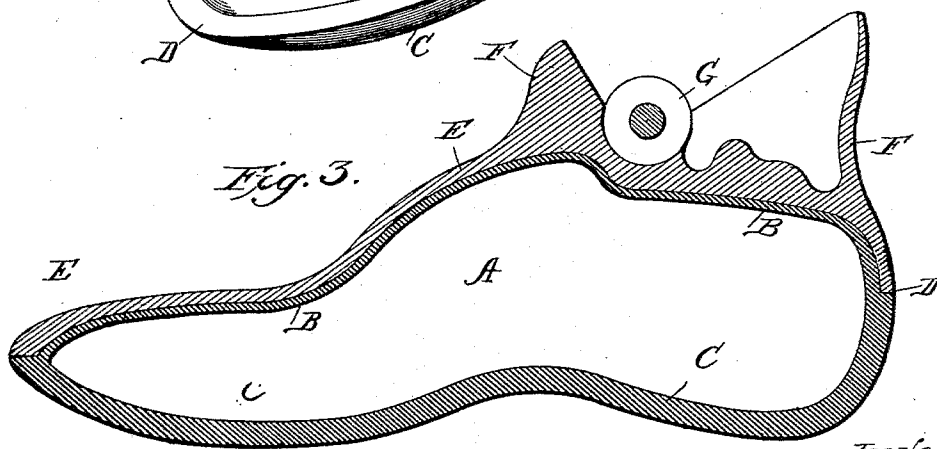
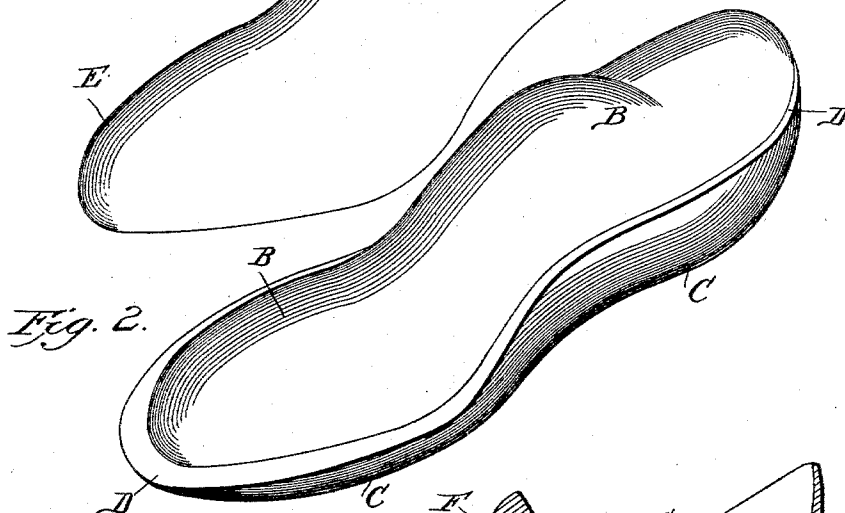
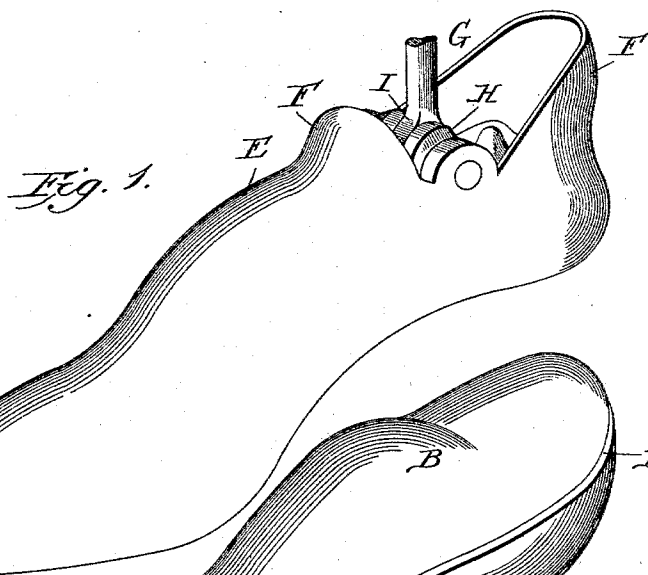


(No Model.)

J. I. LYONS.
ARTIFICIAL FOOT AND ANKLE.

No. 584,004.

Patented June 8, 1897.



