

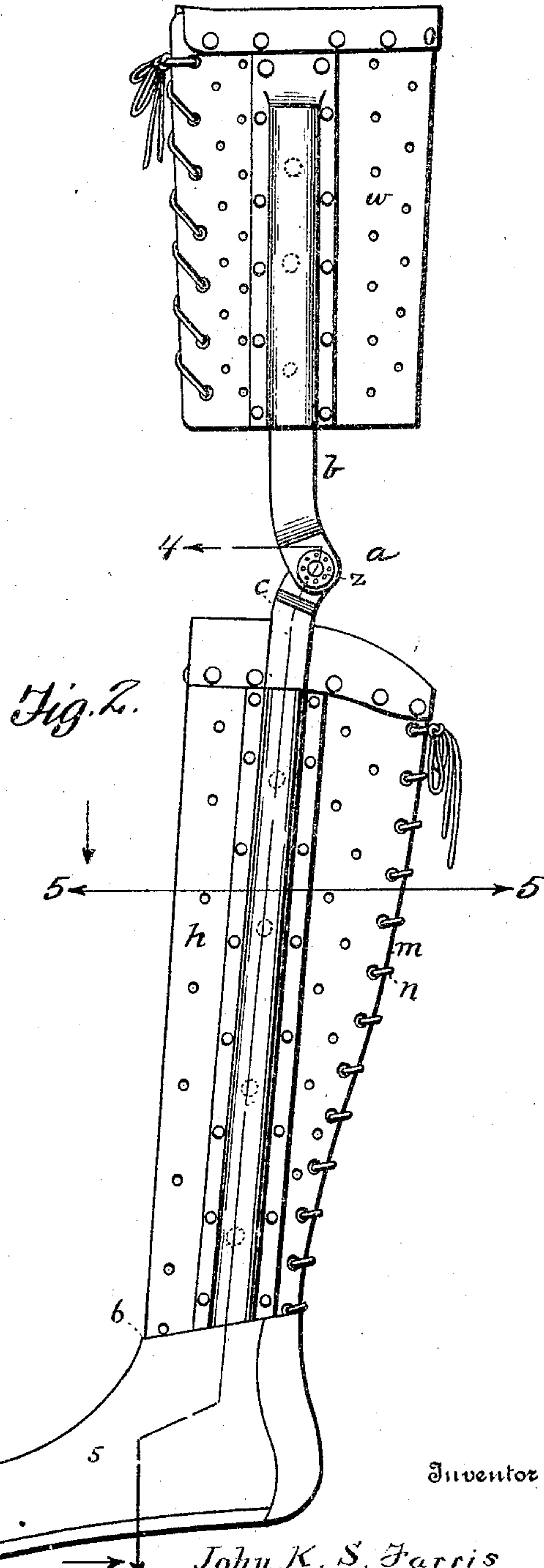
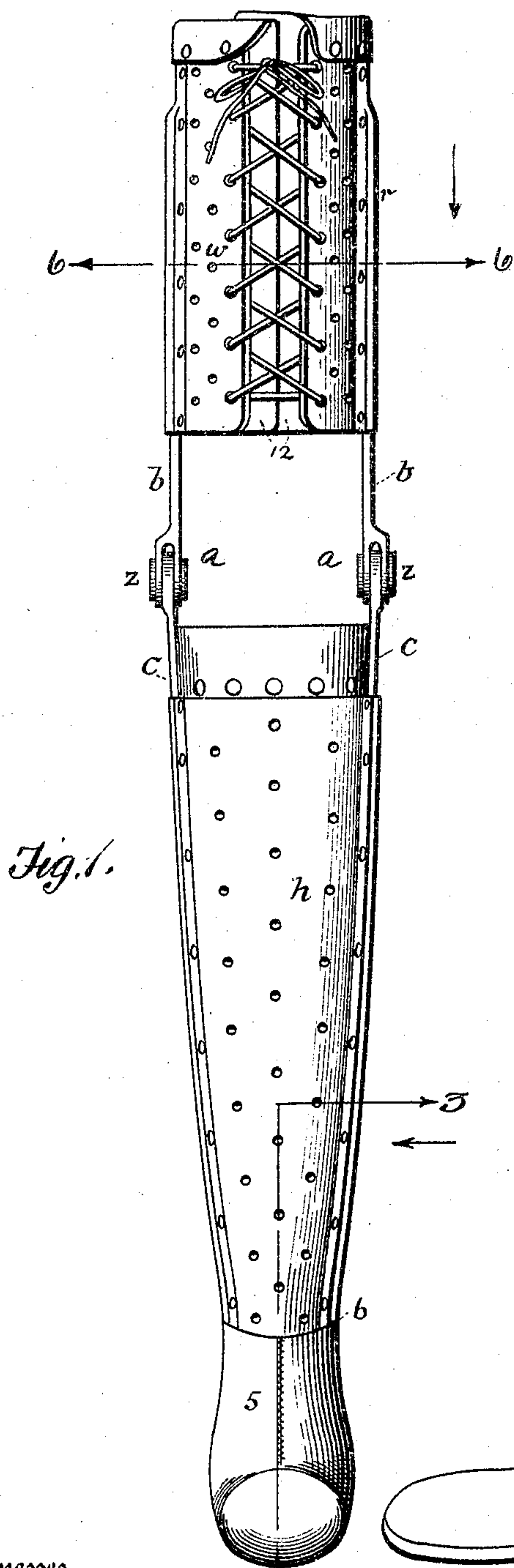
No. 794,147.

