

J. L. TOWNE & J. W. O'NEILL.
LAST.

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1,033,041.

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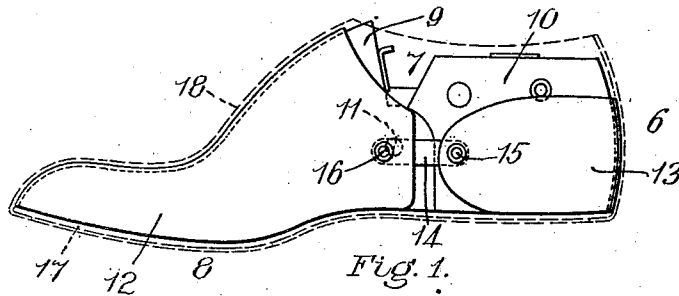


Fig. 1.

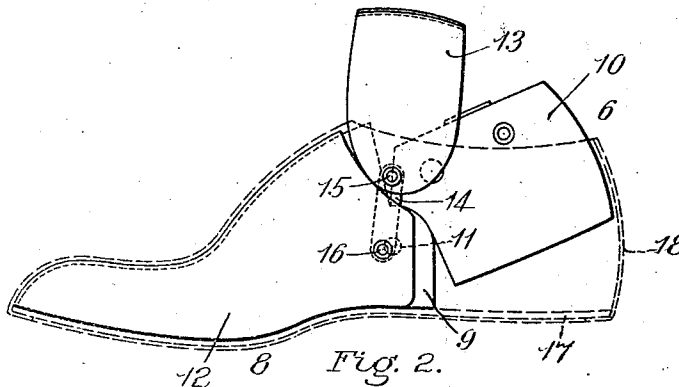


Fig. 2.

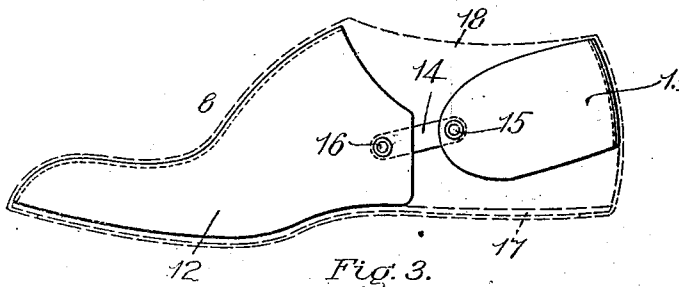


Fig. 3.

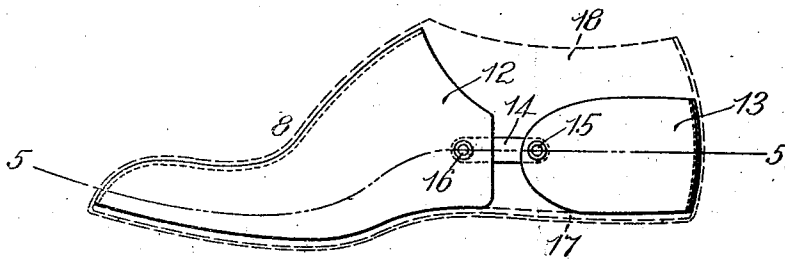


Fig. 4.

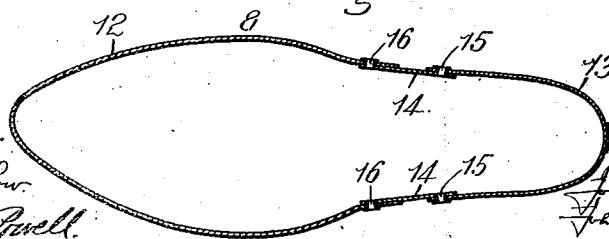


Fig. 5. by their attorney, Charles S. Goring.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN L. TOWNE, OF HAVERHILL, AND JOHN W. O'NEILL, OF LYNN, MASSACHUSETTS.

LAST.

1,033,041.

Specification of Letters Patent.

Patented July 16, 1912.

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To all whom it may concern:

Be it known that we, JOHN L. TOWNE, a citizen of the United States, residing at Haverhill, in the county of Essex, and JOHN W. O'NEILL, a citizen of the United States, residing at Lynn, in the county of Essex, both in the State of Massachusetts, have invented new and useful Improvements in Lasts, of which the following is a specification.

This invention relates to an improved last for boots and shoes which consists of a core and a shell outside the core.

The object of the invention is to provide a last upon which the upper of a boot or shoe can be lasted in the usual manner, viz, by tacking an inner sole to the last and then drawing the upper tightly over the last and fastening it temporarily to the inner sole. The core of the last is then removed and the subsequent steps in the process of manufacture are performed with the shell of the last, said shell remaining in the upper in the same condition in which it was when the upper was first lasted upon the last, so that during all the subsequent processes of manufacture of the shoe the shell remains in the same position relatively to the upper and holds said upper fully distended and in the shape it originally assumed when the lasting process was finished. The shell of the last being left within the upper while the core has been removed therefrom allows the shoe upper, and especially the box toe inserted therein, to dry during the process of manufacture, and furthermore only one set of cores is used to any desired number of shells. Thus, the shoe can be sent forward in the different processes of manufacture immediately after the lasting operation, even in the case where box toes are used in the shoe, without waiting for the usual time to allow the box toes to dry, thus saving time, also saving a large number of lasts and very much reducing the weight of the shoe and last as the shoe is passing through the different processes of manufacture subsequent to the lasting process. During these subsequent processes of manufacture only the shell remains within the shoe.

