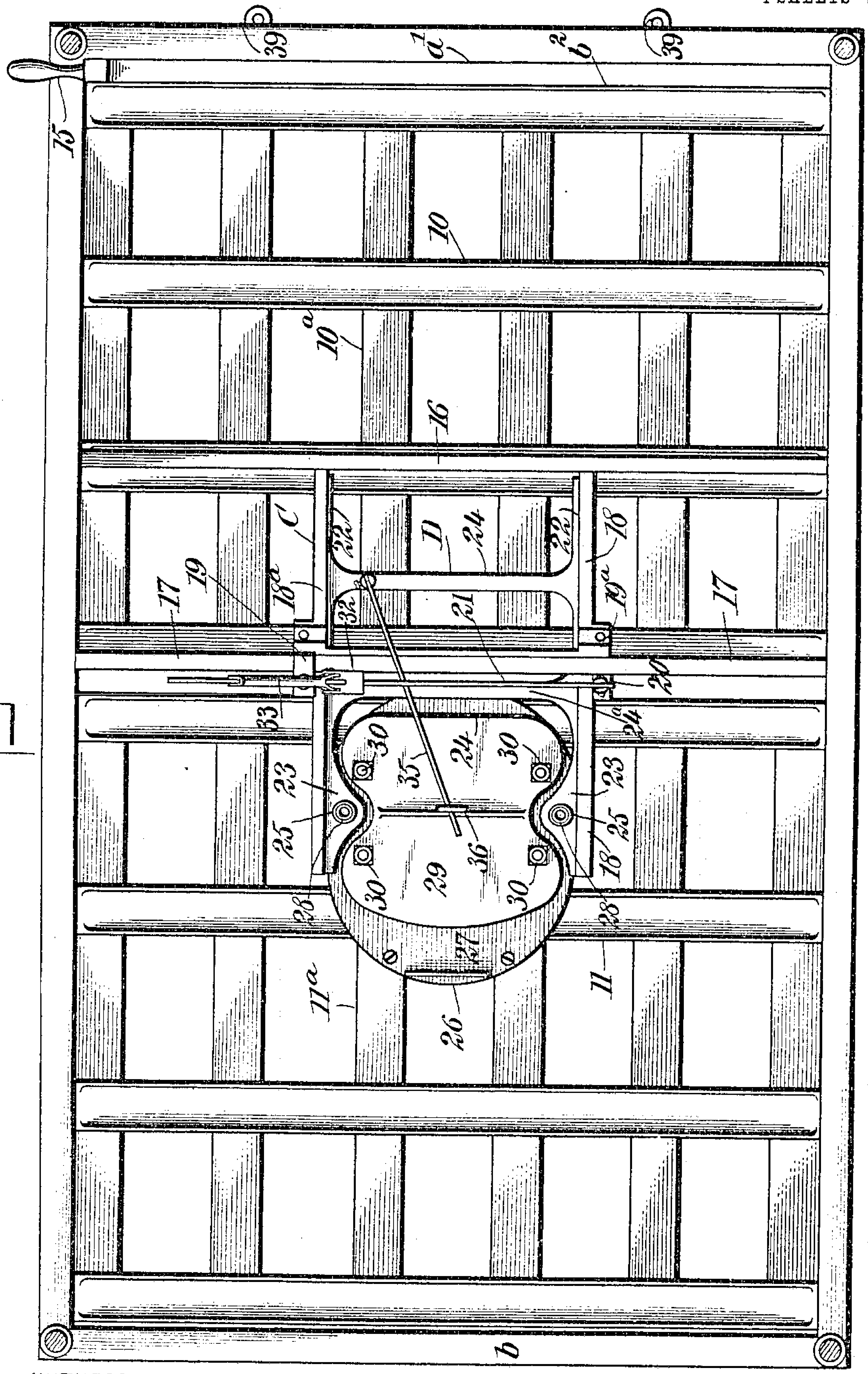

Fig. 2.

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4 SHEETS—SHEET 3.

Fig. 3.

