(No Model.)

J. F. ROWLEY.

ARTIFICIAL FOOT.

No. 456,206. Patented July 21, 1891.

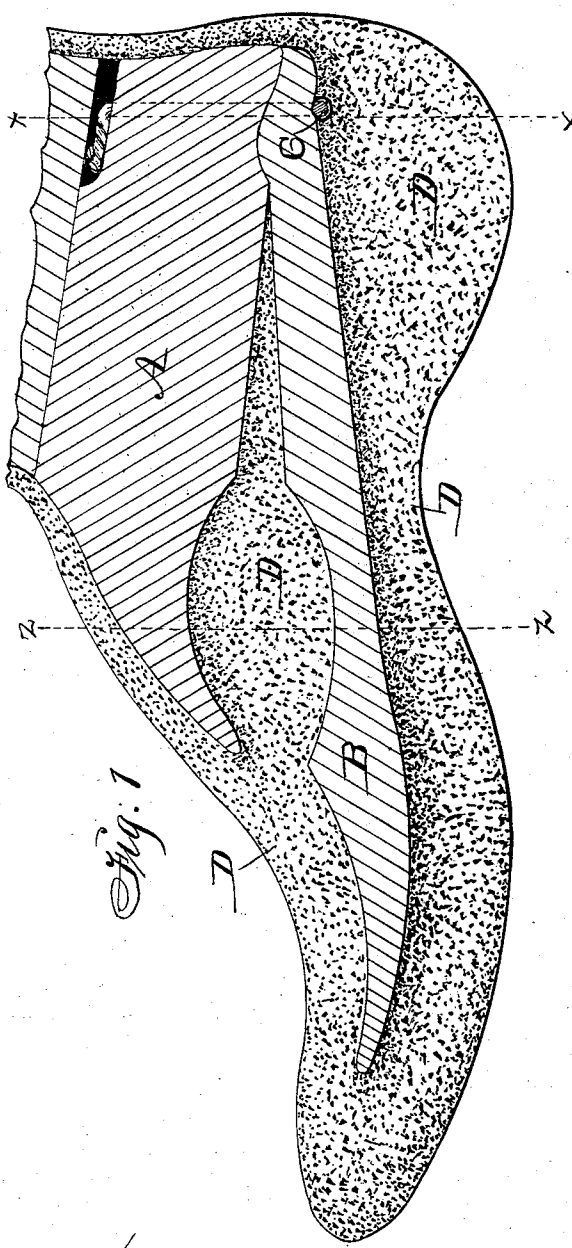


Fig. 1

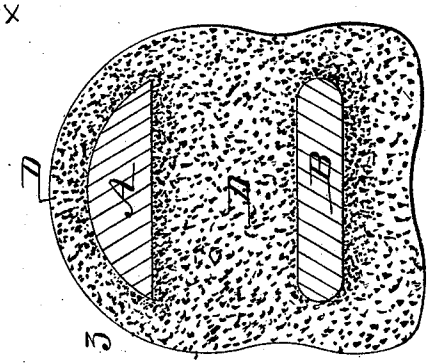


Fig. 3

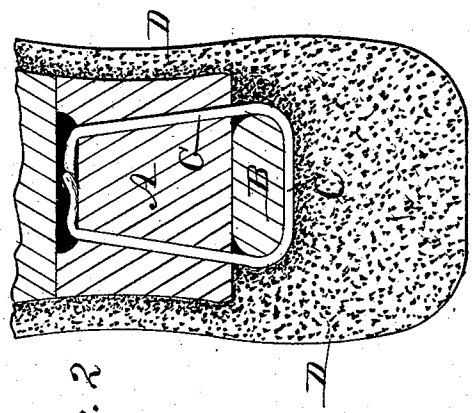


Fig. 2

Witnesses:
A. W. Stites,
M. P. Smith.

Inventor:
James F. Rowley,
By Thomas G. Orwig, Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES F. ROWLEY, OF DES MOINES, IOWA.

ARTIFICIAL FOOT.

SPECIFICATION forming part of Letters Patent No. 456,206, dated July 21, 1891.

Application filed April 8, 1890. Serial No. 347,116. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. ROWLEY, a citizen of the United States of America, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented an Improved Artificial Foot, of which the following is a specification.

My object is, first, to produce an artificial foot of wood and rubber in such a manner that it will have the firmness required to sustain any weight or strain to which it may be subjected by the wearer, and at the same time possess all the flexibility and elasticity essential to produce natural movements without allowing any undue lateral or unnatural flexure; second, to simplify the construction, reduce the cost, and increase the efficiency and durability of an artificial foot and leg.

My invention consists in the construction and combination of two pieces of solid wood, a metal coupling device, and an elastic covering, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section showing the forms and relative positions of the two pieces of wood combined and concealed by the elastic cover. Fig. 2 is a vertical sectional view of the heel through the line *x x* of Fig. 1, showing the form and position of the metal coupling device. Fig. 3 is a vertical sectional view through the line *z z* in Fig. 1, showing the relative positions of the two pieces of wood at the instep and the manner of producing flexibility from the heel to the toe without allowing lateral flexion.

A is a piece of wood or other suitable solid material, that represents the tarsus or ankle of the foot connected with the leg A^2.

B is a piece of wood or other suitable solid material that extends from the heel to the toe and has an articulate connection with the piece A that allows all the flexure required and all the natural motions of a foot incident to walking. At the point where the rear ends or heel portions (two pieces of wood) come in contact the one has a concave surface and the other a convex surface, as clearly shown in Fig. 1. The front portion of the piece A has a concave on its under side and the central portion and top surface of the piece B has a corresponding concave, so that an enlarged elliptic-shaped spring or cushion is admitted between them to produce a strong and elastic instep that will accommodate itself to all the varying degrees of pressure to which the foot is subject and that extends from heel to toe.

C is a piece of wire or metal coupling bent double to encircle the rear end of the wooden piece B and its ends then passed up through perforations in the piece A and twisted together, as clearly shown in Fig. 2, and as required to produce a flexible, strong, and durable connection between them. A cavity in the top surface of the piece A allows the ends of the wire to be embedded and concealed in the wood.

D represents a rubber or other elastic filling and covering formed between and around the two pieces of wood by means of a mold in a common way and as required to produce an imitation of the human foot. The toe portion that extends in front of the wood has more elasticity than any other part of the foot, and in combination with the two pieces of wood and the cushion or spring between them makes the motions of the toes and complete foot easy and natural and protects the wearer from jars and concussions incident to the use of an artificial foot that has not sufficient flexure between the toe and instep.

I claim as my invention—

1. A solid piece having a concave in its top and central portion and a convex surface at its top and rear end, a solid piece having a concave in its bottom and front end and a concave in its bottom and rear end, a metal coupling device connecting the rear end portions of the two overlapping solid pieces, and an elastic filling between their overlapping front portions, arranged and combined in an artificial foot to operate in the manner set forth, for the purposes stated.

2. An improved artificial foot consisting of a solid piece B, extending from the heel to the toe, an overlapping solid piece A in contact with the top of the heel end only of the

part B and extending horizontally forward to near the toe portion, a U-shaped metal coupling surrounding the heel end of the part B and extending up through the heel end of the part A, an elastic filling extending through the elongated space between the parts A and B, and an elastic covering, in the form of a foot, enveloping and concealing the said wooden parts, substantially as shown and described.

JAMES F. ROWLEY.

Witnesses:
MARTIN P. SMITH,
THOMAS G. ORWIG.