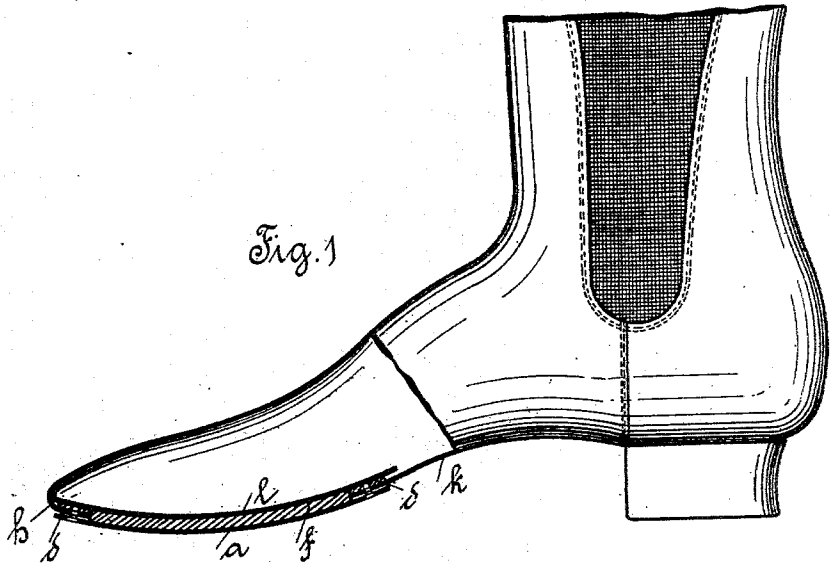
(No Model.)

S. LISSAUER

SHOE.

No. 515,547. Patented Feb. 27, 1894.

Fig. 1



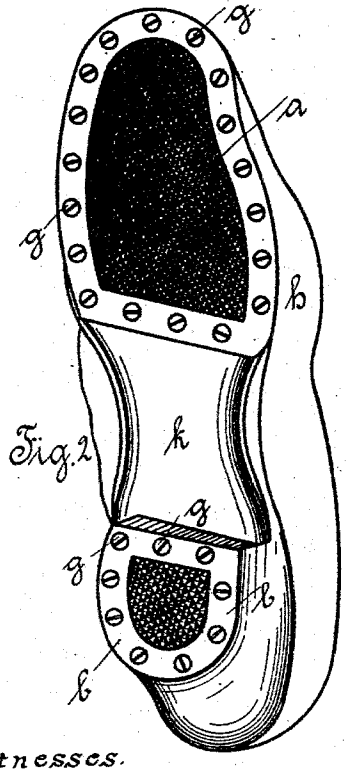


Fig. 2

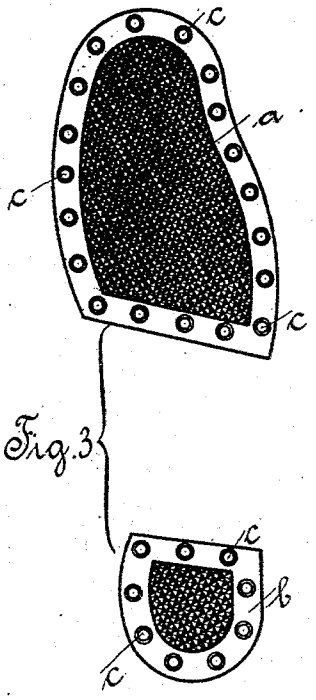


Fig. 3

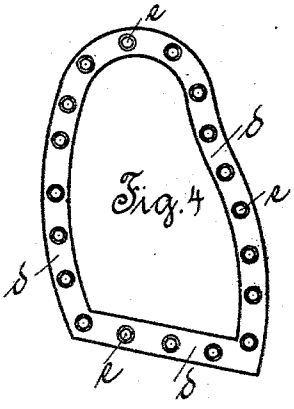


Fig. 4

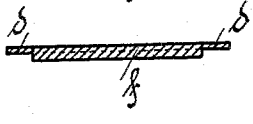


Fig. 5

Witnesses.
Thomas Durant
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by Church & Church
his Attys.