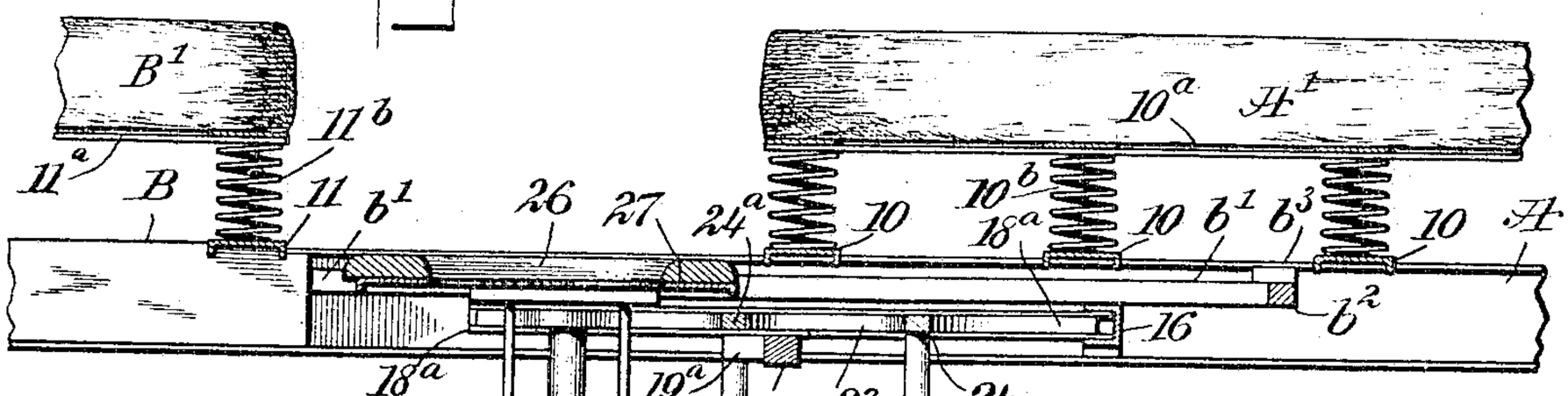


Fig. 4.

