C. B. MUELLER AND H. EISELE.

SHOE SPIKE GUARD.

APPLICATION FILED DEC. 19, 1919.

1,379,646.

Patented May 31, 1921.

2 SHEETS—SHEET 1.

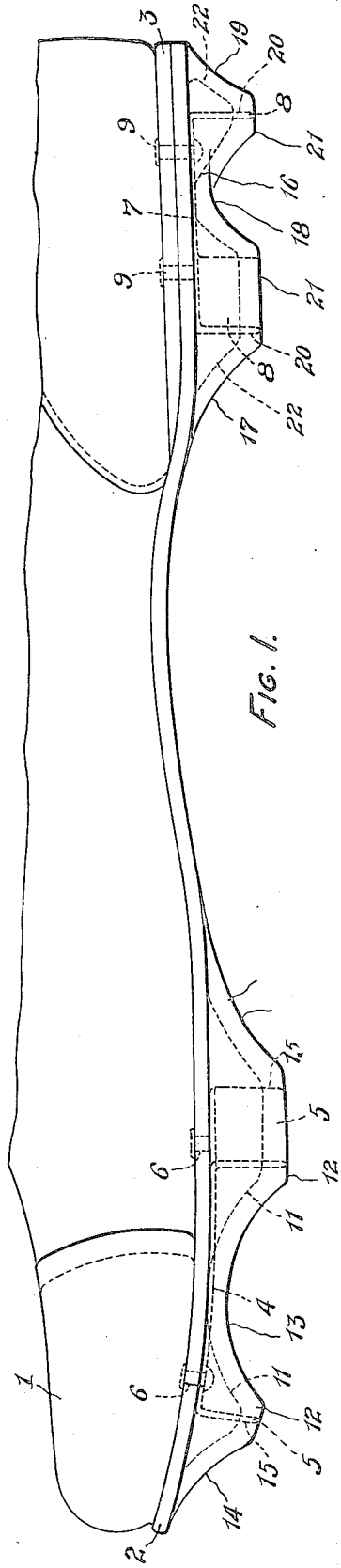


FIG. I.

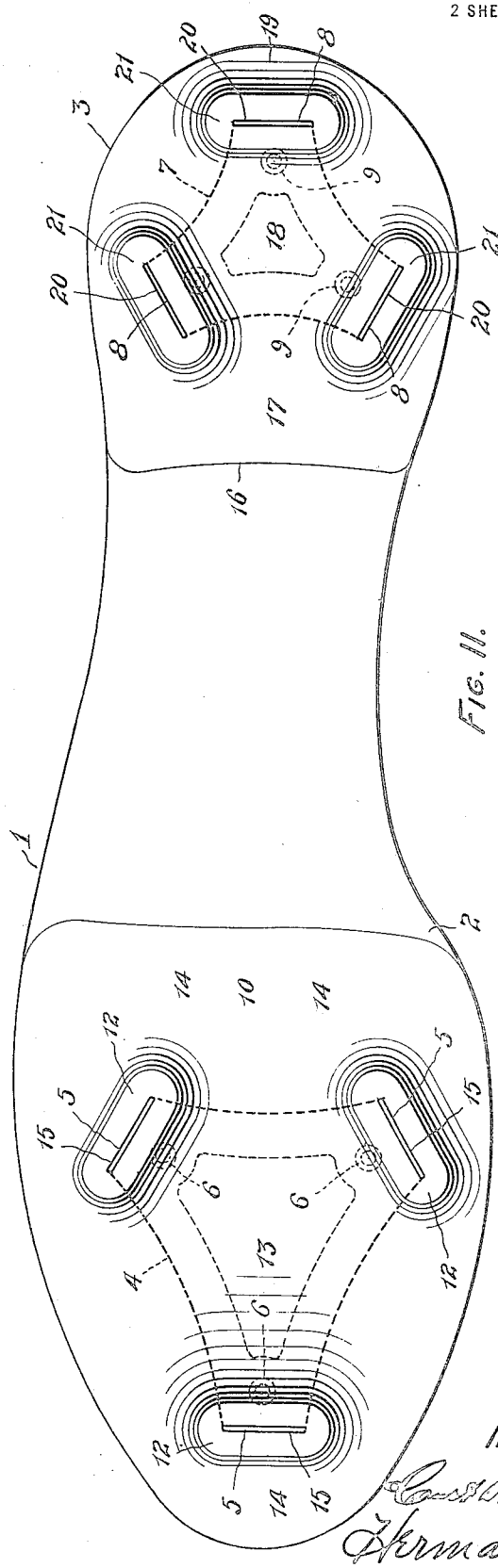


FIG. II.

