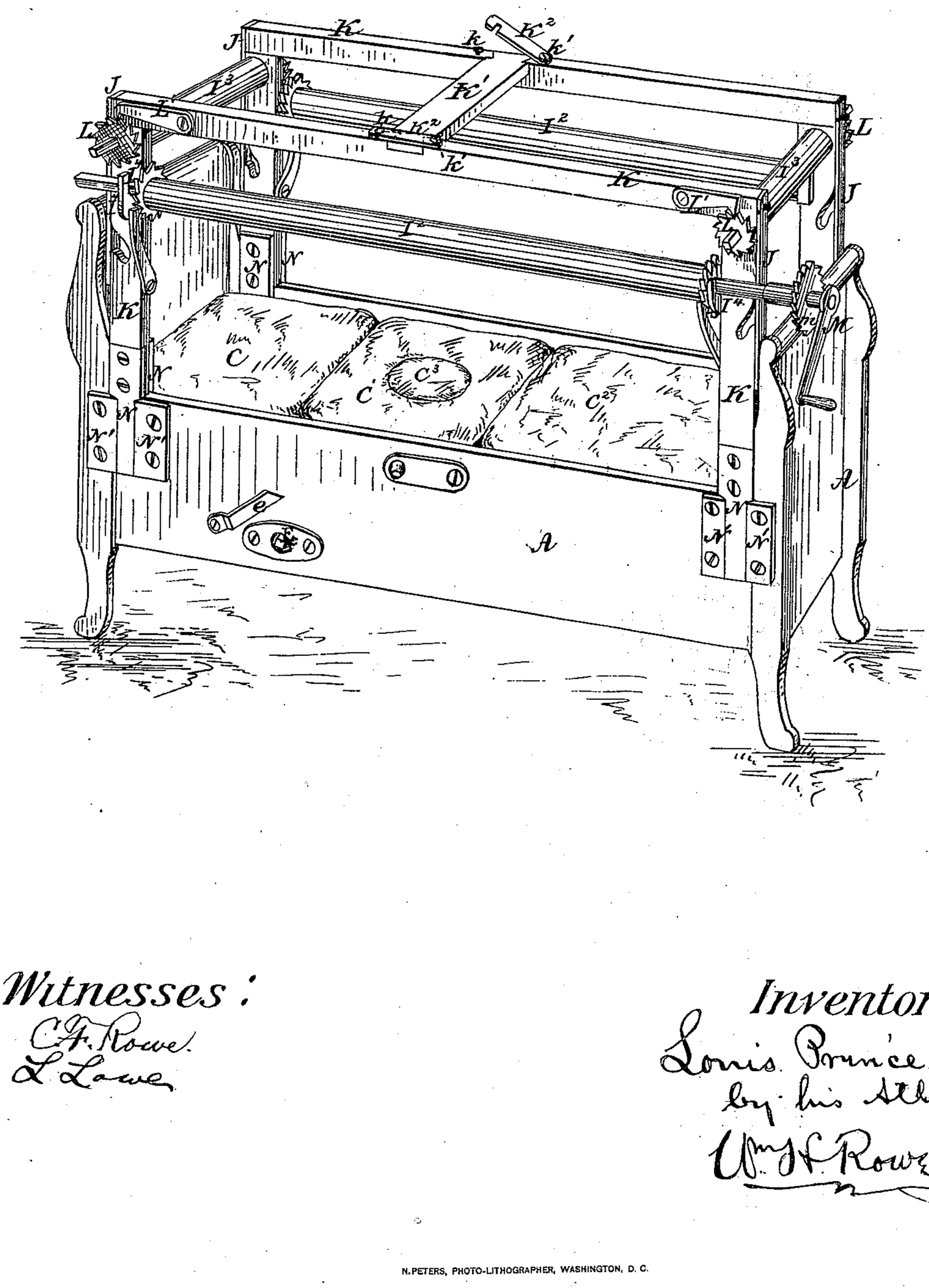
2 Sheets—Sheet 1.

L. PRINCE.
Invalid Bedstead.

No. 229,910. Patented July 13, 1880.

Fig. 1



Witnesses:
C. F. Rowe.
L. Lowe.

Inventor:
Louis Prince.
by his Atty.
Wm. F. Rowe

2 Sheets—Sheet 2.

L. PRINCE.
Invalid Bedstead.

No. 229,910. Patented July 13, 1880.