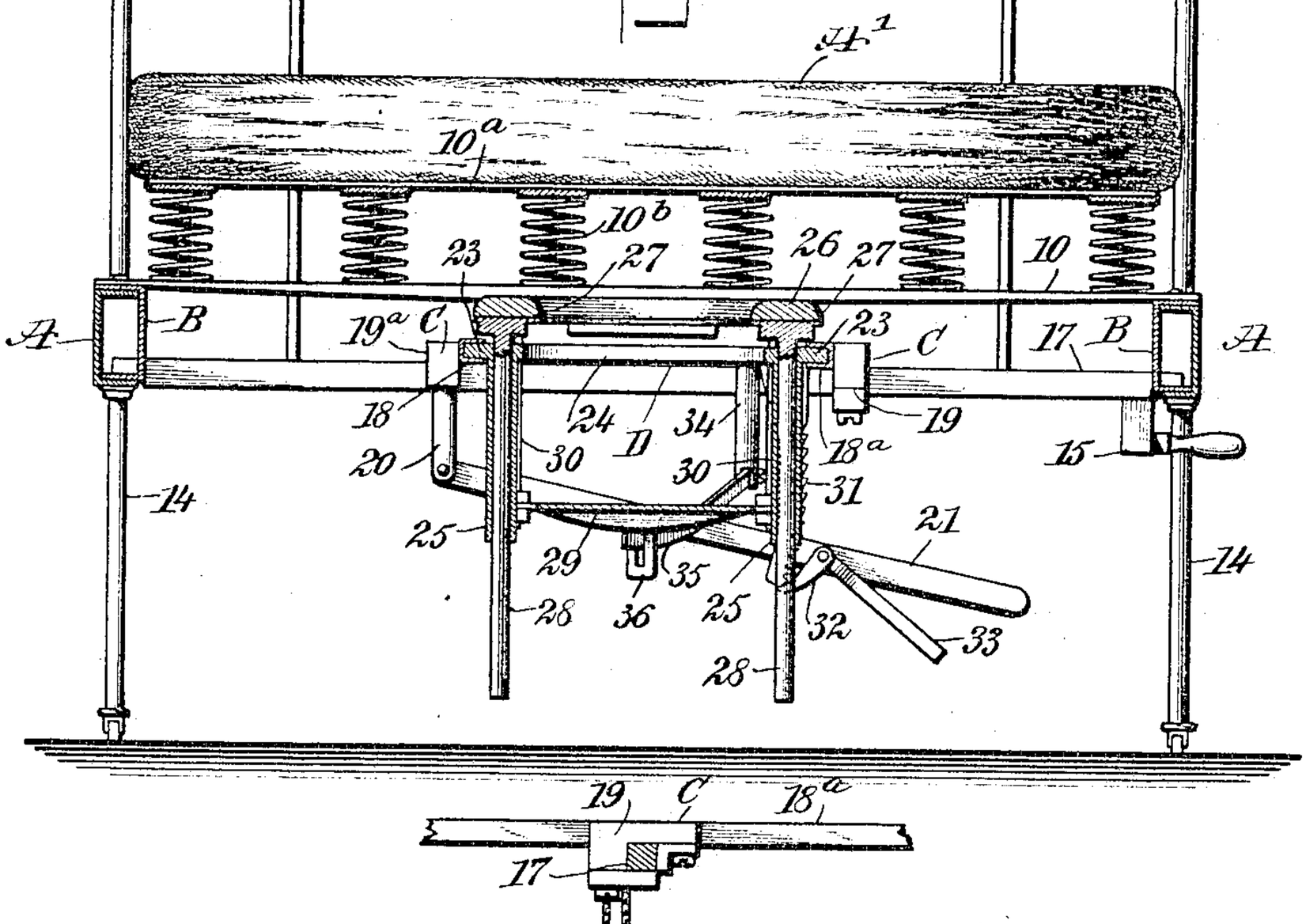
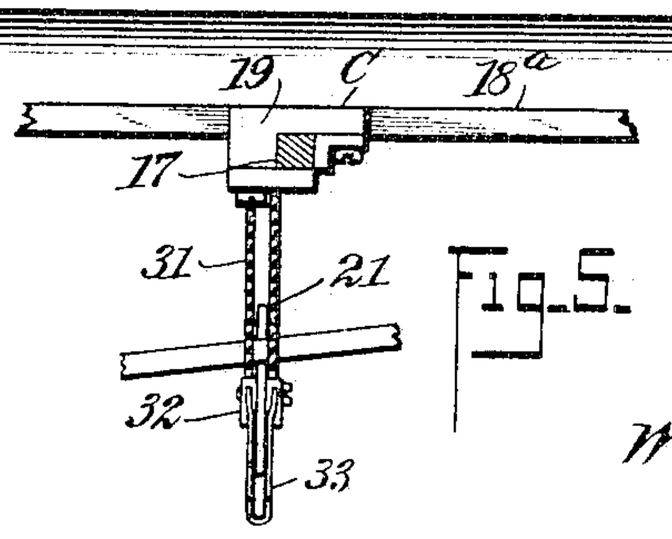


