

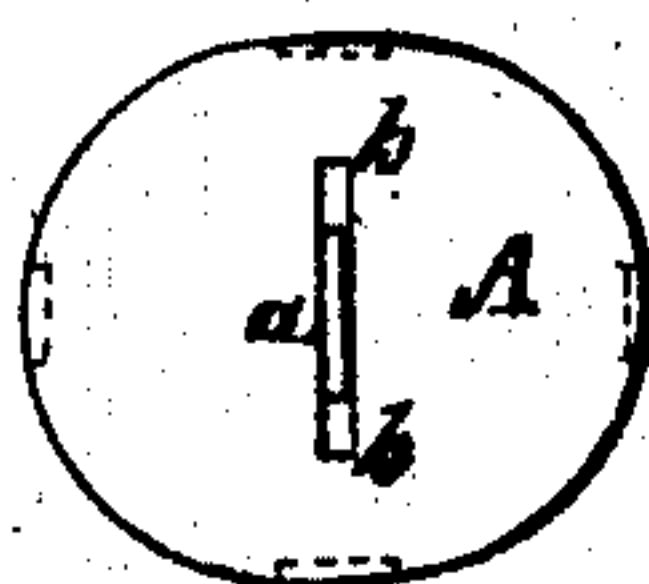
71424

PATENTED

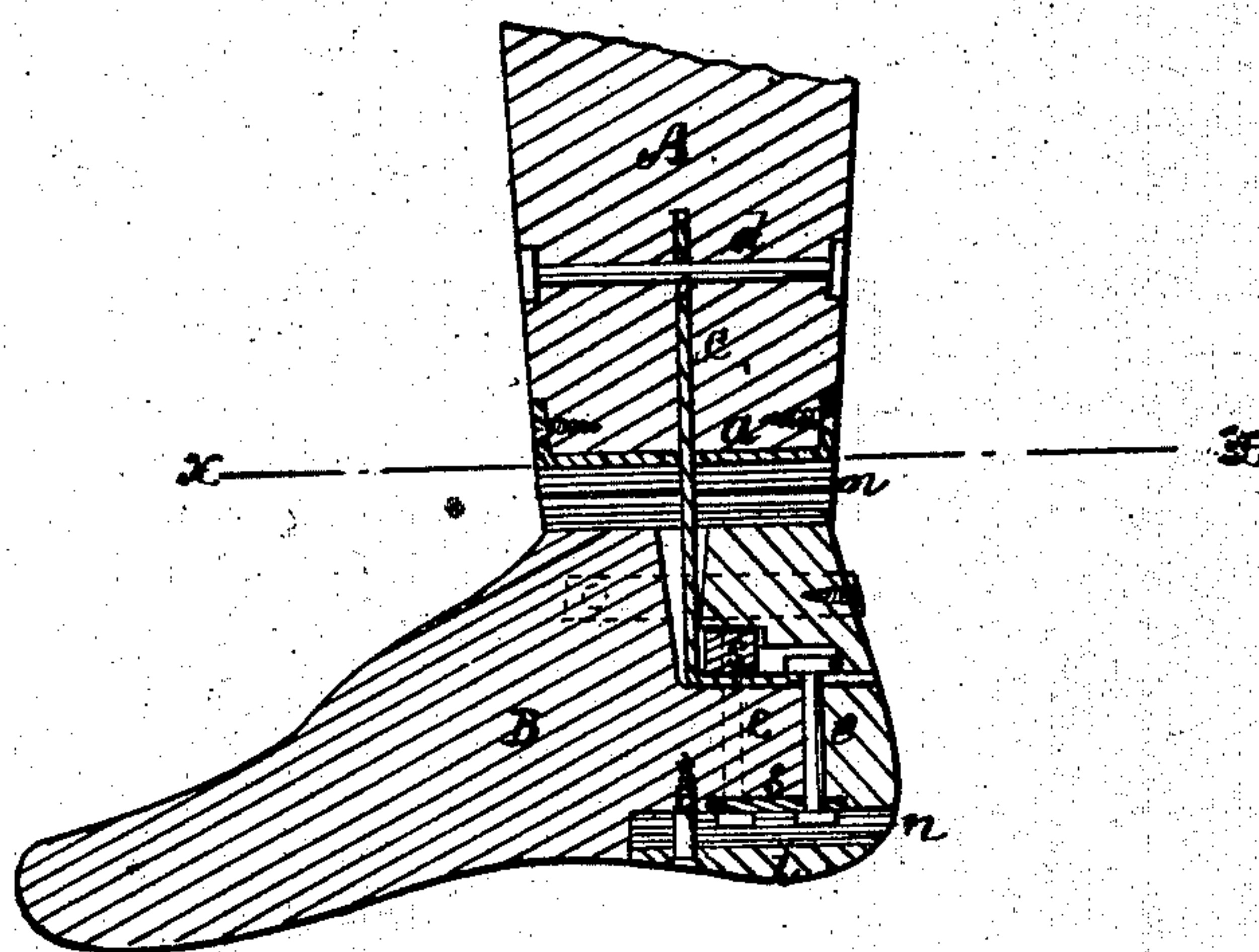
NOV 26 1867

*Charles Swett's Imp<sup>d</sup> Artificial Legs*

*Fig. 2.*



*Fig. 1.*



*Witnesses*  
*Theo. Tusche*  
*J. A. Larrick*

*Inventor*  
*Chas. Swett*  
*Per. Wm. H. H. H.*  
*Attorney*



# United States Patent Office.

CHARLES SWETT, OF VICKSBURG, MISSISSIPPI.

Letters Patent No. 71,424, dated November 26, 1867.

## 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, CHARLES SWETT, of Vicksburg, in the county of Warren, and State of Mississippi, have invented a new and useful Improvement in 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 drawings, forming part of this specification, in which—

Figure 1 is a central vertical section of a leg, showing my improved ankle-joint.

Figure 2 is a transverse section taken in the plane of the line *x x*, fig. 2.

Similar letters of reference indicate like parts.

This invention relates to an improved arrangement of devices for an ankle-joint of an artificial leg, and consists in a combination of a vertical spring with a horizontal India-rubber plate, arranged in such manner that the foot may readily adapt itself to any required position when a step is made with the artificial limb, through the combined flexible action of the India-rubber plates and steel springs, while by their elasticity the movement will be assisted, and the foot will instantly resume its natural position when lifted from the ground.

In fig. 1, A is the leg and B the foot of an artificial limb, made of wood or any suitable material. The leg and foot are made in separate pieces, divided transversely through the ankle-joint. On the lower end of the section of the leg A is fastened a metal plate, *a*, in which is made a narrow slot, *b b*, about one and one-quarter inch long, as shown in fig. 2. This slot is made at right angles to the central line of the foot, and through it passes a flat steel spring, *c*, about one inch in width, and varying in thickness with the strength and elasticity required in the case to which the limb is applied. The spring *c* is let into a long recess in the lower end of the leg, corresponding to the slot *b b* in the plate *a*, in