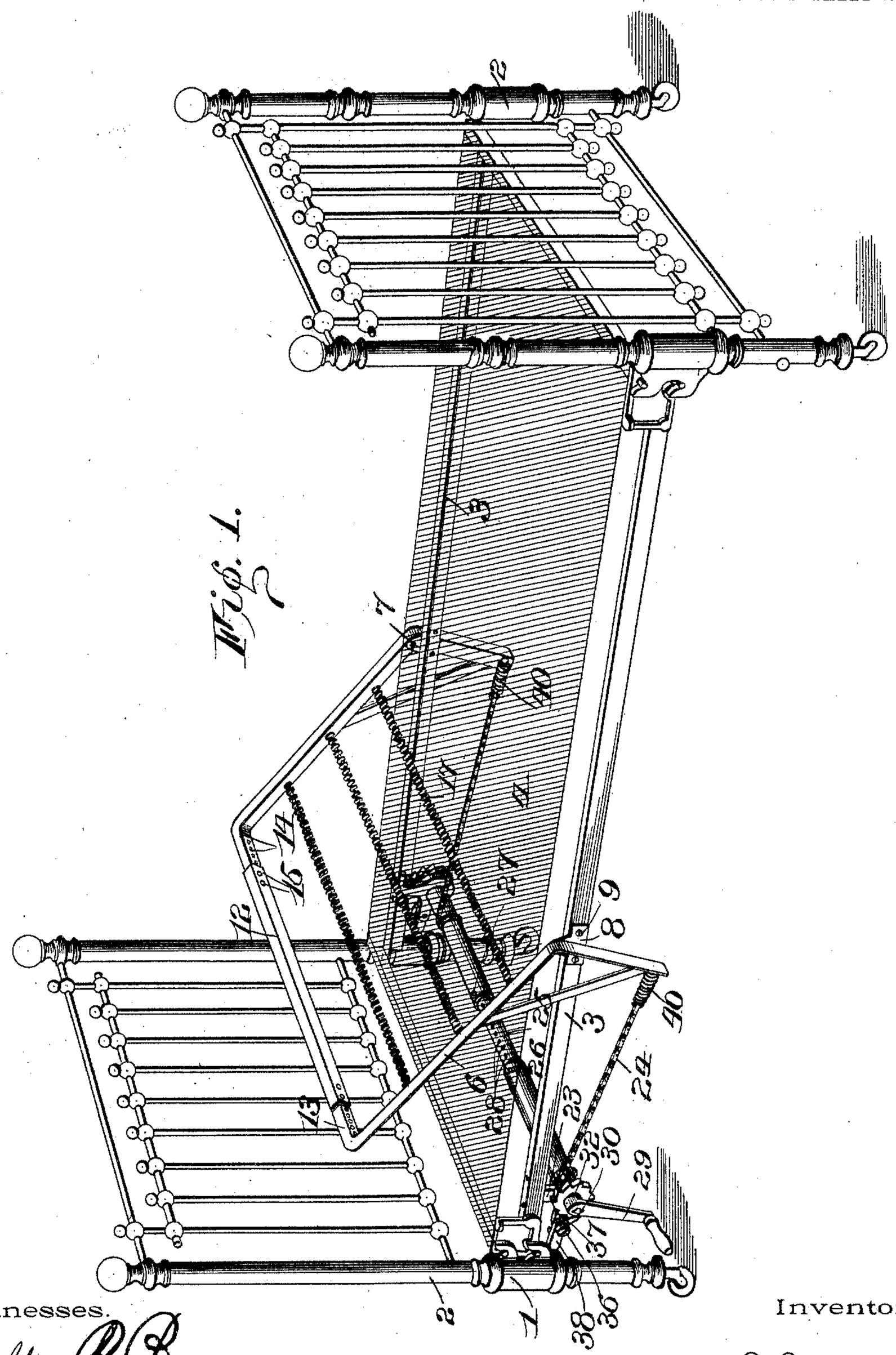
No. 760,153. PATENTED MAY 17, 1904.

W. E. ROBERTS.

BED ATTACHMENT.

APPLICATION FILED AUG. 12, 1901.

NO MODEL. 2 SHEETS—SHEET 1.



Witnesses.

Walter B. Payne.

