

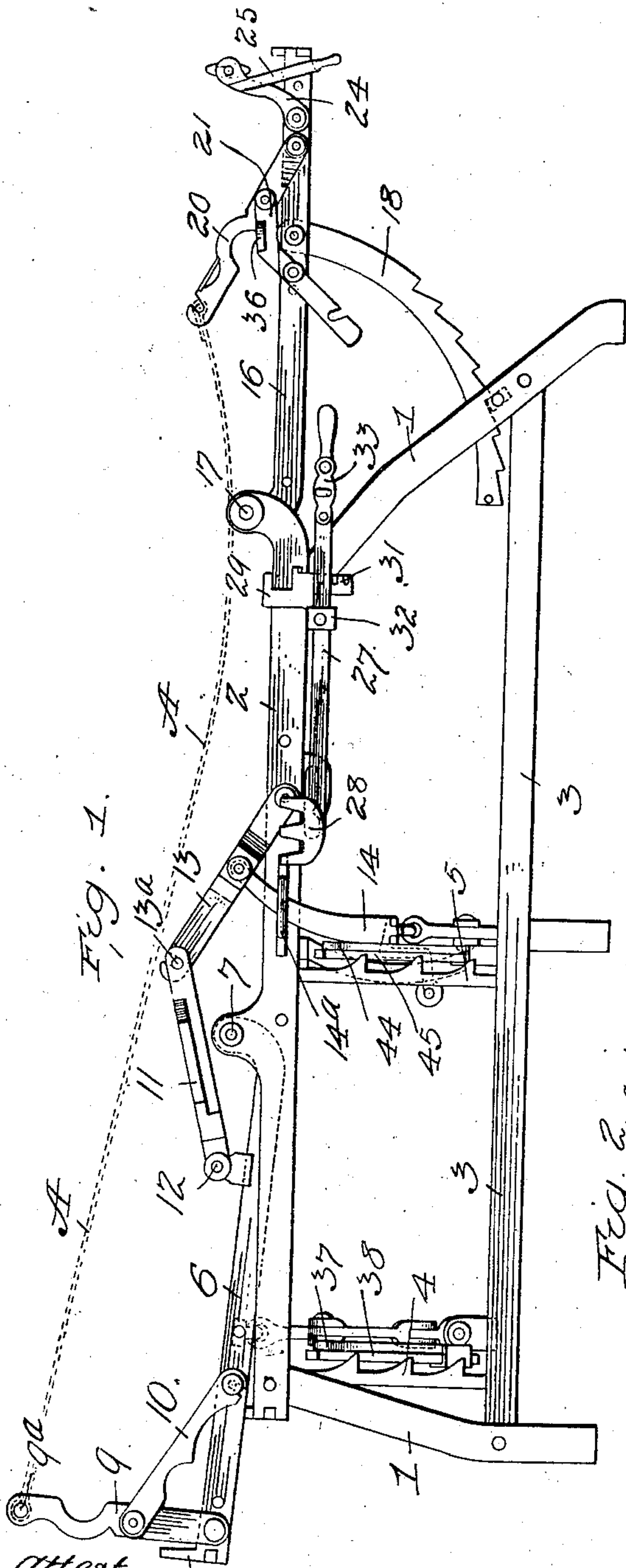
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