INVENTORS:

Conrad B. Mueller.

Herman Eisele

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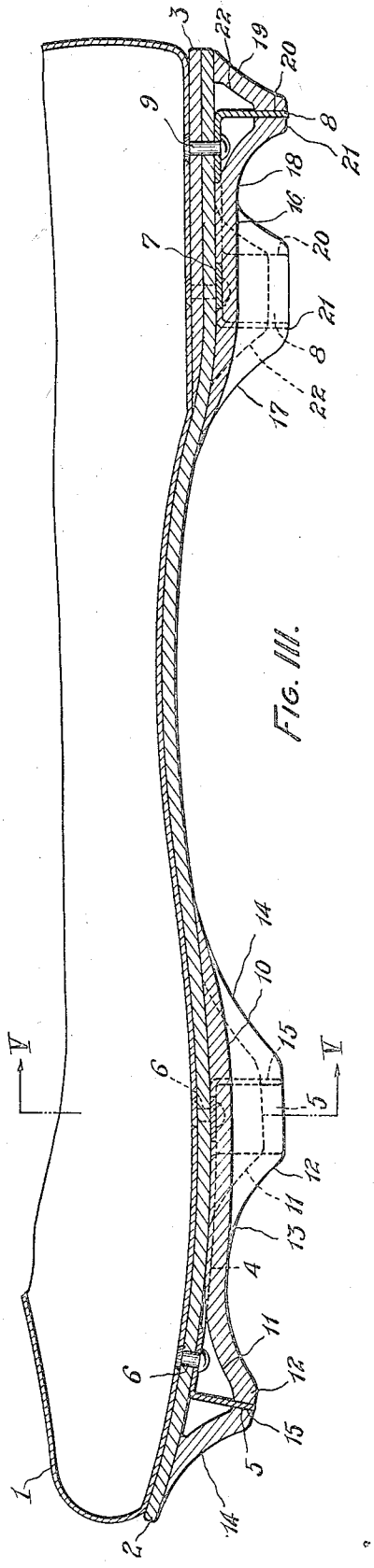


FIG. III.

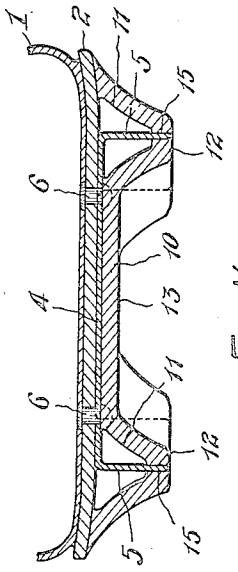


FIG. V.

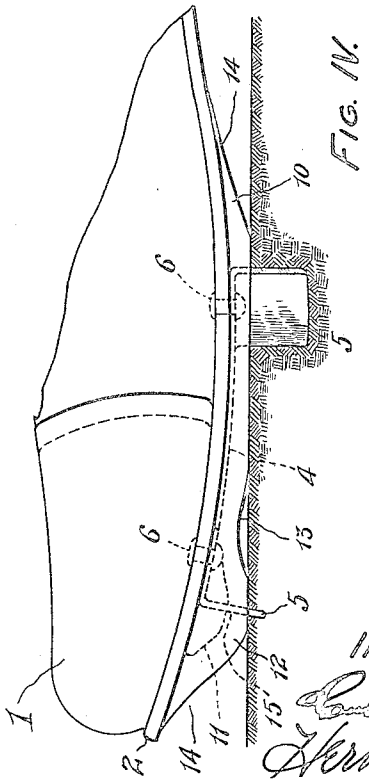


FIG. IV.

INVENTORS:

Louis B. Mueller.

Herman Eisele

UNITED STATES PATENT OFFICE.

CURT B. MUELLER, OF WEST PARK, AND HERMAN EISELE, OF CLEVELAND, OHIO; SAID EISELE ASSIGNOR TO SAID MUELLER.

SHOE-SPIKE GUARD.

1,379,646. Specification of Letters Patent. Patented May 31, 1921.

Application filed December 19, 1919. Serial No. 346,157.

To all whom it may concern:

Be it known that we, CURT B. MUELLER and HERMAN EISELE, both citizens of the United States of America, residing at village of West Park and Cleveland, respectively, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Shoe-Spike Guards, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

Our invention pertains to a guard and more particularly to a guard bordering shoe spikes, such for example, as are in common use today on baseball shoes.