G. Willard Rich.

Inventor.

William E. Roberts

by Frederick S. Church

his Attorney.

No. 760,153. PATENTED MAY 17, 1904.

W. E. ROBERTS.

BED ATTACHMENT.

APPLICATION FILED AUG. 12, 1901.

NO MODEL. 2 SHEETS—SHEET 2.

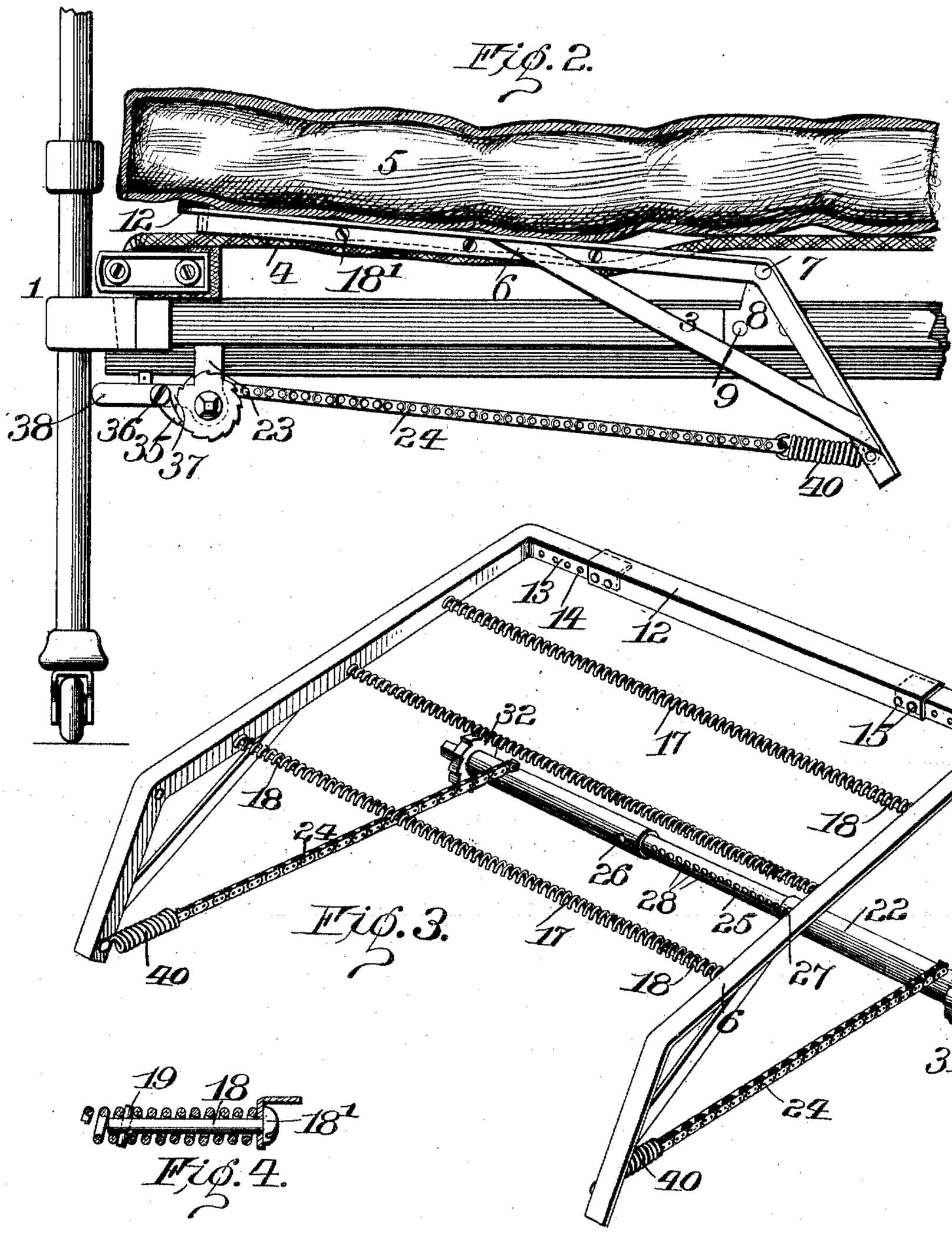


Fig. 2.

Fig. 3.

