(No Model.)

J. F. ROWLEY.

COAPTATING PAD FOR ARTIFICIAL LIMBS.

No. 526,057. Patented Sept. 18, 1894.

Fig. 1.

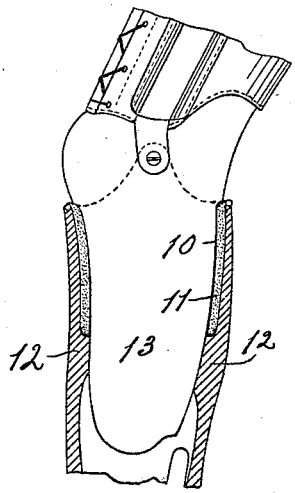
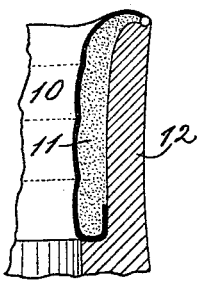


Fig. 2.



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UNITED STATES PATENT OFFICE.

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COAPTATING PAD FOR ARTIFICIAL LIMBS.

SPECIFICATION forming part of Letters Patent No. 526,057, dated September 18, 1894.

Application filed August 14, 1893. Serial No. 483,116. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. ROWLEY, a citizen of the United States of America, residing at Des Moines, in the county of Polk, State of Iowa, have invented a certain new and useful Coaptating Pad for Artificial Limbs, of which the following is a specification.

This invention relates to co-aptating pads for artificial limbs, and its object is to produce a pad that will constantly coaptate with and conform to the shape of the stump of the natural limb.

With this object in view the invention consists substantially in the construction, combinations, location, and relative arrangement of parts, all as will be more fully hereinafter described, as indicated in the accompanying drawings and as finally pointed out in the appended claims.

Reference is had to the accompanying sheet of drawings and to the numerals of reference appearing thereon and wherein—

Figure 1 is a view in vertical section of an artificial leg socket with a coaptative pad constructed in accordance with the principle of my invention applied thereto, and showing a stump in place therein. Fig. 2 is a detail view in vertical section, upon an enlarged scale showing the relative location and arrangement of parts.

The same reference sign is used to designate the same part wherever it occurs in the drawings.

In carrying out my invention I provide as a base a piece of soft, inelastic absorbent, material 11, of suitable size and shape to form an interior lining for the socket of an artificial limb, 12.

In practice I have found that eider down fabric, among many other things possessing the characteristics above mentioned, is well adapted for the base of my coaptating pad.

I attach to base 11 in any suitable way a piece of soft, pliable inelastic material, 10, of suitable size and shape to form a lining therefor.

Among other things possessing the necessary qualities as a lining, I have found that canvas answers the purpose. The lining is placed relatively to the inelastic absorbent fabric, 11, so as to cover the side thereof, and it forms the interior lining of the pad when the pad is in place in a socket for the reception of a stump, as 13.

Before the pad is applied to the socket, the base is completely saturated by introducing between the lining and base a non-elastic plastic composition, possessing the property of becoming softened by a slight rise in the temperature from the normal. I have found that hydrocarbon oils, and particularly paraffin wax is admirably adapted for this purpose. The paraffin is melted, then poured, percolated through or otherwise placed on the fabric forming the base. The paraffin enters the interstices of the soft inelastic fabric forming the base until it permeates the entire body thereof to the point of saturation.

It will be understood that the greatest amount of wax is present along the inside of the interior lining of the pad. This feature possesses utility presently to be described. The facing or lining forms, together with the base, a pocket to retain the paraffin and prevent the same from escaping.

When the pad constructed substantially in the form as above described is completed it is inserted in the socket of the artificial limb and is ready for use.

To supply an artificial limb with my pad attached thereto the socket portion of the artificial limb is warmed sufficiently to soften the paraffin, the stump of the natural limb is then inserted and the wearer applies his weight thereon, causing the pad to mold itself around the stump and to conform to the shape thereof. The natural warmth of the stump retains the paraffin in a softened state thus forming a continuously constantly coaptating pad. This result is more readily accomplished by reason of the presence of a larger quantity of the paraffin adjacent to the lining or facing of the pad, as above explained.

The presence of bunions, corns, &c., on the stump, due to friction and rubbing of the stump in its pad is a source of pain and annoyance to the wearers of artificial limbs. It has long been the vain effort to produce a pad that will not only fail to conduce to the growth of these annoying and painful enlargements and inflammations, but one that will soothe and cure the same and impart ease and comfort to the wearer. Moreover,

it is often the case with stumps of amputated limbs that the process of atrophy of the fatty parts, muscles and superficial membranes and tissue of the stump in proximity to the point of amputation, continues for years after the operation is performed, thus causing the stump to gradually shrink or change its shape. It is a matter of the highest importance in the manufacture of artificial limbs to provide for such changes without causing the wearer inconvenience or pain. The efforts heretofore made in this line have been confined to producing elastic pads. While this has been a step of advancement in the art, it has failed to produce entirely satisfactory results, for the reason that elastic pads, continually tending to resume a normal shape causes undue friction and pressure on the tender stump resulting in pain and physical distress to the wearer.

All these defects and objections are remedied in my pad, which is composed of a yielding inelastic material, which does not tend to resume a normal shape, but conforms to the varying shape of the stump at all times by the heat of the stump keeping the pad soft and pliable, thus forming a continually coaptating, soft, easy, comfortable pad. Since the lining of the pad in immediate contact with the stump is soft and flexible, undue friction or rubbing of the parts is avoided, and hence development and growth of bunions, corns, &c., is avoided as well as uncomfortable, painful inflammations.

While I have shown a form of pad as applied to the stump of a leg it is obvious and will be readily understood that my invention may be applied to the stumps of amputations of other portions of the body.

Many changes and modifications in the details and size and proportions of parts would readily suggest themselves to persons skilled in the art.

I do not desire, therefore, to limit myself to the exact details shown; but

Having now fully described my invention and explained the principles thereof, its purposes and mode of application, what I claim as my invention and desire to secure by Letters Patent of the United States is—

1. A coaptating pad for artificial limbs comprising a soft base saturated with an inelastic waxy substance and a flexible lining, as and for the purpose set forth.

2. A pad for artificial limbs comprising a backing of inelastic absorbent material impregnated to the point of saturation with paraffin wax, a flexible inelastic lining secured to said material and adapted to retain said paraffin, as and for the purpose set forth.

3. The combination with an artificial limb socket, of a pad adapted to be inserted therein, comprising a soft, flexible inelastic backing, saturated with a waxy substance, and a flexible, inelastic lining; as and for the purpose set forth.

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Witnesses:
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