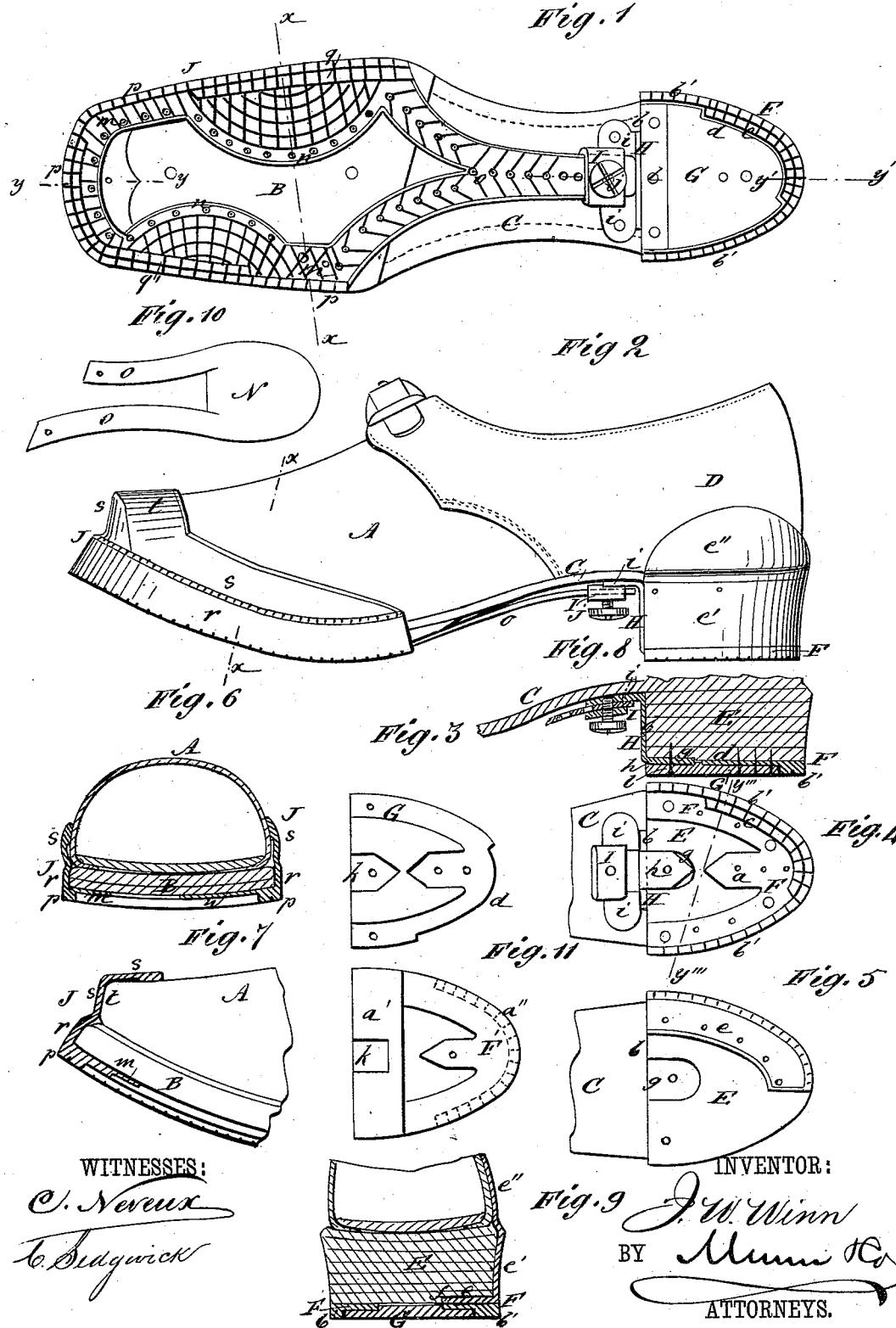


J. W. WINN.
Boots and Shoes.

2 Sheets—Sheet 1.

No. 217,761.

Patented July 22, 1879.



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2 Sheets—Sheet 2.

