(No Model.)

S. E. WILLIAMS.

BED BRACE.

No. 457,688. Patented Aug. 11, 1891.

Fig. 1

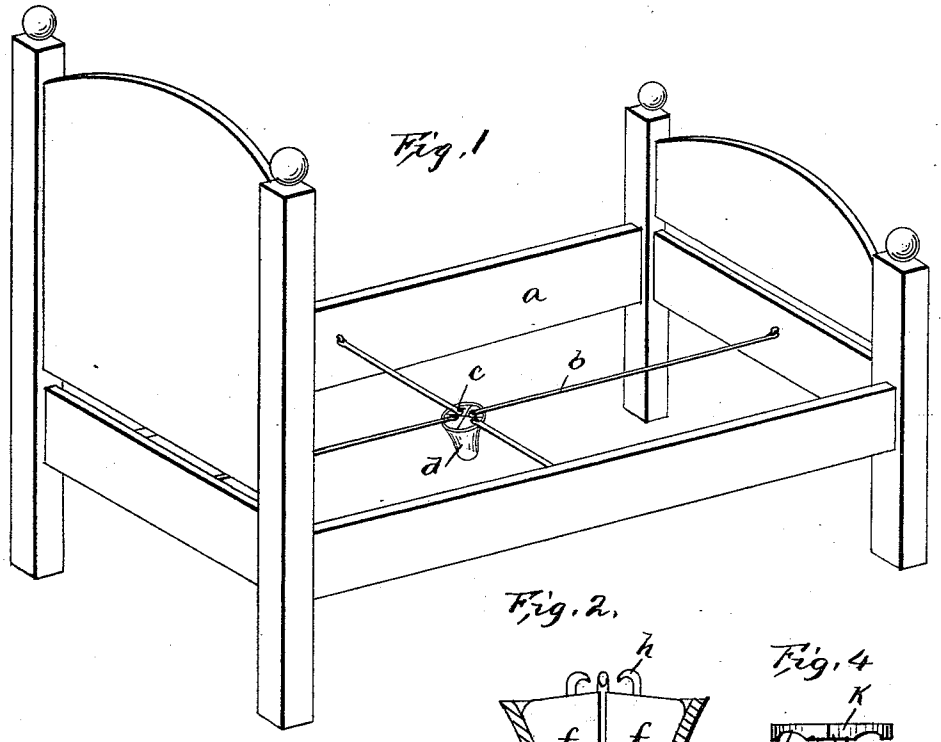


Fig. 2.

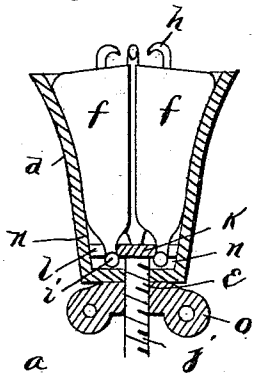


Fig. 4

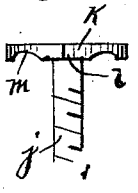


Fig. 5.

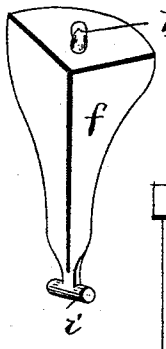


Fig. 3.

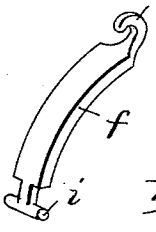
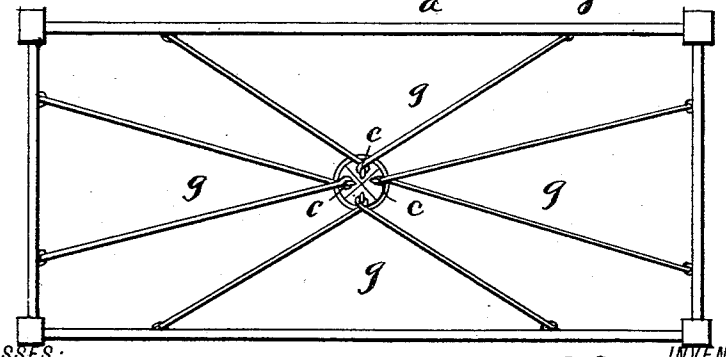


Fig. 6.



WITNESSES:

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BED-BRACE.

SPECIFICATION forming part of Letters Patent No. 457,688, dated August 11, 1891.

Application filed April 2, 1891. Serial No. 387,420. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN E. WILLIAMS, of Lexington, in the county of Davidson and State of North Carolina, have invented certain new and useful Improvements in Bed-Braces; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in bed-braces, and more particularly to improvements in devices for tightening bed-braces or analogous purposes.

The object of the invention is to provide an improved tightener or stretcher for bed-braces exceedingly cheap, strong, simple, and durable in construction and composed of a minimum number of parts, whereby the braces can be tightened or loosened freely and quickly at any time when desired.

