

(No Model.)

J. H. McKECHNIE.
VENTILATED RUBBER SHOE.

No. 429,944.

Patented June 10, 1890.

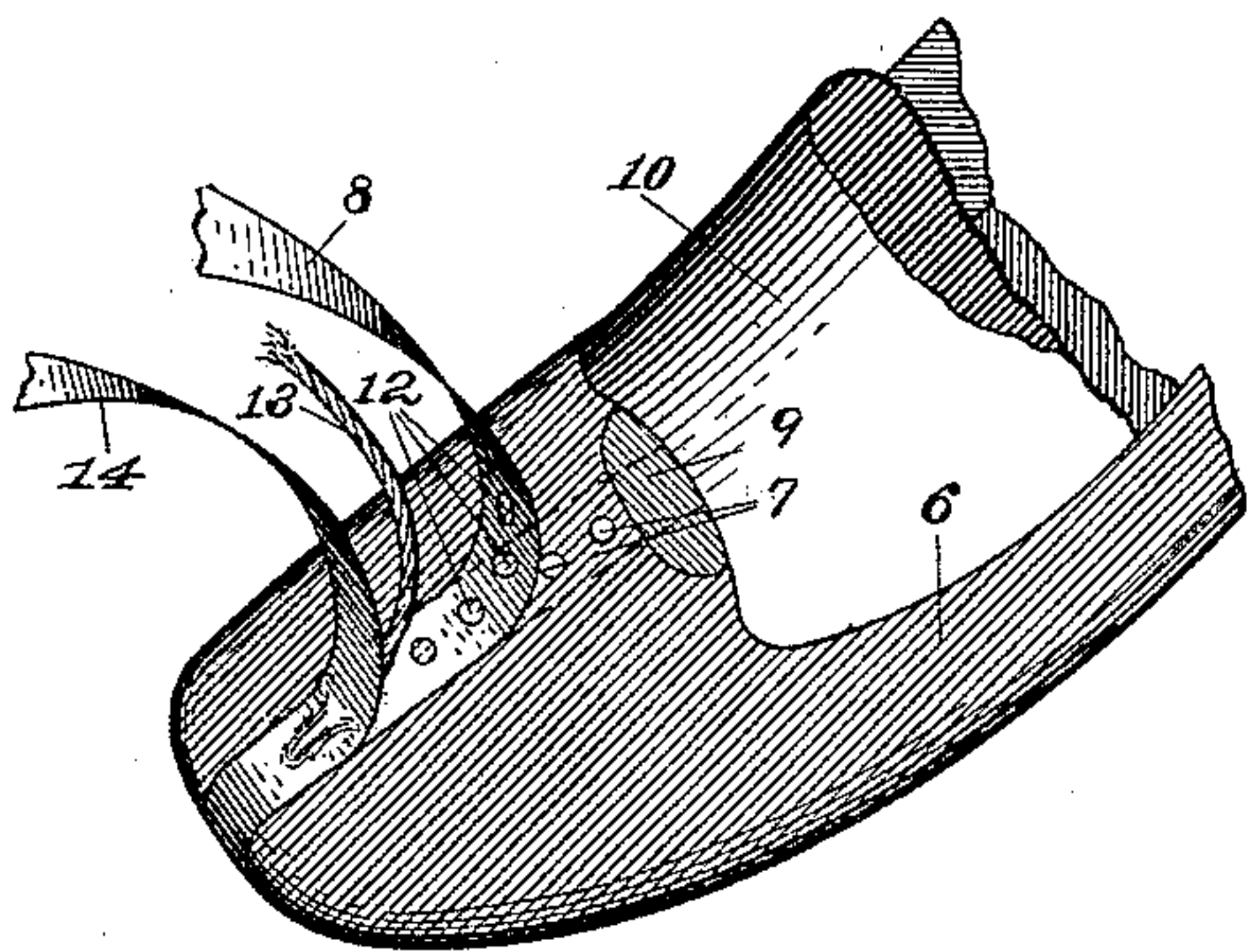


Fig. 6

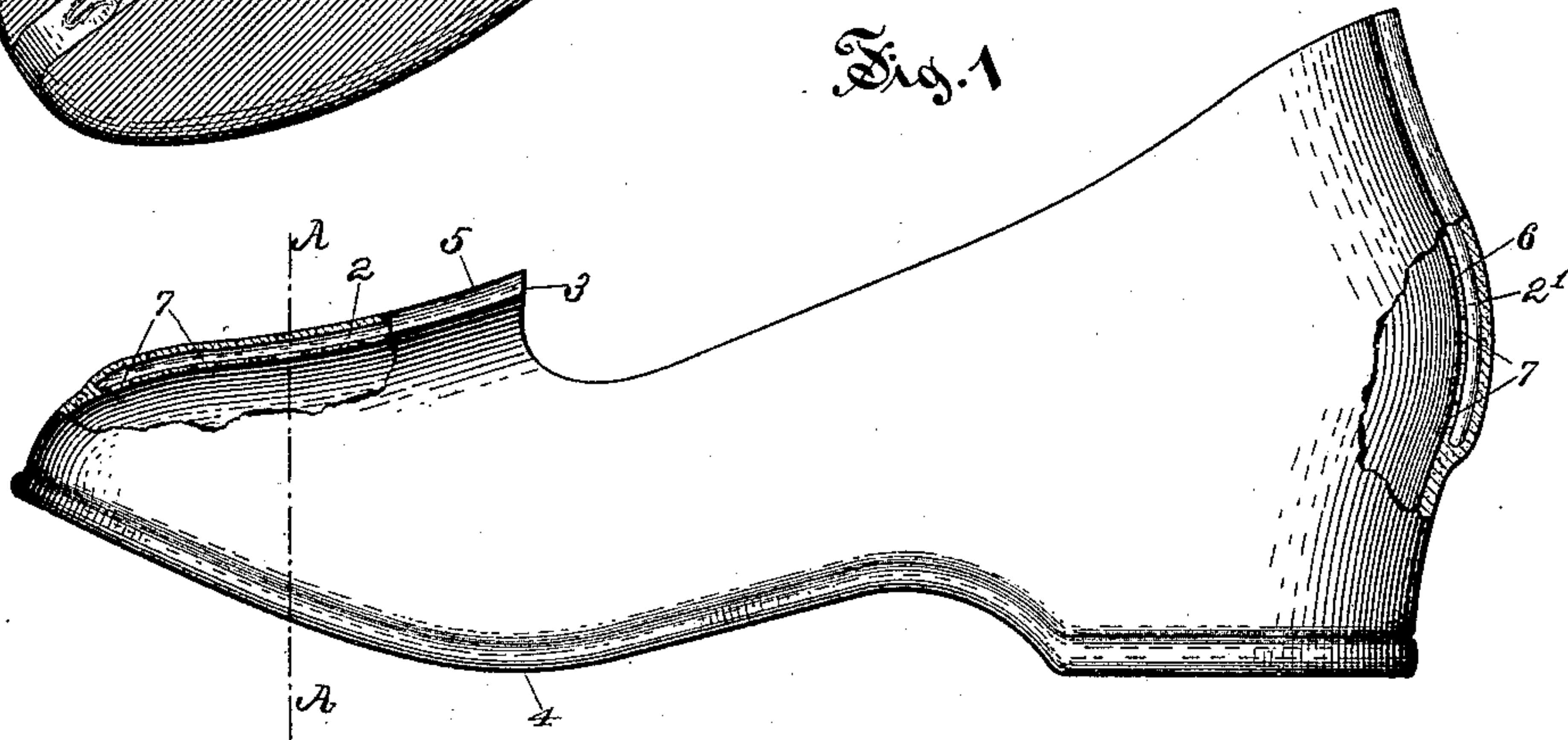


Fig. 1

