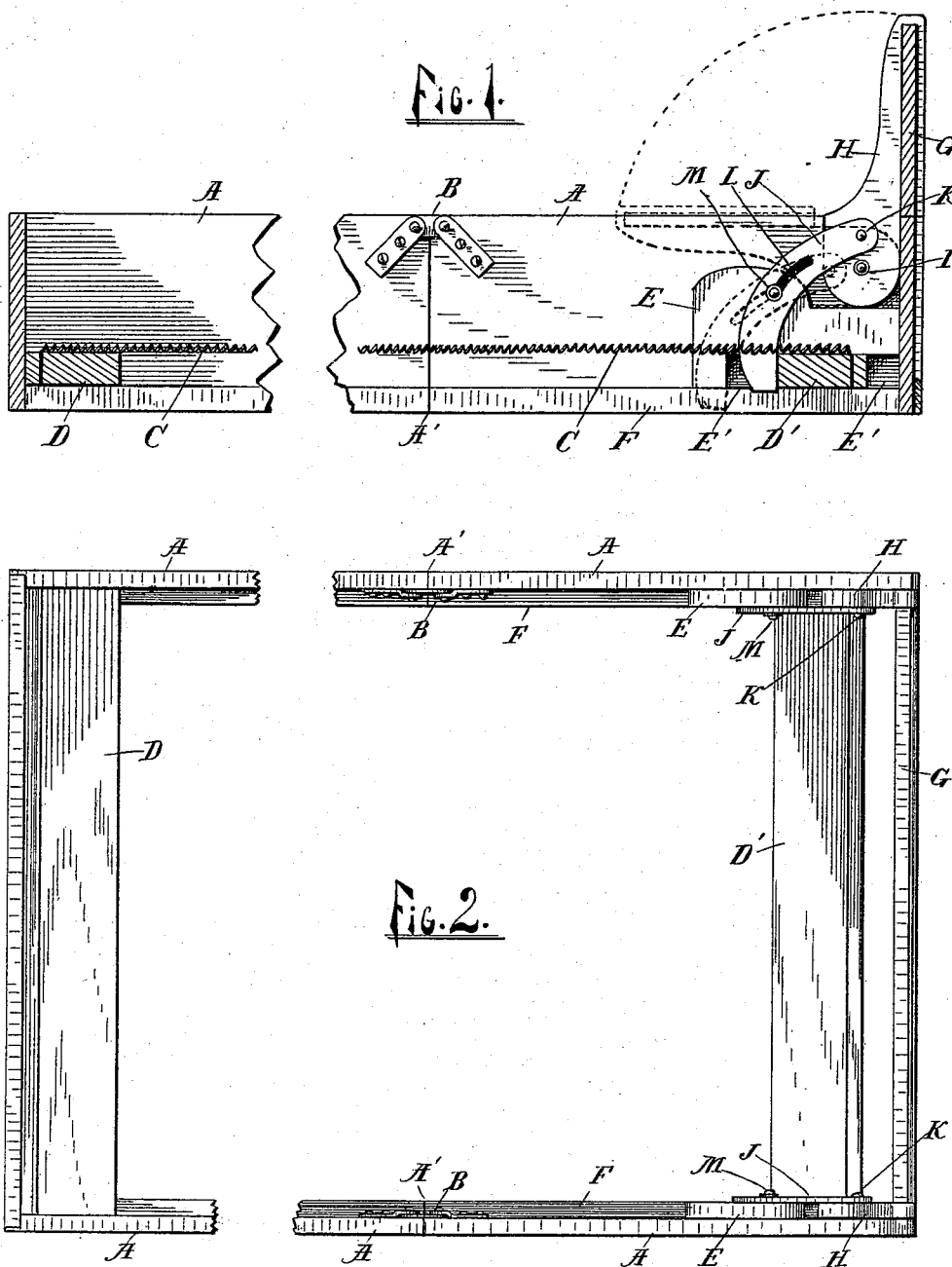


No Model.)

W. S. GUNN.
FOLDING BED.

No. 494,419.

Patented Mar. 28, 1893.



WITNESSES:

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WILLIAM S. GUNN, OF GRAND RAPIDS, MICHIGAN.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 494,419, dated March 28, 1893.

Application filed June 25, 1892. Serial No. 437,976. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. GUNN, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Folding Beds; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in folding beds and more particularly to mechanism for automatically tightening and loosening the woven wire bottom in the same, as the device is opened and closed, and its object is to provide the same with certain new and useful features hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings in which;—

Figure 1 is a vertical section of the folding section of a folding bed, having my device attached; and, Fig. 2 a plan view of the same.

Like letters refer to like parts in both of the figures.

