(No Model.)

J. I. E. NELSON.

SOLE OR HEEL PLATE.

No. 504,995. Patented Sept. 12, 1893.

Fig. 1.

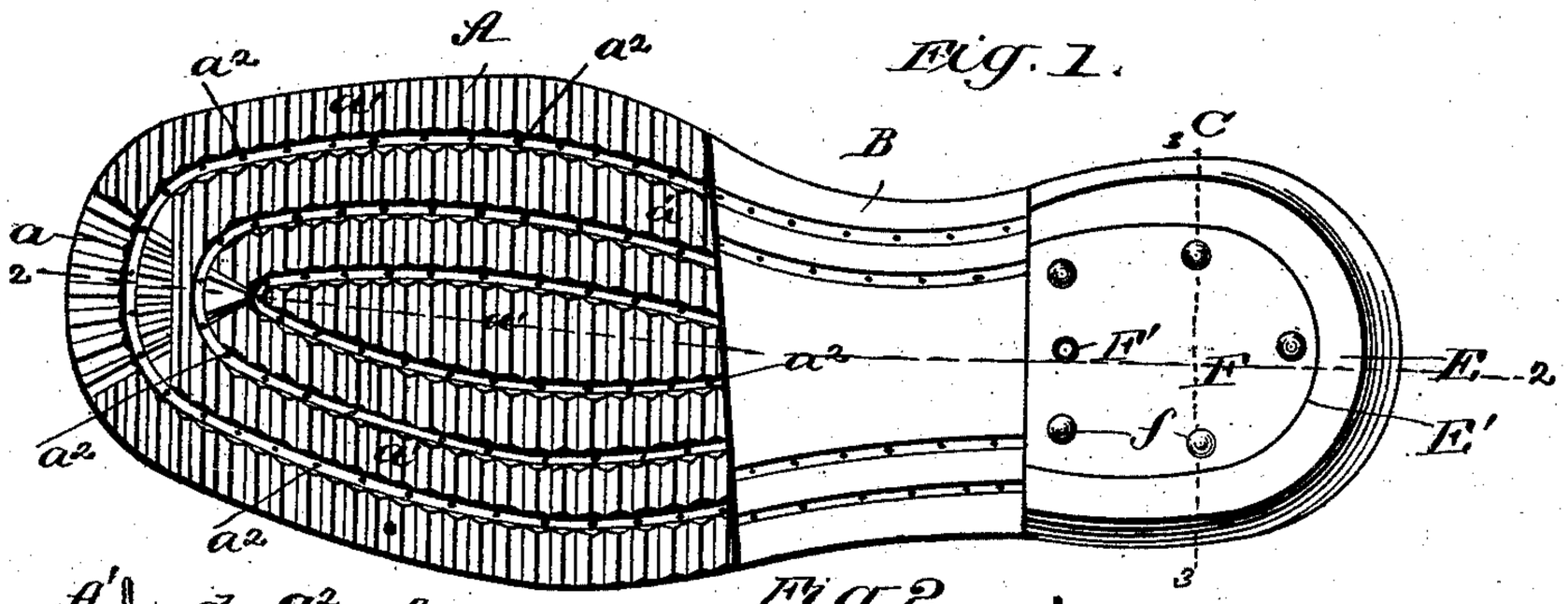


Fig. 2.

