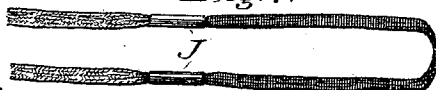
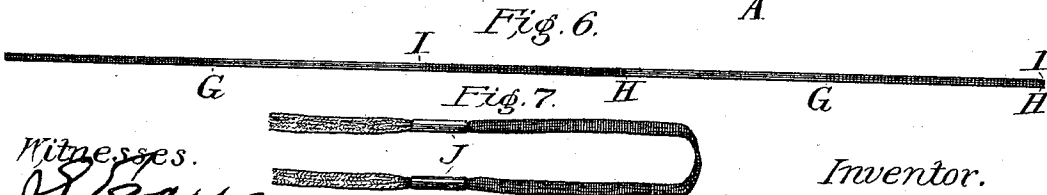
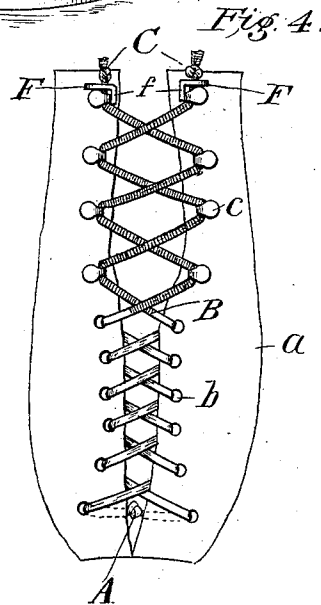
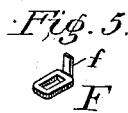
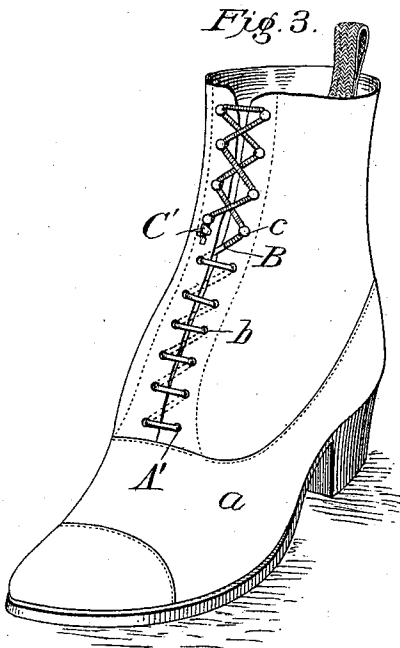
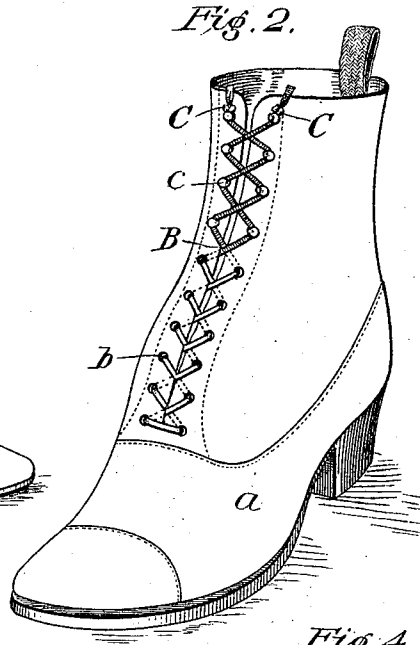
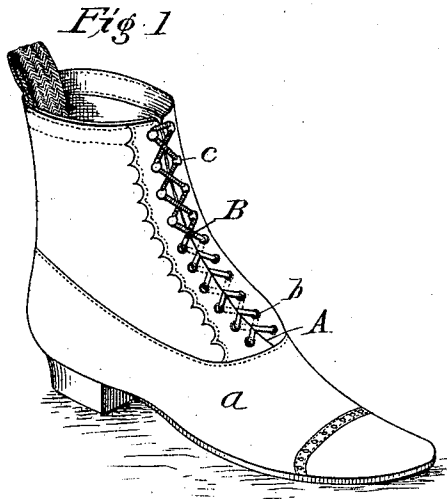


(No Model.)