Heretofore it has been usual to connect the movable bar to the jointed side rails by mechanism adapted to move said bar by opening out said side rails. This admits of use only with beds of the class having jointed side rails, commonly known as mantel beds. It is also objectionable for that straining the bottom in this way interferes with the free operation of said jointed rails and the foot is often thrown forcibly upward by the contracting bed bottom.

My invention consists in providing mechanism whereby a hinged foot board is connected to the movable end bar of the bed bottom, in such a manner that opening the foot board moves the bar and tightens the bed bottom, and also whereby said foot board is held in place both when open and when closed by the tension of said bottom.

A A, are the side rails which may be divided and hinged at B for the purpose of folding the foot of the bed over upon itself, as in the so-called mantel bed, for which style of structure my device is especially adapted, but it may also be used in the beds having no jointed side rails, as it is desirable to take

off the strain from the bottom when it is not in use.

C represents the woven wire bottom which is omitted in Fig. 2, this bottom is attached at the head to a fixed transverse bar D, and at the foot to a movable bar D', which engages the grooves E' at each end and moves laterally therein, said grooves being formed by the adjacent edges of the bottom strips F and the blocks E, which are firmly secured to the opposite inner sides of the rails A, the contractile action of the bottom C tends to move the bar D' toward the head bar D.

The foot board G is attached to supports H at each side, which supports extend below said foot board and are pivoted to the side rails at I, and turn from vertical to horizontal on said pivots as indicated by dotted lines. These foot board supports are connected to the movable bar D', by means of levers J, connected to said foot board supports by pivots K, at one end and engaging said bar at the other end, being intermediately pivoted upon a movable fulcrum, to accommodate the movement of the pivot K, which fulcrum is preferably a fixed stud M, attached to the block E on the side rail, and passing through a curved slot L in said lever J. It is evident that either the pivot K, or stud M may traverse a slot, and the other be a fixed pivot, and that which ever traverses a slot may instead engage the side of the lever instead of passing through the same, or the lever may be connected at either point by a pivoted connecting rod to provide for the longitudinal shifting of the fulcrum, or pivot, without in any wise departing from the spirit of the invention, or effecting the relation and operation of the parts. By arranging to increase the distance between the pivot K and the fulcrum M, I gain the greatest leverage, while the bottom is under the greatest tension, and thus gain the best results.

Very many modified forms of mechanism and well known equivalents might be utilized to connect the bar and foot board to secure the same practical results by substantially the same means. For these reasons I do not limit myself to the precise construction shown.

By observing the change of position of the parts indicated by the dotted lines the opera-

tion of the device will be readily understood. As the foot board is turned down the pivot K traverses the arc of ninety degrees about the pivot I this slides the levers on the studs M and moves their lower ends inward, the bar D' follows and slackens the tension on the bottom C and permits the foot of the bed to be easily turned over upon the hinges B. As the bar rests against the levers J it tends to turn them on the studs M and thus forces the foot board down upon the bedding thus firmly securing the same. When the bed is opened out, as the foot board is raised to the vertical position it turns the levers to their former position and forces the bar D' toward the foot of the bed, and stretches the bottom C, the pressure of the bar D' against said levers again tends to turn them on the studs M and force the pivot K backward, which now being above the pivot I, tends to hold the foot board in place, I thus automatically tighten and slacken the bottom C by opening and closing the foot board, and at the same time automatically hold the foot board open or closed as the case may be. By this construction I am also able to slacken the bottom before folding the jointed side rails of the mantel beds, thus avoiding the interference with such folding, due to the heavy tension of said bottom.

What I claim is—

1. The combination with a bed frame, of a longitudinally-contractile bed bottom secured at one end to a fixed bar, and at the other end to a movable bar, a pivoted foot board, and a lever connecting said pivoted foot board and said movable bar in such a manner that said movable bar will be reciprocated by the move-

ment of said pivoted foot board, substantially as described.

2. The combination with a bed frame, of a longitudinally-contractile bed bottom secured at one end to a fixed bar, and at the other end to a movable bar, a pivoted foot board, and a slotted lever connecting said pivoted foot board and said movable bar, and engaging an intermediate fulcrum, whereby said movable bar is reciprocated by the movement of said pivoted foot board, substantially as described.

3. In a folding bed in combination with a longitudinally contractile bed bottom having a movable bar attached to one end of the same, and a pivoted foot board; levers pivoted to said foot board at one end, engaging said movable bar at the other end and having intermediate slots engaging and traversed by studs, attached to the side rails substantially as described.

4. In a folding bed in combination with side rails divided and hinged; a fixed transverse bar, and a movable bar and a longitudinally contractile bed bottom attached to said bars, a foot board having supports extending below the bottom of the same and pivoted to said side rails, curved levers pivoted to said supports, having slots near the middle and engaging said movable bar at their opposite ends, and fixed studs attached to the side rails and traversing said slots, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM S. GUNN.

Witnesses:

LUTHER V. MOULTON,
LOIS MOULTON.