No. 819,993. PATENTED MAY 8, 1906.

W. E. HAWS & G. W. HILL.

LACING.

APPLICATION FILED MAY 8, 1905.

Fig. 1.

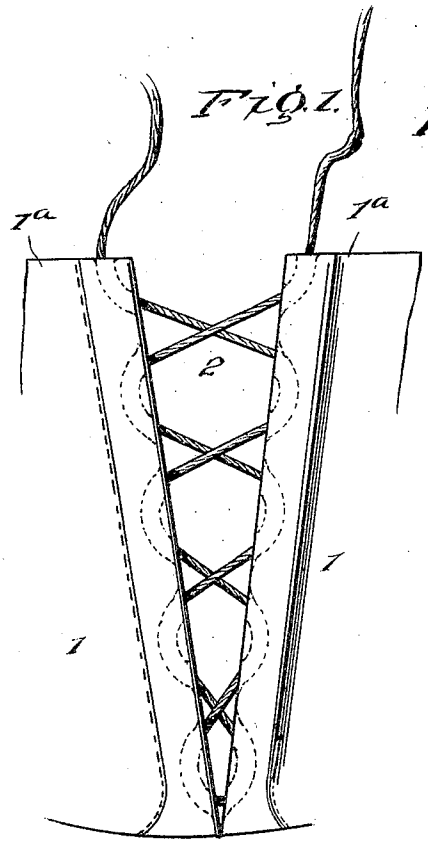


Fig. 2.

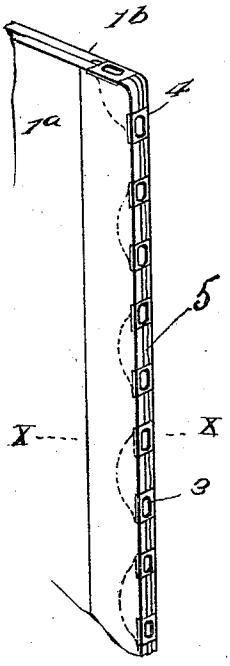


Fig. 3.

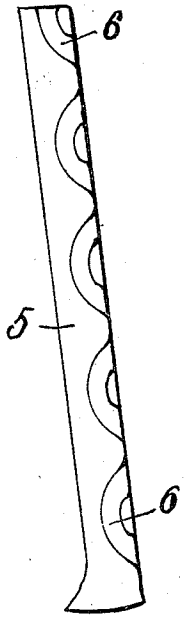


Fig. 4.

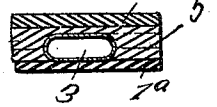


Fig. 7.

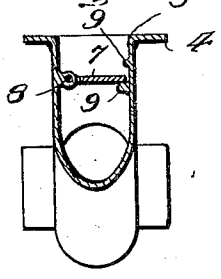


Fig. 5.

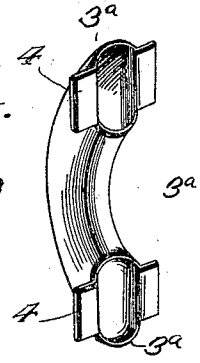
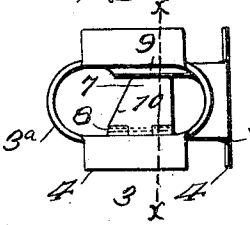


Fig. 6.



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UNITED STATES PATENT OFFICE.

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LACING.

No. 819,993. Specification of Letters Patent. Patented May 8, 1906.

Application filed May 9, 1905. Serial No. 259,584.

To all whom it may concern:

Be it known that we, WILLIAM E. HAWS and GEORGE W. HILL, citizens of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Lacings, of which the following is a specification.

This invention appertains to novel means for securing parts together by lacing, and the invention is particularly designed for use upon shoes in order to connect the flaps of the shoe together in the customary manner.

As is well known, shoes are commonly provided upon the flaps thereof with suitable lace-engaging members in the form of hooks or eyes, the hooks affording projecting members unsightly to a certain extent and often wearing out the lower portions of trousers, dresses, and wearing-apparel coming into contact therewith, whereas the eyes used ordinarily on ladies' shoes entirely are disadvantageous in requiring no small amount of time in threading the lace therethrough.

The essential feature of this invention resides in the provision of means whereby parts may be laced together so as to form a very neat connection between the said parts, obviating the use of projecting elements and doing away with the necessity for threading the lace through eyes, admitting of more quickly bringing the connected parts together and giving rise to other advantages of obvious import after consideration of the following description.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a front elevation showing parts laced together in accordance with the invention, such parts representing the flaps of the shoe preferably. Fig. 2 is an enlarged view of the part provided with lace-engaging members comprised in the invention, bringing out more clearly the arrangement and manner of securing said members to the part to which they are applied. Fig. 3 is a view in elevation of the filling-strip, such as used between the plies of material commonly employed in forming a flap of a shoe, said strip being utilized to facilitate the neat attachment of the lace-engaging members. Fig. 4 is an enlarged transverse sectional view taken about on the line X X of Fig. 2. Fig. 5 is an enlarged perspective view of one of the lace-engaging members. Fig. 6 is a top plan view of the lace-engaging member preferably used at the upper extremity of the flap adjacent which the knot of the lace is commonly made. Fig. 7 is a vertical sectional view on the line X X of Fig. 6.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

It is contemplated in carrying out the invention that the parts which are to be secured together by the lacing shall be provided with engaging members in the form of tubular bodies suitably secured thereto and having the lacing passed therethrough, so as to work with perfect freedom to admit the parts connected to be drawn together quickly by merely pulling upon the ends of the lacing.

