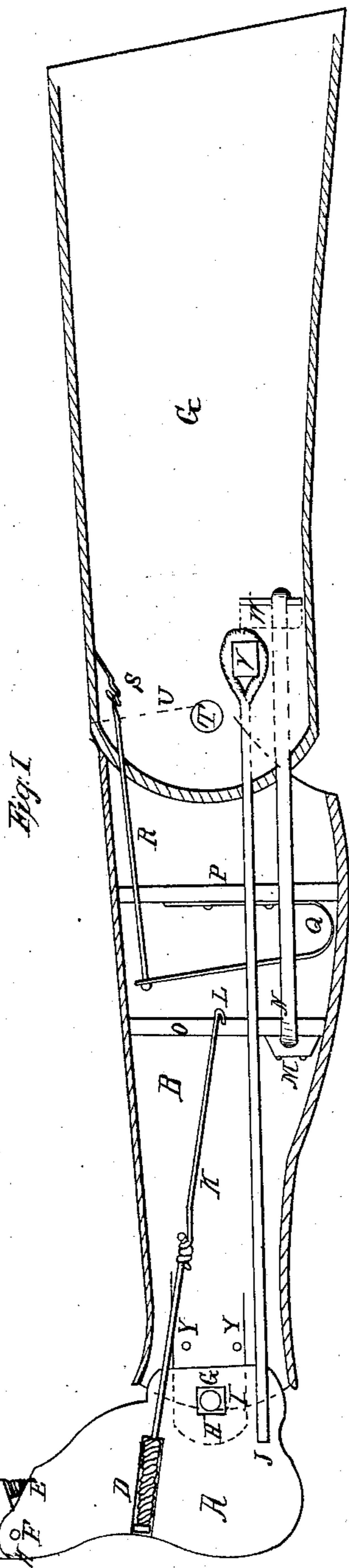


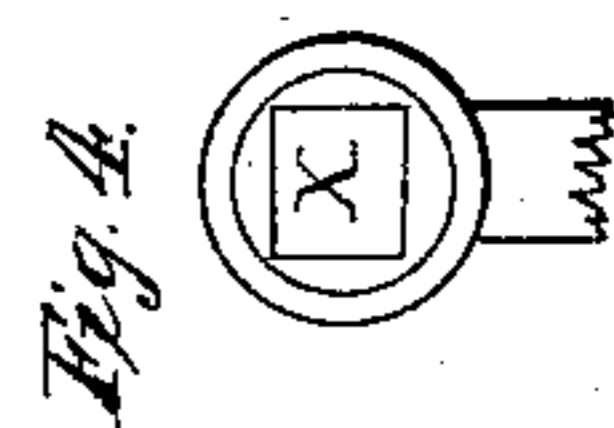
*B. W. Jerrett,  
Artificial Leg.*

*No. 16,360.*

*Patented Jan. 6, 1857.*



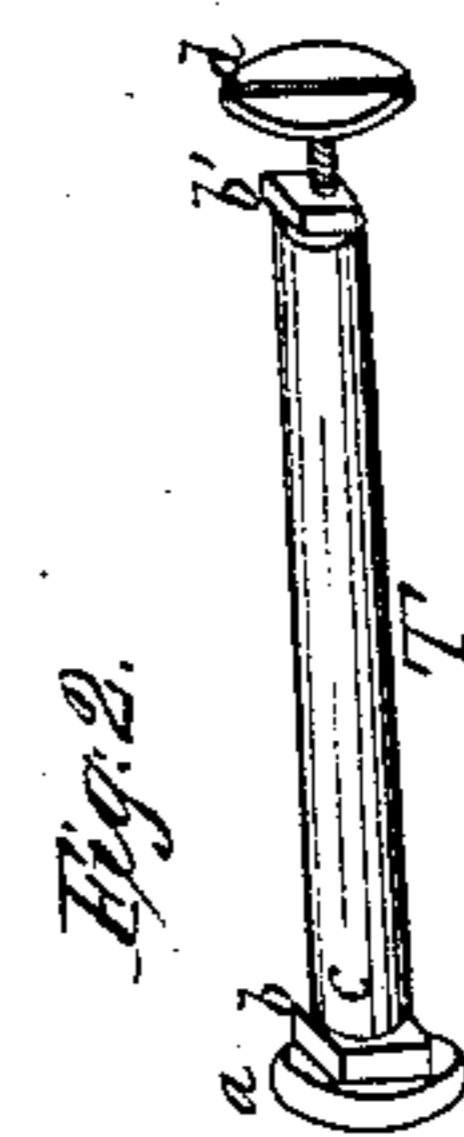
*Fig. 1.*



*Fig. 4.*



*Fig. 3.*



*Fig. 2.*

*Witnesses:  
J. P. Morrison  
G. S. Gale*

*Inventor:  
Benjamin W. Jerrett*

# UNITED STATES PATENT OFFICE.

BENJN. W. JEWETT, OF GILFORD, NEW HAMPSHIRE.

## ARTIFICIAL LEG.

Specification of Letters Patent No. 16,360, dated January 6, 1857.

*To all whom it may concern:*

Be it known that I, BENJAMIN W. JEWETT, of Gilford, in the county of Belknap and State of New Hampshire, have invented new and useful Improvements on Artificial Legs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, of which said drawings—

Figure one is a longitudinal section of the limb, Fig. 2 is a view of the bolt of the knee joint, Fig. 3 of the bolt of the ankle joint, and Fig. 4 of the strap by which the bolts are fastened firmly in their places.