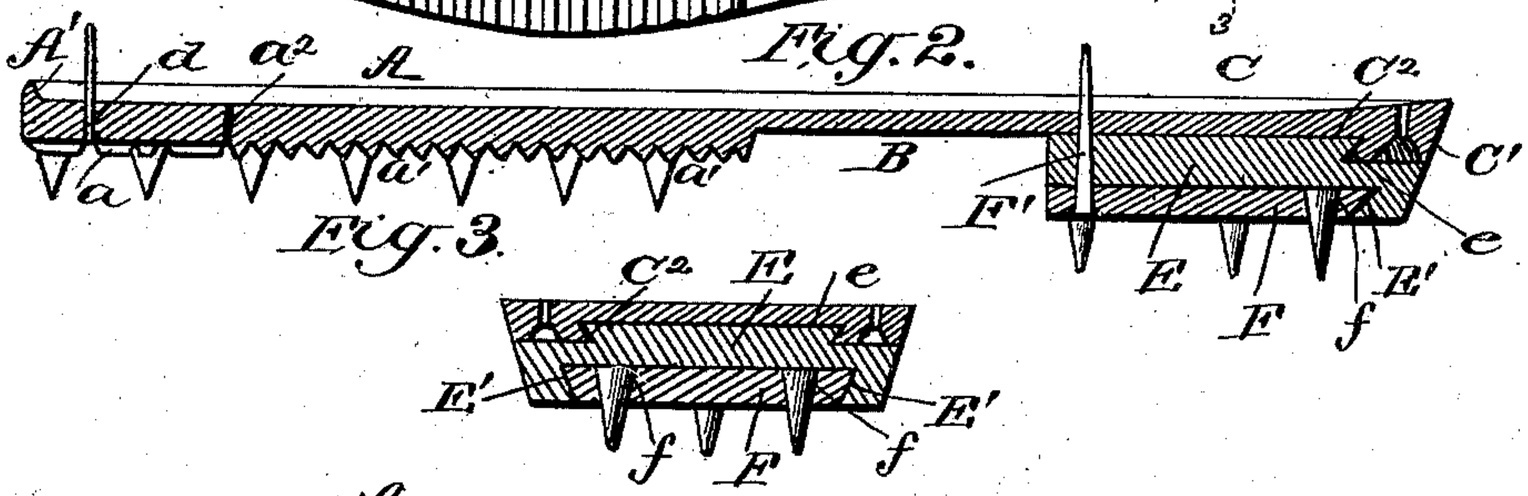


Fig. 3.

Fig. 4.

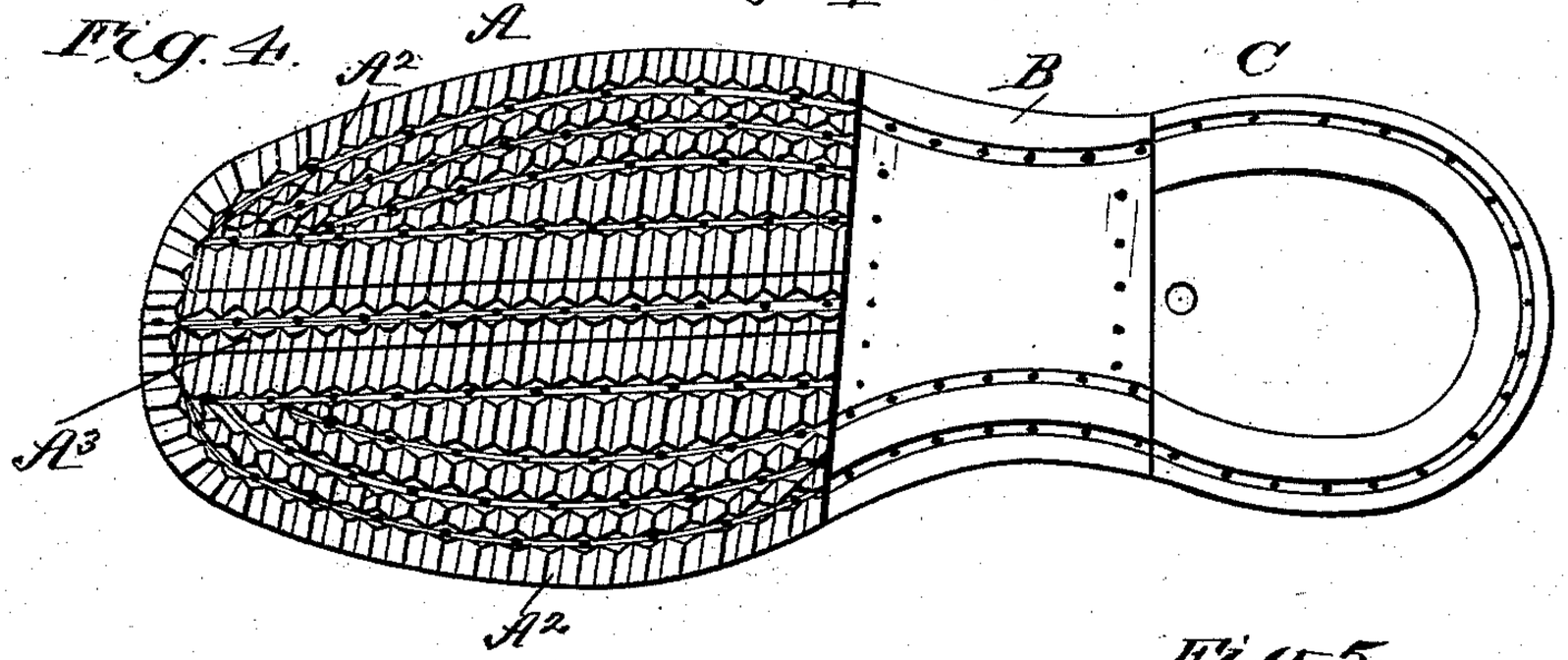
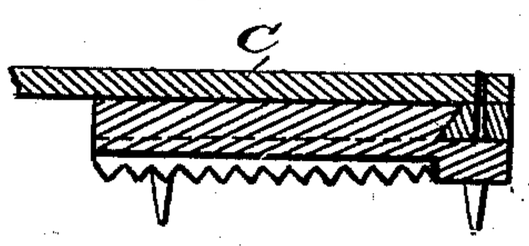


