J. A. FOSTER.

HEEL FOR BOOTS AND SHOES.

APPLICATION FILED APR. 25, 1908.

900,920. **Patented Oct. 13, 1908.**

Fig. 1.

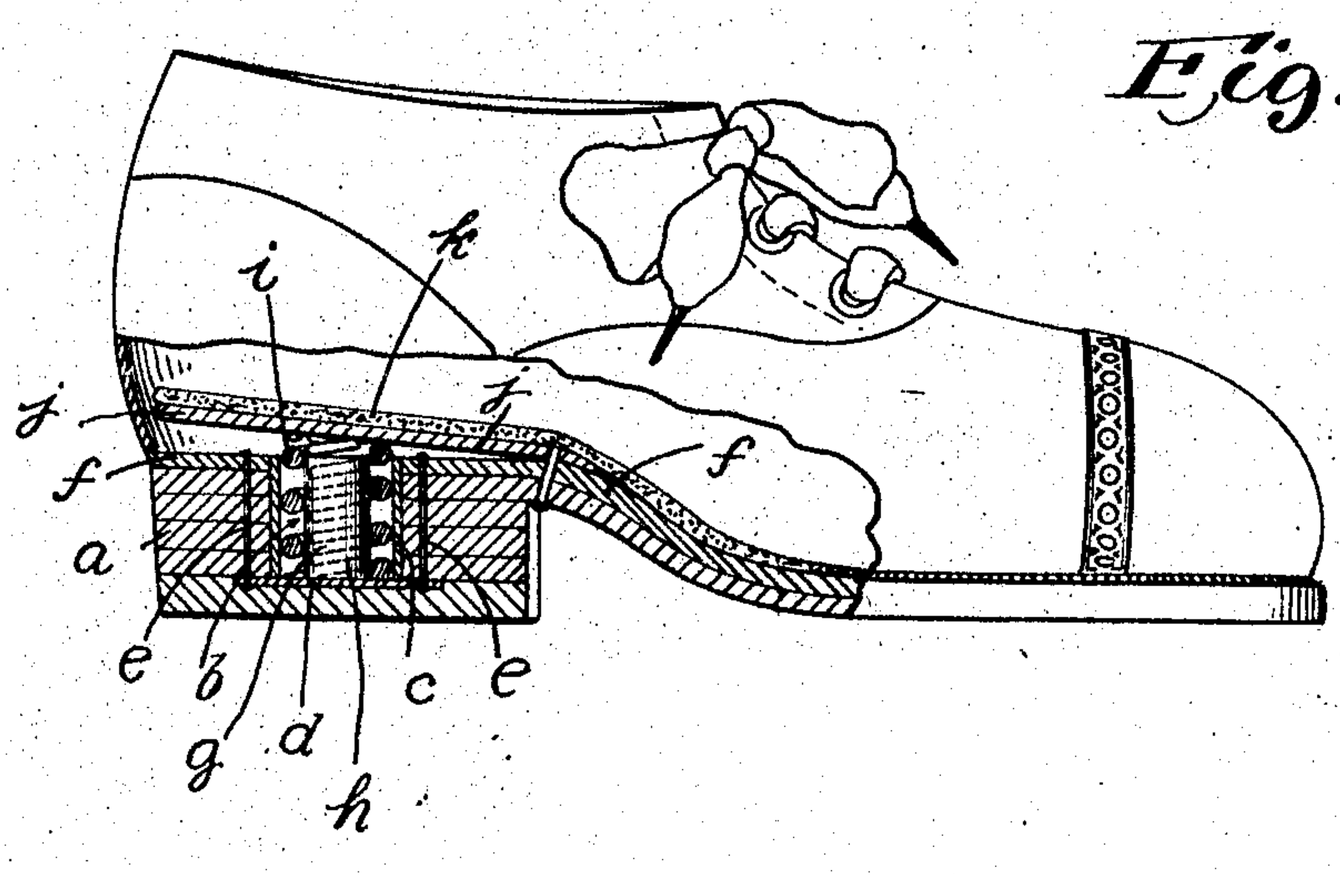
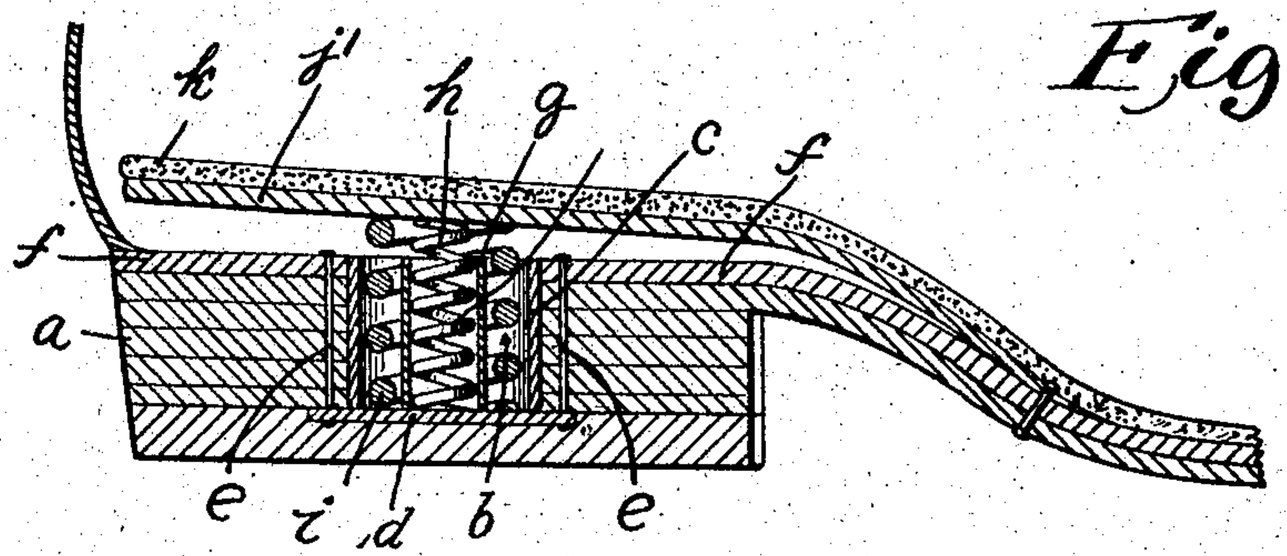