Fig. 4.

Witnesses.
Walter B. Payne.
Willard Rich.

Inventor.
William E. Roberts
by Frederick S. Church
his Attorney.

No. 760,153. Patented May 17, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM E. ROBERTS, OF ROCHESTER, NEW YORK, ASSIGNOR TO PEERLESS BED REST COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

BED ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 760,153, dated May 17, 1904.

Application filed August 12, 1901. Serial No. 71,745. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. ROBERTS, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Bed Attachments; and I do hereby declare the following to be a clear, full, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide an improved form of elevating device adapted to be applied to beds, whereby a patient or occupant of the bed may be elevated to a sitting posture or adjusted at any intermediate inclined position; and it embodies such an arrangement of parts that the device may be easily applied to any bed or adjusted to fit those of different widths.

To these ends my invention further consists in certain improvements and combination of parts, all as will be described, and the novel features pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a perspective view of a bed, showing the application of an elevating device constructed in accordance with my invention. Fig. 2 is a side elevation of the head portion of the bed having my device applied thereto. Fig. 3 is a perspective view of my elevating device and the operating mechanism connected thereto, and Fig. 4 is a detail view.

Similar reference-numerals in the several figures indicate similar parts.

The device I have shown is particularly adapted to be used upon beds in hospitals and similar institutions and embodies a suitable frame adapted to be arranged beneath the mattress whereby one end of the latter may be elevated to raise the patient. In the present instance I have shown my device applied to a bed having the head and foot portions 1 and 2, between which extend the side rails 3, and above the upper edges of the latter are the usual springs forming a support 4 for the mattress 5.

The elevating device embodies a pair of parallel arms 6, pivoted at 7 to plates or brackets 8, secured to the side rails by bolts 9, and the forward ends 10 of said arms are bent downward from the pivotal point, forming levers by means of which the arms may be adjusted. The latter are rigidly connected at their upper ends by a bar 12, and in order to make the device adjustable for beds of various widths I provide the inwardly-extending end portions 13 upon each of the arms and provide therein a series of apertures 14, adapted to receive the bolts 15, by means of which the ends of the bar 12 are secured. A series of supports for the mattress also extend between the arms 6 and over the bed-springs, and in order that the mattress may give slightly under the patient's weight when in either a flat or elevated position I construct said supports of coil-springs 17, and to adjust the tension of the springs or to lengthen the latter when the device is applied to a wider bed I arrange bolts 18, extending through the arms at the ends of the springs and into the center thereof, and at the inner ends of the bolts are provided pins 19, engaging between convolutions of the springs. The adjustment is accomplished by revolving the bolts by means of a screw-driver or other tool inserted in the slotted head 18′, causing the pins 19 to move around between the convolutions of the springs to regulate their tension, and by extending the bolts inwardly, as shown, I am enabled to employ the same springs upon the frames whether mounted upon a wide or narrow bed, and the springs being adjusted equally upon their opposite ends the mattress will give freely and with equal elasticity at any point between its sides.

The operating mechanism is arranged upon the bed-frame in rear of the pivots 7 and consists of a revoluble shaft 22, supported in bearings or brackets 23, attached to the bed-rails 3, and connected to the lever-arms 10 by means of chains 24 or other flexible connections. The shaft 22 is also adjustable, and to vary its length as may be required I construct it, as shown, embodying the end portions of equal diameter, and between these I

arrange a smaller telescoping section 25, secured rigidly in one of said end portions by a rivet 26 and adjustably engaging the other portion by means of a bolt 27, passing through said portion and engaging in one of a series of apertures 28, provided in the section 25. By this arrangement the shaft may be easily adjusted and the ends thereof rotated together.

