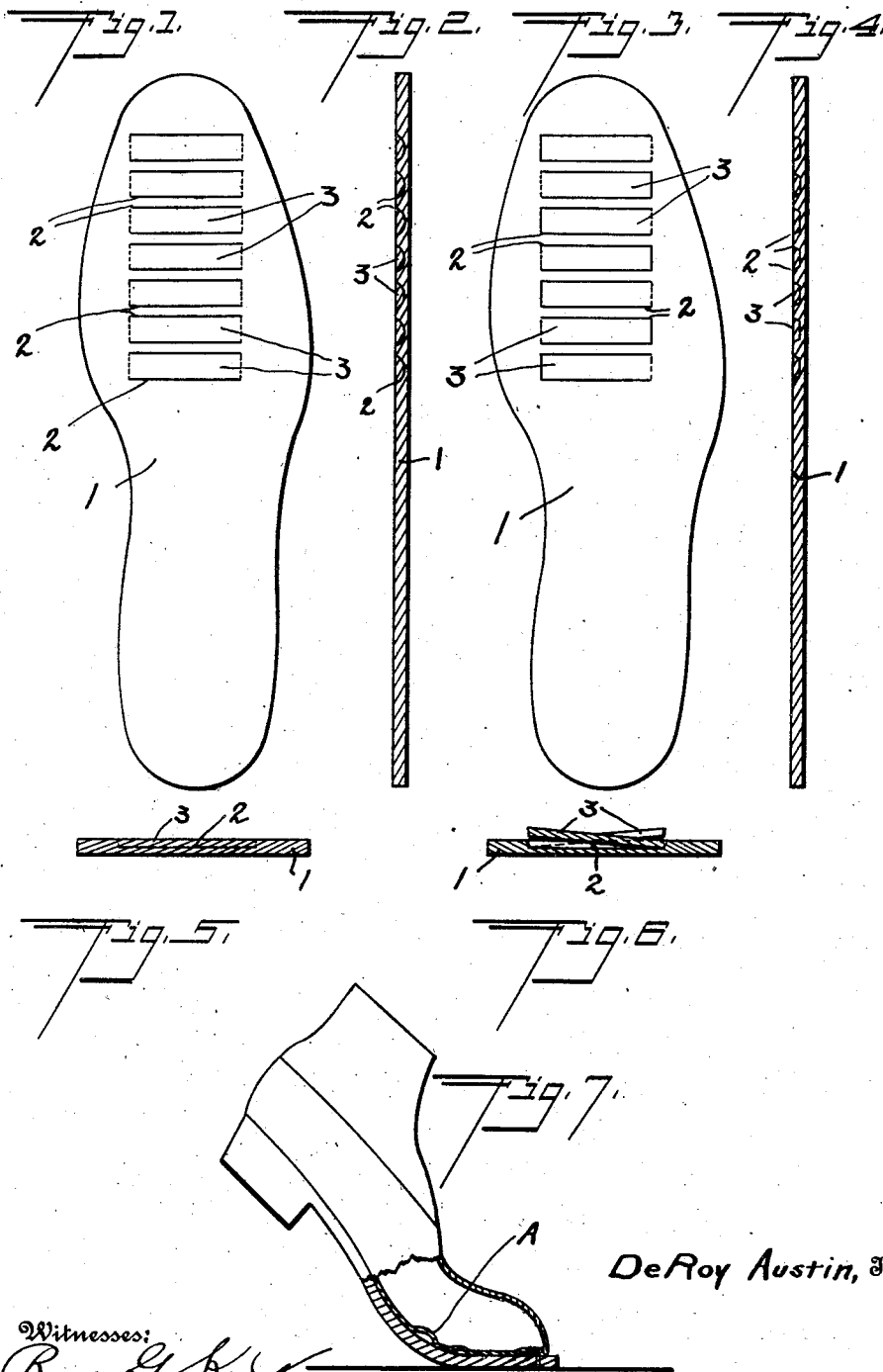


DE ROY AUSTIN.  
 INSOLE FOR SHOES.  
 APPLICATION FILED NOV. 18, 1910.

