

S. W. WARDWELL.

LACING.

APPLICATION FILED JULY 15, 1911.

1,045,919.

Patented Dec. 3, 1912.

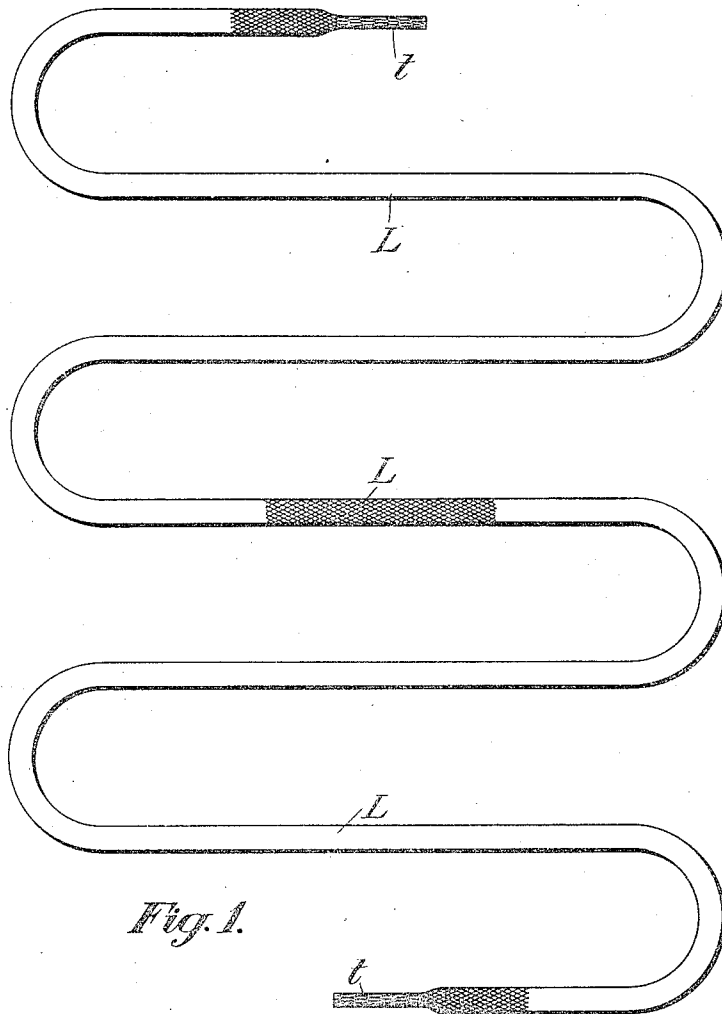


Fig. 1.

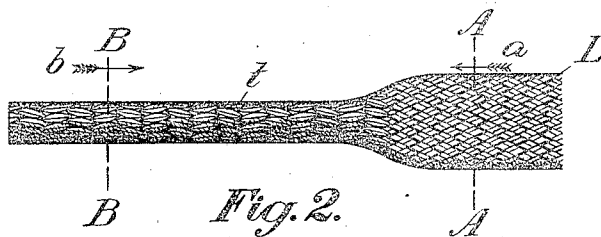


Fig. 2.



Fig. 3.



Fig. 4.

WITNESSES:

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SIMON W. WARDWELL, OF PROVIDENCE, RHODE ISLAND.

LACING.

1,045,919.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SIMON W. WARDWELL, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Lacings, of which the following is a specification.

My invention relates to lacings for use with articles of apparel such as shoes, corsets, etc., or for other purposes, and consists particularly of improvements in the tips at the ends of the lacing which are provided to facilitate threading it through the eyelets and to give a finish to the article.

The object of my improvement is to dispense with the use of the unsightly and easily destroyed metal tip now generally employed and to provide a practically indestructible fabric tip formed integral with the main portion of the lacing and presenting a neater and more attractive appearance.

The invention is fully described in the following specification, illustrated by the accompanying drawings, in which:—

Figure 1 is a view of my improved lacing showing the fabric tips formed integral with the main portion; Fig. 2, an enlarged detail view of one end of the lacing illustrating the difference in the character of the fabric in the main portion and the tip; Fig. 3, a sectional view of the fabric taken on the line A—A of Fig. 2, looking in the direction indicated by the arrow *a*; Fig. 4, a similar view taken on the line B—B of Fig. 2, looking in the direction indicated by the arrow *b*.