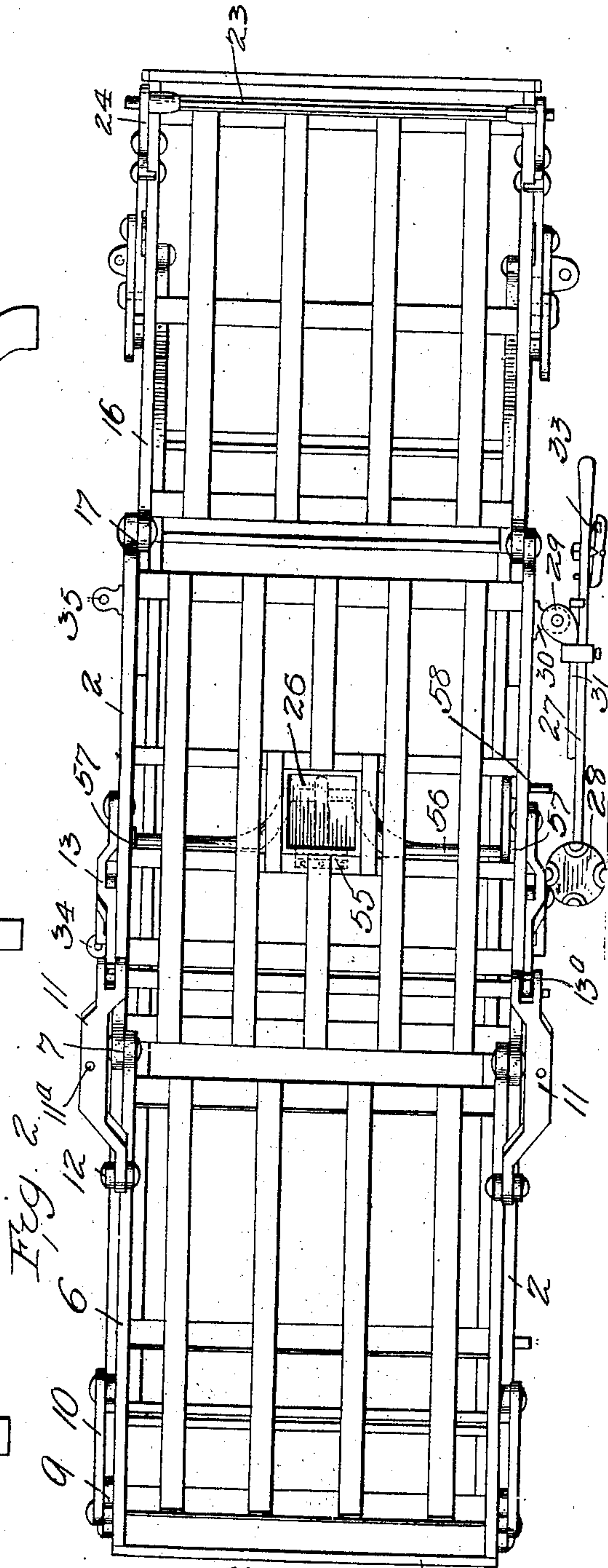
E. C. MEAD.
INVALID BED.