Specifically describing the invention, the numeral 1 designates the parts to be secured together by the lacing 2, said parts comprising, preferably, as before mentioned, the flaps of the shoe. It is customary to form the flaps of a shoe of plies of material, usually an outer ply 1^a of leather and an inner ply 1^b, forming a lining therefor. One of the most important features of the invention resides in the arrangement of the lacing 2 with respect to the flaps or parts 1, whereby said lacing throughout its length is in substantially the same plane as the flaps 1, giving a very much neater effect than secured in the present methods of lacing shoes and reducing the wear upon the lacing to no small extent, since the latter is not exposed to the same extent as ordinarily. The above gives rise also to a more free manipulation of the lacing in the actual use thereof.

The flaps or parts 1 of the shoe are each provided with a plurality of engaging members arranged at intervals in the length thereof, and these members preferably consist of curved tubes 3, secured to the flaps, each flap having oppositely-disposed tubes or engaging members, through which the lacing is passed. The tubes 3 are preferably secured between the outer and inner plies 1^a and 1^b of the flaps 1, being housed or inclosed thereby, and each tube is provided at its ends

with flanges 4, which are adapted to be bent about the plies of the flaps 1, so as to be engaged therewith to assist in preventing displacement of the engaging members or tubes therefrom. Each of the tubes 3 is preferably somewhat enlarged at its ends, as shown at 3ª, in order to increase the freedom or looseness of the play of the lace therethrough, and when the parts 3 are secured between the outer and inner plies composing the flaps 1 it is preferably designed to use an interposed filling-strip 5, which is preferably of fabric or similar material and adapted to be stitched to the plies of each flap therebetween. The filling-strip 5 may be pressed or otherwise operated upon so as to form a plurality of curved recessed portions or seats 6 at suitable intervals in the length thereof, and the tubes 3 have the bodies thereof received or seated in the portions 6 of the filling-strip, so that said tubes are about flush with the sides of this strip. In other words, the filling-strip 5 is employed in order that when the tubes 3 are disposed between the plies of the flaps 1 the attachment of the plies will not cause the bodies of the tubes to form curved protuberances, which would increase the unsightliness of the flaps in an obvious way. When the strips 5 are used, the attachment of the parts 3 is such that their disposition between the plies of the flaps 1 is wholly unnoticeable. The flanges 4 of the members 3 are of course firmly clamped or bent about the adjacent edges of the plies of each flap, and this operation may of course be performed by a suitable machine devised for this purpose.

The uppermost of the engaging members 3 is not curved so much as the other of said members and is of a peculiar form in order to provide means to positively grip the lacing after the same has been pulled upon to bring the flaps together to prevent said lacing from slipping back and loosening. The lower end of each of the uppermost members 3 terminates at the inner edge of its flap, whereas the upper extremity terminates at the top of the flap instead of at the inner edge, as in the case of the lower members 3. The above is desirable in order that the upper ends of the lacing may have a direct vertical pull in pulling the lacing to bring the flaps together preparatory to making the knot usually provided. The uppermost of the members 3, which are of tubular form of course, are each provided in the tubular portion thereof with a small tongue 7, pivoted at one end, as shown at 8, to a side of the tubing and having its other end movable between two small ribs or projections 9, formed upon the inner side of the tube upon which said tongue is arranged. The tongue 7 is not sufficiently wide to extend entirely across the inner tubular portion of the tube in which it is arranged, but sufficient space is left for the lacing to play freely through the tube without touching said tongue. The tongue 7 of each tube 3 is flat, and a side edge thereof is cut away on an incline, as indicated at 10, so that when the ends of the lacing are pulled upon and brought together the same will be forced between the projections 9 and the adjacent end of the tongue, causing said tongue to firmly engage the ends as soon as the pull is relieved upon, and thereby automatically prevent the same from loosening after the flaps have been brought together.

From the foregoing it will be noted that the parts 7 and 9 form a fastening means which will enable a knot to be dispensed with if this be desired, and in order to release the end portion of the lacing from the tongues 7 it is only necessary to pull the same outwardly from the space between the tongue and the members 9 and the lacing will freely run through the engaging members 3 when the flaps are spread apart and admit of almost instantly removing the shoe from the foot. The lacing is never displaced from the engaging members 3 or tubes through which it passes, as the end portions do not pull out of the shoes at the top when they are removed. Should the knot formed in the lacing become accidentally untied, the fastening members 7 will not permit the lacing to become loose, as will be apparent.

It is to be understood that while the invention is designed especially for laced shoes it may be readily adapted to corsets, gloves, belts, and analogous articles utilizing a lace as the fastening means. It is contemplated to employ any means for fastening the lace when drawn taut. By preference such fastening means is arranged within the uppermost tube or lace-engaging element, so as to be out of the way and out of sight.

Having thus described the invention, what is claimed as new is—

1. In a lace-fastening, the combination of flaps, each flap composed of inner and outer plies, a filling-strip between the plies and having portions recessed to form seats, curved tubes arranged in the seats of the filling-strip between the inner and outer plies, and a lace passed through said tubes, as described.

2. In a lace-fastening, the combination of spaced parts to be secured together, a lacing therefor, and tubular engaging members at intervals in the length of the spaced parts and having the lacing passed therethrough, certain of said engaging members being provided with lacing engaging and holding devices interiorly thereof to prevent movement of the lacing through the tubular engaging members.

3. In a lace-fastening, the combination of spaced parts to be secured together, a lacing therefor, and tubular engaging members at intervals in the length of the spaced parts and having the lacing passed therethrough,

certain of said engaging members being provided with lacing-engaging devices interiorly thereof, said lacing-engaging devices being composed of a movable tongue and coöperating projections adapted to engage portions of the lacing to prevent movement of the lacing through the tubular engaging members.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM E. HAWS. [L. S.]
GEORGE W. HILL. [L. S.]

Witnesses:
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