W. W. MUNSELL.
SHOE LACER AND LACING.

No. 578,066.

Patented Mar. 2, 1897.



Witnesses.
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SHOE LACER AND LACING.

SPECIFICATION forming part of Letters Patent No. 578,066, dated March 2, 1897.

Application filed January 31, 1895. Serial No. 536,776. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. MUNSELL, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shoe Lacers and Lacings, of which the following is a full, clear, and exact specification.

This invention relates to improvements in lacing-strings heretofore composed throughout their length of cotton, silk, leather, and other practically non-elastic material and employed for lacing shoes, gloves, corsets, and other articles of wearing-apparel.

Generally stated, the object of my invention is to provide in a lacing-string for the yielding of the opposing edges of the article or device laced at any predetermined point of the length thereof, and by this means relieving the strain on the said edges at such point, and at the same time enable the article of apparel or edges laced to conform to the surface of the part inclosed thereby, and thus relieve such part of any uncomfortable or undue pressure and permit the free movement of the ankle or wrist when used for shoes or gloves while serving every purpose of the usual string or lace to hold the laced parts in their proper position.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a perspective view of a shoe having therein an endless lacing embracing my invention. Fig. 2 is a similar view of a shoe, showing a lacing embodying my invention having two knotted ends. Fig. 3 is a similar view of a shoe, illustrating the use of a single lacing-string embracing my invention. Fig. 4 is a detail front elevation of a shoe, showing a lacing-string embodying my invention composed of two parts knotted together at the lower portion or beginning of the lacing-string. Fig. 5 is a

detail view in perspective of a stop or catch adapted to be used in connection with knotted lacing-strings for holding the free ends thereof in their operative position. Fig. 6 is a diagrammatic detail view of a lacing-string embracing my invention wherein the elastic and non-elastic portions are alternately connected together; and Fig. 7 is a detail view illustrating one of said means by which the elastic and non-elastic portions of a lacing-string embodying my invention may be secured together.

Like signs of reference indicate like parts throughout the several views.

In carrying out my invention I construct a lacing-string of elastic and non-elastic portions or parts, the non-elastic portions being formed of cotton, silk, leather, or other materials now commonly employed for the manufacture of lacing-strings and the elastic portions of rubber, whereby they will be both flexible and elastic and may be utilized like the non-elastic portions for lacing back and forth around the lacing hooks or eyelets and will readily run through the same when necessary. The elastic and non-elastic portions may alternate with each other throughout the length of the string, or one end of the string may be composed of elastic while the other is of non-elastic material, or the intermediate length of the string may be elastic while its end portions are composed of non-elastic flexible material.

The connection of the elastic with the non-elastic portions of the string may be made by any of well-known methods, such as sewing, knotting, cementing, riveting, or splicing, or by uniting the parts by a web or covering of any suitable construction, or by means of clasps such as are commonly employed for uniting the ends of cords or ropes, or, in fact, any means of effecting this union may be employed that will permit the string to readily run through the eyelets, hooks, or other devices by which the string is connected with the article to be laced.

In the accompanying drawings I have illustrated the purposes and advantages of my invention in connection with shoes as an exam-

ple of one of the many forms of wearing-apparel and other devices with which my lacing may be used to advantage.

a represents the shoe, which is provided with the eyelets *b* and hooks *c* of the usual form and which receive the lacer.

In the form of my invention shown in Figs. 1 and 4 it will be seen that the two ends of the lacer or string are united by a flat knot *A* at their lower ends after having passed through the eyelets *b*, as clearly shown in Fig. 4.

The parts of the lace or string from or near *B* downward are made of any suitable material and correspond in texture and appearance to any first-class shoe or other article of apparel to which the lace may be applied, while from *B* upward the lace or string is composed of an elastic substance, such as rubber, suitable in strength, form, and texture for the purposes required, whereby it will be both flexible and elastic and hence adapted for lacing back and forth around the hooks *b* in the same manner that the non-elastic end of the lace may be employed.

