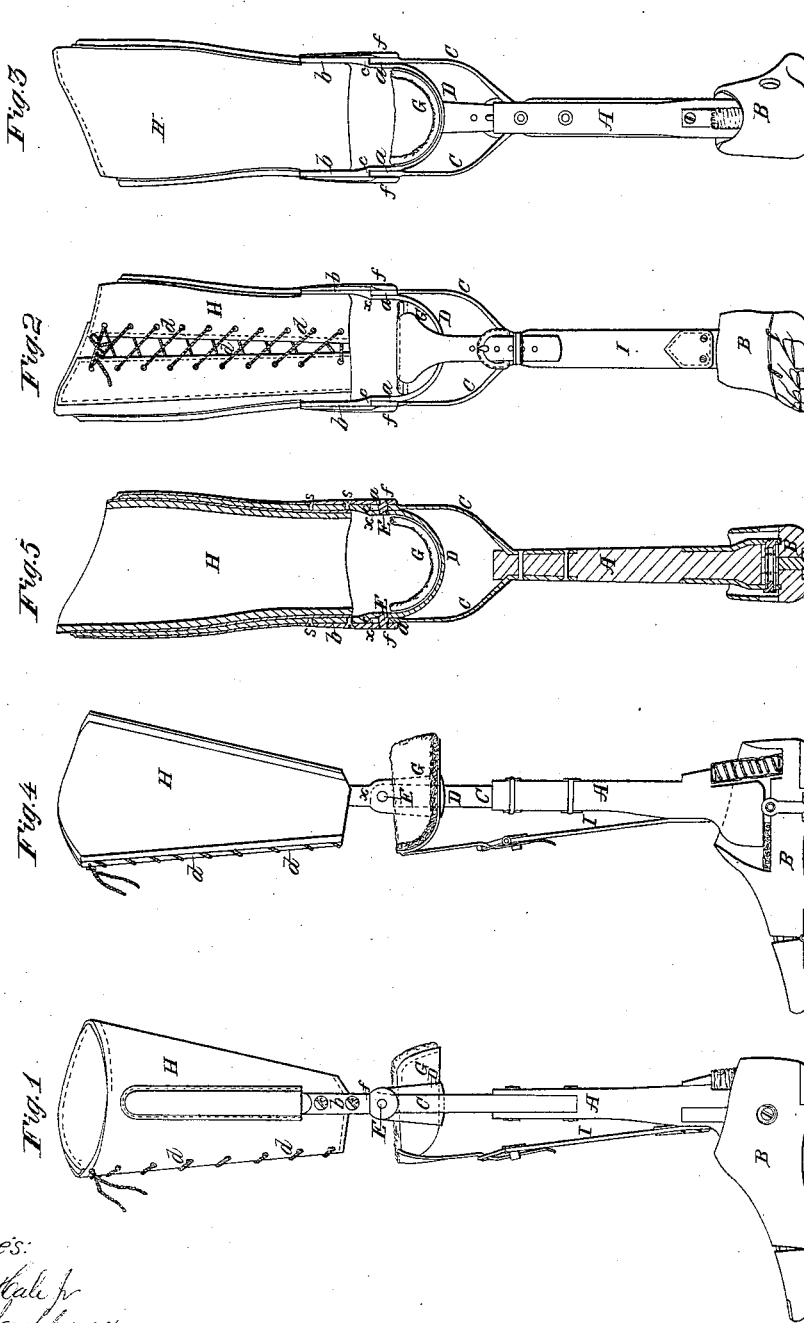


G. B. Jewett,

Artificial Leg,

No. 51,593,

Patented Dec. 19 1865.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE B. JEWETT, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN ARTIFICIAL LEGS.

Specification forming part of Letters Patent No. 51,593, dated December 19, 1865.

To all whom it may concern:

Be it known that I, GEORGE B. JEWETT, of Salem, in the county of Essex and State of Massachusetts, have made a new and useful invention having reference to Artificial Legs; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, Fig. 2 a front view, Fig. 3 a rear elevation, and Figs. 4 and 5 are longitudinal sections, of an artificial leg provided with or constructed in accordance with my invention.

In cases of amputation just below the knee-joint, owing to the shortness of the stump or to the contraction of the tendons, or both, perhaps, it becomes necessary sometimes, for application of an artificial leg to the thigh and stump, to have it provided with a knee-bearing. As usually constructed such legs have been clumsy, especially about the knee part thereof, the joint-being arranged entirely below the knee, whereby the tibia part of the leg is rendered shorter than that of the natural leg, and the knee-joint advanced beyond that of the natural leg while the person is in either a sitting or a kneeling posture. Then, again, the thigh-socket has been constructed as a wooden case with an opening in the rear for the stump to extend through.

