

UNITED STATES PATENT OFFICE.

WILLIAM H. TOWERS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN WATER-PROOF COMPOSITION SHANKS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 122,925, dated January 23, 1872.

To all whom it may concern:

Be it known that I, WILLIAM H. TOWERS, of Boston, in the county of Suffolk and State of Massachusetts, have made a new and useful Improvement in Water-Proof Composition Shanks for Boots and Shoes; and I hereby declare the following to be a full and exact description of the same.

In the manufacture of boots and shoes it is usual to place a piece called the shank between the inner and outer sole, so as to fill up the space and give the proper shape to the bottom of the boot or shoe. This shank is usually made of pieces of leather tacked together and cut to the proper form. To do this requires considerable labor and skill. It has also been proposed to mold the shank from rubber or gutta-percha; also, to fashion it from wood, steel, and other hard substances. These are either too costly or too rigid to give the proper spring to the bottom of the boot or shoe. It has also been proposed to use paper or paper pulp. This looked well, and the shoes and boots made with it sold well enough, but as soon as wet the composition swelled and became disintegrated, so as to render the boot or shoe bottom unsightly and almost worthless, to the great injury of the wearer and to the loss of reputation of the manufacturer.

It is the object of my invention to produce a shank for boots and shoes which, while much cheaper than the hand-made shank of boot-leather, shall be equally or more durable and serviceable. To this end my invention consists of a molded shank, suitable for boots or shoes, made of fibrous materials united by a water-proof cement.

The fibrous materials employed may be paper pulp, leather scraps, cotton, flax, hemp, tow, grass, shoddy, Manila, or any other suitable

fiber or mixture of them. The cement used may be any water-proof cement that is not too brittle when combined with the fiber or pulp. When the harder gums are used they may be toughened by combining with the softer and more elastic gums and resins.

In preparing the shank the fibrous material is first disintegrated, so as to form a pulp, by machinery suitable to the particular fiber used. It is then mixed with sufficient cement to render the mass plastic and capable of being molded, and so as to fill the pores and render the shank, when made, water-proof.

For the cement I prefer to use rubber, gutta-percha, or any of the allied gums or their solutions. Other gums and cement may be used. Gelatine or glue may be employed, but should be rendered water-proof by treatment with tannin or its equivalent.

I do not bind myself to any particular kind of water-proof cement, for any one that is sufficiently adhesive and tough and is water-proof will serve to carry out my invention.

When additional elasticity or spring is required in the shank I insert in the center a steel wire or spring, or any other suitable stiff springy material.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

A composition water-proof shank for boots and shoes made by combining a fibrous pulp with a water-proof cement, either with or without a steel or other spring, all substantially as set forth.

WM. H. TOWERS.

Witnesses:

H. S. THAYER,
JOS. H. WHITMAN.