No. 791,295. PATENTED MAY 30, 1905.

W. C. SENNETT.

INVALID BED.

APPLICATION FILED JULY 21, 1904.

3 SHEETS—SHEET 1.

Fig. 1.

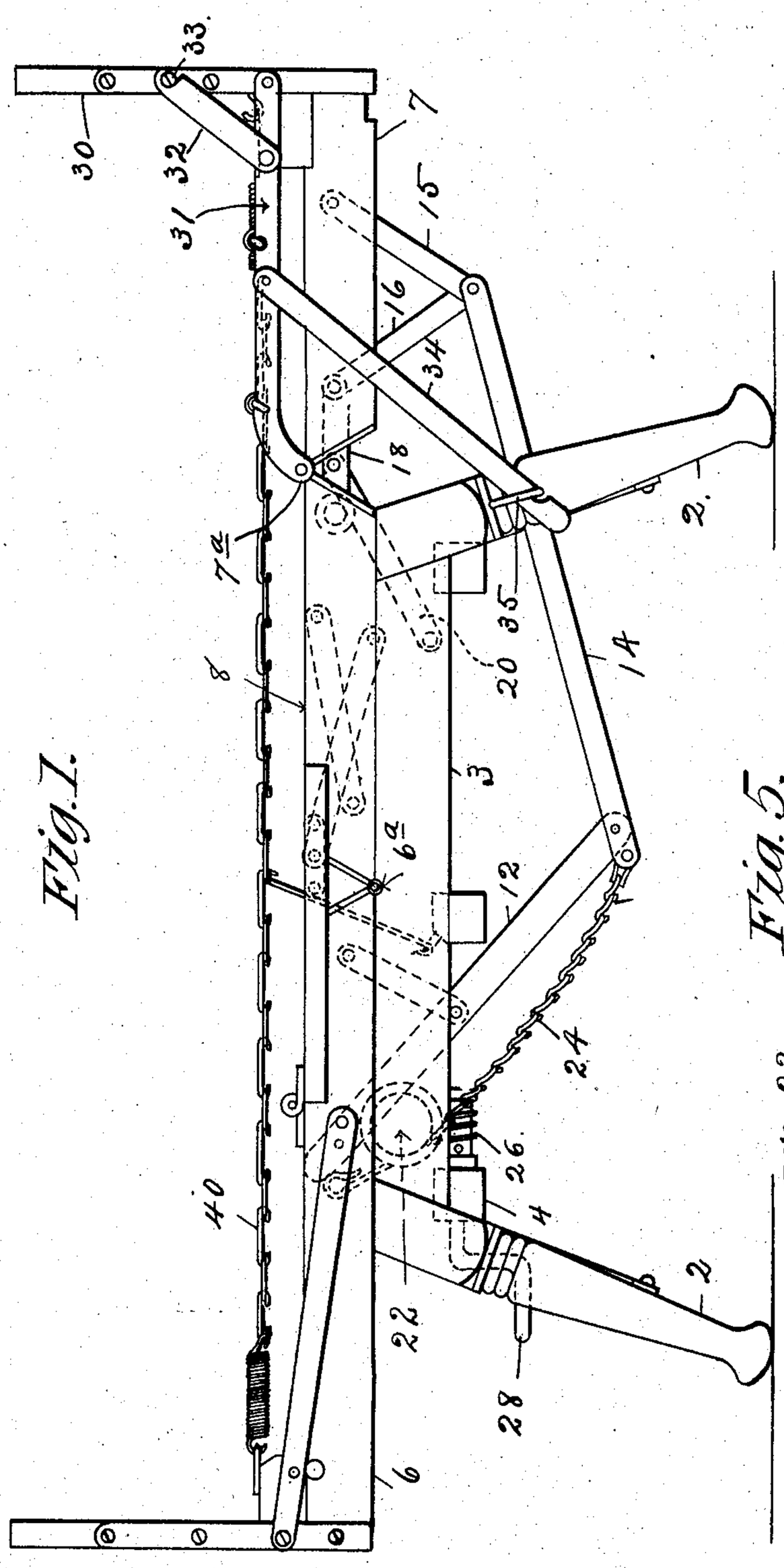
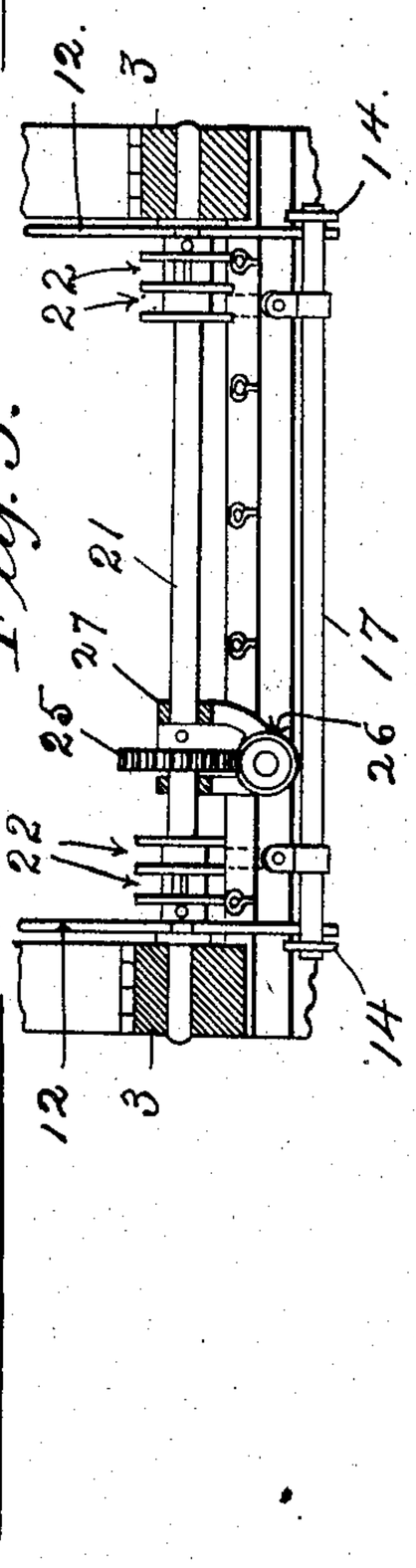