1,021,441.

Patented Mar. 26, 1912.



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Witnesses:

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# UNITED STATES PATENT OFFICE

DE ROY AUSTIN, OF OMAHA, NEBRASKA.

## INSOLE FOR SHOES

1,021,441.

Specification of Letters Patent.

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### *To all whom it may concern:*

Be it known that I, DE ROY AUSTIN, a citizen of the United States, and a resident of Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Insoles for Shoes, of which the following is a specification.

My invention relates to insoles for boots and shoes, and it is the object thereof to provide a flexible insole which may be made from strong and durable leather and in which flexibility is attained without removal of any of the material of the sole and without weakening the insole in such a way as to impair its durability.

In the accompanying drawings, Figure 1 is a bottom view of an insole embodying my invention, Fig. 2 is a longitudinal section thereof, Fig. 3 is a bottom view of a modified form of the insole, Fig. 4 is a longitudinal section thereof, Fig. 5 is a transverse section of the sole shown in Fig. 1, Fig. 6 is a transverse section of the sole shown in Fig. 3, and Fig. 7 is a side view, partly in section, showing the distortion of the insole when the shoe is bent.

When the soles of shoes are bent as in walking the relative length of the inner and outer portions of the sole must vary proportionally to their radii of curvature. In a single piece of leather these differences of length are compensated by elongation of the material in the outer part of the curved portion and by compression of the material in the inner part of the curved portion, and the flexibility of the piece is thus determined by the elasticity and compressibility thereof. In shoes the outsole is usually heavier than the insole and the action of the two soles when bent is dissimilar to that of a single piece of leather. The outsole being the predominant member bends in the ordinary way, the outer layers of material therein stretching and the inner layers being compressed, while the insole, being incapable of being compressed sufficiently to make up the required shortening thereof, forms one or more wrinkles in front of the instep, as shown at A in Fig. 7. My invention provides a means for facilitating the formation of such wrinkles in the insole, without the removal of any of the material thereof, and without essentially weak-

ening or reducing the transverse strength thereof.

In carrying out my invention I provide an insole 1 of ordinary form and material. In the lower side thereof between the instep and toe is made a series of reëntrant incisions 2 which form a series of transverse strips 3 of which the ends are attached to the body of the sole and which lie in the transverse channels in the sole from which they were cut. The edge portion of the insole is then secured to the upper of the shoe in any ordinary manner, as by nailing, sewing or welting, and the shoe is completed in the usual way.

For shoes in which it is not objectionable to reduce the transverse strength of the insole, one end of each of the strips 3 may be detached from the body of the sole. Such a construction is shown in Figs. 3, 4 and 6, in which the strips are detached alternately at opposite ends thereof.

Now, having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a shoe, an insole having therein a series of incisions each entering a surface of the sole and curving so as to emerge from the same surface and form a transverse strip attached to the body of the sole.

2. In a shoe, an insole having in the lower side thereof between the instep and toe a series of reëntrant incisions forming transverse strips attached at both ends to the body of the sole and detached from the sole at their central portions, said strips lying in the channels formed by the detachment of said portions from the sole.

3. In a shoe, an insole having a series of transverse channels formed in the lower side thereof, and strips integral with the sole and of the same material lying in and filling said channels.

4. In a shoe, an insole having a series of transverse channels formed in the lower side thereof between the instep and toe, and strips integral with the sole and of the same material lying in said channels and attached at both ends to the body of the sole.

5. In a shoe, an insole having in the lower surface thereof a series of incisions each having two lines of emergence from the lower surface and forming a strip attached at both ends to the body of the sole.

6. In a shoe, an insole having in the lower  
side thereof a series of transverse incisions  
each entering and emerging from the same  
surface in parallel lines so as to form a  
5 series of transverse strips integral with the  
sole and lying in transverse channels  
therein.

In testimony whereof I have hereunto  
subscribed my name in the presence of two  
witnesses.

DE ROY AUSTIN.

Witnesses:

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ROY G. KRATZ.