Fig. 2.



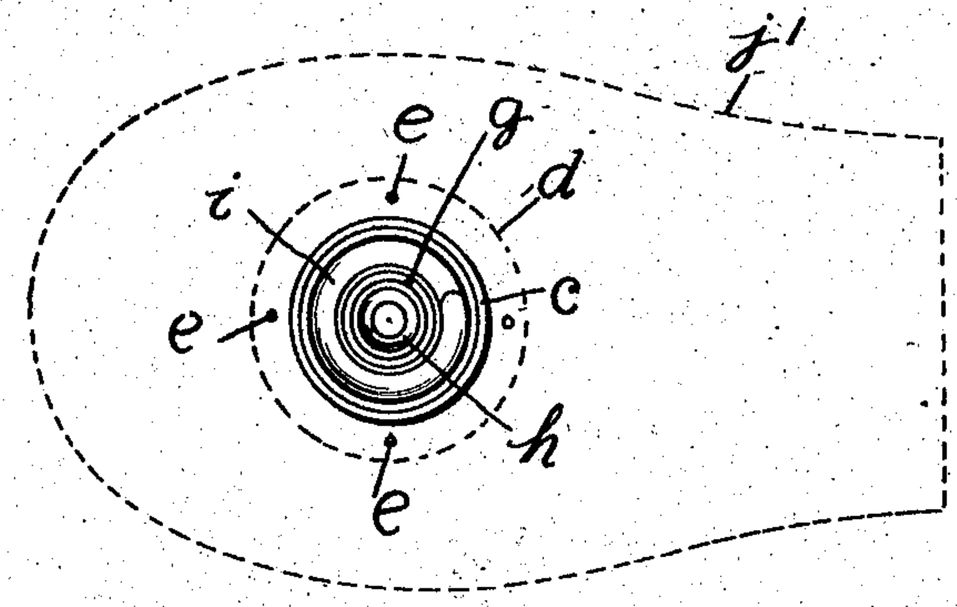


Fig. 3

Witnesses:
Harry E. Hebig
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James A. Foster Inventor

By his Attorney
James Hamilton

UNITED STATES PATENT OFFICE.

JAMES A. FOSTER, OF LOWELL, MASSACHUSETTS.

HEEL FOR BOOTS AND SHOES.

No. 900,920. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed April 25, 1908. Serial No. 429,240.