Fig. 5.



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4 SHEETS—SHEET 4.

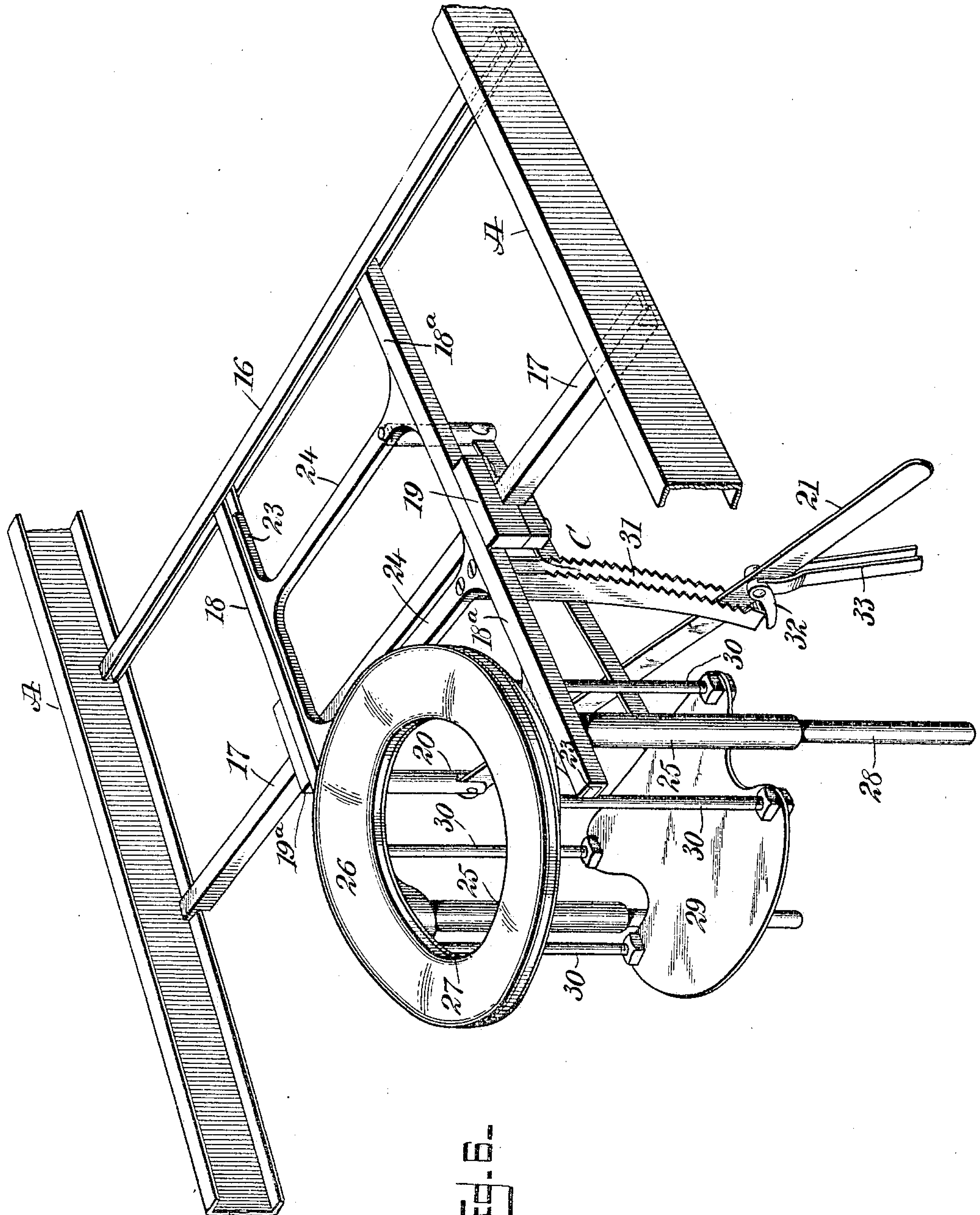

FIG. 6.

WITNESSES:

A. R. Appleman

[signature]

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No. 787,162. Patented April 11, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM C. FEELY, OF NEW YORK, N. Y.

INVALID-BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 787,162, dated April 11, 1905.

Application filed November 19, 1903. Serial No. 181,776.

To all whom it may concern:

Be it known that I, WILLIAM C. FEELY, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Invalid-Bedstead, of which the following is a full, clear, and exact description.

The purpose of my invention is to provide an adjustable bedstead and a commode practically constituting a portion of the bed and means whereby the commode may be adjusted up and down or in direction of either side of the bed, all of the said adjustments being capable of accomplishment by the manipulation of a single lever or operating member.

A further purpose of the invention is to provide a bed constructed in movable sections capable of adjustment to and from each other, the commode being so mounted upon the bedstead that when the sections of the bed are closed the top of the commode will be carried sufficiently downward to offer no obstruction to the action of the sections of the bedstead or to the mattress or springs that may be placed on the bedstead.

Another purpose of the invention is to accomplish the above-named movements in an expeditious and convenient manner and through simple, durable, and economic mechanism and also to provide a means for moving the head and foot sections of the bed, for example, to an open or a closed position, which means can be operated by an attendant or by a patient while in the bed.

A further purpose of the invention is to provide the bedstead with devices which will enable the patient to raise and lower himself for the purpose of changing his position in the bed and to construct the bed and its attachments in a light yet durable manner and so that the several parts can be operated with the least possible discomfort to the patient and with accuracy and despatch.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved bed in an open position and illustrates the commode attachment elevated and likewise in perspective view. Fig. 2 is a bottom plan view of the bedstead closed and the commode in position below the springs or mattress of the bed. Fig. 3 is a longitudinal vertical section through the head and foot portions of the bedstead with the mattress and springs carried thereby separated to expose the commode attachment, which latter appears in vertical section and in its lower or normal position. Fig. 4 is a transverse section through the bedstead and commode attachment, the latter being in its lower or normal position shown in Fig. 3. Fig. 5 is a detail view of a portion of the commode-adjusting devices, and Fig. 6 is a perspective view of the commode attachment and the portion of the bed-frame to which it is applied.

