

No. 703,030.

Patented June 24, 1902.

E. E. WINKLEY & B. PHILLIPS.

LOCK STITCH SEAM.

(Application filed Sept. 20, 1901.)

(No Model.)

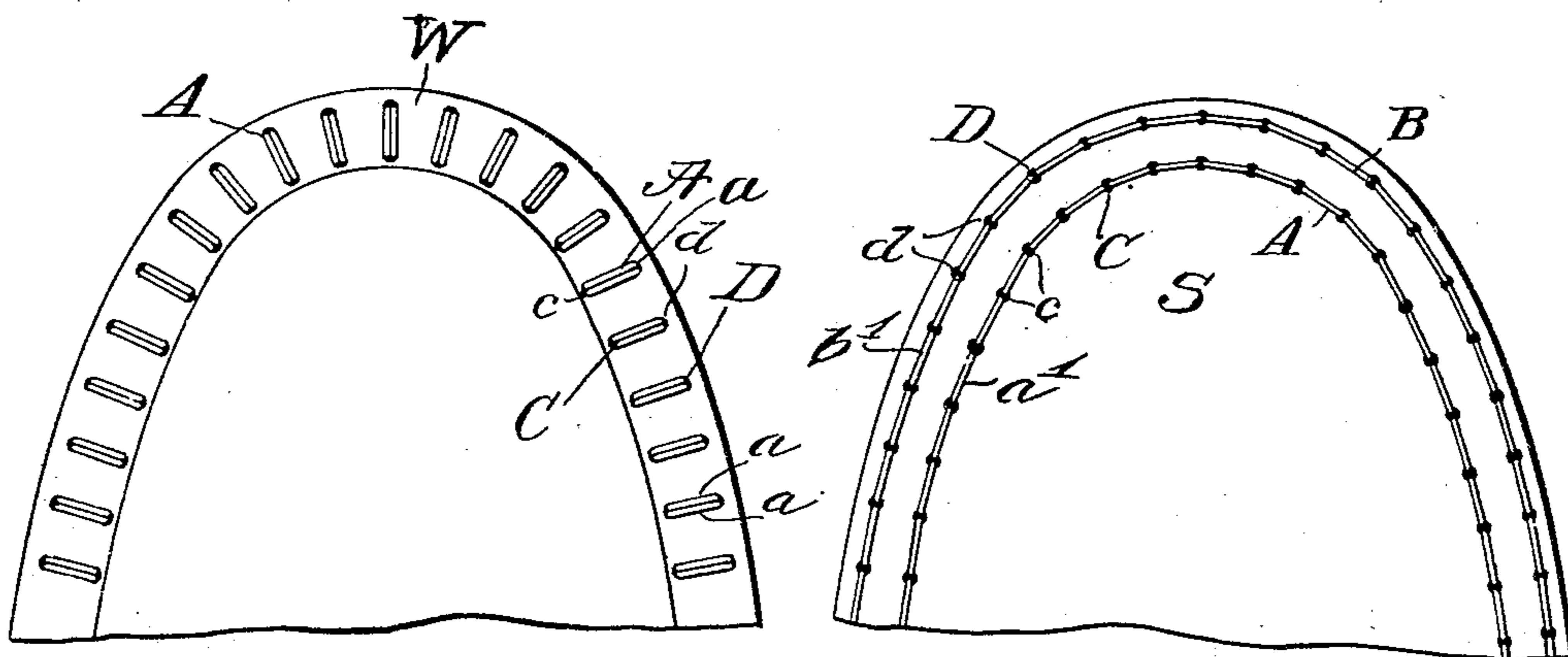


Fig. 1.

Fig. 2.

