

(No Model.)

P. A. PETTERSON.
VENTILATOR FOR BOOTS OR SHOES.

No. 454,880.

Patented June 30, 1891.

Fig. 1.

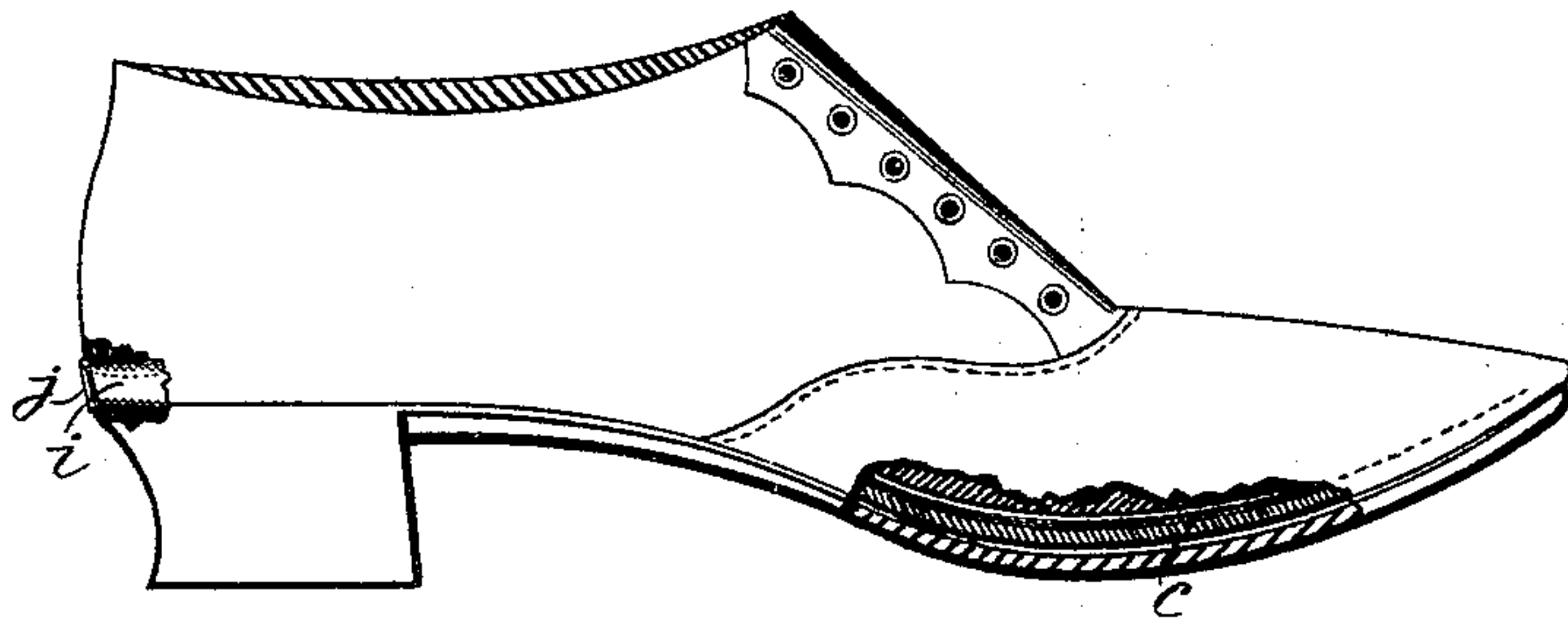


Fig. 2.

