

No. 641,572.

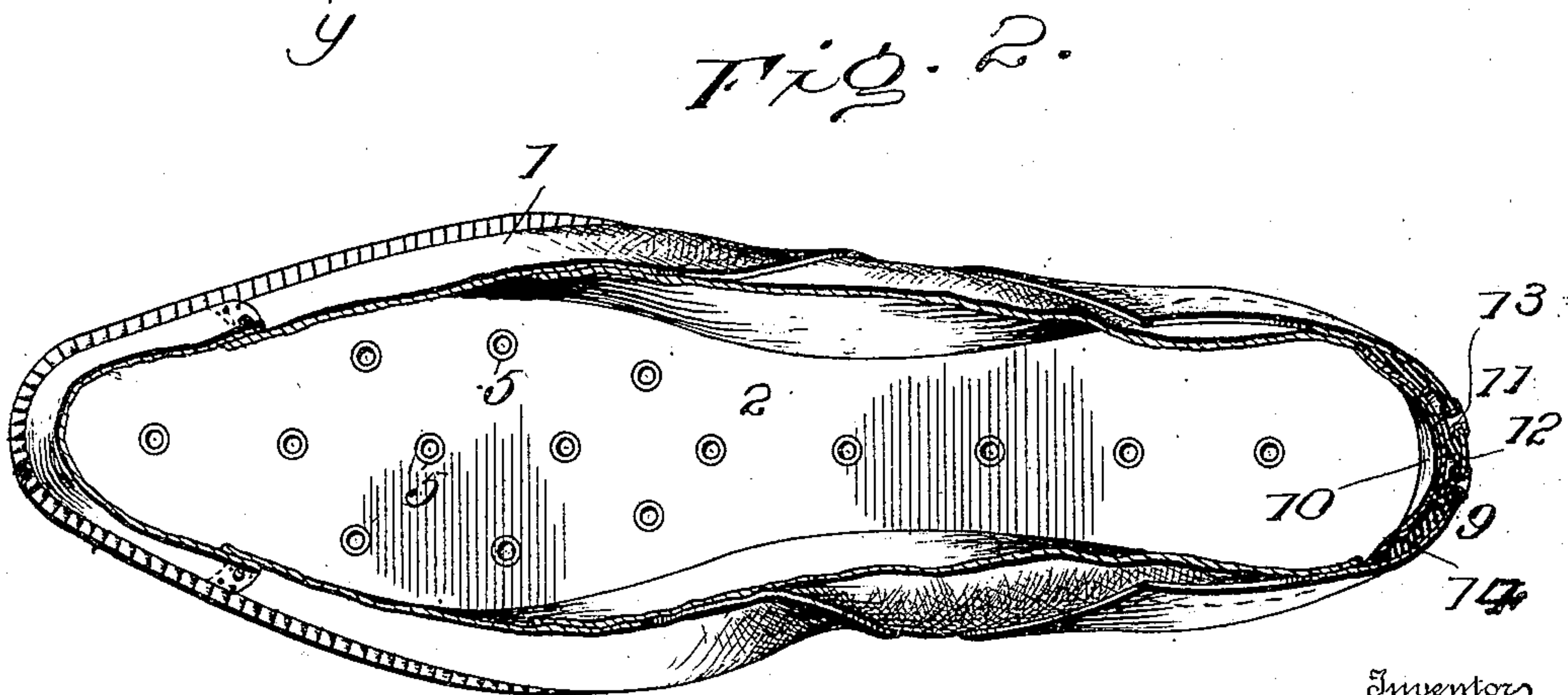