Fig. 5.



Witnesses:
J. D. Garfield
A. J. Clemons

Inventor
Walter C. Sennett.
By Chapin & Co
Attorneys

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3 SHEETS—SHEET 2.

Fig. 2.

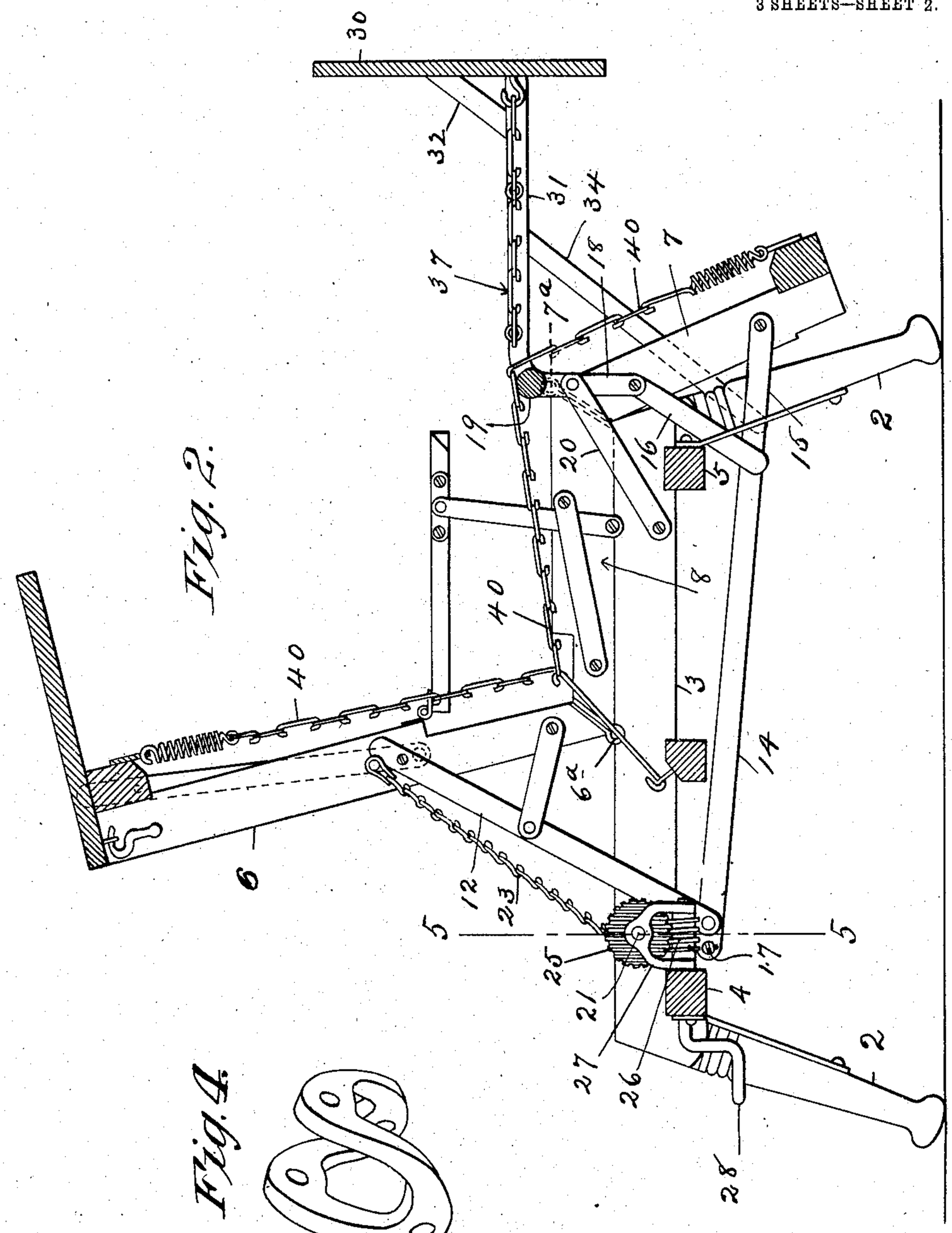

