Jan. 13, 1942. B. B. GOODMAN 2,269,815

SHOE

Filed Jan. 11, 1939 3 Sheets-Sheet 1

FIG. 1.

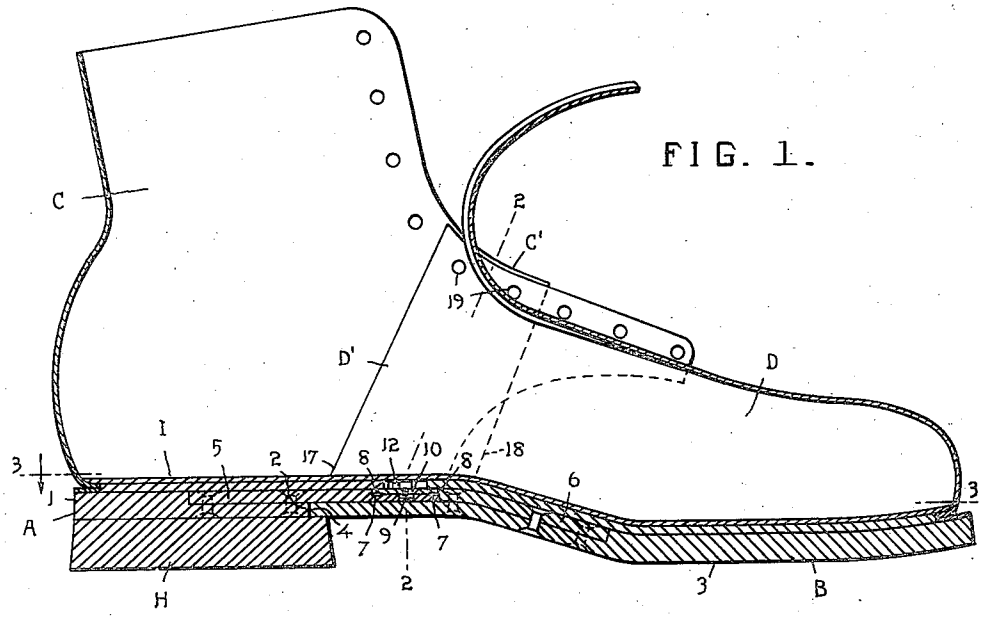


FIG. 3.

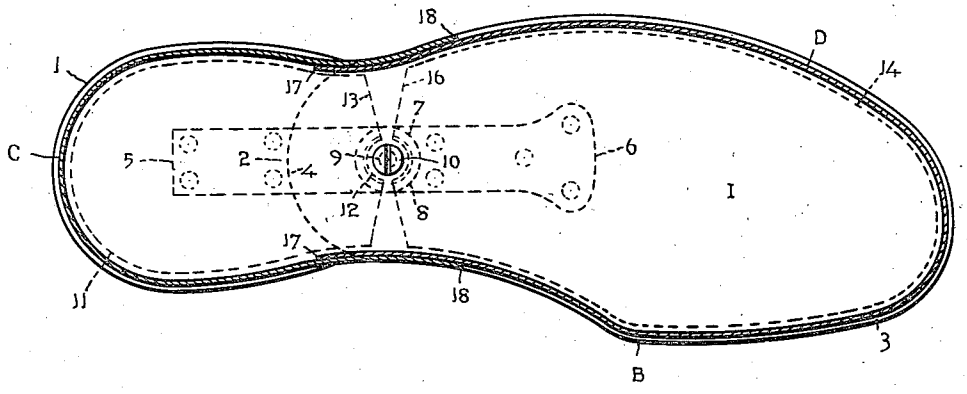
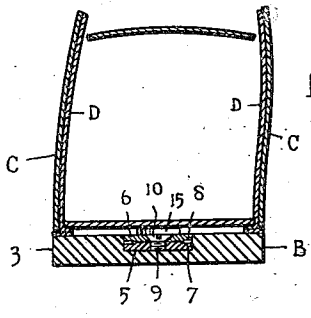


FIG. 2.



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Jan. 13, 1942. B. B. GOODMAN 2,269,815

SHOE

Filed Jan. 11, 1939 3 Sheets-Sheet 2

FIG. 4.

