(No Model.) 2 Sheets—Sheet 1.

E. HENN.

INVALID BEDSTEAD.

No. 244,806. Patented July 26, 1881.

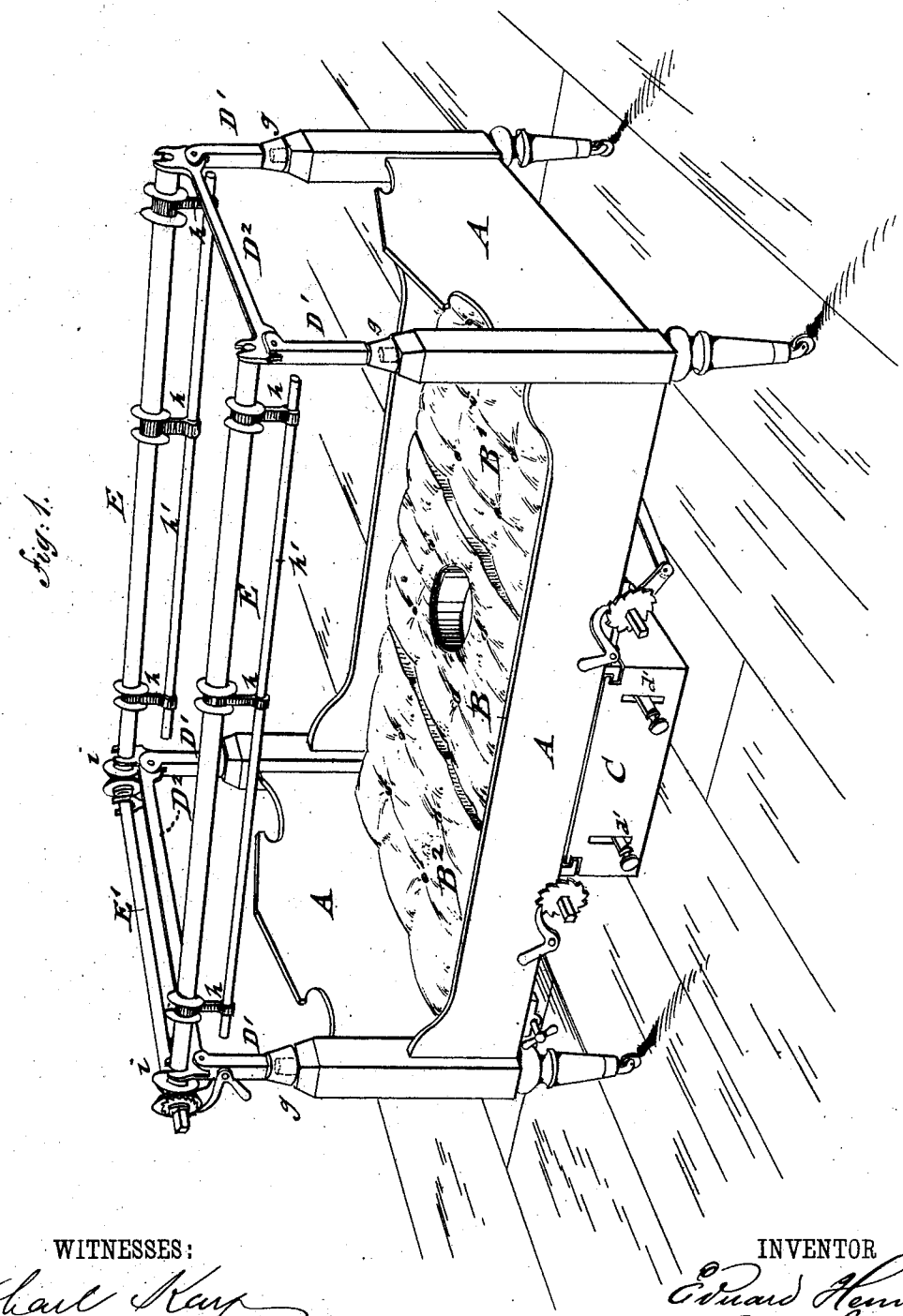


Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig: 4.

