

(No Model.)

H. L. FREEMAN.  
FURNITURE BRACE TIGHTENER.

No. 488,333.

Patented Dec. 20, 1892.

Fig. 1.

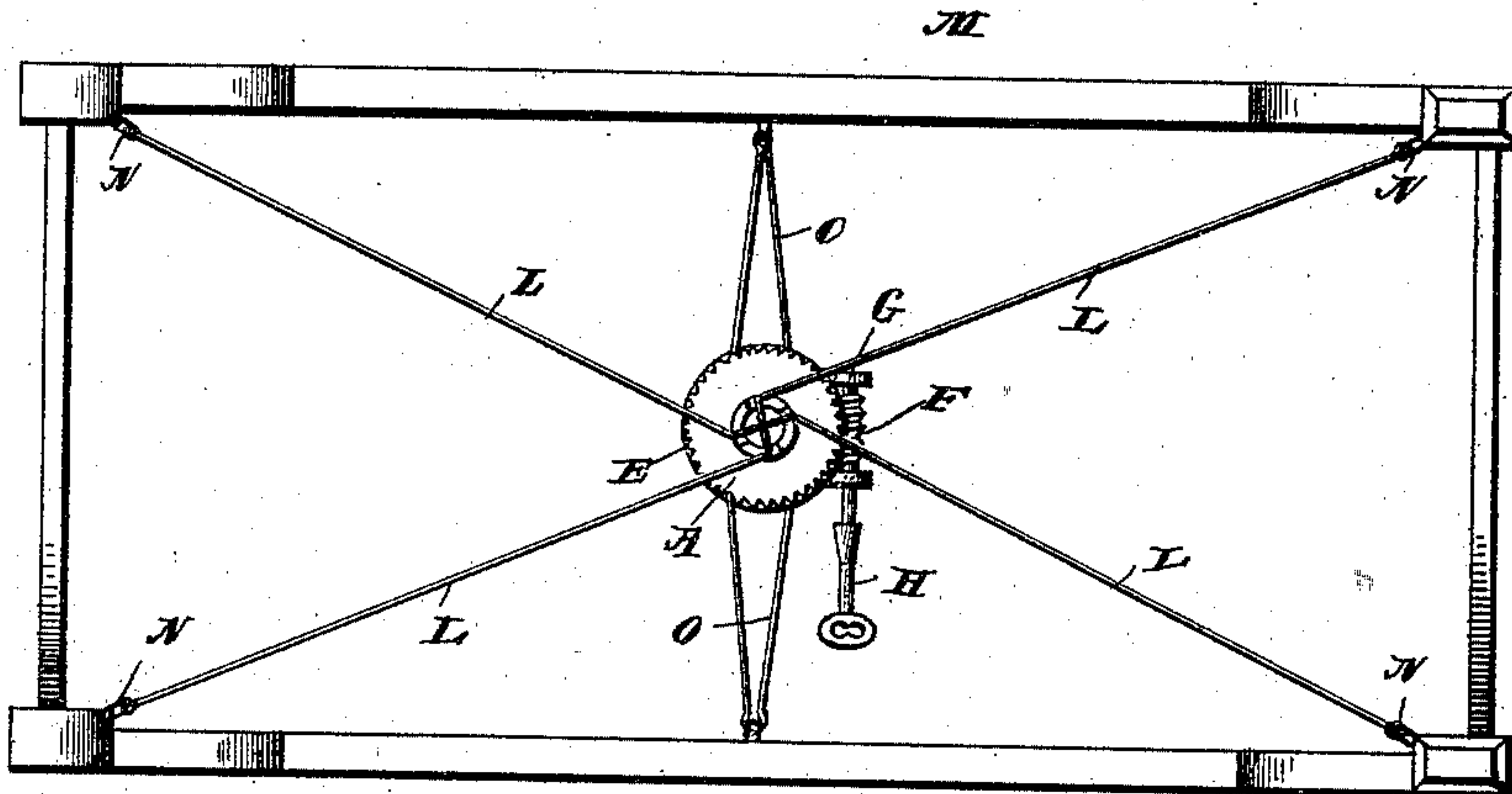


Fig. 2.

