

A. NORMAN.  
LAST.

APPLICATION FILED MAY 9, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

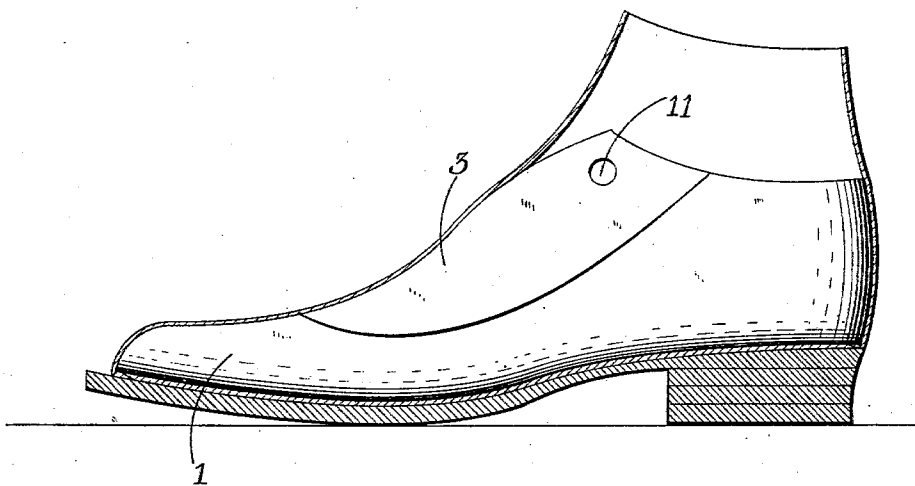
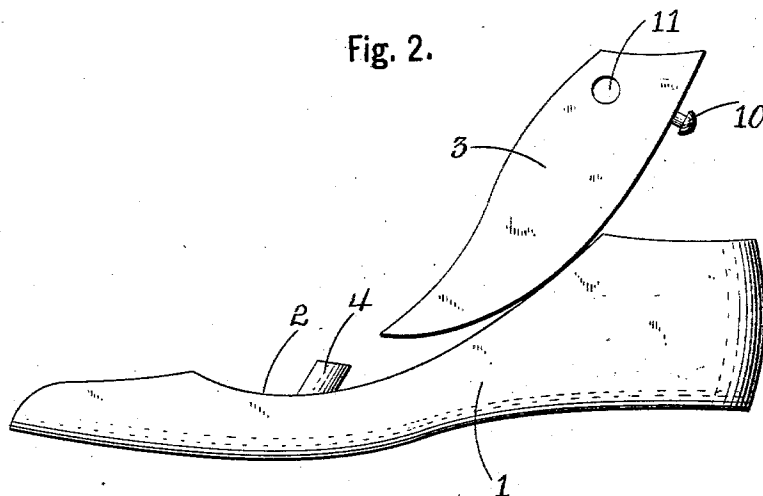


Fig. 2.



Witnesses.

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A. NORMAN.  
LAST.

APPLICATION FILED MAY 9, 1901.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 3.

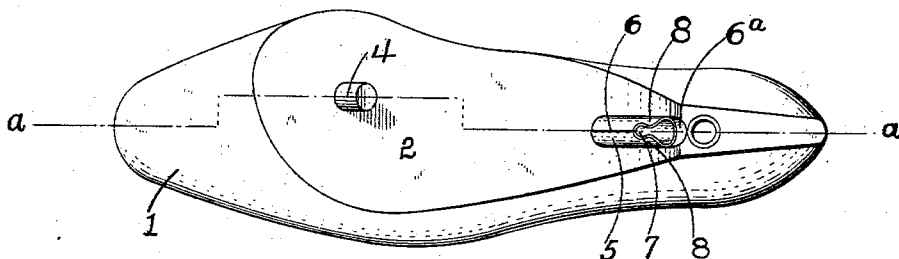


Fig. 6.

Fig. 4.

