J. F. ROWLEY.

ANKLE JOINT FOR ARTIFICIAL LIMBS.

APPLICATION FILED MAR. 2, 1906.

969,196. Patented Sept. 6, 1910.

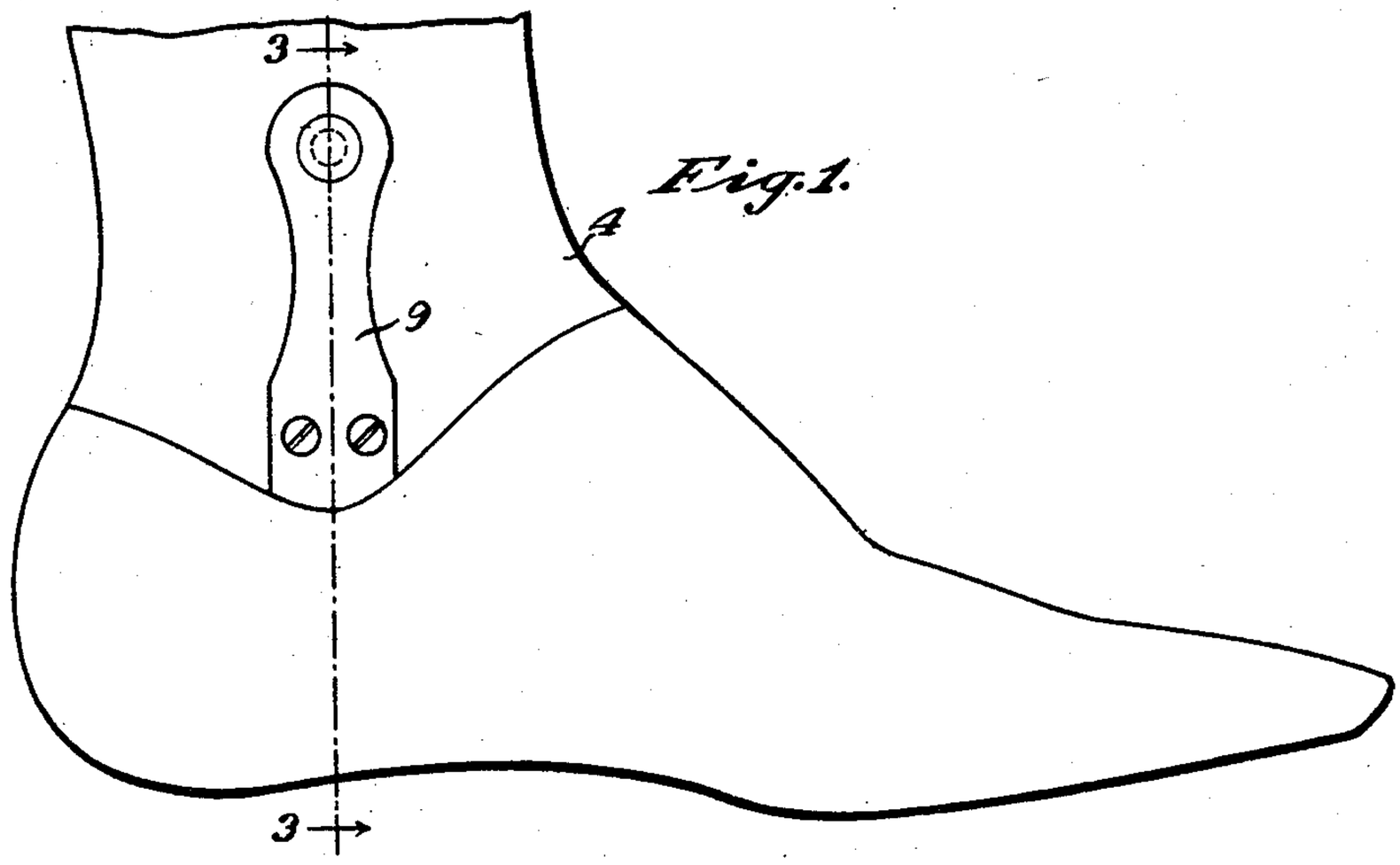


Fig. 1.

