

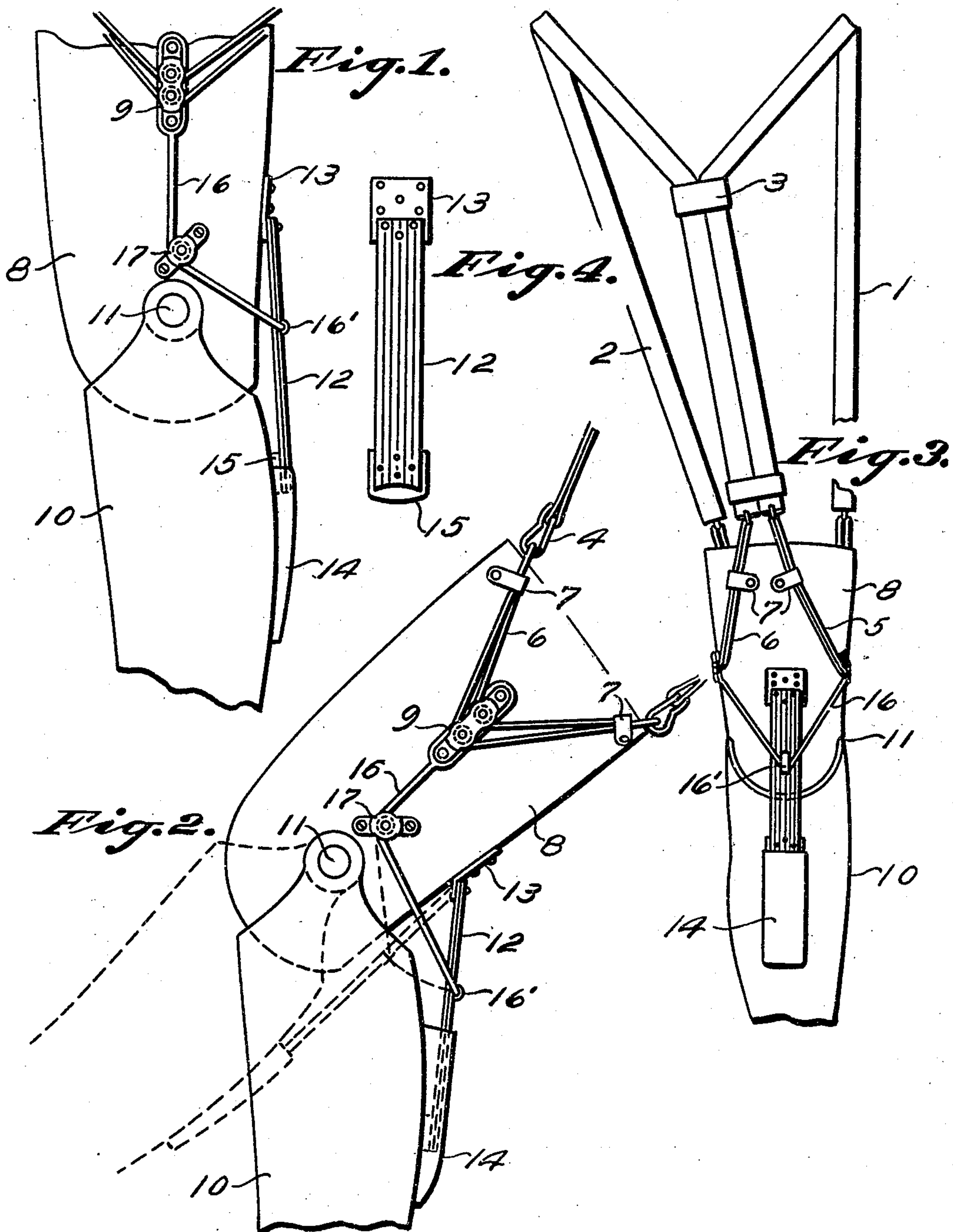
No. 774,111.

PATENTED NOV. 1, 1904.

J. F. ROWLEY.
ARTIFICIAL LIMB SUSPENDER.

APPLICATION FILED JUNE 2, 1904.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES F. ROWLEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE J. F. ROWLEY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ARTIFICIAL-LIMB SUSPENDER.

SPECIFICATION forming part of Letters Patent No. 774,111, dated November 1, 1904.

Application filed June 2, 1904. Serial No. 210,793. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. ROWLEY, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Artificial-Limb Suspenders, of which the following is a specification.

My invention relates to a modification of the artificial-limb suspenders shown in my Letters Patent of the United States No. 644,464, of February 27, 1900.

The main objects of my present invention are to provide an improved arrangement of suspenders of this class in which the leg-section is operated from the side and rear, so that when desired the front of the knee may be left smooth and free from straps, and to provide an improved form of the sliding loops and connecting parts, whereby the same may be relatively shifted to bring the wear upon different points of the loops, so as to increase the life thereof. It will be understood that the present invention, like the structure shown in said patent, also provides for straightening the limb or moving the leg-section forward by a movement of the shoulders or body of the wearer, while at the same time supporting the limb securely upon the stump of the wearer regardless of whether the body is in a stooping position or in an erect position, and likewise provides for the sliding connections adapted to compensate for the movement of the limb and body without causing the suspender to shift over the shoulder of the wearer. I accomplish these objects by the device shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partly broken away, of an artificial limb constructed according to my invention. Fig. 2 is a side elevation of the same, showing the limb in a bent position. Fig. 3 is a rear elevation of the same, showing parts of the suspender which pass over the shoulders of the wearer. Fig. 4 is a detail view of the brace which serves to straighten the limb.