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Fig. 12

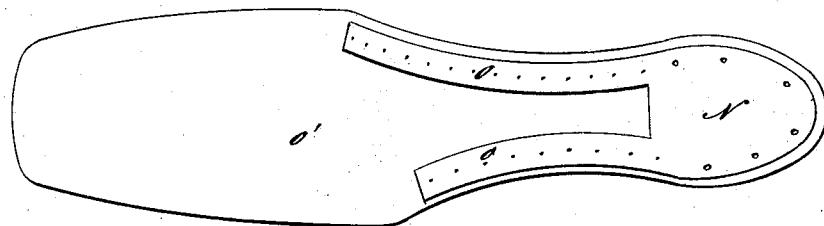


Fig. 14

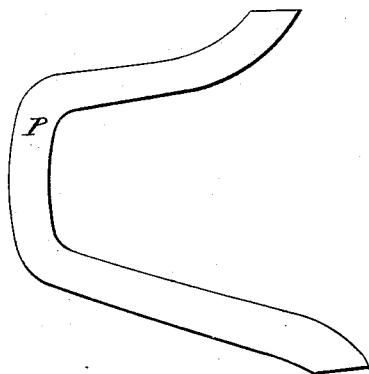


Fig. 15

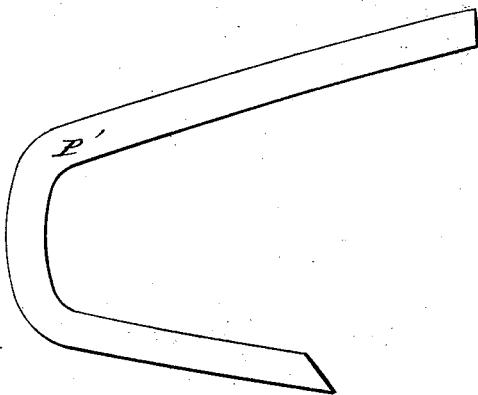


Fig. 15

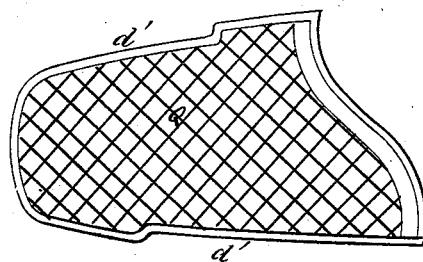
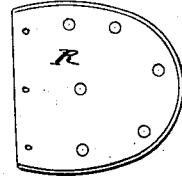


Fig. 16



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UNITED STATES PATENT OFFICE

JAMES W. WINN, OF HAVERHILL, MASSACHUSETTS.

IMPROVEMENT IN BOOTS AND SHOES.

Specification forming part of Letters Patent No. **217,761**, dated July 22, 1879; application filed April 1, 1879.

To all whom it may concern:

Be it known that I, JAMES W. WINN, of Haverhill, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Boots and Shoes, of which the following is a specification.

This invention relates specifically to certain additions and improvements in the soles, heels, and adjacent parts of boots and shoes; and the object thereof is to protect and preserve the parts most subject to wear and loss of shape.

The invention will be first described in connection with the accompanying drawings, and then particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a plan of the bottom of a shoe provided with my improvements. Fig. 2 is a side elevation of the same. Fig. 3 represents the cap-piece of the heel. Fig. 4 is a bottom view of the heel with cap-piece removed. Fig. 5 shows the bottom of the heel with cap-piece and top removed, and showing the turned-under part of the counter-protector. Fig. 6 is a cross-section of the front of the shoe on line *x* *x*, Figs. 1 and 2. Fig. 7 is a longitudinal section on line *y* *y* of Fig. 1. Fig. 8 is a longitudinal section on line *y'* *y'*, same figure. Fig. 9 is a cross-section of the heel on line *y''* *y'''* of Fig. 4. Fig. 10 represents a strengthening-piece for the inside sole. Fig. 11 is a modified form of the heel-tap and cap-piece. Fig. 12 represents strengthening-piece, Fig. 10, laid on the insole. Fig. 13 represents a piece to be laid between the edge of the protector and the adjacent edge of the sole. Fig. 14 is a piece to be laid between the upper part of the protector and the adjacent part of the upper. Figs. 15 and 16 are taps to be laid over the heel and sole to prevent slipping.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the shoe-upper, B is the sole, C is the shank, and D is the counter, all constructed and arranged in the usual well-known manner.

The first part of the invention relates to devices for preventing the rapid wear of the heel and the injury of the shape of the shoe by the counter turning over or breaking down.

