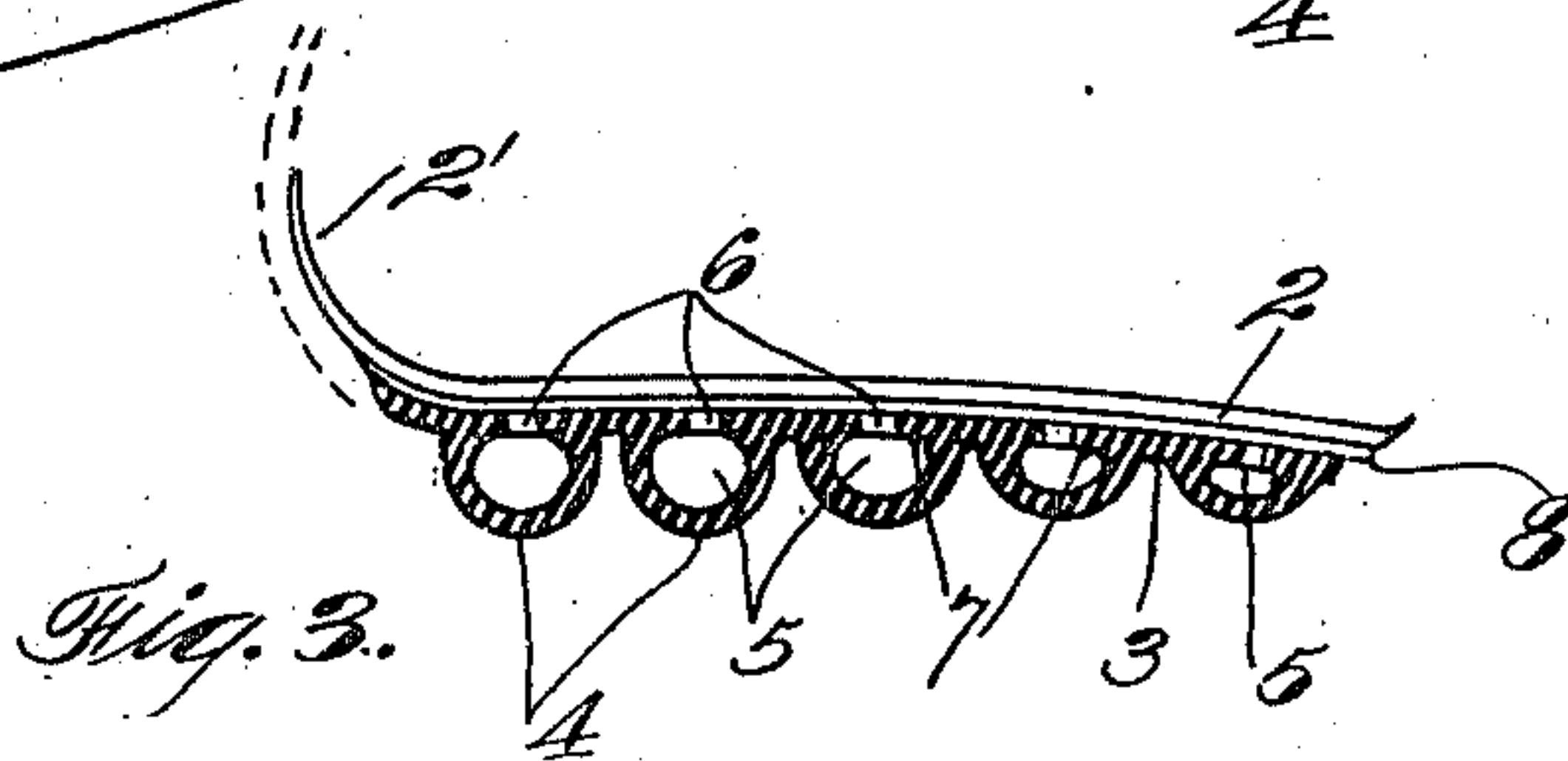