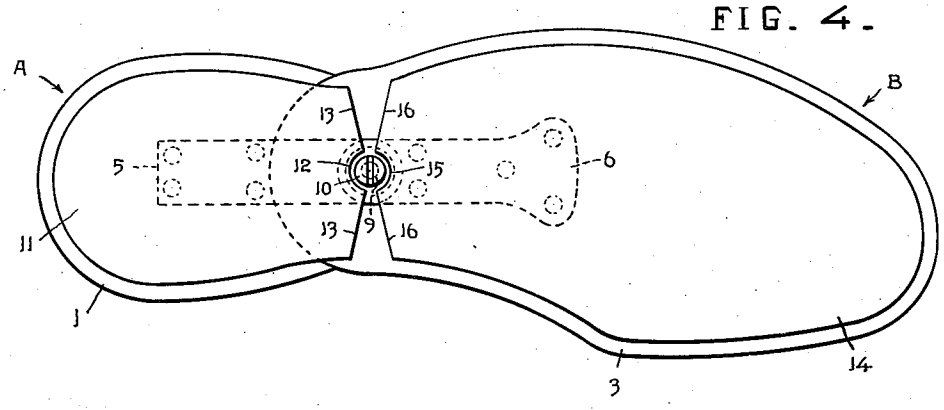


FIG. 5.

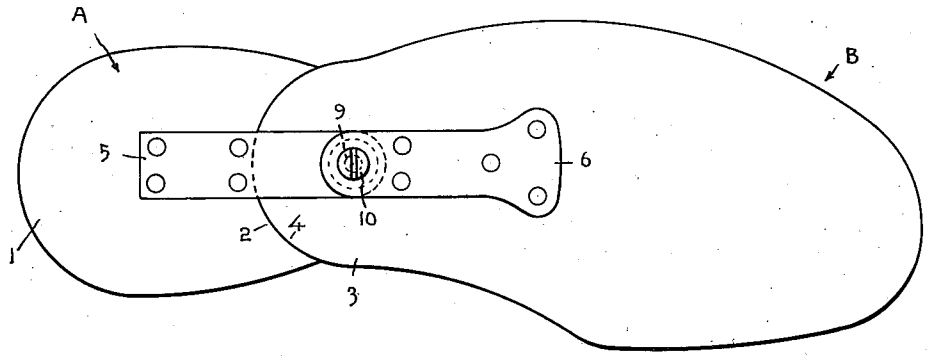
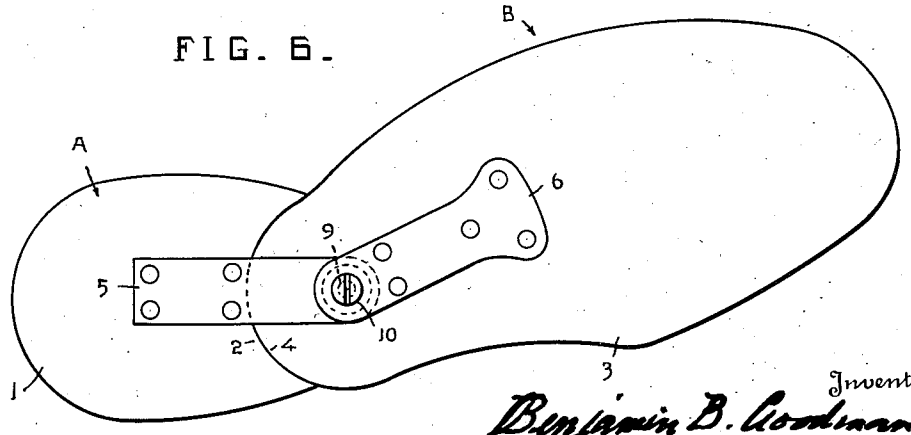


FIG. 6.



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Jan. 13, 1942. B. B. GOODMAN 2,269,815

SHOE

Filed Jan. 11, 1939 3 Sheets-Sheet 3

FIG. 7.