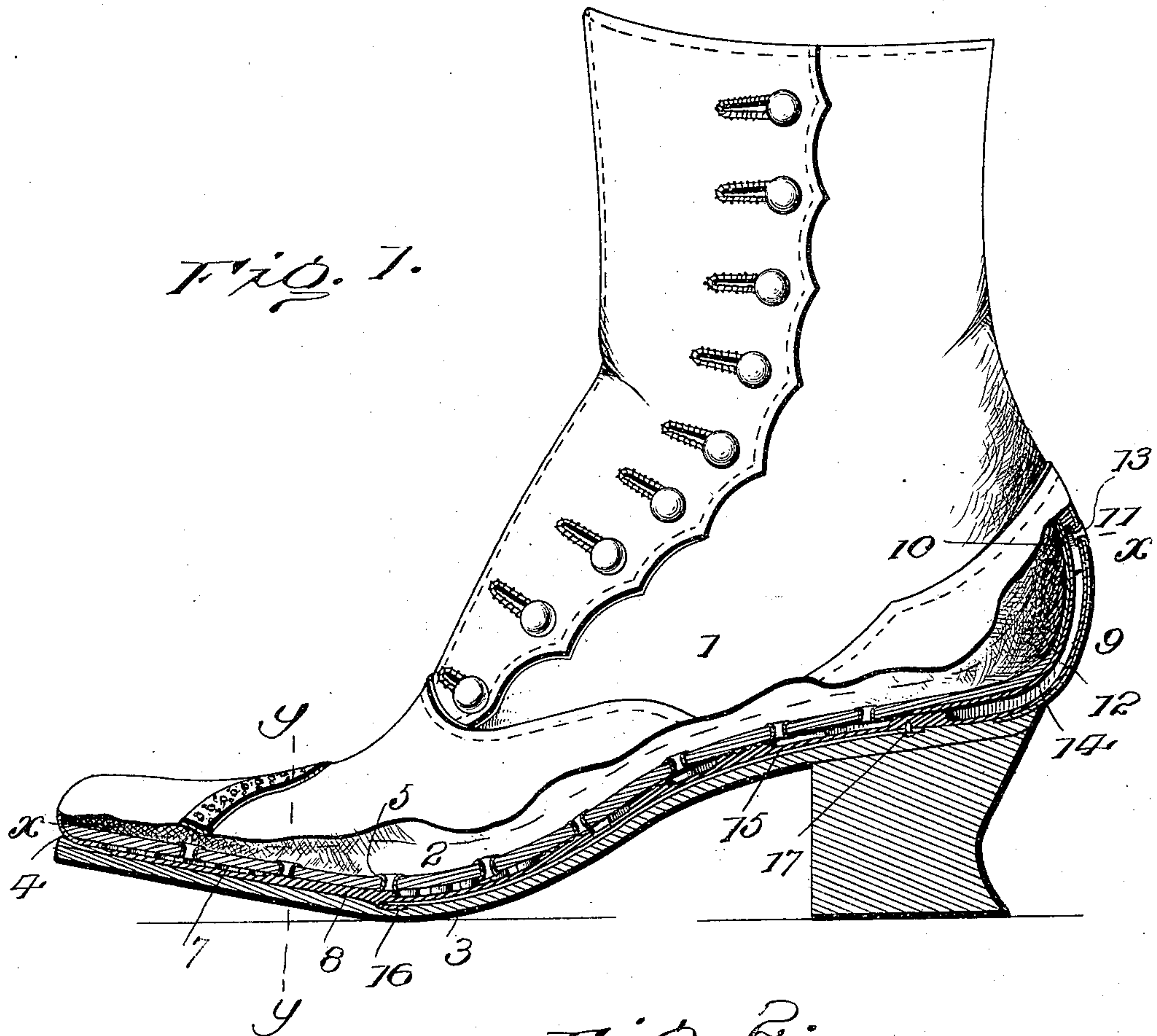
Patented Jan. 16, 1900.