the upper part of which recess it is held by a pivot, *d*, that passes from the front to the back side of the leg A, in such manner that the spring *c* has a lateral movement permitted from one end to the other of the slot *b b*. The lower end of the spring *c* is turned at right angles, and let into the heel of the foot B, where it is firmly secured by screw-bolts and nuts *e e*, and binding-plates *s s*. The length of the spring *c* is such as to allow an India-rubber plate or cushion, *m*, of proper consistency and elasticity to be placed between the upper part of the foot B and the lower part of the leg A, next to the plate *a*, about one and one-quarter of an inch in thickness. In the rubber plate is a slot corresponding to the slot *b b*, through which passes the spring *c*. For the purpose of giving local elasticity to the heel, I insert a horizontal plate or cushion of India rubber, *n*, horizontally in the heel of the foot A, secured by one or more screws, *e'*, under a tap, *i*. It will be obvious that with this combined arrangement of a horizontal rubber cushion and vertical spring in the ankle, the joint will have a free and elastic movement in all directions, and especially forward and backward, to facilitate the action of the limb in stepping and treading on the ground, and also laterally through the play of the spring edgewise in the slot *b b*, as suspended on the pivot *d*. The rubber plate *m* should have holes cut before and behind the spring *c*, so as to leave a narrow strip on each side of it, and a narrow rim around the outside of the plate, to produce more elasticity. And behind the ankle a thin metal plate should be screwed, to connect the leg and heel together, and serve as a "check"-plate, being made fast to the heel B, and slotted, to slide on the leg A.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. The flat vertical spring *c*, combined with the horizontal rubber cushion *m*, the leg A, and foot B, arranged and operating substantially as and for the purposes herein described.

2. In combination with the above, I claim the elastic cushion *n*, substantially as described for the purpose specified.

CHAS. SWETT.

Witnesses:

C. A. MUNSON,

JOHN H. HOBART.