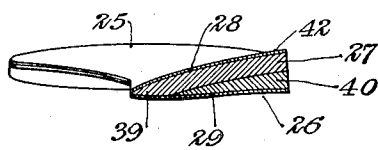
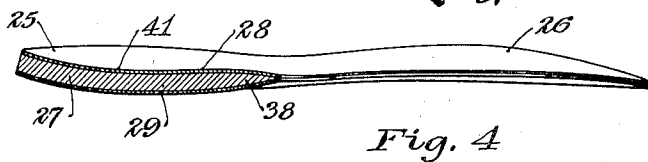
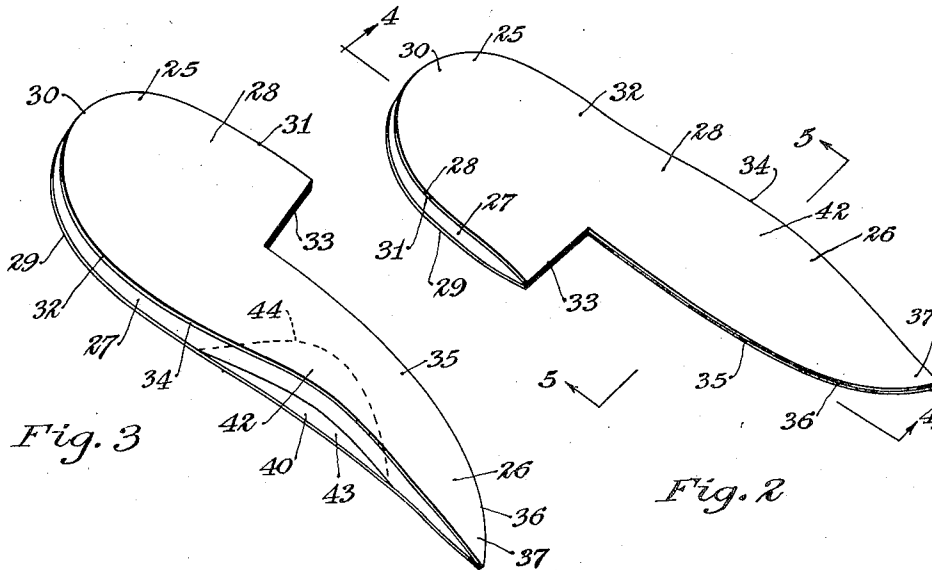
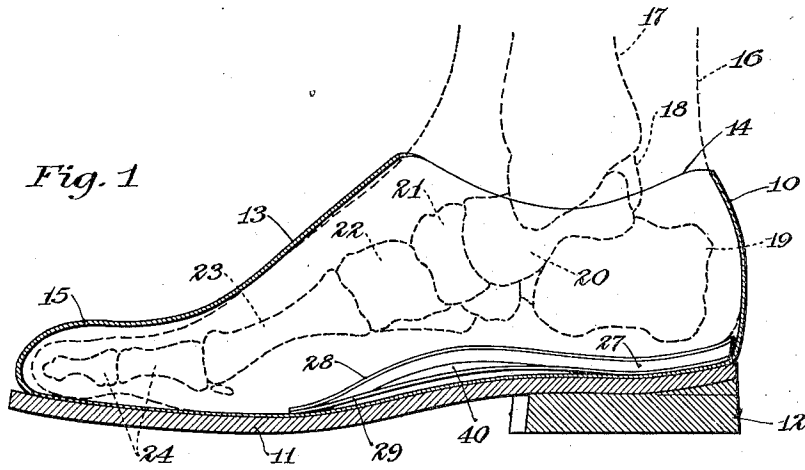


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C. J. BOHMBACH
ORTHOPEDIC APPLIANCE
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Inventor

Chris J. Bohmbach

By Brewell & Lagaard
Attorneys

UNITED STATES PATENT OFFICE

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ORTHOPEDIC APPLIANCE

Chris J. Bohmbach, Red Wing, Minn.

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2 Claims. (Cl. 36—71)

My invention relates to orthopedic appliances and has for its object to provide a combined arch support and heel pad.

Another object of the invention resides in providing an appliance which may be worn in the shoe of the wearer and which may be permanently retained therein.

A still further object of the invention resides in providing an appliance which forms a cushion for the os calcis or the heel bone and which at the same time provides a convex pillow for relieving the strain upon the arch of the foot and for supporting the astragalus, scaphoid and cuneiform bones.

A feature of the invention resides in constructing the arch support integral with the heel pad.

An object of the invention resides in constructing the arch support of a width less than the width of the sole of the shoe with which it is used.

Another object of the invention resides in constructing the heel pad of a length such that the same terminates along an anterior transverse line in proximity to the cuneiform bones of the foot of the wearer.

