H. J. MORRIS & J. A. COWLYN.

ARTIFICIAL LIMB.

APPLICATION FILED JUNE 30, 1911.

1,026,109.

Patented May 14, 1912.

Fig. 1.

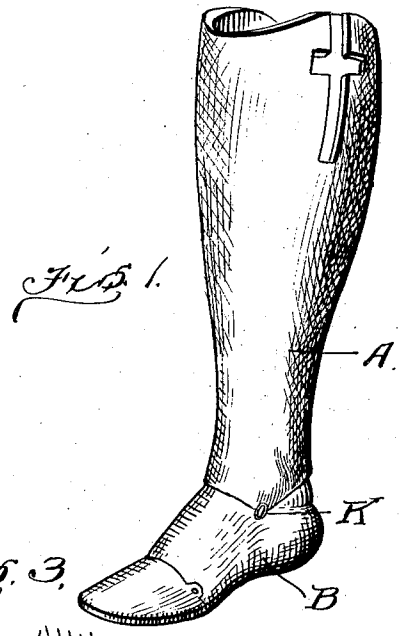


Fig. 3.

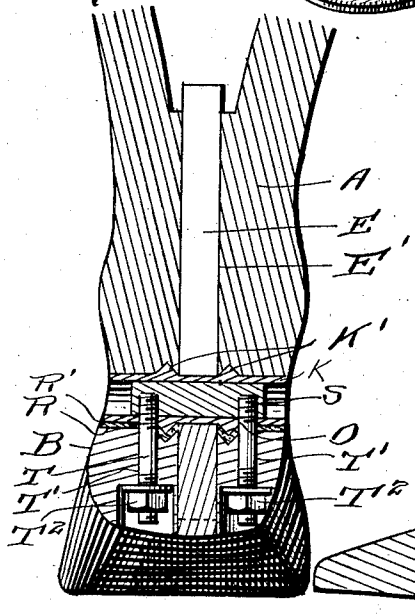
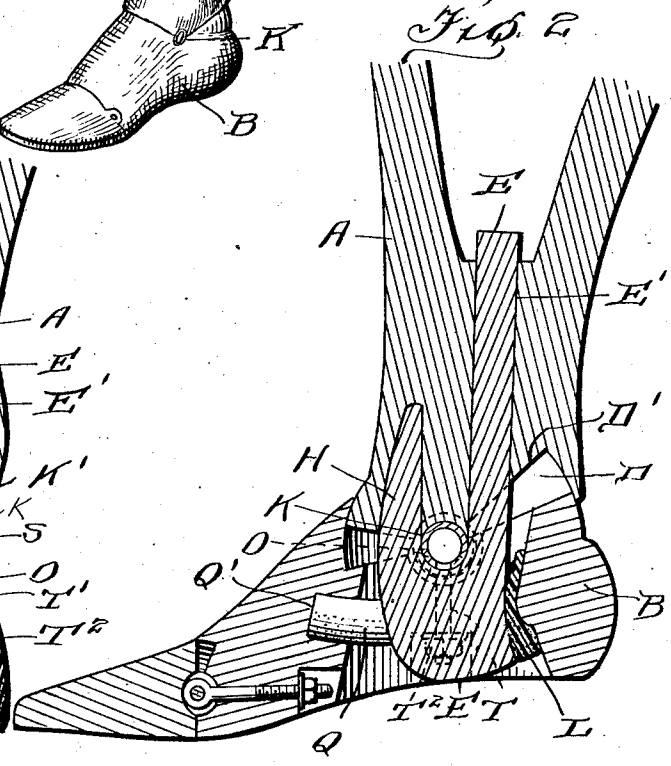


Fig. 2.



Witnesses

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ARTIFICIAL LIMB.

1,026,109. Specification of Letters Patent. Patented May 14, 1912.

Application filed June 30, 1911. Serial No. 636,276.

To all whom it may concern:

Be it known that we, HARRY J. MORRIS and JOHN A. COWLYN, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Artificial Limbs; and we do hereby 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in artificial limbs and the object in view is to generally improve upon and render more efficient devices of this nature.

More specifically, the invention comprises an artificial limb having the ankle of the foot portion pivoted to the shank in such a manner as to be allowed to have a free play and, in the provision of buffers for the purpose of relieving jar while the limb is swung forward, and also buffer means for bringing the foot back to the right angle with the shin portion, while a person, equipped with the limb, is walking.

