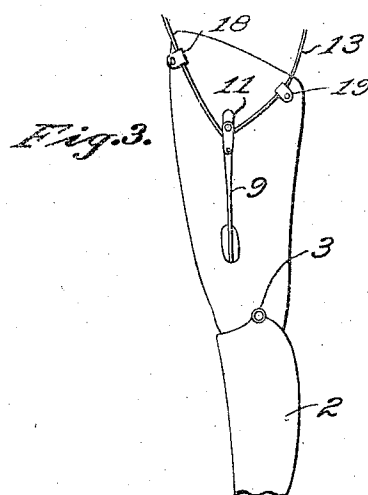
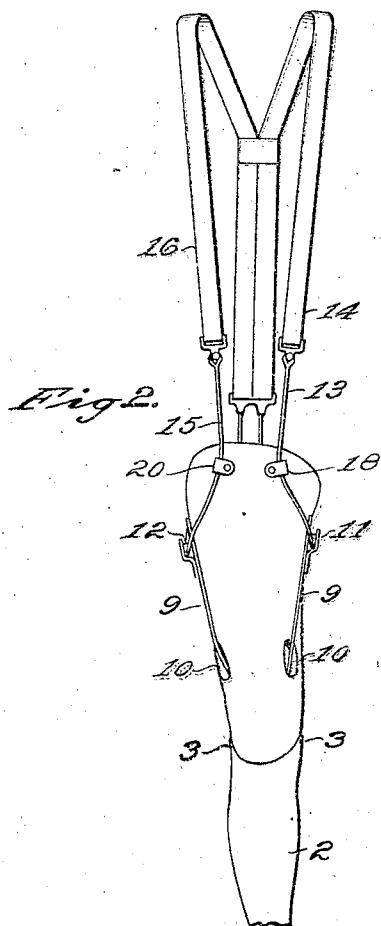
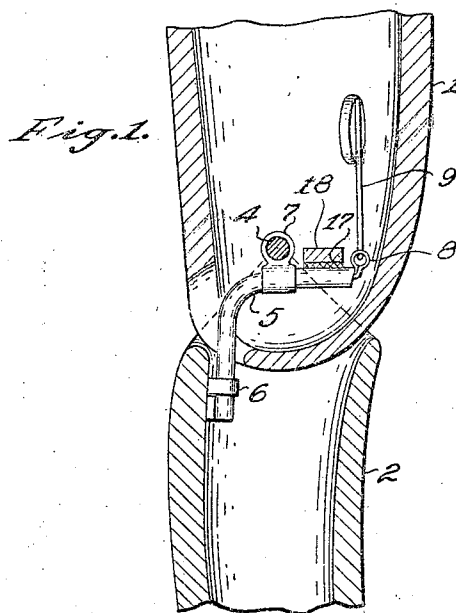


J. F. ROWLEY.
ARTIFICIAL LIMB SUSPENDER AND BACK CHECK.
APPLICATION FILED OCT. 15, 1906.

961,165.

Patented June 14, 1910.



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UNITED STATES PATENT OFFICE.

JAMES F. ROWLEY, OF CHICAGO, ILLINOIS.

ARTIFICIAL-LIMB SUSPENDER AND BACK-CHECK.

961,165.

Specification of Letters Patent. Patented June 14, 1910.

Application filed October 15, 1906. Serial No. 339,910.

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 and Back-Checks, of which the following is a specification.

The main objects of this invention are to provide an artificial limb and suspender embodying the invention described in my Patent Number 644,464, but in which the connection between the suspender and the leg-section, whereby the latter is moved on its knee-joint, is made through the interior of the thigh-section, instead of being made outside of the knee-joint as in the specific form of said invention shown in the drawing forming part of the specification of said patent; and to provide a suitable form of back-check and connection between the back-check and the suspender whereby the leg-section may be moved forward on its pivotal connection with the thigh-section. These objects are accomplished by the device shown in the accompanying drawings, in which:

Figure 1 is a vertical section of an artificial limb partly broken away, showing the interior connections of the suspender with the leg-section. Fig. 2 is a front elevation of an artificial limb and suspender constructed according to this invention and having the lower part of the leg-section broken away. Fig. 3 is a side elevation of the same device with the upper parts of the suspender broken away.

