(No Model.)

W. A. KNIPE & G. C. WADLEIGH.

BOOT OR SHOE AND THE ART OF MAKING THE SAME.

No. 341,920. Patented May 18, 1886.

Fig. 1.

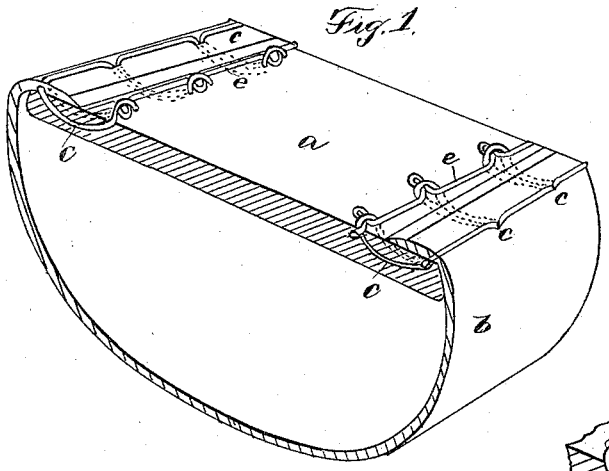


Fig. 7.

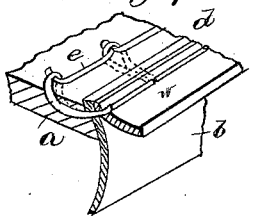


Fig. 2.

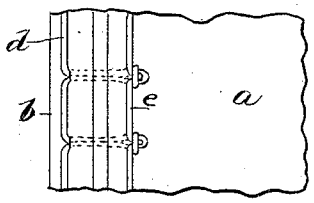


Fig. 3.

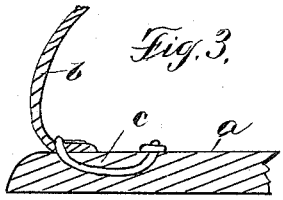


Fig. 4.

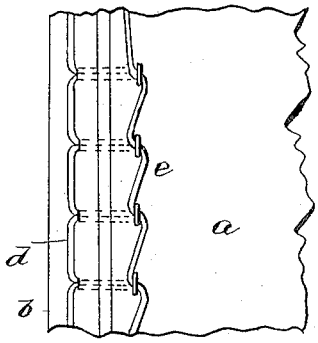


Fig. 5.

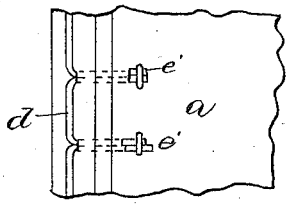
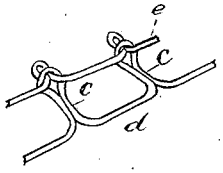


Fig. 6.



Witnesses
E. W. H. Brown,
M. M. Brown.

Inventor
W. A. Knipe
and
G. C. Wadleigh
By their Attorneys
Wright, Brown & Crosby

UNITED STATES PATENT OFFICE.

WILLIAM A. KNIPE AND GEORGE C. WADLEIGH, OF HAVERHILL, MASS.

BOOT OR SHOE AND ART OF MAKING THE SAME.

SPECIFICATION forming part of Letters Patent No. 341,920, dated May 18, 1886.

Application filed January 18, 1886. Serial No. 188,904. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. KNIPE and GEORGE C. WADLEIGH, of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Boots and Shoes and the Art of Making the Same, of which the following is a specification.

Our invention relates to boots or shoes and the art of making the same, and has for its object to avoid channeling or cutting the sole or any other portion of the shoe, which latter operation results in weakening the parts, and in other defects well known to those skilled in the art.

Our invention is particularly applicable to "turned" shoes; and, as practiced in that connection, it consists in passing a series of securing-loops from a single thread through the portion of the upper lying on the sole at the point where it is desired to attach the former to the latter, and through a portion of the sole, passing a thread or loop or tuft of a thread through each securing-loop above the inner surface of the sole, and taking up or tightening each securing-loop, thereby drawing the bight, thread, or tuft of thread passed through it closely against the inner surface of the sole and firmly into the hole formed for the securing-loop, whereby the securing-loops are locked, all channeling or cutting of the sole is avoided, the sole and upper effectively and conveniently secured together, and the holes made for the securing-loops entirely closed, while at the same time the flexibility of the sole is left intact.