PATENTED JULY 4, 1905.

J. K. S. FARRIS.  
ARTIFICIAL LEG.

APPLICATION FILED MAR. 21, 1905.

2 SHEETS—SHEET 1.



Witnesses

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*George M. Anderson.*

Inventor

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Attorney

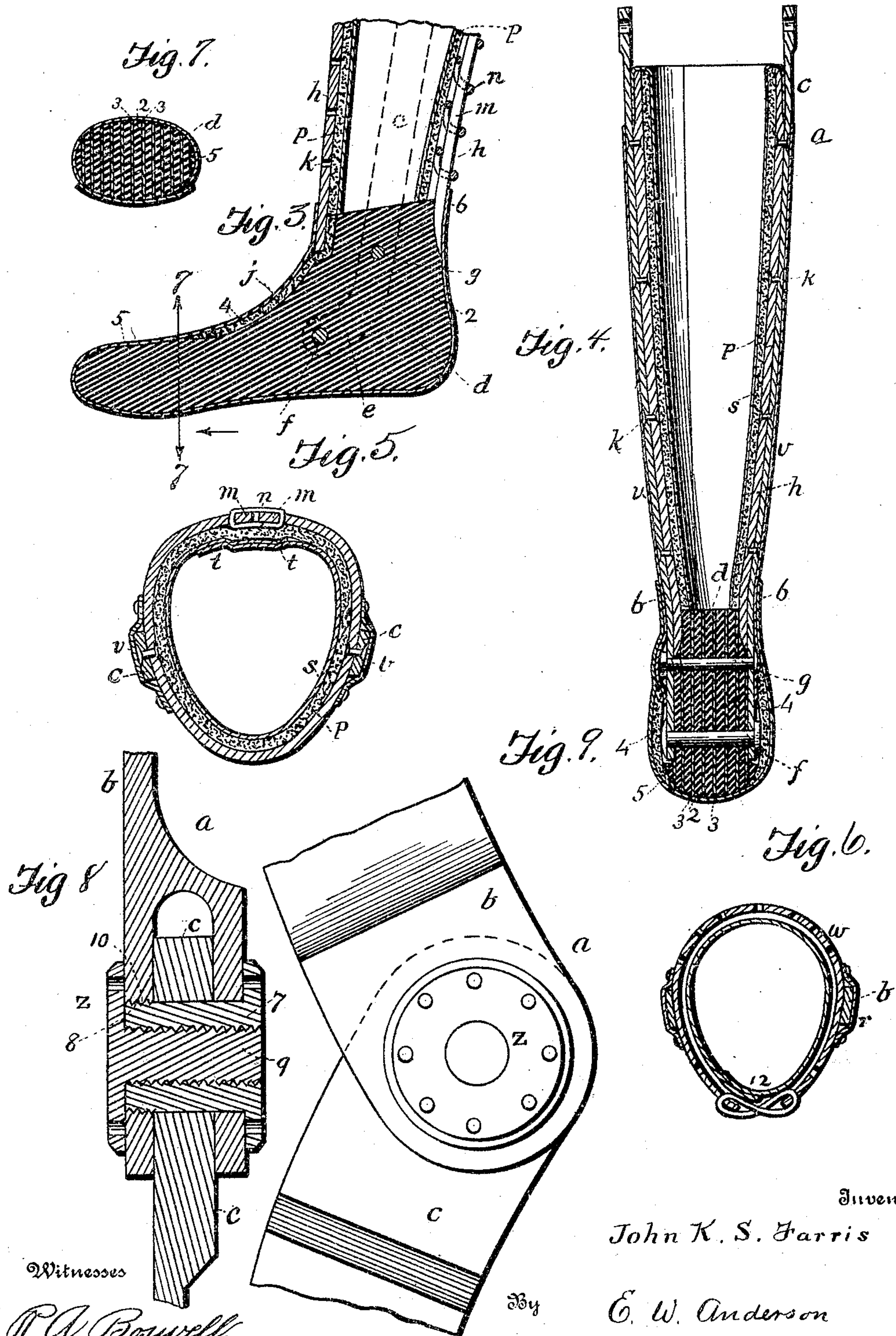
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George M. Anderson.