To all whom it may concern:

Be it known that I, JAMES A. FOSTER, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Heels for Boots and Shoes, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in heels for boots and shoes and particularly to improvements in mechanically-contrived spring-controlled cushion heels as distinguished from cushion heels in which lifts of yielding material, such as rubber, are used; and an object of my invention is to provide a cushion heel of the class described which will prove simple in construction, comparatively cheap in manufacture and most efficient in use, affording ease and comfort to the wearer without shortening the life of the shoe.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle, Figure 1 is an elevation of a shoe embodying my improvement, the heel part being shown in section; Fig. 2 is a section showing my new cushion heel in section on an enlarged scale; and Fig. 3 is a detail showing the springs and their holders in plan.

The heel *a* of the shoe is formed with a central chamber *b* in which is fitted a cylindrical shell or housing *c* which lines the chamber and forms practically the cylindrical wall thereof. The bottom of the chamber is closed by a disk *d* of larger diameter than the shell *c*. The disk *d* is held in place by the nails *e* the upper ends of which extend through the inner-sole *f*, whereby stress applied to the disk *d* is transmitted to the inner-sole. Centrally disposed in the chamber *b* is a tubular holder *g* in which is mounted a coil-spring *h*, while between the holder *g* and the shell *c* is mounted a second coil-spring *i* of larger wire than that of which the coil-spring *h* is made. Above the heel part of the inner-sole lies a spring-plate *j* the top of which is preferably covered with a cushion of felt or like material *k*. In Fig. 1 the spring-plate *j* is shown fastened at its forward end to the inner-sole and shank of the shoe near the breast of the heel; but the exact place of fastening the plate *j* is not of controlling importance and in Fig. 2 the spring-plate *j'* is shown fastened some distance forward of the breast of the heel.

My design is so to improve heels of this character heretofore made as to produce a practical wearable heel of this class. In order that the life of the shoe may not be shortened by the tearing-off of the heel by the reaction of the springs, the disk *d* is fastened to the inner-sole. The spring-pressure upon the bottom of the plate *j* is distributed so as to make the shoe one comfortable for the wearer. The upper edges of the shell *c* and the holder *g* lie just below the top of the inner-sole, whereby the bottom of the spring-plate in its lowermost position is made to rest upon a flat even surface,—that of the heel-part of the inner-sole. The shell *c* forming the lining of the spring chamber *b* is free from connection with the spring-plate *j*, whereby the construction is simplified and cheapened and the life of the shoe is lengthened.

I claim:

1. The combination with a heel having an inner sole formed with a chamber, of a plate mounted free to vibrate above said inner sole; a second plate which is mounted at the bottom of said chamber and which lies wholly below and is fastened to said inner sole; and a yielding device mounted in said chamber, the lower end of said device bearing against the last named plate and the upper end of said device bearing against the first named plate.

2. The combination with a heel having an inner sole and formed with a chamber, of a plate mounted free to vibrate above said inner sole; a second plate which forms the bottom of said chamber and which lies wholly below and is fastened to said inner sole; and a coil-spring one end of which bears against the first named plate and the other end of which bears against said second plate.

3. The combination with a heel formed with a chamber and having an inner sole, of a plate mounted free to vibrate above said inner sole; a shell which forms a wall of said chamber and is free from connection with said plate; a second plate which forms the bottom of said chamber and is fastened to said inner sole; and a yielding device one end of which bears against the first named plate and the other end of which bears against the last named plate.

4. The combination with a heel having an inner sole and formed with a chamber, of a plate mounted free to vibrate above said heel; a second plate which forms the bottom of said chamber and is fastened to said inner sole free from connection with the first named plate; and a yielding device mounted in said chamber, one end of which bears against the first named plate and the other end of which bears against the last named plate.

5. The combination with a heel having an inner sole and formed with a chamber, of a plate mounted free to vibrate above said inner sole; a second plate which forms the bottom of said chamber and extends beyond the walls thereof; means for fastening said second plate to said inner sole; and a spring mounted in said chamber and adapted to bear against both of said plates.

6. The combination with a heel formed with a chamber and having an inner-sole, of a plate mounted free to vibrate above said inner-sole; a second plate which forms the bottom of said chamber and extends laterally beyond the walls thereof under said inner-sole; a fastening device one end of which is attached to said second plate and the other end of which is attached to said inner sole; and a yielding device mounted in said chamber and bearing against both said plates.

7. The combination with a heel formed with a chamber, of a plate mounted free to vibrate above the same; a holder mounted in said chamber; a spring mounted in said holder; and a second spring mounted in said chamber outside said holder; said springs being made of different sizes of wire.

In testimony whereof I have hereunto set my hand at Detroit Mich. this 22nd day of April, A. D., 1908, in the presence of the two undersigned witnesses.

JAMES A. FOSTER.

Witnesses:

ARTHUR SPEAR,

P. W. SMITH.