E. A. GALLISON.

METHOD OF MAKING TIPPED LACINGS.

APPLICATION FILED APR. 2, 1912.

1,040,662.

Patented Oct. 8, 1912.

Fig. 1.

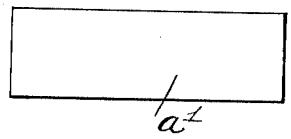


Fig. 2.

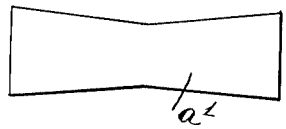


Fig. 3.

Fig. 4.

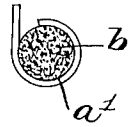


Fig. 5.

Fig. 6.

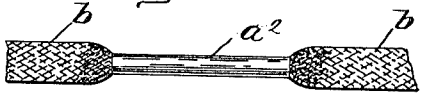


Fig. 7.

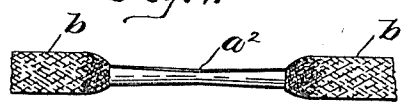
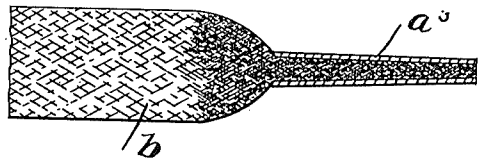


Fig. 8.



Witnesses:
F. R. Ronlstone
P. W. Pezzetti

Inventor:
E. A. Gallison
by Wright Brown Quinby & May
Attys

UNITED STATES PATENT OFFICE.

ERNEST A. GALLISON, OF EVERETT, MASSACHUSETTS, ASSIGNOR TO COLONIAL FAST COLOR TIPPING COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

METHOD OF MAKING TIPPED LACINGS.

1,040,662. Specification of Letters Patent. Patented Oct. 8, 1912.

Original application filed February 20, 1912, Serial No. 678,917. Divided and this application filed April 2, 1912. Serial No. 688,074.

To all whom it may concern:

Be it known that I, ERNEST A. GALLISON, of Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Methods of Making Tipped Lacings, of which the following is a specification.

The object of the present invention is to provide lacings with tips of a material which may have a permanent color to match or contrast with the color of the fabric, said tips being so intimately united with the fabric that they cannot be pulled off, the extreme ends of the tips being flush with the inclosed fabric material so that there will be no projecting tufts of material.

Lacings for shoes, corsets, and other articles, as most commonly made, comprise strips of fabric termed braid, tape or ribbon which will hereinafter be referred to under the generic term ribbon, said strips of ribbon having their ends stiffened, usually with sheet metal, in order to facilitate the threading of the lacings through eyelets. As is well known, the sheet metal tips frequently slip off the ribbon in spite of the fact that the metal is perforated or punched to secure better engagement with the fabric of the ribbon. This treatment of the metal causes the tips to be extremely rough, so that they are unsightly and cause more wear of the eyelet coatings than smooth tips, and are more liable to catch when lacing up. When they slip off, the lacing is practically rendered valueless. A particular disadvantage when sheet metal tips are employed for lacings that are used in connection with articles of apparel that are washed, is that the lacings must be removed before the garment is washed, or else the metal is likely to cause the fabric to become stained by rust spots.

Attempts have been made to provide lacings with tips of celluloid or similar material, but so far as I am aware, none have been provided with tips of such material in sheet form and which are internally intimately united with the material of the fabric.

The present invention consists in assembling a portion of a length of ribbon and a blank of sheet celluloid of the desired color and thickness, applying a solvent, and subjecting the blank to heat and pressure to wrap the blank around the ribbon, preferably with the edges of the blank overlapping, to compress or condense the ribbon and intimately unite the inner surface of the celluloid with the surface fibers of the ribbon, the embedding of said fibers in the inner surface of the sheet material resulting in firmly retaining the tip in place.

This application is a division of my application filed February 20, 1912, Serial No. 678,917.

Of the accompanying drawings,—Figures 1 and 2 illustrate two shapes of blanks which may be cut from a celluloid strip for making, respectively, straight and tapered tips. Figs. 3, 4 and 5 are detail end views of a blank in three different stages of its shaping and application to the ribbon. Figs. 6 and 7 are side elevations showing the blanks of Figs. 1 and 2 applied to the ribbon prior to cutting to form two tips. Fig. 8 is a view on an enlarged scale of one end of a completed tipped lacing, the sheath or tip being shown in section.

