I. Gale,

Shoe Sole.

No. 3,657. Patented July 11, 1844.

Fig: 1

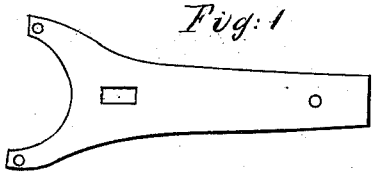


Fig: 2

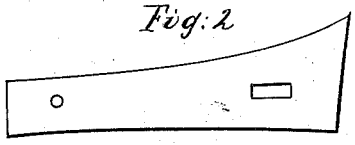


Fig: 3

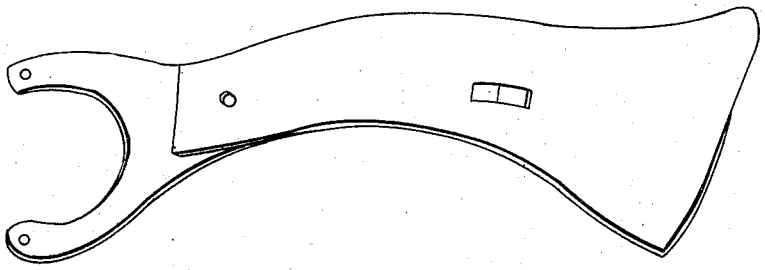
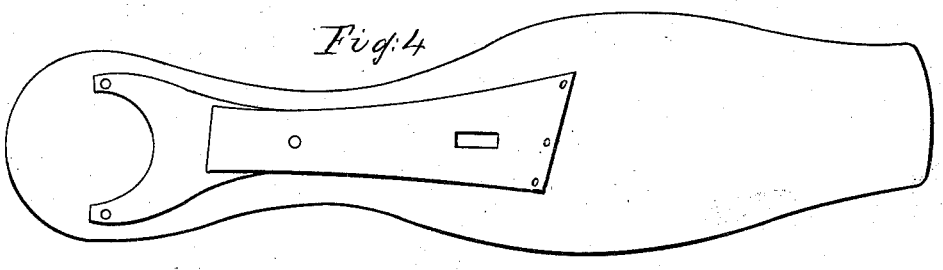


Fig: 4



UNITED STATES PATENT OFFICE.

ISAIAH GALE, OF NATCHEZ, MISSISSIPPI.

IMPROVEMENT IN ELASTIC BOOT-SHANKS.

Specification forming part of Letters Patent No. **3,657**, dated July 11, 1844.

To all whom it may concern:

Be it known that I, ISAIAH GALE, of the city of Natchez, in the county of Adams, in the State of Mississippi, have invented a new and useful Improvement in the Manufacture of Boots and Shoes, called a "Double Elliptical Sliding Spring-Shank" for the Soles of Boots and Shoes, of which the following is a full and exact description.

This double elliptical sliding steel spring, calculated to give ease and elasticity to a boot or shoe and keep it in close-fitting and contact with the foot, is composed of two elliptical springs of tempered steel, marked in the drawings Nos. 1 and 2. No. 1 is attached firmly to the heel on the under side of the inner sole by rivets, the other end of the spring extending toward the ball of the foot. No. 2 is firmly attached to the ball of the inner sole and extends backward nearly to the front of the heel. The two elliptical springs Nos. 1 and 2 are then connected by two nibs and slits, a nib and a slit being in each separate spring, thus together forming a compound spring attached to the heel and the ball of the inner sole, with a stretching or sliding motion allowed to the compound spring by the two nibs and slits which connect the separate springs, which motion accommodates the spring to the motion of the foot at every footstep. This compound spring, thus firmly united by the nibs and slits, is designated in the drawing as No. 3, and is designed to play between the inner and outer soles and keep the sole closely pressed up in the hollow of the foot and make the boot or shoe easy on the instep, as well as to impart an elasticity to the wearer of the boot or shoe in stepping, the springs being made of fine spring-tempered steel and in pairs, so as to fit the right and left shape of a pair of boots or shoes. No. 4 represents the double or compound spring as attached to the inner sole and exhibiting the manner in which it is fastened to the sole without the curve or bend, as seen in No. 3.

There is but one other patent steel shank known to the inventor of the double elliptical sliding spring-shank, now owned by a Mr. Brooks and used in the city of New York. This being but a single spring, and attached only at the heel and reaching forward, is merely confined by the outer and inner soles of the boot or shoe, and has no sliding motion to agree with the motion of the foot at each footstep. The double elliptical sliding spring-shank has double the elasticity of the single spring and incomparably more ease and naturalness of action, accommodating itself to the natural motion of the foot in stepping, and it yields to all hard substances with which the hollow of the foot may come in contact, while Brooks's patent shank often breaks, not having the sliding motion by the nibs and slits, as in the double elliptical sliding spring-shank. The broad end of spring No. 1 is scalloped and attached to the heel at each point or horn of the crescent, so as not to intercept the nails of the heel-lifts.

I do not claim the double elliptical spring; but

What I do claim is—

The combination of the above-described spring with the boot or shoe in the manner and for the purpose described.

ISAIAH GALE.

Witnesses:

CH. L. MINDENAUD,

N. WILLIAMS.