No. 730,770. PATENTED JUNE 9, 1903.

A. M. HOYER.

ATTACHMENT FOR BEDSTEADS.

APPLICATION FILED JAN. 23, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

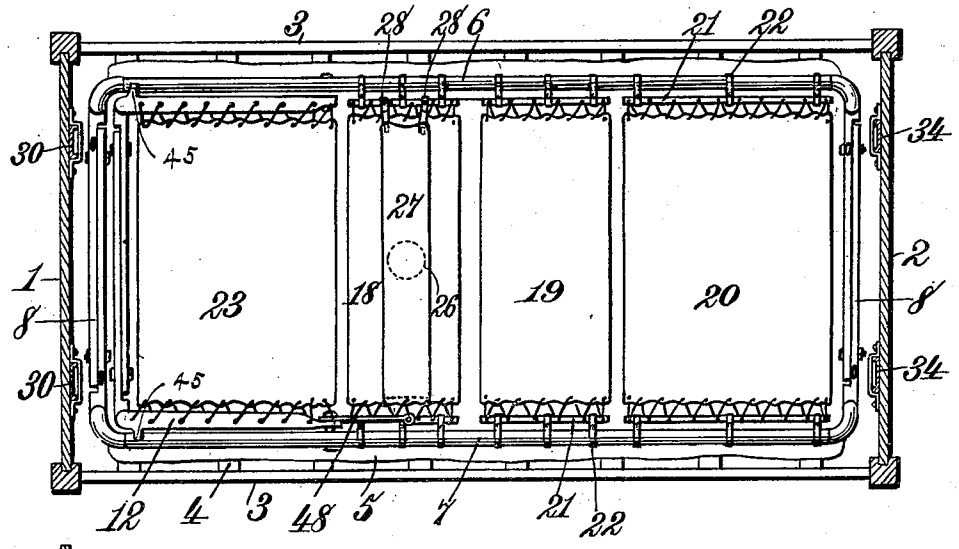
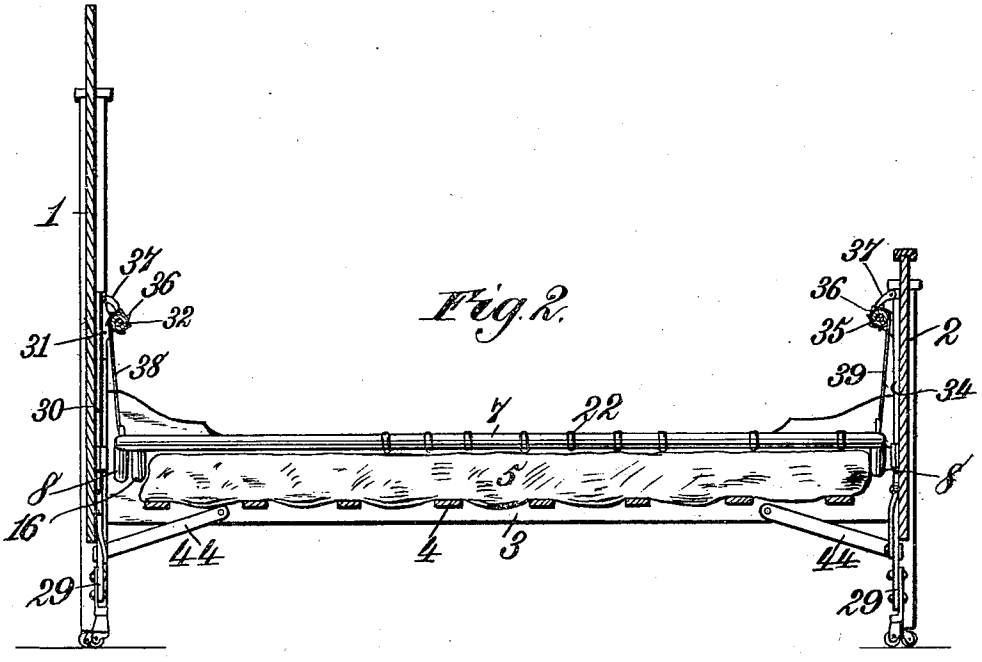


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

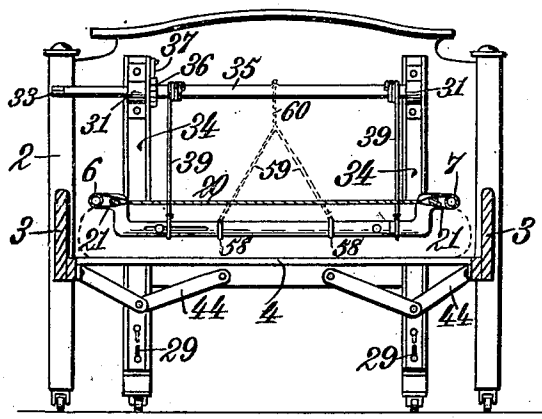


Fig. 4.

