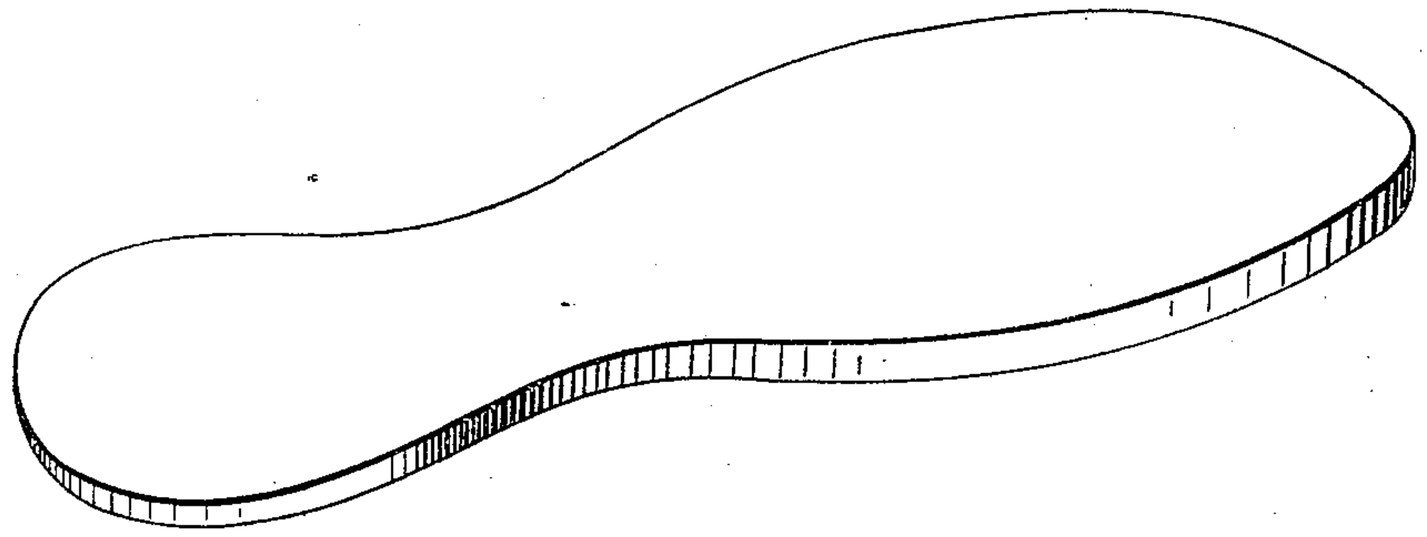
(No Model.)

J. PIENOVI.

SOLE AND HEEL FOR BOOTS AND SHOES.

No. 249,086. Patented Nov. 1, 1881.



Witnesses:

E. E. Masson

Philip Pollock

Inventor

Joseph Pienovi

by A. Pollok

his attorney

UNITED STATES PATENT OFFICE.

JOSEPH PIENOVI, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE UNION INDIA-RUBBER COMPANY, OF NEW YORK, N. Y.

SOLE AND HEEL FOR BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 249,086, dated November 1, 1881.

Application filed September 28, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH PIENOVI, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Soles and Heels for Boots and Shoes, which improvement is fully set forth in the following specification.

This invention relates to water-proof soles, heels, and linings for rubber and other boots and shoes; and it consists in forming the sole, heel, or lining of a compound of rubber and asbestus or other fibrous mineral. Vegetable fiber is not adapted to the purpose because it conducts the water through the compound, which is not the case with asbestus.

Soles and heels made in accordance with this invention possess advantage over those heretofore made from rubber or rubber compound in that they are not so liable to slip on snow or ice or to be burned when held close to the fire; that they wear better and are not easily cut upon sharp substances, as on ice, stones, or sand; that they can be made of such fibrous character as to conform to the inequalities of the foot, like a leather or felt sole, while at the same time they are perfectly water-proof; and in that they can be mended by nailing on a lift or tap. Boot-linings of this material have analogous advantages, mainly in that they conform to the foot, like a felt lining, while at the same time they are perfectly water-proof, and that they can be easily repaired.

The proportion of asbestus preferred is the largest that can be vulcanized, although less can be used with good effect. It is also preferred to have the asbestus fiber of considerable length—say a quarter of an inch—although it can be reduced almost to powder or be used in intermediate or longer lengths.

In carrying the invention into effect the rubber and asbestus, with due proportion of sulphur, are used with or without other materials. The following composition is deemed preferable: Asbestus, two and one-half pounds; rubber, three pounds; lamp-black, two pounds; litharge, one-half pound; and sulphur, two ounces. The ingredients are thoroughly mixed by means of machines ordinarily used for compounding rubber with other materials. The compound or mixture is then rolled into sheets and cut or pressed into soles, heels, and linings and vulcanized in the usual way.

As already stated, the relative quantities of materials may be varied. Probably some asbestus could be used in place of a portion of the lamp-black. Compounds containing less asbestus can also be used with good results. When long-fiber asbestus is used the surface of the compound has a mottled appearance, if the original white color of the fiber is allowed to remain; but if the fiber is made very short it is hardly visible.

The accompanying drawing represents the sole and heel of a rubber boot, such as could be made of rubber and asbestus compound in accordance with this invention. If desired, they could be formed of several pieces or lifts, like the soles and heels of ordinary boots, or one or more suitable pieces of the rubber and asbestus composition could be combined with pieces of leather.

Instead of asbestus other suitable fibrous mineral could be used.

I claim—

A sole, heel, or lining for rubber and other boots and shoes, composed of rubber and asbestus, combined and vulcanized substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH PIENOVI.

Witnesses:
W. G. VERMILYE,
FREDK. W. LIVERMORE.