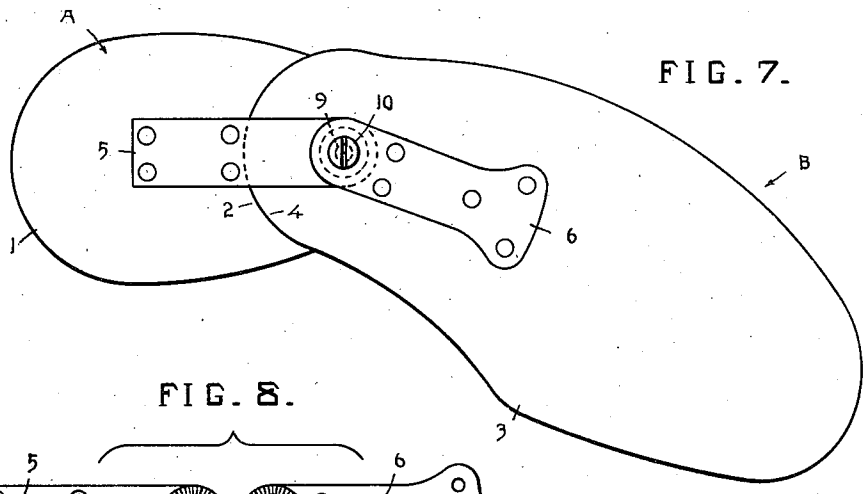


FIG. 8.

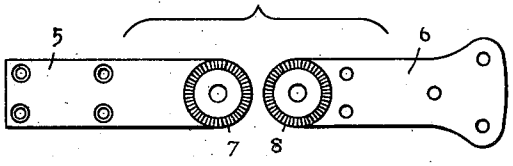


FIG. 9.

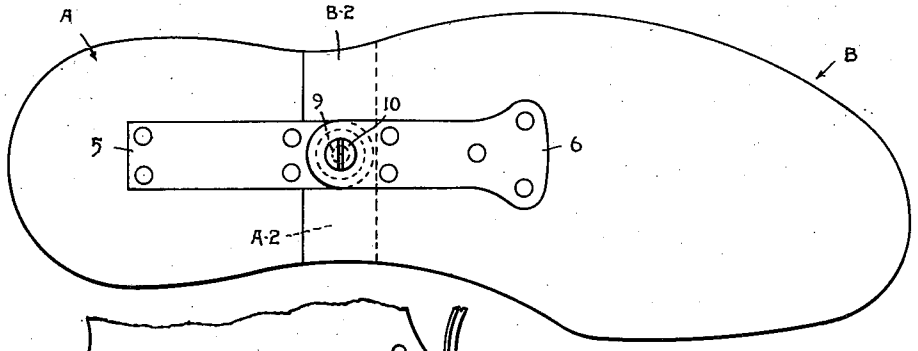
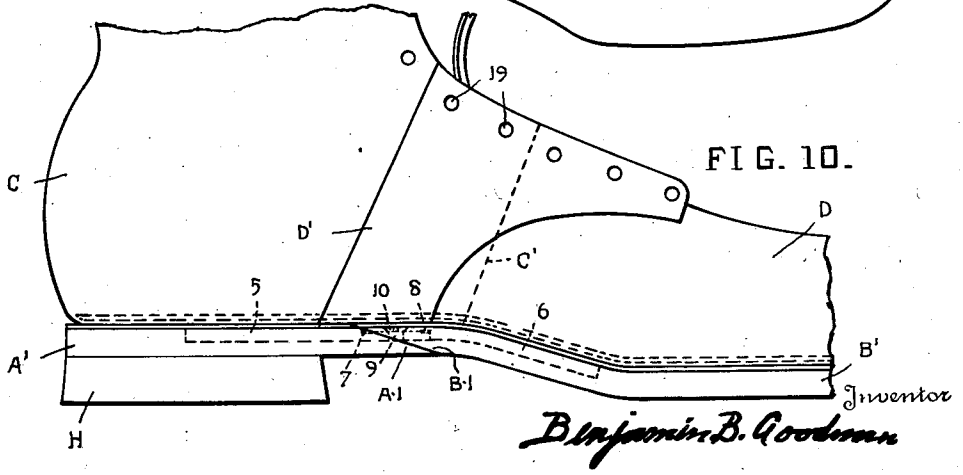


FIG. 10.