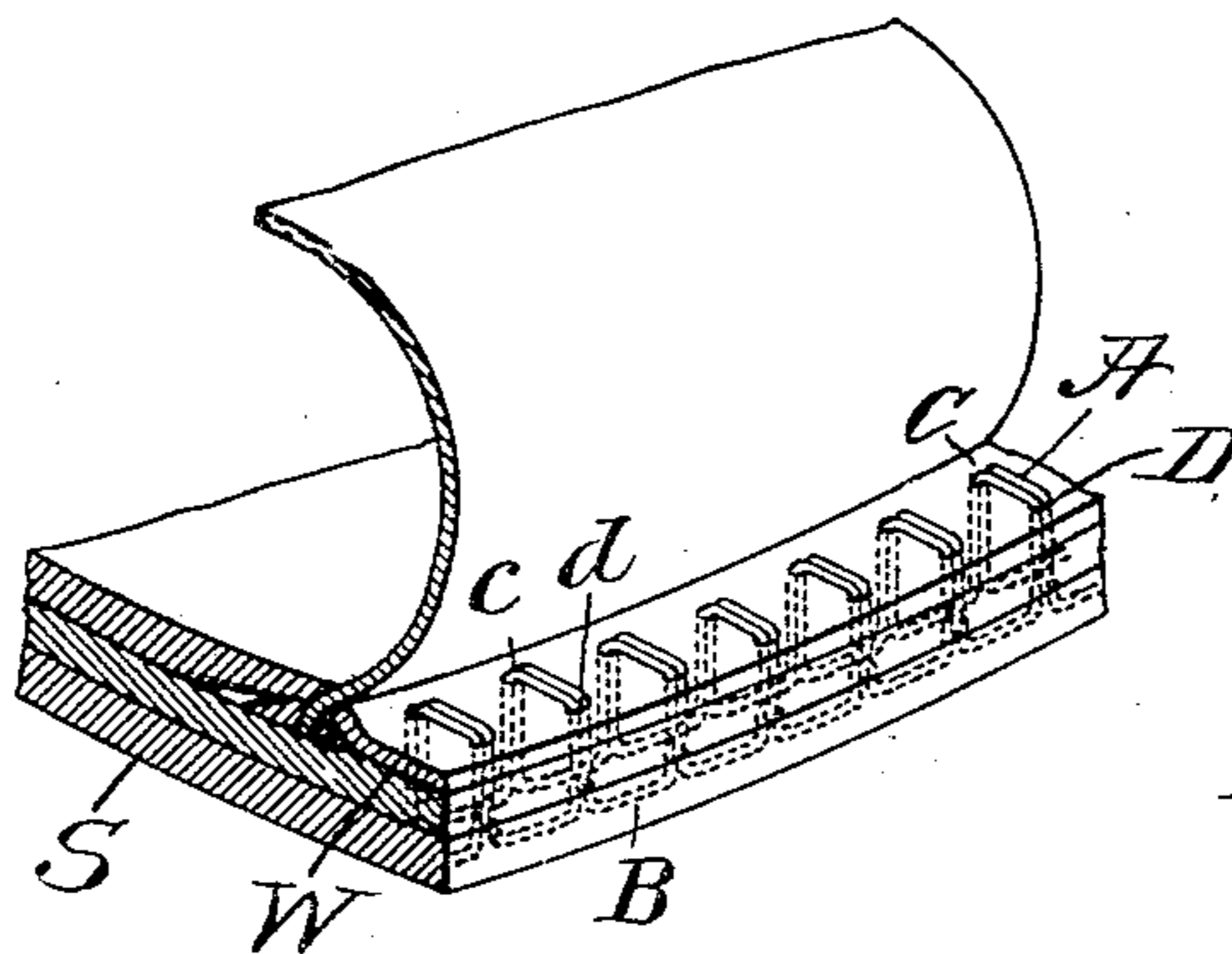


Fig. 3.

Witnesses
Edward S. Day
Horace Van Eversen

Inventors
Eugene E. Winkley
Benjamin Phillips

UNITED STATES PATENT OFFICE.

ERASTUS E. WINKLEY AND BENJAMIN PHILLIPS, OF LYNN, MASSACHUSETTS,
ASSIGNORS TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW
JERSEY, A CORPORATION OF NEW JERSEY.

LOCK-STITCH SEAM.

SPECIFICATION forming part of Letters Patent No. 703,030, dated June 24, 1902.

Application filed September 20, 1901. Serial No. 75,887. (No model.)

