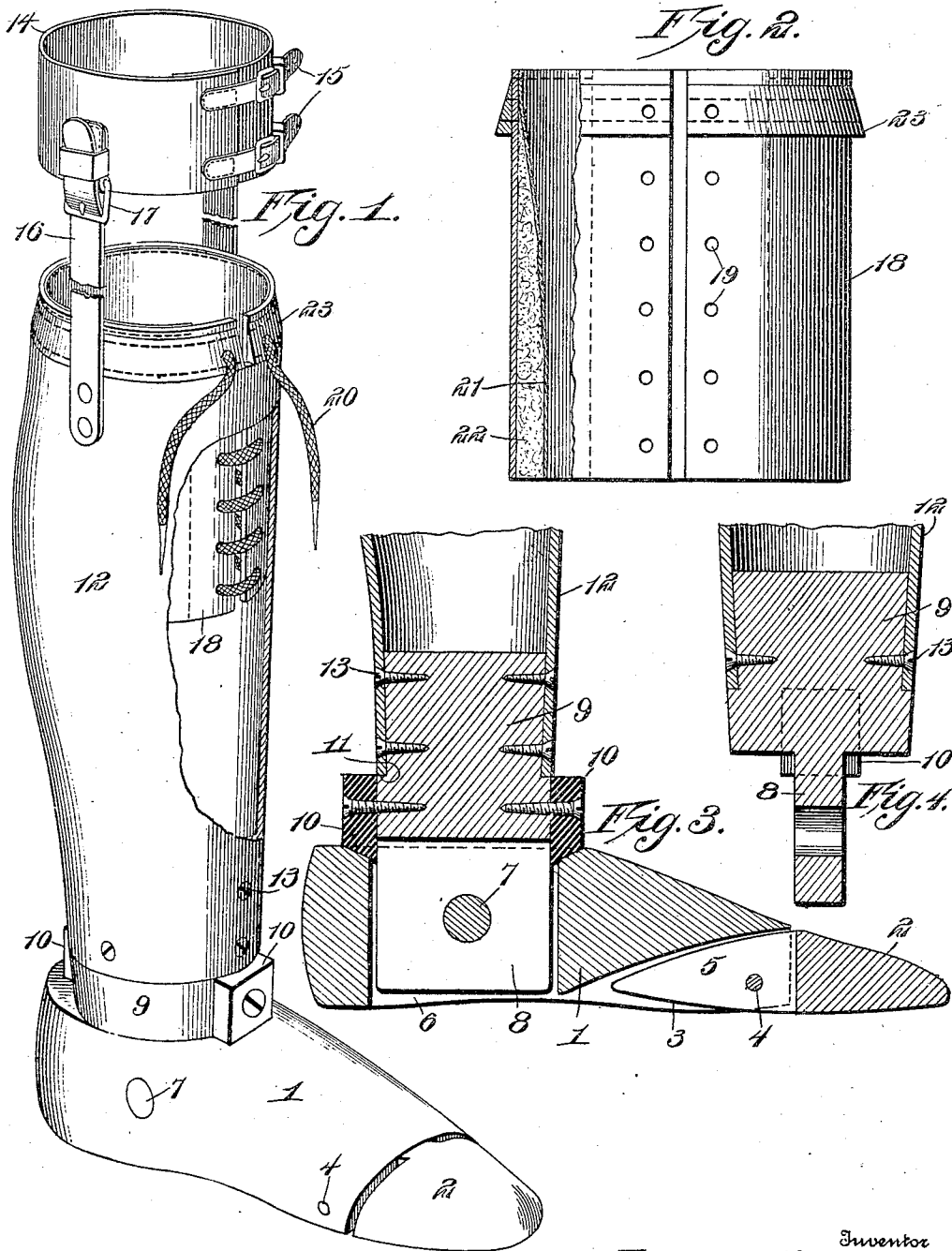


No. 832,270.

PATENTED OCT. 2, 1906.

J. McGRADY.
ARTIFICIAL LIMB.

APPLICATION FILED APR. 11, 1905. RENEWED MAR. 26, 1906.



Witnesses

Louis D. Heinrichs
Herbert D. Lawson

Inventor
James McGrady

By W. J. Fitzgerald & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JAMES McGRADY, OF SAGINAW, MICHIGAN.

ARTIFICIAL LIMB.

No. 832,270.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed April 11, 1905. Renewed March 26, 1906. Serial No. 308,133.

To all whom it may concern:

Be it known that I, JAMES McGRADY, a citizen of the United States, residing at 724 Emily street, Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Artificial Limbs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to artificial limbs especially adapted for use where amputations have been made below the knee.

The object of this invention is to provide a device of this character which is very light and durable and which is provided with means whereby the socket of the leg can be fitted upon stumps of different sizes without the necessity of forming a socket of a special construction or size.