Inventor

Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES I. LYONS, OF CHICAGO, ILLINOIS.

ARTIFICIAL FOOT AND ANKLE.

SPECIFICATION forming part of Letters Patent No. 584,004, dated June 8, 1897.

Application filed March 27, 1893. Serial No. 467,698. (No model.)

To all whom it may concern:

Be it known that I, JAMES I. LYONS, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented new and useful Improvements in Artificial Feet and Ankles, of which the following is a full, clear, and exact description.

The object of my invention is to provide an improved artificial foot which is so constructed that the foot does not independently turn, but retains its relative position while in the shoe and which is made in such a simple and economical manner that its practicability is assured, substantially as hereinafter fully described and as illustrated in the drawings, in which—

Figure 2 is a perspective view of my improved inflated foot. Fig. 1 is a perspective view of the upper superincumbent part or cover of the same; and Fig. 3 is a longitudinal vertical section of my invention, showing the parts thereof assembled as when ready for use.

In the drawings, A represents a hollow foot made of some suitable elastic material, preferably rubber, and conforming in its general contours to the shape of the natural foot. The highest formation or part of this foot A is the instep *a*, it being devoid of an ankle and sloped downward to and rounding into the heel. The sole *b* of the foot is slightly but proportionately wider and longer than the upper half thereof, thus creating a shoulder or ledge *c*, which extends, preferably, clear around the foot.

The edges of the upper part or cover B of my invention rest on the shoulder *c*; just referred to, and the concavity in its under side conforms to and nicely fits over the upper surface of the inflated foot above this shoulder *c*. This upper B is preferably made of aluminium and consists of a mere shell, excepting the part over the heel portion of the foot in which the ankle-joint is made, as will hereinafter be more fully described. Just above the instep of this upper there arises a transverse wall *k*, the rear of which is sloped precipitately downward and merges at its base into the transverse knuckles *l*, which are separated at a point located about midway between the sides of the ankle by a segmental slot *e*, made transverse to the length

of the knuckles. Extending from the outer end of one knuckle around the heel to the outer end of the other knuckle is a vertical wall *f*, which reaches its highest point at the rear of the foot. The space inclosed between these walls *k* and *f* forms a socket for the insertion of the lower end of the lower leg. This leg of the artificial limb is secured to the upper B by means of the bolt C, which screws down into a tapped transverse opening made in the pintle D at about its center of length, and which, when in position in the knuckles, is exposed through the transverse slot *e*. As thus constructed the entire weight of the wearer comes upon the knuckles and the space inclosed by the walls *k* and *f*, which latter accommodates the lower contiguous end of the lower leg and, like the natural limb, constitutes the point from which the weight is distributed to all parts of the foot proper.

My improved foot possesses the ability to yield like the natural foot when a stone or other obstruction is trodden upon, and therefore the wearer is not thrown off his balance as he would be were the foot unyielding. Besides this the concussion caused by the artificial foot striking the ground is taken up by the air-cushion within the hollow foot and is not felt by the wearer any more than the concussion of the natural foot upon the ground would be felt.

Now I have heretofore alluded to the hollow foot without referring to the fact that its interior chamber is filled with air, simply because I desire to emphasize the fact that it makes no difference, so far as the principle of my invention is concerned, whether the air is inclosed in the foot during the process of its manufacture or afterward by some such means as are employed in inflating the tires of bicycles. Either way would be considered as coming within the spirit of my invention. This hollow foot is made air-tight and it holds the air within it until by long use the condition of the material of which it is made gets into such condition as to permit the air to escape. It takes a considerable length of time to do this, however, and ordinarily the hollow foot made as hereinbefore described needs no reinforcing.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. As an article of manufacture, an artificial foot consisting of a hollow foot of elastic material which is filled with confined air and which is provided with a ledge or shoulder
5 just above the plane of the sole-line, and an upper of suitable material conforming to the shape of the upper surface of the upper part of the said foot.

2. As an article of manufacture, an artificial foot consisting of a foot of rubber the contour of which includes raised instep and heel

portion, and which is hollow from toe to heel, and is provided just above the plane of the sole-line with a ledge, of an upper shell which conforms to the shape of said foot above the
15 said ledge upon which its edges rest, and which is jointed at the ankle, as set forth.

JAMES I. LYONS.

Witnesses:

WILLIS MELVILLE,
WM. P. BLUE.