

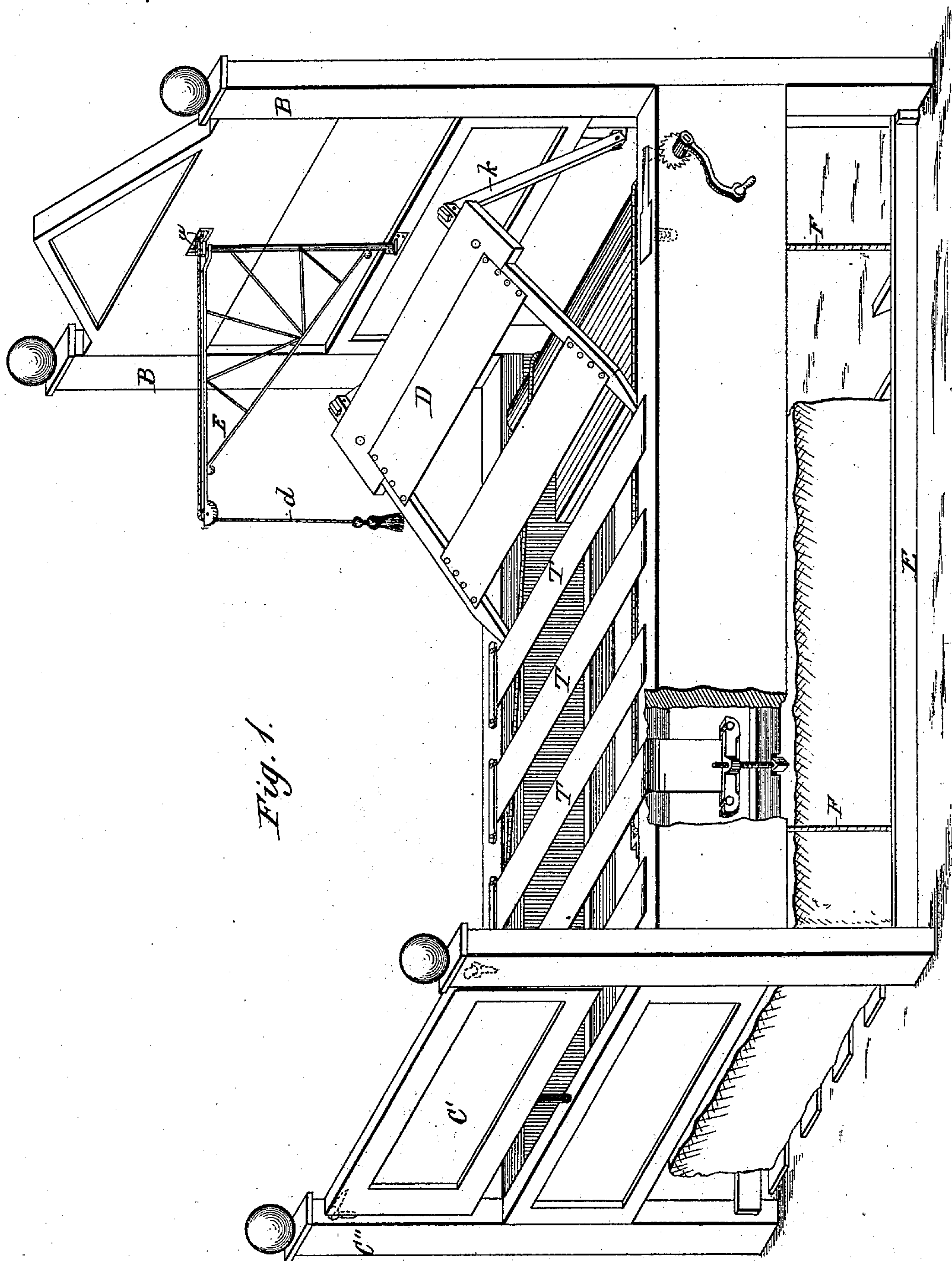
(No Model.)

2 Sheets—Sheet 1.

I. D. JOHNSON.
INVALID BEDSTEAD.

No. 268,238.

Patented Nov. 28, 1882.



WITNESSES:

J. B. Brown.
W. X. Stevens.

INVENTOR:

Isaac D. Johnson

BY

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ATTORNEYS.