S. ARNSFIELD & J. KOLLER.
COMBINED SHOE VENTILATOR AND CUSHION.

(Application filed Feb. 11, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL ARNSFIELD AND JOHN KOLLER, OF JOHNSTOWN, NEW YORK.

COMBINED SHOE VENTILATOR AND CUSHION.

SPECIFICATION forming part of Letters Patent No. 641,572, dated January 16, 1900.

Application filed February 11, 1899. Serial No. 705,359. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL ARNSFIELD and JOHN KOLLER, citizens of the United States, residing at Johnstown, in the county of Fulton and State of New York, have invented certain new and useful Improvements in a Combined Shoe Ventilator and Cushion; and we do hereby 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.

This invention relates to foot-gear, and is designed to prevent foot scald and burn, to cushion the impact of the foot when traveling over any hard or unyielding surface, to keep the feet dry and provide an escape for any moisture that may find its way into the shoe from below, to obviate sweating by setting up and maintaining a circulation of air, which cools the foot and carries off heated and vitiated air and vapors, and to devise a means of simple construction which can be readily applied to any make, style, size, or nature of boot or shoe without adding appreciably to the weight thereof or detracting in the least from its shape, flexibility, or comfort to the wearer.

The invention consists of a combined ventilator and cushion interposed between the outer and inner soles of a boot or shoe, the top side of the device being channeled or formed with spaced ribs or projections forming passages for the circulation of air, and the insole having a plurality of openings establishing communication between the interior of the shoe and the air or ventilating passages.

The invention also consists in forming and combining with the sole-ventilator a supplementary ventilator located in the rear of the heel and placed between the counter and counter-stiffener and having openings leading through the counter for the ingress and egress of air when the shoe is worn, said openings being at such a height as to prevent the entrance of water therein, stoppage thereof by mud or dirt, or interference therewith when rubbers or overshoes are worn.

The invention further consists of the novel features of construction and combinations of the parts which hereinafter will be more fully described and claimed.

In the drawings, Figure 1 is a side elevation of a shoe having the invention applied thereto, the lower portion being in section to show the relative arrangement of the parts. Fig. 2 is a horizontal or plan section about on the line X X of Fig. 1. Fig. 3 is a cross-section on the line Y Y of Fig. 1 looking in the direction of the arrow. Fig. 4 is a plan view of the combined ventilator and cushion, the rear portion being extended to show more clearly the passages formed therein. Fig. 5 is a detail perspective view of the rear ventilator, the covering-strip being removed and set to one side, so as to show a series of passages.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The invention is shown applied to a shoe of ordinary formation, although it is to be understood that it is to be used in connection with boots or foot-covering of any variety.

The upper 1 of the shoe is lasted to the insole 2 and outer sole 3 in any of the usual ways, the usual space formed by the welt 4 being occupied by the cushion and ventilating device. The insole 2 is provided throughout its extent with a plurality of openings 5, by means of which communication is established between the interior of the shoe and the ventilating-passages of the device, as illustrated. These openings are reinforced by eyelets, so as to prevent their closing after the shoe has been in service.

The combined cushion and ventilator consists of a base or intermediate sole 6, of rubber, leather, or like flexible material, so as to conform readily to the shape of the shoe and various movements of the foot and which is sufficiently firm to prevent the closing of the ventilating-passages by spreading of the ribs or projections after the device has been in use. The base 6 conforms to the outline of the sole of the shoe and is provided on its top side or the face adjacent to the insole with a series of ribs 7 and projections 8, which are spaced apart, so as to form channels or passages for the circulation of air when the shoe is worn. The heel and shank portions of the base being somewhat contracted, the air-passages are preferably formed thereon by projections 8, and the ball portion being of

greater extent the passages are preferably formed by the ribs 7, which are spaced a short distance from one another, forming a plurality of channels extending lengthwise of the shoe and communicating at their outer or extreme ends. The projecting portions 7 and 8 may be applied to or formed with the base 6 and are possessed of a degree of elasticity, so as to cushion the force or impact of the foot with a hard surface when the wearer is passing thereover. The base 6 is thin and pliable, so as to occupy a small space and readily conform to the shape of the shoe and not interfere with the free movements of the foot, and when in position is supported upon the outer sole 3. The ribs 7 and projections 8 bear directly against the lower side of the insole 2, and the latter extends over and closes the upper side of the various air-passages. The openings 5 are disposed so as to communicate with the ventilating-passages throughout the extent of the insole, thereby insuring a rapid carrying off of heated and vitiated air and the cooling of the foot at all points. The rear ventilator 9 is of approximately concavo-convex form, so as to fit comfortably against the rear portion of the heel, and is located between the counter 10 and the counter-step 11, and may be molded or pressed into the required shape. The side wings of the ventilator 9 are recessed or cut away at their lower ends or edges 9' to form free portions, which permit said wings to have ample yielding movement to accommodate themselves to the shape of the counter of the shoe and heel of the foot of the wearer, and thereby prevent chafing of the latter. This ventilator 9 occupies a position at right angles to the sole-ventilator and is provided upon its inner side with one or more channels 12, formed by longitudinal ribs and communicating with the ventilating-passages of the sole-ventilator, so as to supply fresh air to the foot and carry off heated and foul air. Outlets 13 extend from the upper end of the channel 12 through the counter 11 and are reinforced by eyelets, which serve to connect the ventilator 9 with the counter or rear portion of the shoe. The rear ventilator 9, like the sole-ventilator, is flexible, so as to conform to the shape of the heel portion of the shoe and prevent uncomfortable pressure upon the heel. A strip 14 is attached to the inner side of the base portion of the ventilator 9 and extends over the projecting portions thereof, so as to close the inner or upper side of the passage or channel 12. Any number of outlets 13 may be provided, according to the size and required capacity of the ventilator, and the number and capacity of the ventilating-passages may be varied to suit the make and style of shoe.