Fig. 2

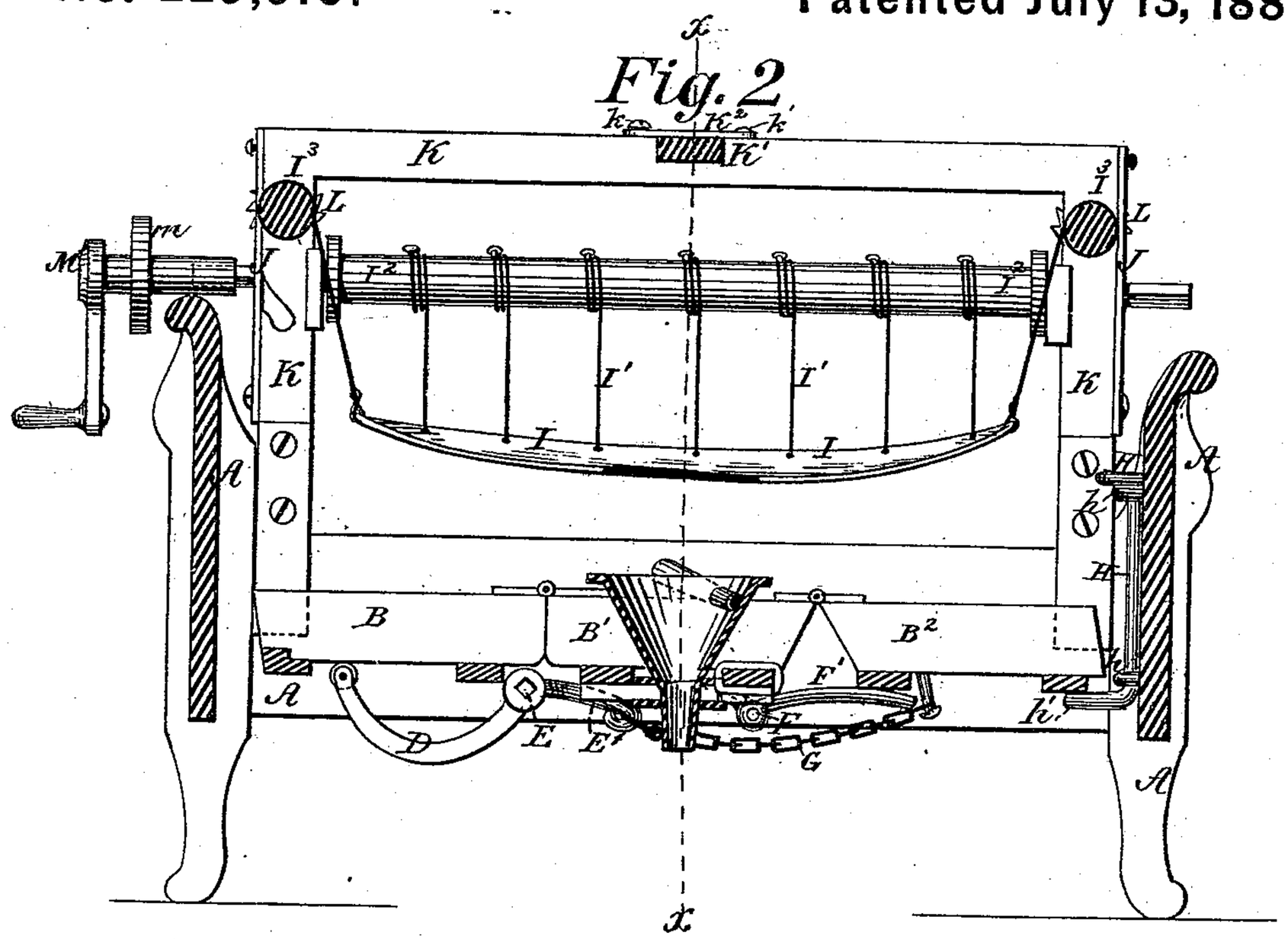
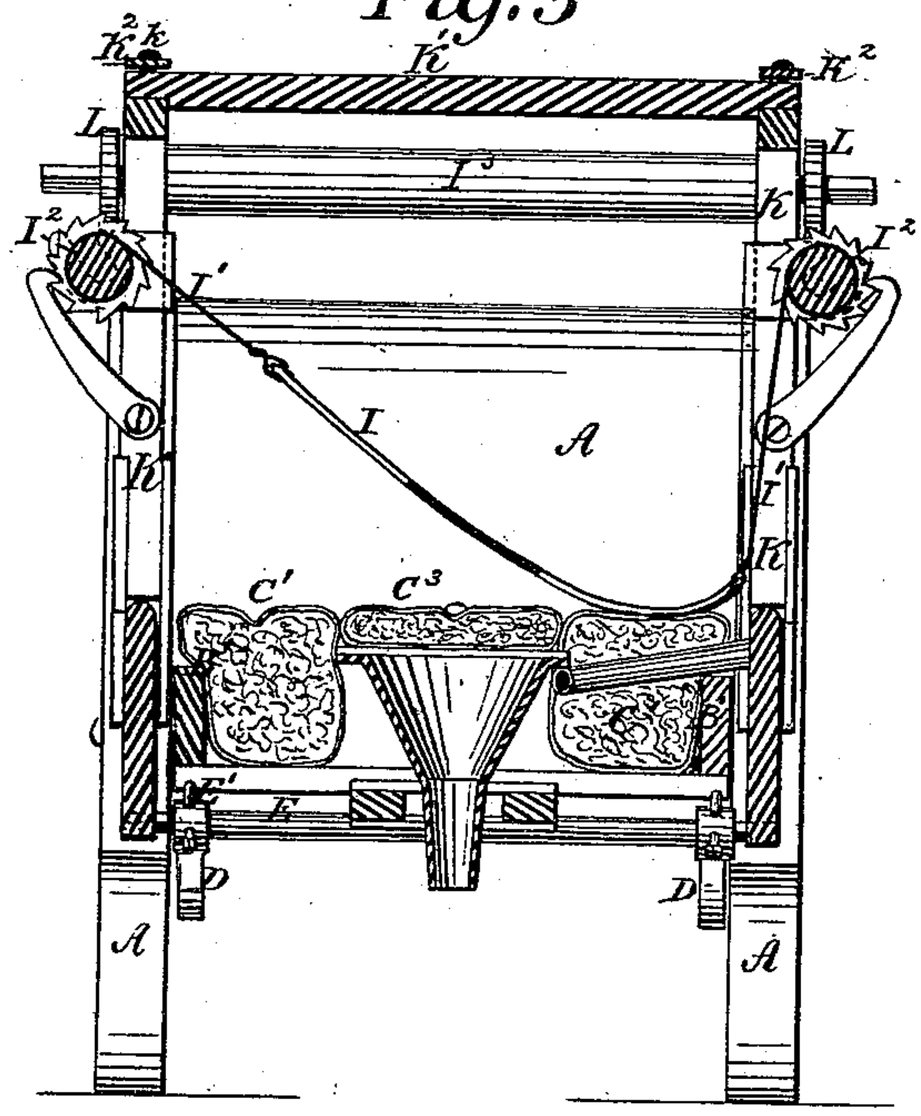