E represents the body of the heel, composed

of several layers of leather nailed or pegged in place. F represents a metal heel tap or protector, of an ovoid shape, to conform to the shape of the heel on which it is placed. It is cut out from its broader end, but has a tongue, *a*, projecting from its narrower end in the cut-out portion in the direction of the straight part of the heel *b*. The upper side of this tap is flat, so that it bears squarely against the surface of the heel; but on its under side is a rim or flange, *b'*, raised above its surface and running entirely around its edge. On the edge of this tap corresponding to the outer edge of the heel, where it is most subject to wear, this flange is re-enforced by a second flange or rim, *c*, extending about one-third the distance around. These two rims or flanges form the bearing-surfaces or parts of the heel that come in contact with the ground, and being made, together with the tap, of steel, they furnish a very durable wearing-edge that protects the heel very efficiently.

G represents a center piece, of leather, rubber, or other suitable similar material. It is adapted to lie over the tap F within the flanges *b'* and *c*, a part, *d*, being being cut out of the edge to admit the latter, as clearly shown in Fig. 1.

The counter-protector, made of metal, consists of three parts, *e* *e'* *e''*, the first and second at right angles to each other, while the last extends upward into a segment of a circle, and is curved to fit closely to the counter. It is designed to extend from the front line of the heel *b* round half of the same and to the back seam of the counter on the outside of the heel, as this side of the counter is most liable to bend over. It is applied as follows: The part *e* lies in a recess, *f*, in the outer edge of the bottom layer of the heel E, the part *e'* fits closely to the heel half-way round, and the segmental part *e''* lies over the counter, while the dividing ridge between parts *e'* *e''* fits closely in the channel between the heel and upper, as shown clearly in Fig. 9.

Thus arranged, the protector is secured by nails or screws driven laterally through the upper part of *e'* into the heel, and by other nails or screws driven up through part *e*, thus forming a secure and neat connection with the heel and counter, serving to sustain the latter

and prevent it from bending over by wear or by becoming wet.

These several parts are applied to the heel as clearly shown in Figs. 2 and 9—that is, the counter-protector is secured in place in the manner just described. This leaves a flat surface to the body of the heel E, on which is laid the tap F; then the center piece, G, is laid on the tap within the flange or rim, and screws are passed through holes in the center piece and corresponding holes in the tap, and thence into the heel, thus securing all the parts together and to the heel; but the screws being passed through within the flanges b' c, they do not bear upon the ground or floor, as shown in Fig. 8.

As will be observed in Figs. 3 and 8, the surface of the center piece, G, has depressions to receive the various parts of the tap F, so that the parts of the piece within the opening of the tap bear against the surface of the heel, and thus enables a close joint to be made.

In the middle of the body of the heel from the front line, b, a depressed recess, g, is made to receive the tongue h, extending back at a right angle to the plate H, which lies against the front of the heel and joins a plate, i, secured to the shank and provided with a socket, I, through which is run a set-screw, j. The tongue h is held under the center piece, G, (which is provided with a slight depression, k, to receive it,) and is secured in place by the screw l, passed through the centering piece into the heel, as clearly shown in Fig. 8. This is designed to form the connection between the heel-protector and the front or toe protector J, which forms the second part of my invention. This is a shell of the same shape precisely as the front of the shoe, so as to fit closely over it. It has a flat sole or bottom part, m, to cover the sole of the shoe near the edge and under the ball of the foot, projecting out toward the center, so as to furnish a firm bearing for this part of the foot, as indicated at n n; and at the rear the two sides of the sole part m are brought together to form a shank, o.

Around the edge of the bottom or sole part m is a raised rim, p, extending around the three sides thereof and doubled at q q' under the ball and great-toe parts of the sole respectively. This forms the bearing part of the protector.

From the sole part m sides r extend upward at an angle corresponding to the angle of the sole of the shoe over which it is to be placed, and from the sides r extends the upper part, s, of the shell or protector, of the same shape as the toe and front sides of the shoe, so as to adapt it to receive the front of the shoe-upper.

This shell or protector is made of metal, and its purpose is to protect the sole of the shoe or boot from wear, and to prevent gravel, dust, mud, and dampness from getting in between the upper and sole, and preserve these parts from decay. The upper part of the protector

also protects the front of the shoe or boot from rubbing. This part is not connected directly with the shoe at any point; but it is applied and secured in position in the following manner: The front of the shoe is slipped in the protector J from the rear until the toe of the shoe enters the box-toe t of the protector, when the sides r are in contact with the edge of the sole, and the protector is fitted over the shoe, as shown in Fig. 2. The end of the shank o is entered into the socket I, and is secured therein by the set-screw j, thus connecting the protector with the plate i, and thence with the heel, and fastening it securely to the shoe.

