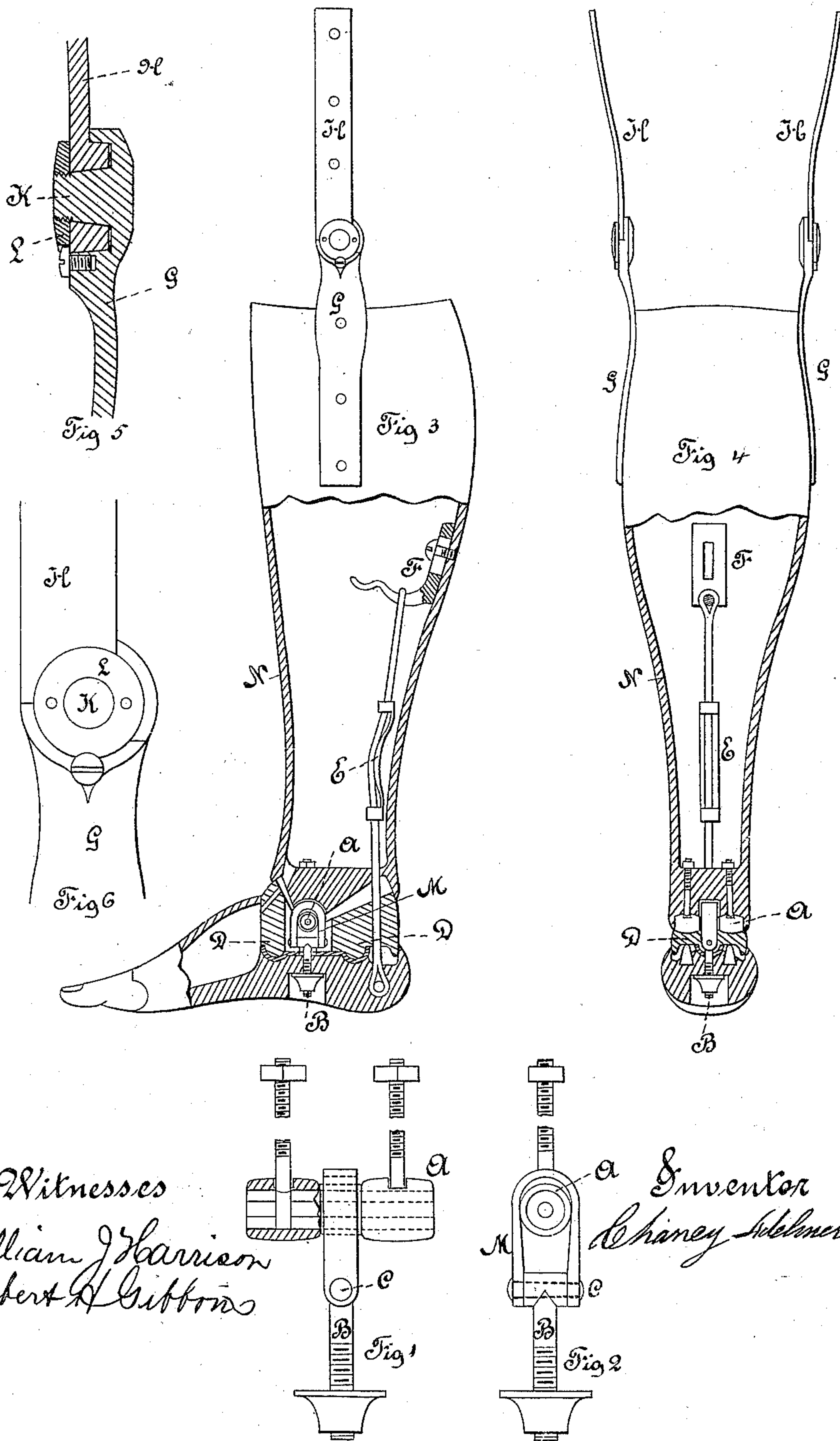


(No Model.)

C. A. FREES.
ARTIFICIAL LEG.

No. 335,748.

Patented Feb. 9, 1886.



Witnesses

William J. Harrison
Robert H. Gibbons

Inventor

Chas. H. Freeman

UNITED STATES PATENT OFFICE.