The body of the bed is made in two sections A and B, telescopically connected or mounted to have end movement one in direction of the other; but the section A is adapted as a stationary section and the section B, which is the foot-section, as a movable section. These sections of the body of the bed may be constructed in any suitable or approved manner. Usually they are made, as illustrated in Fig. 4, of vertically-disposed and oppositely-directed channel-irons, corresponding channel-irons having movement one on the other.

The sides of the main body-section A are connected by cross-bars 10 of any suitable formation, and springs 10^b extend upward from the said cross-bars 10, as is best shown in Figs. 3 and 4, to an engagement with a preferably lattice structure 10^a, on which a section A′ of the mattress is located, which section of the mattress is much shorter than the length of the said main section A of the body of the bedstead.

The sides of the foot-section B of the bedstead are connected by cross-bars 11, on which springs 11^b are mounted, connected at their top by an upper lattice structure 11^a, adapted to support the second section B′ of the mattress, as is illustrated in Figs. 1, 3, and

4. Under this construction of the body of the bedstead a space is formed between the inner edges of the mattress-sections when the foot-section of the bedstead is drawn outward, as is shown in Fig. 1, and when one section of the bedstead is closed within the other the opposing inner edges of the mattress-sections engage.

In order that the two sections of the body of the bed may be moved with the least possible amount of friction, I provide friction-rollers *a* in any desired number, as is indicated by dotted lines in Fig. 1. The main body-section A is suitably connected at its head end with what may be termed a "head-bar" *a'*, and a corresponding foot-bar *b* connects the sides of the foot-section B at the outer ends of the said sides, as is shown in Fig. 1.

The sides of the foot-section B of the body of the bedstead are of less length than the sides of the main section A; but guide-bars *b'* are attached to the said sides of the foot-section B of the body of the bedstead, and these guide-bars are connected at their inner ends by a cross or lever bar b^2, as is shown in Figs. 1, 2, and 3. Blocks b^3 are preferably secured to the upper face of the lever or inner end bar b^2 to engage with the under faces of the upper flanged members of the sides of the main section A of the body, so as to prevent the foot-section B of the bedstead from dropping down when it has been drawn out to the position shown in Fig. 1 and as is illustrated in Fig. 3.

A crank-arm 15 is located at one end of the inner end bar b^2 of the foot-section B of the bedstead, and an attendant grasping the said crank-arm 15 and pushing the said crank-arm to or from the head portion of the bedstead will close or open the sections of the bedstead, as may be desired. The bedstead is provided with the usual headboard 12 of any suitable type and a footboard 13 of any approved construction. The main section A of the body of the bedstead is provided at its corners with legs 14, usually four in number; but a greater number of legs may be employed, and, in fact, a supporting-leg may be used in connection with the foot or sliding section B of the bedstead, if so desired.

Adjacent to the head of the main section A of the bedstead a channeled bar 16 is transversely located adapted as a guide-bar, and a preferably solid guide-bar 17 is located between the foot portion of the main section A of the bedstead and the aforesaid guide-bar 16, as is illustrated in Figs. 1 and 3 and as is shown in Fig. 4, the guide-bar 17 being located at that portion of the main section A of the bedstead which is exposed when the foot-section B is drawn out, as is clearly shown in Fig. 1.

In connection with the parts described I employ a sliding frame C, which is adapted to have movement on the guide-bar 17 and in the channeled guide-bar 16, the said frame C being capable of movement in direction of either side of the bedstead. This sliding frame C consists of parallel horizontally-located channel-irons 18 and 18[a], the inner ends of which channel-irons enter the channeled guide-bar 16, and the said channel-irons 18 and 18[a], forming the sides of the sliding frame C, bear between their ends on the guide-bar 17, as is shown in Figs. 1, 3, and 4.

A bracket 19 is secured to one of the channel-irons of the said sliding frame, preferably the channel-iron 18[a], and this bracket, as is shown in Fig. 5, is sectionally constructed to receive and have movement upon the guide-bar 17, the sections of the bracket being secured together by screws or their equivalents, and a second bracket 19[a] is secured to the opposing side channel-iron 18 of the sliding frame C. The said bracket 19[a] is likewise loosely and slidably mounted on the said guide-bar 17.

A post 20 extends down from the bracket 19[a], as is best shown in Fig. 4, and one end of a lever 21 is pivoted to the said post 20 in such manner that the lever may have vertical movement and may be moved more or less sidewise in direction of the foot or the head of the bedstead for a purpose to be hereinafter described. When the sliding frame C is to be moved in direction of one or the other side of the bedstead, the lever 21 is either drawn upon or forced in direction of its ends, thus compelling the said frame C to move on the guide-bar 17.