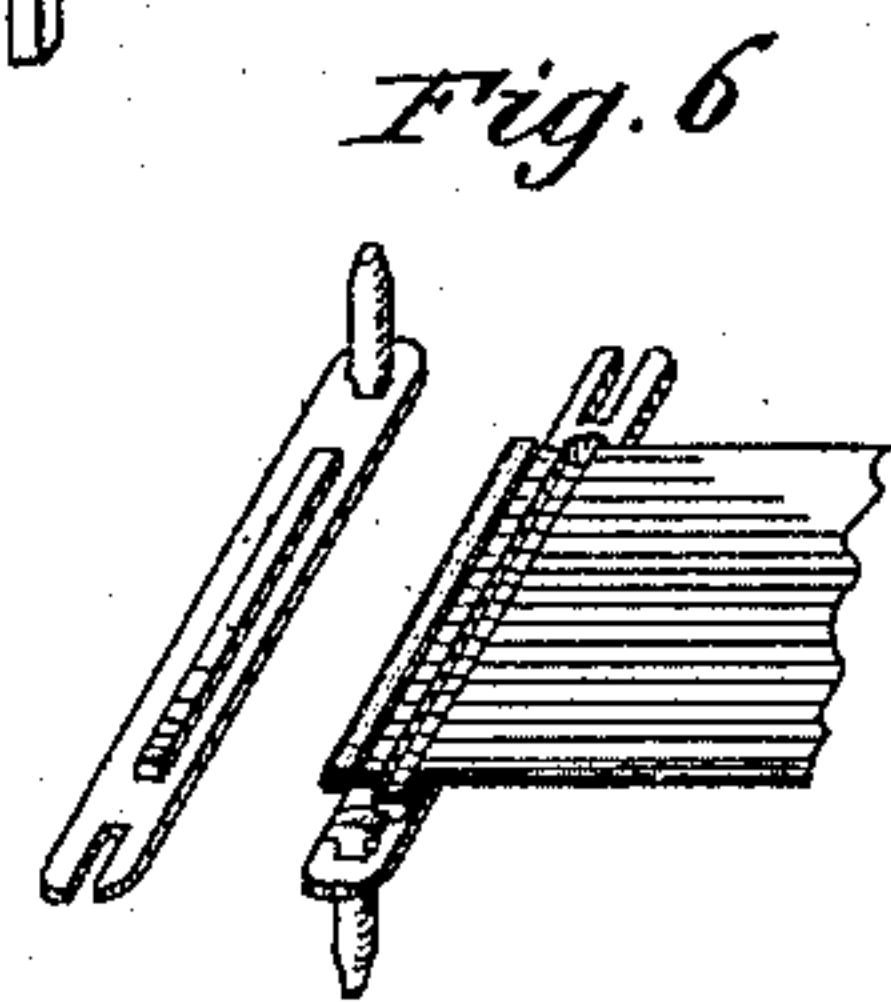
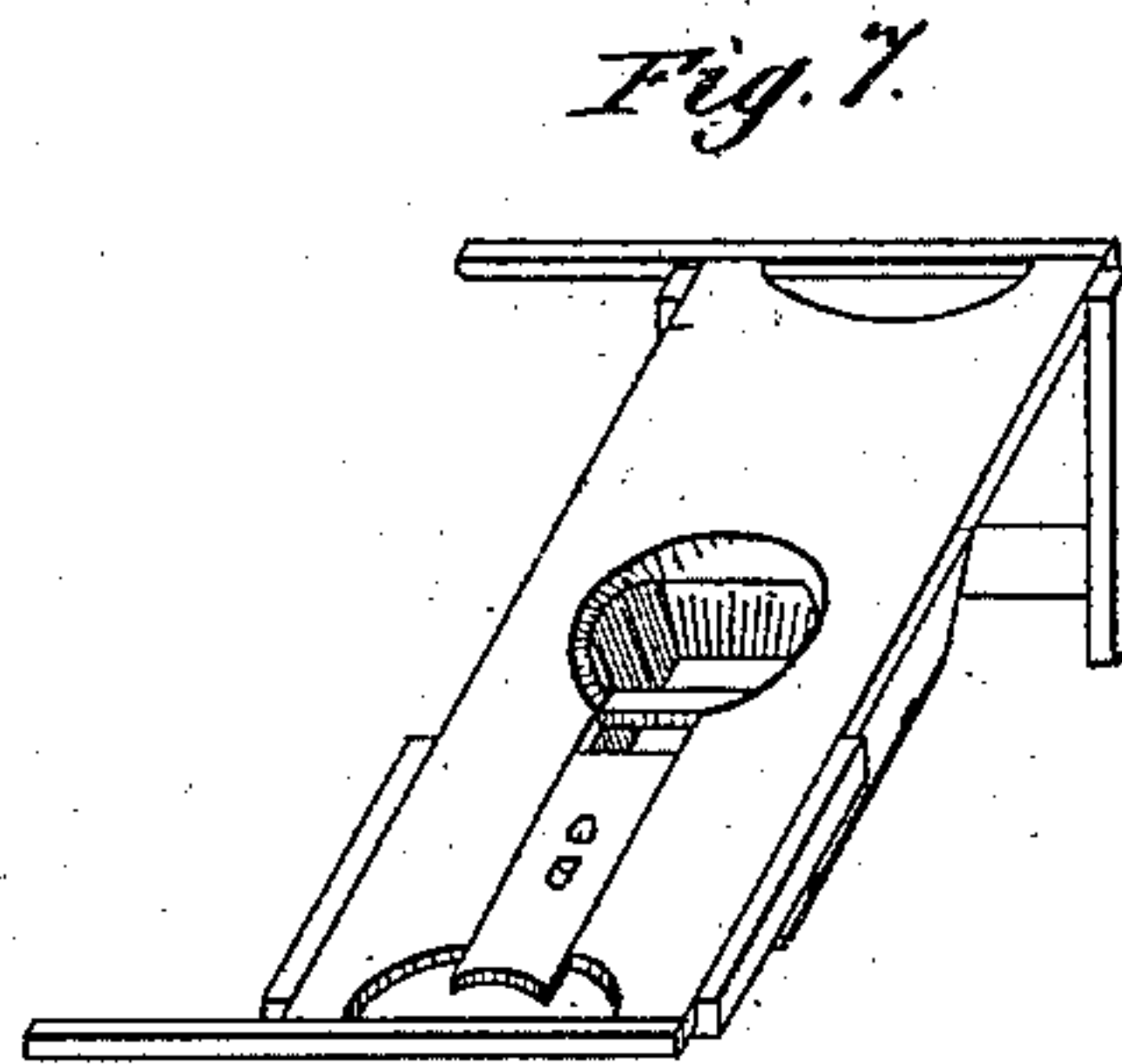