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# UNITED STATES PATENT OFFICE.

JOHN K. S. FARRIS, OF SALTVILLE, VIRGINIA.

## ARTIFICIAL LEG.

SPECIFICATION forming part of Letters Patent No. 794,147, dated July 4, 1905.

Application filed March 21, 1905. Serial No. 251,271.

*To all whom it may concern:*

Be it known that I, JOHN K. S. FARRIS, a citizen of the United States, and a resident of Saltville, in the county of Smyth and State of Virginia, have made a certain new and useful Invention in Artificial Legs; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

Figure 1 is a front elevation of my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a section on the line 3 3, Fig. 1. Fig. 4 is a section on the line 4 4, Fig. 2. Fig. 5 is a section on the line 5 5, Fig. 2. Fig. 6 is a section on the line 6 6, Fig. 1. Fig. 7 is a cross-section through the foot portion of the leg. Figs. 8 and 9 are detail views of the joint at the knee.

The invention relates to artificial legs; and it consists in the novel construction and combinations of parts, as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the letter *a* designates the lateral jointed irons, *c* indicating the sections below the knee, and *b* the sections above the knee.

*d* represents the body of the foot, which terminates just above the ankle and is connected to the lower forward-bent ends *e* of the sections *c* by the transverse ankle-bolt *f*, and the transverse bracing-bolt *g*, extending through the foot and irons, is located above the ankle-bolt. The sections *c* of the irons below the knee-joint are secured exteriorly to the sides of the main inclosing leg-wrap *h* by means of rivets *k*. This wrap is adjustable, having marginal portions *m*, which are perforated for the reception of the fastenings *n*, whereby it can be drawn to neatly fit the stump. This main wrap is usually made of leather. Next to the main wrap *h* is placed a layer of felt *p* and next to the felt layer an inside lining *s*, of soft leather, which is provided with lapping marginal portions *t*, whereby the adjustment is facilitated. The felt layer or cushion is connected to the lining by

stitches. The lateral irons, being outside the sides of the main wrap, are covered in by outer pieces *v* of leather or other suitable material secured to the main wrap. The latter is provided with ventilating-perforations.

The foot-body *d* is composed of a series of vertical straight flat longitudinal layers *2* of flexible rubber, having interlayers *3*, of thread or fabric, these layers and interlayers being held together by suitable cement. The terminal bends of the leg-irons and the transverse bolts connecting said irons, which pass through the layers and interlayers, serve to hold the layers properly braced in position.