Fig. 4.

Witnesses:

J. D. Canfield

H. J. Clemons

Inventor

Walter C. Sennett.

by Chapin & Co.

Attorneys.

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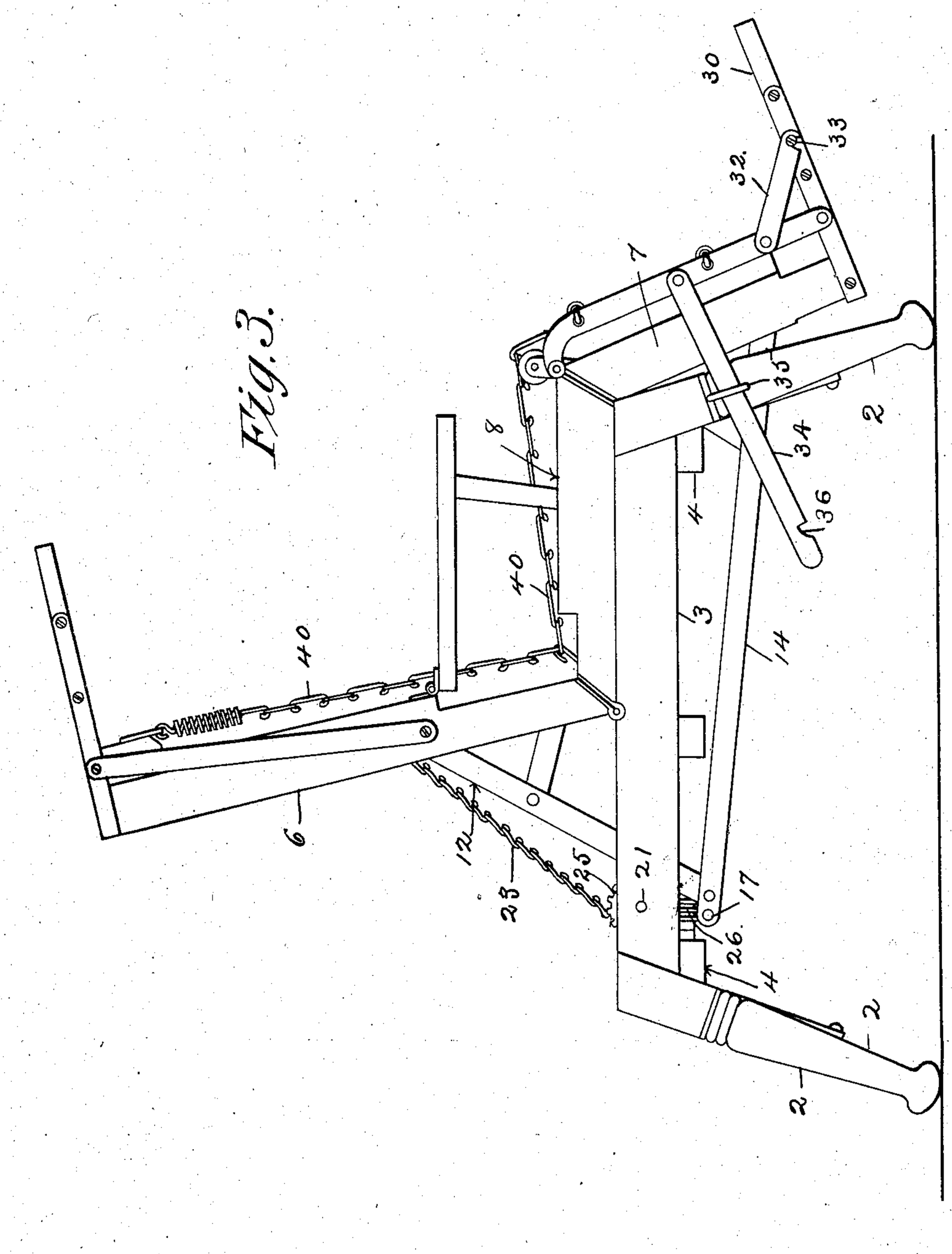
3 SHEETS—SHEET 3.

