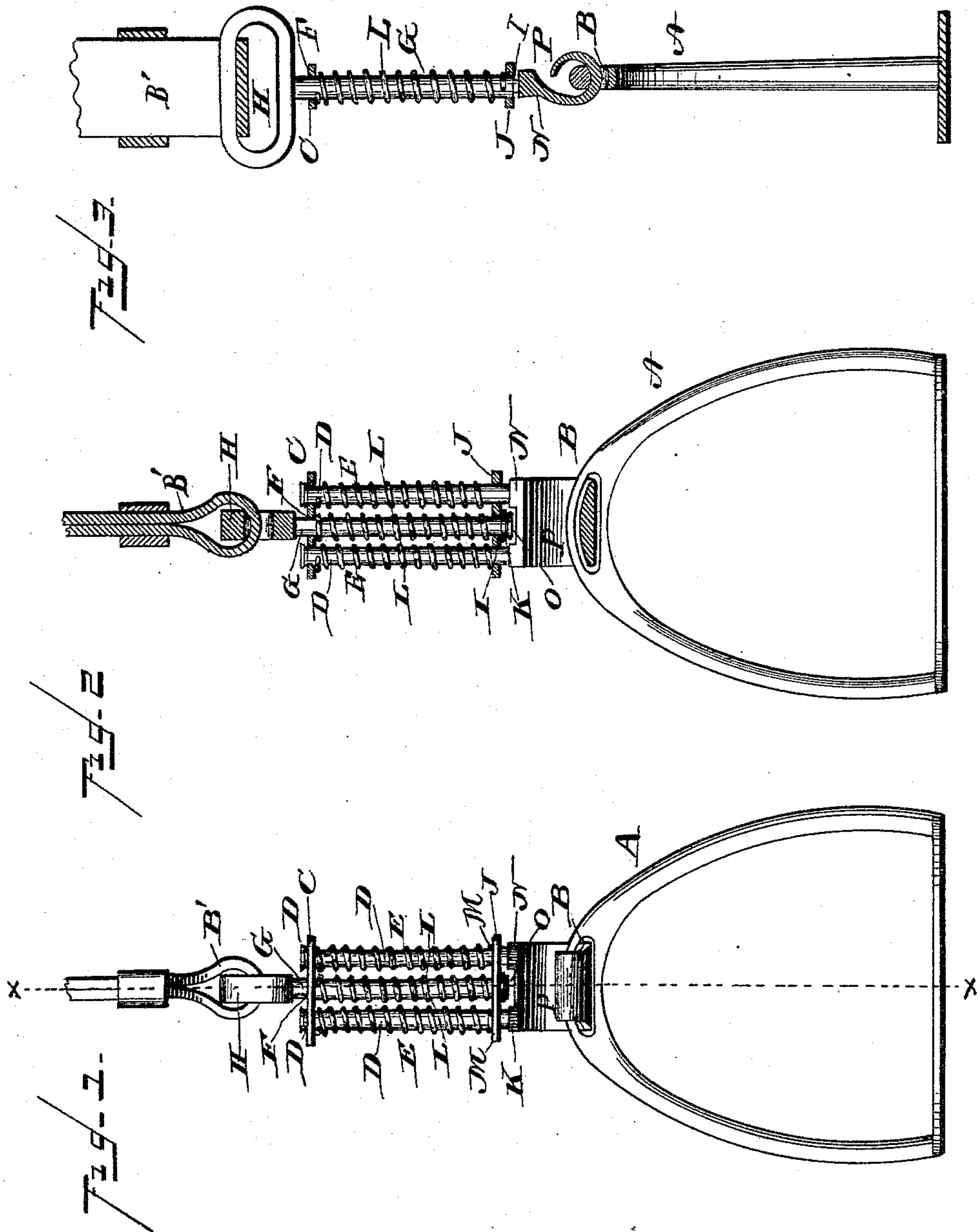


(No Model.)

J. BULL.
STIRRUP.

No. 411,757.

Patented Sept. 24, 1889.



WITNESSES

P. L. Ourand.
C. F. Whisholm.

INVENTOR:

John Bull,
By Louis Duggan & Co.,
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN BULL, OF CINCINNATI, ASSIGNOR TO E. E. JOHNSON, OF PAINESVILLE,
OHIO.

STIRRUP.

SPECIFICATION forming part of Letters Patent No. 411,757, dated September 24, 1889.

Application filed June 7, 1889. Serial No. 313,466. (No model.)

To all whom it may concern:

Be it known that I, JOHN BULL, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Stirrups; 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.

This invention relates to stirrups made of iron, steel, or other suitable metal; and it consists in a certain improvement upon the spring attachment for which Letters Patent of the United States No. 227,727 were granted to me on the 18th day of May, 1880, which said improvement will be hereinafter more fully described and claimed.

Reference being had to the accompanying drawings, Figure 1 is a side elevation of my improved stirrup. Fig. 2 is a longitudinal sectional view of the same; and Fig. 3 is a transverse vertical sectional view on line $x x$, or at right angles to the view shown in Fig. 2. Like letters of reference denote corresponding parts in the several figures.

The metallic stirrup A is provided at its upper end with the usual slot B for its attachment to the spring device at the lower end of the stirrup-strap B'. This spring device or attachment consists of an upper plate C, having depending from it, on opposite sides, two parallel rods D D, encircled by coiled springs E E, the upper ends of which bear against the plate. Between the side rods D D in plate C is an aperture F, through which is inserted loosely a central rod G, the projecting upper end of which has a loop H for the attachment of the stirrup-strap. The lower end of this middle rod G is inserted through an aperture I in the movable bottom plate J, and is provided with a washer K at its lower end, which is fastened securely upon the rod by riveting or in any other suitable manner, whereby said rod becomes swiveled, and is enabled to turn, with the loop H at its upper end, in either direction, so as to prevent twisting of the stirrup-strap.

The central swiveled rod G is, like the fixed side rods D D, encircled by a coiled spring L, which, in like manner as the side springs E E,

takes a bearing at its upper end against plate C and at its lower end against the movable bottom plate J. The latter has apertures M M—one at each side—through which the fixed side rods D D are inserted loosely, thus permitting the bottom plate to play up or down upon the said rods.

The downwardly-projecting lower ends of the side rods D D are made integral with or secured in a block or plate N, the middle part of which has a recess O to accommodate or make room for the washer K at the lower end of the swiveled middle rod G. The lower end of said block or plate N is also bent or curved to form a hook P, which is inserted through the slot B in the metallic stirrup-bow, and then clinched, as shown in Fig. 3, to prevent the hook from slipping out of the slot. In order to permit the stirrup to have a limited lateral play upon this hook without binding, the hooked and clinched part P of the block is made concavo-convex longitudinally, as shown in Fig. 2, so as to conform to the curvature of the slot B. By this direct fastening of the stirrup to its spring attachment by means of the hooked and clinched block N intermediate straps or other fastenings between the stirrup and its spring attachment are avoided, thereby greatly increasing the simplicity, strength, and durability of the device as a whole.

Having thus described my improvement, I claim and desire to secure by Letters Patent of the United States—

The combination, in a stirrup, of the spring attachment comprising the top and bottom plates, fixed side rods, movable center rod, and their respective springs, arranged as described, the downwardly-projecting hooked and clinched block N, and the stirrup having a slot at its upper end conforming in shape to the concavo-convex hooked and clinched end of the block, substantially as and for the purpose shown and set forth.

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

JOHN BULL.

Witnesses:

THOMAS RAFFERTY,
STEPHEN GANO.