The shank portion of the sole-ventilator is stiffened by means of a curved spring 15, applied to the lower side of the base 6. This spring or shank 15 is arranged so as to come opposite the hollow or shank portion of the

shoe and stiffen the latter and is secured at its ends to the part 6. In order to support the shank 15, the base 6 is provided with central projections, which are contracted toward their ends and which are located intermediate of the spaces formed by cutting away the inner corners of the outer or marginal projections. The terminal portion of the spring 15 adjacent to the ball portion of the ventilator is thrust into a transverse slit 16, formed in the base 6 and confined between the said base and the projection opposite and adjacent to the extremity of the shank. The other end of the shank 15 is attached to the lower side of the base by a tack or like fastening 17, passing through an opening thereof and entering the projection directly opposite the terminal of the spring.

It is preferred to construct the device of a size to occupy the space commonly provided between the insole and the outer sole of welted, machine-sewed, or turned shoes, usually filled in with some other material; but it may be of a size corresponding to either sole. The shank-stiffener is not new *per se*, but combined with the cushion and ventilator in the manner set forth gives beneficial results and preserves the shape of the parts longer. Within the scope of the invention the ventilating channels or spaces may be formed by projections of any style, either continuous in character or interrupted.

From the foregoing it is obvious that changes in the form and minor details of construction may be resorted to without departing from the spirit or nature of the invention.

Having thus described the invention, what is claimed as new is—

1. A combined cushion and ventilator for shoes, consisting of a pliable base provided upon its upper side with a series of spaced ribs and projections to form ventilating-channels and having a slit opposite one of the medial projections, and a spring-shank applied to the bottom side of the base and having a terminal portion thrust into said slit and confined between the base and the projection opposite the said slit, substantially as set forth.

2. A combined cushion and ventilator for boots and shoes, consisting of a pliable base or intermediate sole provided upon its upper side with projections to form air-channels, a rear concavo-convex ventilator provided upon its inner concaved surface with ribs forming an air-channel in communication with the said channels in the sole and having the lower ends or edges of its side wings free to allow said wings to yield and conform to the shape of the counter of the shoe and heel of the wearer, and a covering-strip secured to said sole and adapted to be applied to said ribs on the rear ventilator to close the inner side of the channel formed thereby.

3. In a boot or shoe of the character described, the combination, with an insole having openings, of a combined cushion and ventilator interposed between the outer sole and

insole and comprising a pliable base forming a single intermediate sole proper having its under|side plane-surfaced and resting directly upon the outer sole and provided upon its upper side with projections forming longitudinal air-channels, a concavo-convex rear ventilator formed with upper outlets registering with corresponding outlets in the counter of the shoe and having upon its inner concaved surface longitudinal ribs forming a channel in communication with said outlets and the channels in the sole and also having the lower ends or edges of its sides free to form yielding wings, eyelets passed through the registering outlets in the rear ventilator and coun-

ter of the shoe and connecting said parts, and a flexible covering-strip secured directly to the rear portion of the said single intermediate sole and to the ribs upon the rear ventilator and closing the inner side of the channel formed by said ribs, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

SAMUEL ARNSFIELD. [L. S.]
JOHN KOLLER. [L. S.]

Witnesses:

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