G. B. Jerrett,

Artificial Leg.

No. 35,937. Patented July 22, 1862.

Fig. 1.

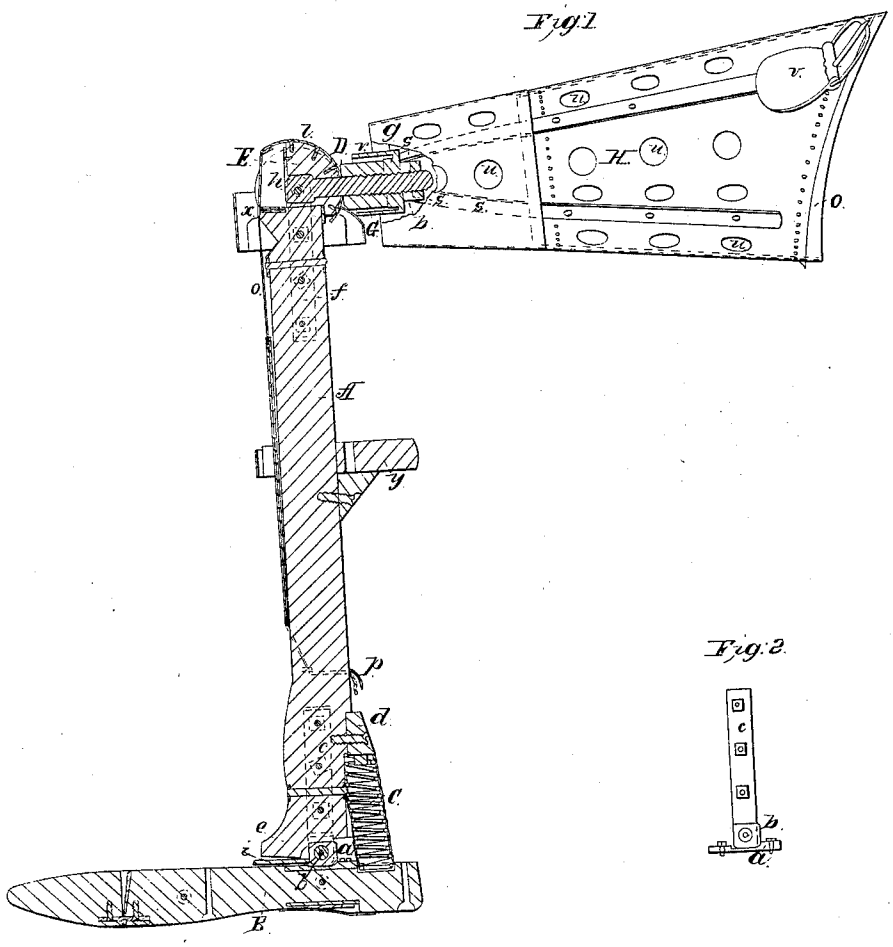


Fig. 2.

Witnesses:
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Inventor:
Geo. B. Jerrett
by his attorney
Samuel Cooper
per Roach.

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

UNITED STATES PATENT OFFICE.

GEORGE B. JEWETT, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN ARTIFICIAL LEGS.

Specification forming part of Letters Patent No. **35,937**, dated July 22, 1862.

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 invented certain Improvements in Artificial Legs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which is represented my improved artificial leg, the parts from the knee-joint down being shown in section.

The improved artificial leg which is the subject of my present invention is intended to be applied in cases of amputation above the knee-joint, and is so constructed that its length may be easily and nicely adjusted to suit the wearer, it being found in practice to be almost impossible to make an artificial leg by measurement to be comfortable. In all other artificial legs with which I am acquainted the spring which is applied at the knee-joint to straighten the leg when bent continues to exert its full strength when the wearer is sitting down and the thigh and lower leg are at right angles to each other. This is inconvenient, as the wearer is compelled to extend the leg instead of holding it bent in a natural position. This I have remedied by my improved construction of knee-joint and the manner of applying the spring thereto.

