E. OSBORNE.

Artificial Limb.

No. 197,943. Patented Dec. 11, 1877

Fig. 1.

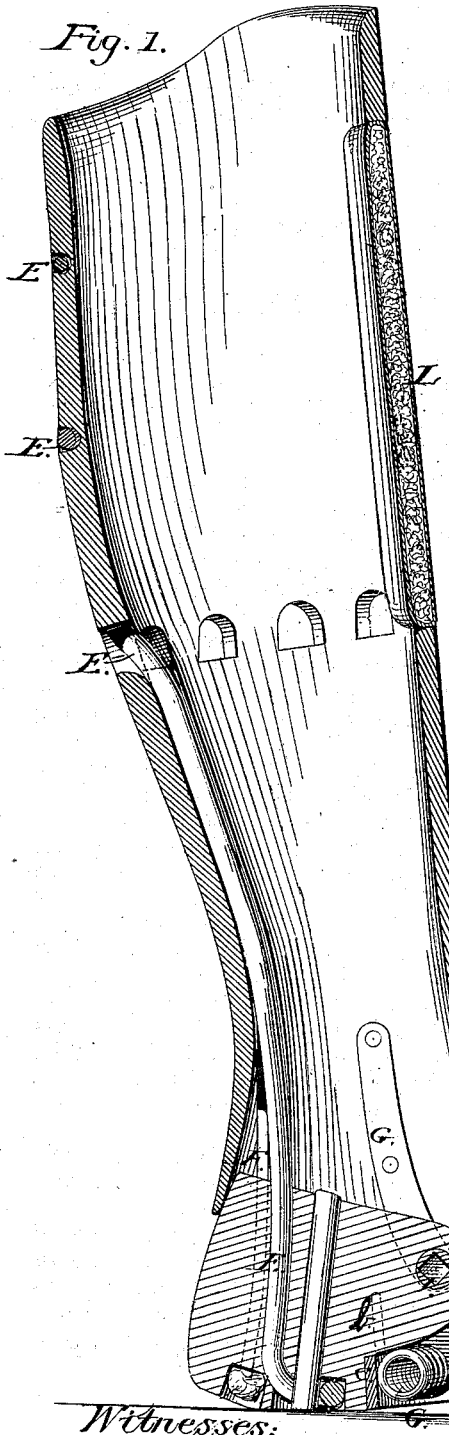


Fig. 2.

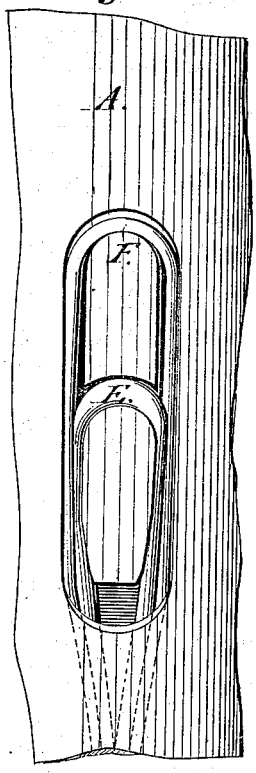
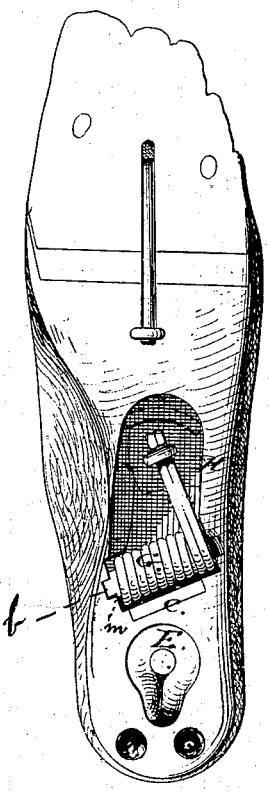


Fig. 3.



Witnesses:

William J. Harvey

Thos. E. Merchant

Inventor:

Edwin Osborne

UNITED STATES PATENT OFFICE.

EDWIN OSBORNE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ARTIFICIAL LIMBS.

Specification forming part of Letters Patent No. **197,943**, dated December 11, 1877; application filed October 22, 1877.

To all whom it may concern:

Be it known that I, EDWIN OSBORNE, of Philadelphia, Pennsylvania, have invented a new Improvement in Artificial Limbs, of which the following is a specification:

In the annexed drawings, Figure 1 is a vertical section of a leg with my improvements attached. Fig. 2 is a part of the rear part of the leg, and Fig. 3 is a bottom view of the foot.

My invention relates to artificial limbs; and consists, first, in a sectional pad applied to that part of the artificial limb upon which the lateral strain comes in the act of stepping; second, in the combination of an elastic cord with that already in use, as an extensor, the former to act as a yielding resistant until it may be relieved or re-enforced by the latter, thus imparting a natural easy motion to the body in walking.

Where legs have been amputated below the knee, there is a leverage which throws the shin-bone against the inner casing of the artificial leg every time a step is taken, and as the body moves forward great pressure is brought to bear upon this point, producing abrasion of a very painful nature. To relieve this I cut out the wood, after ascertaining the proper position, and put in its place a pad, I, of wool, felt, or other suitable substance, and retain it by a covering of leather on both sides, which pad, while it yields sufficiently to conform to the shape of the stump, will afford a sufficiently firm bearing for the purpose.

As an improvement on the single cord heretofore used, which corresponds to the extensor-tendon, I propose to use two cords, one of the ordinary construction, marked E, which is practically rigid, and a second, F, made of sheep-intestine, known generally as catgut. This latter is sufficiently elastic to yield or stretch about three-eighths of an inch per foot when placed upon a leg, and will resist sufficiently to give the body in its forward movement the support needed until its maximum weight has been placed upon the leg, when the strain is gradually transferred to the rigid cord.

In repairing an artificial leg the foot has generally to be taken off. This has required considerable labor and trouble, as the flexor-cord has been anchored to a concealed spring, which was securely fastened in the foot. To remedy this I have cut a slot, C, across the bottom of the foot, just below the ankle-joint, in which to place the foot-spring G, which works upon the bolt *b*, slid into bearings *m* on either side of this slot. One end of the spring projects into a hole, *l*, up the foot, and the other is slightly hooked to receive the cord H.

Having fully described my invention, what I claim as my improvement, and desire to secure by Letters Patent, is—

1. The pad I, inserted in a slot cut in the forward portion of the leg, substantially as and for the purposes herein set forth.

2. The combination, in an artificial leg, of the rigid cord E and the elastic cord F, both attached and operating directly upon the pivoted heel, as and for the purpose described.

EDWIN OSBORNE.

Witnesses:

THOS. E. MERCHANT,

WILLIAM J. HARVEY.