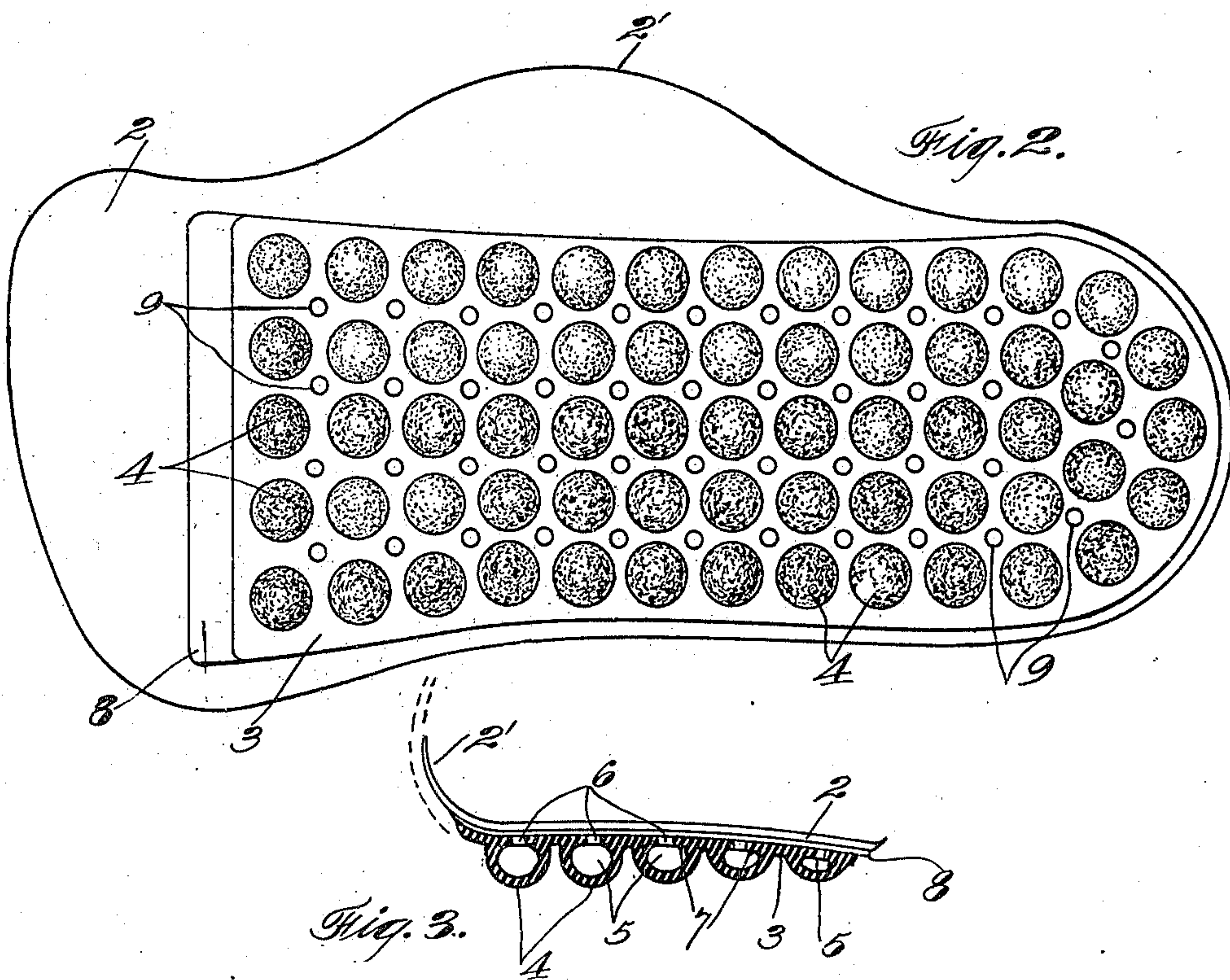
