

No. 623,741.

Patented Apr. 25, 1899.

L. RIEBEL, JR.
ARTIFICIAL LIMB.

(Application filed July 6, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

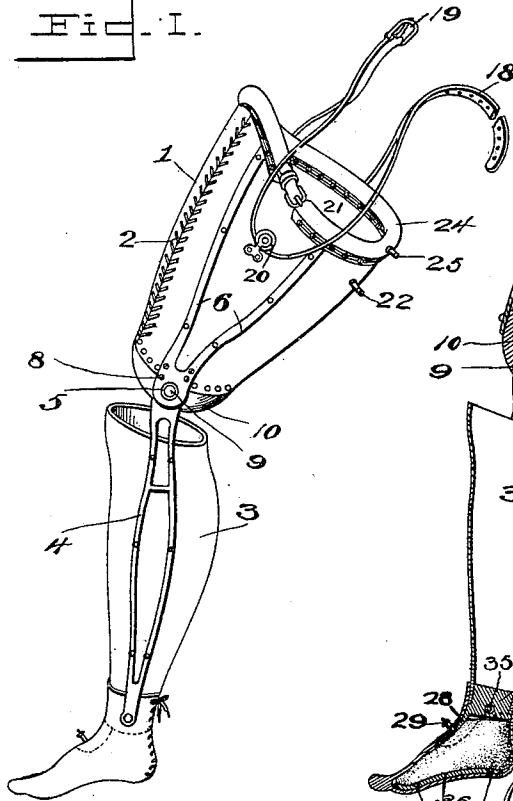


Fig. 2.

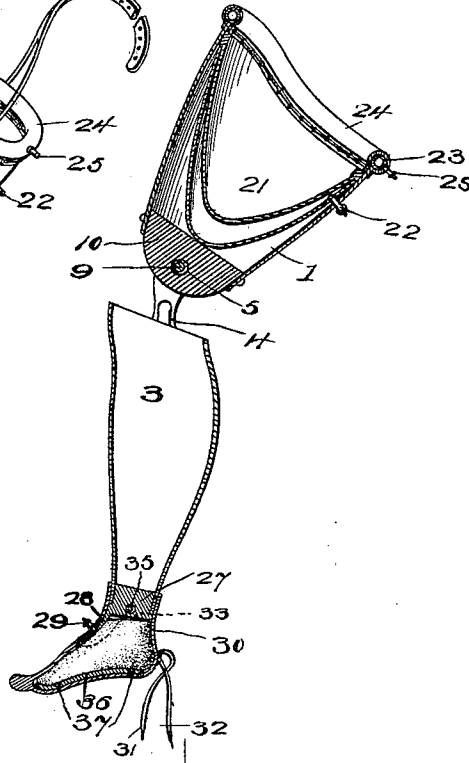


Fig. 3.

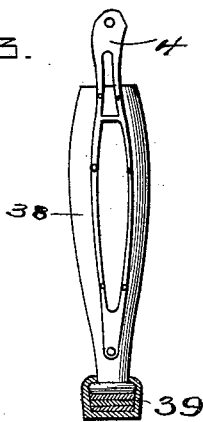
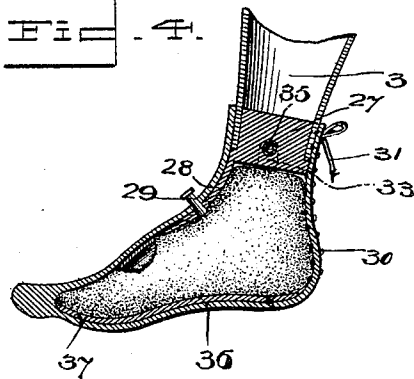


Fig. 4.



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Fig. 5.

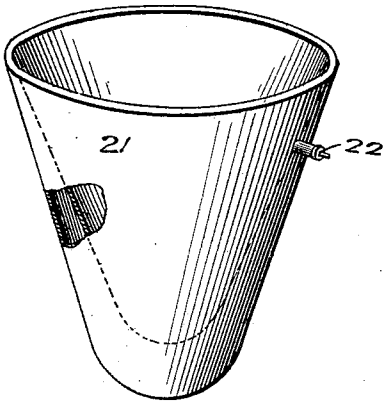


Fig. 6.

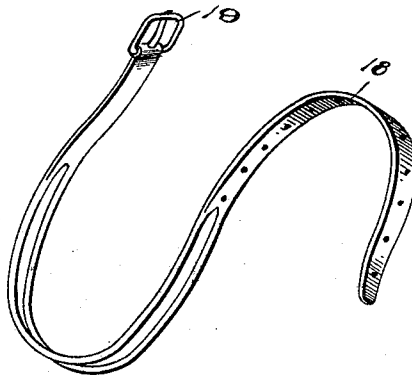


Fig. 7.