This protector saves the sole of the shoe from wear, as it does not allow it to come in contact with the ground at all. Further, it prevents mud, gravel, dirt, &c., from getting in the seam between the upper and sole, and thus protects the seam from the cutting and wearing action of the same; and, lastly, it protects the lower part of the upper and the toe from rubbing against the gravel, stones, &c.

Inasmuch as the stock in the heel is frequently of such inferior material that it will not hold the screws or nails employed in fastening the several parts heretofore described, I place a strengthening-piece on the insole to receive and hold them. This piece is shown in Figs. 10 and 12, and is composed of the heel-piece N and shank-extensions O O. It is laid on top of the insole O', as in Fig. 12, and the screws or nails passed up through the tap, heel, and insole, and into the heel part N. In this way the heel is bound between the tap and the strengthening-piece and pressed together, so that, however inferior the stock, it will be held together.

The shank-extensions O O are to prevent the water from soaking into the soft edges of the pasted insole; and in case the upper and the sole come apart by the giving away of the pasted inner soles or any other cause, the shank may be fastened down by pegging, nailing, or sewing it to the extensions O O, and thus be held fast.

The piece P, Fig. 14, is to be laid on top of the upper, under the parts t and s of the protector, to prevent water, gravel, and sand from getting in between the upper and protector from above. It may be made of rubber or leather.

The piece P', Fig. 13, is to be laid between the angular sides r of the protector and the edge of the sole, to prevent the entrance of water, gravel, sand, &c. It may be made of leather or rubber.

Q, Fig. 15, is a tap, of leather or rubber, laid over the front of the shoe-sole, to prevent the wearer from slipping. It is placed on the bottom parts, m n, of the protector, within the rims p q, (recesses d' being left in its edges for the purpose,) and is secured by screws or rivets to the protector-bottom.

R, Fig. 16, is a similar tap, of leather or rub-

ber, to be placed over the center piece, G, and rims $b' c$ of the heel-protector, to prevent the wearer from slipping. This, too, is secured by screws or nails.

The modification of the cap-piece and tap shown in Fig. 11 consists in making the cap-piece with a raised portion, a' , extending across the front or straight part, and making the tap F' extend from this raised piece only, and with a single raised rim, a'' , (in dotted lines,) extending only part-way around on both sides, the cap-piece being cut out to form a flush connection and surface with the tap and to fit within the rim a'' . This is intended for light shoes and boots.

The protector J is designed to be molded in a single piece from malleable iron with the shank O; or the latter may be made separately and attached to the bottom of the protector by rivets. The counter-protector, likewise, is to be made of malleable iron.

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

1. As an improvement in boots and shoes, the steel tap F, applied to the under side of the heel E, and provided with a raised flange, b' , running all around the edge, and flange c , running part-way round on the side most subject to wear, in combination with the heel E and center piece, G, having the edge cut out at d to adapt it to fit within the flanges $b' c$ and over the tap F, so that the flanges $b' c$ will come in contact with the ground, substantially as described.

2. The counter-protector made of a single piece of metal, composed of parts $e e' e''$, the former part held in a recess, f , in the heel E under tap F, and the latter parts held against the outside surface of the heel and counter, respectively, in combination with the counter D and heel E, substantially as described.

3. The tongue h , extending from the plate i on the shank of the shoe, and held in the recess g in the heel, in combination with the heel E, cap-piece G, and plate i , provided with the socket I, having set-screw j , to form a joint or connection between the front protector and the heel, substantially as described.

4. The protector J, of metal, for the front of the shoe, composed of the bottom m , with projecting parts $n n$ for the ball of the foot, raised rim p , running entirely around the edge and doubled at $q q'$ under the ball and great toe, respectively, the beveled sides r , extending up at the angle of the soles, and the curved part s , extending up to inclose the bottom edge of the upper or vamp and to form a box-toe, t , the whole constituting a shell adapted to receive the front or toe of the shoe, and having a shank adapted to fit in the socket I, and be secured therein by set-screw j , and thus be held in place and connected with the heel, substantially as described.

5. In combination with the upper parts, $s t$, of the protector, the piece P, for insertion between the upper and parts $s t$, to prevent the entrance of water, gravel, sand, &c., substantially as described.

6. In combination with the angular sides r of the protector J and the adjacent edges of the soles, the piece P', to be inserted between the said parts, substantially as described.

7. The strengthening-piece composed of heel part N and extensions O, laid on the insole O', in combination with the insole O', shank C, heel E, tap F, and center piece, G, to furnish a foundation for the strengthening of the shank and heel, substantially as described.

JAMES WILLIAM WINN.

Witnesses:

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JOHN C. F. LONGFELLOW.