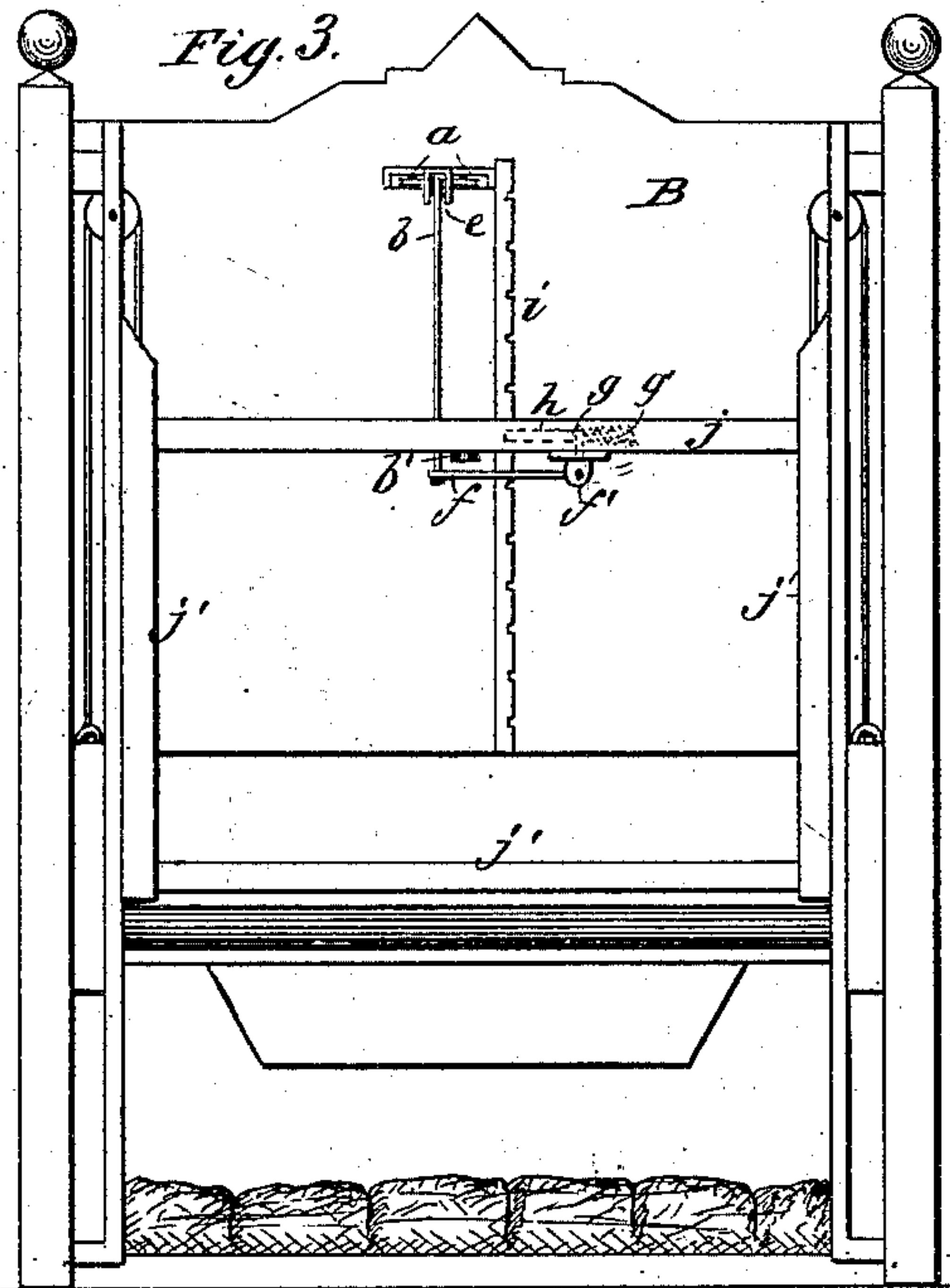
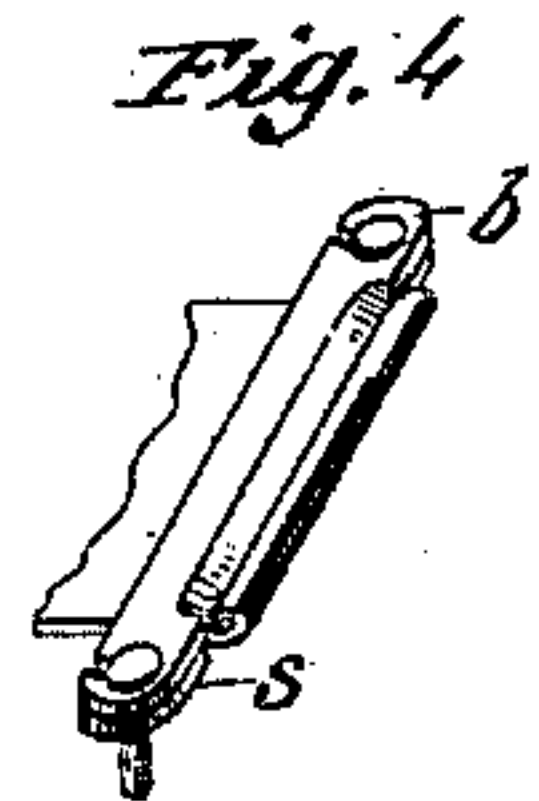
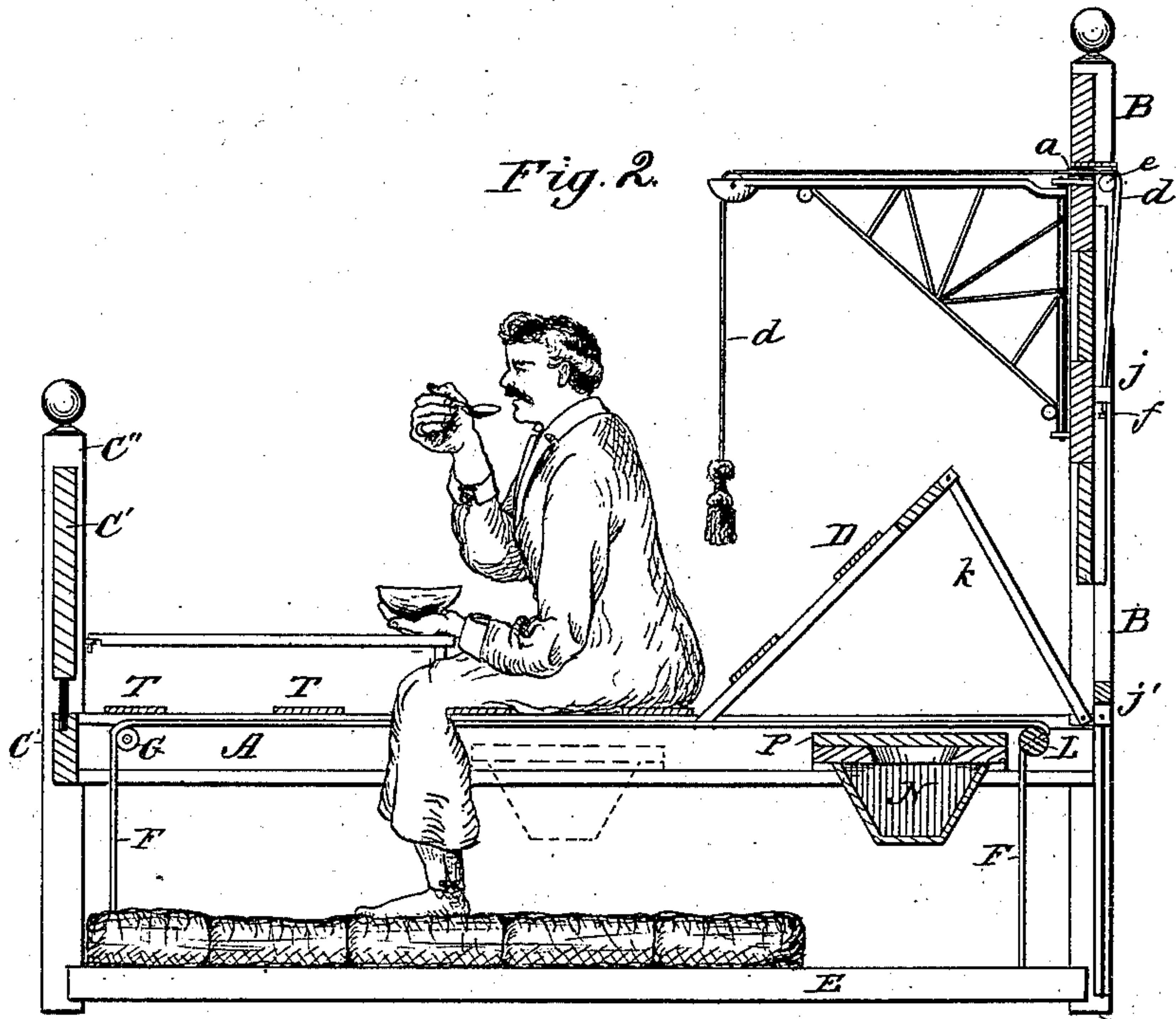
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2 Sheets—Sheet 2.