APPLICATION FILED AUG. 29, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3

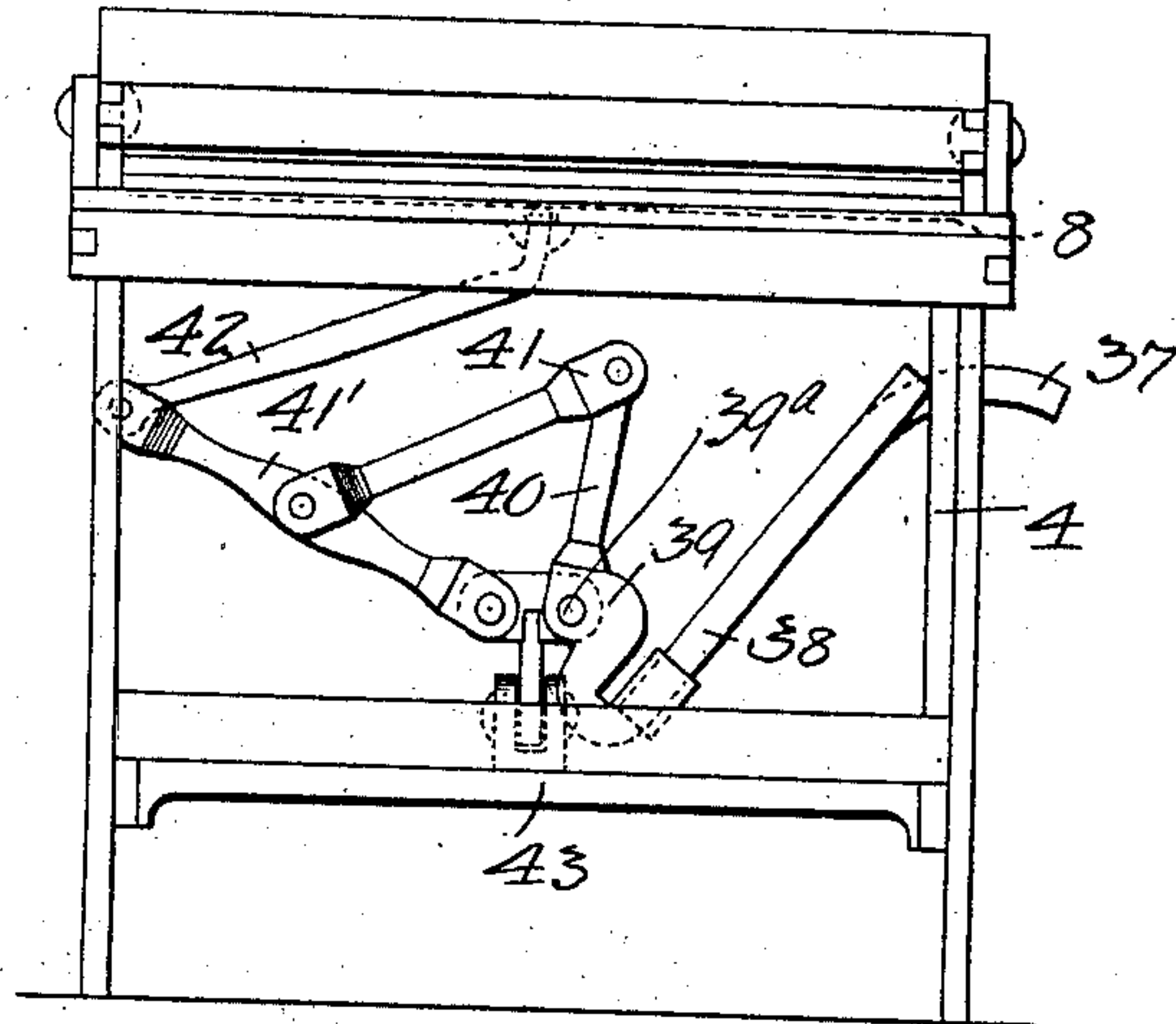