As is well known, at least in this country, the spikes of baseball shoes while considered necessary to prevent slipping of the shoe along the surface of the ground, are not infrequently the cause of painful or serious injury to a fellow player who chances to become struck by the sharp edges of spikes of this character when the wearer's foot is off the ground.

Accordingly, the object of our invention is to provide a collapsible or compressible shoe spike guard which in its normal position partly or wholly incloses the tip of the spike so as to prevent any impingement with the sharp edge thereof whenever the shoe is not sustaining any weight as is the case when the wearer's foot is off the ground, but which guard will readily collapse or compress when sustaining the weight of a person so as to allow the spike to protrude sufficiently to supply the desired bite or traction.

The drawings exemplify a rubber guard, but it is manifest that other materials or forms of collapsible structures might be employed to accomplish the same purpose.

Figure I is a side elevation of the lower portion of a baseball shoe provided with the type of spike in general use.

Fig. II is a bottom plan view, the spike supporting structure being shown in dotted lines.

Fig. III is a vertical longitudinal section taken on the middle line of the lower portion of the shoe.

Fig. IV is a side elvation of the toe and sole showing the guard compressed when subjected to the weight of the wearer.

Fig. V is a section on line V—V of Fig. III looking toward the heel of the shoe.

A shoe 1 is provided with a sole 2 and a heel 3. A triangular shaped open plate 4 carries three spikes 5 and is secured to the sole 2 by means of rivets 6. The heel 3 similarly carries a somewhat smaller plate 7 provided with three spikes 8 and secured to the heel by means of rivets 9. In practice the spikes project from the outer surface of the sole or heel as the case may be not much less than half an inch and are therefore a dangerous weapon for lacerating a fellow player with the incidental risk of blood poisoning.

It is to be understood that we appreciate the many types of spike guards which could be contrived to answer the purpose of our invention, by functionating in substantially the same manner, our invention. The guard device should be readily and sufficiently compressible. It should be capable also of withstanding laterally directed wrenching actions with the attendant side sway and strain thereupon without marked distortion and without rupture. Mindful of the foregoing we are inclined to think rubber to be the best material to be used, because its elastic qualities will maks more certain reassumption on the part of the guard of its spike inclosing position, because of its wearing qualities, because of its simplicity of manufacture and readily varied design to meet changing conditions and because it may be readily attached and detached to standard makes of shoes.

According to the exemplification of the drawings a rubber additional sole member 10 is hollowed at 11 about the base of each spike 5 and inclosing such three hollows is a projection 12 which has its middle section dished or recessed at 13 and furthermore cut away at 14 both ahead and behind the spikes with reference to the longitudinal direction of the shoe. It is the relation of the surfaces 13 and 14 which determines the shape of the projection 12. The spikes 5 pass through suitable slots 15 in the projection 12 thereby allowing air communication between the hollows 11 and the atmos-

phere when the projections 12 are compressed as shown in Fig. IV. Then the air in the hollows 11 is allowed to find exit along the spikes 5.

The construction of the heel is similar. An additional rubber heel member 16, being cut away along the surface 17 in front, being recessed at 18 between its three spikes 8 and being further cutaway at 19 at the rear. The spikes 8 pass through suitable slots 20 in the raised portions 21 which cover the hollows 22 about the base of the spikes.

It will be observed that the shape of the three portions of the guard 10 and the three portions of the guard 16 which immediately envelop the three spikes 5 and the three spikes 8 respectively, is such as to be more readily compressible and therefore to more completely expose the spikes when the foot of the wearer is on the ground. Obviously, if the desired spike traction is to be realized, the spike should protrude as much as possible beyond the end surfaces of the projection 12 and raised portions 21. During the rough usage of the projections 12 and raised portions 21 are continually reinforced by those portions of the spikes 5 and 8 which are abutted thereby, and in consequence any tendency to distortion of the projections 12 and raised portions 21 other than in the desired direction up and down is resisted by the interposition of the spikes.

We claim:—

1. A shoe comprising the combination of a tread portion, spikes projecting therefrom, and an auxiliary tread provided with projections adapted to serve as guards each entirely surrounding one of said spikes.

2. A shoe comprising the combination of a tread portion, a plurality of separated spikes projecting therefrom and an auxiliary tread provided with separated guards enveloping said spikes respectively, and each independently collapsible.

3. A shoe comprising the combination of a tread portion, a spike projecting therefrom and a rubber guard bodily movable relatively to said spike.