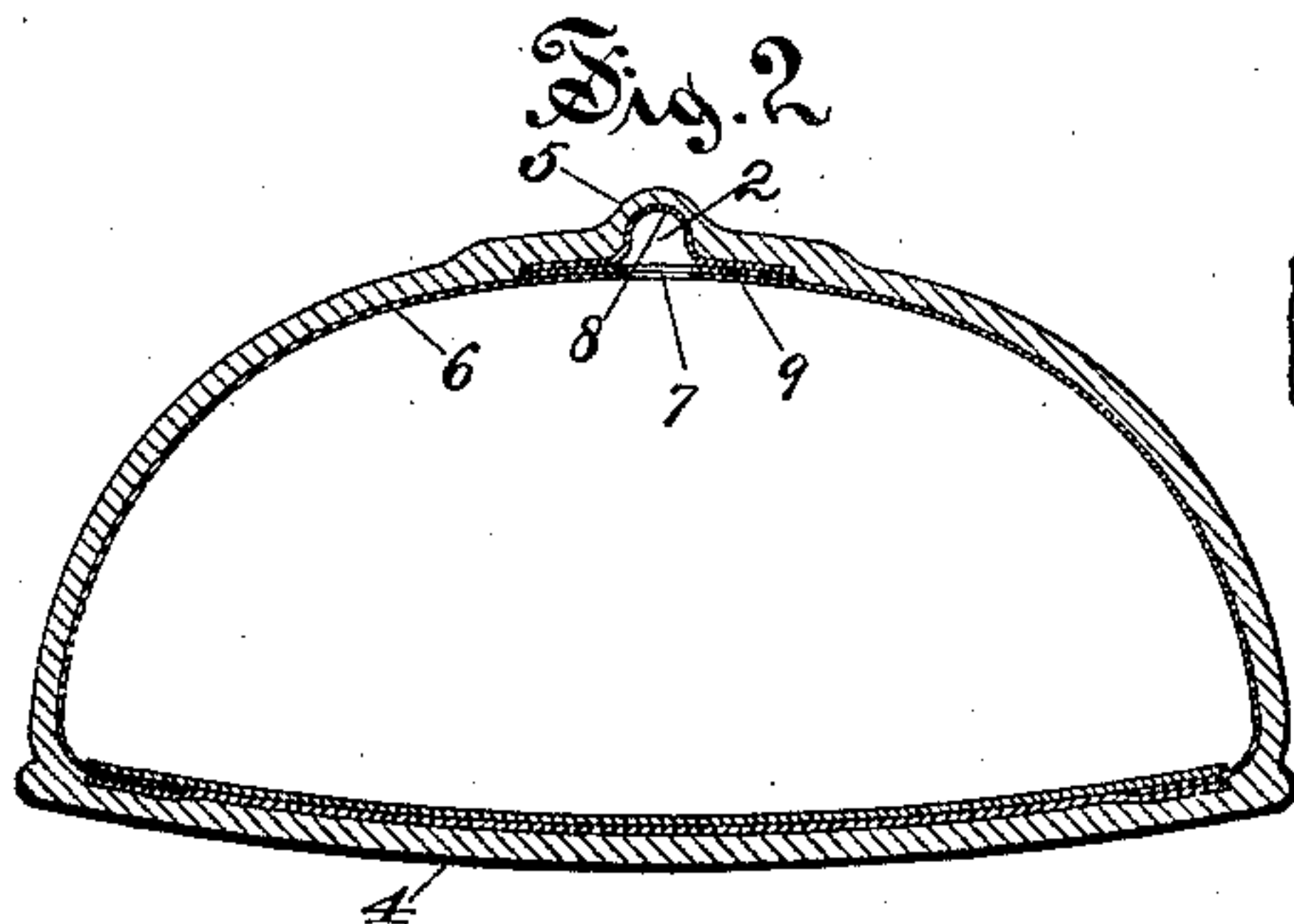


Fig. 2

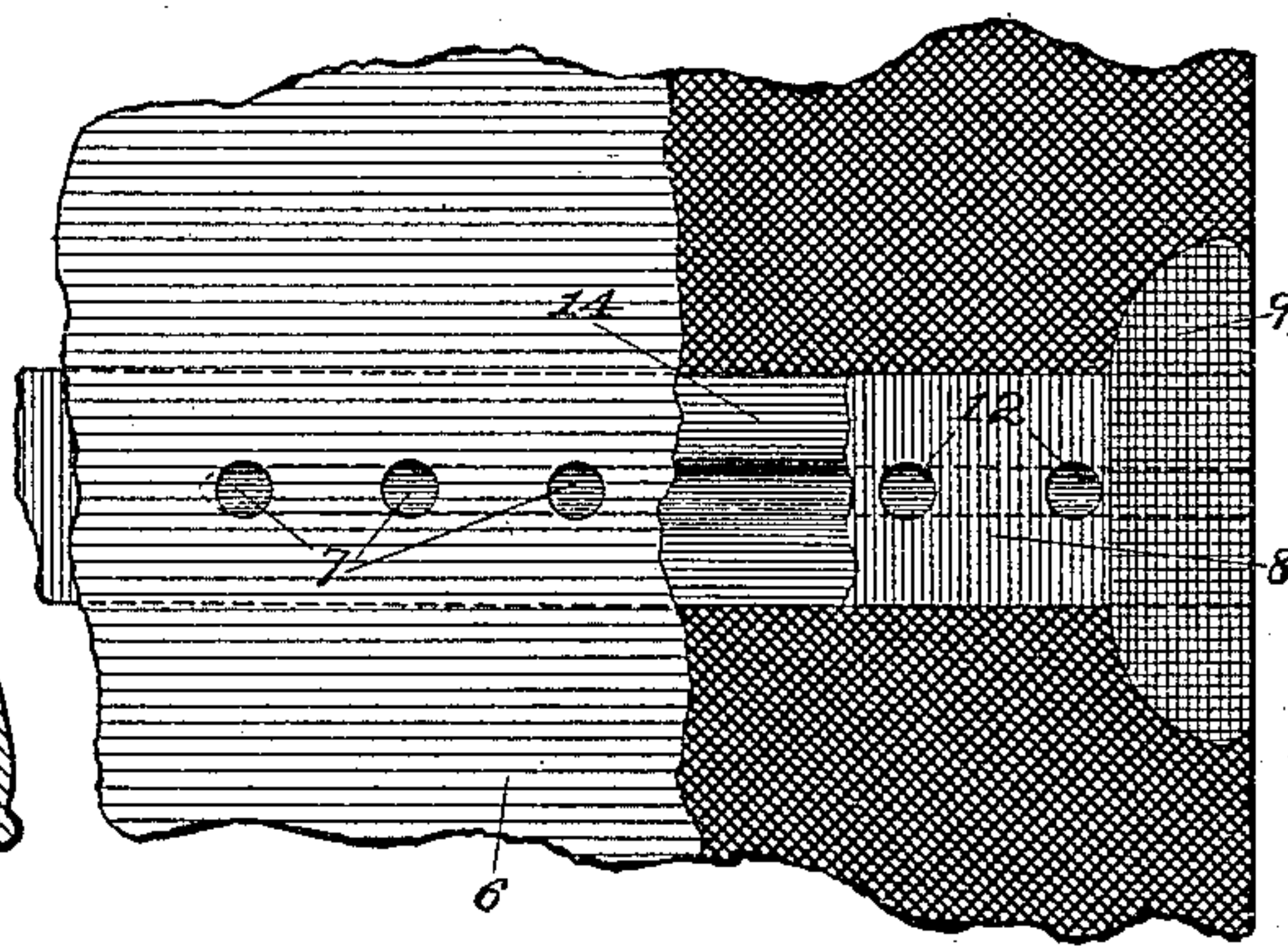


Fig. 3

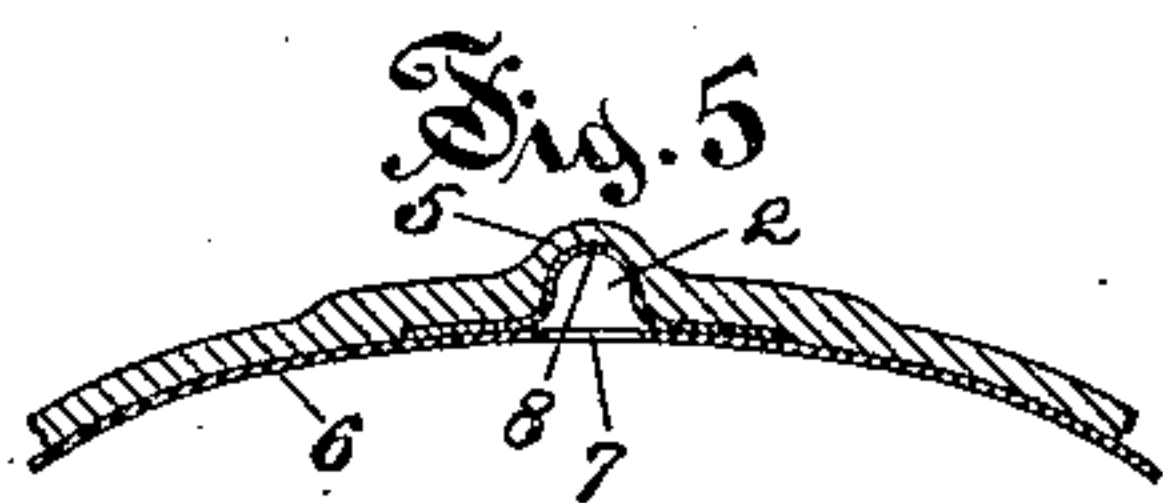


Fig. 5

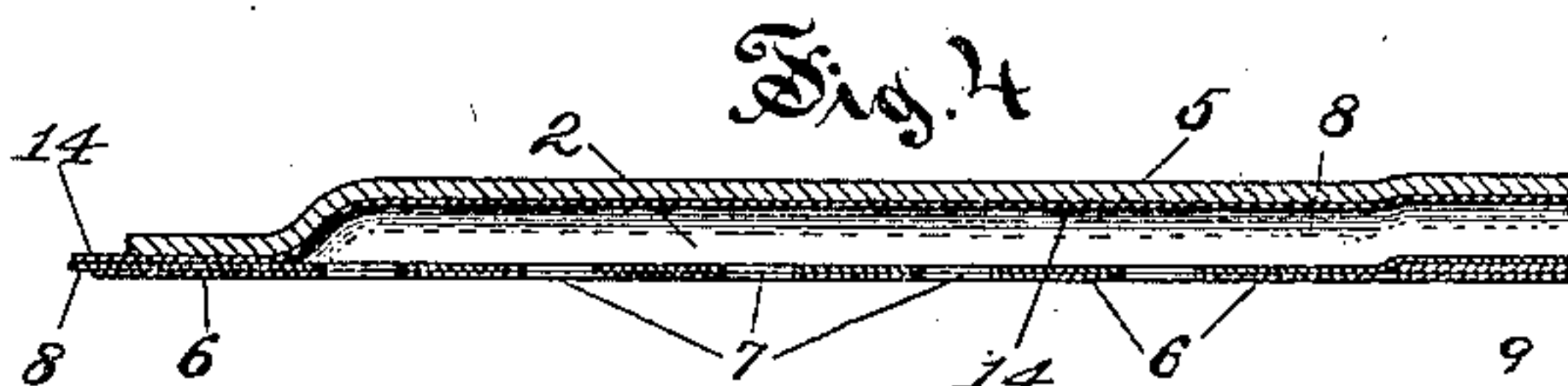


Fig. 4

Witnesses:

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UNITED STATES PATENT OFFICE.

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VENTILATED RUBBER SHOE.

SPECIFICATION forming part of Letters Patent No. 429,944, dated June 10, 1890.

Application filed March 19, 1890. Serial No. 344,526. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. McKECHNIE, a subject of the Queen of Great Britain, and residing at Granby, county of Shefford, in the Province of Quebec, and Dominion of Canada, have invented certain new and useful Improvements in Ventilated Rubber Boots or Shoes, of which the following is a specification.