Fig. 5

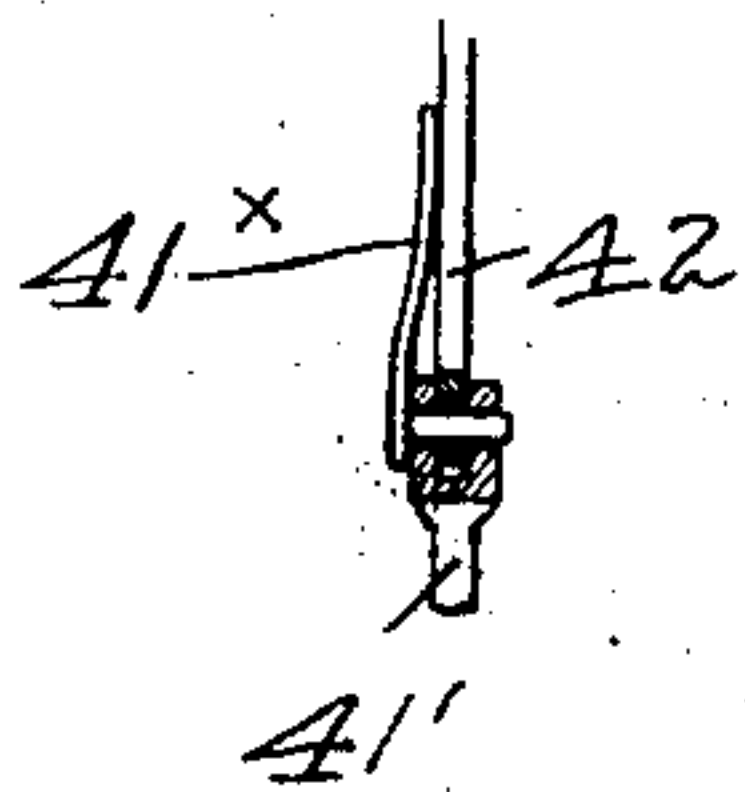


Fig. 6

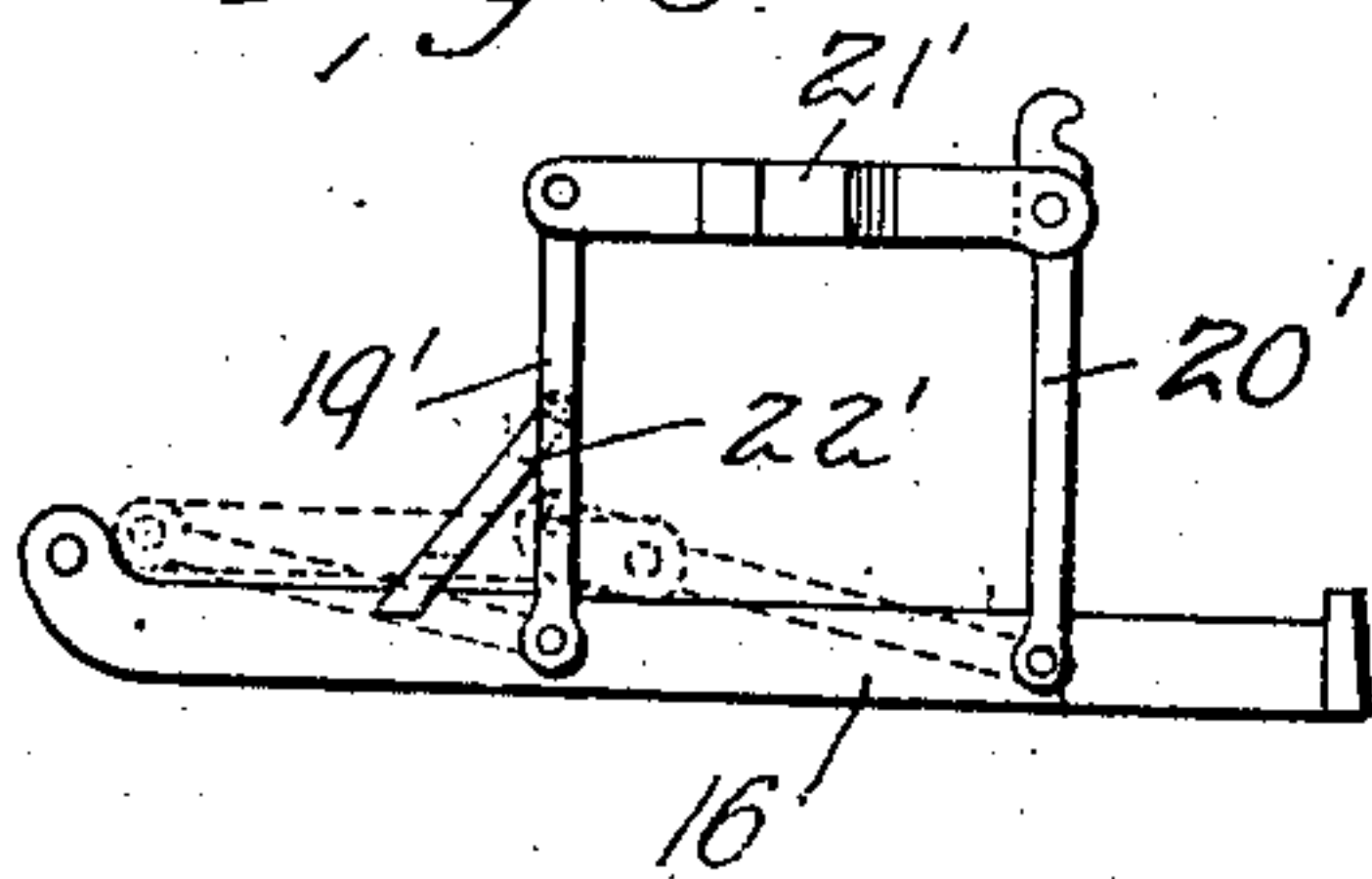