A carriage D is adapted to have movement in the sliding frame C in direction of the head and the foot of the bed. This carriage consists of side bars 23, adapted for free movement in the channel-irons 18 and 18[a], constituting the sides of the sliding frame C, and these side bars 23 are connected, for example, by means of two cross-bars 24 and 24[a], as is particularly shown in Fig. 2.

Tubes 25, usually two in number, are carried downward from the side bars of the carriage D, and these tubes either extend up through the said side bars of the carriage or connect with openings in the said side bars. The carriage D supports a ring-seat 26, preferably reinforced at its bottom by a metal band 27, and rods 28 are connected with this seat or with the strengthening or stay band of the seat, and the said rods extend down through the tubes 25, above referred to. A platform 29 is connected with the said reinforcing-band 27 or the seat 26 through the medium of bolts 30, and the platform 29 is placed a suitable distance below the seat and below the top of the carriage when the carriage is in closest relation thereto, as is shown in Fig. 4, and this platform is adapted to receive and support a vessel. All of the parts supporting and imparting movement to the

platform, including the platform, are included in the word "commode," the operating-lever 21 being excepted.

A loop-rack 31 is carried down from the side of the carriage D, having a double row of upwardly-extending teeth. The lever 21 is loosely passed between the members of this rack, and at the handle end of the lever a pawl 32 is pivoted, adapted to engage with both rows of teeth, which pawl is controlled by a grip member 33, preferably grooved to receive the lower edge of the handle-section of the lever 21. A post 34 extends downward from the carriage D, preferably from the cross-bar nearest the head of the bedstead, as is shown in Figs. 3 and 4, and a lifting-bar 35 is pivoted at one end to the post 34, the other end of the said lifting-bar being loosely carried through a stirrup 36, extending down from the platform 29. Therefore the lifting-bar 35 crosses the lever 21, and upon the release of the pawl 32 from the rack 31 the seat 26 and connected platform 29 may be raised and lowered, as desired, and the seat may be adjusted transversely of the bed to suit the position of the patient by moving the sliding or traveling frame C, which is accomplished by pulling or pushing on the lever 21 in direction of its length. The said seat may be moved to or from the head or the foot of the bed by moving the lever 21 sidewise or in direction of either end of the bed, as the said lever 21 passes through the rack 31 connected with the carriage, compelling the carriage to move on the sliding frame C according to the direction in which the lever 21 may be forced.

In the adjustment of the commode and seat all of the movements described are brought about by the manipulation of one lever 21, and in the operation of the seat it is first raised to proper position and locked in such position by the pawl 32 and is afterward moved to the right or to the left or forward or back, as occasion may require; but I desire it to be understood that I do not confine myself to the above-described order of adjustment.

In order that the patient may in a convenient manner assist and control the movements of the body in changing from one position to another and that in the event of an operation or a dressing the patient may have something positive to be grasped by the hand, I provide pivot-supports and handholds at the head of the bed. This device consists of rods 37 in the form of davits, pivoted to the head-section of the bed at their lower ends and extending at their upper end above the headboard in direction of the foot of the bed, and hand-straps 38, which are pivoted to the said davit-rods, as is shown in Fig. 1, the sockets 39 for the said davit-rods being clearly shown in Fig. 2.

The device for moving one section of the bed with reference to the other may consist of a lever and link connections between the lever and the section of the bed to be moved, and I furthermore desire it to be understood that the seat 26 and the vessel-support connected therewith may be raised and lowered by means of cables and pulleys suitably placed, as is evident from the construction now shown in Fig. 4. I further desire it to be understood that any approved means may be employed for locking the sections of the bed in closed position.

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

1. A bedstead, a commode mounted upon the bedstead for vertical movement, movement in direction of the sides of the bedstead and movement in direction of the ends of the bedstead, and an operating-lever in operative connection with the commode to bring about all of said movements, as set forth.

2. A bedstead, a commode mounted upon the bedstead for vertical movement, movement in direction of the sides of the bedstead and movement in direction of the ends of the bedstead, an operating-lever in operative connection with the commode to bring about all of the said movements, and a locking device operating in conjunction with the said operating-lever for the commode, as described.