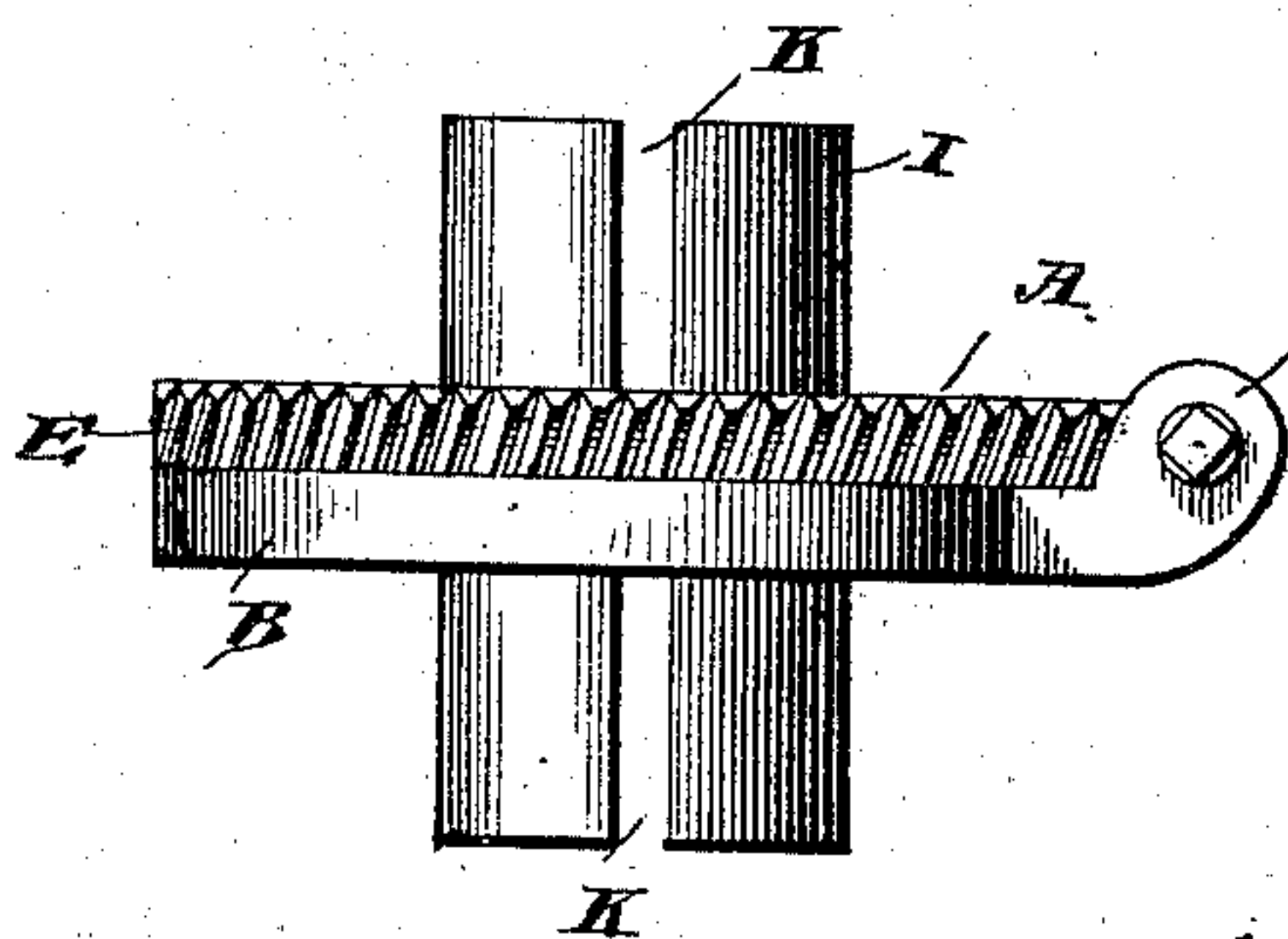


Fig. 3.