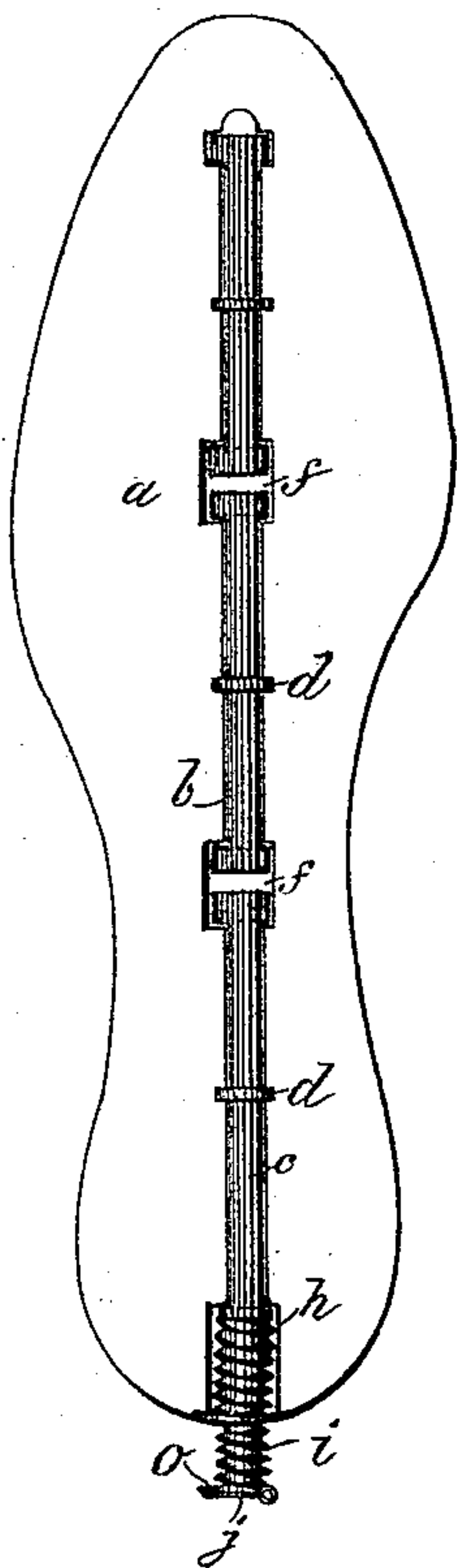


Fig. 4.

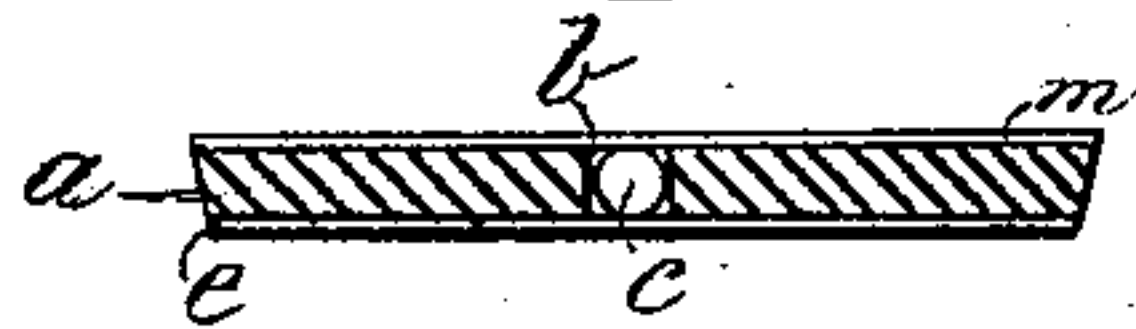


Fig. 5.

