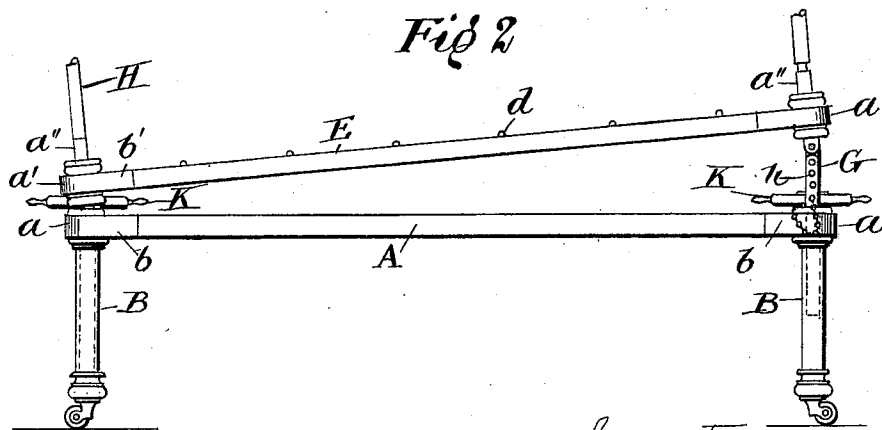
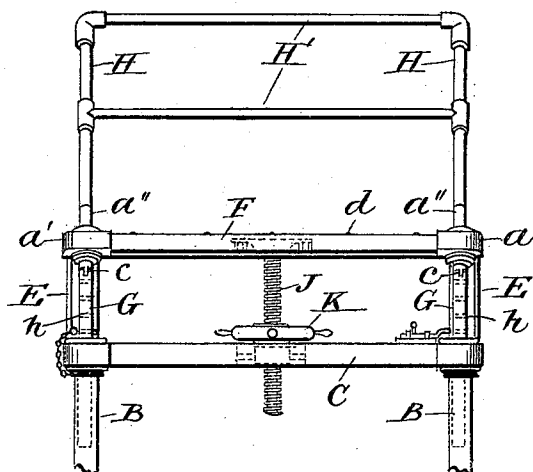
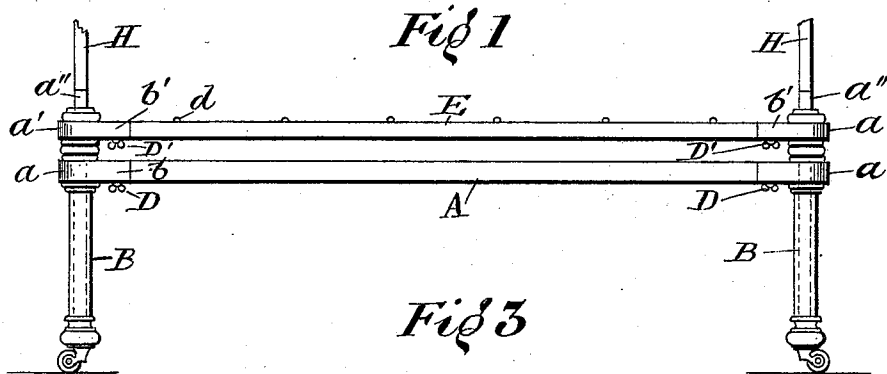


L. W. BICKLE.
ADJUSTABLE BEDSTEAD.

No. 541,586.

Patented June 25, 1895.



