

S. H. WATERMAN.
SECURING MEANS FOR ARTIFICIAL LIMBS.
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Fig. 1.

Fig. 2.

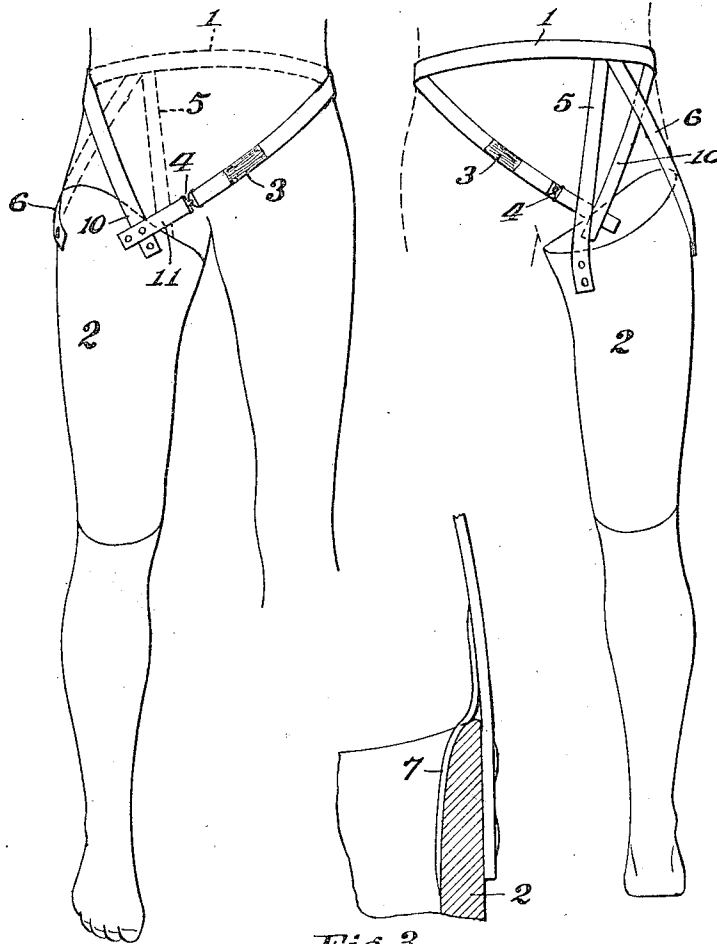


Fig. 3.

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To all whom it may concern:

Be it known that I, SAMUEL H. WATERMAN, a citizen of the United States, and resident of the city of Seattle, county of King, and State of Washington, have invented certain new and useful Improvements in Securing Means for Artificial Limbs, of which the following is a specification.

My invention relates to artificial limbs and means for securing them in place.

The object of my invention is to provide a means for securing an artificial limb which includes the thigh portion, to the body, in such manner that it is held more securely in place and with greater comfort to the wearer and particularly to hold it better in place when the wearer sits, stoops, or walks, and materially assists in controlling the limb entirely by means of the stump of the amputated member.

My invention comprises the novel parts and combinations thereof which will hereinafter be defined in the claims. The accompanying drawings show the invention in the form of construction which is now preferred by me.

Figure 1 shows my device in its position of use, the same being as seen from the front.

Fig. 2 shows the same parts as they would appear when seen from the rear.

Fig. 3 is a detail showing the manner of protecting the point where the suspending straps and the thigh member of the artificial member join, so as to prevent pinching of the flesh.

In the practice of securing artificial limbs by some form of harness which extends to and over the shoulder, the weight of the limb is suspended from the shoulder. This is objectionable from at least three or more standpoints. In the first place it places a load upon the shoulder which becomes burdensome and objectionable, and second, because, when the wearer stoops or sits down, the harness by which the limb is suspended is slackened in such a manner as to permit the limb to more or less fall away from the body and it often causes inconvenience to secure proper seating of the limbs, when regaining upright position.

Due to length of suspending harness there is always more or less slack in the same which permits the limb to slide up and down when walking, necessitating the raising of the shoulder at each step, resulting in an

ungraceful and ungainly manner of walking, loss of quick control of the limb, as well as considerable chafing of the stump of the amputated limb.

Also, due to constant movement of the body and harness in walking, these straps cause chafing and irritation at various points of contact with the body as well as damage to clothing.

By my invention I suspend the limb by means of a strap or belt which extends to and about the hips and waist. This belt has one end secured to the front upper portion of the thigh section 2. It is placed in angular position such that its extension will pass over the hip, then across the back, over the other hip and downwardly on an angle to secure its other end to the upper forward portion of the thigh section, at a point which may be approximately the same as the point of securing the other end. These two ends may, however, be secured in somewhat separated positions, if desired.

I prefer to place at some point in this belt, as for instance the point 3, a section of elastic webbing, so that a small amount of give may be provided. The belt as described, is also preferably divided into two or more parts which are secured together by buckle or catch, as at 4. The form of device used for securing the two parts is immaterial.

A strap or web 5 is secured to the belt 1 at the back at a point over the hip and extends downwardly, having its lower end secured to the upper rear portion of the thigh section 2. I also prefer to provide a second strap 6, which extends over from the belt at a point at the back, substantially the same as that to which the strap 5 is secured, downwardly and forwardly, and at its lower end is secured to the thigh section at the outer or hip side thereof. These straps securely hold the limb in such manner that no matter how the wearer bends or stoops the limb is held securely to the body and there is no unseating between the thigh section 2 and the body, and allows full control of the limb by the stump of the amputated limb.

Also, when walking there is no slack in this suspension thus preventing the limb slipping up or down at each step, as is the case with shoulder suspension devices. The elimination of shoulder straps causes the leg to be thrown forward in walking entirely by

the stump, which gives a far more natural and graceful walk to the wearer.

In Fig. 3 I have shown a means which I prefer to employ for preventing the possibility of the flesh being caught between any one of these straps and the upper edge of the thigh section. This consists of applying a short section of web or leather to the inner surface of the thigh section 2, and having it extend upwardly a short distance above the upper edge of said thigh section, in position to overlap or lie against the inner surface of the web. This furnishes enough resistance so that when the strap is slackened, the flesh will not be pushed over the edge of the thigh section 2 and be caught by the strap when it is tightened.

By having the device attached to the body at the hips a solid and rigid base is secured which prevents any slipping or unseating of said device which would occur should this device be in the form of a belt buckling across the abdomen. By having the front straps pass downward from their support at the hips the abdomen is kept entirely clear of straps with the result there is no pressure on or interference with the digestive organs which would in any wise cause ill health.

What I claim as my invention is:

1. A supporting means for artificial limbs comprising a belt extending across the back

at the waist, over the hips and then downwardly with its ends secured to the front upper part of the thigh section of said limb, and a strap extending from said belt at the back downwardly and secured to said thigh section at the rear.

2. A supporting means for artificial limbs comprising a belt extending across the back at the waist, over the hips and then downwardly with its ends secured to the front upper part of the thigh section of said limb, and two straps connected with the back section of the belt over the limb and secured to the thigh section of the limb, one at the rear and toward the inner side thereof and the other toward the outer side of the thigh section.

3. A means for securing and supporting artificial limbs comprising a waist belt in two parts provided with detachable securing means, both parts being secured by an end to the front upper part of the thigh section of said limb, and each extending toward its respective hip, said belt having an elastic section therein, and straps connecting parts of said belt between and rearwardly of the hips with the upper rearward parts of the thigh section of said limb.

Signed at Seattle, Washington, this 28th day of February, 1918.

SAMUEL H. WATERMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."