The sides and ankle-recess *j* of the foot-body are padded by means of a piece or pieces of felt, (indicated at 4,) which serves to give form to the foot and to guard the ends of the ankle-bolt. The whole is covered in by an external flexible foot-form covering *5*, made of rubber and fabric, the open upper marginal portion *6* of which extends above the top of the foot-body and surrounds the irons and wrapping layers above the ankle. The upper ends of the leg-irons *c* and the lower ends of the thigh-irons *b* are curved rearward and terminate in perforated portions for the joint-pivots *z*. The thigh-irons *b* are bifurcated at their lower ends to receive the upper ends of the leg-irons, and the perforations of these ends are made large enough to receive the threaded sleeve-section *7* of the pivot *z*, which has its flange-head on the outside of the thigh-iron and is connected by a terminal thread *8* with an interior thread of the perforation *10* in the inner branch of its bifurcated end. The interior of this sleeve-section is threaded for engagement with the flanged screw-section *g*. The flanges of these pivot-sections are provided with wrench-seats, so that the tension of the joint can be easily adjusted with a wrench-key.

The irons of the thigh are secured to the main leather-wrap *w* of the thigh by means of rivets and are covered in with pieces of soft leather *r*. This rap is also made with perforated rear marginal portions for lacing. The soft lining-leather of the thigh-section is riveted to the upper portion of the wrap *w* and is free at its lower and rear margins. The



rear marginal portions 12 are made with extensions for lapping to facilitate adjustment. The irons are designed to be made of spring-steel, and the sleeve-section of the pivot 5 should also be made of tempered steel in order to increase its resistance to wear.

When the stump is above the knee, the thigh wrap or receptacle is provided with a lining which is made reticular at its lower end, 10 and this receptacle is made longer upward in order to reach higher on the thigh. In this case the outer leather covering is made integral with the covering of the portion below the knee-joint in order to present a more 15 shapely appearance.

The recess *j* is made in the ankle portion of the foot-body opposite the ankle-bolt, and the toe portion of said body is made thicker and wider in front of said recess in order to provide for flexibility at the ankle, the ankle-bolt being set low in the foot and somewhat 20 forward toward the recess in order to properly locate the point of flexibility with reference to said recess.

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

1. In an artificial leg, the combination of a flexible foot-body, a flexible leg portion, and 30 connecting and stiffening means consisting of side leg-irons secured to said leg portion and having a transverse ankle-bolt connection with said foot-body, substantially as specified.

2. In an artificial leg, the combination of a 35 foot-body formed of a series of straight flat longitudinal vertical layers of rubber and interlayers of thread having a cement connection to said layers of rubber, a flexible leg

portion joined to said foot-body, and connecting and stiffening means consisting of side leg- 40 irons secured to said leg portion and to said foot-body, substantially as specified.

3. In an artificial leg, the combination of a foot-body formed of a series of straight flat longitudinal vertical layers of rubber and in- 45 terlayers of thread having a cement connection to said layers of rubber, a flexible leg portion joined to said foot-body and formed of layers of felt and leather having perforations throughout for ventilation and flexi- 50 bility, the ends of said leg portion having lacing connections, and stiffening and connecting means consisting of side leg-irons secured to said leg portion and having a transverse ankle- 55 bolt connection with said foot-body, substantially as specified.

4. In an artificial leg, the combination with longitudinal vertical flexible layers connected together and forming a foot-body, of side leg- 60 irons having forward terminal bends and an ankle-bolt passing through said layers and connecting said irons, substantially as specified.

5. In an artificial leg, lateral leg-irons having forward terminal bends at their lower ends, 65 a flexible foot-body having an ankle-recess, a transverse ankle-bolt, a transverse bracing-bolt, side pads and recess-padding, and a foot-form covering, substantially as specified.

In testimony whereof I affix my signature in 70 presence of two witnesses.

JOHN K. S. FARRIS.

Witnesses:

W. P. BUCHANAN,  
G. G. SHANNON.