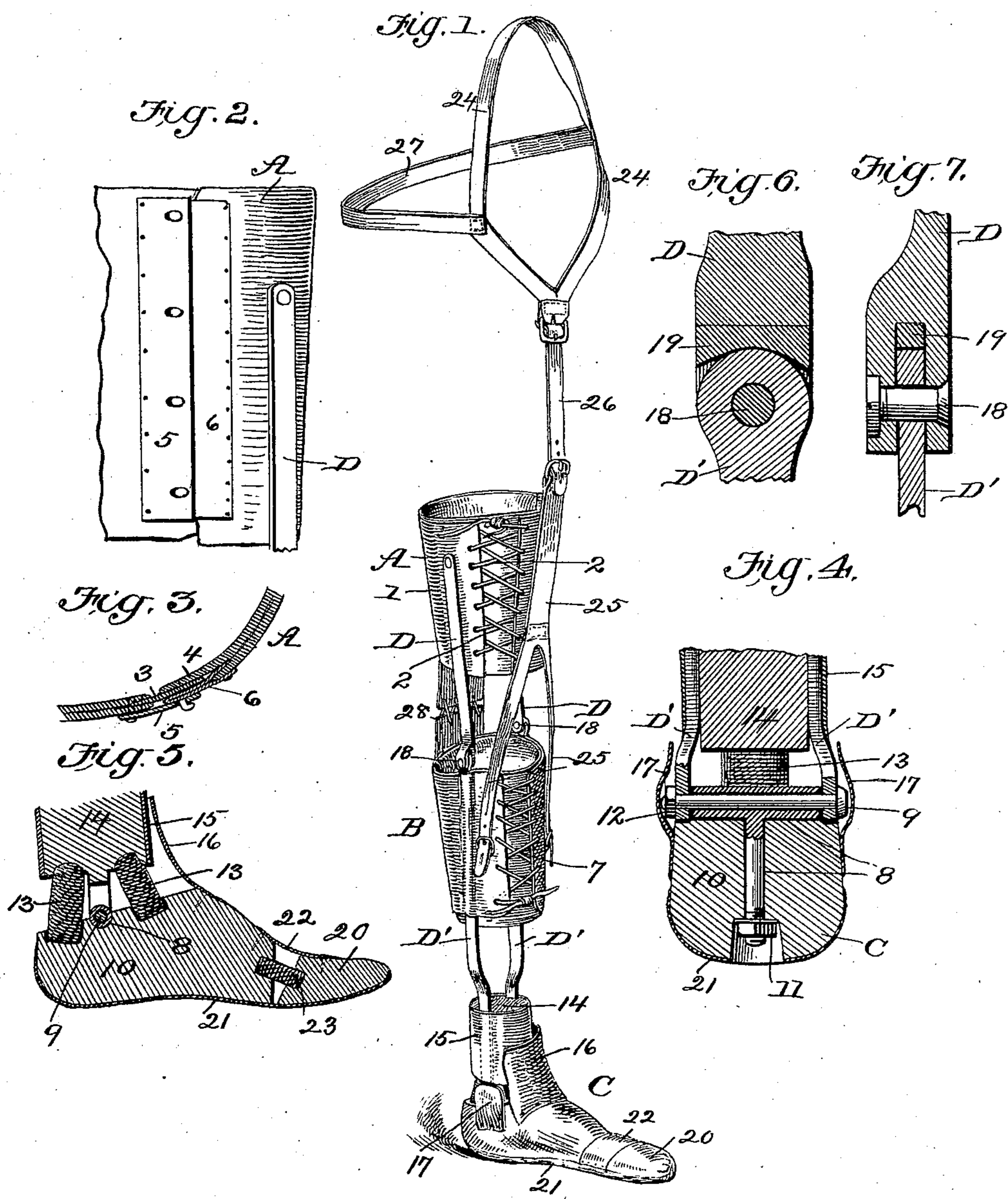


(No Model.)

J. NEYQUIST.
ARTIFICIAL LIMB.

No. 574,212.

Patented Dec. 29, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN NEYQUIST, OF COBURN, PENNSYLVANIA.

ARTIFICIAL LIMB.

SPECIFICATION forming part of Letters Patent No. 574,212, dated December 29, 1896.

Application filed October 30, 1896. Serial No. 610,577. (No model.)

To all whom it may concern:

Be it known that I, JOHN NEYQUIST, of Coburn, in the county of Center and State of Pennsylvania, have invented a new and useful Improvement in Artificial Limbs, of which the following is a specification.

My invention relates particularly to artificial limbs for amputations below the knee.

