G. B. JEWETT.

ARTIFICIAL LEG.

No. 35,686. Patented June 24, 1862.

Fig. 1

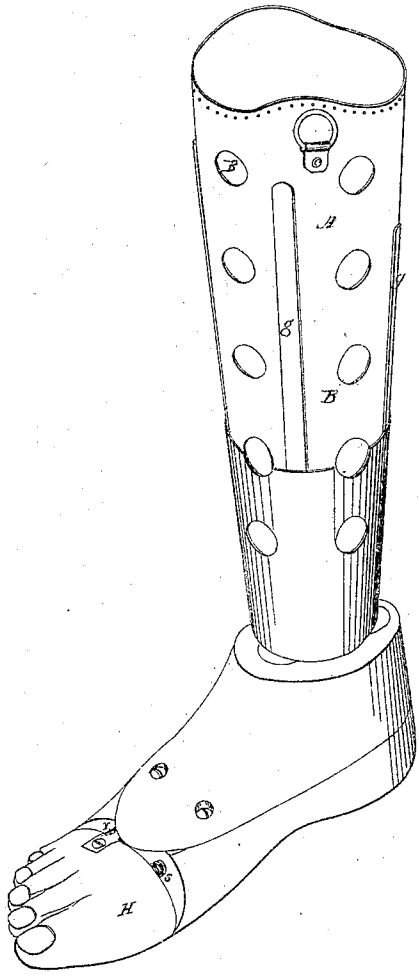


Fig. 3

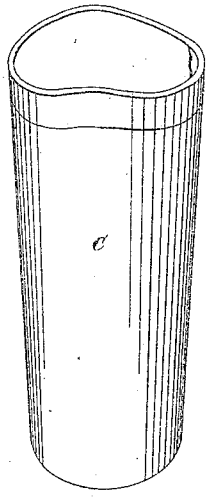


Fig. 2

UNITED STATES PATENT OFFICE.

GEORGE B. JEWETT, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN ARTIFICIAL LEGS.

Specification forming part of Letters Patent No. **35,686**, dated June 24, 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 drawings, making part of this specification, in which—

Figure 1 is a perspective view of my improved leg; Fig. 2, a vertical section through the same; Fig. 3, a view of the removable socket, which will be more fully described hereinafter.

In the artificial legs heretofore made it has been found difficult to adapt the socket exactly to the stump, and still more difficult to readjust it to the limb after the form of the latter has been altered by pressure or otherwise; and the consequence has been that after awhile the leg becomes painful to the wearer, and there has thus far been no efficient remedy for this inconvenience. In some cases the socket has been excavated out of a block of wood; but there is difficulty in getting an exact fit in the first place, and if this be ever so perfectly attained the socket cannot well be readjusted to the stump after the latter has shrunk under the influence of the pressure to which it is subjected. In other cases sockets have been made by cementing or binding together layers of duck-cloth, leather, or other suitable material; but a socket thus made does not maintain its exact size and cannot be easily changed to suit the varying form of the stump.

The first part of my invention has for its object to produce a socket that shall be perfectly rigid and unyielding, and at the same time soft and easy to the wearer and capable of being readily modified in form and size to correspond to the exact form or varying size of the stump. This part of my invention consists in a rigid exterior socket, in combination with a removable interior socket made of some soft material, the form and size of which may be varied to suit the varying size and form of the stump.

The second part of my invention has for its object to enable me to increase or diminish the length of the leg, as may be required, and to replace or modify any one portion of it without altering the other portions and at very small expense; and this part of my invention consists in connecting the leg with the foot by means of a pedestal secured firmly to the leg and hinged to the foot in such a manner that any required change in the length of the leg or the position of the foot may be readily made, and either the leg or the foot may be replaced without the necessity of constructing the entire limb.

To enable others skilled in the art to understand my invention, I will proceed to describe the manner in which I have carried it out.

In the accompanying drawings, A is the exterior casing or socket, which is made of sheet metal and perforated with holes B for the purpose of lightness and ventilation. Within this socket is fitted the interior socket, C, which is made of several layers of soft material and is fitted as near as may be to the stump, the outside of this interior socket being supported by the rigid exterior socket, A. Should the stump contract or shrink away at any one point, the socket C may be padded opposite to that point, or wherever may be required, and should the stump swell or become enlarged at any point the interior socket may be reduced to correspond thereto, and thus the socket may always be made to conform exactly to the stump, while it will always be soft and easy to the wearer.

The socket A is secured to a metallic cap, D, by means of straps *g*, and through a hole in the center of this plate passes the pedestal E, upon the upper portion of which is cut a screw, to which is adapted the nuts *f* and *h*, the one above and the other below the cap, and thus by tightening these nuts against this plate the pedestal is secured to the socket, the position of the socket with respect to the pedestal being varied by raising or lowering the nuts. At its lower end the pedestal is hinged to the foot at *i*, the motion of the two with respect to each other being controlled by an india-rubber tension-spring, F, and a spiral compression-spring, G, and also by the cushion *k* upon the foot, against which the pedestal bears at the completion of the step.

The pedestal may be made of iron, as represented in the drawings, or it may be made of wood or other suitable material; but in all

cases it must be hinged to the foot and united with the socket, so that the leg may be lengthened or shortened, as described. The toe-piece H is hinged to the foot at *m*, and they are furthermore connected together by an india-rubber tension-spring, *r*, and a spiral compression-spring, *s*, by which means the required position and motions of the toe-piece are secured.

In the leg represented in the accompanying drawings the exterior or rigid socket is made of sheet metal, and this is the material which I prefer for the purpose, as it affords peculiar facilities for shaping the socket to the form of the stump; but it is obvious that it may be made of any other material that is not too heavy and is sufficiently rigid and unyielding

The interior or removable socket I make from preference of thick woolen felt, covered upon both the inside and outside with sheepskin, as the felt is pecularly elastic and may be easily shaved and pared for the purpose of reducing it in thickness at any one point. I do not, however, confine myself to these materials, but intend to employ such materials and such construction as may best secure the desired end.

Among the advantages offered by this removable socket may be enumerated the following: first, it may be padded at any point for the purpose of adapting it more exactly to any sunken or diminished part of the stump; second, this padding can be done upon the outside of the removable socket, whereby the stump is relieved of the irregularities and edges of the pads, which are apt to cause pain when they come next to the wearer or between the socket and the skin; third, in case of the swelling or enlargement of any part of the stump the thickness of the soft socket may be reduced at this point by paring away the felt, or, if it be constructed of other materials, by reducing the thickness opposite to the swelling; fourth, if any portion of the stump be particularly tender or sensitive, it may be entirely relieved by cutting away the socket at such point.

It is manifest that the leg represented in the drawings may be covered with sheep skin or other suitable material.

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

1. The rigid socket A, in combination with the removable socket C, operating in the manner substantially as described.

2. Connecting the socket with the foot by means of the pedestal E, having an adjustable connection with the socket and being hinged to the foot, as described, for the purpose specified.

GEO. B. JEWETT.

Witnesses:

HENRY WHIPPLE,

A. AUG. SMITH.