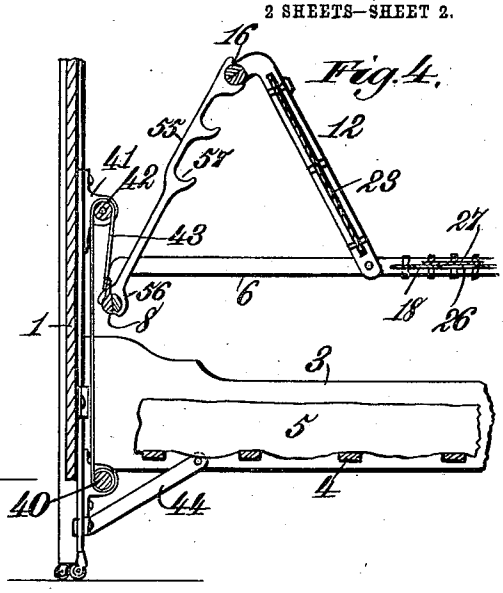


Fig. 5.

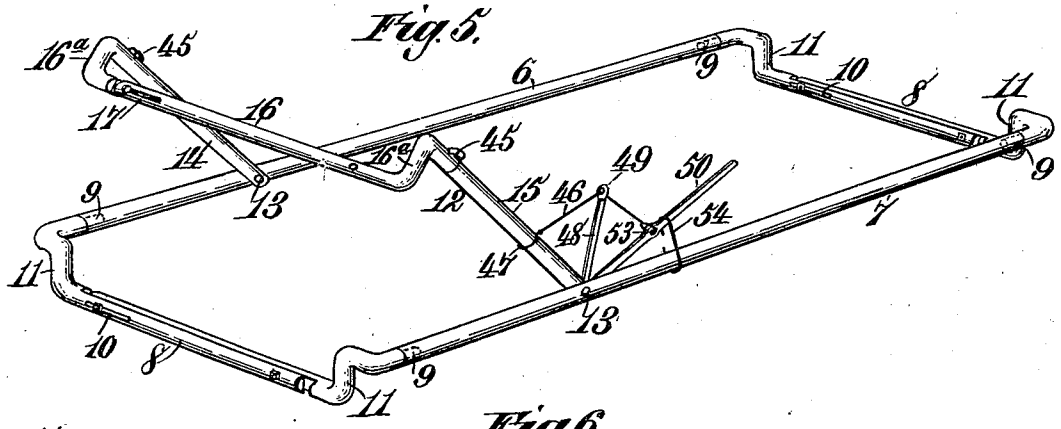


Fig. 6.

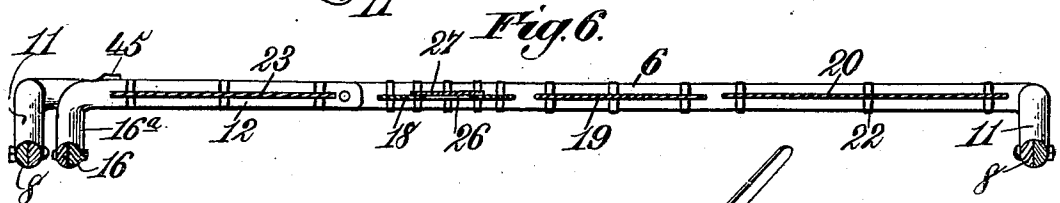
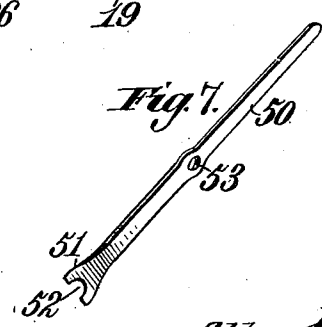


Fig. 7.



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No. 730,770. Patented June 9, 1903.

UNITED STATES PATENT OFFICE.

ALBERT M. HOYER, OF NASHVILLE, OHIO.

ATTACHMENT FOR BEDSTEADS.

SPECIFICATION forming part of Letters Patent No. 730,770, dated June 9, 1903.

Application filed January 23, 1902. Serial No. 90,963. (No model.)

To all whom it may concern:

Be it known that I, ALBERT M. HOYER, a citizen of the United States, residing at Nashville, in the county of Holmes and State of Ohio, have invented new and useful Improvements in Attachments for Bedsteads, of which the following is a specification.

My invention relates to certain new and useful improvements in attachments for bedsteads whereby the ordinary bedstead may be readily converted into an invalid-bedstead to enable the handling, turning, or posturing of the patient to be accomplished by the attendant with the minimum amount of inconvenience to the patient.