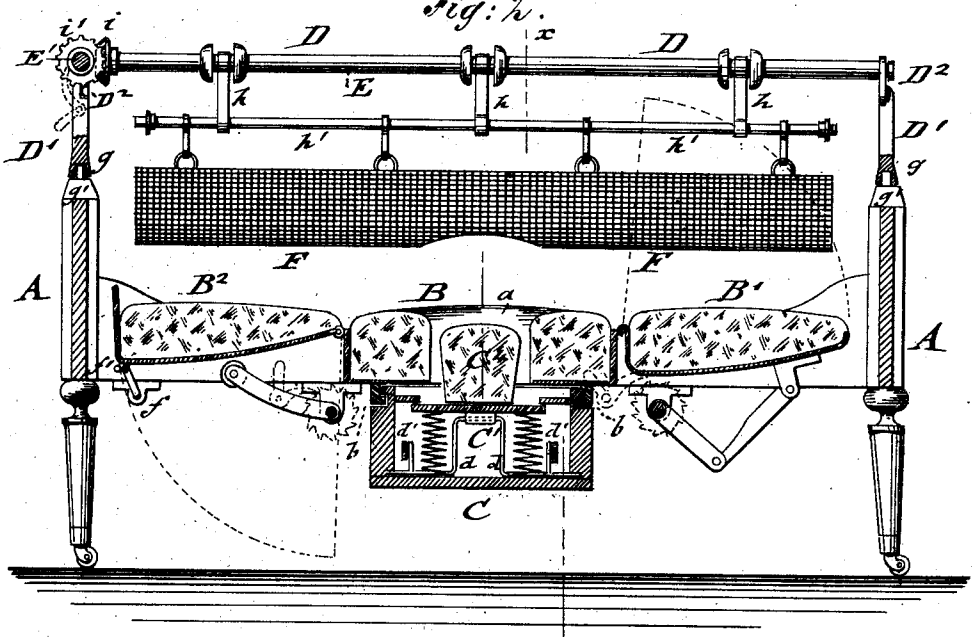
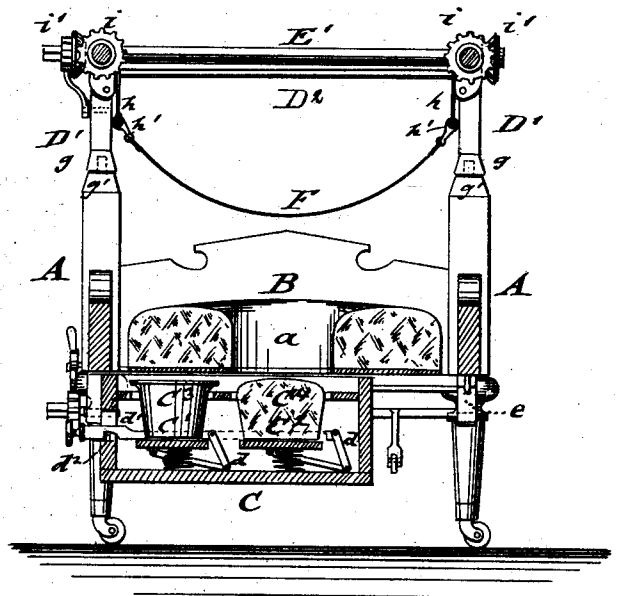


Fig: 5.



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UNITED STATES PATENT OFFICE.

EDUARD HENN, OF JERSEY CITY, NEW JERSEY.

INVALID-BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 244,806, dated July 26, 1881.

Application filed March 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, EDUARD HENN, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Invalid-Bedsteads, of which the following is a specification.

This invention relates to certain improvements in invalid-bedsteads of the class in which the bed-bottom is made of three sections with separately-adjustable head and foot sections, and in which provision is made for a more convenient setting up and lifting of the invalid by means of a hammock and a detachable supporting-frame and hoisting mechanism.

The invention consists, first, of the combination, with the middle section of a three-part bed-bottom and mattress, of a laterally-sliding and removable commode; and, secondly, in the improved construction of the supporting-frame and hoisting mechanism of the hammock by which the patient is lifted above the bed.

In the accompanying drawings, Figure 1 represents a perspective view of my improved bedstead with the hammock removed. Fig. 2 is a vertical longitudinal section with the hammock raised above the mattress; and Fig. 3 is a vertical transverse section of the same on line *x x*, Fig. 2.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a bedstead of the usual form and construction. The bed-bottom and mattress is made in three sections, B B′ B², of which the head and foot sections, B′ B², are hinged to the middle section, B, in such a manner that the head section can be raised by suitable mechanism and the foot section be lowered independently thereof, so that the patient can be set up either for a change of position or for using the chamber.

Below the middle stationary section, B, of the bed-bottom and mattress is arranged a commode, C, which slides like a drawer on fixed transverse bottom rails, *b*, of the bedstead.

At the inside of the commode C are supported two spring-cushioned platforms. C′ C², upon which, respectively, a chamber, C³, and a fixed cushion, C⁴, are placed. The platforms C′ C² are capable of being lowered by means of transversely-pivoted crank-levers *d*, which are hinged to the under side of the platform and operated by pivot-rods *d′*. The rods *d′* extend through guide-slots at the front of the commode, and are provided with knobs or handles for taking hold of the same. By a notch or recess at the under side of the operating-rods *d′* they can be locked to fixed transverse stops *d²*, arranged in the guide-slots, when they are drawn out at the front of the commode. The platforms are thereby lowered by the action of the crank-levers to such an extent that the chamber C³ and cushion C⁴ clear the bottom of the middle section, B, and allow the drawing out of the commode at one side of the bedstead A without interfering with the middle section, B. The lowering of the platforms compresses the cushioning-springs, as shown clearly in Fig. 3. When the commode is drawn out sidewise the chamber may be removed and cleaned, after which it is replaced into its platform, and the latter pushed back until its front is in line with the side rail of the bedstead. In this position the cushion C⁴ is vertically below the circular opening *a* of the middle section, B², of the bed-bottom, so that on releasing the rod *d′* of the platform C² the cushioning-springs will raise the cushion and lift it into the circular opening of the middle section, B, as shown in Fig. 2, so as to be nearly on a level therewith and form one continuous portion with the same when the mattress of the middle section, B, is depressed by the weight of the invalid around the filling-cushion C⁴.