THE NATIONAL LITHOGRAPHING COMPANY.
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SALLY LISSAUER, OF DRESDEN, GERMANY.

SHOE.

SPECIFICATION forming part of Letters Patent No. 515,547, dated February 27, 1894.

Application filed February 14, 1893. Serial No. 462,353. (No model.) Patented in England October 9, 1891, No. 17,243; in France October 26, 1891, No. 216,989; in Belgium March 14, 1892, No. 98,797; in Austria-Hungary March 25, 1892, No. 53,473 and No. 4,556, and in Germany May 12, 1892, No. 14,991.

To all whom it may concern:

Be it known that I, SALLY LISSAUER, a subject of the King of Saxony, residing at Dresden, Saxony, Germany, have invented certain new and useful Improvements in or Relating to the Soles and Heels of Boots and Shoes, (for which I have obtained Letters Patent in France, No. 216,989, dated October 26, 1891; in Austria-Hungary, No. 53,473 and No. 4,556, dated March 25, 1892; in Great Britain, No. 17,243, dated October 9, 1891; in Belgium, No. 98,797, dated March 14, 1892, and in Germany, No. 64,991, dated May 12, 1892,) of which the following is a specification.

The object of this invention is to replace the usual soles and heels of boots and shoes, made of leather, cardboard, india rubber or the like, which, while comparatively expensive, are not durable, by soles and heels made of metal alloy. The alloy mainly consists of copper, tin, zinc, nickel and aluminium, and it has been found advantageous to mix these metals in the following proportions,—sixty to seventy parts of copper, twenty parts of zinc, five to ten parts of tin, four to five parts of nickel, and about three parts of aluminium. These proportions may vary however and if preferred some of the metals may be dispensed with altogether. The alloy is rolled into a thin plate or sheet and must be capable of bending without breaking.

In the accompanying drawings,—Figure 1 is a side elevation of a boot partly in section. Fig. 2 is a perspective view looking from the under side of the boot. Fig. 3 is a plan of the under side of the sole and heel. Fig. 4 is a plan of the frame; Fig. 5 a transverse section of a portion of the sole.

From this thin sheet portions such as *a* and *b*, (Fig. 3,) are cut out by means of a rod or tool having the desired shape of soles and heels, such portions being, if necessary, provided with rough or grooved surfaces by the same stamping process. By means of a separate press, they may in addition be perforated, as at *c*, for the insertion of screws or equivalent *g*. To attach these soles or heels to the boots or shoes screws may be used, but the following mode of attachment is however preferred: A frame *d* is stamped out of sheet metal (iron, zinc, aluminium or the like) and provided with perforations *e* for the insertion of screws *g*, (Fig. 4.) Into this frame is fitted a plate *f* (Fig. 5) made of a non-conductor of heat such as cloth, fabric, leather, felt, cork or the like. Over this frame *d* (as shown in Fig. 1) are placed the upper *h* of the shoe and the shank *k* connecting the sole with the heel, the opposite side of the frame *d* having been previously covered by a plate *l* of leather, or any other suitable material. The sole *a* made of the alloy, is then fitted in position and secured by means of screws or tacks *g*. These first pass through the sole *a*, then the upper *h* and the connecting piece *k* of the shoe and finally the frame *d*, while the plates *f* and *l* are stitched or otherwise joined together beforehand. In this manner an extremely economical, light and easy shoe or boot is obtained, offering the additional advantage of keeping the foot warm and dry.

I claim—

1. In a boot or shoe, the combination with the metal alloy sole, the metal frame or rim overlying the sole of the upper interposed between the rim and sole, and fastening devices for uniting the parts together; substantially as described.

2. In a boot or shoe, the combination with the metal alloy sole, of the metal frame or rim overlying the sole of the plate of non conducting material fitted within said rim or frame, the upper having its edges interposed between the sole and rim, and fastening devices for uniting the parts, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

SALLY LISSAUER.

Witnesses:

ALFRED MORIK,

HERNANDO DE SOTO.