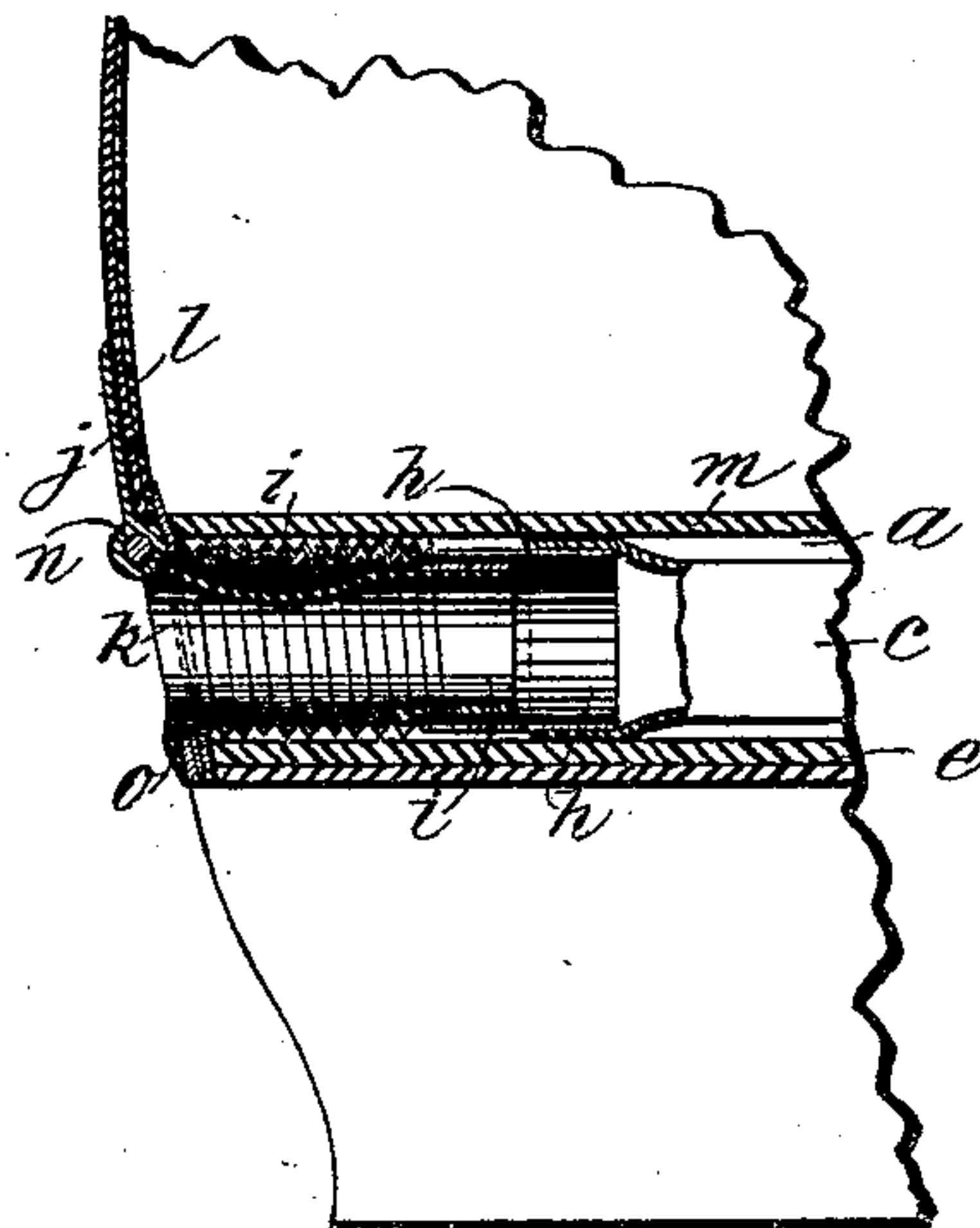


Fig. 3.