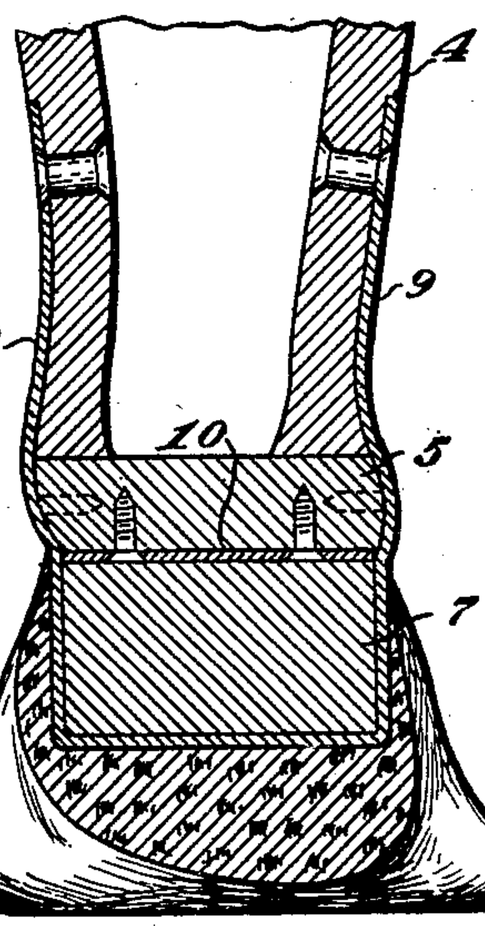
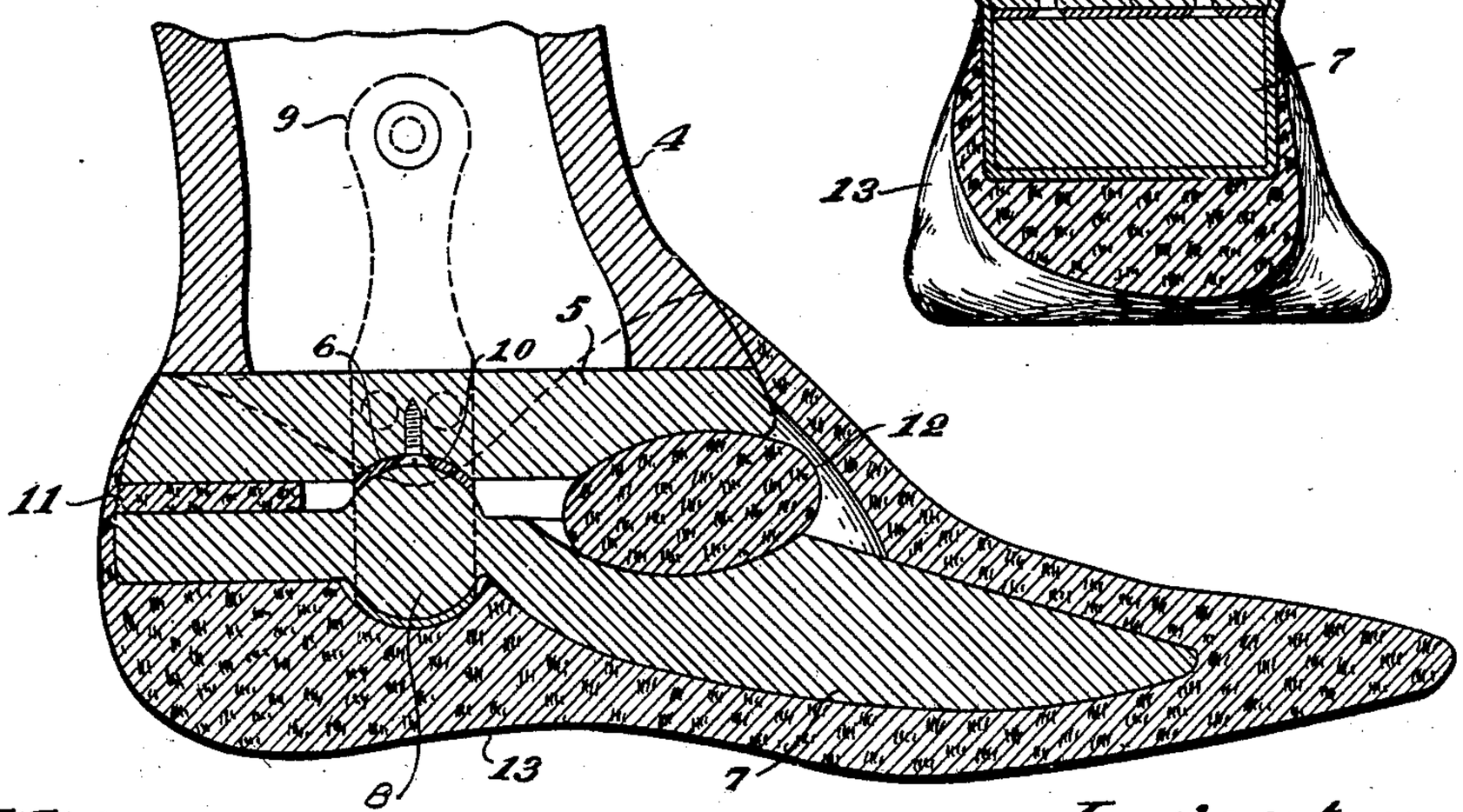


Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES F. ROWLEY, OF CHICAGO, ILLINOIS.