In Fig. 1, A represents the foot, B, the leg, and C, the thigh. B is so constructed that its lower end overlaps at the ankle the foot A upon all sides, as indicated by the dotted line I. In Palmer's artificial leg the leg overlaps the foot behind, and the foot the leg before, and in that leg there is an opening in the top of the foot which allows the dirt and perspiration access to the spring in the foot. By constructing it in the way above mentioned, even if the foot be constructed like that of Mr. Palmer's, there is inconvenience from this source. But the foot is not so constructed. E is a spiral spring, one end of which is inserted into the foot, and the other end presses against the toe, which turns upon the hinge at F. The toe is kept down by the operation of this spring and is prevented from opening too far by the bottom of the toe striking the foot at *h*. D is another spiral spring inserted into the hollow of the foot, to which is attached a cord terminating in a metallic rod marked K, which is fastened to the cross-brace O, passing across the leg, by the hook L. Its office is to restore the foot to its proper position after being drawn down by the action of the tendo Achillis J, J. The tendo Achillis is inserted firmly into the heel; on emerging therefrom it branches into two parts, one of which passes upon each side of the interior of the leg through apertures in the bottom of the thigh, at the knee, and are firmly secured there at V. H, the dotted line is a prolongation of the leg, there being two, one on each side of the foot, whose office is to support the bearings of the joint, and thereby attach the foot to the leg. Through these prolongations and through the foot passes the bolt G, shown

in Fig. B. These bolts are made square at the ends so as to fit into corresponding apertures in the straps which attach them to the limb as in X, Fig. 4, to obviate a difficulty in the joint as constructed in Mr. Palmer's leg, in that the bolt is attached to the strap, and prevented from turning by two small screws passing through the bolt head into the strap, on one side of the head, and the constant strain causes them to get loose and work unsteadily. These bolts in my invention also pass through boxes of Babbitt or other suitable metal. In Palmer's leg the aperture through which the bolt passes is sheathed with buckskin glued on to the wood; the expansion of the wood by heat causes it to pinch the bolt and renders it necessary to lubricate the joint; and for this purpose tallow must be used as a softer material would offset the glue and loosen the buckskin. In cold weather this joint becomes so stiff that it is necessary to warm it before it will move easily. To remove this inconvenience I devise the metallic box which incloses the bolt. Y Y are screws passing through the prolongations of the leg H for the purpose of preventing the foot from moving upward or downward too far. N is a cord passing around the cross bar O, and there secured by the cap M. One end of this cord passes up on each side of the interior of the leg, a little back of the tendo Achillis through apertures in the knee and is attached to the thigh at W. It prevents the thigh from tilting too far forward and strengthens the limb. Q is a bent spring firmly secured to the cross brace P, and having at the end a rod R, passing up through an aperture in the cross brace P, through a slot in the knee into the thigh to which it is attached by the hook S. It tends to throw the leg forward. T is the bolt of the knee joint, shown at Fig. 2. The dotted line U shows the outside of the top of the leg.

Fig. 2, is a representation of the bolt of the knee joint. A is the circular head of the bolt; *b*, *b'* squares fitting the straps (shown at Fig. 4); *c*, the body of the bolt, slightly tapering; *d*, a screw passing into the end and securing the bolt in its place.

Fig. 3 is the bolt of the ankle joint and may be made in that form, or in the form of Fig. 2. The tendo Achillis J and the cord N are made of linen, covered with buckskin. I substitute the use of linen for catgut in these cords because it is more flexible,

and in case of amputations below the knee is not so much affected by the perspiration as the gut is. These cords pass up through apertures in the bottom of the thigh, around which the wood is not cut away, and are fastened at V and W by blocks of wood fitting into sockets in the woodwork, in which sockets the apertures through which the cords pass terminate. By the use of the spiral springs E and D I avoid the use of the large spring used in Palmer's leg, which requires a great deal of the interior of the foot to be cut away, thereby weakening it and tending to cause it to break at the ankle, and I avoid also the use of the cord passing from the spring beneath the foot over the joint of the toe, in Palmer's leg, which is liable to be worn off, and besides this, from its construction, the spring is apt to break, and it would deface the foot to remove it. And if it were necessary to remove the toes, as it often is, it would be necessary to make new ones in Palmer's leg, whereas in my foot the toes can be removed and replaced without injury.

By the use of the bent spring Q and its adjuncts I avoid the use of the cumbersome

spring and lever in the thigh of Palmer's leg, which can not be used in case of a long stump to the thigh, and renders necessary the application of an elastic strap on the outside. In my invention every part is so constructed as to be easily removed for repair, while in other artificial legs there is great difficulty in this, so much so that it must be sent to the manufactory for repairs even the most trivial.

I do not claim the tendo Achillis J, but

What I do claim and desire to secure by Letters Patent, is:

1. The spiral spring D in combination with the rod K, hook L and cross-brace O.

2. The method of attaching the tendo Achillis J and the cord N to the thigh by the use of the pins V and W.

3. The bolts G and F, Figs. 2 and 3, in combination with the straps, Fig. 4, and their metallic boxes; all for the purposes hereinbefore specified and operating substantially in the manner as hereinbefore set forth.

BENJAMIN W. JEWETT.

Witnesses:

J. P. MORRISON,  
C. S. GALE.