

C. T. GRILLEY.
Shoe-Tips.

No. 164,447.

Patented June 15, 1875.

Fig. 1.

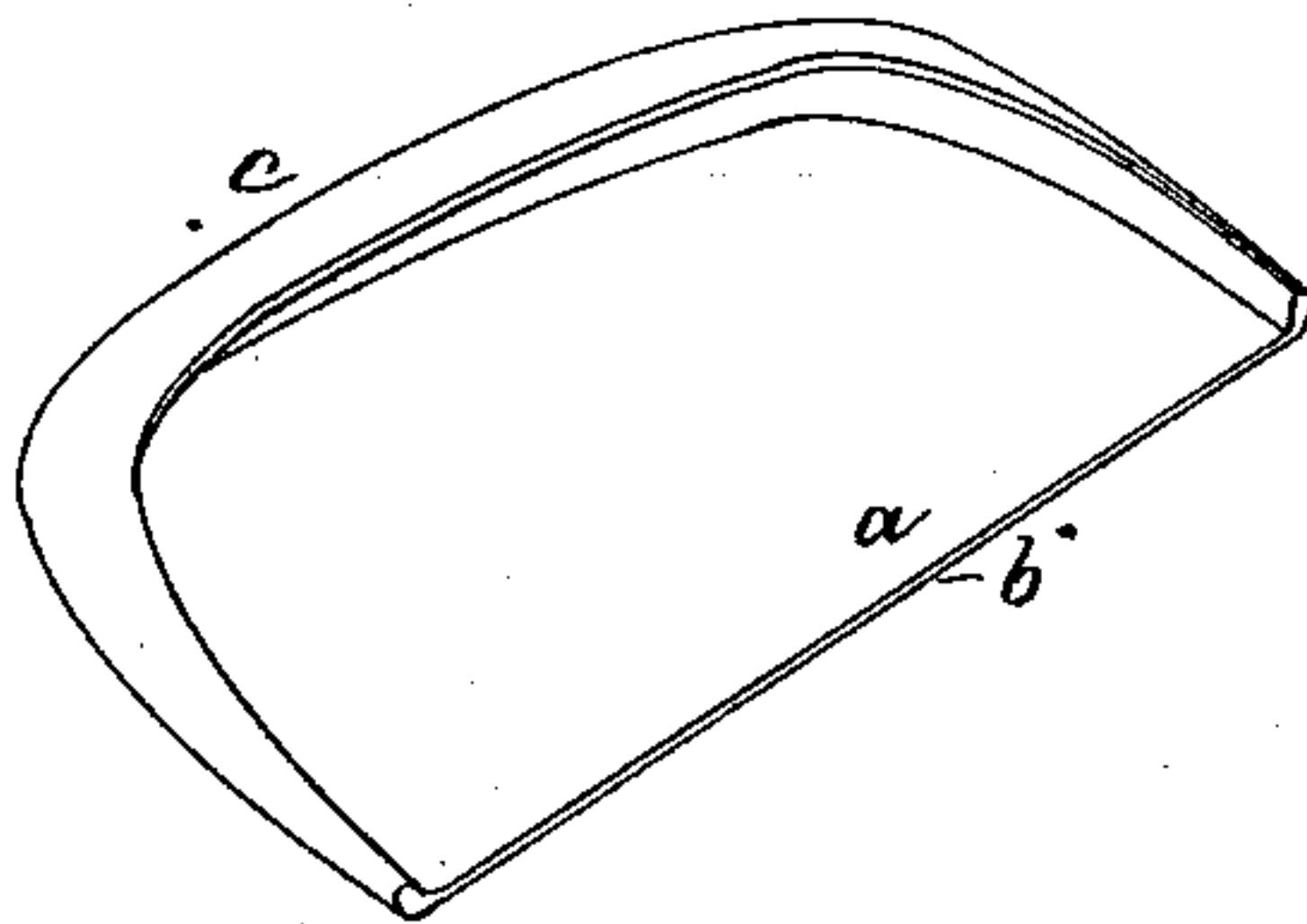
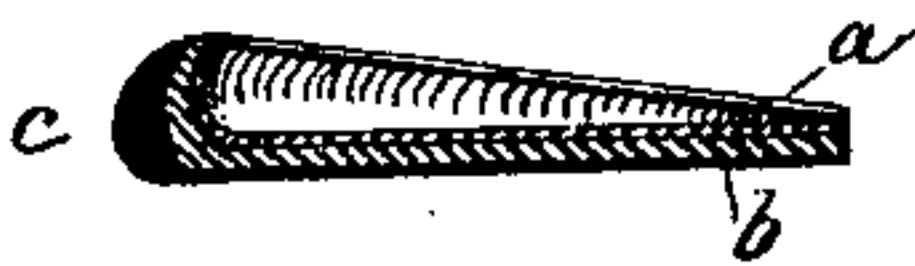


Fig. 2.