In the construction shown the suspender

consists of shoulder-straps 1 and 2, which pass over the shoulders of the wearer and are connected at the back by means of a cross-strap 3. The ends of the shoulder-straps 1 and 2 are preferably provided with snap-hooks 4. The ends of the strap 1 are hooked into opposite parts of a loop 5, while the ends of the strap 2 are similarly hooked into a loop 6. The strap 1, with the loop 5, and the strap 2, with the loop 6, forms in each case an endless loop passing over the shoulders of the wearer, then passing loosely through the guides 7 on the thigh-section 8 of the artificial limb and through the blocks 9. The blocks 9 are each provided with two sheaves for engaging the two parts of the loop 6, which is endless, as may be seen in Fig. 2.

The thigh-section 8 and the leg-section 10 of the artificial limb are pivotally connected together at 11 to form a knee-joint. A back-brace 12 is hinged to the thigh-section 8 behind and above the knee-joint by means of a leather flap 13. The brace 12 extends downwardly along the back of the leg-section 10, and its free end is seated in a pocket 14, preferably of leather and secured to the back of the leg-section. During the movement of the leg-section the free end of the brace 12 slides along the leg-section and is guided by the pocket 14. Friction between the brace 12 and the leg-section is prevented by means of a soft-leather pad 15, secured to the lower end of the brace. The pocket 14 normally lies in a collapsed position against the leg-section 6, but is adapted to extend to permit of the necessary movement of the brace 12 when the parts of the limb are in the position shown in Fig. 2.

A cord 16, having each of its ends secured, respectively, to one of the blocks 9, extends around the back of the brace 12, being held against shifting along the brace by means of a staple 16' and passing through guide-sheaves 17, which are at opposite sides of the thigh-section and suitably located to lead the cord forward, so as to cause the brace 12 to be drawn forward and to straighten the limb through an upward tension on the suspender.

The block 9 is loosely hung in the loop 6 and is free to move vertically along the thigh-section.

The operation of the device shown is as follows: When the wearer stands in an erect position, the shoulder-straps through the loops 5 and 6 will draw upwardly on the cord 15, pulling the brace 12 forward and pulling the leg-section toward the forward limit of its pivotal movement, as shown in Fig. 1. When the wearer bends forward slightly or lowers his shoulders or raises the thigh-section, as in the act of walking, the shoulder-straps will cease to pull on the cord 16, thereby permitting the leg-section 10 to swing backward on its pivotal axis. The act of straightening the hip-joint of the wearer or a slight raising movement of the shoulder will again exert a pull on the cord 16 and move the leg-section to its upward position. If the thigh-section is raised to any forward position by the wearer through the natural action of the hip-joint, he may cause an extension of the leg-section, as indicated in Fig. 2, by slightly lifting one or both of his shoulders to cause an upward tension on the cord 16.

The position of the artificial limb does not interfere with the free forward or backward movement of the body, since any such movement is readily compensated for by the sliding of the loop 6 through the block 9. The cord 16 is connected to the brace 12 at the staple 16'. The loop 6, being endless and being of flexible material, may be readily shifted around so as to bring the wear of the snap-hooks 4 and the sheaves in the block 9 to different points along its length.

It will be seen that numerous details of the construction shown may be altered without departing from the spirit of my invention.

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

1. The combination of an artificial limb comprising a thigh-section and a leg-section pivotally connected together; a brace bearing between said thigh-section and leg-section at points respectively above and below the pivotal connection and adapted when drawn forward to straighten the limb; a suspender comprising a loop slidably connected to said brace and adapted to pass over and be supported on the shoulder of the wearer; and guides on the thigh-section for the loop; all arranged to swing the leg-section forward on its pivotal connection through an upward tension on said loop, substantially as described.

2. The combination of an artificial limb comprising a thigh-section and a leg-section pivotally connected together; a brace bearing between said thigh-section and leg-section at points respectively above and below the pivotal connection and adapted when drawn for-

ward to straighten the limb; a suspender comprising a cord secured to said brace intermediate of its ends and extending forward and upward at each side of the thigh-section; guides on said thigh-section for said cord; loops slidably connected to the ends of said cord and adapted to pass over and be supported on the shoulders of the wearer; guides on the thigh-section for said loop; all arranged to swing the leg-section forward on its pivotal connection through an upward tension on said loop, substantially as described.

3. The combination of an artificial limb comprising a thigh-section and a leg-section pivotally connected together; a brace hinged to said thigh-section and slidably bearing on the leg-section at the rear of the pivotal connection between said thigh-section and leg-section, said brace being adapted when drawn forward to straighten the limb; and a suspender adapted to pass over and be supported by the shoulder of the wearer and connected with said brace for pulling the brace forward through an upward tension on the suspender; and guides on the thigh-section for said suspender, substantially as described.

4. The combination of an artificial limb comprising a thigh-section and a leg-section pivotally connected together; a brace hinged to the thigh-section at the rear of and above the pivotal connection and having its free end slidably bearing at the rear of the leg-section below the pivotal connection; a guide adapted to prevent lateral shifting of the end of said brace on said leg-section; a suspender connected with said brace and adapted to pass over and be supported by the shoulder of the wearer; guides on the thigh-section for said suspender; all arranged to swing the leg-section forward on its pivotal connection through an upward tension on the suspender, substantially as described.

5. The combination of an artificial limb comprising a thigh-section and a leg-section pivotally connected together; and a suspender comprising a strap adapted to pass over and be supported on the shoulder of the wearer; an endless loop slidably connected at opposite points to the ends of the strap; a cord having one end slidably connected to both parts of the loop between the ends of the strap and having its other end connected with the leg-section for swinging said leg-section on its pivotal axis through a tension on said loop; substantially as described.

Signed at Chicago this 20th day of May, 1904.

JAMES F. ROWLEY.

Witnesses:

WM. R. RUMMLER,
EUGENE A. RUMMLER.