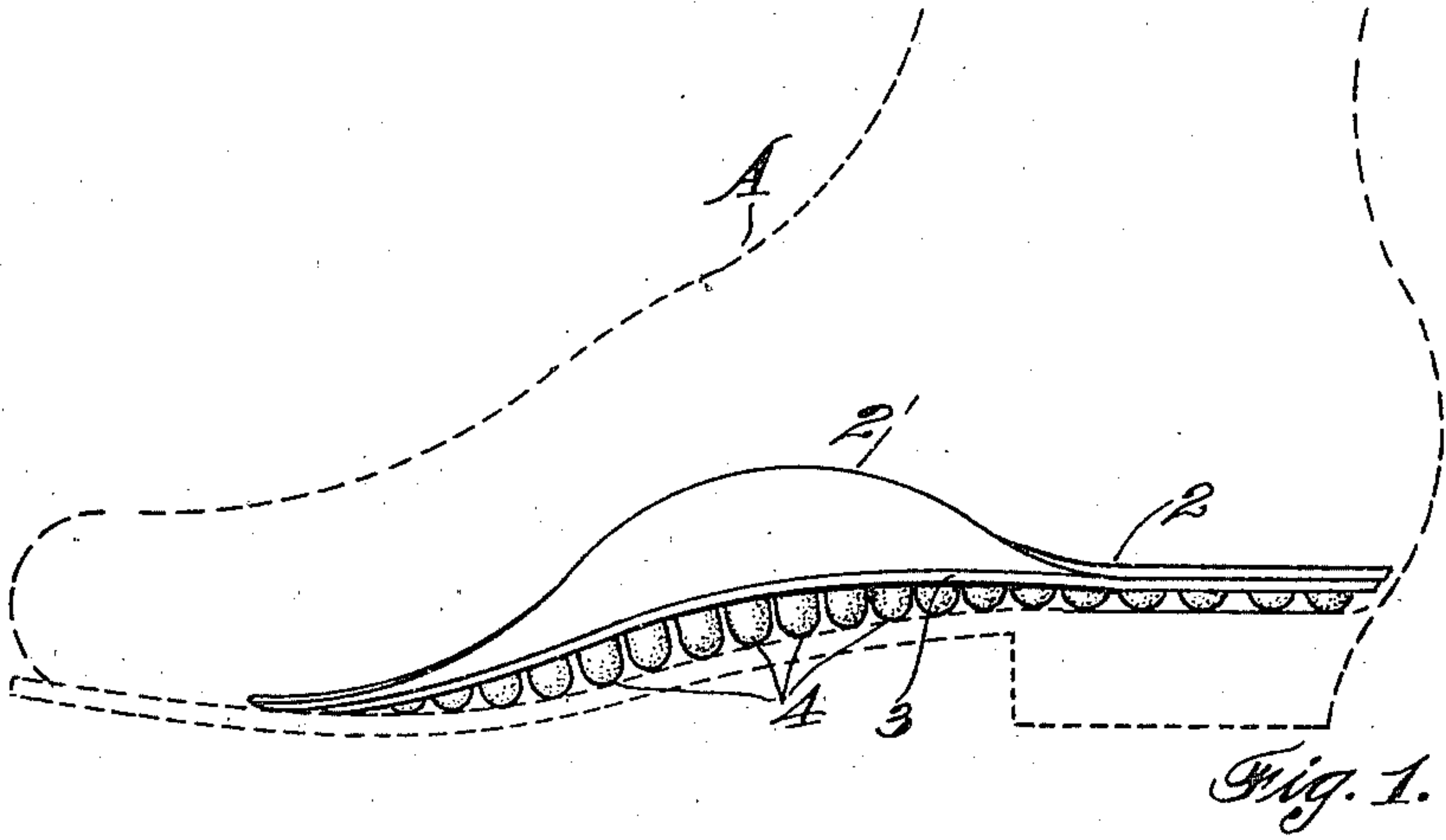