WITNESSES.

L. H. Latimer.

W^m Pratt.

INVENTOR.

Charles T. Grilley.

PER Crosby Gregory Attys.

UNITED STATES PATENT OFFICE.

CHARLES T. GRILLEY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SHOE-TIPS.

Specification forming part of Letters Patent No. **164,447**, dated June 15, 1875; application filed May 18, 1875.

To all whom it may concern:

Be it known that I, CHARLES T. GRILLEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Shoe-Tip, of which the following is a specification:

This invention relates to improvements in shoe-tips made of india-rubber or its compounds.

In the manufacture of shoes for children's wear, it is customary to place on the toes metallic tips or caps; but for the better class of shoes these tips are omitted as being objectionable, because the metal is suggestive to the public of economy, and they are also objectionable because they dent badly, and cut through into the leather. Tips have been made of metal enameled, and they have also been made of india-rubber; but those made of india-rubber or its compounds, up to the present time, have been objectionable on account of being too elastic or too hard. A rubber tip to be good and serviceable must have a large proportion of pure gum, and when such rubber is used alone the tip is too elastic, will not retain its position closely, and dirt will get between it and the leather, and the tip will then be forced out of shape, destroying the contour of the toe, which is unpleasant to the eye, and will allow the water caught in the tip to run through into the boot or shoe at the toe. Hard rubber is produced by the addition of certain amounts of sulphur, and a good quality of hard rubber would not make a serviceable tip, because it would not stand the abrasion which the toe of a boot or shoe receives, and would soon be unsightly and worthless, and to mix with the rubber substances which shall give it rigidity or body deteriorates the wearing quality of the rubber.

To obtain the best possible result in a tip, it is necessary to present an outer surface which shall be elastic to a certain degree, so that it will not indent, and which shall be capable of withstanding much abrasion without chipping or wearing off, and for such outer surface I select a good quality of rubber having a considerable portion of pure gum, so as to be elastic, and it will not be mixed with substances to cause it to dry out or become weak. I then support this good rubber at the

back, or within the convexed portion of the tip, with a suitable thickness of india-rubber, having mixed with it substances to make it rigid or give to it body, and in this way I produce a tip molded to fit the toe of the boot or shoe, one having sufficient rigidity to retain its position closely about the toe, and the outer portion of the tip is covered with a layer of rubber of a superior quality, and of greater or less thickness. This tip is, preferably, formed on cotton or other strong fabric, and extends for some distance under the toe proper of the boot or shoe, and in this flat part or extension are introduced the stitches, or nails, or pegs, or whatever may be used to unite the sole and upper, and this tip will be found suitable for the better classes of boots and shoes, and it is also ornamental.

Figure 1 is a top view of one of my improved tips, and Fig. 2 is a section thereof.

In the drawing, *a* designates a layer of cloth or fabric, and *b* a coating of india-rubber, and *c* the good rubber forming the abrading portion of the tip. This tip is formed in a heated mold. To form the tip I prefer to coat the fabric in sheets with a film or sheet of rubber of the kind used for hard-rubber compounds, or harder than the material *c*, which is to form the outside of the tip. This sheet of fabric and rubber is then cut out by dies or otherwise into the proper shape for a tip-blank, and this blank is laid in the mold and about one edge of the mold, which is recessed to receive it, and on the blank is placed a quantity of good rubber, *c*, and then the other portion of the die is brought against the material to form the tip, and it is molded into the shape shown in the drawing, the good rubber *c* being accumulated at the forward end of the tip, and being backed by the harder rubber or fabric.

I do not desire to limit myself to the shape of the tips, as they will be adapted to shoes of different shapes. Should the whole of the tip be made of a rubber compound as hard as that used for the foundation with the cloth, the tip would at the end be too hard and rigid, for the outer surface of the tip would chip or break, and would not stand abrasion required of a tip, and, therefore, it becomes necessary to place outside the hard-rubber compound a softer rubber capable of standing

much abrasion, and which will be sufficiently elastic not to permanently indent. The fabric strengthens the thin hard-rubber compound, and assists in holding the stitches or uniting the sole and upper. These bright metallic tips can be seen at a great distance, are considered as a badge of poverty, and are very objectionable because they are so very conspicuous, whereas a black tip is scarcely noticeable.

Having described my invention, I claim—

A shoe-tip composed of layers of india-rubber compound, the outer layer at the end of the tip being softer than the inner or stiffening layer, substantially as described.

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

CHARLES T. GRILLEY.

Witnesses:

G. W. GREGORY,
NN. PRATT.