The invention consists in the construction, arrangement, and combination of parts hereinafter described and claimed, and illustrated in accompanying drawings, in which—

Figure 1 is a perspective view of the entire limb and its shoulder-strap attachment. Fig. 2 is an enlarged side view of a portion of the upper or thigh socket. Fig. 3 is a horizontal section of such portion. Fig. 4 is an enlarged vertical section of the ankle-joint. Fig. 5 is a longitudinal section of the foot and ankle. Figs. 6 and 7 are sectional views of the knee-joint.

A indicates the upper or thigh socket, B the lower or stump socket, and C the foot. These parts A B C are connected by jointed leg-irons D D', that allow due flexibility at the knee and ankle. The thigh-socket is composed of different pieces of leather, which are divided vertically on the front sides and their edges adapted to overlap one another. The outer piece 1 is riveted to the leg-irons D and provided with a lace 2, so that the socket A may be contracted or enlarged at will to accommodate limbs of different sizes or the same limb in different conditions. The said outer piece 1 is also divided longitudinally at another point and the edges 3 4 lapped and connected, as shown in Fig. 3. That is to say, one edge or flap 3, Fig. 3, enters a slit or socket in the other opposite edge 4, and the respective edges are provided with a clasp attachment which permits them to be quickly and easily connected and disconnected, as required, for putting on and removing the leg. The clasp consists of a sheet-metal strip 5, riveted to one flap and provided with slots, and another strip 6, having catches which are adapted to pass through said slots and fasten the strips together, as shown in Fig. 2. Thus by the lacing and clasp I provide for convenient diametrical adjustment of the socket A,

and for instant connection and detachment of the same, whatever be the adjustment, by means of the lace.

The lower socket B has overlapping edges and a lacing 7, like the thigh-socket A, and it is open at the bottom to allow access of air to the end of the stump while the leg is being worn.

The leg-irons D' are connected with the foot C by a peculiar joint composed of a T-shaped screw-bolt 8, having a hollow cylindrical head through which passes the screw-bolt 9, that serves as a journal-pin and connects the ends of the leg-irons. The shank of bolt 8 passes down through the heel 10 of the wooden foot C, Fig. 4, and is secured by a nut 11. The cylindrical head of the bolt 8 abuts the leg-irons D', and the nut 12 of bolt 9 serves to tighten the joint, so as to take up wear. On each side of the joint, Fig. 5, is arranged a rubber block 13, whose ends are fitted in opposite sockets formed in the heel 10 and ankle part 14, as shown. The said ankle part 14 is composed of a wooden block or blocks fitted tightly in a sheet-metal cylinder or sleeve 15, through which the leg-irons D' pass and to which they are riveted. This construction and combination of parts provides a cylindrical ankle portion 15, which combines due lightness and strength and affords a firm socket-bearing for the elastic blocks 13.

The leg-iron sections D D' are jointed together intermediately of the thigh and stump sockets, as shown. Thus they are left free or disconnected save at the ankle and are necessarily elastic to allow expansion or contraction of the leg-sockets A B, so that they and the irons may accommodate themselves to legs differing in size, and thus enable the artificial leg to be worn with ease and comfort.

The knuckle knee-joints of the leg-irons (see Figs. 6 and 7) are constructed as follows: The upper leg-iron sections D are bifurcated and thus provided with sockets to receive the ends of the lower sections D', the two being pivoted together by a screw journal-pin 18, whose flat head is countersunk, as shown. This screw enables the lateral wear of the joint to be taken up.

The upper portion of the socket or space

above the heads of the leg-iron sections D' is filled with a copper piece or bushing 19, with the curved lower edge of which the circular heads of irons D' work in frictional contact, so that the wear is mainly confined to said bushings 19, which, when unduly worn, may be readily removed and new ones quickly substituted at trifling expense.

The foot has a toe-piece 20, that is flexibly connected with the body or heel portion 10 by means of a leather sole 21 and the leather top piece 22. Elastic blocks 23 are inserted in sockets in the respective parts 10 20, as shown in Fig. 5.

The shoulder-loop 24 is connected with the stump-socket B by means of a bifurcated strap 25 and intermediate strap 26, which is made adjustable in length by means of buckles. The loop 24 is prevented from slipping off the shoulder of the wearer by means of a lateral loop 27, that passes around the chest. Thus

the loop 24 in this instance passes over the left shoulder and the strap 27 under the right arm.

The sockets A and B are also connected on the rear side by tension-straps 28, which are laced together to provide for adjustment, if required.

The ankle-joint is protected by leather flaps 16 and 17, as shown best in Fig. 1.

What I claim is—

In an artificial leg, the combination, with the foot and leg irons jointed together as specified, of the ankle portion formed of a metal cylinder riveted to the leg-irons, a wooden filling secured in said cylinder, and elastic blocks socketed in such filling and the foot, on front and rear sides of the joint, as shown and described.

JOHN NEYQUIST.

Witnesses:

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