ANKLE-JOINT FOR ARTIFICIAL LIMBS.

969,196. Specification of Letters Patent. **Patented Sept. 6, 1910.**

Application filed March 2, 1906. Serial No. 303,844.

To all whom it may concern:

Be it known that I, JAMES F. ROWLEY, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ankle-Joints for Artificial Limbs, of which the following is a specification.

The main object of this invention is to provide an improved form of ankle joint for artificial limbs, whereby great strength and freedom of movement will be had with little wear, and whereby compensation for wear may be readily made. This object is accomplished by the device shown in the accompanying drawings, in which:

Figure 1 is a side elevation of an artificial foot, provided with an ankle joint constructed according to this invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section of the same on the line 3—3 of Fig. 1.

In the construction shown, the shin section 4 is provided with an ankle block 5 at its lower end having therein, at its middle part, a concave socket 6. The foot member or core 7 is fulcrumed at the lower end of the shin section. The foot member 7 has a bulb 8 which is seated in the socket 6 and is held in position by means of an upwardly concave support, preferably in the form of a metal strap or stirrup 9 which extends around below the bulb of the foot member and is secured at each side of the shin section by rivets and screws, as shown. The upper and lower surfaces of the bulb 8 are convex and of circular curvature and fit the lower concave part of the stirrup 9 and the concave metal lining 10 of the socket 6. The convex surfaces of the bulb and the concave surfaces of the shin section and stirrup are all concentric with the axis of rotation of the foot member, which axis is transverse to the length of the foot.

The foot member 7 extends both forward and rearward from the bulb 8. A pad 11 of soft material such as felt or rubber is interposed between the rearward part of the member 7 and the shin section and a resilient rubber cushion 12 is interposed between the member 7 and the ankle block 5 in front of the bulb 8. This cushion is arranged to yield so as to permit of the required movement of the foot member on the shin section during the act of walking by the wearer. The foot member and ankle block 5 are surrounded by a filling 13 of sponge rubber which is formed to the shape of the foot.

The metal lining plate 10 of the socket 6 is preferably separate from the stirrup and is independently fastened to the ankle block 5. The bulb 8 of the foot member is seated in position in the socket and is securely held in such position by means of the stirrup which is rigidly fastened to the ankle block 5 and shin section 4. The construction shown provides an ankle joint which is light and at the same time of great strength. The wearing surfaces are large so that the wear is very small. In case of wear after long continued use of the limb, such wear may be readily taken up by inserting a lining of paper or other thin material between the ankle block 5 and the plate 10.

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

1. In an artificial limb, the combination of a shin section, having a socket at its lower end, a member having a bulb which serves as a fulcrum therefor seated in said socket and adapted to have a limited rotation therein, and a stirrup extending around below said bulb and upwardly at each side of said shin section, the upwardly extending parts of said stirrup being separately fastened to opposite sides of said shin section for holding said bulb in said socket.

2. In an artificial limb, the combination of a shin section having a concave socket at its lower end, a stirrup rigidly fastened thereon and having therein a concave socket opposed to the socket on said shin section, and a foot member interposed between said stirrup and shin section and having convex portions seated in said sockets and together forming a fulcrum for said foot member.

3. In an artificial limb, the combination of a shin section having a concave socket at its lower end, a stirrup rigidly fastened thereon and having therein a concave socket opposed to the socket on said shin section, and a foot member interposed between said stirrup and shin section and having convex portions seated in said sockets and together forming a fulcrum about which said foot member turns with respect to said shin-section; said foot member and shin section being each extended forward and rearward of said fulcrum, and a resilient cushion interposed between each pair of said extensions.

4. In an artificial limb, the combination of a shin section having a concave socket at

its lower end, a foot member having a bulb seated in said socket and serving as a fulcrum about which said foot-member turns with respect to said shin-section, a removable concave lining plate in said socket interposed between the shin section and bulb, and a stirrup secured to said shin section and extending around below said bulb for holding the same in said socket, all arranged to permit a limited movement of said foot member on the shin section.

Signed at Chicago this 16th day of February 1906.

JAMES F. ROWLEY.

Witnesses:
L. A. SMITH,
WM. R. RUMMLER.