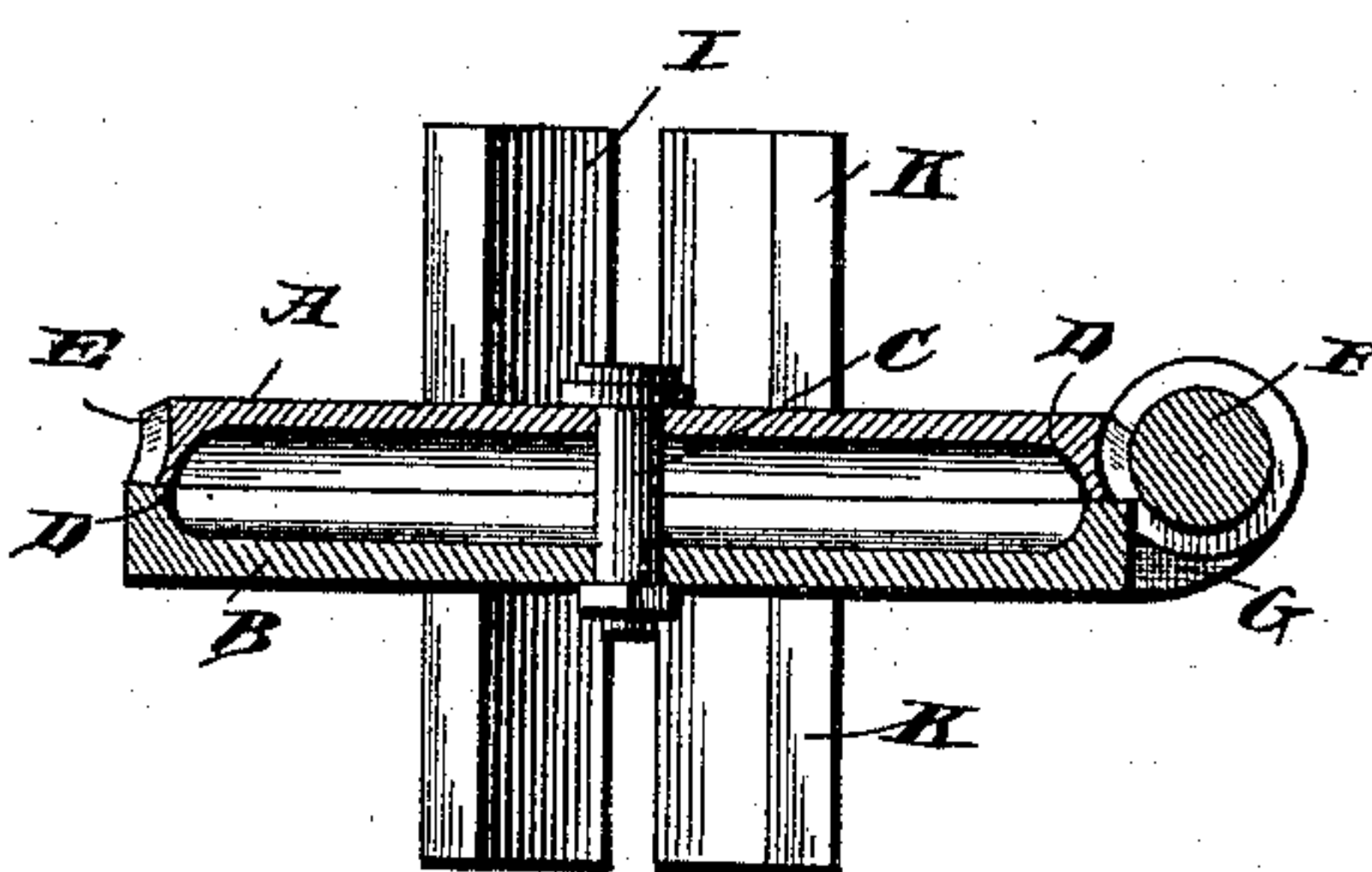