This invention especially relates to rubber shoes, boots, and overshoes; and it consists in means for ventilating those articles of footwear in the heel and toe spaces or in other parts thereof and in the methods set forth for making the said articles.

In the drawings accompanying and forming a part of this specification, Figure 1 is a side elevation of a rubber shoe embodying my improvements. Fig. 2 is a sectional view in line A A, Fig. 1. Fig. 3 is a plan view of the inner side of the front or top of the shoe. Fig. 4 is a sectional view through the ventilating-tube and is drawn in projection with Fig. 3. Fig. 5 is a view similar to a part of Fig. 2, showing one modification of the construction of the ventilating-tube. Fig. 6 illustrates the method of making the shoe and the ventilating-channel therein.

Similar characters designate like parts in all the figures.

In my improved shoe or boot the ventilating tube or channel 2 is carried from the top line 3, or from some point well above the sole 4, down to the space or spaces to be ventilated. The said ventilating-channels may be used one at the heel, as at 2', Fig. 1, and one at the front, as at 2 in said figure. Usually, however, the front ventilator 2 will be sufficient.

In constructing my improved shoe I make an outward curvature or arch 5 in the principal layers of the material thereof, and thus form the outer wall of the channel 2, whose inner wall is or may be the lining 6 of the shoe. Communication between the interior of the shoe and said ventilating-channel is made through a series of holes 7 at suitable distances apart in said lining-layer 6 of the shoe. By this construction the lining becomes not only the inner wall of the tube 2, but also serves as the "strain-sheet" for holding the shoe together. For this latter purpose, however, and since the said lining is usually a soft

and very elastic fabric, I employ for all, except the lightest weights of shoes, a supplemental sheet 8 to re-enforce the lining and prevent destruction of the tube; also, and especially in the heavier weights of shoes and in those having a very yielding lining, I sometimes use the edge re-enforcing strip 9, set on the lining crosswise to the direction of the tube and extending beyond the sheet 8 on either side thereof. This re-enforcing member 9 gives to the lining greater strength for preventing a tear from starting at that point, and gives to the upper end of the tube the rigidity and strength necessary for preventing the closing of said tube at that point by the stretching out of the upper edge of said lining. In some grades of rubber shoes the strip 9 may be used to the exclusion of the sheet 8; but in other grades I use both said strip and said sheet. In making the shoe having said tube therein I first apply the lining 6 to the last 10, as in Fig. 6. The perforations 7 being formed in said lining, the sheet 8 is next applied, so that its perforations 12 correspond with the holes 7; or the sheet 8 unperforated may be applied to the perforated lining and the holes then made through both by a suitable eyeletting-punch in a well-known manner. The strip 9, if used, may be applied under or over the sheet 8. Next the tube or channel core 13 is applied over the perforations and the outer layer or layers of the shoe formed or "molded" over the same. In practice I first apply the sheet 14 and "arch" the same upon the lining over the channel-core 13 and then put on the rubber surface-layer over the whole shoe, after which the shoe is vulcanized in the usual manner and the core then drawn out of the tube; but in some cases, as when the surface-layer of rubber is of extra thickness, the separate sheet 14 may be dispensed with. It will be understood that the several pieces 6, 8, 9, and 14 (but not the core 13) are, previous to using, made adhesive by treating them with the preparations usually employed for like purposes in the manufacture of ordinary rubber shoes.

Having thus described my invention, I claim—

1. A rubber boot or shoe having a ventilating tubular channel formed of and projecting

above the surface of the body thereof, said channel communicating with the interior of the boot or shoe by a series of openings formed at the inside and along the line of the said
5 channel, substantially as described.

2. In a ventilated rubber shoe, the combination, with the perforated lining, of the re-enforcing sheet, arched substantially as described, and the edge re-enforcing strip 9, all
10 substantially as shown and described.

3. In a ventilated rubber shoe, the combination, with the perforated lining, of the sheet 8, correspondingly perforated and applied to said lining, the arched outer layer, and the strip 9, contiguous to the edge of the lining, 15 all substantially as described.

JAMES H. McKECHNIE.

Witnesses:

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