2 Sheets--Sheet 1.

J. GOODWIN.

Invalid-Bedstead.

No. 160,667. Patented March 9, 1875.

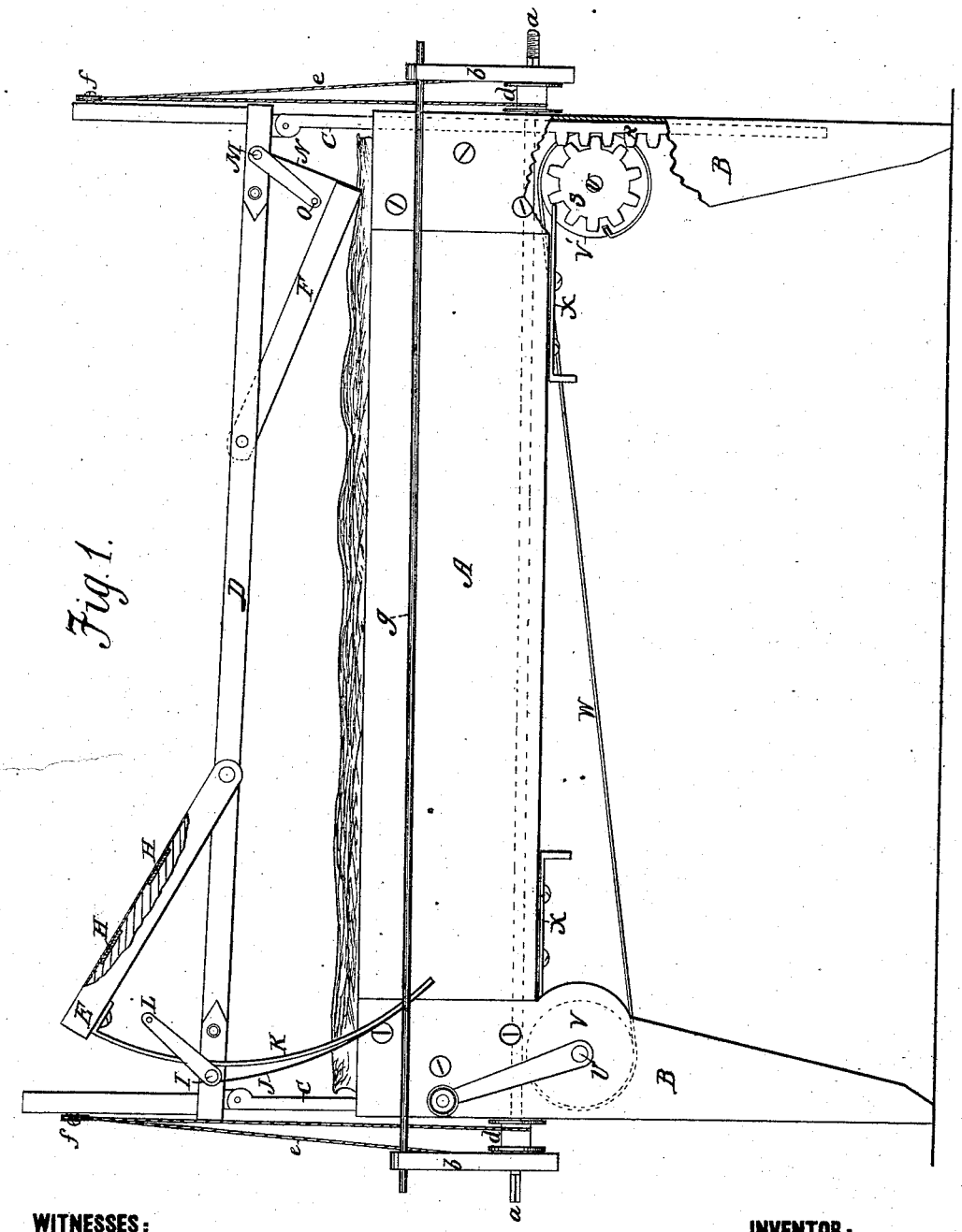

Fig. 1.

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2 Sheets--Sheet 2.