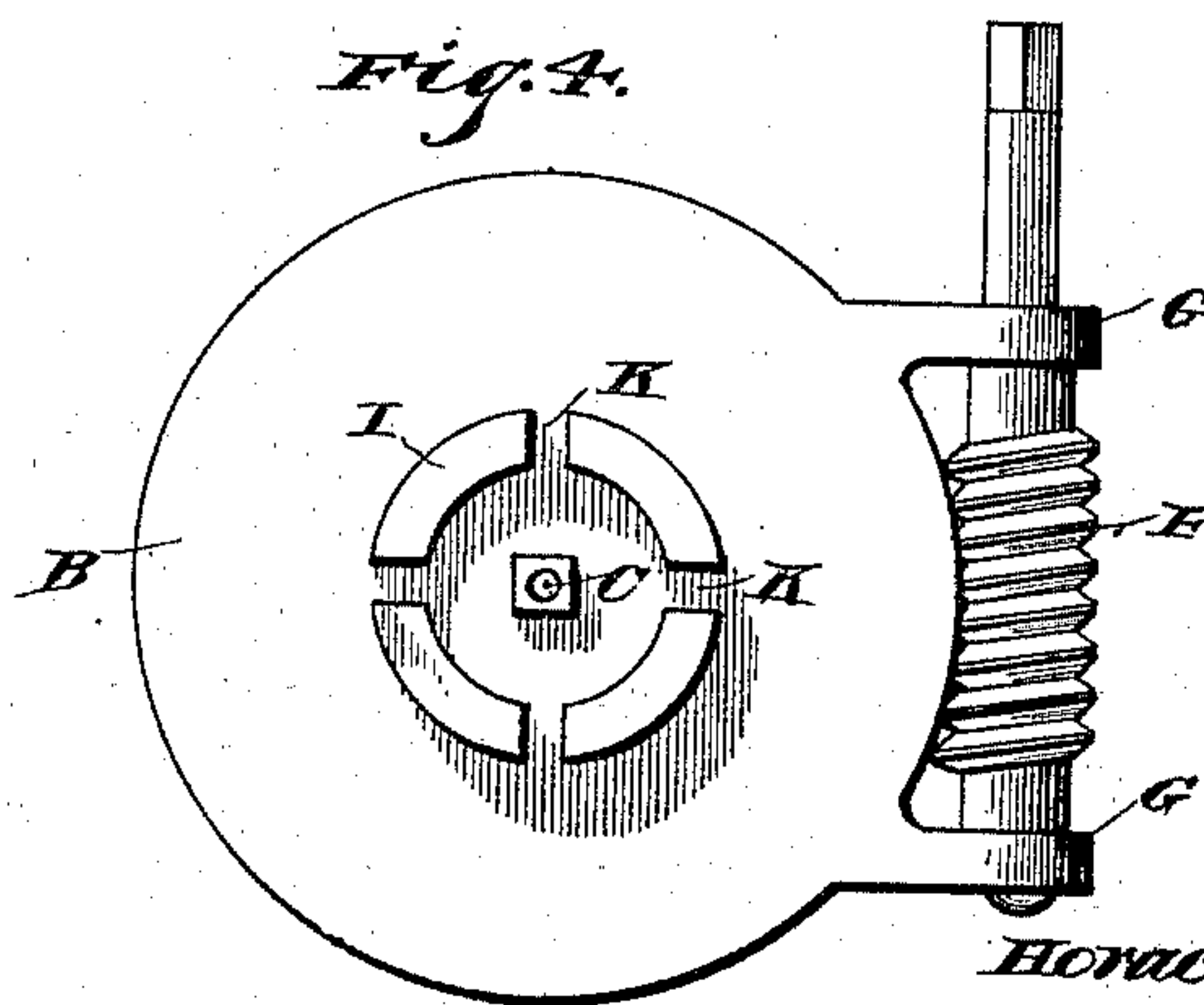