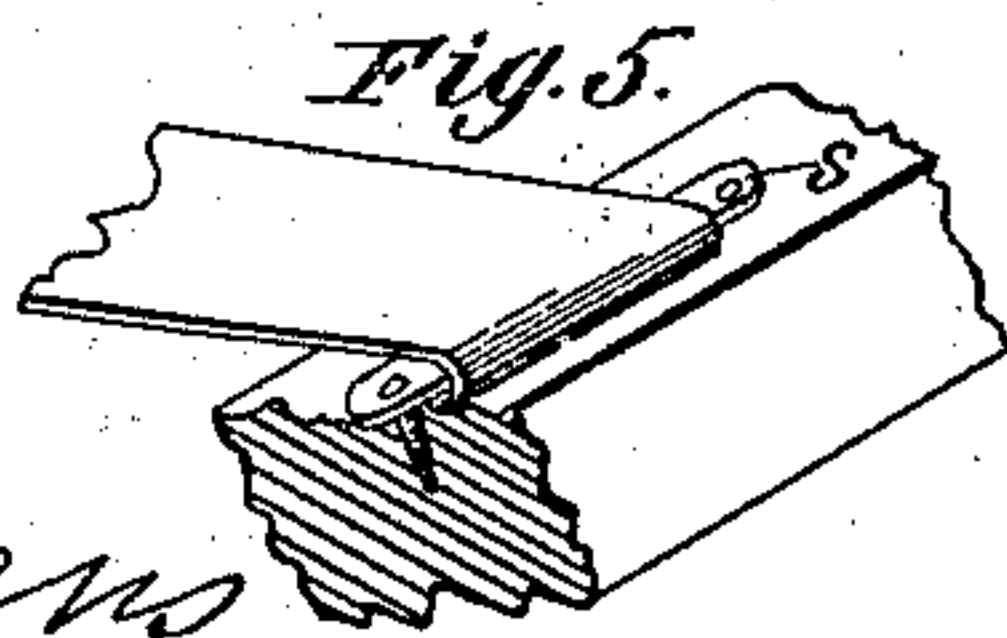
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UNITED STATES PATENT OFFICE.