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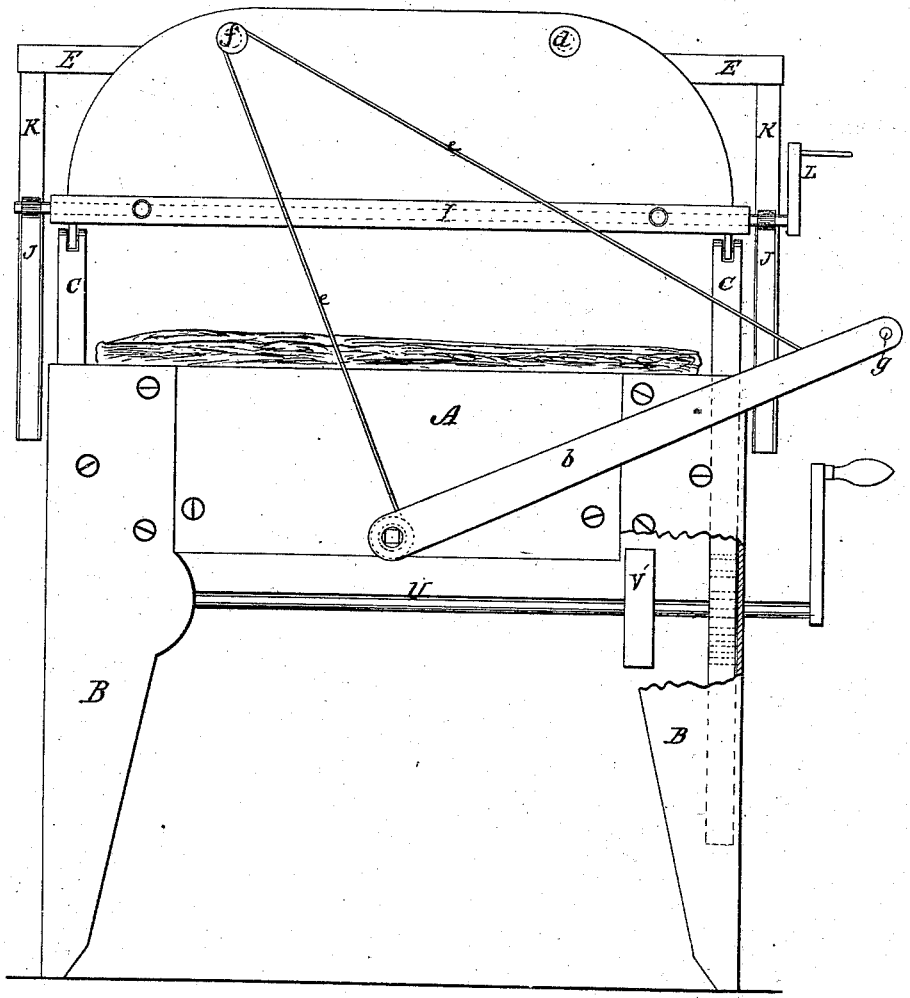
Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES GOODWIN, OF LENNOXVILLE, CANADA.

IMPROVEMENT IN INVALID-BEDSTEADS.

Specification forming part of Letters Patent No. **160,667**, dated March 9, 1875; application filed February 2, 1875.

To all whom it may concern:

Be it known that I, JAMES GOODWIN, of Lennoxville, in the county of Sherbrook and Province of Quebec, Canada, have invented a new and useful Improvement in Invalid-Bedsteads; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a vertical side elevation with portions broken away; Fig. 2, a vertical end elevation.

This invention relates to certain improvements in invalid-beds; and it consists in the combination of a movable stretcher-frame with elevating-posts, the latter being connected to said frame by means of joints or hinges, whereby the entire frame may be set at any inclination. It also consists in the combination, with an invalid-bed, of radially-moving arms at the head and foot, connected by a rod adapted to be placed in the hem of the sheet, so that when the arms are actuated with a rotary motion the patient is turned upon his side, or from one side of the bed to the other. The invention further consists in the combination, with said arms and rod, of means for operating the same, as will be hereinafter more fully described.

