

S. MARTINCHEK.
ARTIFICIAL LEG.
APPLICATION FILED AUG. 13, 1913.

1,102,774.

Patented July 7, 1914.

FIG. 1.

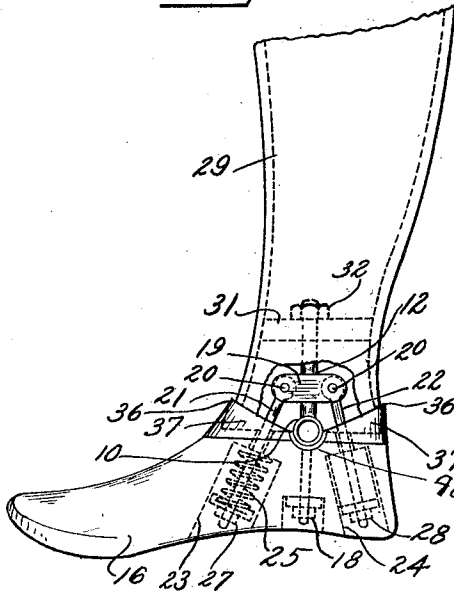


FIG. 2.

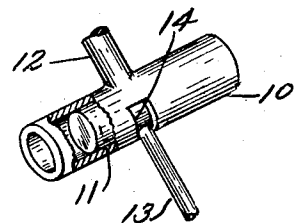
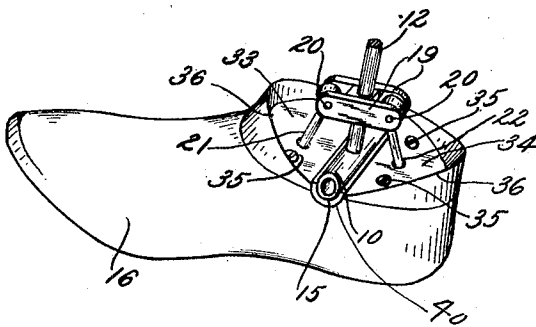
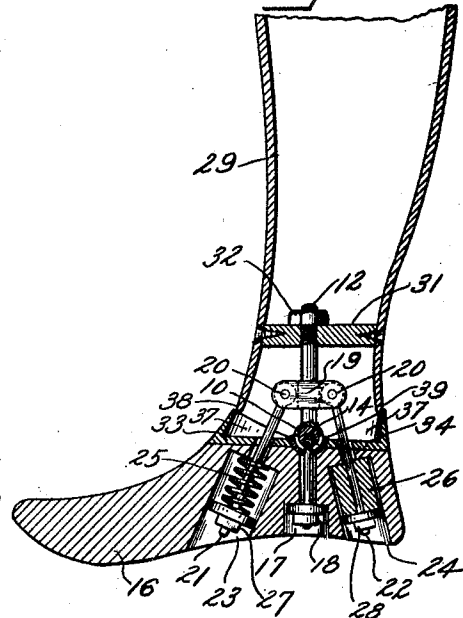


FIG. 4.

FIG. 3.

WITNESSES:

Edw. J. H. H. H.
Eric H. H. H.

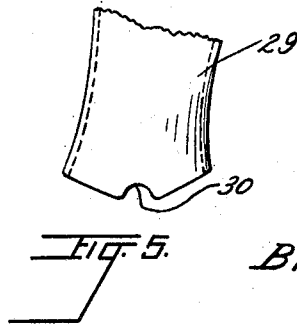


FIG. 5.

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STEPHAN MARTINCHEK, OF POSEN, ILLINOIS.

ARTIFICIAL LEG.

1,102,774.

Specification of Letters Patent.

Patented July 7, 1914.

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To all whom it may concern:

Be it known that I, STEPHAN MARTINCHEK, a citizen of the United States, residing at Posen, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Ankle-Joints for Artificial Legs.

The object of my invention is to simplify construction; increase strength and durability; and to generally improve the construction of artificial legs.

In the drawings Figure 1 is a side elevation of an artificial leg provided with my improvements; Fig. 2 is a sectional elevation of the same leg; Fig. 3 is a perspective view of the top of the foot portion of such leg, with my improvements attached thereto; Fig. 4 is a perspective view of a portion of the joint mechanism; and Fig. 5 an elevation of the lower part of the leg portion of my artificial limb.