The invention comprises various details of construction and combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

We illustrate our invention in the accompanying drawings, in which:—

Figure 1 is a perspective view of an artificial limb made in accordance with our invention. Fig. 2 is a vertical sectional view through the same longitudinally, and Fig. 3 is a sectional view at right angles to the plane of Fig. 2.

Reference now being had to the details of the drawings by letter, A designates the shin portion of the limb and B the foot. The bottom of the shin portion has a recess D formed therein, with the top wall thereof inclined as at D′.

A pin, designated by letter E, and made preferably of a hard wood, passes through a slot E′ formed in the lower solid part of the shin portion and said pin has a convexed end F and a laterally projecting hook portion H. A hollow shell K passes through a slot in said pin and forms a bearing upon which the foot rocks, said shell having circumferential ribs K′, one upon either side of the pin, and mounted in angular grooves formed in the bottom of the shank. Said shell is provided with circumferential slots O, and S designates a rock shaft mounted in said shell and threaded rods T are fastened to said rock shaft and project through the slots in the shell and are adapted to pass through apertures T′ formed in the foot, nuts T^2 being mounted upon the threaded ends of the rods and countersunken in the bottom of the foot. It will be noted that the foot portion of the limb, which is adjacent to the lower end of the shank part is provided with bearing grooves R in which are seated cushions R′ of any suitable fabric, such as leather, in which the shell and ribs thereon have a bearing. A buffer Q is positioned in a hole Q′ formed in the wall of the recess of the foot and is adapted to bear against the convexed edge of the hook of the pin while another buffer L is mounted between the opposite edge of the pin E and the adjacent wall of the recess in the foot, thus forming means for taking up vibration when the shank swings in either direction. The buffer Q will serve the purpose for returning the foot back to a right angle with the shin portion, while a person, equipped with the artificial limb, is walking.

By the provision of the construction shown, it will be observed that the foot will be held to the shank, even though the nuts upon the bolt come off, this being due to the peculiar shape of the pin E which passes down through the recess of the foot and engaged by the buffers. By this construction, it will be noted that there will be no downward pull upon the ankle joint, which is apt to be the case with artificial limbs in which bolts only are employed to hold the foot.

By the provision of an apparatus as shown, cords usually employed upon artificial limbs are entirely dispensed with and an artificial limb is produced which is simple in construction.

What we claim to be new is:—

1. An artificial limb comprising a shank and a foot portion, the latter being recessed, a pin projecting from the lower part of the shank portion and having a hook at one end, a bearing shell supported by said hook, a buffer mounted in a hole in the wall of the recess of the foot and bearing against the said hook, another buffer interposed be-

tween the edge of the pin opposite the hook, and an under cut wall at end of the recess, as set forth.

2. An artificial limb comprising a shank and a foot portion, the latter being recessed, a pin projecting from the shank portion, a bearing shell supported by said pin, a rock shaft journaled in said shell, threaded rods fastened to said rock shaft and passing through slots in the shell and through apertures in the foot, nuts mounted upon the threaded ends of the bolts, and buffers intermediate the opposite edges of the pin and the walls of the recess.

3. An artificial limb comprising a shank and a foot portion, the latter being recessed, a pin fastened to the shank portion and having a hook at its lower end one edge of the hook being convexed and the edge of the pin opposite the hook, and near its lower end, being slightly concaved and extending laterally, a bearing shell mounted in said recess and provided with annular ribs seated in grooves in adjacent contact surfaces of the shank portion and foot, a rock shaft mounted in said shell, threaded rods fixed to the rock shaft and passing through slots in the shell and through apertures in the foot, nuts mounted upon the bolts, and buffers bearing against the opposite edges of hook of the pin.

4. An artificial limb comprising a shank and a foot portion, the latter being recessed, a slotted pin fastened to the shank portion and having one edge of the hook convexed and the edge of the pin opposite the hook, and near its lower end, being slightly concaved and extending laterally, a bearing shell mounted in said slot and provided with circumferential ribs seated in grooves in adjacent contact surfaces of the shank portion and foot, a rock shaft mounted in said shell, threaded rods fixed to the rock shaft and passing through slots in the shell and through apertures in the foot, nuts mounted upon the bolts, buffers bearing against the opposite edges of the hook of the pin, the lower end of the shank having a recess and adapted to receive the heel portion of the foot.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

HARRY J. MORRIS.
JOHN A. COWLYN.

Witnesses:
GEORGE M. MORRIS,
EDWIN DAVIDSON.