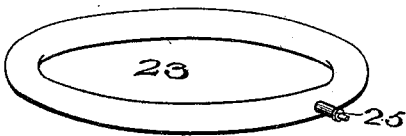
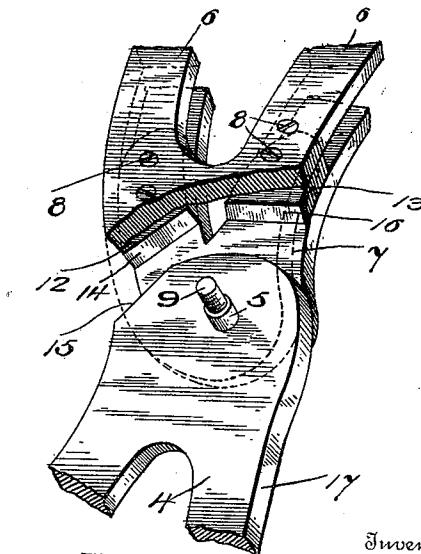


Fig. 8.



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UNITED STATES PATENT OFFICE.

LEONARD RIEBEL, JR., OF CHARITON, IOWA.

ARTIFICIAL LIMB.

SPECIFICATION forming part of Letters Patent No. 623,741, dated April 25, 1899.

Application filed July 6, 1898. Serial No. 685,252. (No model.)

To all whom it may concern:

Be it known that I, LEONARD RIEBEL, Jr., a citizen of the United States, residing at Chariton, in the county of Lucas and State of Iowa, have invented certain new and useful Improvements in Artificial Limbs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to artificial limbs; and the object is to provide a device of this character that will simulate the natural limb and conduce to the comfort and convenience of the user.

To these ends the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully described, and particularly pointed out in the claims.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claims at the end of this specification.

The same reference characters indicate the same parts of the invention.

Figure 1 is a perspective view of my improved artificial limb. Fig. 2 is a vertical section through the limb. Fig. 3 is an interchangeable peg or lower section. Fig. 4 is a detail view of the pneumatic foot. Fig. 5 is a detail view of the pneumatic socket for the stump. Fig. 6 is a detail view of the adjusting-strap for securing the limb to the stump. Fig. 7 is a detail perspective view of the pneumatic bearing-ring. Fig. 8 is an enlarged detail view, partly in section, of one of the hinge-joints.

1 denotes the upper-socket or thigh section, which is formed of harness or sole-leather and is provided with the usual lacing 2 down the front to snugly adjust it to the stump.

3 denotes the lower-socket or calf section, likewise formed of light leather, and 4 4 represent the vertical parallel braces suitably fixed to the opposite sides of the lower section 3, and their upper ends are hinged by the tubular rivets 5 5 to the lower ends of the diverging braces 6 6, fixed to the upper socket 1.

7 denotes a bearing-plate secured by the screws 8 8 to the lower end of each of the braces 6 6, and it extends on the outside of the lower brace 4, the bolt 9 passing through the tubular rivet 5 and into the solid bottom 10 of the upper section.

12 and 13 denote spacing-blocks interposed between the brace 6 and the plate 7, and they also form limit-stops for limiting the movement of the lower section 3 with reference to the upper section 1 when the limb is in use, the lower end of the block 12 terminating in a diagonal edge 14, which comes in contact with diagonal edge 15 of the brace 4 when the sections are alined, and the corresponding edge 16 of the block 13 comes in contact with the straight edge 17 of the brace 4 to form a limit-stop when the knee-joint is bent.

18 denotes a strap which is passed over the shoulder and its free end brought down and adjustably secured in the buckle 19, the buckle end being bifurcated, as shown, one portion extending through the grooved pulley 20, fixed on one side of the section 1, and the other portion passing through a similar pulley on the other side of said section.

21 denotes a conical pneumatic cushion, which is provided with a valved tube 22 for inflating it by means of an ordinary bicycle-pump.

23 represents a pneumatic bearing-ring, which is secured in the upper end of the socket 1 by means of the lacing-strap 24, and it is also provided with a valved tube 25 for conveniently inflating it.

26 denotes the pneumatic foot, and it is formed with a solid wooden ankle 27 and an instep 28, through which the valved tube extends for inflating it. This inflatable foot is covered by a leather envelop 30, which is provided with the lacings 31 and 32 for securing the inflatable foot in place, and it is also formed with the side ears 33 34 to receive the pivot-bolt 35, which also extends through the lower ends of the braces 4 4 and the ankle 27 to hinge the foot to the lower socket 3.

36 represents a leaf-spring fixed to the inside of the leather envelop by the rivets 37 37.

38 denotes a wooden peg-leg provided with the leather and rubber pad 39 and braces 4 4 for securing it to the socket 1 in place of the lower socket 3.

In practice I prefer to form the pneumatic foot 26 with a solid rubber or leather heel, and the pneumatic portion in the event of a puncture can be stuffed with hair, wool, or other suitable fabric.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

10 1. In combination, the adjustable socket 1, the braces 6 6 fixed thereto, the pneumatic foot 26, the lower socket 3, the braces 4 4 fixed thereto and hinged at their lower ends to said foot and at their upper ends to the braces 6 6
15 and the pneumatic cushion 21 encompassed

by said socket 1, substantially as shown and described.

2. In combination, the adjustable socket 1, the conical pneumatic cushion 21 contained within said socket, the pneumatic ring 21 and 20 the lacing-strap 24, adapted to secure said ring to the upper edge of said socket, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 25 nesses.

LEONARD RIEBEL, JR.

Witnesses:

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N. C. BYERS.