To all whom it may concern:

Be it known that we, ERASTUS E. WINKLEY and BENJAMIN PHILLIPS, citizens of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Lock-Stitch Seams; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

It has become the custom in the manufacture of certain styles of boots and shoes to unite the outsole and welt by what is commonly called "box-stitching" or a "box-seam." Such a seam requires two rows of punctures in the projecting edge of the welt and outsole and shows on the welt two transverse threads extending across the welt from a puncture in one row to a puncture in the other row, said seam showing on the sole side two single threads, substantially parallel, extending between two punctures in the same row. The seam above referred to is strong and durable and gives a finished and pleasing appearance to the shoe.

So far as we are advised of the state of the art the seam above described has always been formed by hand, although the holes to receive the stitches have been pricked by a machine. This necessity for handwork is due to the fact that the stitch heretofore used in making this seam is essentially a hand-sewer's stitch, requiring the component threads to be drawn entirely through the material, and is unsuitable for machine-sewing in the boot and shoe arts.

Our present invention contemplates an improved lock-stitch seam comprising, essentially, machine-stitches and capable of being made by a properly-constructed sewing-machine, the finished seam having the external appearance of a box-seam, thereby giving the required finish to the shoe and also possessing equal strength and durability.

Our invention can be best explained in connection with the accompanying drawings, which illustrate the preferred form of our improved seam, and in which—

Figures 1 and 2 are respectively a plan and

reverse plan of the toe portion of a shoe, the welt and outsole of which are united thereby; and Fig. 3 is a perspective view of a portion of the fore part of a shoe, showing concealed portion of the seam in dotted lines.

In the drawings, W represents a portion of the welt, and S a portion of the sole, of a boot or shoe. In the projecting edge of the welt and sole are formed, either before or contemporaneously with the sewing, two rows of stitch-receiving punctures—an inner row C and an outer row D. Our improved seam in its preferred form consists of a series of loops of thread A, each of which extends through a puncture *c* in the inner row C, across the welt W to a puncture *d* in the outer row D, and is interlocked in said puncture with a second thread B. It is of course evident that the loops A might be first passed through the punctures *d* in the outer row D and then into the punctures *c* in the inner row C, in which they could be interlocked with a second thread, and while such a seam would be clearly within the scope of the present invention we prefer to pass the loops A first through the punctures *c*, so that in drawing up said loops the thread may be pulled away from and not toward the upper of the shoe.

It will be noted that our improved seam shows on the welt side two transverse threads *a a*, extending across the welt from the puncture *c* in the inner row C to the puncture *d* in the outer row D, said seam showing on the sole side two single threads *a'* and *b'*, substantially parallel and extending between the punctures *c c* and *d d*, the first two in the inner row C and the last two in the outer row D. Our improved seam thus presents an external appearance substantially like that of the box-seam hereinbefore described, and it is obvious to those skilled in the art that it likewise possesses equal strength and durability. We desire to say in this connection that while we have described our improved seam as formed with the usual lock our invention also contemplates the use of the loop-lock or other forms of lock suitable for the purpose. We, however, prefer the usual lock, such as is shown in the drawings and is formed by most commercial lock-stitch ma-

chines on account of greater strength and durability.

Our improved seam can of course be made by hand, and the method of so making it is
5 obvious to one skilled in the art from the foregoing description of its construction. It is not, however, intended that it should be made by hand, the stitches comprising it being essentially machine-stitches and the principal advantage of our invention being that
10 it produces a seam which in appearance and durability resembles a box-seam, but which is capable of being made by machine methods. To describe the machine method of
15 making our improved seam would be to describe a lock-stitch sewing-machine modified for this special purpose, which description we do not consider within the scope of the present specification. It is, however, obvi-
20 ous to any sewing-machine designer of average skill in the art that our improved seam possesses great advantages in its adaptability to machine methods.

Having thus described the preferred form of our invention, we claim as new and desire
to secure by Letters Patent of the United States— 25

A lock-stitch seam consisting of the combination with suitable material of a thread provided with a series of loops each of which
30 passes through a puncture in the material and thence transversely to the direction of the seam to another puncture in the material, and a second thread interlocked with
35 each of said loops in said last-named puncture, the portions of each thread between the loops extending longitudinally of the seam on the same side of the material, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses. 40

ERASTUS E. WINKLEY.
BENJAMIN PHILLIPS.

Witnesses:

HORACE VAN EVERSEN,
ALFRED H. HILDRETH.