Fig. 3.



Witnesses:
S. D. Garfield
H. D. Clemons

Inventor:
Walter C Sennett.
by Chapin & Co
Attorneys

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UNITED STATES PATENT OFFICE.

WALTER C. SENNETT, OF PORTLAND, MAINE, ASSIGNOR TO ALBERT WEAVER, OF SPRINGFIELD, MASSACHUSETTS.

INVALID-BED.

SPECIFICATION forming part of Letters Patent No. 791,295, dated May 30, 1905.

Application filed July 21, 1904. Serial No. 217,524.

To all whom it may concern:

Be it known that I, WALTER C. SENNETT, a citizen of the United States of America, residing at Portland, in the county of Cumberland and State of Maine, have invented new and useful Improvements in Invalid-Beds, of which the following is a specification.

This invention relates to invalid-beds, and has for its object to provide certain improvements in the construction shown and described in Letters Patent of the United States issued to me on May 5, 1903, under number 727,467, for invalid-beds, the improved constructions comprising the employment of a supplemental foot-section capable of adjustment independently of the main foot-section, (which latter is adjustable simultaneously with the back-section,) whereby the supplemental foot-section may remain in a horizontal position after the main foot-section has been swung downwardly, all without interfering in any manner whatsoever with the adjustment of the foot-section.

Another object of the invention is to provide improved means to adjust simultaneously the head and foot sections and to provide for locking the same in various positions without employing a supplementary locking device.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, and shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings forming part of this application, Figure 1 is a side elevation of the device of the present invention when adjusted in position for use as a bed or couch. Fig. 2 is a longitudinal sectional view of the device adjusted for use as a chair with the supplemental foot-section supported in a horizontal position. Fig. 3 is a side elevation of the device adjusted for use as a chair with the supplemental foot-section swung downwardly alongside of the main foot-section with the headboard adjusted for use as a table. Fig. 4 is a perspective view of a special casting to receive a worm and its operating crank-handle. Fig. 5 is a detail cross-sectional view on the line 5 5, Fig. 2.