In the construction shown, the thigh-section 1 and the leg-section 2 are pivotally connected at the knee-joint 3 at each side of the leg. A knee-bolt 4 passes through the thigh-section between said joints 3. The back-check is of rigid material and is secured to the leg-section 2 by means of a sleeve 6 and is connected with the knee-bolt 4 by means of the sleeve 7. The sleeve 7 serves to hold the back-check 5 at the proper height in the sleeve 6. The forward end of the back-check 5 is provided with an eye 8 for engaging the strap 9. The strap 9 extends through an opening 10 on each side of the thigh-section and is provided at its ends with the pulleys 11 and 12. The pulley 11 has the strap 13 passing through the same, and having its upper end

14 adapted to pass over one shoulder of the wearer. A similar strap 15 engages the pulley 12 and has its upper end 16 adapted to pass over and be supported upon the other shoulder of the wearer. The part of the back-check 5 which projects forward of the sleeve 7 abuts against a pad 17 when the leg-section is in the straightened position relatively of the thigh-section. The pad 17 is supported on a cross-piece 18 which extends across and is rigidly secured within the thigh-section.

The strap 13 is slidingly connected to the thigh-section by means of the guides 18 and 19. The strap 15 is similarly slidingly connected to the thigh-section by means of a guide 20 at the front and a similar guide at the rear, corresponding to the guide 19.

The operation of the device is as follows: The upper parts 14 and 15 of the suspender-loops pass over the shoulders of the wearer and support the thigh-section in proper position upon the stump-leg. When the wearer stands in an erect position, the suspender-loops will draw upwardly on the strap 9 and on the forwardly projecting end of the back-check 5, and will thereby pull the leg-section toward the forward limit of its pivotal movement on the thigh-section. When the wearer bends forward slightly or lowers his shoulders, or raises the thigh-section forwardly, as in the act of walking, the shoulder-straps will cease to draw upwardly on the strap 9, and will permit the leg-section to move backwardly on its pivotal connection with the thigh-section. To straighten the leg-section or bring the same forward toward a position of alinement with the thigh-section, the wearer will straighten his body or raise the shoulders so as to exert an upward tension on the suspender-loops and the strap 9.

In any position of the leg, the free forward and backward movement of the body of the wearer is not interfered with, since the straps 13 and 15 will slide freely through the pulleys 11 and 12 and through the guides on the thigh-section. The sliding connection of the suspender-loops with the thigh-section prevents the suspender-loops from shifting or drawing back and forth over the shoulders of the wearer when he bends his body forward or backward. The pad 17 and cross-piece 18, abutting against the top of the forwardly projecting part of the back-check 5 limits the forward move-

ment of the leg-section on its pivotal connection, to a position in alinement with the thigh-section. The strap 9 will slide slightly through the eye 18 if one shoulder of the wearer is raised more than the other, but this sliding movement is not as free as the sliding movement of the suspender loops through the pulleys 11 and 12. An upward tension on either suspender loop will therefore pull the leg-section toward the forward limit of its movement on its pivotal connection with the thigh-section.