A still further object of the invention resides in constructing the arch support so that the same terminates along a medial line extending longitudinally from the anterior portion of the arch support to the anterior terminal line of the heel pad.

A feature of the invention resides in constructing the appliance with a cushion member having facings on either side thereof, said facings and cushion members being all continuous throughout both the heel pad and the arch support.

An object of the invention resides in reducing said cushion member in thickness along a medial longitudinal line extending from the anterior portion of the arch support to a portion thereof in proximity to the cuneiform bones of the foot of the wearer.

Another object of the invention resides in reducing the thickness of the appliance along a transverse line located in proximity to the cuneiform bones of the foot of the wearer and extending from the first named line to the outer portion of the appliance.

A still further object of the invention resides in increasing the thickness of the cushion member within the arch support and along the interior lateral portion thereof.

Other objects of the invention reside in the novel combination and arrangement of parts and

in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a longitudinal sectional elevational view of a shoe illustrating an embodiment of my invention applied thereto.

Figs. 2 and 3 are perspective views of detached right and left hand appliances.

Fig. 4 is a longitudinal sectional view taken on line 4—4 of Fig. 2.

Fig. 5 is a cross sectional view taken on line 5—5 of Fig. 2.

Where orthopedic appliances are to be used in conjunction with the foot for relieving the discomforts of and for correcting the deformity caused by broken or fallen arches, it is highly desirable not only to provide a support for the broken or weakened arch of the foot but to provide a cushion for the heel bone of the foot. In addition, it is highly desirable to maintain an exact relation between the arch support and the seat for the heel bone which relation differs for different feet. The present invention provides an extremely simple and effective appliance in which these various advantages are readily procured.

For the purpose of illustrating the application of my invention, I have shown in the drawing an ordinary shoe 10 consisting of a sole 11 and having a heel 12 attached thereto. The shoe 10 further comprises the usual uppers 13 including the quarters 14 and the cap 15 which may all be constructed in the usual manner. Inasmuch as the construction of the shoe does not form any particular feature of this invention, I have only shown the shoe diagrammatically without indicating the particular construction thereof. It will presently become apparent that the invention may be used with any type or form of shoe.

In order to more fully comprehend the application and use of the invention, I have shown diagrammatically the foot 16 of the wearer within the shoe 10. In addition, I have illustrated in dotted lines the various bones of the foot. The tibia is indicated at 17 while the fibula and the os calcis are respectively indicated at 18 and 19. The astragalus and scaphoid bones are represented by the numbers 20 and 21 while the cuneiform and metatarsal bones are indicated at 22 and 23. The numeral 24 represents the phalanges. Where the condition of flat feet or broken arch occurs, the cuneiform and scaphoid bones drop causing the abnormal condition which I am able to correct with the instant invention. In the

drawing, bones are illustrated as held in proper position with my appliance.

The invention proper is constructed with rights and lefts and is also made in various sizes to fit different feet. In Figs. 2 and 3 I have shown in perspective a right appliance and a left appliance. Inasmuch as both of these appliances are identical in construction excepting as to the differences pointed out, only that shown in Fig. 2 will be described in detail. The appliance comprises a heel pad 25 and an arch support 26 which are integrally connected together. These structures are formed with a common cushion member 27 constructed of felt or some other suitable material having considerable resiliency and yet sufficient body to form a support for the foot of the wearer. Upon the upper surface of the cushion member 27 is disposed a facing 28 while upon the lower surface of this cushion member is disposed a facing 29. These two facings are preferably constructed of leather or some other flexible and wear resisting sheet material and serve to hold the cushion member intact. The facings 28 and 29 may be cemented or stitched to the cushion member 28 or the same may be secured together in any suitable manner to form a composite rigid construction.

The heel pad 25 is constructed in the shape of the heel of a shoe having the posterior portion thereof indicated at 30 curved and with the interior and exterior lateral edges 31 and 32 extending in a longitudinal direction. The heel pad 25 terminates at the anterior portion thereof along a line 33 which is situated in proximity to the cuneiform bones of the foot and which extends from the outer lateral edge of the appliance laterally inwardly. The arch support 26 is constructed so as to form a continuation of the heel pad 25 and has its interior lateral edge 34 extending in continuation of the edge 32 of the heel pad 25. This structure terminates at the interior thereof along a longitudinal line 35 which is disposed in proximity to the medial plane of the foot of the wearer and which extends from the edge 33 of the heel pad 25 in an anterior direction longitudinally of the appliance. The extreme edge 36 of the arch support 26 is curved from the edge 35 to the tip 37 thereof meeting the outer edge 34.