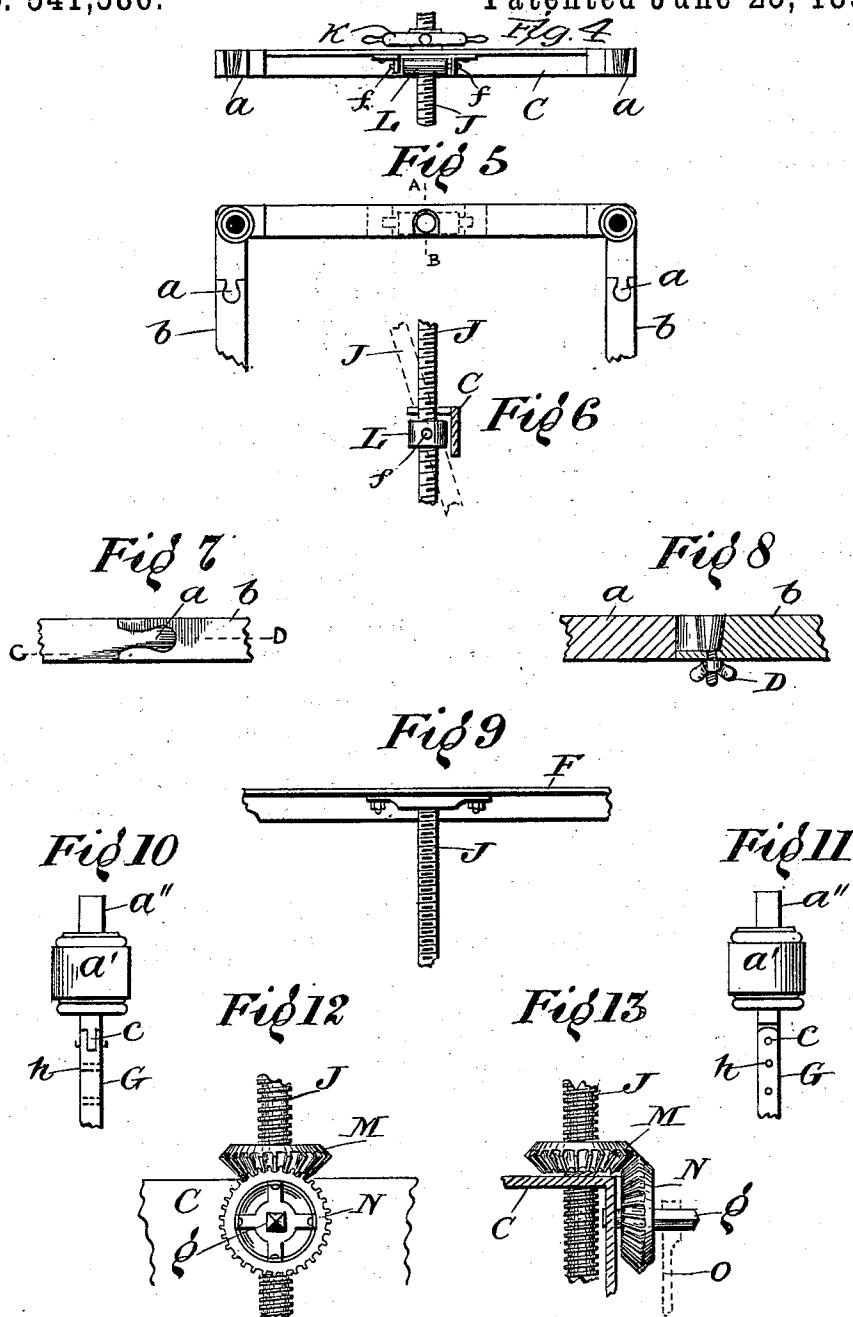
Witness:
E. H. Shuler
E. A. Scott

Inventor:
Leonard Watkins Bickle
Edward Bickle
attorney

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Witness:
E. H. Sturtevant
E. A. Scott

by

Inventor:
Leonard Watkins Bickle

Reynolds R
attorney

UNITED STATES PATENT OFFICE.

LEONARD W. BICKLE, OF MOUNT BARKER, SOUTH AUSTRALIA.

ADJUSTABLE BEDSTEAD.

SPECIFICATION forming part of Letters Patent No. 541,586, dated June 25, 1895.

Application filed December 18, 1894; Serial No. 532,254. (No model.) Patented in England April 24, 1894, No. 8,080.

To all whom it may concern:

Be it known that I, LEONARD WATKINS BICKLE, M. R. C. S., Eng. L. R. C. P., London, a subject of Her Majesty the Queen of Great Britain, residing at Mount Barker, South Australia, have invented an Improved Adjustable Bedstead for Facilitating Surgical Operations, (for which I have obtained a patent in Great Britain, No. 8,080, and bearing date April 24, 1894,) of which the following is a specification.

My invention includes a special form of connection between the sides and end pieces and in the particular means for adjusting the upper frame in relation to the lower frame.

For the purpose of making my invention more clearly understood I have hereunto appended two sheets of drawings, in which—

Figure 1, Sheet 1, is a side elevation of my improved bedstead when the upper frame is at rest upon the lower and in a position for use as an ordinary bed. Fig. 2 is a similar view illustrating how either end may be raised to facilitate surgical operations without removing the patient. Fig. 3 is a head or foot elevation of same as viewed from right to left of Fig. 2. Fig. 4, Sheet 2, is an inside view of the top head or foot rail of the lower frame, showing the position and the manner in which I prefer to mount the elevating-screw thereon. Fig. 5 is a plan view of Fig. 4 with the said screw in section or broken off. Fig. 6 is a vertical section upon the line A B of Fig. 5. Figs. 7 and 8 are views of the junction portions of the sides and ends of the upper or lower frames, or both, the latter being a section upon the lines C D of the former, illustrating the method and means I employ for fastening them together. Fig. 9 is an inside view of the horizontal rail of the head or foot of the upper frame, illustrating the manner in which I prefer to connect the head of the said elevating-screw thereto. Figs. 10 and 11 are enlarged views of the ends of the same rail, Fig. 9, illustrating the manner in which I prefer to hinge or pivot the legs of the upper frame thereto. Figs. 12 and 13 are enlarged back elevation and vertical section, respectively, of so much of the horizontal rail of the head or foot of the lower

frame as will serve to illustrate an alternative method I may employ for operating the said elevating-screw.

Similar reference-letters are used in all the views when referring to the same or like parts.

