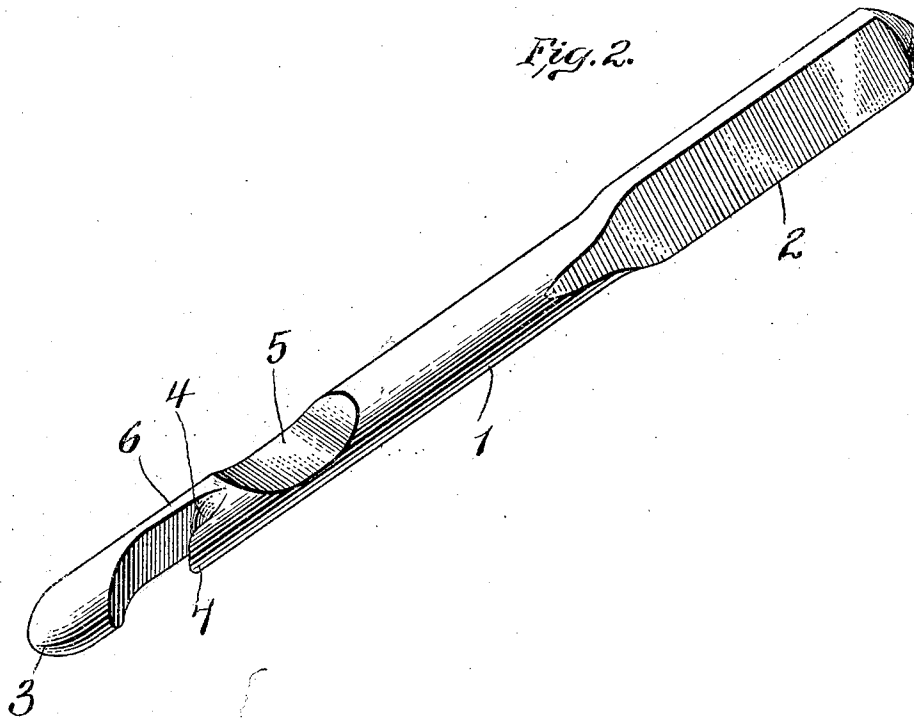
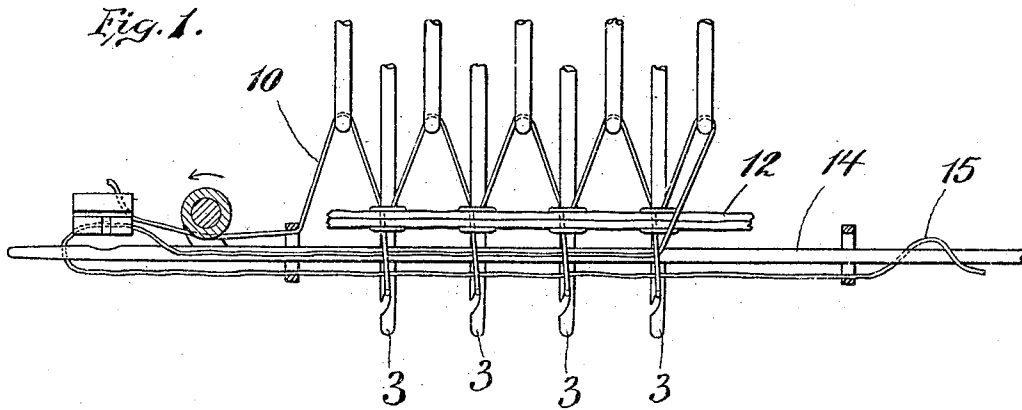


W. A. SMITH.
 NEEDLE FOR SHOE LACING MACHINES.
 APPLICATION FILED FEB. 15, 1905.

946,789.

Patented Jan. 18, 1910.



Witnesses:

H. L. Robbins -
 E. B. Batchelder

Inventor:

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 Attorneys

UNITED STATES PATENT OFFICE.

WILLARD A. SMITH, OF MELROSE, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

NEEDLE FOR SHOE-LACING MACHINES.

946,789.

Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed February 15, 1905. Serial No. 245,704.

To all whom it may concern:

Be it known that I, WILLARD A. SMITH, of Melrose, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Needles for Shoe-Lacing Machines, of which the following is a specification.

This invention relates to a new and improved needle for lacing machines.

Figure 1 is a side elevation and shows a part of the machine equipped with a gang of my improved needles. Fig. 2 is a detail perspective view of my improved needle.

In Patent 779,008 granted to me January 3, 1905, there is illustrated a machine for lacing shoe uppers, in which a gang of needles is employed upon which the eyes of the shoe uppers are threaded.

The present invention has for its object the production of a needle to be used in the machine referred to, in place of the needles therein shown.

Referring to Fig. 2, my improved needle is formed with a body portion 1, a flattened end or butt 2, and a rounded point 3 of substantially hemispherical contour. The needle below and back of the point 3 is cut away on one side and beneath the point 3 to form a notch 4.

5 represents a groove formed in the body of the needle to the rear of the notch 4, the groove 5 being arranged at right angles to the notch 4, as shown. The notch 4, as shown, has on one side the uncut wall 6 of the needle body, and on the other side the lip 7. In the form of needle shown in my prior patent the notch 4 has the lip 7 on either side of it, and is not protected by the end as 3. In using the form of needle shown in the patent referred to, the lips sometime may interfere with the quick threading of the eyes of the uppers over the needles, but this defect is entirely removed by the needle above described, the needle thread 10 lying in the notch 4, while the latter is so guarded by the end 3 that the work of threading the upper on the needles is not interfered with by the lip 7, one side of the notch being

guarded by the uncut wall 6 of the needle while the other side of the notch is guarded by the lip 7 of the wall of the needle, the notch itself being above the end 3 and guarded by it. Moreover, the form of the blunt end is such that it cannot catch in the work but will permit the latter to slide over it, without penetration or catching, directing an eye in the shoe to the needle. In practice, after the needles 3 are threaded the eyes of the shoe upper 12 are pushed upon the needles 3, as shown in Fig. 1. A shuttle device 14 then carries a tie thread 15 between each needle and its thread 10, the shuttle device 14 and its thread 15 running in the grooves 5.

The mechanism and mode of operation of the machines in which these needles are used need not be more fully described as they are clearly set forth in the patent referred to.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I desire to claim is:

A needle for use in machines for lacing shoe uppers having a shank, a rounded end adapted to engage and locate the eyelet of a shoe upper and guide the eyelet on to the needle, a throat formed on one side of the needle between the end and shank to receive a lacing, a slot or eye extending from the throat toward the shank, said slot or eye being arranged to retain the lacing during the forward movement of the needle and to discharge the lacing during a backward movement of the needle and a groove between the eye and shank of the needle at right angles to the eye constructed to permit the passage of a shuttle device between the needle and the thread carried by the needle.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLARD A. SMITH.

Witnesses:

H. L. ROBBINS,
E. T. GRAHAM.