ISAAC D. JOHNSON, OF KENNETT SQUARE, PENNSYLVANIA.

INVALID-BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 268,238, dated November 28, 1882.

Application filed October 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, ISAAC DUER JOHNSON, a citizen of the United States, residing at Kennett Square, in the county of Chester and State of Pennsylvania, have invented a new and Improved Invalid-Bedstead; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—
Figure 1 is a perspective view of the bed with the mattress lowered. Fig. 2 is a central longitudinal vertical section of the same. Fig. 3 is an elevation at the head of the same. Fig. 4 is a detail view of the strap-holding clamp. Figs. 5 and 6 show modifications of the subject of Fig. 4. Fig. 7 is a perspective view of the commode, and Fig. 8 is a transverse section of a strap and clamp.

My invention relates to certain improvements on Patent No. 247,921, issued to me October 4, 1881, on an invalid-bed; and it consists, first, in means whereby the cord which raises the head-section and passes over the crane to come within reach of the invalid may be kept in place upon the pulley near the axis of said crane when the same is turned to either side to allow the cord to be operated by an attendant; second, in means whereby the sliding frame which supports the head-section may be raised by the cord which draws the locking-bolt, so that the invalid may unlock the support to the head-section and raise or lower the same by operating a single cord; third, in means for holding the ends of the supporting- straps, whereby the same may be readily detached from the bed and from their fastening device; fourth, in means whereby the commode may be supported upon the mattress-supporting frame when in use, while the mattress is low enough to permit the occupant's feet to rest comfortably thereon; fifth, in means for keeping the commode in line with its ways while sliding thereon, that it may not be cramped and stuck fast between the side rails; sixth, in means for concealing the ratchet and wheel which hold the mattress-elevating roller, yet leaving a handle of the ratchet convenient for use; and, seventh, in means for guiding the frame which supports the mattress to slide vertically to enter between the bed-rails.

A represents the side rails of the bedstead, which are made very deep to serve as a crib

when the mattress is lowered till its top is on a level with the lower edge of the rails.

C is the foot cross-rail, rigidly framed to the side rails at the corners.

P is a cross-board, framed to the side rails just low enough to allow the head-section D space to rest between the side rails with its top even with them.

The two side rails, A, the foot-rail C, and the cross-board P form the frame of the bedstead, rectangular, inseparable, and rigid. The head-board and posts B and the foot-posts C' are secured to the corners of this frame by joint-bolts, to be removed and packed alongside of the frame for transportation.

The foot-board C' is provided with a long dowel projecting downward from its center into the foot-rail, and with hooks on its ends fitting eyes on the inner faces of the foot-posts. By this construction the posts are steadied and the foot-board held in a manner to be easily removed from the bedstead in any emergency by merely raising it till its hooks and pin are disconnected.

The head-section D is hinged to the side rails and provided with a raising device, described in my former patent to which reference has been made.

