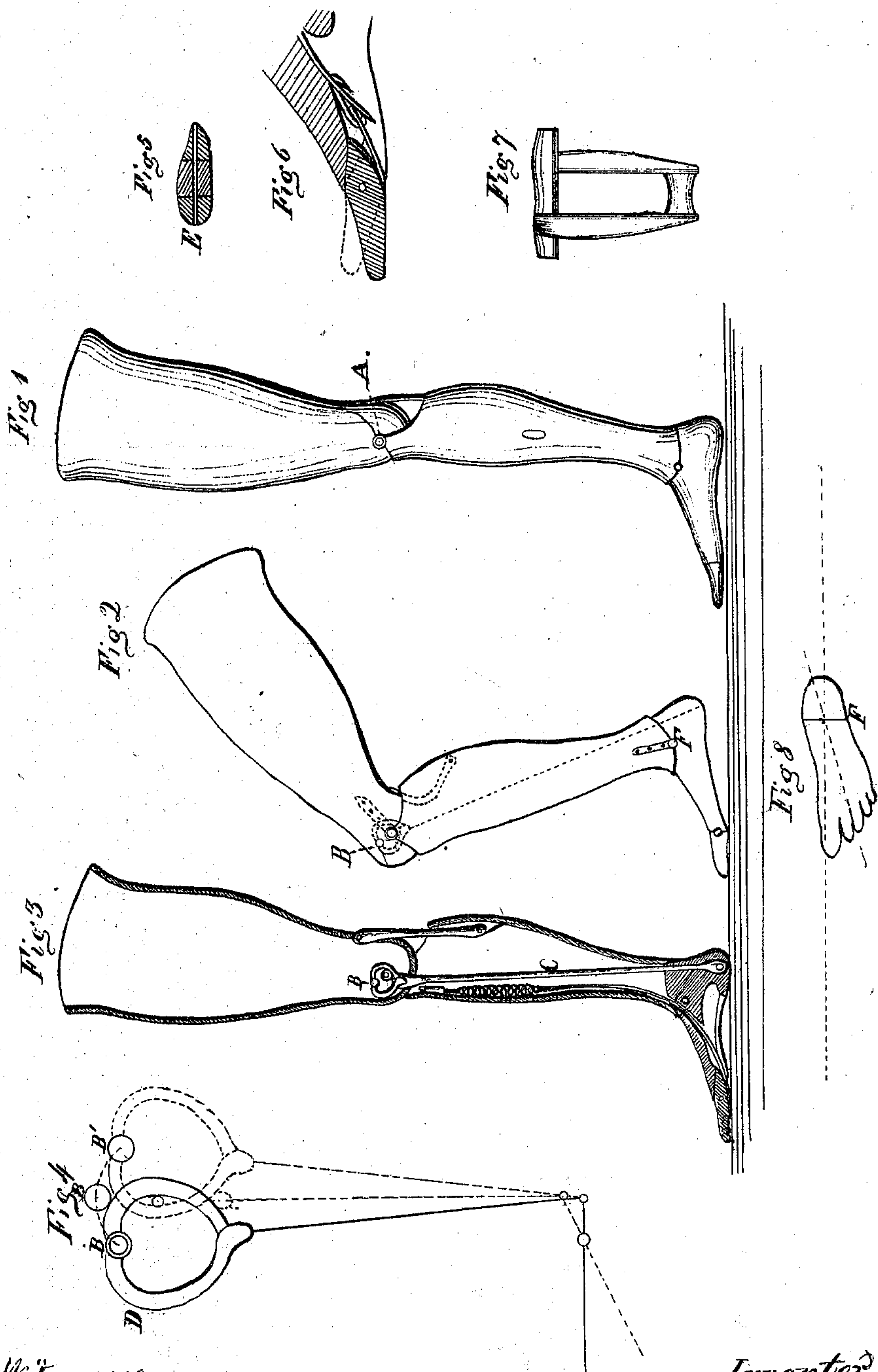


S. B. Jewett,

Artificial Leg.

