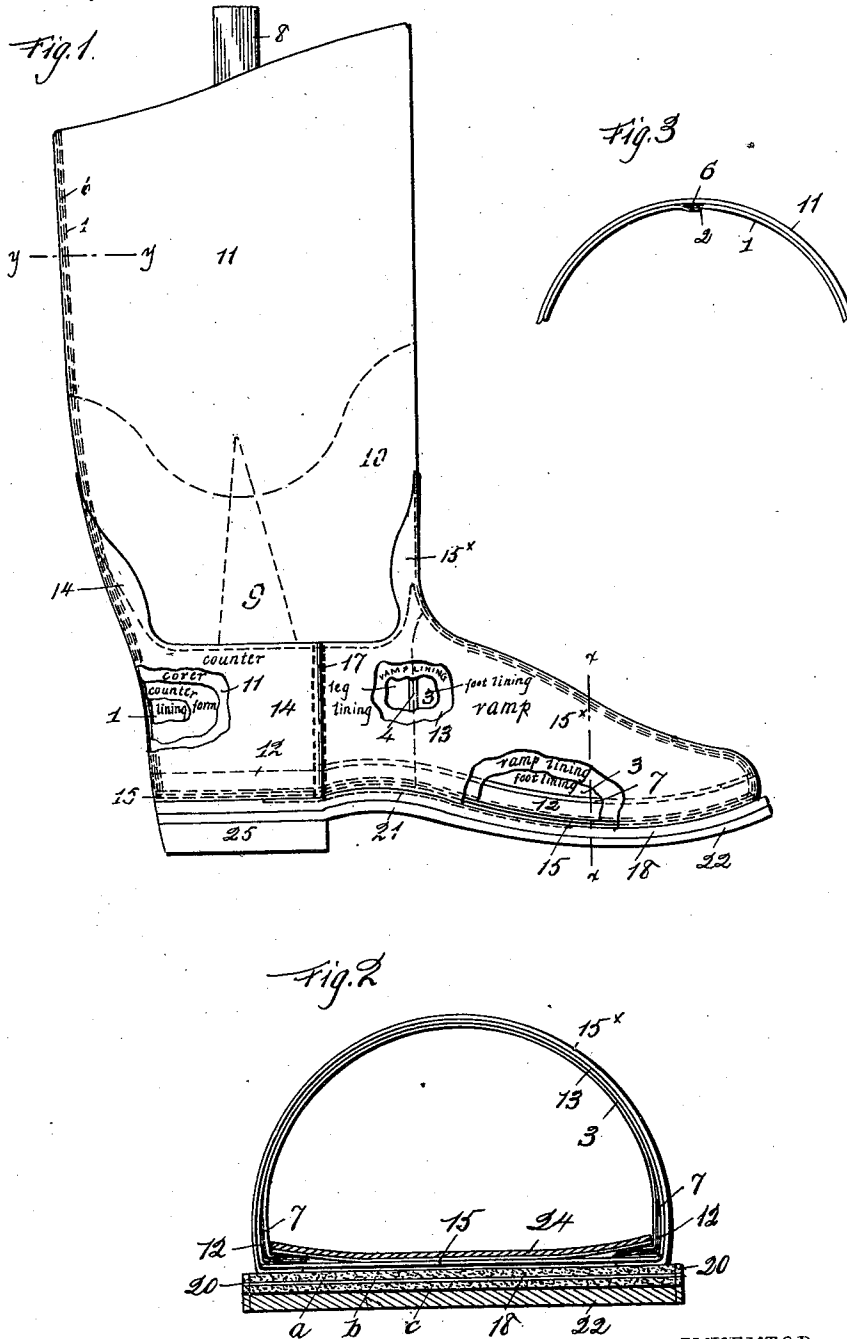


(No Model.)

S. J. HARRIS.
RUBBER BOOT.

No. 542,961.

Patented July 16, 1895.



WITNESSES

Geo. M. Anderson
Phil. C. Mearns,

INVENTOR

Samuel J. Harris
by C. W. Anderson
his Attorney

UNITED STATES PATENT OFFICE.

SAMUEL J. HARRIS, OF MILLVILLE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WILLIAM F. STEINBACH, OF MYSTIC, CONNECTICUT.

RUBBER BOOT.

SPECIFICATION forming part of Letters Patent No. 542,961, dated July 16, 1895.

Application filed December 8, 1894. Serial No. 531,276. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. HARRIS, a citizen of the United States, and a resident of Millville, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Rubber Boots; and I do 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, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a side view of boot broken away to show the different parts. Fig. 2 is a section of boot on line *x x*, Fig. 1. Fig. 3 is a section through rear portion of boot on line *y y*, Fig. 1.

The object of this invention is to improve the construction of that class of rubber boots which are provided with combination rubber and leather soles, and more particularly to provide an improved construction of sole, together with an improved foundation for same, whereby the sole is rendered perfectly waterproof and secure. A further object is to provide means for strengthening the foot of the boot.