Fig. 5



WITNESSES:
Fred G. Dieterich
P. B. Turpin

INVENTOR
John Isaac Emil Nelson.
BY Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN I. E. NELSON, OF CEDAR HOME, WASHINGTON.

SOLE AND HEEL PLATE.

SPECIFICATION forming part of Letters Patent No. 504,995, dated September 12, 1893.

Application filed February 4, 1893. Serial No. 460,972. (No model.)

To all whom it may concern:

Be it known that I, JOHN ISAAC EMIL NELSON, residing at Cedar Home, Snohomish county, in the State of Washington, have invented a new and useful Improvement in Boots or Shoes, of which the following is a specification.

My invention is an improvement in boots and shoes, especially in that class of such foot wear used by workmen in lumbering, logging and heavy laborious work where the shoes are frequently wet.

The invention has for an object to provide means whereby to render the boots more durable and also to provide for retaining in the soles the stiffness and firmness desirable for such purposes.

The invention consists in the special constructions and combinations of parts hereinafter described and pointed out in the claims.

In the drawings—Figure 1 is a bottom plan view of my improvements. Figs. 2 and 3 are sectional views on respectively lines 2—2 and 3—3 of Fig. 1. Fig. 4 is a bottom plan view of the improvement as applied to repairing. Fig. 5 is a sectional view of the heel as applied in repairing.

My invention is shown in Fig. 1 as embodied in new work and I will first describe it in such connection.

