April 20, 1948. H. C. CAMPBELL 2,440,075

ANKLE JOINT AND REINFORCING MEMBER FOR PNEUMATIC FEET

Filed April 24, 1946

Fig. 1.

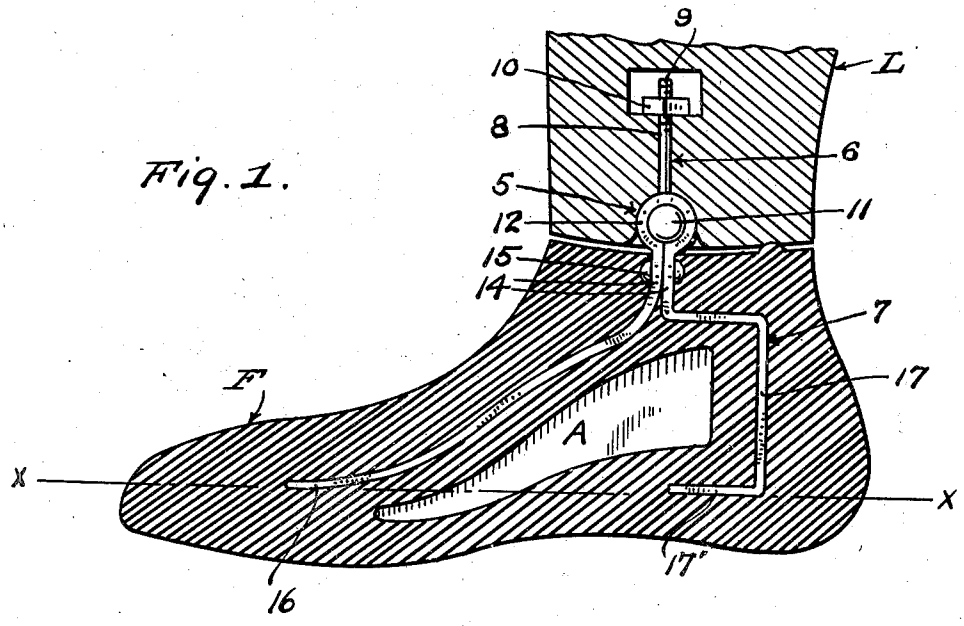


Fig. 2.

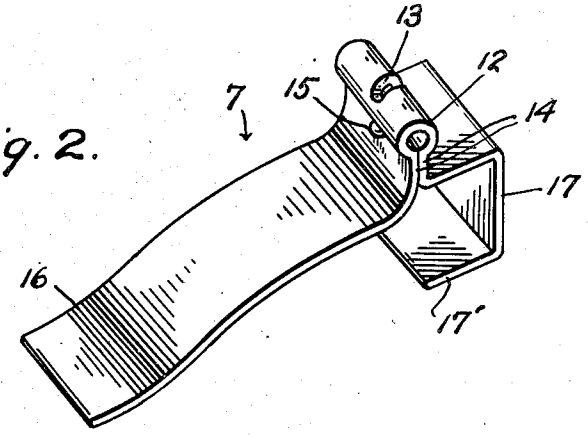
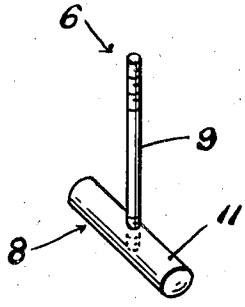


Fig. 3.



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ANKLE JOINT AND REINFORCING MEMBER FOR PNEUMATIC FEET

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3 Claims. (Cl. 3—8)

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This invention relates to artificial limbs and more particularly ankle joints of artificial legs.

The primary object of this invention resides in the provision of an akle joint for artificial feet of the penumatic type adapted to be so molded or otherwise disposed in the feet that maximum cushioning of the feet will prevail.

Another object of this invention resides in the particular construction of the angle joint.