Fig. 3



Witnesses:-
C. H. Howe
L. Lowe

Inventor:
Louis Prince
by his Atty
Wm. H. Rowe

UNITED STATES PATENT OFFICE.

LOUIS PRINCE, OF NASHVILLE, OHIO.

INVALID-BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 229,910, dated July 13, 1880.

Application filed September 18, 1879.

To all whom it may concern:

Be it known that I, LOUIS PRINCE, of Nashville, in the county of Holmes and State of Ohio, have invented certain new and useful Improvements in Invalid-Bedsteads, of which the following is a specification.

My invention relates to invalid-bedsteads in which the bed-bottom and mattress are made in three hinged sections and may be raised at an angle at the head and depressed at the foot to place the occupant in a sitting position, and are furthermore supplied with a hammock or sheeting suspended from rollers at the head and sides of the bed, for lifting the patient bodily, for changing his position upon the bed, or for raising either the upper or lower portion of the body separately and independently of the mechanism for operating the bed-bottom; and the improvement consists, first, in the peculiar construction of the mechanism for operating the bed-bottom and for holding it in position; second, in the peculiar construction of the framing for suspending and operating the hammock, so that it may be readily disjointed for removal and transportation.

In the accompanying drawings, Figure 1 is a perspective view of my improved bedstead with the hammock-sheeting removed; Fig. 2, a central longitudinal section of the bedstead with the hammock raised above the mattress; Fig. 3, a transverse vertical section in the line *x x* of Fig. 2, with one side of the hammock raised to move the body to one side of the bed.

