

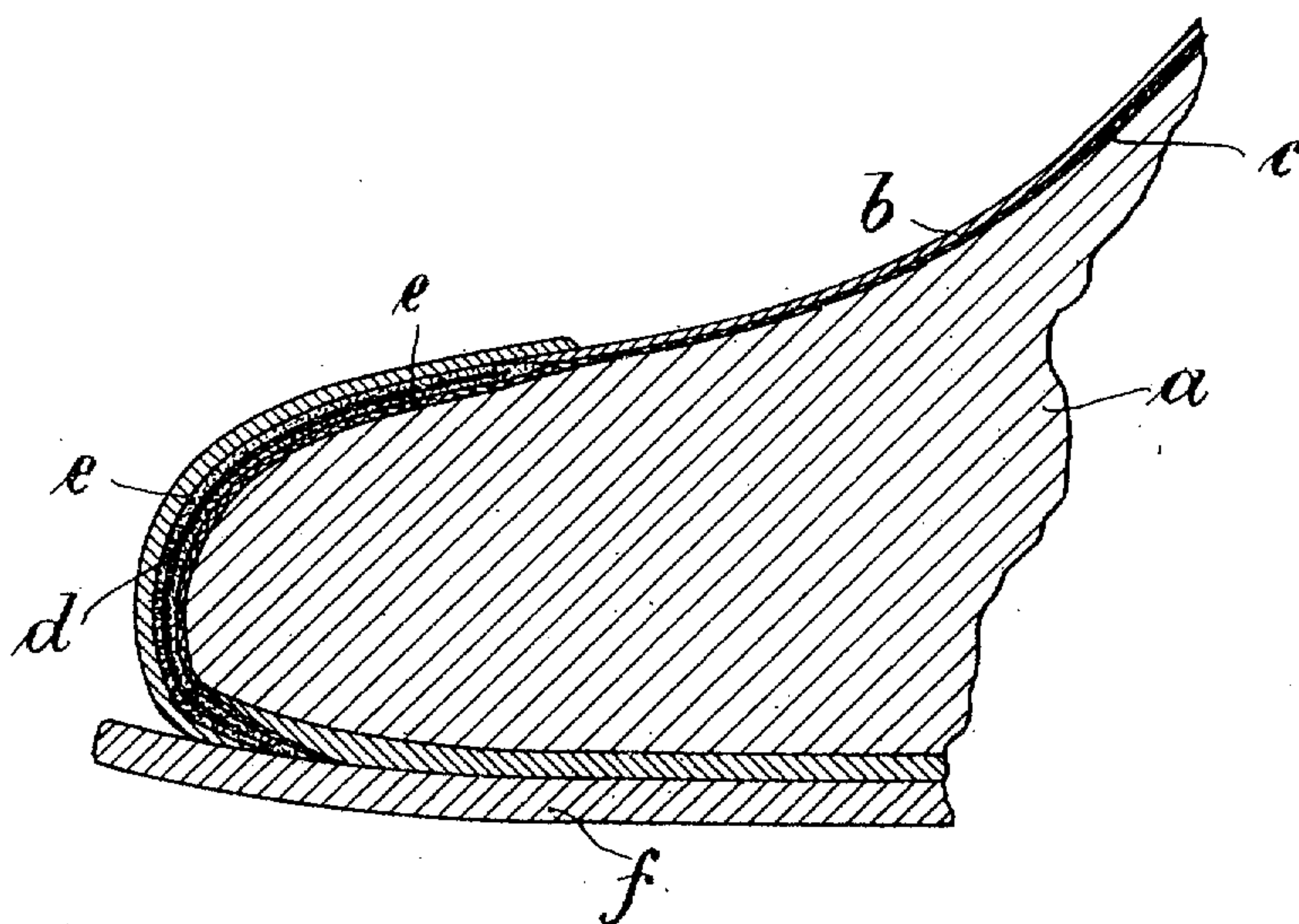
E. LIEBMANN.

PROCESS FOR STIFFENING THE TOES AND HEELS OF FOOTWEAR.