With these and other objects in view this invention resides in certain novel features of construction and arrangement of elements to be hereinafter more particularly set forth in the specification, illustrated in the accompanying drawing and pointed out in the appended claims and, although this disclosure depicts my present conception of the invention, the right is reserved to report to such changes in construction and arrangement of elements as come wiithin the spirit of the invention.

In the accompanying drawing forming a part of this application;

Fig. 1 is a vertical sectional view of the lower part of an artificial leg with a pneumatic foot attached thereto by the ankle joint forming the subject matter of this invention.

Fig. 2 is a perspective view of the lower member of the angle joint.

Fig. 3 is a similar view of the upper member of the ankle joint.

In the present illustration of this invention the letter L designates the lower portion of an artificial foot constructed of any suitable material and having secured thereto, by a hinged ankle joint 5 consisting of upper and lower members 6 and 7, an artificial foot F preferably of the pneumatic rubber type, however, the foot may be formed of any suitable material in which the lower member of the joint can be molded or otherwise secured in a fashion similar to that herein disclosed. Said lower member 7 is of substantially inverted Y-shape configuration.

The upper ankle joint member is herein disclosed in the form of a T bolt 8 having its stem 9 threaded for securing it to the leg by a nut 10 or other suitable element and its cross arms 11 removably attached to its opposite end in any suitable manner permitting it to be slid through a cylindrical head 12 formed on the outer end of the staff portion of the lower member above the upper surface of the foot. Said head is provided with an annularly disposed slot 13 at its medial point to permit the foot to rock on the arms 11 with natural foot action in movement of the leg.

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The aforesaid head 12 is formed by looping the medial portion of a strap of strong metal upon itself and securing the abutting portions 14 thereof together by rivets 15, welded or the like with the opposite end portions or arms 16 and 17 thereof bent at approximately right angles thereto and surrounding the upper, front and rear walls of an air compartment A formed in the foot. The end portion or arm 16 extends forwardly of the head 12 and conforms approximately to the shape of the front portion of the foot while the portion end 17 extends rearwardly thereof and is of substantially U-shape configuration surrounding the rear portion of the air compartment A with its free end 17' spaced from the free end of the end portion 16 so as to permit the foot to bend and air compartment to absorb shock and also cushion the weight of the individual wearing the artificial leg. Said free end 17' acts to support the weight on the lower ankle joint while the ogee front end portion 16 permits a certain degree of flexibility of the front portion of the rubber foot.

With this invention fully described it is manifest that an ankle joint for artificial legs is provided which will readily permit natural action of an artificial foot thereon and, through the particular construction and arrangement of the lower member thereof, it is rigidly molded in a pneumatic foot without destroying the cushioning effects thereof.

Having thus described my invention what I claim and desire to protect by Letters Patent is:

1. The combination with an artificial leg, a pneumatic foot, a lower ankle joint member molded in the foot and surrounding the upper portion of the air compartment therein, a substantially cylindrical head formed on the lower ankle joint member disposed outward of the upper surface of the foot with its bore extending laterally of the foot, an upper ankle joint member of substantially T-shape configuration removably secured to the lower portion of the leg by its stem and having its arms removably and pivotally disposed in the head.

2. In an article of manufacture in the form of the lower member of an artificial foot joint formed from a strap of metal having its medial portion slotted and looped and secured together inwardly of the looped portion thereof with one end thereof bent forwardly on a substantially ogee curve and its other end bent rearwardly thereof into substantially U-shape configuration and terminating in spaced relation to the extremity of the first mentioned end portion.

3. The combination with a pneumatic artificial foot having an air compartment formed therein, and a substantially inverted Y-shape ankle joint member embedded in the foot and surrounding the upper, front and rear walls of the air compartment with its inner ends spaced and terminating adjacent the front and rear walls of the air compartment and its staff extending outwardly through the upper surface of the foot with a loop therein.

HARRY C. CAMPBELL.

REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
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963,796	Mueller	July 12, 1940