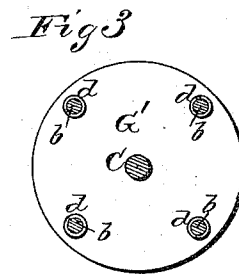
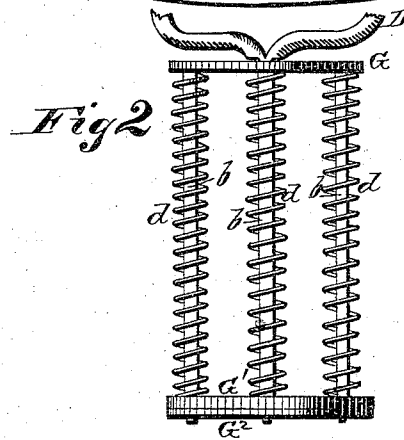
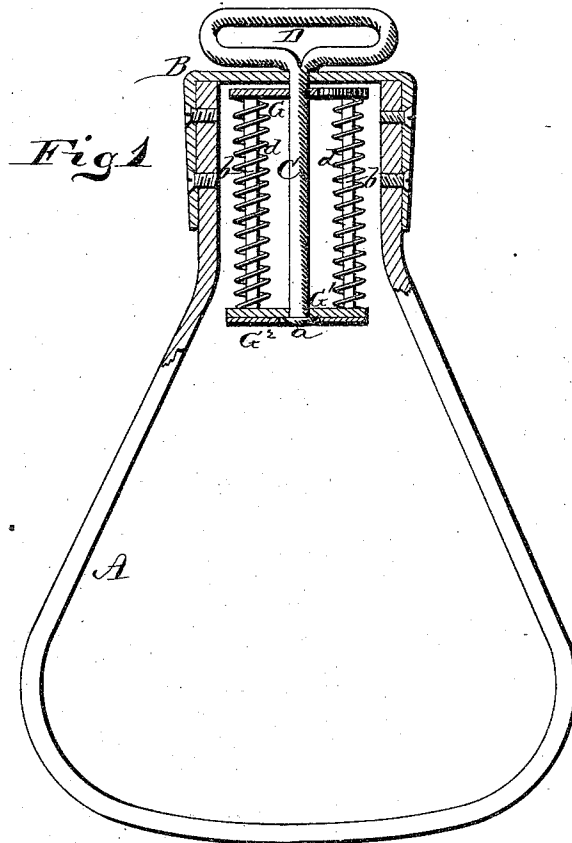


J. BULL.
Stirrups.

No. 157,786.

Patented Dec. 15, 1874.



WITNESSES

Francis L. Ourand
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per
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UNITED STATES PATENT OFFICE.

JOHN BULL, OF CHATTANOOGA, TENNESSEE.

IMPROVEMENT IN STIRRUPS.

Specification forming part of Letters Patent No. **157,786**, dated December 15, 1874; application filed October 12, 1874.

To all whom it may concern:

Be it known that I, JOHN BULL, of Chattanooga, in the county of Hamilton, and in the State of Tennessee, have invented certain new and useful Improvements in Stirrups; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a spring-stirrup, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of a stirrup embodying my improvement. Fig. 2 is a side view of the spring attachment, and Fig. 3 is a horizontal section of the same.

A represents an ordinary stirrup, made of a single piece of wood bent in proper shape, and having a metallic cross-bar, B, fastened across its upper end. Through the center of the cross-bar B passes a shank or stem, C, the upper end of which is formed or provided with a loop, D, for the attachment of the stirrup-strap. The shank C, below the cross-bar B, passes through two circular metallic disks, G G¹, and the shank has, on its lower end, a head or button, a, to prevent its being with-

drawn from the disks. In the disk G are fastened a series of rods, b, which pass downward through holes in the disk G¹, and their lower ends are fastened in a disk, G². Around each rod b, between the disks G G¹, is placed a spiral spring, d. The rods b, with their springs d, are arranged in a circle around the center shank C, whereby the springs are made to bear or act equally on all sides.

I am aware that the attachment of springs to a stirrup is not new, and I do, therefore, not claim such, broadly, as being my invention.

By my arrangement of the springs in a circular form around the shank between the disks or plates, the pressure of the foot is equalized, no matter whether the foot is inserted directly in the middle of the stirrup or to either side.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with a stirrup, A, having cross-bar B, of the swivel-shank C, with loop D and head a, the circular disks G G¹ G², and the rods b, with springs d, arranged in circular form around the shank C, all substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of September, 1874.

JOHN BULL.

Witnesses:

CHAS. E. STIVERS,
P. F. STEWART.