J. E. HANGER.

ARTIFICIAL LEG.

No. 111,741. Patented Feb. 14, 1871.

Fig. 2.

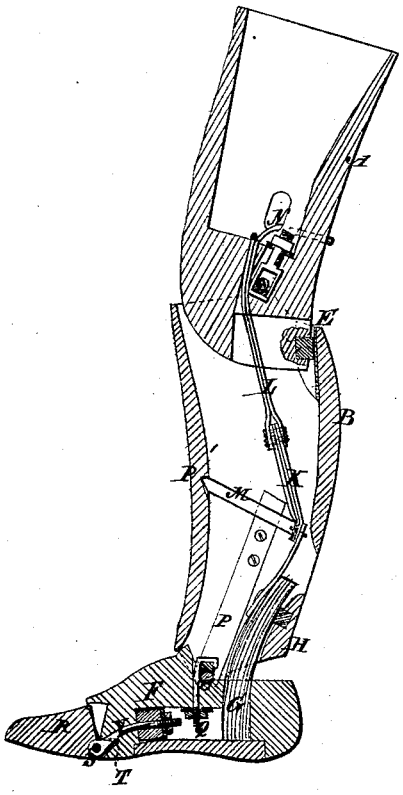
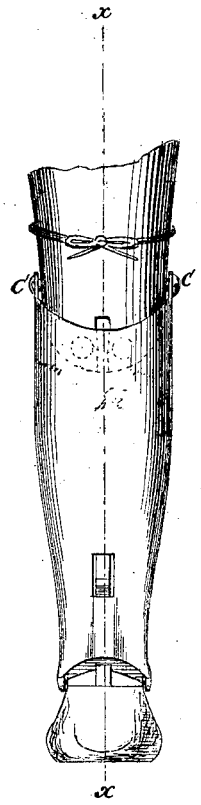


Fig. 1.



Witnesses:

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JAMES EDWARD HANGER, OF STAUNTON, VIRGINIA.

Letters Patent No. 111,741, dated February 14, 1871.

IMPROVEMENT IN ARTIFICIAL LEGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES EDWARD HANGER, of Staunton, in the county of Augusta and State of Virginia, have invented a new and improved Artificial Leg; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in the construction of artificial legs; and

It consists in the arrangements of the knee, ankle, and toe-joints, hereinafter described, which are designed to provide more efficient and durable legs than those now in use.

Figure 1 is a rear elevation of my improved leg, and

Figure 2 is a sectional elevation of the same taken on the line *x x* of fig. 1.

Similar letters of reference indicate corresponding parts.

The lower end of the thigh A and the upper end of the leg B, which are pivoted together by the pivot C, are arranged so that the part A extends into the part B, and is provided with an India-rubber cushion, D, which acts on the pad E of part B, for arresting the forward motion of B, and softening the shock whenever the said parts come in contact.

The foot F is provided with a strong curved piece of wood, G, mortised in at the top from the front of the heel, and rising upward into the leg for bearing against the rear part H when the leg swings forward on the foot as far as required, which part is provided with the India-rubber spring I, to soften the shock.

This piece is also used, in connection with the lifting-spring K, the cords L, and the deflecting-bar M, for swinging the toes as the leg is raised in walking, previous to stepping forward, the said cord being extended up into the part A in front of the knee pivot-bolt, and out through side holes N, for fastening by tying around the leg, where it may be conveniently reached for adjustment from time to time, and the deflecting-bar being notched into the inner wall of the front of the leg, as shown at P', and extending backward and downward to near the rear side, as shown, for deflecting the spring K, to cause it to draw the piece G, so as not to interfere with its bearing against the cushion I when required, and so that the spring K will operate both the knee and ankle-joints.

The ankle-joint bolt O is attached at the ends in the bars P, which are firmly riveted to the walls of the leg, and the foot is suspended from it by the hook-headed bolt Q, having an adjusting-nut, and arranged for clamping the foot, which is provided with a transverse groove in the upper side against the bolt, so that the groove forms a seat for it to turn in, which seat may be closely confined against the bolt to prevent any looseness by the adjusting-nut and screw.

This furnishes a very permanent and reliable joint.

The toe R is provided behind the pivot S with an angular point, T, which projects into a V-groove in the front end of the the foot F, for bearing in the bottom of said groove, as a point of vibration to lessen the friction as much as possible, the bolt or rod V, by which the pivot S is held, being allowed to spring up and down slightly.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The pivot C, in rear of the center rubber cushion D, pad E, and leg B, combined as described with thigh A having solid knee protruding within the leg-piece, all for the purpose of forming an improved knee-joint.

2. The curved wooden piece G applied to an artificial leg, in combination with the spring on back part of leg, the lifting spring, the deflecting-bar, and the mechanism of the foot, as specified.

3. The combination, with the foot, the leg, thigh, and the bent wood-piece G, of the spring K, cord L, and deflecting-bar M, substantially as specified.

JAMES E. HANGER.

Witnesses:

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