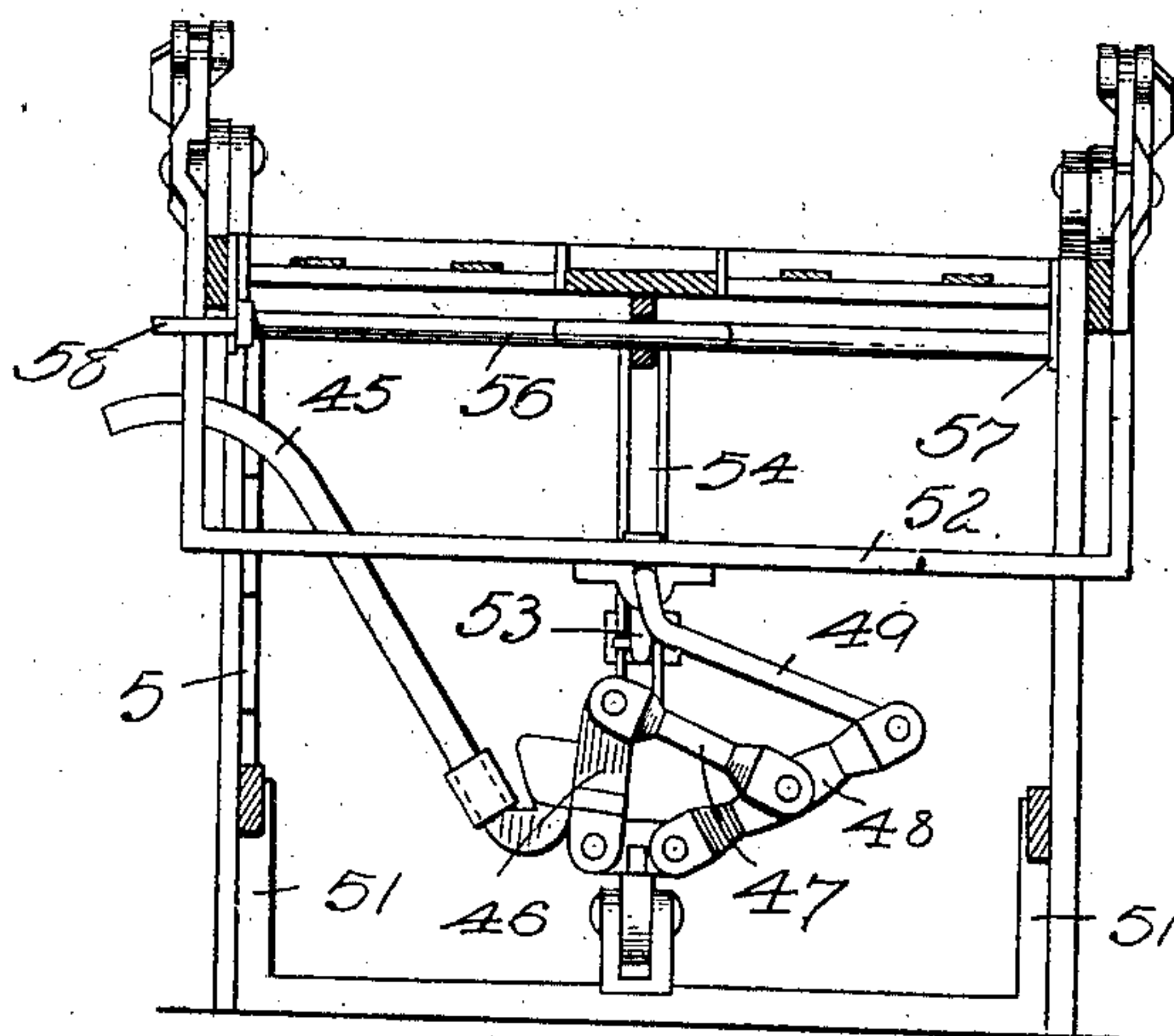


Fig. 4



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UNITED STATES PATENT OFFICE.

