June 27, 1944. H. GHEZ ET AL 2,352,532

ARTICULATED SOLE OF WOOD OR OTHER STIFF MATERIAL

Filed April 11, 1942

Fig. 1

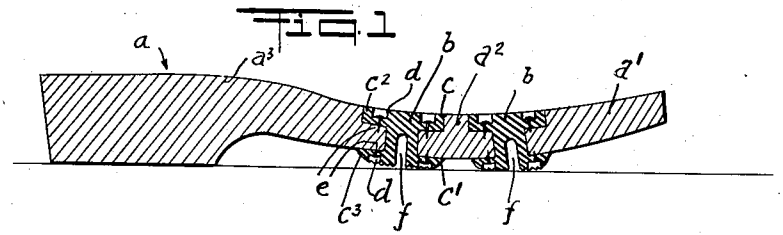


Fig. 2

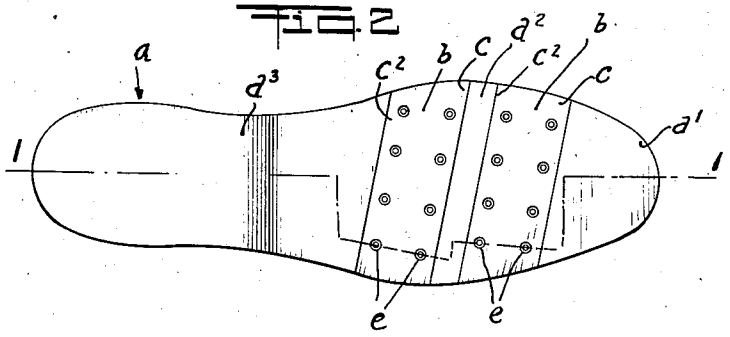


Fig. 3

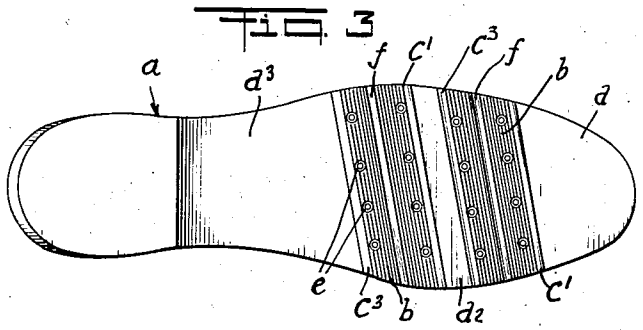
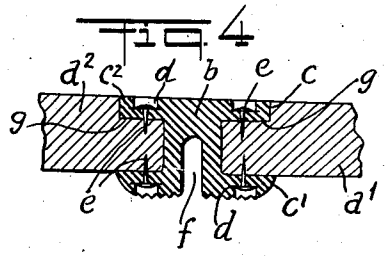


Fig. 4



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ARTICULATED SOLE OF WOOD OR OTHER STIFF MATERIALS

Henry Ghez and Oscar Ghez, New York, N. Y.

Application April 11, 1942, Serial No. 438,599
In France October 1, 1941

3 Claims. (Cl. 36—33)

This invention relates to an articulated flexure system or structure for shoe soles made of stiff materials such as wood and the like.

The main object of our invention is to introduce articulated joints of special yielding material between several parts of an articulated sole in order to allow the latter to flex despite the fact that said sole is made of stiff parts, thus allowing such a sole to be manufactured from wood or other rigid materials, and thereby saving leather and other more expensive materials.

Another object is to provide a type of resilient joint of rubber or other material for connecting the parts of a sole of stiff material, said joint being of efficient form for flexure and also for being conveniently secured to said parts.

A further object is to produce an articulated sole of stiff material which is waterproof even though capable of flexure by virtue of the joints forming part of said sole.

Other objects and the advantages of our invention and its application to practical use will appear more fully as this specification proceeds.

The principles and features characterizing the invention are readily comprehended by referring to the accompanying drawing forming part hereof, and in which:

Fig. 1 is a longitudinal section of a sole embodying the invention in practical form as taken on line I—I in Fig. 2.

Fig. 2 is a bottom plan view of the sole of Fig. 1.

Fig. 3 is a top plan view of the same.

Fig. 4 is an enlarged fragmentary section of hinge detail.

Throughout the views, the same references indicate the same or like parts.

In the practice of our invention, a shoe sole consists of stiff material, generally indicated at *a*, and may be of wood, metal, fibre or plastics of all types, although wood is preferred. This sole *a* is divided into a plurality of sole members a^1, a^2, a^3, and can even consist of more members, if desired, but these three mentioned will suffice for the present purpose and are connected into a coherent flexible series by means of resilient hinge blocks *b*, *b* preferably made of rubber or resilient plastic material. The hinge blocks each have a cross sectional profile like an H or a double U with one U inverted, the legs *c*, c^1 of said blocks being secured to one edge of each of sole members a^1 and a^2 while legs c^2, c^3 are secured to the other edge of each of sole members a^2 and a^3.

From the underside of each hinge block and intermediately of the forward and rear ends thereof, a deep groove *f* extends upwardly a distance into the block to facilitate bending or flexing of the same. It is this flexing of each hinge block that provides for flexure of the sole as a whole, as the members a^1, a^2, a^3 are thus capable of assuming various flexed positions with respect to each other, and the same ultimate effect is obtained as though the sole were wholly flexible in usual sense.

The legs or edges C—C^3 are preferably secured to the sole members by nails, screws, rivets or grommets *e*, and the hinge block edges C, C^2 are in each case sunk flush with the upper surfaces of said sole members by fitting into shoulder recesses *g*, g^1 in said members. The lower portions c^1 and c^2 of each hinge block are secured to the lower surfaces of the hinge blocks and project thereon sufficiently to provide anti-skid characteristics to the sole.

Manifestly, the sole may be varied in form and style and likewise the sole members and hinge blocks, as may be found desirable, within the scope of the appended claims.

Having now fully described our invention, we claim:

1. An articulated shoe sole including a plurality of sole members of wood or other rigid material, and a plurality of hinge blocks secured to and connecting the adjacent pairs of sole members into a coherent series, each hinge block being a unitary member of resilient material of the class consisting of rubber and resilient plastic material having the upper portions thereof forming a single flat unbroken surface, and each hinge block having a reduced portion between the ends thereof by being grooved upwardly a distance exclusively in and from the lower surface thereof.

2. An articulated sole according to claim 1, in which each hinge block has a double U or H cross section with the limbs of one U extending in the opposite direction to those of the other, the limbs or portions of the upper flat unbroken surface occupying recesses in the upper edges of the sole members, and the limbs or portions of the lower surface of the hinge block extending in projecting manner upon the lower portions of said sole members to form downwardly extending anti-skid means on the sole, and said lower surface of said hinge block being broken by an upwardly extending intermediate groove or recess forming an intermediate reduced portion in said hinge block.

3. An articulated sole according to claim 1, in which each hinge block has a double U or H

cross section with the limbs of one U extending in the opposite direction to those of the other, the limbs or portions of the hinge block projecting at one end in one direction receiving a portion of one sole member between them and the limbs projecting at the other end receiving a portion of the next adjacent sole member between them, the lower surface of said hinge block being broken by an upwardly extending intermediate groove or recess forming an intermediate reduced portion in said hinge block.

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