When it is desired to use the chamber the cushion is lowered and withdrawn from the central opening by pulling its rod and locking the latter to the stop *d²*, in which position the commode can be pushed back until it is arrested by a stop-pin, *e*, of the opposite side rail of the bedstead. In this position of the commode the chamber is vertically below the circular opening of the middle section, and may be readily lifted up into the same, so as to take the place of the cushion, by releasing the governing-rod of its platform from the stop of the front end of the commode. For removing the chamber it is lowered with its platform and drawn out sidewise with the commode, which is then pushed back until its front is in line

with the side rail. The cushion is then lifted again into the circular opening of the bed-bottom. The platforms are arrested in their upward motion by a horizontal partition of the commode, which partition has openings for the chamber and cushion. This commode attachment forms an essential improvement of my invalid-bedstead, as thereby the chamber is instantly within reach by simply lowering the cushion, pushing back the commode, and raising the chamber. The easy removal of the chamber dispenses with all disagreeable smells.

The head and foot sections of the bed-bottom and mattress are operated by separate mechanisms, as shown respectively in Figs. 1 and 2.

Any approved mechanism for raising and lowering the head and foot sections may be employed, that shown in the drawings consisting of a toggle-lever arrangement for the head section, which is operated by a crank-shaft in connection with a pawl-and-ratchet mechanism, while the foot section is raised or lowered by curved arms having rollers at the outler ends, said arms being keyed to a transverse shaft, which is operated by a hand-crank and locked in proper position by a pawl and ratchet. When the foot section, B^2, arrives in a horizontal position a transverse supporting-rod, *f*, is thrown by a handle, at one or both of the ends, against stop-pins *f'* at the inside of the side rails, as shown in Figs. 1 and 2.

I may state in this connection that I do not lay any claim to the mechanism for raising and lowering the head and foot sections.

Upon the bed-posts A is supported a detachable top frame, D, the vertical corner-posts D', which are connected by base-sockets *g* to round or square extension-pins *g'* at the tops of the bed-posts, the pins being rigidly secured thereto by means of caps or otherwise. The vertical posts D' are of such height as to admit the raising of the patient by means of a hammock suspended from frame D to the proper height above the mattress for conveniently arranging the bed. The corner-posts D' are stiffened by transverse braces D^2, which are pivoted to lugs of the corner-posts D', and provided with bearings for the longitudinal side rollers, E. Upon the side rollers, E, are wound the suspension-bands *h*, from which the side rods, *h'*, of the hammock F are applied. The hammock F is connected by means of rings and spring-clasps to the longitudinal side rods, *h'*, as shown in Fig. 2. The side rollers, E, are provided at one end with bevel-gear wheels *i*, into which mesh the bevel-wheels *i'* at the end of a transverse shaft, E', which turns in bracket-bearings of the corner posts D' at one end of the bedstead. This transverse shaft E' is operated by a hand-crank at one end, so that both side rollers, E, are turned at the same time. They cause thereby the winding up of the suspension-bands *h* of the hammock and lift the same with the patient. A pawl-and-ratchet mechanism at one end of the transverse shaft E' serves to lock the hammock at any desired position. For lowering the hammock the pawl is withdrawn from the ratchet, and the hammock then slowly lowered by turning the hand-crank in opposite direction.

The advantages of my improved supporting-frame are, first, that it can be operated by one person from one point only, instead of requiring two persons who have to work simultaneously at diagonally-opposite points of the frame; secondly, that it may be readily removed from the bedstead when not required for use and conveniently stored away, as the side rollers and end shaft may be readily detached and the corner-posts folded below the transverse braces. The bed may then be used as a common bedstead, the top caps and pins of the corner-posts forming a kind of ornamental feature of the bedstead.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an invalid-bedstead, the combination, with the middle section of a bed-bottom, having a central circular opening, of a laterally-sliding commode having interior spring-cushioned platforms respectively for a chamber and cushion, and with means for raising or lowering the chamber and cushion, substantially as and for the purpose set forth.

2. In an invalid-bedstead, the combination of a commode supported below the middle section of the bed-bottom with interior spring-cushioned platforms, carrying respectively a chamber and a cushion, with mechanism, substantially as described, whereby each platform may be separately raised or lowered, substantially as specified.

3. In an invalid-bedstead, a supporting top frame consisting of vertical corner-posts secured detachably to the bed-posts, transverse end braces, longitudinal side rollers supported in bearings of the end braces and carrying the bands for suspending the hammock, and of a transverse crank-shaft and bevel-gears at one end of the frame for operating the side rollers from one point of the bedstead, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 14th day of February, 1881.

EDUARD HENN.

Witnesses:
PAUL GOEPEL,
CARL KARP.