That others skilled in the art may understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing, A is a straight stick of some strong wood, (which represents the tibia of the human leg,) to the lower end of which is hinged the foot-piece B, to which a certain amount of motion is allowed, as follows: the foot-piece B has attached to its top an iron plate, *a*, to which is hinged at *b* two metal straps, *c*, (shown detatched in Fig. 2,) which are attached by suitable bolts or screws, one on each side of the piece A. A spring, C, is placed behind the piece A and presses against the heel of the foot and against a stop, *d*. As the weight is thrown upon the heel, this spring is compressed, and as the step is completed a shoulder, *e*, on the front side of the piece A comes down onto an elastic pad, *i*, secured to the top of the foot-piece B, and limits the vibration of the foot on its pivot *b*. The thickness of this pad *i* may be varied to suit the length of step or stride of the wearer.

To the upper end of the piece A is attached, by bolts or screws, two metal straps, *f*, one on each side, (shown dotted,) to which is pivoted a metal spindle, D, on one end of which is cut a screw to receive a nut, *g*, and from the other end of which projects a plate, *h*, which, when the leg is straightened out, comes in contact with and rests on a pad, *m*, of leather or other yielding material, attached to the top of the piece A, which limits the motion of the joint in one direction. This pad may be varied in thickness, so as to give a proper and natural movement to the leg. A block of wood, E, is attached to the spindle D, which passes through it. Its outer side is circular and has a band of metal, *l*, secured to it by screws. It is also screwed to the plate *h*. There is also a soft pad, *n*, at the back of the piece A, against which a shoulder on the block E strikes when the leg is brought into the position shown in the drawings. A spring, F, of elastic webbing or other suitable material, is connected at one end by a strap, *o*, of leather, to the metal band *l*, and is secured at its other end to the piece A, being simply tied to it at *p*, so that its tension may be regulated.

It will be seen by reference to the drawing that from the position in which the strap *o* is attached to the band *l* on the block E the spring F does not exert much power to straighten the leg when it is in the position shown, as the spring draws down directly in the line of the piece A, and consequently the wearer may sit down with his leg bent in a natural position without an effort being necessary to resist the power of the spring. The socket H, into which the stump is inserted, is connected with the spindle in the following manner: A circular block, G, of wood, is slipped over the spindle D, and a metal sleeve or cap, *r*, with a nut, *g*, in its top, fits over the block and screws down onto it, the screw on the the spindle turning in this nut. From this sleeve braces *s* (shown dotted) are connected with the metal shell or socket H. Two lock-nuts, 5 and 6, secure the parts when screwed down.

The block G may be changed for one of a different length, or a piece may be cut off from it to adjust the leg to the proper length,

the socket being screwed down farther onto the spindle D. A soft pad or packing, O, of stuffed leather or other suitable material, is inserted in the shell H to receive the stump of the limb. The holes *u* are for ventilating the socket, and the buckle *v* for strapping it to the body. A metal ring, *x*, is attached at the head of the piece A, and a block, *y*, surrounds it near the middle of its length. A covering or padding of canvas may be stretched over these to give shape to the leg, and a block or pad (not shown in the drawing) forms the instep of the foot, and a rounded block on each side of the knee, together with the curve of the block E, gives to it a natural shape.

The pad O in the socket H may be changed in size or form to fit the leg of the wearer. This is particularly necessary, as the stump is liable to shrink away.

The above-described leg is light and of great strength, and from the simplicity of its several adjustments and the manner of applying the spring to the knee-joint is remarkably easy and satisfactory to the wearer.

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

1. The leg-piece A, to which the foot B is hinged at one end and the spindle D at the other, substantially as described.

2. The shoulder *e* and pad *i* for limiting the motion of the foot B, substantially as specified.

3. The block E, with the spring F attached to its front in the manner substantially as set forth.

4. Connecting the socket H to the spindle D, in the manner substantially as specified, whereby the length of the leg may be adjusted.

5. In combination with a spindle D, pivoted to the head of the leg-piece A, the plate *h* and pad *m* for regulating and limiting the motion of the joint or the position of the leg when straightened out, substantially as set forth.

6. The combination of the socket H and its adjustable pad O with the leg-piece A when they are hinged and connected together, substantially in the manner specified.

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Witnesses:
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