In lumbering and the like it is customary to stud the bottoms of the boots with spikes having their shanks driven in the soles. When the soles become wet the seats of said shanks are weakened so that they will bend to one side and be worse than useless. This wetting of the soles also renders them so pliable that they will bend both lengthwise and crosswise so freely as to destroy the footing necessary in stepping from log to log in logging in the streams. By my improvement I furnish a metal bottom for the boot made preferably of aluminium and steel combined in about the proportion of nine parts of the former to one part of steel and the bottom is composed of the tread A, shank B and heel seat C which may preferably be made integral as shown in Figs. 1 and 2. The tread A has its surface formed with corrugations or ridges. At the toe portion at *a* the ridges are arranged to run approximately in the direction of length of the shoe while in rear of ridges *a* are provided transverse ridges *a'* approximately at right angles to the ridges *a*. This tread is also perforated at a^2 for the passage of the fastening nails and the shanks *d* of the spikes driven therein and into the leather sole. It is obvious that this forms a firm seat for the shank which will not be affected by moisture the spikes standing up rigidly at all times. The shank B and the rand like part C' of the heel seat are also provided with openings for the fastening nails. The heel seat is formed with undercut mortise C^2 for the heel piece E which has at its under side a tenon *e* to fit the mortise C^2 and is provided in its face with an undercut mortise E' to receive the spike plate F. This plate F is provided with conical openings *f* in which conical plug like spikes are driven and formed to protrude through the same. The points of these spikes may be formed of different lengths so that they may be made in sets of different lengths and the desired size be inserted at will, the base of the spikes resting firmly against the base of the mortise E'. The spike plate and heel piece E may be both firmly secured by a single nail F'. By employing the separate heel piece E, heel pieces of any desired height may be quickly applied and if at any time the heel piece should become worn or broken it can be replaced in a few moments at a slight cost. It will also be seen that it is but a few minutes work to remove the spike plate, renew one or more of the spikes and reapply and secure it in place. Around the head A I provide the upwardly projected well defined flange A' which serves to steady the tread in place and relieve the fastening nails in a large measure of lateral strains. Manifestly the sole piece can be quickly applied to a new boot or shoe requiring much less time than the ordinary studding or spiking in the common manner.

In applying the invention in repairing boots and shoes it may be desirable to make the tread A, shank B and heel seat C separately and to apply them as shown in Fig. 4. The tread A is also made in sections, the opposite side sections A^2 A^2 being capable of application to fit slightly different widths of shoes and in connection with the central strip A^3 for a greater range of adjustment as will be readily seen.

In applying the heel portion the rand like portion may be applied to the leather heel and the heel piece and spike plate applied as in Fig. 5. In this figure the spike plate is shown as provided around its edge with a border of ribs or corrugations and the spike openings are formed in the said border. Manifestly if desired this form of heel plate might be used as a substitute for that shown in Fig. 1, and vice versa. When the spikes are not needed the ribbed surface operates to prevent slipping under ordinary circumstances.

It will be understood that the metallic sole of aluminium as described will be very light and may be used on children's shoes if desired.

While it is much preferred to use a separate spike plate and to apply it to the heel piece as shown in Figs. 2 and 3 it is manifest the heel piece may be made integral with the spike plate as shown in Fig. 5.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In boots and shoes the metallic sole piece having the integral tread shank and heel seat having the tread provided with openings for the spike shanks and the heel seat provided with the undercut mortise the heel piece having on one side a tenon to fit said mortise and provided in its outer side with an undercut mortise and the spike plate fitted in said mortise, substantially as set forth.

2. A metallic sole piece having the integral tread shank and heel seat and provided in the tread with openings for the spikes and the detachable heel piece fitted to the heel seat all substantially as set forth.

3. In boots and shoes the improved sole piece herein described made of metal having the integral tread shank and heel seat, the tread being provided with ribs and openings for the spike shanks, the heel seat being provided with an undercut mortise, the heel piece having a tenon fitted to said mortise and also provided with an undercut mortise and the spike plate fitted to the undercut mortise of the heel piece all substantially as and for the purposes set forth.

4. In boots and shoes, a metallic sole piece having openings for the spike shanks, a heel seat having an undercut mortise the heel piece fitted to said mortise and an intermediate shank portion arranged between the heel seat and sole piece all substantially as and for the purposes set forth.

JOHN I. E. NELSON.

Witnesses:
P. B. TURPIN,
SOLON C. KEMON.