The crane E, vertically pivoted to the center of the head-board, has associated with it two horizontal pulleys, *a*, to keep the cord *d* on the pulley *e* when the crane is swung to either side for the convenience of an attendant in working the cord *d* to raise the head-section D. This cord *d* passes over the frame, back through the head-board, over pulley *e*, down to a lever, *f*, to the long arm of which it is secured to raise the same vertically. This lever *f* is pivoted at *f'* to a block secured to the under side of a cross-bar, *j*, of the guiding-sash *j'*, which raises and supports the head-section D by means of braces K. The opposite arm, *g*, of the lever stands at right angles to the main arm *f* and extends through a hole in bar *j* to a bolt, *h*, which is driven by a spring, *g'*, into notches in bar *i*, secured to the head-board, to hold the frame *j* and its dependencies as set. *b'* is a cushion secured to the under side of bar *j*, against which the lever *f* is brought by cord *b*.

In operation, the cord *d*, being pulled, raises lever *f*, which first withdraws bolt *h* from

notched bar *i*; then, resting on cushion *b'*, raises bar *j*, frame *j'*, and head-section D. When it is high enough the cord is let go, and the bolt *h*, being released, is driven by spring *g'* into notched bar *j*, holding all parts fixed. To let the head-section down, the same cord, *d*, is pulled enough to hold bolt *h* disengaged from bar *i*, and the frame is gently pressed down, while continuing to hold the cord, till it is as low as required. The ratchet-wheel *l*, secured upon the shaft of the roll L, is concealed within the side rail, A, and its ratchet *m* is provided with a handle, *n*, extending to the top surface of the rail, and a spring, *n'*, to keep it in engagement with the wheel-teeth. By this means the roll-securing device is neatly concealed, except the pawl or ratchet handle *m*, which is necessarily on the surface, convenient to the invalid or attendant.

The mattress or bed proper is supported upon a rectangular frame, E, by means of cords F, running over roller L, which is wound up by a crank-wrench and secured at any height by the ratchet and wheel *m l*, the foot-cords F first passing over rollers G, then along the bed to the roller L. The four corners of the frame E are vertically notched or grooved to slide upon the inner corners of the four bed-posts, as guides to keep the bed in place and cause the frame E to enter the frame A C when drawn up.

N is a commode, consisting of a box to contain a chamber, which is passed in and out by means of a door, N'.

r is the opening through the seat O.

H is a sliding lid covering a hole through which the invalid may be wiped. This lid is an improvement over that in my former patent only in details of construction, making it more mechanical and more convenient for use.

The seat O is notched at one end to permit the lid to slide, and at the other end for uniformity of appearance. The horns of these notches are connected by end cleats, J, which extend beyond their sides to increase the line of bearing on the ribs projecting from the inner faces of the rails A, that the commode may not be cramped by turning diagonally between the rails when sliding forward to the position shown in dotted lines.

I represents four legs, pivoted or hinged to the sides of the commode-top, to swing downward to a vertical position and rest upon the side rails of frame E when the commode is forward. Across the lower portion of the legs is a thin cleat, upon which a button secured to the lower side of the top board, O, acts to hold the legs when swung up.

In practice the mattress will be lowered out of the way, the commode will be slid forward beneath the invalid while he sits upon the cross-straps T, which are strong webbing, the legs I will be swung down, and the mattress will be raised, taking the legs I upon its frame until the commode is in position against the invalid. These legs serve to support the commode in position for use upon the mattress-

frame when the mattress is low enough to be an easy rest for the patient's feet. In my former patent the commode was supported by its box resting on the mattress, thus requiring the mattress to be raised too high for the occupant's comfort as a foot-rest.