The invention consists in a last consisting of a core and a shell outside the core, said core and shell each constituting in itself a last adapted to support and distend the fore part and the heel part of a shoe upper.

The invention further consists in a last

formed as hereinafter described and particularly in the combination of elements forming a last set forth in the claims.

Referring to the drawings: Figure 1 is a side elevation of our improved last including the shell and core illustrating the same as it appears on the inside of an upper of a shoe, the upper of the shoe being shown in dotted lines as the same appears after it has been lasted, and attached to the inner sole. Fig. 2 is a side elevation of the core and shell of the last showing the same as they appear when "broken" the same also being shown in connection with the upper of a shoe. Fig. 3 is a side elevation of the shell of the last as it appears after the core has been removed, and with the heel piece pushed part way down into the heel portion of the upper. Fig. 4 is a side elevation of the shell of the last similar to Fig. 3, but showing the heel piece pushed downwardly within the upper to its lowest position. Fig. 5 is a detail sectional plan of the shell of the last taken on line 5-5 of Fig. 4.

In each of the Figs. 1 to 4, inclusive, the upper and inner sole of a shoe are indicated in dotted lines.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 6 is the last consisting of a core 7 and a shell 8. The core is made in two parts, the fore part 9 and the heel part 10, said heel part being pivoted at 11 upon the fore part 9. The shell 8 is also made in two parts, viz, the fore part 12 and the heel part 13.

The heel part of the shell is pivotally connected on opposite sides thereof, respectively, by links 14, 14 to the fore part 12 of the shell 8. These links are connected by rivets 15, 15 to the heel part 13 and are connected by pivots 16, 16 to the fore part 12, the pivots 16 being eccentric to the pivot 11, so that the heel part 13 of the shell 8 is eccentrically pivoted upon the fore part 12 relatively to the pivot 11 of the heel part 10 of the core 7. Or, in other words, said heel parts, when the core and shell are assembled to form a complete last, are eccentrically pivoted relatively to each other. The object of thus eccentrically pivoting the heel parts relatively to each other is so that when the core is broken as illustrated in Fig. 2, prior to the removal thereof from the shell, and the heel parts of the core and of the shell are moved upwardly to the po

sition illustrated in Fig. 2, the back portion of the heel part 13 will move outwardly to clear itself from the heel part of the core during this breaking operation.

5 It will be noted that the shell extends only over a portion of the core, that is, said shell does not extend across the bottom of the core, thus leaving the bottom of the core free for the application of, and the fastening thereto in the usual manner, by two 10 or three tacks of an inner sole 17.

The manner of using our improved last is as follows: Assuming the shell and core to be assembled relatively to each other, as 15 illustrated in Fig. 1, the inner sole 17 is tacked to the bottom of the core 7 and the upper 18 is then pulled over the shell and lasted in the usual manner by temporarily fastening the edges thereof to the inner sole 20 17. The laster then "breaks" the core and the shell, swinging the heel portion outwardly into the respective positions illustrated in Fig. 2. He then withdraws the core from the shell and swings the heel portion 25 13 of the shell downwardly into the upper as illustrated in Fig. 3, the final operation being to push said heel portion downwardly in the upper to the position illustrated in Fig. 4, thus clamping the shell 30 firmly within the upper of the shoe. The shoe is then free of the core of the last and has within the upper the shell, thus preserving the shape originally given to the upper during the lasting process. The upper of 35 the shoe as thus lasted, with the shell of the last within the same, is carried forwardly for the soling, heeling and other processes of manufacture well known to those skilled in this art until the shoe is 40 completed, it being understood that during all of these processes of manufacture the shell of the last remains within the upper, accurately preserving the shape of the upper during said processes of manufacture. 45 It will be understood that as compared with the ordinary size of a last which has no

shell the outer surface of the shell is of the same size and shape as the outer surface of the ordinary solid wooden last.

It will be seen that many sets of shells can 50 be used for one set of cores and that as the shoe passes through the different processes of manufacture, subsequent to the lasting operation, it is much lighter to handle, and the upper and all parts of the shoe have a 55 free circulation of air to dry the same within as well as without the upper.

It will be understood that the shell of the last is made of sheet material such as papier 60 mâché, fiber, or any suitable material for the purpose for which it is to be used.

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

1. A last consisting of a core in two parts, 65 viz, a front part and a heel part pivotally mounted thereon, and a shell outside said core and consisting of a front part and a heel part pivotally mounted on said front part. 70

2. A last consisting of a core in two parts, viz, a front part and a heel part pivotally 75 mounted thereon and a shell outside said core and consisting of a front part and a heel part pivotally mounted on said front part, said heel parts being eccentrically pivoted relatively to each other.

3. A last consisting of a core in two parts, a front part and a heel part pivotally 80 mounted on said front part and a shell outside of said core and consisting of a front part and a heel part, and links connecting the heel part to the front part of said shell.

In testimony whereof we have hereunto set our hands in presence of two subscrib- 85 ing witnesses.

JOHN L. TOWNE.
JOHN W. O'NEILL.

Witnesses:

PETER A. CONPAL
LOUIS A. JONES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."