CHANCY ADELMER FREES, OF NEW YORK, N. Y.

ARTIFICIAL LEG.

SPECIFICATION forming part of Letters Patent No. 335,748, dated February 9, 1886.

Application filed July 23, 1885. Serial No. 172,637. (No model.)

To all whom it may concern:

Be it known that I, CHANCY A. FREES, of the city of New York, county and State of New York, have invented a new and useful Improvement in Artificial Legs, of which the following specification is a full, clear, and exact description.

This invention relates to an artificial leg, and more particularly to the ankle and knee joints thereof. The ankle-joint is constructed with a view to permit lateral and forward oscillation of the foot without allowing the joints to slip. The knee-joint is so made that it can be tightened up when reduced by wear.

The invention consists in the elements of improvement hereinafter more fully pointed out.

In the accompanying drawings, Figure 1 is a detail front view of the parts constituting the ankle-joint proper. Fig. 2 is an end view of such parts. Fig. 3 is a longitudinal central section, partly in side view, of the artificial leg; Fig. 4, a sectional rear view of the same. Fig. 5 is a detail longitudinal section through the knee-joint. Fig. 6 is a side view of the joint.

The artificial leg beneath the knee is composed of three separate parts—the leg proper, N, the foot proper, P, and an intervening ankle-piece, D. These parts are connected in such a way that the leg can oscillate backward and forward upon the ankle-piece, and that the ankle-piece can rock or oscillate laterally upon the foot. In order to obtain this double motion, the following construction is adopted: To the lower part of the leg there is rigidly attached, by means of two screw-pins, Fig. 4, a bolt, A, occupying a position substantially the same as the ankle does in the foot. This bolt is not made of even diameter, but it is contracted at its center, while its ends are made barrel-shaped—that is, tapering or curved from the center toward the edges. The bolt A is supported within a corresponding seat formed in the ankle-piece D, and by means of its peculiar form it will be prevented from shifting, even should the seat become somewhat worn. The ankle-piece D is slotted from top to bottom at its center to admit a staple, M, which embraces the contracted cen-

tral portion of bolt A, and is free to turn thereon. The lower portion of staple M is by a pivot, C, connected to a screw-shank, B, and the lower end of this shank is embraced by a nut, which is received by a socket in the sole of the foot, and is thus readily accessible. By turning this nut up the joint is tightened.

It will be seen that pivot C is placed in the direction of the longitudinal axis of the foot, while the bolt A is placed at right angles thereto. If the leg oscillates backward and forward upon ankle-piece D by turning upon its bolt A, such bolt will turn within staple M, and said staple and parts connected therewith will therefore not interfere with the free movement of the foot. If a lateral motion of the ankle-piece D upon the foot is to be had, the ankle-piece will turn upon pivot C, while the staple M will remain at rest upon its seat on bolt A. Thus a free and true movement of the parts is obtained.

To the heel portion of the foot P there is attached one end of the cord or heel tendon, which extends up through the ankle-piece D, and is thence attached with its upper end to a hook, F. This hook has a slotted shank for the reception of a screw, by means of which the hook is attached to the leg N. By loosening this screw and moving the hook farther up or down, the tension of the cord may be adjusted. To give to the cord a somewhat curved position, it is embraced at two points by the rolled-up ends of a curved spring, E.

From the upper end of the leg there projects upwardly a side rod, G, provided with a conical head, K. This head is embraced by a ring having a corresponding tapering inner edge, and secured to the lower end of the thigh-bar H. The forward edge of head K is screw-threaded for the reception of a nut, L. When the joint between the head K and the ring becomes somewhat loose by wear, it is again tightened by screwing up the nut L.

I claim as my invention—

1. The combination of leg N, ankle-piece D, and foot P with bolt A, having rounded ends, and with staple M, pivot C, and screw-bolt B, the bolt A being arranged at right angles to pivot C, substantially as specified.

2. The combination of an artificial leg hav-

ing a heel - tendon with spring E, having curved body and rolled-up ends to embrace the heel-tendon, substantially as described.

3. The combination of leg N and side rod, G,
5 having conical head K, with the thigh-bar H, having a tapering ring, and with a nut, L, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHANCY ADELMER FREES.

Witnesses:

WILLIAM J. HARRISON,
ROBERT H. GIBBONS.