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Patented Jan. 13, 1942

2,269,815

UNITED STATES PATENT OFFICE

2,269,815

SHOE

Benjamin B. Goodman, Baltimore, Md., assignor of one-half to Harry Scheinberg, Baltimore, Md.

Application January 11, 1939, Serial No. 250,409

2 Claims. (Cl. 36—8.5)

My invention consists in a new and useful improvement in shoes and is designed to produce a shoe to be worn by persons undergoing treatment for such deformities of the foot as talipes varus and talipes valgus, in which the foot is inverted or everted from the normal position. Under the method of treating such deformities, as now practiced, the foot structure is so disposed as to effect a certain desired relationship between the several parts, which relationship must be maintained during a definite period. Thereupon further treatment produces a new relationship of the parts which is maintained through a definite period. Such periodic changes in the relationship of the parts of the foot structure may be numerous. Since the patient requires the use of a shoe on the treated foot during the several periods of treatment, it is obvious that there must be adequate provision for a shoe which precisely corresponds in its contour with the particular condition of the foot in each period of the treatment. To obviate the necessity of providing a separate shoe designed for the condition of the foot in each period, I have devised my improved shoe which is so constructed as to be capable of manipulation to produce the proper contour suitable for the foot in each period of treatment. Since the treatment produces variations in the relation of the fore foot to the hind foot, my improved shoe is designed to provide relatively movable fore and hind portions. The structure of the sole and upper of my shoe is such that the fore and hind portions thereof can be manipulated to assume any one of a plurality of relations, to produce a shoe having the precise contour demanded by the peculiar relationship of the parts of the foot structure produced at any particular period of treatment. To effect this result, the fore and hind portions of my shoe are pivotally related at a point on the vertical axis passing through the calcaneo-cuboid joint of the foot for which the shoe is made.

The particularly novel and useful features of my improved shoe are the bi-partite sole and bi-partite upper mounted thereon, and the means for pivotally relating the two portions of the sole. My shoe comprises a two part outsole, a two part insole, with pivotally related connecting members mounted between the respective outsole and insole of each sole portion, a quarter attached to the posterior portion of the sole, and a vamp attached to the anterior portion of the sole, the quarter and vamp having overlapping portions and means, such as eyelets and lacing, for temporarily connecting the quarter and vamp. The connecting members of the sole are provided with locking means whereby they may be retained in determined relations.

I have illustrated in the drawings filed herewith, and have hereinafter fully described certain specific embodiments of my invention, but it is to be distinctly understood that I do not consider my invention to be limited to said specific embodiments, but refer for its scope to the claims appended hereto.

In the drawings:

Fig. 1 is a longitudinal vertical section of my shoe.

Fig. 2 is a transverse vertical section on the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal horizontal section on the line 3—3 of Fig. 1.

Fig. 4 is a top plan view of the sole of my shoe, illustrating the relation of the outsole, insole and pivoted connecting members.

Fig. 5 is a top plan view of the outsole with the pivoted connecting members applied thereto.

Fig. 6 is a view similar to Fig. 5, illustrating the adjustment of the parts for an everted foot.

Fig. 7 is a view similar to Fig. 5, illustrating the adjustment of the parts for an inverted foot.

Fig. 8 is a top plan view of one of the pivoted connecting members, and a bottom plan view of the other member.

Fig. 9 is a view similar to Fig. 5 of a modified form of my improved shoe.

Fig. 10 is a side elevation of the modified form of shoe.