In carrying out my invention, I cut from a strip of celluloid, a blank such as the form shown at a' in Fig. 1, or the form shown in Fig. 2. Such material or the equivalents thereof are variously known as xylonite, cellon, or celluloid. Hereinafter the term "celluloid" will be employed alone, for the purpose of brevity of description, and not for the purpose of limitation to a specific type of sheet material.

By suitable means or machine not necessary to describe herein the blank is first given a trough form as indicated in Fig. 3. Then a length of ribbon b is laid in the trough-shaped blank, and one edge or lip is rolled over to a position such as shown in Fig. 4. Just before this operation, a small quantity of alcohol or other liquid that is a suitable solvent or softener of the celluloid, is deposited, and then the other lip or edge of the blank is rolled over upon the previously rolled lip thus completing the formation of the tube, as indicated in Figs. 5, 6, and 7. During the shaping of the blank as just described, it is subjected to the action of heat, which, in connection with the action of the solvent and the pressure to which the rolled blank and the inclosed ribbon are subjected, gives a permanent form to the tube and leaves it with practically no longitudinal seam. The heat and the action of the

solvent softens enough of the inner surface of the tube to enable the pressure of the tools or machinery employed in carrying out the process to condense the ribbon and intimately unite the inner surface of the celluloid with the surface of the ribbon, so that the fibers are embedded in the inner surface of the celluloid, thus resulting in so firmly connecting the parts that the tip cannot be pulled off after the cutting operation, presently described.

After the tube has been applied as indicated in Figs. 5, 6 and 7, the tube and the inclosed condensed ribbon are cut at the mid-length of the tube at the point indicated by the dotted lines in Figs. 6 and 7, so that the act of cutting the tube and the ribbon therein results in finishing the adjacent ends of two lacings. As indicated in Fig. 8, this results in the material of the lacing being flush with the end of the tip a^3 so that there is no tuft of fabric material projecting beyond the tip.

When the operation indicated in Fig. 5 is performed, the pressure, in connection with the heat and the solvent results in forming a tube with practically no seam visible because the first formed or bent lip is pressed into the fabric, and the last formed or bent lip is embedded into the surface of the first formed lip, as indicated in Fig. 6. This leaves an externally smooth surface of the tip.

It is to be understood that if desired, the external surface might be provided with shallow lines or figures to ornament the same, but this is not necessary, in order to insure the permanency of the connection of the tip with the ribbon. Said connection is effected solely by the intimate union of the fibers of the ribbon with the inner wall of the tube, this being due to the heat and the solvent and the pressure imparted when the blank is converted from the form shown in Fig. 3 to the form shown in Fig. 5, in which latter figure I have indicated said intimate union by the irregular line between the tube a^2 and ribbon b. The only difference illustrated by comparing Figs. 6 and 7 is that if the tube a^2 is cylindrical as shown in Fig. 6, and then cut at the mid-length, each section of the ribbon b will have a straight tip. If the tube be of the form indicated in Fig. 7 and then cut at its mid-length, each section of ribbon b will have a tapered tip as indicated at a^3 in Fig. 8.

For a more complete understanding of how a machine may be constructed and operated to produce the tipped lacings, reference may be had to my Patents 1,030,513 and 1,030,514, granted me June 25, 1912.

I claim:

1. The method of making tipped lacings, consisting in wrapping a blank of sheet celluloid around a portion of a length of ribbon while subjected to the action of heat and a solvent, and subjecting the blank and the inclosed ribbon to pressure to compress or condense the ribbon and intimately unite the inner surface of the celluloid with the surface fibers of the ribbon.

2. The method of making tipped lacings, consisting in wrapping a blank of sheet celluloid around a portion of a length of ribbon with the edges of the blank overlapping while subjected to the action of heat and a solvent, and subjecting the blank and the inclosed ribbon to pressure to compress or condense the ribbon and intimately unite the inner surface of the celluloid with the surface fibers of the ribbon.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ERNEST A. GALLISON.

Witnesses:
A. W. HARRISON,
P. W. PEZZETTI.