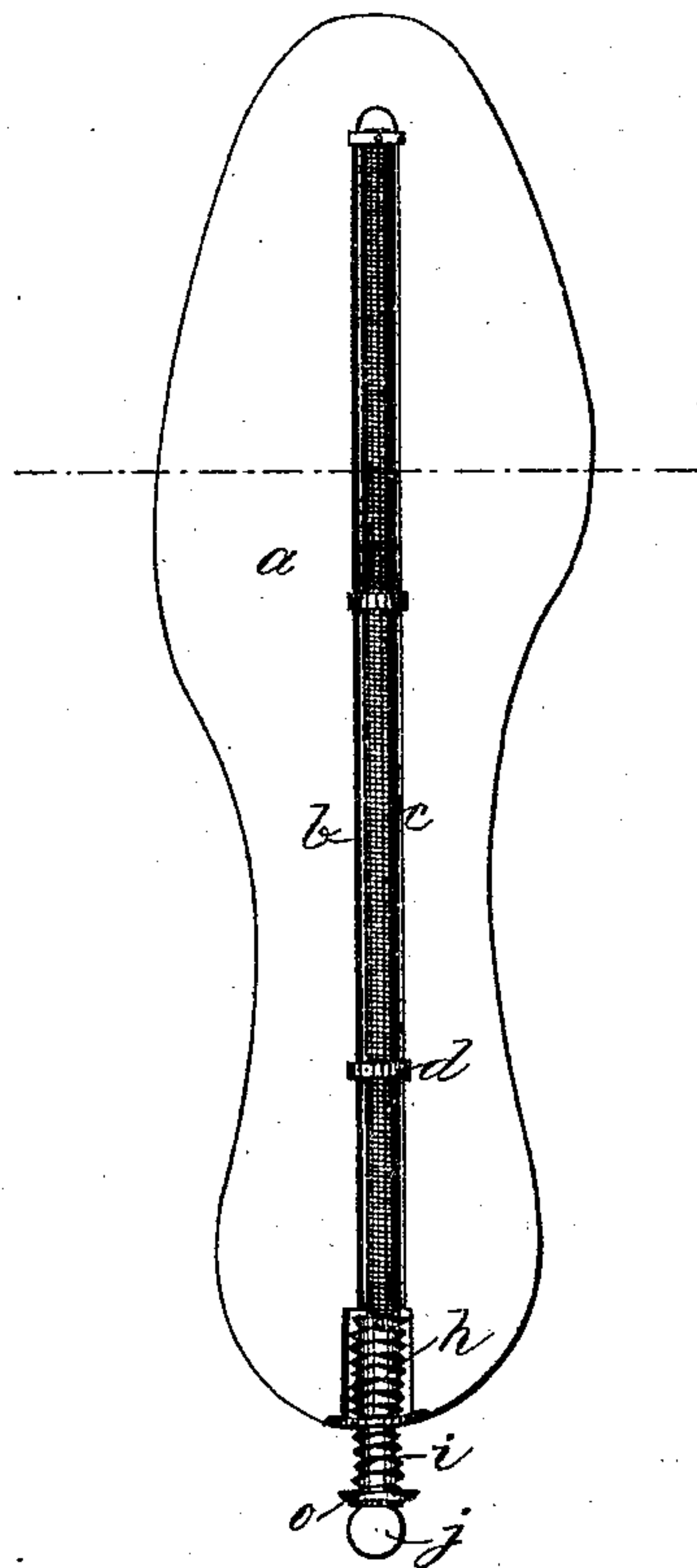
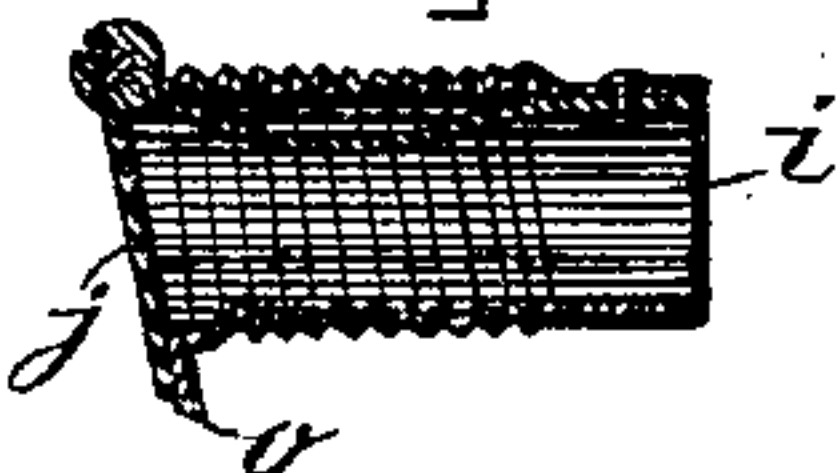


Fig. 6.



Fig. 7.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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VENTILATOR FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 454,880, dated June 30, 1891.

Application filed July 27, 1889. Serial No. 318,983. (No model.)

To all whom it may concern:

Be it known that I, PER ADOLPH PETTERSON, a citizen of the United States, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Ventilators for Boots or Shoes; and I 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.

My invention consists of an improved contrivance for a ventilating-insole in addition to the ordinary insole, and being insertible and removable for use or not, as required, for boots or shoes, the induction and eduction passage for the air being through the upper above the surface of the permanent sole, and being made with a detachable connection through the heel-upper, whereby the ventilator may be used or not, and the said passage being provided with a cap, which may be fixed in the open or closed position, as desired, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of a shoe provided with my improved ventilator, and being sectioned in parts to show the same. Fig. 2 is a plan view of the insole with one form of my improved ventilator. Fig. 3 is a plan of the same, showing a modification of the ventilator. Fig. 4 is a transverse section of the ventilating-insole on line *xx*, Fig. 3. Fig. 5 is a longitudinal section of the heel of a shoe provided with my improved ventilator on an enlarged scale. Fig. 6 is a detail of a ventilating-tube as sometimes arranged, and Fig. 7 is a detail of the detachable connecting device.