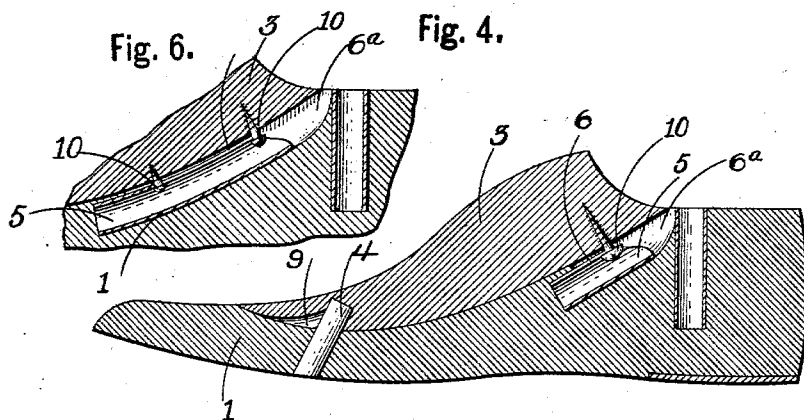
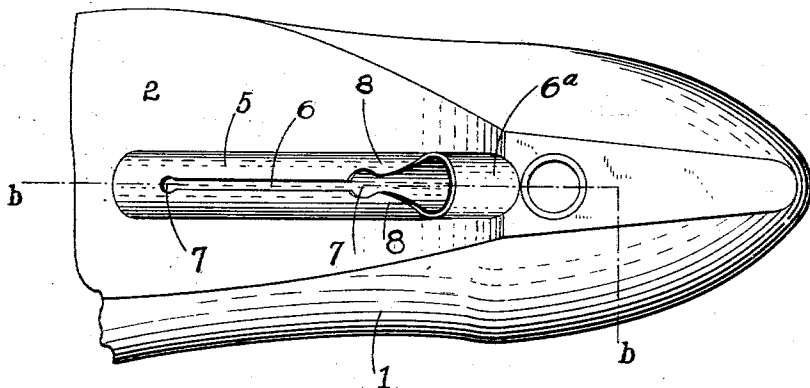


Fig. 5.



Witnesses.

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# UNITED STATES PATENT OFFICE.

ADDISON NORMAN, OF DAVISVILLE, CANADA.

## LAST.

SPECIFICATION forming part of Letters Patent No. 745,652, dated December 1, 1903.

Application filed May 9, 1901. Serial No. 59,445. (No model.)

*To all whom it may concern:*

Be it known that I, ADDISON NORMAN, a subject of the King of Great Britain, residing at Davisville, in the county of York, Province of Ontario, and Dominion of Canada, have invented certain new and useful Improvements in Lasts, of which the following is a specification.

My invention relates to an improved sectional last for shoes, boots, &c., in which the parts are fastened together by a simple and convenient interlocking mechanism arranged so that the upper portion can be easily removed by drawing it backward and upward out of the shoe, boot, or other article in which it is placed.

The main object of the invention is to lock the parts of the last to each other so that they cannot be separated in any way except by a backward movement of the upper portion upon the remainder of the last, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical section through a shoe in which my improved last is placed. Fig. 2 is a side elevation of the last with the parts partially separated. Fig. 3 is a top plan view of the lower portion of the last. Fig. 4 is a section on line *a a*, Fig. 3. Fig. 5 is a fragmentary top view of the lower portion of a last having a slotted tube arranged to receive the knobs of an upper portion having two knobs. Fig. 6 is a fragmentary section on line *b b*, Fig. 5, through a last united by a plurality of locking-knobs.

In referring to the drawings for the details of construction like numerals designate like parts.