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

1. The combination of a thigh section, a leg section pivotally connected thereto, a pair of suspender guides on the thigh section, a suspender loop passing through said guides and adapted to pass over and be supported on the shoulder of the wearer, an extension for said suspender loop extending from a point intermediate of said guides to the interior of the thigh section and means operatively connecting said extension with said leg section, all arranged to swing the leg section forward on its pivotal connection through an upward tension on said loop.
2. The combination of a thigh section and a leg section pivotally connected together, a member extending upward from the leg section into the interior of the thigh section, and a suspender loop slidably connected to said thigh section and adapted to pass over and be supported on the shoulder of the wearer, and having a connection to said upwardly extending member at a point inside said thigh section and removed from the axis of said pivotal connection.
3. The combination of a thigh-section and a leg-section connected by a knee-joint, a suspender loop slidably connected to said thigh-section, having a rotating shifting movement relative thereto, adapted to pass over and be supported on the shoulder of the wearer, and having a flexible extension running to the inside of the thigh-section, and intermediate means connecting said extension with said leg-section and adapted to move the leg-section on its knee-joint through an upward tension on said loop.
4. The combination of a thigh-section and a leg-section connected by a knee-joint, a suspender loop slidably connected to said thigh-section, having a rotating shifting movement relative thereto, adapted to pass over and be supported on the shoulder of the wearer, a flexible extension slidably connected to said loop and running to the inside of the thigh-section, and intermediate means connecting said extension with said leg-section and adapted to move the leg-section on its knee-joint through an upward tension on said loop.
5. The combination of a thigh-section and

a leg-section pivotally connected together, a knee-bolt extending across the thigh-section at said pivotal connection, a back-check of rigid material extending from the leg-section to the interior of the thigh-section, a sleeve surrounding said knee-bolt and rigidly secured to the back-check, and a suspender-loop slidably engaging the thigh-section and having a connection to the back-check adapted to move the leg-section forward on its pivotal connection to the thigh-section, through an upward tension on said loop.

6. The combination of a thigh section and a leg section pivotally connected together, a back-check of stiff material secured to the leg section and extending to the interior of the thigh section, and a suspender loop, slidably engaging the thigh section and having an extension operatively connected to said back-check at a point within the thigh section and removed from the axis of said pivotal connection.

7. The combination of a thigh-section and a leg-section pivotally connected together, a knee-bolt extending across the thigh-section at said pivotal connection, a back-check of rigid material extending from the leg-section to the interior of the thigh-section, a sleeve secured to the leg-section and engaging said back-check, and a sleeve surrounding said knee-bolt and rigidly secured to the back-check, and a suspender-loop slidably engaging the thigh-section and having a connection to the back-check adapted to move the leg-section forward on its pivotal connection to the thigh-section, through an upward tension on said loop.

8. The combination with a thigh-section and a leg-section pivotally connected together, of a lever fulcrumed in the thigh-section and having upper and lower arms, the lower arm being connected with the leg-section, a suspender connected with the upper arm of the lever, and means cooperating with the lever for limiting the forward movement of the leg-section, substantially as set forth.

9. The combination with a thigh-section, a leg section and a pivot connecting the same, the thigh section being provided in its sides above said pivot with openings and in its rear side with a slot, a lever mounted on said pivot and having an upper arm arranged wholly within the thigh section and a lower arm extending downwardly through the slot of the thigh-section into the leg-section and secured to the latter, and a suspender having members which pass through the side openings of the thigh section and are secured to the upper arm of said lever, substantially as set forth.

10. The combination of a thigh section, a leg section pivotally connected therewith, a suspender loop slidably connected to the

thigh section and adapted to pass over and be supported on the shoulder of the wearer, said loop having a flexible extension, and a rocking back-check having an arm wholly within said thigh section and there engaging with said suspender extension.

11. The combination of a thigh-section and a leg-section connected by a knee-joint, with a suspender connected to the leg-section at a point providing leverage outside of the axis of the knee-joint, said suspender comprising a loop having a rotating, shifting movement relatively of said point and adapted to extend over the shoulder of the wearer to form a shoulder strap, and said suspender having a part, between said point

and said shoulder strap, extending through the interior of the thigh-section.

12. The combination of a thigh section, a leg section pivotally connected thereto, a suspender loop operatively connected to the outside of said thigh section and having a flexible extension running to the interior of said thigh section through holes in the walls thereof, and rigid connecting means between said extension and said leg section.

Signed at Chicago this 13th day of October 1906.

JAMES F. ROWLEY.

Witnesses:

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L. A. SMITH.