Fig. 4.



Witnesses

*B. S. Ober*  
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Inventor

*Horace L. Freeman,*

By *His* Attorneys,

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# UNITED STATES PATENT OFFICE.

HORACE LIZZELLE FREEMAN, OF LEXINGTON, NORTH CAROLINA, ASSIGNOR  
TO BAXTER SHEMWELL, OF SAME PLACE.

## FURNITURE-BRACE TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 488,333, dated December 20, 1892.

Application filed August 18, 1892. Serial No. 443,442. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE LIZZELLE FREEMAN, a citizen of the United States, residing at Lexington, in the county of Davidson and State of North Carolina, have invented a new and useful Furniture-Brace Tightener, of which the following is a specification.

My invention relates to a device for tightening the braces used in connection with furniture, as chairs, bedsteads, &c., the object in view being to provide a simple, cheap and effective tension device which may be readily operated to draw the members of such articles firmly together, and the construction and operation of the same is clearly described hereinafter in connection with the drawings, the novel features being particularly pointed out in the claims.

In the drawings:—Figure 1 is a plan view of the tension device, applied in the operative position to the bracing wires, or cords, of a bedstead; Fig. 2 is a side view of the tension device; Fig. 3 is a vertical central sectional view of the same; Fig. 4 is a reverse plan view.

A B represent two disks, provided with central, registering openings in which is arranged a pivot-bolt, C, the said disks being concaved upon their inner or facing surfaces to provide rim-bearings, D, at their peripheries. The periphery of the disk, A, is provided with worm-teeth E, to mesh with the worm, F, which is mounted in bearings formed in ears, G G, upon the periphery of the disk, B. This worm is carried by a shaft which is squared at one end to receive the key, H. The disks are provided upon their outer sides with perpendicular, hollow hubs, I I, concentric with the disks, and provided with diametrically opposite slots, K K.

In operation, the brace-wires, L L, extend diagonally across the bedstead, M, and are secured at their extremities to screw-eyes, N N, arranged in the bed-posts, and the transverse-brace-wires, O O, are attached, in the same manner, to the side bars of the bedstead, and intersect the longitudinal brace-wires, at their centers. The tension device is adjusted and connected to the brace wires

by passing the latter through the diametrically opposite slots in the hubs of the disks, one of the longitudinal wires being passed through the upper hub and the transverse wires being passed through the lower hub. By means of the key the worm is now turned, thus rotating the disks in opposite directions, and reeling the brace-wires respectively upon the hubs.

Any desired tension may be produced in the wires, the tension device may be applied, or removed at any time, without disconnecting the brace-wires, and my improved device may be used in connection with any furniture having intersecting brace wires.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States, is:—

1. A tension device having concentric, independently-rotatable disks, carrying twisting hubs, and provided, respectively, with a worm and worm-teeth, substantially as specified.

2. A tension-device having concentric, concaved disks mounted upon a common pivot-pin and provided with twisting-hubs, and a worm mounted upon one disk and engaging worm teeth upon the other, substantially as specified.

3. A tension-device having concentric disks provided with twisting-hubs having diametrically-opposite receiving slots, and the worm carried by one disk to engage worm teeth upon the other, substantially as specified.

4. In combination with intersecting, bracing-wires, the tension device comprising concentric twisting disks, provided with slotted hubs to receive the wires, and a worm mounted upon one disk to engage peripheral worm-teeth upon the other disk, substantially as specified.

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

HORACE LIZZELLE FREEMAN.

Witnesses:

J. M. RILEY,  
JNO. T. VANCE.