No. 751,729. PATENTED FEB. 9, 1904.

M. M. HEINITSH & J. T. MORIARTY.

SHOE LACING.

APPLICATION FILED MAR. 25, 1902.

NO MODEL.

Fig 1.

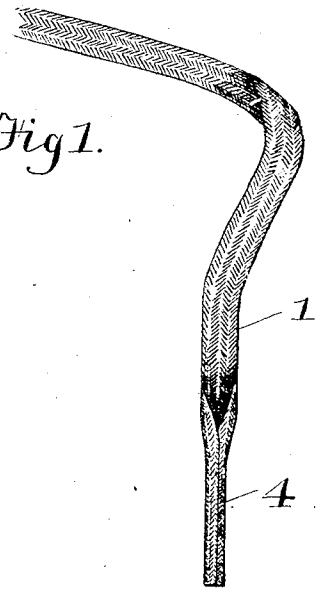


Fig 2.

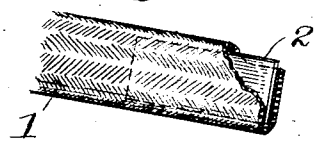


Fig 3.



Fig 4.



Fig 5.



WITNESSES:

Edw. W. Vaill Jr.

Chas. K. Burdett.

INVENTORS

Margaret M. Heinitsh
and Joseph T. Moriarty.
by Horace Pettit
ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 751,729. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

MARGARET M. HEINITSH, OF PHILADELPHIA, PENNSYLVANIA, AND JOSEPH T. MORIARTY, OF NEW BEDFORD, MASSACHUSETTS.

SHOE-LACING.

SPECIFICATION forming part of Letters Patent No. 751,729, dated February 9, 1904.

Application filed March 25, 1902. Serial No. 99,856. (No model.)

To all whom it may concern:

Be it known that we, MARGARET M. HEINITSH, a resident of the city of Philadelphia, State of Pennsylvania, and JOSEPH T. MORIARTY, a resident of New Bedford, State of Massachusetts, both citizens of the United States, have invented certain new and useful Improvements in Shoe-Lacings, of which the following is a full, clear, and exact description.

In general our invention relates to improvements in the manufacture and construction of lacings for shoes, corsets, and the like, and particularly to an improved tip therefor which is neat in appearance, less liable to become worn out, and which may be manufactured at a low cost.

A further object of the invention is to provide a tip having a metallic stiffening which is completely hidden from view and is completely surrounded by the webbing and is attached to the webbing in such a manner that it cannot be detached therefrom by the wearing out of the material on the outside of the same, as is the case with the metal-covered tips now in use.

Another object of the invention is to so construct the tip as to provide a reinforced end composed of the lacing material and hardened, so as to withstand considerable wear before breaking through to the metallic stiffening.

With these main objects in view the invention consists in the novel arrangement and construction of the tip, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of a portion of the lacing made in accordance with our invention. Fig. 2 is a detailed perspective view of the tip before it is rolled, a part of the covering being shown as broken away. Fig. 3 is a perspective view of the tip on a slightly-enlarged scale. Fig. 4 is a cross-sectional view through the tip, showing the stiffening-plate mashed down or bent into a zigzag form. Fig. 5 is a cross-sectional view through the tip, showing the stiffening-plate bent into spiral form.

In carrying out our invention we provide a webbing in the form of a tube 1. Within the tube of webbing is placed a metallic plate 2, which is substantially the length of the completed tip and of width to fit snugly in the tube when the latter is flattened out. After the plate 2 has been placed within the tube the plate, with its covering, is coiled spirally, as shown in Fig. 5, or mashed down, so as to assume the form shown in Fig. 4, or some other form produced by pressure which will cause the tip to assume an elongated shape and substantially cylindrical in cross-section. The parts of the tip, including the plate and the tube, are all bent longitudinally at one and the same time without any transverse folding or doubling, so that the plate is surrounded by one cross-section or portion only of the tube at any point in its length. After this process is completed the tips may then be dipped in a liquid solution which hardens the webbing and thoroughly permeates the tip and solidifies the same, so cementing the webbing to the metal.

The coiling or bending of the metal plates and fabric ends is accomplished by suitable machinery, and the amount of compression used in this coiling or bending should be such as to force the parts quite closely or tightly together in order to reduce the size of the tips.

From the foregoing description it will be seen that the edges of the metallic plate are nowhere exposed and do not require the fabric to be folded about the edges to cover the same, although the fabric or webbing may be folded over the end of the plate, if desired.

Having described our invention what we claim, and desire to secure by Letters Patent, is—

1. A lacing-tip comprising a tubular lacing and a plate incased within a tubular end thereof, said plate and the layers of said end being crushed together transversely to form a substantially solid cylindrical lacing-tip.

2. A lacing-tip comprising a tubular lacing and a plate incased within the tubular end thereof, said plate and layers of said end being crushed together from all directions transversely to form a substantially solid cylindrical lacing-tip irrespective of the shape of the interior cross-sections of the plate.

3. A lacing-tip comprising a tubular lacing

and a plate inserted in the tubular end thereof, said plate and layers of said end being crushed together to form a substantially solid cylindrical lacing-tip, the cross-section of said plate and layers being in the form of convolutes or spirals.

4. A lacing-tip comprising a tubular lacing and a plate incased within the tubular end thereof, said plate and the layers of said end forming a substantially cylindrical, compact solid lacing-tip.

5. A tubular lacing having short metallic plates inserted in the tubular ends thereof, the layers of said plates and ends being bent longitudinally to form the lacing-tips, and hardening material permeating said ends and cementing the parts together, substantially as described.

In witness whereof we have hereunto set our hands this 24th day of March, A. D. 1902.

MARGARET M. HEINITSH.
JOSEPH T. MORIARTY.

Witnesses:
EDW. W. VAILL, Jr.,
JNO. T. CROSS.