4. A shoe spike guard comprising a structure attached to the tread of the shoe, and constructed and arranged to inclose a spike thereon, and adapted for bodily movement relatively to the latter.

5. A shoe spike guard comprising a rubber structure attached to the tread of the shoe, constructed and arranged to inclose the spikes thereon, and having areas around said spikes adapted both to be compressed and collapsed therealong.

6. The combination with a shoe having a spike projecting from the tread thereof, of a rubber member secured to said shoe and provided with an opening through which said spike is adapted to project when said member is compressed, that portion of said member bordering its opening projecting from the shoe tread a greater distance than another portion of said member, whereby the portion of said guard member bordering its opening may more readily yield and move along said spike to expose a larger part of the tip thereof.

7. A device of the character described comprising in combination with a shoe tread carrying a projecting spike, of a guard comprising an auxiliary rubber tread spaced from the base and normally inclosing the tip of said spike.

8. A device of the character described comprising the combination with a shoe having a tread and a spike projecting therefrom, of a spike guard movably attached to said tread and having a portion spaced therefrom adjacent said spike.

9. A device of the character described comprising the combination with a shoe having a tread carrying a rigid spike, of a spike guard inclosing said spike and including a portion spaced from and movable relatively to said shoe tread.

10. A device of the character described comprising the combination with a shoe provided with a projecting metal spike, of a rubber spike guard adjacent to said spike and including a portion spaced from, so as to be more readily movable relatively to, the portion of said shoe to which other portions are attached.

11. A device of the character described comprising the combination with a shoe having a tread provided with a rigid spike, of a rubber guard normally forming an air space about said spike in conjunction with the portion of the shoe to which it is attached.

12. The combination with a shoe having a spike projecting from the tread thereof, of a rubber guard secured to said shoe so as to inclose a space adjacent said spike, said guard being provided with an opening through which said spike is adapted to project, said opening communicating with said space whereby to enable ingress and egress of air thereto during the elastic action of said guard.

13. The combination with a shoe having spikes projecting from the tread thereof, of a collapsible structure secured to said shoe and provided with openings correspondingly spaced as and through which said spikes are adapted loosely to project so as to protrude when said structure is collapsed.

14. The combination with a shoe having a spike projecting from the tread thereof, of a rubber member secured to said shoe and provided with an opening through which said spike is adapted to project when said rubber member is compressed, that portion of said member bordering its opening being normally spaced from the base of said spike.

15. The combination with a shoe having a plurality of spikes projecting from the tread thereof, of a rubber member secured to said shoe and provided with openings through which said spikes are adapted loosely to project when said member is compressed, that portion of said member bordering its openings projecting from the shoe tread a greater distance than other portions of said member.

16. The combination with a shoe having a rigid spike projecting from the tread thereof, of an auxiliary rubber tread purposed to serve as a guard for said spike, said auxiliary rubber tread being provided with a projection having an aperture and a relatively enlarged hollow through which said spike is adapted to project, said aperture communicating with said enlarged hollow, the latter forming a space about the base of said spike whereby to enable bodily movement of the extremity of said projection along said spike.

17. The combination with a shoe having spikes projecting from the tread thereof, of an auxiliary rubber tread purposed to serve as a guard and provided with projections arranged to correspond with the relative locations of said spikes and each fitted entirely around one of said spikes.

18. The combination with a shoe having spikes projecting from the tread thereof, of a rubber guard provided with projections arranged to correspond with the relative locations of said spikes, said projections having apertures occupied by said spikes respectively and each of said projections having sides converging in a direction away from the shoe tread, whereby to permit the rubber of which it is composed to more readily bulge under compression.

19. The combination with a shoe having a spike projecting from the tread thereof, of an auxiliary rubber tread purposed to serve as a guard and provided with a projection having an aperture occupied by said spike, said projection being of progressively reduced size measured in a direction toward its free extremity whereby to facilitate its compression under the weight of the wearer.

20. The combination with a shoe having a spike projecting from the tread thereof, of an auxiliary rubber tread purposed to serve as a guard and provided with a projection having an aperture occupied by said spike, said projection being of progressively reduced size measured in a direction toward its free extremity whereby to facilitate its compression under the weight of the wearer, the aperture in the said projection being furthermore enlarged at the base of said spike so as to provide a space also aiding compression.

21. The combination with a shoe having a spike projecting from the tread thereof, of a collapsible structure secured to said shoe and provided with an opening through which said spike is adapted to project so as to protrude when said structure is collapsed.

Signed by us, this 16th day of December, 1919.

CURT B. MUELLER.
HERMAN EISELE.