My invention consists, essentially, in a novel construction of frame adapted to be applied to the bed, to novel means for operating the same, and in certain novel parts and combinations of parts, all as hereinafter fully described, and particularly pointed out in the claims.

In order that my invention may be fully understood, I have illustrated the same in the accompanying drawings, wherein—

Figure 1 is a sectional plan view of a bedstead with my attachment applied thereto. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view of the same. Fig. 4 is a longitudinal sectional view of the upper portion or head of the bed, showing a support for the head-rest and showing also a modified arrangement of the means for elevating the frame. Fig. 5 is a perspective view of the frame on an enlarged scale. Fig. 6 is a longitudinal sectional view of the same, the head-rest being lowered; and Fig. 7 is a detail view of a lever.

Referring now to the drawings, 1 indicates the headboard, 2 the footboard, and 3 the side boards, of a bedstead of the ordinary construction.

4 indicates the slats of the bed supporting the mattress 5.

My improved frame is shown in detail in Fig. 5 and comprises two side bars 6 7, which may be made from metal tubing, and two end bars 8, made of cast-iron. The end bars 8 are separate from the side bars 6 7 and have a screw-threaded or socket connection with the latter, as indicated at 9, to permit of a slight adjustment between these parts for the purpose of lengthening or shortening the frame. The end bars 8 are made in two parts having a separable sliding or adjustable connection, as indicated at 10, whereby the width of the frame may be increased or diminished. As clearly shown, the end bars 8 are located in a plane considerably lower than that of the side bars of the frame, and to this end said end bars are bent downward at right angles to themselves near their corners, as indicated at 11. The purpose of this construction, as more clearly shown in Fig. 2, is to permit the end bars 8 to be located below the upper surface of the mattress 5 at each end thereof, so that the feet or head of the patient cannot at any time come in contact with the same. Pivotally connected to the side bars 6 7 of the frame at points about one-third the length of said bars from the head of the frame is a supplemental frame or head-rest 12, the points of pivotal connection being indicated at 13. Said head-rest comprises side pieces 14 15 and a cross-piece 16, made of two parts having an adjustable connection, as indicated at 17, so that the head-rest may be adjusted in width coincidently with the frame. The cross-piece 16 is also bent downward at right angles to itself, as shown at 16^a, so that it cannot come in contact with the head of the patient. As shown more clearly in Figs. 1 and 6, strips of canvas 18, 19, and 20 are secured in the frame, extending from side to side thereof. This is done by lacing the strips at each end to metal rods 21, which are secured to the side bars 6 7 by means of three or more straps 22, having buckles whereby the strips may be readily removed from the frame, as when it is desired to wash them. The end strips or sections 18 and 20 will not ordinarily be removed from the frame except for some such reason as stated. The strip 19, however, is intended to have one or the other of its ends detached, so that the strips may be permitted to drop, for a reason hereinafter explained. The head-rest 12 is likewise provided with a strip of canvas 23, which is laced to the side bars of the head-rest. The strip 18 is provided with a central aperture or opening 26 to permit the patient to have the natural discharges from the body. At other times this opening is covered by means of a flap 27, secured at one end to the

end of the strip 18, as by being sewed thereto, and at the other end detachably secured to the rod 24 by means of straps 28 having buckles.

In order to raise the frame, I provide the following apparatus: 30 indicates two uprights which are secured to the inner side of the headboard 1 and are provided near their upper ends with bearings 31 for a shaft 32, having a squared end 33, to which a crank may be applied. Similar uprights 34 are secured to the footboard 2 and provided with bearings for a shaft 35, similar to the shaft 32. Said shafts are vertically adjustable, as indicated at 29, to accommodate different heights of bedsteads and may be felted on one or more sides to prevent injuring the furniture. Each shaft is provided with a ratchet 36 and pawl 37. Secured to the shaft 32 at one end are two cords 38, which at their opposite ends are secured to the cross-piece 8 at the head of the frame. Similar cords 39 are secured to the shaft 35 and the cross-piece 8 at the foot of the frame.

In Fig. 4 I have shown a modified arrangement of the apparatus for raising the frame. In this construction a shaft 40, corresponding to the shaft 32, is mounted in bearings on the headboard beneath the plane of the slats, bearings 41, having pulleys 42, are mounted near the top of the headboard, and cables 43 pass from the shaft 40 over the pulleys 42 and are secured to the cross-piece 8 at the head of the frame. A similar arrangement will of course be provided at the foot of the bedstead if this construction be adopted. According to either construction it will be seen that the attachment may be raised uniformly to a given height or the head or foot of the attachment may be raised independently, or by detaching one or the other of the cables 38 and 39 either side of the frame may be raised to assist in turning the patient from one side to the other. The manner of securing the uprights 30 and 34 to the headboard and footboard, respectively, is not material. As shown, however, these uprights may be screwed or bolted in position and be braced beneath the bed by the brackets 44.