As illustrated in the drawings, my improved shoe comprises the bi-partite sole consisting of the posterior portion A and the anterior portion B, and the bi-partite upper consisting of the separate quarter C and vamp D. Each of the portions A and B comprises the usual outsole and insole. The outsole 1 of the posterior portion A has its forward edge 2 formed as an arcuate concavity and the outsole 3 of the anterior portion B has its rear edge 4 convexly arcuate to correspond with the edge 2. The outsoles 1 and 3 have suitably embedded therein and riveted thereto the co-acting pivotally related members 5 and 6 respectively. The member 5 and the member 6 are provided with co-acting knurled faces 7 and 8 on their upper and lower surfaces respectively. The screw pivot-pin 9 is threaded in the member 5 and its slotted head 10 bears on the member 6. It is to be noted (Fig. 5) that the members 5 and 6 are so disposed relative to the outsoles 1 and 3 that the member 5 extends forwardly of the junction of the edges 2 and 4, over the out-

sole 3. The insole 11 of the posterior portion A is mounted on the outsole 1 and member 5 and extends forwardly over a portion of the outsole 3, and its forward edge has an arcuate concavity 12 spaced slightly from the head 10 of the pivot-pin 9, and rearwardly inclined shoulders 13. The insole 14 of the anterior portion B is mounted on the outsole 3 and the member 6 and its rear edge has an arcuate cavity 15 spaced slightly from the head 10 of the pivot-pin 9, and forwardly inclined shoulders 16. The heel H is suitably attached to the posterior portion A.

The vamp D is attached in the usual way to the anterior portion B, its lower rear edges 17 extending slightly rearwardly of the meeting edges 2 and 4 of the outsoles 1 and 3. The quarter C is attached in the usual way to the posterior portion A, its forward edges 18 extending over the rear of the vamp D somewhat forwardly of the pivot-pin 9, thereby causing the forward portion C' of the quarter C to overlap the rear portion D' of the vamp D. It is to be noted that the lacing eyelets 19 in the portions C' and D' are disposed in registering positions. A single loose inner sole I overlying the portions A and B may be provided.

In Figs. 9 and 10, I have illustrated a modified form of my improved shoe. In this form, the forward edge A—1 of the posterior portion A' of the sole and the rear edge B—1 of the anterior portion B' of the sole are correspondingly beveled, thereby providing overlapping areas A—2 and B—2 of the posterior and anterior portions A' and B' respectively, the pivot-pin 9 being centrally disposed relative to these overlapping areas A—2 and B—2. In this modified form of my shoe, I have shown the rear portion D' of the vamp D enclosing the forward portion C' of the quarter C.

From the foregoing description of the details of construction of my improved shoe, its operation and use will be obvious. Removal of the loose inner sole I renders access to the slotted head 10 of the pivot-pin 9 which may be rotated by any suitable tool, thereby relieving tension between the faces 7 and 8 of the members 5 and 6. The anterior portion B with vamp D may then be manipulated, relative to the posterior portion A and quarter C, so that the shoe assumes the desired configuration. The pivot-pin 9 is then rotated by the head 10, thereby locking the parts to maintain their determined relation. The inner sole I is replaced, and the shoe is ready for use.

Having described my invention, what I claim is:

1. In a shoe, the combination of a posterior outsole portion having a concave forward edge and a longitudinal recess in its inner face extending rearwardly from said edge; an anterior outsole portion having a convex rear edge received in the concavity of the posterior portion, and a longitudinal recess in its inner face extending forwardly from said convex edge, the two recesses being aligned; a lower hinge member disposed in the recess of the posterior portion and a portion of the recess of the anterior portion and fixed to the posterior portion; an upper hinge member disposed in the remaining portion of the recess in the anterior portion and fixed to the anterior portion; and a pintle pin pivotally relating said hinge members.

2. In a shoe, the combination of a posterior outsole portion having a concave forward edge and a longitudinal recess in its inner face extending rearwardly from said edge; an anterior outsole portion having a convex rear edge received in the concavity of the posterior portion, and a longitudinal recess in its inner face extending forwardly from said convex edge, the two recesses being aligned; a lower hinge member disposed in the recess of the posterior portion and a portion of the recess of the anterior portion and fixed to the posterior portion; an upper hinge member disposed in the remaining portion of the recess in the anterior portion and fixed to the anterior portion; a pintle pin pivotally relating said hinge members; a posterior insole portion attached to said posterior outsole portion and extending forwardly over a portion of said anterior outsole portion; and an anterior insole portion attached to said anterior outsole portion, the two insole portions having adjacent faces formed to provide a substantially circular passage for said pintle pin and V-shaped recesses projecting laterally from said passage.

BENJAMIN B. GOODMAN.