In the form of my invention shown in Fig. 1 the elastic portion of the lace or string is endless, that is to say, the intermediate length of the string is elastic while its ends are non-elastic, and with a string thus constructed it is fastened over the hook *c*, as shown in Fig. 1, so that the necessity of tying a knot after the shoe is laced is obviated; and it is obvious that when the lace or string is thus employed its lower ends may be secured in various ways—such, for instance, as that illustrated at *A*, Fig. 4, or by attaching the two ends of the lace to the lower eyelets by means of small hooks or any other convenient equivalent, as will be understood.

The lacer shown in Fig. 2 from *B* downward is made of non-elastic material and is endless, and is laced in the ordinary manner, as shown, beginning at the lower eyelets. The portions from *B* upward are elastic and divided, the two ends being provided with knots or equivalents, and the knots on said elastic portions are held in close and permanent contact with the upper hooks on each side of the open front of the shoe by their elasticity.

In connection with the lacers shown in Figs. 2, 3, and 4 may be used the stop *F*, which consists of a small hook forming substantially a right angle, as shown, the intention being that before the knot is tied in the ends of the lacer for the purpose of securing the same at the hooks *c* the ends of said lacer should be passed through the opening in said stop *F*, and the extension *f* is to be drawn closely into contact with the inside portion of the hook *c*, as shown in Fig. 4, so as to prevent the ends of the lacer from slipping out of position.

In the single lacer shown in Fig. 3 the non-

elastic end is secured in one of the lower eyelets at *A'* by means of a suitable knot, hook, or any other convenient and suitable equivalent, and is then laced and secured in the manner shown.

It will be seen that whenever it is desired to shorten or tighten the lace of the shoe it may be accomplished by simply tying a new knot (or knots) in the end (or ends) of the lacer and cutting off the old ones.

Referring to Fig. 6, it will be observed that the lacer may be manufactured in a continuous cord of indefinite length, having elastic portions alternating with non-elastic portions, so that it may be applied to either of the shoes illustrated and in the manner shown by cutting it off into necessary lengths and at different points. For instance, as applied in Fig. 1 it would be cut off at *G G*, as applied in Fig. 2 it would be cut at *I I*, and as applied in Fig. 3 it would be cut at *H H*.

In Fig. 7 is shown a simple device consisting of a metallic clasp *J*, by which the elastic and non-elastic portions of the lacer may be united. The two ends of said portions may be united with thread, knot, or any equivalent that will effectually secure the same in such a manner as will permit the point of union to pass easily through the eyelets.

It will be further seen that this lacer may be applied to different styles of shoes by having the elastic and non-elastic portions made into longer or shorter lengths, as may be required.

The lacer and forms of lacing shown and herein described are very easily applied to the shoe, quickly laced and fastened, and easily unfastened without tying and untying knots each time. It holds the laced parts of the shoe so that the uneven strain on lacer and shoe is obviated, and at the same time the elasticity of the lacer will permit the shoe to adjust itself to the foot of the wearer, allowing a free and easy motion to the cords and muscles of the ankle.

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

1. As a new and useful article of manufacture a lacing-string composed of elastic and non-elastic parts, the non-elastic parts being secured into the lower eyelets and the elastic part being endless so that it may be laced around the hooks *c* and be secured without a knot, substantially as and for the purpose described.

2. As a new and useful article of manufacture a lacing-string for the purpose described, having its intermediate length composed of elastic material and its extremities composed of flexible non-elastic material, substantially as set forth.

3. As a new and useful article of manufacture a lacing-string of substantially uniform diameter or thickness throughout its entire

length having a section of the length of its
lacing medium composed of flexible elastic
rubber and the balance thereof of non-elastic
material arranged end to end with the said
5 elastic section and forming a continuation of
the lacing medium, substantially as set forth.

4. As a new and useful article of manufacture
a lacing-string of substantially uniform
diameter or thickness throughout its entire
10 length having its lacing medium composed of

a plurality of rubber sections alternating with
a plurality of non-elastic sections, said elastic
and non-elastic sections being arranged
end to end throughout the length of the string,
substantially as set forth.

WILLIAM W. MUNSELL.

Witnesses:

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