No. 97,647.

Patented Dec. 7. 1869.



Witnesses
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SAMUEL B. JEWETT, OF LACONIA, NEW HAMPSHIRE.

Letters Patent No. 97,647, dated December 7, 1869.

IMPROVED ARTIFICIAL LEG.

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, SAMUEL B. JEWETT, of Laconia, in the county of Belknap, and State of New Hampshire, have invented a new and useful Improvement in Artificial Legs; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of a peculiar link for attaching the heel-cord to the thigh, without interfering with the knee-joint.

Figure 1 is a side view of my improved leg.

Figure 2 is the same, partly flared.

Figure 3 is a section of the same.

Figure 4 is a view showing the motion of the heel-cord and foot.

Figure 5 is a cross-section of the foot.

Figure 6 is a detached view of the toe.

Figure 7 is a detached view of the link for heel-cord.

Figure 8 is a bottom view of the foot, showing the line of travel.

In the construction of my improved artificial leg, the thigh, leg, and foot may be of the usual general form, with the knee-pivot, ankle-pivot, knee-cords, and toe-cord or spring, all arranged in the ordinary manner, as shown in the accompanying drawings, figs. 1, 2, and 3.

At a point, say about five-eighths of an inch forward and above the knee-pivot A, a bolt is inserted through the thigh, as seen at B, fig. 3.

When the leg is extended, a line connecting the knee-pivot and the bolt B, would stand at about an angle of forty-five degrees from a vertical or a horizontal line.

Upon this bolt B is swung a link, D, through which the knee-pivot passes, without touching the same. This link is very broad, in order to let the knee bend or extend, without interference with the knee-pivot, as shown in figs. 2 and 4.

The heel-cord C, I make very firm and inelastic, so as to bear a great strain without stretching, and I attach this cord to the link D. By this arrangement it will be seen that the flexion of the foot, and consequent strain upon the heel-cord, will extend the knee-joint, and hold the same very stiff when the person rests upon the artificial foot.

The foot acting like a lever, and the heel being the

short arm of the lever, about one-third of the length of the foot, the strain upon the heel-cord may amount to five hundred pounds or more, according to the weight of the person resting on the foot. Therefore, the heel-cord acts as a most powerful extensor of the knee, and it is impossible for the knee-joint to give way and let the patient fall.

The knee-pivot and the pivot which connects or attaches the heel-cord or link D to the thigh, are placed in such relation to each other, that the heel-cord not only holds the leg when completely or nearly extended, but the cord also may act as an extensor, until the knee is bent to an angle of forty-five degrees, or to the dead centre.

As the knee is bent, the point B travels through the arc of a circle, as shown in broken lines in fig. 4. It will be seen that the point B first rises in passing this arc, so as to draw up the heel at the centre of the arc, and then descends until it reaches the point B', when the heel falls to the point from which it started. Thus it will be seen that the point B travels from the front of the knee-pivot to the rear of the same, as the knee bends, and then returns again to the front of the knee-pivot as the leg is extended.

During this motion, the link D transfers the point B from side to side of the knee-pivot, without any interference, as is clearly seen in fig. 4.

The hinge of the toe-joint is made to conform to the shape of the natural foot.

Fig. 5 is a section of this joint, showing a transverse section of the foot and the pivot E. The hinge is so moulded to the form of the foot as to make no cavity or projection, whether the toe is flexed or extended.

I set the knee-pivot and ankle-pivot nearly parallel to each other, so as to prevent the knee from turning outward as the knee is bent. Thus the ankle-pivot is set obliquely to the central line of the foot, and at right angles to the line of travel, as shown in fig. 8.

Having thus described my invention,

I claim—

The link D, substantially in the manner and for the purposes set forth.

S. B. JEWETT.

Witnesses:

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