EDWARD C. MEAD, OF ELKHART, INDIANA.

INVALID-BED.

No. 840,787.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed August 29, 1904. Serial No. 222,622.

To all whom it may concern:

Be it known that I, EDWARD C. MEAD, a citizen of the United States, residing at Elkhart, Indiana, have invented certain new and useful Improvements in Invalid-Beds, of which the following is a specification.

My invention relates to improvements in cots or beds for the use of invalids; and the object of the invention is to provide a construction in which the patient may be readily placed in a recumbent, reclining, or sitting position, as desired, may be easily lifted or supported free from the cot or bed proper, and will permit of changing the bedding and allowing a free circulation of air.

A further object is to provide a cot or bed on which the patient can be easily handled and his position changed as desired without the necessity of his being lifted by the nurse.

A still further object is to improve the various details of construction in the respects hereinafter described.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the cot or bed. Fig. 2 is a plan view. Fig. 3 is an end view. Fig. 4 is a sectional view taken near the center. Fig. 5 is a detail view, and Fig. 6 is a detail view of a modified form of foot-rest.

Referring by reference characters to these figures, the ordinals 2 designate the side rails or main frame of the cot and to which the legs 1 1 are attached, these being in turn connected by braces 3 3, so that the whole forms a rigid frame. Connected to this frame is a holder or upright 4, suitably notched to engage the lever 38, (shown in Fig. 3 and hereinafter more fully described,) while a similar holder or upright 5 is provided for engaging the lever 45. (Shown in Fig. 4.)

A frame or head section 6 is adjustably hinged to the frame of the cot or bed at 7 and may be raised or lowered to any desired position by the lever 38, above referred to, the head-section having the usual head-board 8. Pivoted arms or standards 9 are attached near the end of the head-section and form a part of the device for raising the patient and supporting him free from cot or bed.

Attached to each standard 9 is a brace or other suitable support 10, which rests against the top of the side rail 6 or preferably engages pins on the said rail, as shown, and holds the arms or standards in an upright

position. This brace or support 10 is so constructed that it can be released and the arms or standards 9 folded down at the sides and out of the way. An arm-rest 11 is hinged to the head-section 6 on each side, at 12, and an arm or standard 13 is attached to each side rail 2 of the main frame of cot or bed and connected to the corresponding arm 11 by any suitable connection, preferably pin-and-slot, as at 13^a.

The arms 13 are a part of the device for raising and supporting the patient off from the bed and are operated and held in position by the segmental arms 14, said arms working through guides 14^a on the sides of frame 2 and connecting with and being actuated by the lever device shown in detail in Fig. 4. The arm 13 also acts as a support for the arm-rest 11, the end of the arm-rest being suitably notched or bifurcated to pass over the end of the standard 13.

The foot-section 16 of the cot is adjustable and is hinged to the main frame of the cot at 17. It may be raised or lowered to any desired position and held by the segmental notched rest or support 18, said circular notched rest or support being hinged to the foot-section 16 and engaging a suitable cross-bar connecting the two foot-legs of the cot.

Arms 20, pivotally connected to the leg-section, complete the device for raising and lowering the patient and supporting him free from the cot or bed. Attached to each arm is a notched brace or other suitable support 21 for holding the arms 20 in a suitable position and which brace or support 21 engages the section 16 and may be released to allow the arms 20 to be folded down and out of the way when not in use. A foot-rest 23 is attached to the foot-section 16 by arms 24 and is held in an upright position by the brace or support 25. This foot-rest is so constructed that it can be swung down at the end of the foot-section 16 when not in use. In the center of the central section is a trap or door 26, which is opened and closed by the crank-shaft 56, journaled at 57 and having a handle 58.