It has been thought best to clearly illustrate the invention to show a chair construction which in its main features embodies the construction shown and described in my said prior patent, and to the end that the relation of the present improvement to said prior construction may be clearly brought out a brief description of the general features thereof is deemed requisite. Referring, therefore, to the accompanying drawings, the structure as a whole rests on a substantially rectangular frame, comprising the legs 2, the side bars 3, and the cross-braces 4 and 5, located, respectively, at the rear and forward ends of the supporting-frame, all the parts being suitably put together to constitute a rigid support for the movable head or back section 6 and the movable main foot-section 7, which are hinged, respectively, at 6^a and 7^a to a central seat-section 8, permanently secured to the supporting-frame, said head-section, foot-section, and seat-section (when the device is in the form of a bed) constituting continuous side rails for the latter, as shown in Fig. 1. As described in my said prior patent, means are provided to simultaneously move the head-section and the main foot-section in opposite directions, and to this end said sections are connected through the medium of levers 12, extending from about midway of each side of the back-section downwardly to a point below the level of the supporting-frame and there being pivotally connected to two other parallel levers, 14, extending forwardly of the frame and being pivotally connected near the main foot-section to two links 15 and 16, which extend to the main foot-section 7 and are connected therewith near the opposite ends thereof. The rear ends of these levers 14 are connected together by a transverse bar 17, whose relation to these levers is clearly shown in Fig. 5.

A swinging arm or link 18 has one end

pivotally supported upon the pivot connection of the upper end of the link 16, and on the upper end of the link 18 is supported a transverse rail 19, there being a brace 20 extending from the intermediate portions of the links 18 to the inner face of the adjacent side bar of the supporting-frame, all of which is clearly shown in Fig. 2.

The counter-shaft 21 is journaled on the opposite sides of the rectangular supporting-frame and in the rear of the seat portion of the chair carries near its opposite end fixed drums or pulleys 22. A flexible connection 23, as a chain, has its upper end connected to the inner face of the adjacent side bar of the back-section, with its lower end attached to one of the drums or pulleys 22, while another chain, 24, has its upper end fixed to the adjacent drum or pulley, being wound around the latter in an opposite direction to that of the chain 23, the lower end of the second chain 24 being connected to the transverse bar 17, which connects the ends of the oppositely-located forwardly-extending levers 14.

Upon the counter-shaft 21 is a gear 25, and beneath the latter and in mesh therewith is a worm 26, which is mounted in a bracket or hanger 27, hung from the counter-shaft, there being a suitable operating crank-handle 28 piercing the rear cross-bar 4 of the frame and connected to the worm-gear for convenience in manually rotating the latter.

With the device adjusted for use as a bed, as shown in Fig. 1, to adjust it for use as a chair the crank-handle 28 is manipulated to rotate the counter-shaft 21 in a direction to draw up the pendent chains 24, thereby elevating the levers 12 and drawing rearwardly upon the horizontal levers 14, which will result in swinging the back-section 6 upwardly and the foot-section 7 downwardly until they have reached their limit, with the back in an upright or substantially upright position. A reverse rotation of the crank-handle will wind the upwardly-extending chains 23 upon the counter-shaft to draw downwardly the back-section and to force upwardly the foot-section, so as to return the device to its horizontal position for use as a bed.

It will here be noted that the worm-gear constitutes a lock in itself for supporting the back and foot sections at any inclination without employing any supplemental locking means, which is an important feature of this invention, as it materially simplifies the controlling means for adjusting the positions of the back and foot sections.

In some instances when the device is adjusted for use as a chair it may be desirable to support the legs of the occupant in a substantially horizontal position, and to meet this requirement a supplemental foot-section has been provided separate from the main foot-section 7 and independently operative relative thereto, and it comprises a footboard 30, which is supported at opposite ends upon arms 31, the latter having their rear ends inclined downwardly and pivotally supported upon the pintles of the hinges which connect the main foot-sections to the supporting-frame at 7^a. The footboard is normally held at substantially right angles to the arms 31 by means of the braces 32, pivotally carried by the arm and terminating at their outer ends in hooks, each of which is designed to engage a projection 33, carried by the adjacent edge of the footboard. Each arm 31 is supported in a horizontal position by means of a prop or brace 34, pivoted to the intermediate portion of the arm, with its rear portion working through a guide or keeper 35, and provided with a seat 36 in its edge to engage the lower end of the guide or keeper and support the supplementary foot-section in a horizontal position. By disengaging the props 34 from the guides or keepers the supplemental foot-section may be swung downwardly against the main foot-section, as indicated in Fig. 2.

