A. A. Marks,

Artificial Leg,

No. 40,763, Patented Dec. 1, 1863.

Fig: 2.

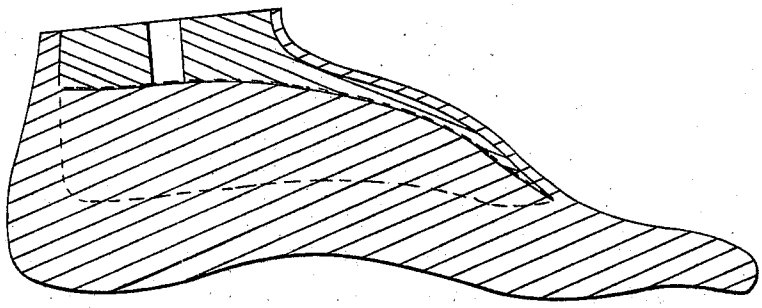


Fig: 1.

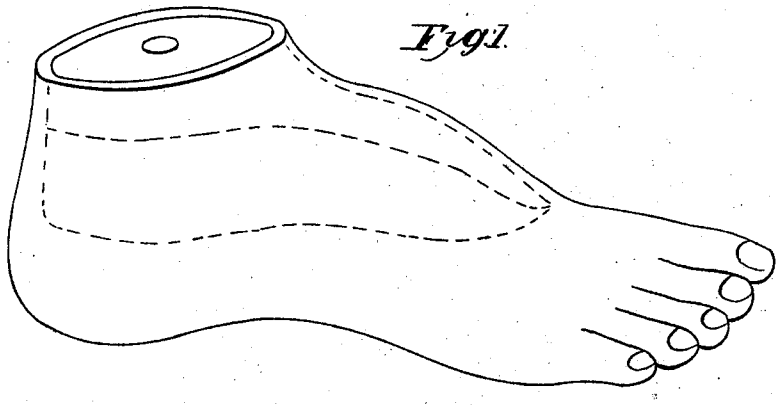
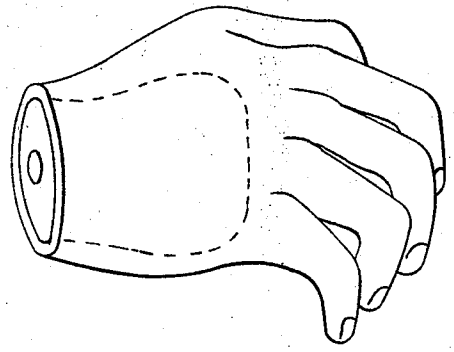


Fig: 3.



Witnesses:
Barnaz S. Low
Charles Low.

Inventor:
A. A. Marks.

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

AMASA A. MARKS, OF NEW YORK, N. Y.

IMPROVEMENT IN ARTIFICIAL LIMBS.

Specification forming part of Letters Patent No. **40,763**, dated December 1, 1863.

To all whom it may concern:

Be it known that I, AMASA A. MARKS, of the city, county, and State of New York, have invented certain new and useful Improvements in the Manufacture of Artificial Limbs; and I do hereby declare that the following is a full and exact description of the same, reference being made to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view of a foot to be attached to the stump of an amputated leg; Fig. 2, a longitudinal vertical section of the same, and Fig. 3 a perspective view of a hand to be attached to the stump of an amputated arm.

The ordinary construction of artificial limbs involves the use of springs, joints, pivots, &c., to such an extent that they are not only very costly, but also very liable to get out of order by use. I propose to obviate these objections by my improvement, which consists in making the wearing parts of the limbs—viz., the foot and hand—of a composition of "sponge-rubber" and "hard rubber," or of sponge-rubber and wood, the sponge-rubber being used to give to the toes, heel, and body of the foot and to the fingers and body of the hand the requisite degree of elasticity, (corresponding as near as possible to the natural movements of the two members,) and the hard rubber or wood filling to give the requisite degree of solidity to enable them to be fastened and secured to the wooden stumps that are to be fastened and secured to and upon the remaining stumps of the leg or arm to which they are to be applied. By this means I avoid the use of springs, pivots, joints, &c., that are ordinarily employed for producing the movement of the foot and hand in ordinary artificial limbs, and also avoid the great expense and wear, making the limbs cheaper and more durable. The body of the foot A and of the hand B is made of what is commercially known as "sponge-rubber," possessing great strength, combined with the requisite degree of elasticity. They are made in proper molds, of such different sizes as may be required. C in the foot and D in the hand is the filling of hard (or inelastic) rubber or of wood, as may be preferred, to which the attachment to the wooden stump of the leg or arm is made. In the latter case the attachment is made by a ball-and-socket joint, so that the hand may be set to any required position and be secured there. In the former it is made direct and permanent to the stump, so that the foot can be controlled absolutely by the movement of the remaining part of the natural leg of the wearer.

The natural movement of the foot is more closely imitated by my improvement than by any other before known, while at the same time the cumbrous, expensive, and delicate attachments ordinarily used to effect the same purposes are dispensed with. In regard to the hand, I only propose to make it as an artificial "show" limb, one that will cover the defect, in appearance, due to the loss of the real member, and which will yet, when grasped by another person, have a more natural feeling than a rigid artificial one would have.

What I claim as my invention, and desire to secure by Letters Patent, is—

Making feet and hands for artificial limbs of sponge or soft rubber, combined with hard rubber or wood, as and for the purpose herein set forth.

A. A. MARKS.

Witnesses
FRANCIS S. LOW,
CHARLES LOW.