With these objects in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

In carrying out the manufacture of my improved boot it is first lasted in an ordinary manner, the leg-lining (indicated by the numeral 1 in the accompanying drawings) being lapped at the back of the boot-tree and the edges thereof joined by means of a rubber-sized strip 2, which is fastened to one of the edges of the lining and lapped upon the other, forming a seam at the back, running from the top of the lining to the bottom of the tree. The lower inside edge of the lining is covered with a rubber cement, which unites said lining to the under surface of the lasting or inner sole of the boot upon which it is lapped. This inner sole may be made of any fabric suitable for the purpose, its outer surface being covered with a rubber compound for the purpose of securing the other parts which

come in contact therewith. The foot-lining 3 is then put in place, the edge thereof which connects with the leg-lining being attached to a rubber-sized strip 4, similar to that used for uniting the edges of the leg-lining and which is lapped upon and secured to the leg-lining over the instep of the boot. The lower edges of this boot-lining are connected to the under surface of the inner sole, being fitted to the shape of the foot. The boot is now trimmed in the usual manner, the heel-stay and counter-form being laid over the lining at the back of the boot with the bottom edges thereof lapping onto the bottom of the boot over the edge of the leg-lining. A strip 6 of rubber is now laid over the seam at the back, running from the top to the bottom of the boot. A strip 7 of rubber-sized cloth is then run around the front of the boot, commencing at the lower side of the counter-form and extending around the toe and back to the counter-form at the opposite side, its purpose being to add strength to the edge of the boot. The straps or loops 8 are then attached. A side stay 9 is also laid upon the leg-lining above the counter-form at each side at the center and extending up toward the straps or loops. The usual ankle-pieces 10 are now applied and the boot is ready for the leg-cover 11. This cover is laid upon the front of the lining and is drawn tightly around the boot, the seam at the back being made to lie over the lining-seam. The whole is then rolled solidly together. I now take a narrow continuous strip 12 of rubber, which I extend entirely around the lower portion of the boot, with a seam at the back, its lower edge lapping upon the bottom of the boot and over the foot-lining and the bottom of the leg-cover. This strip gives great strength to the whole foot of the boot, especially when combined with the improved combination-sole presently to be described. After the boot has been built thus far the usual vamp-lining 13 is applied, being laid upon the upper part of the foot and lapped upon the leg-cover, after which it is drawn tightly over the sides and toe portions of the foot, lapping over the strip 12 upon the bottom of the boot, thus strengthening and holding the foot portion in shape. The counter 14 is now applied with its for-

ward edges coming over the vamp-lining and the sides of the boot and its bottom edge lapping over the bottom of the boot and the strip 12. The whole is now thoroughly rolled.

5 I now apply the middle sole 15, made of canvas or cloth saturated with a rubber solution and coated, in the usual way. This sole is to be of sufficient thickness to make the bottom of the boot perfectly flat. This sole covers in

10 the inner sole and the edges of the parts lapping thereon and is solidly rolled in place. The ragged edge is then skived off around the heel. The vamp 15^x is now applied in the usual manner.

15 The bottom of the boot being perfectly flat, the ordinary filling-sole need not be employed. The vertical edges of the vamp lap the counter, forming the side seams 17. The whole vamp is now rolled and trimmed on the bot-

20 tom tightly against the middle sole. The seams are now all false-stitched and the boot is ready to receive the rubber sole 18. This rubber sole is made of three separate parts of similar shape, the upper part *a* and the lower

25 part *c* being of rubber, while the intermediate part *b* is made of canvas having a coating of rubber cement worked through it to give it great adhesive properties. These three parts are cemented together and rolled or pressed

30 and the sole is then cemented to the middle sole, forming a firm foundation for the leather sole. This sole 18 has its edges extended beyond the sides and toe of the boot, forming a flange or welt 20, to which the leather sole is

35 to be stitched. The upper part or heel and shank portions of this sole 18 are not extended beyond the edge of the boot. The entire sole so formed is now rolled solidly to the bottom of the boot, making the entire boot perfectly

40 water-tight. The boot is now ready to be vulcanized.

After vulcanization the bottom of the sole is coated with cement and a steel shank-piece 21 applied and fastened suitably, (this shank-

45 piece may, if preferred, be applied before the sole 18,) after which the leather sole 22 is coated with cement upon the unfinished side and applied to the rubber sole and rolled tightly thereto. The top portion of the leather

50 sole is then stitched to the extension edge or welt 20, which leaves no holes or punctures

through the bottom and prevents any chance of leakage should the leather pull off or become worn out. In such event the old tap may be cut off and a new one applied. 55

The heel and shank portions of the sole back of where the extension edge 20 stops is nailed or stitched through the bottom into a thin leather insole 24, which gives a substantial body for the stitching. The leather heel 60 25 is then built up and finished in the same manner as in an ordinary leather boot.

The leather sole is formed in one solid piece.

Having thus described my invention, what 65 I claim as new, and desire to secure by Letters Patent, is—

1. A rubber boot, having an insole, a middle sole cemented to said insole, and formed of canvas or cloth saturated with a rubber 70 solution, this sole being of sufficient thickness to fill the hollow of the insole and render the bottom flat, a rubber sole cemented to the middle sole and made up of an upper and a lower section of rubber and an inter- 75 mediate portion of canvas saturated with a rubber compound, the whole being cemented and rolled, or pressed, together, and a leather sole stitched to a welt of said rubber sole, except at the heel portion which is stitched 80 through the said sole to the inside of the boot, substantially as specified.

2. As a new article of manufacture, a rubber boot having the strip 12 running continuously around the bottom thereof underneath 85 the vamp and counters and lapped at its lower edge upon the insole, a middle sole of canvas saturated with rubber cement and coated with a rubber compound, a rubber sole built up of an upper and lower thickness of 90 rubber and an intermediate thickness of rubber saturated canvas, the three thicknesses being cemented and rolled together, said rubber sole having an edge extension beyond the boot, a leather sole stitched to said extension 95 and a leather heel, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL J. HARRIS.

Witnesses:

F. E. SCOTT,
A. J. GERS.