(No Model.)

S. DAVIS.

TIP FOR INSOLES.

No. 263,489. Patented Aug. 29, 1882.

Fig. 1

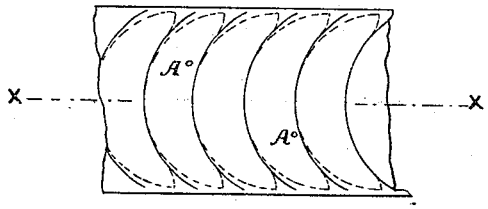


Fig. 2.

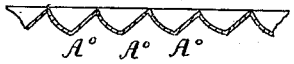


Fig. 3

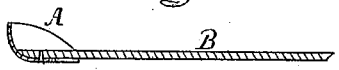
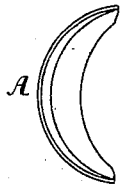


Fig. 4

Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL DAVIS, OF NEW YORK, N. Y.

TIP FOR INSOLES.

SPECIFICATION forming part of Letters Patent No. 263,489, dated August 29, 1882.

Application filed April 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL DAVIS, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Tips for the Insoles of Boots and Shoes, and the materials of which they are manufactured, of which the following is a specification.

This invention relates to tips for the insoles of boots and shoes, and to their manufacture; and it consists of a tip formed of some textile material stiffened with the compositions hereinafter mentioned, as a new article of manufacture.

The article known heretofore in the trade as the "box-toe" or "tip" was formerly made of leather, which was expensive and difficult to manufacture. Frequently the box-toes or tips were made a part of the insole and could be manufactured only by skillful workmen. Later, tips or box-toes were made of a substance termed in the hat-trade as "gossamer," and consisted of muslin stiffened by shellac; but this was objectionable on account of the expense of the shellac, the fluctuations in its value, the necessity of a peculiar expensive muslin wherewith to manufacture it, and the further fact that moisture or damp weather renders the article difficult and fickle to manufacture.

The tip is illustrated in the accompanying drawings, in which Figure 1 represents the top of the tips after being pressed out of the material and before being cut into shape. Fig. 2 is a section of the same on the line *x x* of Fig. 1. Fig. 3 represents the tip when in place upon the insole of a boot or shoe. Fig. 4 is a vertical section of the tip complete, and Fig. 5 a plan thereof.

The compositions hereinbefore referred to can be made in many ways out of the same materials, and consist of the following ingredients, combined in proportions to suit the size and shape of tips and the purposes required. I have found them useful when combined in about the following proportions; but this is not necessary to the manufacture of a sufficient tip.

The ingredients mentioned in the different combinations may also be mixed with each other, irrespective of the arrangements I have given, in such a way as to suit the different purposes and to make the different kinds of tips desired. I however prefer them for ordinary use when made of the following ingredients, combined in about the following proportions: starch two pounds, glue one pound, chloride of zinc eight ounces, water six gallons, muslin seventy yards; or, starch one and three-fourths pound, tapioca, sago, or other farinaceous material one and one-eighth pound, Russia cement three ounces, chloride of zinc four ounces, water six gallons, muslin seventy yards.

The purpose of the chloride of zinc is very largely to prevent mildew and assist in rejecting and resisting moisture, which I have found in actual use to be the enemy of all composition tips; but if this property is not desired this constituent can be safely and properly omitted from the mixture.

In carrying out the manufacture of the material by combining these ingredients I first take the muslin, cheese-cloth, or other textile material and plunge it in hot water. I then saturate it with such a composition as is hereinbefore suggested. When saturated I usually combine it in several layers or thicknesses closely compacted; but it may be manufactured single, if desired. The substance thus formed is rubbed together with pressure from both sides until it is thoroughly combined, and is then either wholly or partially dried. If wholly dried, the material is then moistened, so as to soften it and render it more susceptible to the action of dies. It is then placed between dies and pressed into shape. In this pressing I prefer heated dies for the economy and speed of drying the tips while being pressed, since the composition is readily hardened and dried by heat. This, however, is not necessary, as in the case of the manufacture of tips by the use of shellac, which yields only to heat, for the heat is used in my invention simply for the purpose of hardening, and in the use of shellac it is employed solely for the purpose of softening the material. After the tips are thus stamped or pressed out, as appears in Figs. 1 and 2, they are subjected to the action of cutters along the dotted lines in Fig. 1,

and the tips thus cut out appear complete, as in Figs. 4 and 5, and are ready for use, as in Fig. 3.

The advantages I claim for my invention over all others are that the manufactured tip will not mildew, as will all others; that it is much cheaper, easier, and less fickle in its manufacture than any other composition tip hitherto in the market or known to me. In addition it is found that tips stiffened by shellac or shellac compositions will not endure the strain of manufacture, but when subjected to the continuous perforation by needles and blows of the hammer in making the shoe that the stiffening material pulverizes and sifts out as a dust, thus leaving the tip insufficient for many uses, whereas the tip manufactured and claimed by me is solidified, hardened, and stiffened by the same treatment and benefited rather than injured thereby.

The tip thus manufactured is stiffer at the same thickness than any other composition tip, and is much tougher and will not break or crack in bending, and is much less brittle than the shellac manufactures.

My invention may be distinguished upon examination by the foregoing qualities, and can be made of any desired color. If not dyed, it appears in a light cream color; but I have heretofore uniformly in practice made it of a bright leather color, which I prefer, but do not claim.

By my system a cheap and domestic textile material can be used; but other composition tips, especially if stiffened by shellac, require an expensive material in place thereof in order to become properly stiffened and to constitute a reasonably sufficient article.

The entire expense of manufacturing the tips according to my invention is but a small fractional part of the usual expense of manufacturing other composition tips.

I am aware that a composition consisting of a textile material stiffened by shellac has been in use, and that the tip, as a new article of manufacture, consisting thereof was patented by Letters Patent No. 242,382, May 31, 1881, by M. Shuter and A. Davis; but I am not aware that the tip as an improved article of manufacture made of the materials described by me was ever known or used prior to its invention by me.

I do not claim the combination of the ingredients hereinbefore mentioned as compositions of matter, because circumstances of size, thickness, stiffness, toughness, and rigidity of the tip and the extent to which it may be desired to be mildew-proof render it impossible to make any standard of quantities of each ingredient.

What I claim, and desire to secure by Letters Patent, is—

As an improved article of manufacture, a tip for the insole of boots and shoes, formed of textile material stiffened with a composition of starch, glue, chloride of zinc, and water, or equivalents thereof, substantially as and for the purposes described.

SAMUEL DAVIS.

Witnesses:
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