My improved last is composed of at least two sections—an upper section and a lower section. The lower section 1 is shaped to extend throughout and fills the lower portion of the shoe and has a concavity 2, which forms a seat for the upper section 3. A peg 4 projects slantingly upward from the lower section and has its lower portion fitted in an opening in said lower section. (See Fig. 4.) A tube 5, having a longitudinal slot 6 in its upper surface, is rigidly fastened by its one end, which is inserted in an opening formed in one end wall of a depression 6<sup>a</sup> in the

lower section. The slot 6 enlarges at 7 to provide an opening having curved walls to receive locking devices attached to the upper section and reduces again in the rear of said opening to provide enlargements 8, which fit snugly against the locking device of the upper section as it passes. This prevents the easy or involuntary removal of the upper section from the lower section, as the enlargements spring or give slightly as the shank of the locking device passes, and thereby hold the locking devices in the openings with a spring tension.

One or more of the openings 7 may be provided, according to the number of locking devices used on the upper section, one being shown in Fig. 3 and two in Fig. 6.

The upper section 3 has its lower surface shaped to fit the concavity 2 in the lower section and its upper surface shaped to fill out the upper part of the shoe. (See Fig. 1.) A depression 9 is formed in the forward portion of the upper section, which is shaped to permit the passage of the peg 4 and has a seat at its rear extreme to receive the peg. (See Fig. 4.) One or more knobs 10, which in this instance consist of ordinary screws the heads of which form knobs, are secured to the under surface of the upper section and seat in the opening 7 in the tube of the lower section. While but one knob is shown in Fig. 4, two or more may be employed, as shown in Fig. 6.

When two or more locking-knobs are employed, they decrease in size, according to location, from the rear forward, and the openings 7 are correspondingly reduced in size. For instance, in Fig. 6 the forward knob and the opening in which it seats is smaller than the rear locking-knob and the opening which receives the same.

In removing this last the upper portion is removed from the concavity by vigorously pulling a cord, an ordinary last-hook, or other device passed through the opening 11. The lower portion is then removed in the usual and well-known way.

The principal advantages of this last are its simplicity and cheapness and the admirable manner in which its sections are locked to each other against release in any way except by a diagonally rearward and upward pull,

which removes the upper section by drawing it between the upper surface of the lower section and the interior of the shoe.

The curved walls of the openings yield or  
 5 spring slightly from each other as the locking-knobs are introduced, so that the parts of the last are locked snugly to each other when together and the shanks of the locking-knobs are gripped between the side walls and  
 10 held with a spring tension in the opposed concavities in said side walls forming portions of the openings 7.

In this improved construction the means for holding the locking-knobs is tubular in  
 15 form and is rigidly fastened to one last-section, the arrangement being such that the walls of the slot in the tube yield slightly to permit the entrance of the knob and are still sufficiently strong to prevent any lateral or  
 20 vertical movement. The object is not so much to provide a spring to grip the locking-knobs as it is to arrange a device that will not move on or with respect to the section to which it is attached and is so formed that the knobs  
 25 are gripped between the side walls of a slot and are held against lateral or vertical movement.

I claim as my invention—

1. A last comprising separable sections one  
 30 of which has a depression, a tube having one of its ends rigidly secured in an opening in the wall of said depression and having its under surface conforming to and fitting against the curved walls of said depression and hav-  
 35 ing a longitudinal top slot enlarging at one point to form an opening, the upper sides of

the tube forming the walls of the slot being adapted to have a slight spring movement, and a knob extending from another section adapted to seat in the tube with its shank  
 40 extending through the slot, substantially as set forth.

2. A last comprising an upper section and a lower section; the lower section having a concavity in which the upper section seats  
 45 and a depression having an under portion, a tube conforming to and rigidly secured in one wall of the depression in the lower section and an upper portion provided with a longitudinally-extending top slot enlarging  
 50 at one portion to form an opening; walls of the slot being adapted to spring slightly, and a knob extending downward from the upper section and adapted to slide in the slot and  
 55 seat in the opening where it is retained in place by the spring tension of the side walls, substantially as set forth.

3. A last comprising separable sections having locking means, comprising a tube secured to one section and having a slot which en-  
 60 larges at two points to form openings and the front opening being smaller in size than the rear, and a plurality of knobs secured to the other section and adapted to seat and be re-  
 65 tained in the said openings, the front knob being smaller than the rear knob, substantially as set forth.

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Witnesses:

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