3. A support, a frame mounted for movement on the support, a carriage mounted for movement in the frame at right angles to the movement of the latter, and a support carrying a seat and vessel arranged above the other, the support being mounted for vertical movement in the said carriage, as described.

4. A support, a frame mounted for movement on the support, a carriage mounted for movement in the frame at an angle to the movement of the latter, a seat and a vessel arranged one above the other, the support being mounted for vertical movement in the said carriage, a lever connected with the frame whereby to move it on its support, and connections between the said lever, the carriage, the seat and vessel support, whereby the one lever serves to impart movement to all of the said parts, as described.

5. A bedstead, a guide carried thereby, a frame mounted to move on the guide, a carriage mounted for movement in the frame, the movement of the carriage being at an angle to the movement of the frame, a combined seat and vessel support mounted for movement in the carriage, an operating member for imparting movement to all of the said parts, and a locking device carried partly by the operating member and partly by the carriage, for the purposes described.

6. In bedsteads, a head and a foot section, one section having movement in the other, a frame mounted for movement on one of the sections in direction of its sides, a carriage mounted in the frame to slide to and from the ends of the said section, and a support carrying a seat and vessel arranged one above the

other the support having vertical sliding movement in the said carriage, the said seat being exposed when the sections of the bed are separated, as set forth.

7. In bedsteads, a head and a foot section, one section having movement in the other, a frame mounted for movement in one of the sections in direction of its sides, a carriage mounted in the frame for movement to and from the ends of the said section, a seat and vessel support having vertical movement in the said carriage, the said seat being exposed when the sections of the bed are separated, an operating device arranged to control the movements of the frame, the carriage and the seat and vessel support, and a locking device for holding the seat in adjusted position, as described.

8. In invalid-bedsteads, a main section, and a foot-section adapted for movement in the main section to and from the same, supports for the main section, a support for the inner end of the movable section, and a commode attachment carried by the main section, adjustable vertically, sidewise and in direction of the ends of the bed, which commode attachment is exposed when the movable section of the bed is drawn partially out from the main section, as described.

9. A commode, a support for the same, a single lever for operating the commode, having end movement, vertical movement and movement sidewise, imparting to the commode, as desired, a movement sidewise of the support, a movement in direction of the length of the support, and a vertical movement, and a locking device for the lever.

10. A bedstead, the frame of which is constructed in two telescopic sections, one stationary and the other movable, supports for the stationary section, an operating-lever for the movable section, a commode carried by the stationary section of the bedstead-frame, covered by the movable section when closed and exposed when said movable section is open, and devices for imparting vertical movement to the commode and side movements in different directions, as specified.

11. In an invalid-bed, a bedstead, a support attached to the bedstead, a frame movable on the support, a carriage mounted for movement in the frame at right angles thereto, and a seat supported by the carriage and having independent vertical movement thereon, as described.

12. In an invalid-bed, a bedstead, a support attached to the bedstead, a frame movable on the support, a carriage mounted for movement in the frame, a seat supported by the carriage and having independent movement thereon, and a single lever arranged to accomplish all of the said movements, as set forth.

13. In an invalid-bedstead, a frame mounted to slide transversely in the bedstead, a carriage mounted to slide longitudinally in the frame, a commode-support mounted to slide vertically in the carriage, a pivoted lever carried by the sliding frame and engaging a member of the carriage, a loop-rack through which the lever passes, and a pawl carried by the lever for engaging the rack, as set forth.

14. In an invalid-bedstead, a frame mounted to slide transversely in the bedstead, a carriage mounted to slide longitudinally in the frame, a commode-support mounted to slide vertically in the carriage, a lifting-bar pivoted to the carriage and loosely engaging the commode-support, a lever pivoted to the frame and engaging the lifting-bar, a loop-rack through which the lever passes, and a pawl carried by the lever and engaging the rack, as set forth.

15. In an invalid-bedstead, a transversely and longitudinally sliding support, a lever for operating said support, a seat and vessel support mounted on the first-named support, and means engaging the seat and vessel support and operated by the said lever, as set forth.

16. In an invalid-bedstead, a transversely-sliding frame, a carriage mounted to slide longitudinally in the frame, a commode-support mounted to slide vertically in the carriage, a pivoted lever loosely engaging the commode-support, a lever for operating the carriage and frame and with which said lever engages, and means for locking the lever in position, as set forth.

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

WILLIAM C. FEELY.

Witnesses:
J. FRED. ACKER,
JNO. M. RITTER.