s t represent bars forming a clamp for holding the ends of the supporting-straps T. These straps are provided with a heavy hem at each end to prevent their being pulled out of the clamp, and the clamp, for the same purpose, is sharpened at the edge coming against the hem. The clamp may be still further armed to resist the withdrawal of the strap by having its two bars *s* and *t*, Fig. 8, corrugated to register with each other on the strap. The lower bar, *s*, is provided with dowel-pins *u*, rigidly fixed in it, to fit neatly in vertical holes in the side rails, A, having heads, under which the upper bar, *t*, of the clamp is fitted to slide by means of notches in the bar *t*, made to receive the bodies of the dowel-pins, as in Fig. 4. Fig. 6 shows a modification of the same, made necessary by the corrugations on the style of clamp shown in Fig. 8. A slot is made into bar *s* at one end, to receive the rivet which is secured in bar *t*, and a similar slot in the other end of bar *t* receives a similar rivet in the other end of bar *s*. By this means the corrugations of the two bars may be shut together on the strap and then slid endwise to engage their slots and rivets. By still another modification (shown in Fig. 5) the lower bar, *s*, is provided with dowels *u* to fit the same holes in rails A; but this bar is inserted in a hem in the end of the strap, thereby holding the same. One of the clamp-bars *s* at one end of the strap is screw-threaded, to be drawn by a screw, V, for tightening the strap. This screw passes up through the rib W, projecting from the inner face of the side rail, A, the strap reaching that point through a vertical slit or mortise in the top of the rail, as shown in the break in rail A, Fig. 1.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. The combination, with a crane vertically pivoted to the head-board of a bed to swing from side to side over the bed, supporting a cord over its outer end, which passes over or near its axis through the head-board to connect with a device for raising the head-section of the bed, and a vertical pulley in the head-board, over which said cord runs, of two horizontal pulleys pivoted to the head-board—one on each side of said cord—to keep the same on the vertical pulley, substantially as specified.

2. The combination, with a frame arranged to elevate the head-section of a bed by sliding vertically on the head-board thereof, and a cord passing through or over the head-board above said frame, of an elbow-lever pivoted beneath a cross-bar of the frame, to press against the same when fully raised, a horizontal bolt reciprocating longitudinally in said cross-bar, to engage notches in the side of a vertical bar secured to the head-board, a spring for pressing said bolt constantly toward said vertical

bar, the vertical arm of said elbow-lever engaging said bolt to withdraw it by the action of raising the horizontal arm thereof, and said horizontal arm having the aforesaid cord attached to it, whereby the pulling of the cord at the front of the head-board will first disengage the locking-bolt and then by continued motion raise the head-section of the bed, substantially as specified.

10 3. The combination, with the webbing cross-straps of a bed described, of clamping-bars provided with rivets or their equivalent for holding them together upon the webbing, and means for securing said clamps to the side rails
15 of a bed, substantially as specified.

4. The combination, with a webbing strap or straps secured to one rail of a bedstead and crossing to the other rail, of a mortise or slit vertically through the top of the rail to receive
20 said strap, a clamp or bar holding said strap, provided with a screw-threaded hole, and a screw passing up through the inner rib of said side rail and working in said screw-threaded hole, whereby the strap may be drawn tight,
25 and the device therefor concealed from view, as shown and described.

5. The combination, with a bedstead provided with inwardly-projecting ribs on its side rails, of a commode consisting of a box provided with a top board having a cleat secured across the end of its grain at each end, extending beyond the sides and fitted to slide upon said ribs, as shown and described.

6. The combination, with a bedstead having
35 inwardly-projecting ribs on its side rails, of a commode fitted to slide thereon, provided with notches in each end of its top board, a hand-

hole cover fitted to slide into one of said openings, and a cross-strip separating the hand-hole from the main hole in the seat of the commode, as shown and described. 40

7. The combination, with a bedstead provided with ribs on the inner faces of its side rails, and a mattress-elevating frame, of a commode fitted to slide on said ribs, provided
45 with legs pivoted or hinged to its edges at its four corners to swing to a vertical position to rest upon said mattress-frame, as and for the purpose specified.

8. The combination, with a bedstead having
50 a frame for carrying the mattress supported by cords wound upon a roller, of a ratchet-wheel secured to the shaft of said roller within the side rail of the bedstead, a pawl or ratchet pivoted to swing vertically in the side rail to
55 engage the teeth of the wheel to support the mattress-frame at any point, said pawl being provided with a lever end or handle extending above the rail, by which to disengage it, and a spring beneath said handle to force it
60 upward to keep the pawl in engagement with the teeth of the wheel, as specified.

9. The combination, with a bedstead having rectangular inner corners to each of its four posts below the top of the side rails, of a mattress-supporting frame provided with vertical
65 notches or grooves in each of its four corners to fit and slide freely upon said post-corners, and means for elevating and supporting said mattress-frame, substantially as specified.

ISAAC DUER JOHNSON.

Witnesses:

WILLIAM DAVIS,
L. E. JOHNSON.