In the construction of the heel pad, the portions of the cushion member 27 which I have indicated at 38 and 39 and which follow along the line 33 of the heel pad 25 and line 35 of the arch support 25 are tapered or reduced in thickness as best shown in Figs. 4 and 5 so that the appliance gradually tapers down to a feather edge along these lines. If desired the edges of the facings 28 and 29 may be skived to further reduce the thickness of the appliance at these particular localities.

At a position on the arch support 26 immediately below the scaphoid bone 21 and cuneiform bones 22 of the foot is disposed an auxiliary cushion member 40 which is situated between the facing 29 and the cushion member 27. The construction of this member may best be seen in Figs. 1 and 3. The cushion member 40 is constructed with an edge 43 conforming in curvature with that of the edge 34 of the arch support 26 and is formed with a rounded edge 44 meeting the edge 43. This cushion member is preferably tapered or skived toward the edge 44 so that when the same is inserted within the arch support a hump 42 is formed on the arch support which tapers off gradually to the thickness of the major portion thereof. This auxiliary cushion

member increases the thickness of the arch support in proximity to the concavity of the arch of the foot to support and protect the astragalus scaphoid and cuneiform bones thus relieving the strain upon the arch. It can readily be comprehended that size and thickness of the pad 40 may be varied to meet with the requirement of the foot condition of the particular individual to whom the appliance is to be fitted. The auxiliary cushion member 40 may be cemented or otherwise secured within the arch support so as to be held firmly in place.

In the use of the invention, the appliances are selected to fit the particular shoe and foot of the wearer. The appliances are then merely placed within the shoe and the shoe applied to the wearer's feet in the usual manner. In the application of the appliances to the shoe, the edges 32 and 34 of the same are disposed along the interior lateral portion of the shoe while the heel pad 25 is pulled well back into the shoe to fit snugly within the same. Upon placing the weight of the feet upon the sole of the shoe and the appliances disposed within the same, the heel of the foot quickly forms a socket or depression in the heel pad which I have indicated at 41 in Fig. 4. This forms a seat for the heel which assists in holding the appliance in place within the shoe and prevents movement of the appliance when the user is walking or standing upon his feet. The weight of the foot upon the other portions of the appliance causes the same to fit the anterior of the shoe and to conform to the shape of the foot of the wearer. From Figs. 1, 4 and 5, it will readily become apparent that the hump 42 formed on the arch support fits within the concavity of the arch and operates in a manner to lend support to the bones of the foot so as to relieve the strain imparted to the muscles and tendons of the foot.

My invention is highly advantageous in that an extremely simple and effective appliance is provided for supporting the arch of the foot of the wearer and for cushioning the heel thereof. The appliance may be constructed to fit within any size or style of ladies' or men's shoe. The particular pad and arch support are constructed all in one so that proper correlation of parts is had at all times. The appliance is quite inconspicuous and may be left within the shoe when the shoe is removed thereby making it extremely simple and easy to use. The appliance is constructed solely of flexible material and is readily molded when the weight of the foot is applied thereto to fit the form to the form of the foot thereby making the device extremely easy to wear. The appliance is automatically held in place within the shoe through the weight of the foot upon the heel pad of the appliance so that the device is always in the proper position to give the support and relief desired.

Changes in the specific form of my invention as herein described may be made within the scope of what is claimed without departing from the spirit of the invention.

Having described my invention what I claim as new and desire to protect by Letters Patent is:

1. An article of the class described comprising a facing having heel and sole portions adapted to lie upon the heel and sole of a shoe, said facing at the sole portion thereof being of a width less than the width of the sole of the shoe and at the heel portion conforming to the shape of the heel of the shoe, an arch supporting pad on the sole portion of said facing of a width not in excess of the

width of said facing at such locality, and means located in the heel portion of said facing having a cupped formation for engagement with the heel of the foot of the wearer for assisting in holding the sole portion and arch supporting pad in place within the shoe.	
2. An article of the class described comprising upper and lower facings, said facings being adapted to underlie the heel and instep of the foot of the wearer, said facings at the portion under the instep extending transversely from one lateral edge up to a medial longitudinal line and terminating at such line, said facings further extending completely across the heel, said facings at one side of the heel forming a continuation of the instep portions and at the other side of the heel extending up to a transverse line located in proximity to the transverse posterior arch of the foot and terminating at such line, said facings meeting each other along said medial longitudinal line and said transverse line and being spaced from one another throughout the remainder of the periphery thereof, and a cushion member confined within the margins of said facings and disposed therebetween, said cushion member being reduced in thickness at said longitudinal and transverse lines and being of substantially uniform thickness elsewhere.	80
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CHRIS J. BOHMBACH.	90
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