The use of a supplemental foot-section necessarily requires provision of a separate mattress-support or mattress-section therefor, and to that end a mattress-section 37 is connected to the arm 31 and to the footboard and is entirely independent of the main mattress-section, which is applied to the chair as described in my said prior patent and is illustrated in the present drawings, being numbered 40.

It is evident that the supplementary section may remain stationary when the head and back sections are being adjusted without in any way interfering with the main mattress-section and the supplemental foot-section may be adjusted independently of the main foot-section.

It will of course be understood that any form of a mattress or cushion may be used in connection with this device, although none is shown in the drawings.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, the combination with a stationary base-frame having a seat thereon, and simultaneously-foldable back and foot sections hinged thereto, of a supplemental foot-section hinged to the frame and capable of being folded against the main foot-section, and means to support the supplemental foot-section in substantial alinement with the seat when the main foot-section has been folded downwardly.

2. In a device of the class described, the combination with a stationary base-frame having a seat portion and simultaneously-foldable back and foot sections, of a supplemental foot-section hinged to the frame and capable of being folded downwardly against the main foot-section, and props pivotally carried by the supplemental foot-section and engag-

ing the base-frame to support the foot-section in substantial alinement with the seat.

3. In a device of the class described, the combination with a stationary base-frame having a seat portion and simultaneously-foldable back and foot sections, of a supplemental foot-section hinged to the frame and capable of being folded downwardly against the main foot-section, props pivotally carried by the supplemental foot-section, and keepers carried by the base-frame and slidably receiving the props to support the supplemental foot-section in substantial alinement with the seat.

4. In a device of the class described, the combination with a stationary base-frame having a seat portion and simultaneously-foldable back and foot sections, of a supplemental foot-section hinged to the frame and capable of being folded downwardly against the main foot-section, keeper-loops carried by the frame, and props pivotally carried by the supplemental section with their free end portions slidable through the respective keeper-loops and provided with notches to receive portions of the keepers to support the supplemental foot-section in substantial alinement with the seat.

5. In a device of the class described, the combination with a stationary base-frame having simultaneously-foldable back and foot sections, and a flexible mattress member connected at opposite ends to the back and foot sections and intermediately to the base-frame, the intermediate portion of the mattress constituting a seat, and a supplemental foot-section comprising a frame hinged to the stationary base and capable of being folded downwardly against the main foot-section, a mattress-section carried by the supplemental foot-section independently of the main mattress-section, and means to support the supplemental foot-section in substantial alinement with the seat.

6. In a device of the class described, the combination with a stationary base-frame having simultaneously-foldable back and foot sections, and a main mattress-section connected to the back and foot sections and intermediately to the base-frame, the intermediate portion of the mattress-section forming a seat, of a supplemental foot-section comprising a frame having its sides pivotally supported upon the pintles of the hinges of the main foot-section, a mattress-section carried by the frame of the supplemental foot-section independently of the main mattress-section, and props pivotally carried by the supplemental foot-section and having a detachable engagement with the stationary base-frame to support the supplemental foot-section in substantial alinement with the seat.

7. In a device of the class described, the combination with a stationary supporting-frame including side bars, cross-bars, and leg-standards, of back and foot sections hinged thereto, connecting means extending between the back and foot sections for simultaneously moving the same in opposite directions, a counter-shaft journaled upon the opposite sides of the base-frame in rear of the back-section, flexible connections engaged respectively with the back-section and the connecting means between the back and foot sections, said flexible connections being wound in opposite directions upon the shaft, a gear carried by the shaft, a drive-shaft intermediately journaled upon one of the cross-bars of the frame and provided at its outer end with a crank-handle and at its inner end with a worm in mesh with the gear upon the shaft, and a hanger pendent from the counter-shaft and forming a bearing for the inner end of the driven shaft.

WALTER C. SENNETT.

Witnesses:
CHARLOTTE R. DUFFETT,
BENJAMIN THOMPSON.