In the drawings hereto annexed, and forming a part of this specification, Figure 1 represents a cross-section of a portion of a "turn" boot or shoe, showing the course of the threads therein for uniting the upper to the sole, the shoe being shown as inside out, or before being turned. Fig. 2 is a detail plan view of the same. Fig. 3 is a cross-section through one side or edge of the sole and upper, representing the shoe as turned, and showing the course of the threads therein when in that position. Fig. 4 is a diagrammatic plan view showing the loops of the securing-thread as interlocked with a single strand of the locking-thread. Fig. 5 is a like view showing the loops of the securing-thread as interlocked with tufts of a thread; and Fig. 6 is a view of two loops or stitches of the threads alone, showing the position they are made to assume in the work. Fig. 7 represents a modification.

In carrying out our invention we secure the sole *a* to the last, and pull the upper *b*, with the stiffening therein, wrong side out thereover and last it, all in the usual well-known way. We then pass through the upper, at the point where it is desired to secure it to the sole, a series of securing-loops, *c*, from a single thread, *d*, each loop passing through a portion of the sole to and above its upper inner surface, as clearly represented by dotted lines in Fig. 1, where we interlock or interloop the loops of the securing-thread with a thread, *e*, of single thickness passed through such loops, as shown in Fig. 4, or with bights or loops formed in said thread *e* and passed through the securing-loops, as shown in Figs. 1, 2, and 6, or with simple tufts, *e'*, of a thread or threads, as represented in Fig. 5, drawing up or tightening each securing-loop, thereby drawing the thread, loop, or tuft passed through it firmly into the hole formed for the securing-loop, thereby closing such holes and attaching the upper to the sole. When the thread *e*, with which the securing-thread *d* is interlocked, is continuous, as shown in the drawings, the connecting portions between the loops or locking-points is left slack, so that the flexibility of the sole will not be affected, which is one of the important features of our invention. We prefer to lock the loops of the securing-thread on the upper inner surface of the sole with loops or bights formed in the locking-thread, as represented in Figs. 1, 2, and 6, though in some instances we simply pass a single strand of the locking-thread through the securing-loops, as shown in Fig. 4, and in some cases we pass a tuft of thread through the securing-loops, as represented in Fig. 5. After the upper is secured to the sole, as represented in Figs. 1, 2, and 4, the portions of the locking-thread between the points at which it is engaged by the securing-thread may be cut away, so as to leave tufts substantially like those shown in Fig. 5.

By our method all cutting or channeling of the sole is avoided, and a boot or shoe produced in which the natural flexibility of the sole is not interfered with, and the holes formed

by the needle in the between substance are securely closed.

The invention is not limited to turned shoes, but may be applied to welted work, as shown in Fig. 7, in which the securing-loops are shown as passed through the welt *w* and upper into the outer surface of the inner sole, and locked at their inner ends in the manner already described.

A boot or shoe constructed in accordance with our invention differs from a turned or welted shoe as heretofore made, in the following particulars, viz: First, the sole to which the upper is secured is not weakened by channeling; secondly, the securing-loops when taken up, pull the locking threads or bights so closely against the surface of the sole that the said securing-loops cannot "render" or slip through the holes in the sole through which they pass, each loop being therefore an independent fastening; and, lastly, the flexibility of the sole is not impaired by the locking-threads or the single thread with locking-bights, as it is by the ordinary stitching which usually connects soles and uppers in this class of work.

What we claim is—

1. The improvement in the art of attaching soles to the uppers of boots and shoes, which consists in passing securing-loops from a single thread through a series of holes in the upper and in a portion of the sole, said holes extending substantially at right angles with the edge of the sole, passing independent threads or bights from an independent thread lying on the inner surface of the sole at a distance from the edge thereof through said securing-loops, and taking up the securing-loops, thereby drawing the said independent threads or bights against the inner surface of the sole, locking said securing-loops, and closing the orifices in the sole through which they pass.

2. A boot or shoe having the upper secured to the sole by a series of loops from a single thread passed through a series of holes in the upper and a portion of the sole, said holes extending substantially at right angles with the edge of the sole, each loop being locked at the inner surface of the sole by an independent locking thread or loop of thread passed through it and drawn by it against the inner surface of the sole, the locking thread or threads being slack or disconnected between the securing-loops, so that the flexibility of the sole is unimpaired, as set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 9th day of January, 1886.

WILLIAM A. KNIPE.
GEORGE C. WADLEIGH.

Witnesses:
C. G. JOHNSON,
EDWIN BAILEY.