The bedstead A may be of the usual form and construction. The bed-bottom is formed in three sections, B B′ B², hinged together, and the mattress formed in three corresponding sections, C C′ C², the middle one of which is formed with a circular opening filled by a separate removable cushion, C³, below which a chamber-pan is attached, in this instance to the cross-slats of the section B′ of the bed-bottom. The middle section, B′, of the bed-bottom is stationary with the bedstead, and the section B at the head of the bed is hinged thereto in such manner that it may be raised at an angle with the middle portion, B′, while the section B² is hinged thereto in such manner that it may be depressed at an angle therewith to hold the patient in a sitting position, so that the chamber may be used, or for change of position. The bed-bottom sections are operated by curved arms D D, secured to a shaft, E, extending across the bed below the bed-bottom, and journaled in the side boards of the bed-bottom. They extend entirely through the side boards of the bed, and are made square at their ends to receive a crank-key for turning the shaft. The arms D are arranged upon the sides of the bed, directly beneath the side rails of the section B of the bed-bottom, so that their free ends will press against them when the shaft is turned, and raise the head-section B to any required angle. Spring presser-arms F′ F′, secured at one end to a shaft, F, and to the stationary section B′ of the bed-bottom, bear against the hinged section B² at the foot of the bed and serve to hold it in a horizontal position until the pressure of the spring is overcome by force applied thereto. This is accomplished by attaching the ends of link-chains G G to the sides of the hinged section B² and the other end to arms E′ E′ of the shaft E, so that when the arms D D are operated to raise the head-section B the chain will draw upon the foot-section B², and, overcoming the pressure of the springs F′ F′, will depress it for the purpose specified.

By means of the chains G, operating upon the foot-section B², a simple and direct connection may be made with the shaft E, that operates the head-section B, without the use of long levers, whose sweep or movement would be too great within the limited space beneath the bed.

The crank-key has a ratchet-wheel secured to its shank, and a pawl, *e*, on the side board of the bed engages with its teeth and serves to hold the head and foot sections at any desired angle. A bolt, H, turns in staples *h h*, secured to the foot-board, and has its end *h′* bent at right angles to its shank, so that it may be turned beneath the free end of the section B², and securely hold it against unusual strains and accidental depressing.

The chains G G are arranged slack, so that the arms D D may partially lift the head-section to raise the patient's body a limited distance, when desired, without acting upon the hinged section at the foot of the bed.

The patient may be raised entirely from the bed, in order that the bed may be rearranged,

by means of the hammock or section I, suspended by cords I′ from rollers I^2 at the sides and I^3 at the ends of the bed. The rollers are supported by frames K K upon opposite sides of the bed. The frames are held together by a cross-piece, K′, reaching from one frame to the other, and provided with dovetailed ends that fit in corresponding mortises in the rails of the frame K K. Plates K^2, pivoted to the frames K, extend across the end of the cross-piece K′ and hold it down in its mortise. The free end of the plate engages with a pin, *k*, on the rail of the frame and locks the parts together. By turning the plate on its pivot *k′* the cross-piece may be removed. The end rollers, I^3, also serve as cross-braces to the frame, and, together with the cross-piece K′, hold the frame together. The end rollers are also held in their position by pivoted plates J J, similar to the plate K^2, so that the rollers may be readily removed and the frame taken apart when it is not to be used.

Ratchet-wheels L on the rollers and pawl L′ on the frame serve to hold the rollers from turning at any desired point.

The rollers I^2 are supported on slotted plates I^4, secured to the upright pieces of the side frames, K, and may also be removed.

The ends of the rollers are provided with a square iron rod, upon which a crank-arm key, M, may be placed to turn the rollers. The crank-key M is also provided with a ratchet-wheel, *m*, and may be used to operate the shaft E, the ratchet-wheel being held in any desired position by the pawl *e*.

The patient may be raised entirely from the bed by means of the hammock, or one side roller only may be used, as shown in Fig. 3, to roll or slide the patient over to one side of the bed, in order that the cushion C^3 may be removed to have communication with the basin. An opening in the sheeting opposite the cushion and basin is formed for the same purpose. Either of the end rollers may be used for lifting the head, shoulders, or legs separately without changing the position of the mattresses or bed-bottom.

The upright pieces of the frame are provided with outer and inner plates, N, that fit against the outer and inner sides of the side boards of the bed, and the lower wooden end of the upright rests upon the top edge of the side board of the bed. Guide and retaining plates N′, screwed to the side boards of the bed, either upon the outer or inner or both sides of the side board, receive and hold the plates closely in position and serve to prevent the lower part of the frame from spreading.

I claim—

1. In an invalid's bed, the combination of the bed-bottom formed of three hinged sections, B B′ B^2, the lifting-arms D, and shaft E, for operating the head-section, the flexible chains G, connecting short arms of the shaft E with the section B^2, and spring-arms for pressing against the under side of the foot-section, whereby the head and foot sections may be operated together in a direct manner, substantially as described.

2. The framing for supporting the rollers and hammock, made in detachable jointed sections, and consisting of the side frames, K, the detachable end rollers, I^3, and the cross-piece K′, connecting the longitudinal pieces of the side frames by loose dovetailed joints and retaining-plates, so that the frame may be disjointed for removal or storage, substantially as described.

LOUIS PRINCE.

Witnesses:
L. LOWE,
WM. H. ROWE.