M. BYRNE.  
PNEUMATIC INSOLE AND ARCH SUPPORT.  
APPLICATION FILED JUNE 14, 1909.

989,894.

Patented Apr. 18, 1911.



Witnesses:  
H. C. Maynard  
J. H. Hoberg

Inventor;  
Matthew Byrne,  
By Geo. H. Strong  
his Attorney.



# UNITED STATES PATENT OFFICE.

MATTHEW BYRNE, OF SAN FRANCISCO, CALIFORNIA.

PNEUMATIC INSOLE AND ARCH-SUPPORT.

989,894.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed June 14, 1909. Serial No. 502,165.

*To all whom it may concern:*

Be it known that I, MATTHEW BYRNE, citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Pneumatic Insoles and Arch-Supports, of which the following is a specification.

This invention relates to pneumatic heel cushions and arch supports to be inserted into boots and shoes for the purpose of affording a yielding support for the foot, and to give an arched effect to the instep.

One object of the present invention is to provide means for giving a more perfect arch to the instep, which is done by elongating the cushioning protuberances along the inside of the hollow of the foot.

Another object is to provide a simple means for keeping the cushion in place, and this is done by forming a flexible, lateral flap on the insole, and then extending this up along the inside of the foot.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 shows the device applied. Fig. 2 is a bottom plan. Fig. 3 is a cross section.

A represents a shoe or boot, to which the invention is applicable.

2 is a leather insole adapted to be inserted into the shoe, and shaped thereto so as to extend over the heel and shank. The cushion attachment is applied to this insole, and the latter is provided with a lateral bendable flap portion 2', proximate to the shank portion, and preferably arranged so that this flap may be bent upwardly inside the shoe, and lie against that portion of the upper which is proximate to the inside hollow portion of the foot. This bendable part 2' forms a lock fitting into the hollow of the side portion of the foot, and experience shows that there is little or no tendency of the insole to creep or slip where this flap is used. By means of this flap, it is found that no further securing means is necessary, as the insole with its attachment, will keep its proper place in the shoe under all ordinary conditions of wear and use, and without inconvenience to the wearer. This securing flap 2' is one important feature of the present invention. The other important feature

is the making of the pneumatic knobs or protuberances 4 with which the cushion effect is produced, longer on that side of the attachment which is under the more hollow inner side of the foot, and tapering off the length of these protuberances gradually toward the other or outer side of the foot. These hollow protuberances 4 are formed in a suitable manner, their cavities being preferably sealed. In actual practice I employ a sheet of rubber, as 3, of suitable thickness, and of a shape conforming to the heel, or to the heel and shank, and on which sheet the hollow protuberances 4 are molded. Preferably the cavities in the protuberances are sealed by gluing, or otherwise securing a rubber sheet 8 to the top of the cushion sheet 3; the sheet 8 then being glued to the under side of the insole 2; the length of the cushion sheet depending on the character of the spring support desired.

Since the foot is more nearly straight along its underneath outer edge, between the ball of the foot and the heel, and gradually hollows out more or arches toward the opposite side of the foot, and which hollow extends upwardly toward the ankle, it is desirous in order to evenly support the foot, and give the best arched effect, to taper off the protuberances 4 transversely of this cushion, as shown in Fig. 3, as well as to gradually decrease the height of these underneath yielding projections from the center of the shank portion toward each end of the insert.

The insole 2, with its cushion sheet and yielding underneath projections 4, constitutes the insert: and these inserts are made in rights and lefts and according to different sizes of shoes, and for each pair of inserts the locking flaps 2, and the highest yielding projections 4 are adjacent to each other.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An arch support of flexible material shaped to fit within the heel portion and across the shank of a shoe, and having the shank portion thereof provided with an arched cushion composed of a series of yielding projections, which projections are longest along one side edge of the support, and taper off gradually in length toward the opposite side thereof, and said support having means freely bendable be-



tween its ends extending upwardly within the shoe engageable by the foot of the wearer to hold the support in place.

2. A cushioned heel and arch support consisting of an insole formed of leather shaped to fit over the heel and shank of the inside of a shoe, and the shank portion of the insole having a bendable flap engaging the sides of the shoe to maintain the insole in place, and a yielding cushion on the under side of said insole, said cushion comprising numerous yielding underneath pro-

jections, which projections are longest on that side proximate to said holding means on the insole, and are shortest on the opposite side of the cushion. 15

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MATTHEW BYRNE.

Witnesses:

CHARLES A. PENFIELD,  
EDWIN B. DAVENPORT.