I carry my invention into effect by constructing the lower frame A, after the manner of metallic bedsteads generally, with these exceptions, that the legs B, thereof are hollow and cylindrical, and the said frame has no vertical extensions above the horizontal rails, the whole being mounted upon casters, wheels or rollers in the usual way. The side rails of A, would be connected to the head and foot pieces C, by tongue and socket joints *a*, *b* after the manner of metallic bedsteads generally, and may or may not be retained in connection with each other by the means of a fly-nut or its equivalent D, engaging with a threaded stud fixed upon the lower surface of the tongues *a* and passing through holes in the lower surface of the sockets *b*. This arrangement will be clearly understood by reference to Figs. 7 and 8, and its application by Fig. 1.

The upper frame is of the same dimensions as the lower frame, and consists of side rails E, and end rails F, connected together by tongues and sockets *a'* and *b'*, and retained so connected by nuts D' in the same manner as the lower frame, as shown in Fig. 1, the said rails E, F, being provided with any number of the usual buttons *d*, for the reception of cross laths, or the supporting screws of a woven wire mattress, in the usual way.

The lower surfaces of the corner pieces *a'* I prefer to so construct as to effect a pivoted connection at *c* with the upper ends of legs G, these being so formed as to slide vertically within the legs B, of the lower frame. The upper surfaces of the corner pieces *a'* are provided with hollow nosings or sockets *a''*, for the reception of portable head and foot pieces H, which, when prime cost is a consideration may be constructed from ordinary gas barrel, and may have any number of cross rails H'.

I have previously stated, that one of the objects of my invention is, that the patient, bed, and upper frame of the bedstead may

be raised or lowered, or placed at any desired angle longitudinally to facilitate surgical operations, and I effect this by mounting upon and passing through each end piece C, of the lower frame, a fine pitched threaded spindle or rod J, the upper ends of which may or may not be fixed, but always connected to the end pieces F of the upper frame, preferably in the manner shown by Fig. 9. Upon each spindle or rod J, a hand wheel or its equivalent K would be mounted between C and F, the rotation of either of which, in one direction, would have the effect of raising J and that end of the upper frame, as shown at Figs. 2 and 3, or by the rotation of both wheels K simultaneously, the upper frame may be raised or lowered parallel with the lower frame. By reason of the rods J being connected to the upper frame, the raising of either end as at Figs. 2 and 3, would necessarily occasion a certain deviation in the perpendicularity of the rod J at that end, as shown in Fig. 6, and to accommodate this I may mount upon each of the bars C, a carrier L, pivoted upon angle pieces *f*, fixed upon the under surface of C, and through a hole in L the rod J would freely pass, and these would accommodate themselves to any angle assumed by J. This arrangement will be understood by reference to Figs. 4, 5, and 6.

As an alternative method for effecting the rise and fall of the said elevating screws J, I may, in lieu of the hand wheels K, mount upon each a miter wheel M, and gear these with like wheels N, mounted upon the bars C, and having riveted or otherwise fixed thereto a projection *g*, formed to receive a handle O, and by rotating N in one direction the wheel M would be rotated and J raised thereby. This alternative arrangement will be understood by reference to Figs. 12 and 13.

In order to guard against the possibility of the upper frame falling spontaneously when raised as stated at either or both ends, I may form in the legs G any number of through holes *h*, with either of which may engage a pin P, connected by a chain or cord to the lower frame or other convenient part of the bedstead; or in lieu of P, I may mount upon the bars C, bolts S, capable of engaging with the holes *h*. These arrangements will be understood by reference to Figs. 3 and 4.

The object of the fly-nuts or their equivalents D, D' especially upon the upper frame, are to permit that the entire apparatus may be moved about bodily without fear or danger

of these joints becoming disconnected spontaneously.

When my invention is to be used as a bed in the usual way either or both the head and foot pieces H, may be placed in position as at Fig. 3, but when it is purposed to convert the same into an operating table, either or both of these may be removed, and the upper frame, or either end of this, raised in the manner described, to suit the requirements and convenience of the operating surgeon, without removing the patient, and when the operation is over, or before if necessary, fracture boards may be inserted under the paillasse or mattress, and the upper frame again lowered into its normal position, and if desired the piece or pieces H, replaced, thus again returning the apparatus to its original use as an ordinary bed, and upon which the patient may be allowed to remain.

Having now particularly described and ascertained the nature of my said invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination in a bedstead, the feet or standards and the frame composed of sides and end pieces, the tongue and socket connection between said parts and the wing nut for holding said tongue and socket connections together, said socket being formed in the upper surface of one part and the tongue projecting longitudinally into the same from the other part, and having a downwardly extending screw threaded tongue with which the wing nut engages substantially as described.

2. In combination in a bedstead, the hollow standards, the lower frame, the upper frame, the pivoted rods depending therefrom into the hollow standards, said rods having perforations, means for engaging said perforations to hold the upper frame up, the centrally arranged screw at each end adapted to adjust and hold the frames, said central screws extending vertically and working through a carrier L swiveled on the under side of the lower frame and the hand wheel on the screw bearing on the upperside of the lower frame substantially as described.

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

LEONARD W. BICKLE.

Witnesses:

H. B. CHAPMAN,
M. J. KEPFER.