I employ an insertible and removable cork insole *a*, but may of course use any other approved substance or a combination of different substances in addition to the ordinary permanent sole, and make a groove or channel *b* along the upper surface from the heel nearly to the toe, said groove or channel being deep and wide enough to afford space for a practicable ventilating-tube *c*, which I fit therein, securing it with staples *d* or other improved means, and if necessary, owing to the depth of the groove, re-enforcing the bottom with a

leather binder *e*, pasted on or otherwise secured to prevent it from breaking or tearing asunder along the groove.

If I use a rubber tube, as is indicated in Fig. 2, I will make it in about three sections parted a little at the ends, as shown at *f*, for the induction and eduction of the air thereat, and will bush the open ends with distending rings *g*, of metal or other approved substance, to keep the ends open, and these rings may be flattened a little, as indicated in Figs. 2 and 6, to dispose them in the level of the surface of the insole, the groove being slightly widened to accommodate the lateral spread due to the flattening. A continuous tube with perforations at intervals along it may of course be used instead of the sectional device which I have shown and described, and I will employ such tube when desired; but the sectional arrangement with the distending rings is preferred.

At the heel of the insole the ventilating-tube *c* is stretched on or otherwise connected with a screw-threaded bush *h*, the outer end of which abuts against the inside of the heel-upper *l*, coincident with the ventilating-opening through said heel, and receives another screw-threaded bush *i* leaving a flange-head *o* at the outer end, and being inserted from the exterior of the shoe to connect the ventilator-tube from the outside and by its flange-head close the portion of the opening through the heel exterior to the bush, it also makes the detachable connection of the ventilating-insole with the heel of the shoe. At the outer end of the bush *i* a cap *j* is hinged to it, so as to close or open the passage as desired, and a stop-spring *k* and notches *n* in the eye of the hinge-joint are suitably provided for fastening the cap open or closed as occasion may require, the cap being preferably so as to swing upward for opening.

In Fig. 3 I have represented a ventilating-tube consisting of a closely-coiled wire, which is a plain, simple, and neat conductor, quite flexible and forming an effective conductor and equal distributor without any special openings, the air passing freely and uniformly between the coils of wire. This form of conductor may be stretched over bush *h*, like the rubber tube, for effecting the connection therewith, or it may be connected in any approved

way. A muslin or other approved cover *m* may be pasted or otherwise applied to the upper surface of the insole to cover the metallic attachments and re-enforce the partly-separated insole on the upper side.

It will be seen that besides the inward and outward impulses of the air produced by the tread and lift of the foot there is a further like influence caused by the contraction and expansion of the flexible tube which the tread of the foot above it effects.

Such improved ventilating-insoles may be made and sold separately from the boots or shoes and be applied at any time simply by making the hole in the heel-upper and inserting the insole in the boot or shoe and coupling it through said hole by the bush *i*.

I claim as my invention—

1. The combination, with an insertible and removable insole additional to the ordinary permanent insole and having a longitudinal groove extending from the heel forward, of the ventilating-tube of flexible material located in said groove and having distributing outlet and inlet passages along the same between detached sections having the distended rings in the ends, substantially as described.

2. The combination, with a boot or shoe having an air-passage through the upper at the heel and above the ordinary insole, of the insertible and removable ventilating-insole having an air conducting and distributing tube extending along it and detachably coupled by a screw-threaded bush attached to said tube, with the flanged screw-bush inserted through the hole of the upper, substantially as described.

3. The combination, with a boot or shoe, of an insertible and removable insole having a ventilating-tube extending along the same, a bush connecting with one end of said tube through a ventilating-opening of the upper above the permanent insole, and the cap for closing and opening the air-passage and being self-fastening in either position, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 19th day of July, 1889.

PER ADOLPH PETTERSON,

Witnesses:

W. B. EARLL,

W. J. MORGAN.