A further object is to provide a protector or cushion for the stump which can be padded or adjusted so as to produce a tight fit of the stump within the socket and which will at the same time prevent the formation of sores as a result of the rubbing which is often produced by ill-fitting sockets.

Another object is to provide light simple means for securing the socket in position.

With the above and other objects in view the invention consists of a tubular socket fitted upon a core or block which is pivotally mounted within a foot and is provided with means for resiliently supporting the block or core in a predetermined relation with the foot. A protector or cushion of novel construction is adapted to be secured to the stump before the same is inserted into the socket. This protector comprises a band, preferably of leather, adapted to be laced or otherwise secured upon the stump and having a lining adapted to receive a desired quantity of padding, such as wool, so as to form a cushion for the stump and at the same time support it in proper position within the band. A holding-band is adapted to be secured above the knee of the wearer and is connected to the socket by straps which serve to hold said socket in proper position upon the stump.

The invention also consists of the further novel constructions and combinations of parts hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings I have shown the preferred form of my invention.

In said drawings, Figure 1 is a perspective view of my improved artificial leg, the socket being partly broken away to show the protector therein. Fig. 2 is a view, partly in elevation and partly in section, of the protector. Fig. 3 is a vertical section through the foot and the lower portion of the socket, and Fig. 4 is a transverse section through the block and lower portion of the socket.

Referring to the figures by numerals of reference, 1 is a foot formed of any suitable material and having a toe-section 2, pivoted within a groove 3 and upon a suitable pivoted pin 4. The movement of this toe-section is limited by a projecting tongue 5, which extends from the toe-section 2 and is movably mounted within the groove 3. A slot 6 extends through the foot from the top to the bottom thereof and has a pivot-pin 7, on which is mounted a tongue 8, extending downward from a block or core 9. Blocks 10, of rubber or other resilient material, are secured to the front and rear faces of the block 9 and bear on the adjoining surfaces of the foot and serve to hold said block 9 normally in a predetermined relation with the foot.

The block 9 is reduced in diameter at its upper end and forms a shoulder 11, and fitting this reduced portion and bearing on the shoulder is a socket 12, preferably formed of sole-leather, which is preferably shaped to simulate the lower portion of the leg. This socket is secured to the core or block 9 in any desired manner, as by means of screws 13, and the leather of which it is formed is worked so as to be capable of supporting a considerable weight without the necessity of utilizing reinforcing means. A holding-band 14, having straps 15 for adjustably securing its ends, is connected to the opposite upper end of socket 12 by means of straps 16, connected to buckles 17. The band 14 is adapted to be secured directly above the knee, and by tightening straps 16 the socket 12 can be drawn tightly around the stump.

In order to provide a tight-fitting and a soft support for the stump within the socket, I employ a protector or cushion such as shown in Fig. 2. This comprises a band 18, preferably of stiff leather, having apertures 19 in its ends for the reception of the lace 20. A lining 21, of chamois or other soft material,

is secured to the outer edge of the band 18 and is adapted to form a receptacle for the padding 22, formed of wool or other like material. A flange 23 surrounds the upper 5 portion of the band and forms a shoulder at its lower edge which is equal in width to the thickness of the wall of socket 12.

In using the device herein described wool or other like material is packed between the 10 band 18 and its lining, and said band is then drawn tightly around the stump by means of its lace 20 and forms a soft and tight casing for the stump. This casing is then inserted into the socket, and its flange 23 will rest upon 15 the upper edge thereof. Band 14 is then strapped about the leg above and close to the knee and straps 16 are tightened, so as to hold the socket 12 tightly against the flange 23.

20 It will be seen that an artificial leg such as herein described is very light, durable, and comfortable, and prevents the formation of sores which are ordinarily produced by the rubbing incident to the use of heavy ill-fitting devices of this character. The par- 25 ticular construction of the foot with the resilient supporting-blocks 10 permits the joints to have a movement closely simulating that of the natural foot.

Having thus fully described my invention, 30 what I claim as new, and desire to secure by Letters Patent, is—

1. An artificial limb comprising a tubular socket, a holding-band adjustably connected thereto and a combined stump supporter and 35 protector adapted to be seated within the socket and comprising a band, a loose lining therein and adapted to receive padding between it and the band, means for securing the band upon the stump and supporting 40 means secured to the band and adapted to rest upon one end of the socket.

2. As a new article of manufacture a stump-protector adapted to be inserted within the socket of an artificial limb and con- 45 sisting of a band, a lining secured within the band and open at the lower end to receive padding, a supporting-flange secured to one end of the band for overlapping one end of the socket, and means for tightening the 50 band upon the stump.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES McGRADY.

Witnesses:

GEORGE J. LITTLE,
MICHAEL B. McHUGH.