The head-rest 12 is provided at opposite sides with lugs 45, which are adapted to engage the side bars 6 and 7 and support the head-rest when the latter is in its normal position flush with said side bars. In order to provide for readily raising the head-rest, I secure to the side member 15 of the head-rest a strap or cable 46, which may be done by fastening a ring 47 on said side member having an eye.

48 indicates a fulcrum-bar pivotally secured at its lower end on the inner side of the head-rest at the pivot-point 13 and having in its upper end an eye 49, through which the strap 46 passes.

50 indicates a hand-lever the lower end of which is made relatively thin, as indicated at 51, to enable said lower end to be inserted between the side member 15 of the head-rest and the side bar 7 of the frame and is provided with a recess 52 to fit over the bolt or pivot-pin 13. Said lever is provided intermediate its ends with an aperture 53, in which the free end of the cable or strap 46 may be detachably secured, as by means of a snap-hook. By pressing down on the hand-lever 50 the head-rest may be easily raised, the fulcrum-bar 48 causing the power to be applied directly—that is, in a direction almost at right angles to the frame. After the head-rest has been raised a link 54, engaging the hand-lever 50 and side bar 7, will operate to hold the head-rest in its elevated position. Preferably, however, I employ for this purpose the device shown in Fig. 4, which comprises a bar 55, having a bifurcated end 56, adapted to embrace the end bar 8 of the frame and toward its outer end having a series of notches or recesses 57, into either one of which the cross-piece 16 of the head-rest may be inserted, according to the height to which it is raised. Under certain conditions—as, for instance, during defecation—it is desirable that the patient assume a position as near the sitting posture as possible. To this end one end of the drop-section 19 is unbuckled and allowed to fall. This section being next to the strip 18, containing the opening 26, a relatively wide space is thus provided adjacent to said strip 18, through which the legs of the patient may be suspended. The head-rest 12, if not previously elevated, will be raised to the position shown in Figs. 4 and 5 and the patient thus be brought to the position best adapted for the purpose indicated. For such purpose it will be understood, of course, that the frame will be raised, by means of the shafts 32 and 35, the proper distance above the mattress and a suitable receptacle placed beneath the opening 27, the strip 28 being thrown back to uncover said opening. When it is desired to lower the head-rest, the link 54 is detached or the rod 55 removed, as the case may be, and the frame allowed to descend until the lugs 45 rest on the side bars 6 and 7. After this the cable 46 is unhooked from engagement with the hand-lever 50, which latter may then be removed and the fulcrum-lever 48 turned downward out of the way.

Another feature of the invention consists in the provision of means for adapting the attachment to be elevated and rocked or swung from side to side in the manner of a hammock to gently exercise the patient. Referring to Fig. 3, 58 indicates two rings which are secured to the end bar 8 of the frame, to each of which is secured a cable 59, which are connected to a single cable 60, secured to the shaft 35. A precisely similar arrangement of cables is provided at the head of the bedstead and connected to the shaft 32. By disconnecting the cables 38 and 39 and slightly raising the frame by means of the ca-

ble 60 the patient may be gently rocked to and fro, as the frame will now be supported from the shafts 32 35 by the single cables 60 at each end.

Having thus fully described my invention, what I claim as new is—

1. An attachment of the character described comprising a rectangular frame having depending end bars and a head-rest pivotally secured to the side bars of said frame and having a depending cross-piece.

2. An attachment of the character described comprising a rectangular frame having adjustable depending end bars, a head-rest pivotally secured to the side bars of said frame and having an adjustable depending cross-piece, and means for adjusting said end bars and said cross-piece.

3. An attachment of the character described comprising a substantially rectangular frame, an adjustable head-rest mounted thereon, a series of relatively broad strips of fabric extending transversely of the frame and secured at their ends to the sides thereof, one of said strips having an opening 26, and the strip adjacent thereto on the side nearest the foot of the attachment having its ends detachably secured to the frame, whereby either end of said strip may be lowered to provide an opening through which the lower limbs of the patient may be inserted, substantially as described.

4. An attachment of the character described comprising a frame, a head-rest pivotally mounted thereon by means of pins 13, a fulcrum-bar pivotally mounted on said pin and having in its outer end an eye, a lever 50 having an aperture 53 and a recess 52, a cable secured at one end to the head-rest and passed through said eye and having its other end detachably engaged in said aperture, and means for holding said head-rest in an elevated position, the combination operating as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT M. HOYER.

Witnesses:
JOHN W. BITNER,
H. J. SHREVE.