Attached to the central section is a device for swinging a chamber under the trap or door 26. This device consists of the long arm 27, having at its inner end a suitable device 28 for holding the chamber. This arm is attached to the cot by means of a hanger 29, pivotally engaging a bearing-bracket 30, to which hanger is rigidly attached a bar, 31. The long arm 27 is pivotally and slidably at-

tached to the bar 31 by means of a slide 32. The arm 27 is pivoted upon a bearing in the slide 32, so as to give the long arm an upward and downward motion. At the outer end of the arm 27 is a spring-latch 33, which actuates a pin engaging notches in the bar 31, and a downward extension therefrom, this latch device holding the chamber device in the desired position. By means of this device the chamber is swung under the trap or door. The long bar 27, operating by means of the slide 32 or the bar 31, together with the bearing in the slide, permits the chamber to be brought to the proper position under the trap and raised to the desired position for use, and when not in use the device swings out to the side of the bed and, if desired, can be easily detached from the cot. The bracket 30 is also adapted to receive a support for a table, book-rest, &c. Attached to the central section are also bearings 34 and 35 for supporting cuspidors, &c. The braces 21 have brackets or lugs 36, which are designed to be engaged by projections on cross-bars which are placed across the tops of the brackets as a support for the patient's limbs. The arm-rests 11 in Fig. 1 also have similar holes or bearings 11^a for receiving pins on a bar to act as a support for the arms of the patient.

In Fig. 3 is shown in detail the device by which the head-section of the bed is raised and lowered to the desired position. It consists of a hand-lever 38, connected to a lever 39, pivoted at 39^a, having its free end 40 connected by a link 41 to one member 41' of a toggle-joint 41' and 42, the latter member being connected to a cross-bar of the head-section. The parts 41 and 42 of the toggle are connected by a pin held in place by a spring 41^x, so that the head-section can be detached from the lever when desired, this being shown in Fig. 5. The handle 37 of the hand-lever preferably slides down upon the part 38 when not in use and may be pulled out to give a greater leverage as desired. By this means a downward motion of the lever 38 raises the head-section very easily. The lever 38 engages the notched holder or upright 4 (shown in Fig. 1) and holds the head-section in any desired position. This device rests upon a cross-bar 43, which cross-bar is supported by the brace 3. (Shown in Fig. 1.) The lever 39 is pivotally mounted upon a bracket projecting up from the cross-bar 43, so as to swing on an axis parallel to the axis of the head-section.

Fig. 4 shows a similar lever device for operating the central uprights or standards 13, (shown in Fig. 1,) 44 45 being the handle and lever proper and 46, 47, 48, and 49 being the arms and toggle-links. This device rests upon the floor and is attached to the braces 3 (shown in Fig. 1) by the supports 51. The arm 49 is suitably attached to a cross-bar 52, which cross-bar connects the segmental arms

14. (Shown in Fig. 1.) Attached to the cross-bar 52 is a tongue or lug 53, which operates in the slides or guide 54 for the purpose of holding the arms 14 in a central position. In the outer end of the tongue or lug 53 is a pin to prevent it slipping out of the slide or guide 54. The handle or lever proper, 44 45, engages the notched holder 5 (shown in Fig. 1) and holds the uprights or standards 13 in the desired position.