A is the bedstead, having L-shaped posts B, to receive the angle-posts C. The frame D has a hinged supplementary frame, E, at the head, and a frame, F, at the foot, the former admitting of elevation and the latter of depression, to form an easy-chair, or a stool-chair, or commode, supporting the patient in a sitting position. A ticking covers the supplementary frames E and F, and between the said parts it is secured to the frame D. A webbing, H, is secured transversely to the parts E and F and frame D, underlying the ticking, to prevent it from sagging. The head-frame E is operated from a level to an elevated inclined position by means of a shaft, I, having its bearings in the frame D, winding bands J J on each end, secured to the lower ends of the segment-arms K, whose upper ends are fastened to the frame E, so that when the shaft is rotated by the crank L on its end the bands wind on the shaft, drawing up the segment-arms, and elevate the head-rest inclinedly. By unwinding the bands from the shaft, the head-rest falls to a level position. The foot-rest F is operated from an inclined to a level position by means of a shaft, M, bearing in the frame D, and winds bands N thereon by turning the shaft by a crank, O. A reverse motion of the shaft causes the foot-frame to drop by its own gravity. The frame D is operated to elevate at either end from one to eighteen inches by corner-posts C, which run in the L-angles of the bedstead-post. The posts C are hinged to the frame D, to allow the frame to be elevated at one end more than at the other, as may be desired or needed, to elevate the head or the feet of the patient above his body when in a reclining position. By this manipulation of the frame to any inclined position integrally, and the separate adjustment of the head and foot frames, any desired position can be given to the patient in a gradual manner. The elevation of the posts C can be effected either by a cord-and-pulley gear or by a rack and pinion, in which R is the rack, secured to or forming part of the post, and S are the pinions meshing therewith. The pinions are keyed on shafts U at the head and foot of the bedstead, and on each of the shafts is keyed a pulley, V V′, to which is attached a band, W, wound around the pulley V′, so that, by turning the shaft U by the crank-handle, the band is wound on the pulley V and unwound from the pulley V′, thus causing both shafts to elevate their respective posts simultaneously. X are slides engaging with the pinions S, to keep the posts at any desired elevation. *a* is a longitudinal shaft under the bed-bottom, carried in bearings on the head and foot rails of the bedstead. On the ends of this shaft are placed arms *b*, (attached but turning freely on the shaft,) connected together by a rod, *g*. These arms *b* will be of suitable length to enable them, when the frame is lowered, to carry the rod *g* clear over the bed, the shaft *a* being the center of motion. *d* are pulleys keyed on the shaft *a* in the position shown, and, by rotating the shaft *a* by a crank-handle, the cords *e* are wound upon the pulleys *d*. It will be seen these cords are arranged to pass over pulleys *f*, arranged on the head and foot boards.

The side edge of a sheet under the patient is fastened to the rod *g*, and, by rotating the shaft *a* with its crank-handle, the movable stretcher being previously lowered, the rod *g*, by the operation of the cords and arms, draws the sheet in such a manner as to turn over the patient toward one side of the bed. When it is desired to turn the patient toward the other side of the bed, the bar *g* is detached from that side of the sheet to which it was previously attached, and secured to the other. A pulley, *f*, is furnished at each end of the head and foot board, so that the cord *e* will also be changed from the pulleys at one side of the bed to those on the other; and, by again winding the cords on the pulleys *d*, the patient is turned toward the other side of the bed. Instead of the four pulleys *f* being required, only two may be used, by having sockets for their axles, and thus enabling them to be moved from one side to the other. Thus the patient may be turned over and laid on either side or back, as desired. The bedstead and parts may be made of any suitable materials.

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

1. The combination of a tick-stretching frame, D, with the elevating-posts C, connected by means of joints or hinges, for the purpose of changing the inclination of the entire frame, substantially as described.

2. The combination, with an invalid-bed, of two radial arms at the head and foot of the bed, and a rod connecting the ends of the same, and adapted to be placed in the hem of the sheet, so that when actuated with a rotary motion the patient is turned from one side of the bed to the other, substantially as described.

3. The combination of a shaft, *a*, arms *b*, connecting-rod *g*, pulleys *d* and *f*, and cords *e*, for the purpose of operating a sheet attached to the rod *g*, substantially as described.

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Witnesses:
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