The shaft 22 is adapted to be operated by means of a crank-handle 29, having an angular aperture 30, adapted to engage angular studs or projections 31 on the ends of the shaft. Ratchet-wheels 32 are secured to the end portions of the shaft upon the outer sides of the bearings or brackets 23 and engaging the sides of the latter serve to center the shaft and prevent it from being displaced therein by longitudinal movement. In attaching this part of the device the bearing-brackets 23 are first secured to the side rails 3 and the sections of the shaft 22 separated by removing the bolt 27 when they may be passed through the bearings and secured as described by inserting the telescoping ends and applying the bolt 27 through one of the apertures 28. It will be readily understood, however, that the ratchet-wheels may also be arranged to engage against the inner sides of the bearings to accomplish the same result. Pawls 35, pivoted on screws 36 to rearwardly-extending arms 37 on the bearing-brackets and having a weighted arm 38 in rear of the pivot, normally engage the teeth of the ratchet-wheels to lock the shaft. It is of course only necessary to employ a single ratchet for locking the shaft; but I prefer to use one upon each side and to provide each end of the shaft with the angular projection or studs 31 in order that the device may be operated from either side of the bed, if desired. The elevating device as a whole is adapted to be constructed of comparatively light material. Therefore to prevent the forward ends 10 of the arms 6 from becoming bent, as might be the case were a person to sit down by the side of a patient at the head of the bed when the mattress is slightly in elevated position, I have arranged short coil-springs 40 between the arms 10 and the ends of the chains 24, as shown, thereby providing an elastic connection that will permit the parts to give slightly.

The device described is simple and consists of few parts, which are comparatively small and so arranged upon a bed that they may be conveniently hidden by the usual bedclothes.

To elevate a patient, the operator is simply required to apply the handle 29 to the shaft 22 and turn it, when the arms 6, carrying the mattress, can be adjusted to any desired angle and the flexible supports extending between the arms and carrying the mattress when it is elevated permits the latter to spring or give under the patient's weight, and when the arms are in the lowermost position the supports do not interfere with the operation of the bed-springs.

I claim as my invention—

1. In an attachment for beds embodying a frame having side rails and provided with a bed-support, the combination with separate plates mounted on the rails, arms pivoted thereon, an adjustable bar rigidly connecting their upper ends, separate bearing-brackets mounted on the rails, and an adjustable tubular shaft mounted in the bearings embodying the separate telescoping parts whereby it may be adjusted in length, of ratchet-wheels mounted on the separate parts of said shaft and means for locking said parts to hold the ratchets in engagement with the brackets to limit the longitudinal movement of the shaft in the bearings, pawls pivoted on the brackets and engaging the ratchet-wheels and flexible connections between the shaft and arms.

2. In an attachment for beds embodying a frame having side rails and provided with a bed-support, the combination with plates removably attached to the rails, arms pivoted to the plates, the bar adjustably connected between the upper ends of the arms, springs between the arms extending over the bed-support, of bearing-brackets removably mounted on the rails, the adjustable tubular shaft embodying the separate telescoping parts extending through the bearings and connected at their proximate ends, the ratchet-wheels on said parts of the shaft engaging the brackets and preventing the longitudinal movement of the shaft in the bearings, the pawls on the bracket engaging the ratchets and connections between the arms and shaft whereby the latter may be elevated to an angle to the bed-support when the shaft is rotated.

3. The combination with a bed having the side rails and the bed-support, the combination with separate detachable plates adapted to be mounted on the bed-rails, arms journaled on the plates having the inwardly-extending perforated ends, a bar extending between said ends having engaging devices entering said perforations and flexible connections between the arms extending over the bed-support, of brackets attached to the rails, a sectional tubular shaft journaled therein having its ends telescoping and provided with perforations, ratchet-wheels on the separate sections and interlocking devices securing said sections with the ratchet-wheels in engagement with the brackets to limit the longitudinal movement of the shaft in its bearings, chains connected to the shaft, springs arranged in the chains between the shaft and arms and pawls on the brackets and an operating-handle on the shaft.

4. In an attachment for beds, the combination with a frame provided with side rails and having a bed-support, the separate plates 8 mounted on the rails and arms 6 pivoted to said plates having elastic connections 17 arranged between them and extending over the

bed-support, of separate brackets 23 removably attached to the rails, a shaft having adjustable sections 22, shoulders on said sections adapted to engage the brackets, and a locking device securing the sections with the shoulders thereon engaging similar sides of the brackets to prevent longitudinal movement of the shaft, a ratchet-wheel 32 on the shaft, a pawl 35 on one of the brackets 23 engaging therewith and flexible connections 24 between the shaft and arms.

WILLIAM E. ROBERTS.

Witnesses:
JAMES S. WRIGHT,
ANNIE B. WALTERS.