When it is desired to raise the patient from the cot for the purpose of changing the bedding or to allow a circulation of air around the patient, a suitable support or hammock made of heavy canvas or other suitable material is used. This hammock device is attached at its head-end to a suitable pole or bar, which rests in notches or holes 9^a in the top of the arms or standards 9, which are raised to a vertical position. The head-section of the bed is then raised so as to bring the patient to a sitting position, when the hammock is folded down behind the patient and hooked or fastened by suitable means to the top of arms 13. The head-section of the bed is then lowered, and by a downward motion of the lever 44 45 the body of the patient is raised from the bed. The lower end of the hammock is then hooked or fastened to the top of arms 20, and these arms are raised to an upright position, when the patient will be supported entirely free from the bed. To replace patient on the bed, the operation is reversed. By this device the patient can be readily handled by one nurse and without jarring the patient. When the arms 13 are raised to an upright position, they stretch the head-section of the hammock, and when the arms 20 are raised the foot-section of the hammock is stretched. When the arms 13 are to be used for supporting the hammock, they are disconnected from the arm-rest 11. With this cot or bed sectional springs and mattresses may be used as desired, the central section of mattresses and springs having openings corresponding to the door 26, and the portion of springs and mattresses covering door 26 may be permanently attached to the door or trap.

In the modified form shown in Fig. 6 I provide standards or uprights 19' 20', pivotally connected together by a cross-bar 21' and to the leg-section, serving to complete the device for raising and lowering the patient and supporting him free from the cot or bed. Attached to the standard 19' is a spring, brace, or other suitable support 22' for holding the standards 19' and 20' with their connecting cross-bar 21' in an upright position, and which spring, brace, or support 22' rests upon the top of section 16 and may be released to allow the standards 19' and 20', with their connecting cross-bar 21', to be folded down and out of the way when not in use.

Having thus described my invention, what I claim is—

1. In an invalid-bed, a frame, a head-section pivotally connected therewith, a bracket 5 pivotally connected to the frame on an axis parallel to the axis of the head-section, a toggle-joint connecting said bracket and the free end of the head-section, an operating-lever also pivotally connected to said 10 bracket, and a link forming a connection between said lever and one of the members of the toggle-joint, substantially as described.

2. In a device of the character described, a main frame, a head-section pivoted thereto 15 with means for operating it, standards pivotally connected to said head-section and adapted for engagement with a suspending device, and means near the center of the bed for drawing upon said suspending device to 20 lift the patient, substantially as described.

3. In a device of the character described, a main frame, a head-section pivoted thereto 25 with means for operating it, standards pivotally carried by said head-section and adapted for engagement with a suspending device, and means near the center of the bed for drawing upon said suspending device to lift the patient, and a hinged leg-support 30 with means for holding it in any position to which it may be adjusted, substantially as described.

4. In an invalid's bed, a pivoted head-section, standards 9 pivoted to the head-section, standards 13 pivoted to the middle section 35 of the bed, arm-rests pivoted to the head-section and detachably connected with the standards 13, and standards at the foot of the bed adapted to be raised and lowered, said standards at the head, middle portion and 40 foot of the bed being adapted to removably receive and support a hammock, substantially as described.

5. In combination, in an invalid's bed, a head and foot section, a middle section to which said head and foot sections are piv- 45 oted, and standards on the head, middle and foot sections pivotally supported and adapted to support a hammock, said standards being combined with means for holding them up, substantially as described. 50

6. In combination, a pivoted head-section standards pivoted thereon for holding a hammock, a middle section having pivoted standards thereon for holding another part 55 of said hammock, means for raising and holding the standards of the middle section, and means at the foot of the bed for holding the said hammock.

7. In combination, in an invalid's bed, standards at the head for holding a hammock, 60 pivoted standards at the central portion for supporting and drawing upon the hammock, and means for raising the said standards, said means comprising segmental side arms, guides in which said side arms slide and 65 toggle-levers connected therewith, substantially as described.

8. In an invalid-bed, the combination with the bedstead, of a bearing-bracket carried thereby, a hanger pivotally supported 70 by said bracket, said hanger having a horizontal arm and a notched vertical bar, a long arm having a sliding and pivotal engagement with said horizontal arm, and having a handle at one end and a commode-holding device at 75 the other, and means in proximity to the handle for effecting locking engagement with said notched bar, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD C. MEAD.

Witnesses:

ETHAN L. ARNOLD,
ARTHUR R. RHOADES.