Referring to Fig. 1 of the drawings, the main or body portion of the lacing, designated L, is preferably formed of tubular fabric, braided, woven or otherwise fabricated in any well known manner to give the desired pattern, and adapted to be pressed into a substantially flat tape or strap, as illustrated more particularly in Fig. 3. At the ends of the lacing the tubular portion of the fabric is reduced in diameter and the strands of thread, yarn, fibers, or other attenuated material, from which it is fabricated are drawn tightly together and compacted into substantially solid, round portions *t*, see Fig. 4, which form the terminal tips for the lacing.

The preferable method of manufacturing the improved lacing is described in detail in my application for patent filed July 15,

1911, Serial No. 638,734, and consists particularly in producing a continuous strip of fabric having tip portions of reduced diameter occurring at suitable intervals and adapted to be cut apart to form separate lacings with substantially round fabric tips at their ends. To prevent the ends of the tips from fraying or raveling I also prefer to coat them with shellac, cement, glue or some other waterproof compound which amalgamates the fibers of the structure, after hardening, and increases the stiffness of the tips to render them more easily inserted through the eyelets of the shoes or other articles.

The tubular, body portion L of the lacing is fabricated in any suitable reticular pattern and the strands are usually braided with a relatively loose mesh. To produce the hard, round, cord-like, tip portions *t* of the lacing the strands are intermeshed in more compact formation which may be accomplished to some extent by increasing the tension on the yarns and accelerating the rate of feed of the material through the machine. I have found it expedient, however, to change the pattern of the fabric for the tip portions of the lacing in such manner as to compact the strands of the fabric to a maximum degree at these points. This is accomplished by regulating the crossing of the strands to give them a longer lead along the braid so that they lie more nearly parallel to its sides.

It will be seen from reference to Fig. 2 that the strands in the tubular portion of the fabric cross each other at substantially right angles, while in the tip portion *t* the strands cross at greater angles and are drawn out more nearly parallel with the length of the tip. In this way the tip portion of the fabric is compacted into a substantially solid cord, reduced in diameter from the main portion, and having considerable inherent stiffness and rigidity. After being coated with a waterproof covering a smooth, hard, solid tip is formed, integral with the main portion of the lacing, and proof against damage or disintegration.

My new lacing is much more attractive than the usual article of this style and is more durable in use. The use of metal tips for finishing the ends of the lacing is open to many disadvantages: They pull off easily and are frequently detached if the end of the lacing catches in anything or is

subjected to rough usage. They are also liable to be stepped upon and crushed or bent out of shape, and sometimes entirely destroyed. Furthermore, it has been found impossible to give a permanent finish to a metal tip, the enamel invariably cracking or wearing off after a short period of use, and the tip therefore becoming worn and shabby in appearance. In my improved lacing the fabric fashioned tip presents an extremely neat and finished appearance, in harmony with the article itself, and being of firmer structure it will withstand much rough usage and will outwear the body portion of the lacing. Furthermore, this style of lacing is much cheaper to manufacture than the usual variety, as the complete article, tip and all, can be fashioned on the braiding or other machine and the many operations of tipping the lacing are therefore eliminated.

Without limiting myself to any particular pattern or character of fabric or to any one method of manufacture what I claim as my invention is:

1. An improved lacing comprising a body portion of tubular fabric having tips at its ends formed by cylindrical portions of the fabric of reduced diameter made solid by compacting its strands in the operation of intermeshing the same.

2. As a new article of manufacture, a lacing consisting of a strip of fabric having

terminal tips formed integral therewith by intermeshing the strands of the fabric into a hard, solid cord of less diameter than the width of the main strip.

3. As a new article of manufacture, a lacing having a main portion of tubular fabric and fabric tip portions formed integral therewith by intermeshing the strands in a different pattern to compact them into a hard, cord-like structure.

4. As a new article of manufacture, a lacing consisting of a main portion of tubular fabric having the strands intermeshed with a relatively loose mesh and terminal tips integral with the main portion of the lacing and formed from the same strands intermeshed with a tight mesh to produce a hard, cord-like structure.

5. As a new article of manufacture, a lacing blank consisting of a strip of fabric having tubular portions of suitable length to form the main part of a lacing and tip portions separating the tubular portions of the strip and formed by the same strands compacted into a hard, solid, cord-like structure of less diameter than that of the tubular portions.

In testimony whereof I affix my signature in presence of two witnesses.

SIMON W. WARDWELL.

Witnesses:

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