Referring to the drawings, into a tube 10 is movably fitted a tube 11. A rod 12 is attached to the middle of tube 10 at right angles to its axis. A rod 13 is in like manner attached to tube 11, and projects through an opening 14 cut into tube 10 opposite to the foot of rod 12 therein. Tube 10, with the parts attached thereto, is fitted into semi-cylindrical groove 15, which is formed transversely in the upper surface of artificial foot 16, in such a way that rod 13 projects downward through the body of foot 16 into countersunk opening 17 therein. Groove 15 is preferably provided with a lining 40. Nut 18, located in this opening, is threaded onto the outer end of rod 13 and tightened until tube 10, and the parts attached thereto are firmly joined to foot 16, leaving the possibility, however, of oscillating rod 12 and tube 10, around tube 11 as an axis, backward and forward, within the limits determined by the size of opening 14. Cross-bars 19, attached to rod 12, a short distance from tube 10, at right angles to both rod 12 and tube 10, are connected near their outer ends by pins 20, upon which are pivoted eyebolts 21 and 22, the outer ends of which project into openings 23 and 24, countersunk into the lower face of foot 16 at suitable angles to rod 13, directly in front and to the rear of it. In these openings there are mounted, upon bolts 21 and 22, a compression spring 25 and a rubber cushion 26, confined by nuts 27 and 28, respectively, which are threaded onto

the outer ends of bolts 21 and 22, respectively. Hollow leg-portion 29 is at its lower end provided with suitable semicircular bearing grooves 30, adapted to rest upon the outer ends of tube 10. At right angles to the center line of these bearings and some distance above them there is fastened within leg portion 29 a cross bar 31. The upper end of rod 12 projects through this crossbar, and by means of nut 32, threaded onto the outer end of rod 12, and bearing on crossbar 31, leg portion 29 is drawn down until bearing grooves 30 are in firm and rigid engagement with tube 10. It is evident that by this arrangement leg portion 29 is movably joined to foot 16, the range of movement of the joints formed between them being determined by the size of opening 14 and by the resiliency of spring 25 and cushion 26. Caps 33 and 34, attached by means of wood screws 35 to foot 16, are provided with rims 36 which are designed and formed to cover gaps 37 between the lower front edge 38 and rear edge 39 of leg portion 29, and the upper surface of foot 16. Heretofore rims to cover gaps 37 have usually been made integral with foot 16, necessitating the carving of these rims in each instance. By providing caps 33 and 34, with rims 36, I am enabled to do away with this carving of thin wood rims which is a delicate and slow operation. Caps 33 and 34 are preferably cast or stamped in aluminum or another light metal; but may be pressed of fiber or similar material. Caps of larger size may readily be reduced by filing, especially along their straight edges adjoining groove 15 so as to make it practicable to fit all sizes of feet from a few stock-sizes of caps. To those skilled in the art of making artificial limbs it will further be plain, without further comment, that by means of my improvements I attain not only great simplicity in the construction of the ankle joint, but also great reliability and durability, together with the possibility of regulating and changing with great ease and certainty the degree of flexibility in the joint. For it is evident that springs 25 and cushions 26 of almost any degree of resiliency may be employed; also that springs 25 may be used in lieu of cushions 26 and vice versa.

I desire to have it distinctly understood that the apparatus as above described and as shown in the drawings, embodies only the

preferred form of my invention, and that I do not want to be limited to that precise form.

I claim:—

- 5 1. In artificial legs, the combination, of a hollow leg portion having a transverse brace near its lower end; an artificial foot; mechanism movably connecting said leg portion and foot, said mechanism being joined to
10 said leg portion by means of a rod suitably connected to said brace; and members movably joined to said rod and bearing on resilient members located in the foot, substantially as and for the purpose described.
- 15 2. As a new article of manufacture, mechanism for movably connecting the leg portion and the foot of an artificial leg, com-

prising rods, movably joined together and having nuts threaded on their free ends, in combination with auxiliary members movably joined to one of said rods and having nuts threaded on their free ends, substantially as and for the purpose described. 20

3. As a new article of manufacture, a substantially semicircular cap, provided with a suitable rim along its rounded edge, adapted to fit the top of an artificial foot, and adapted to be trimmed down, especially along its straight edge, substantially as and for the purpose described. 25

STEPHAN MARTINCHEK.

Witnesses:

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