APPLICATION FILED MAY 28, 1908.

986,475.

Patented Mar. 14, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

EMIL LIEBMANN, OF OFFENBACH-ON-THE-MAIN, GERMANY.

PROCESS FOR STIFFENING THE TOES AND HEELS OF FOOTWEAR.

986,475.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed May 28, 1908. Serial No. 435,492.

To all whom it may concern:

Be it known that I, EMIL LIEBMANN, subject of the German Emperor, residing in Offenbach-on-the-Main, in the Empire of Germany, manufacturer, have invented certain new and useful Improvements in Processes for Stiffening the Toes and Heels of Footwear, for which application has been made in Great Britain, dated June 1, 1907; in Austria, dated May 31, 1907; in Hungary, dated June 13, 1907; in Italy, dated June 15, 1907, and in Switzerland, dated June 10, 1907.

This invention relates to a method of making stiffeners for footwear of all kinds, and consists in spreading leather dust, which is produced in large quantities as waste in shoe making by the grinding of the soles and heels, mixed with a suitable adhesive, between several suitably shaped pieces of fabric and then beating the whole with the upper leather upon the last. Toe and heel stiffeners formed by this method are very cheap as their main constituent is a waste product which is practically valueless.

In the drawing I show a vertical sectional view of a portion of a shoe and last therein, illustrating the stiffening material in position.

In said drawing *a* is the shoe last; *b* the upper; *c* the lining; *d* a canvas insertion, and *e* the stiffening substance spread thereon; and *f* is the sole.

The stiffeners are made as follows:—The leather dust is first worked up thoroughly with a suitable adhesive, such for instance as cellulose solutions, chrome glue and the like, so that a viscous or tough mass is formed. This is spread on a suitably cut out piece of fabric which may be preferably previously sewed on the part of the upper which is to be stiffened. A further piece of fabric is then laid thereon and the whole is allowed to dry a little, after which it is beaten over the last in the ordinary manner simultaneously with the upper leather, on which last it is fully dried and thereby imparts to the boot the form of the last better than any other stiffener is adapted to do. Further layers of the substance and the fabric may be alternately applied and placed as desired, before the drying on the upper layer

of material. If the toe and heel stiffeners are to remain soft and elastic the substance may be prevented from fully hardening for instance by the addition of glycerin or suitable oils. If on the other hand quite hard stiff stiffeners are to be produced a suitable stiffening medium such for instance as chalk sludge or heavy spar is added to the stiffener. Hereby the improved stiffener becomes very stiff without becoming brittle.

The proportions of the different ingredients may be varied, but I preferably use 24 parts of celluloid, 60 parts of a solvent such as acetone, 7 to 20 parts of leather dust (according to requirements and the stiffness and strength desired) 6 parts of chalk, and 3 parts of shellac.

Of course in place of leather dust, wood dust, cellulose, sawdust and other like pulverulent waste material may be employed.

I declare that what I claim is:—

1. The hereindescribed process of stiffening the toe and heel of footwear which consists in spreading a mixture comprising essentially leather dust and an adhesive upon a suitably-shaped piece of fabric, laying thereon a second piece of fabric, then allowing the layers of fabric and mixture to dry slightly, then beating the whole over a last simultaneously with the upper leather to impart to the footwear the form of the last, and then allowing the stiffening layers and mixture to dry while on the last.

2. The hereindescribed process of stiffening the toe and heel of footwear which consists in spreading a mixture comprising leather dust, an adhesive, and shellac upon a suitably-shaped piece of fabric, laying thereon a second piece of fabric, then allowing the layers of fabric and mixture to dry slightly, then beating the whole over a last simultaneously with the upper leather to impart to the footwear the form of the last, and then allowing the stiffening layers and mixture to dry while on the last.

In testimony whereof, I have hereunto signed my name this 18th day of May 1908, in the presence of two subscribing witnesses.

EMIL LIEBMANN.

Witnesses:

KARL NOEL,
A. WITTWER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."