With my improvement I am enabled to dispense with the wooden thigh-case and employ in its place a belt or socket of leather or other proper soft or pliable material, it being so made as to lace in front, whereby it may be adjusted to the thigh of the wearer with any desirable amount of pressure. The laced belt or socket may thus be employed to relieve the knee of the person from much pressure that it would otherwise exert on the knee-rest.

With my invention the tibia can be brought into an acute angle with the thigh, so as to bring the foot back under the thigh, which is not the case with the other artificial legs of the kind hereinbefore referred to.

With my improved artificial leg the knee of the wearer will be supported by a padded rest or socket duly shaped to receive and fit it.

In the drawings, A denotes the tibia-post, to which the foot B is hinged. This post is

bifurcated, or has applied to its upper part two curved metallic supporters or branches, C C, formed as represented, each at its upper end terminating in a flat head, *a*, provided with a shoulder, *x*, to bear against.

A curved stirrup or band of metal, D, connected with two thigh-socket supporters or branches, *b b*, which are formed and provided with shoulders *c c*, as shown in the drawings, is placed between the two tibia branches C C, and is jointed to them by means of two cylindrical pins, E E, which are screwed into the stirrup or knee-socket supporter, extend into and through the branches C C, and are also screwed into two lapping pieces, F F, which, in turn, are fastened by screws *s s* to the branches *b b*, the whole being as shown in the drawings. The short pin E of each joint has two male screws cut on it, as shown in Fig. 5, they projecting in opposite directions from the cylindrical part of such pin, which has a bearing on the tibia branch C. One of the screws of the pin is screwed into the stirrup D. The other screw of it has one of the lapping pieces F screwed on it. This lapping piece extends up alongside of the branch *b*, and is secured to it by screws. The lapping piece thus becomes a clamp-nut, which is kept from revolving by being lapped on and secured to the part *b*, and while such lapping piece is so fastened to the part *b* the joint will be effectually secured in place, and cannot be removed from its position by the part C while turning on it. The said stirrup supports a knee-rest, G, which is arranged within and fastened to it, and consists of a metallic plate duly padded on its upper surface, so as to fit to the knee of the person by whom the artificial leg is to be worn.

To the two branches *b b*, made of spring-steel or other suitable material, a broad flexible belt, band, or socket, H, is secured, it being to go around the thigh of a person and so made as to lace in front thereof, its lacing being shown at *d*.

The arrangement of the knee-rest and the joints on two opposite sides thereof should be such as to bring such joints in, or about in, the prolongation of the axis of motion of the knee-joint of the wearer of the leg while supported by the knee-rest G.

An elastic retracting strap or spring, I, is

connected with the knee-rest and the tibia-post, or arranged therewith, as shown in the drawings.

The particular mode of constructing each of the joints, of connecting the tibia branches and the knee-rest stirrup and its extensions or branches, is one of great value and importance, as, while it renders the joint very strong, it effectually prevents the pin thereof from working loose or being lost. The shoulders *c x* of each joint, when in contact with each other, prevent the leg from being bent backward at the knee-joint.

Having thus described my improved artificial leg, what I claim therein as of my invention is as follows, viz:

1. In artificial legs designed for the treatment of the kind of cases hereinbefore mentioned, the above-explained arrangement of the knee-joints with respect to the knee-rest G, such joints under such arrangement being brought above the bearing of the natural knee on the rest, and so as to be in, or about in, the prolongation of the axis of motion of the knee.

2. The improved knee-joint, constructed sub-

stantially as described—viz., with the joint-pin screwed into the two external parts of the joint, and with one of such parts connected to the other by screws or their equivalents.

3. The combination of the knee-rest stirrup or supporter D and its thigh-belt-sustaining branches *b b*, with the tibia-post branches C C arranged as specified.

4. The combination of the knee-rest G, its supporter D, the thigh-belt branches *b b*, and the tibia-post branches C C, arranged as specified.

5. The combination of the thigh-belt or flexible lacing-socket H, the knee-rest G, the supporter D, and the branches *b b* and C C, hinged together and connected with the tibia-post, the whole being substantially as hereinbefore explained.

6. The arrangement of the retractile strap with, or its application directly to, the knee-rest, as described.

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Witnesses:

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