A further object of the invention is to provide an improved bed-brace having improved adjusting and connecting means.

These and other objects are accomplished by and this invention consists in certain novel features of construction, and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a perspective of a bedstead provided with the present braces. Fig. 2 is a vertical sectional view of the connecting and stretching device. Figs. 3, 4, and 5 are detail views of parts thereof. Fig. 6 is a plan of bed-frame, showing preferred arrangement of braces.

In the drawings, reference-letter *a* indicates a bedstead having sides and ends, as usual.

b are the braces, extending from the sides and ends toward the center of the bedstead. These braces are strongly secured to said sides and ends, and at the inner meeting ends are preferably provided with eyes *c*. The inner ends of the braces are secured together by a connecting and tightening or stretching device consisting of the strong metal case *d*. This case is hollow and has its interior flared or tapered outwardly and is open at its large end and at its small end is provided with a central aperture *e*. The interior beveled or tapered part of the case is preferably round, as shown. A suitable number of sliding pivoted blocks *f* are fitted to slide longitudinally in the tapered chamber of the case, having outer curved edges to bear against the inclined wall of such chamber. Each block is provided with a holding finger or hook *h*, extending from the outer extremity thereof, and the opposite end of each block extends inwardly to the inner end of the tapered chamber. The inner end of each block is provided with one or more lateral journals *i*, preferably formed by a narrow neck with two journals from the end thereof. A screw-bolt *j* passes through an aperture in the small end of the case, and within the case is provided with a circular (or other shaped) head *k*, provided with radial slots *l*, equal in number to the adjustable blocks. Concave bearings *m* are formed on the under surface of this head on each side of each slot *l*. The inner end of the chamber of the case is formed cylindrical (see *n*) or similar in cross-section to the contour of the head, and so that the head snugly fits therein and yet can freely slide longitudinally of the chamber. The neck of each block is slipped into a slot *l*, with journals resting in bearings *m* on under side of head *k*. The sides of the cylindrical portion *n* hold the blocks in the head *k*. By reason of this peculiar arrangement the blocks are loosely held in the case and can be swung toward each other and can be drawn together and rigidly held by drawing out the holding and adjusting bolt by the nut *o*, preferably provided with wings, as shown, so that it can be easily turned. When the screw-bolt is drawn out, the adjusting-blocks are drawn in the tapered chamber, drawing their outer ends steadily together and rigidly holding them against separating.

The tightener and connecting device shown has four adjustable blocks, each provided with a holding finger or lug at its outer end.

The device is applied to the braces shown by catching an eye *c* of each brace on a finger or hook of each adjusting-block while the blocks are loose or separated. The nut is then screwed up, drawing the outer ends of

the blocks and hooks together, thereby stretching and holding the braces. The blocks can be of any form, such as shown in Fig. 2 or that shown in Fig. 3. The braces can be arranged in any suitable manner, and, further, the tightener shown can be applied to various uses other than that herein set forth.

In Fig. 6 the preferred arrangement of braces is shown, said braces, preferably four in number, one from each end and side of the frame. Each brace *g* is preferably formed of a single piece of wire or like material, at its opposite ends secured to a side or end of the frame near opposite ends thereof, with its center formed into a loop *c*, said loops meeting at the center of the frame and united and held by the tightener, as before described. This system of braces prevents horizontal rocking or bending of the frame, holding the frame rigid and taut.

It is evident that various other means than here shown might be employed for operating the bolt which controls the blocks and that various changes or modifications might be made in the forms and constructions of parts described without departing from the spirit and scope of my invention. Hence I do not limit myself to exactly what is here shown.

What I claim is—

1. The combination of the hollow case having the tapered or flared chamber, the blocks longitudinally movable therein, having fingers or holding-lugs on their outer extremities, and means, substantially as described, to move the blocks longitudinally in the case, and thereby allow the outer ends of the blocks to separate or draw the same together.

2. In combination, the case having outwardly-flared bore, the blocks longitudinally movable therein and having holding fingers or lugs on their outer extremities arranged to extend from the large end of the case, and the bolt extending into case from the opposite end and having an adjusting-nut on the outer end and having the inner ends of said blocks loosely secured to the inner end of bolt, substantially as described.

3. In combination, a bed-frame, braces secured to the sides and ends thereof and extending toward the center of frame, the series of movable blocks, to the outer ends of which the ends of said braces are secured, a case in which said blocks are confined, said case being so formed that when the blocks are adjusted longitudinally in the case their ends will be thrown toward or from each other, and means confining the blocks in the case and by which they can be adjusted together and held, as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

STEPHEN E. WILLIAMS.

Witnesses:

H. E. PECK,

C. M. WERLE.