

Nov. 21, 1939.

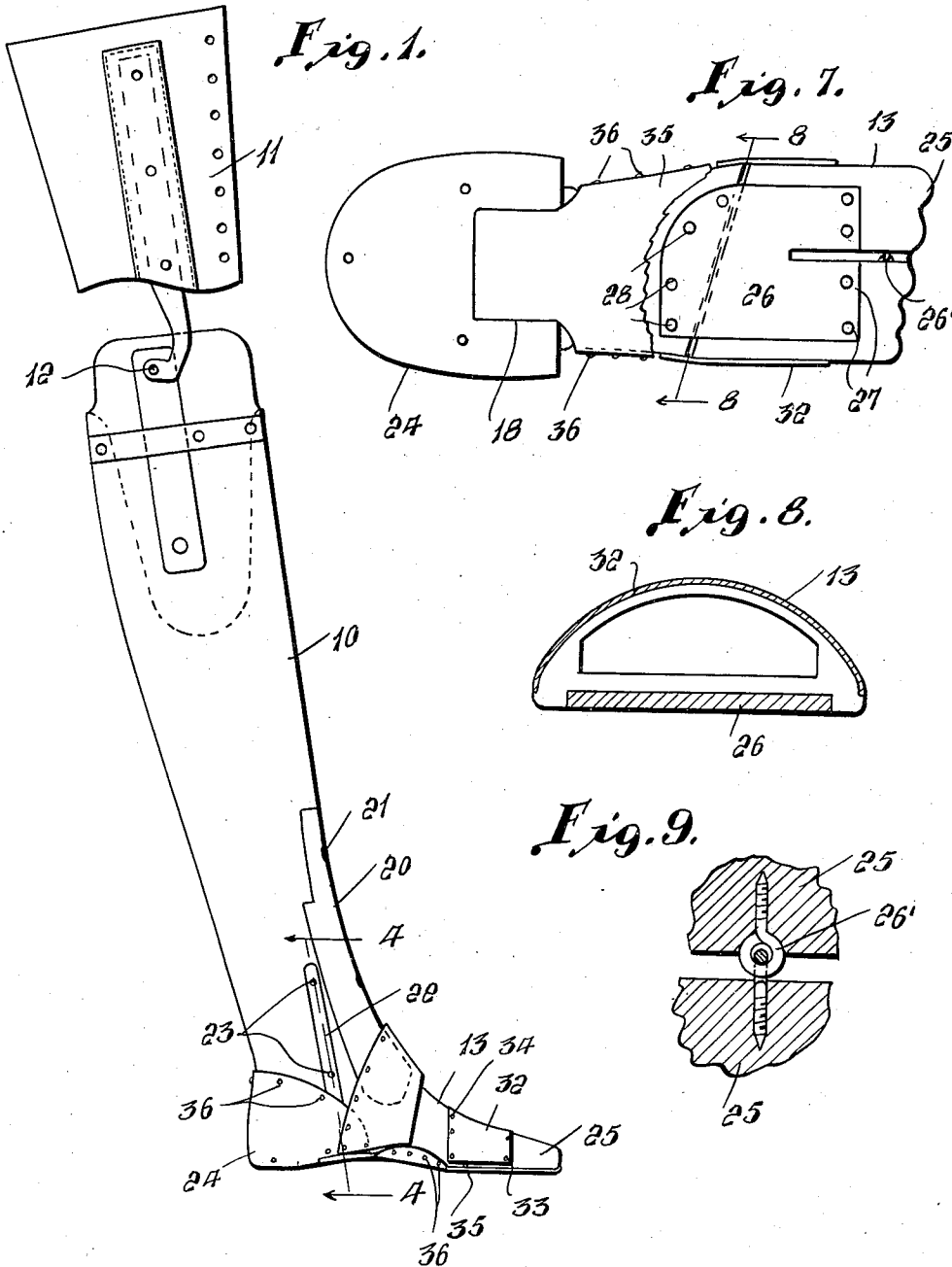
J. C. THOMPSON

2,181,031

ARTIFICIAL LEG

Filed Aug. 26, 1937

2 Sheets-Sheet 1



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*Fig. 2.*

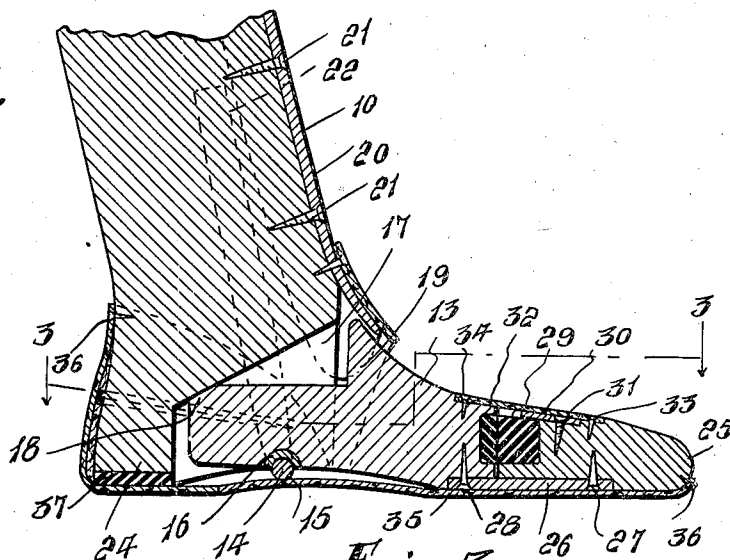


*Fig. 4.*

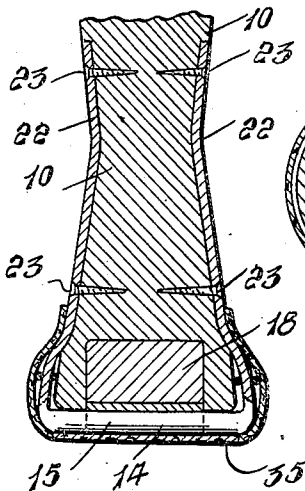


*Fig. 3.*

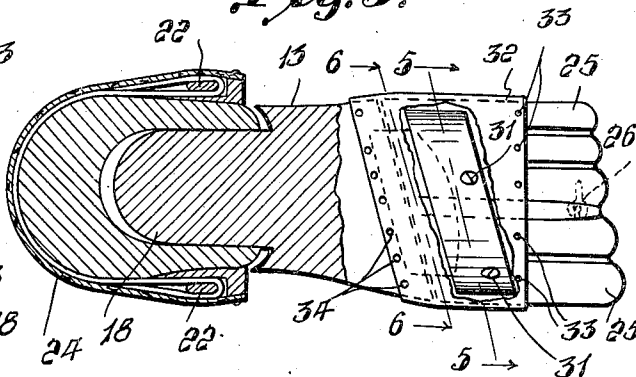


*Fig. 6.*

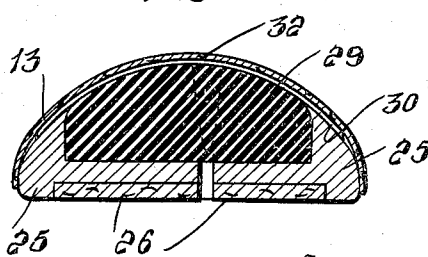
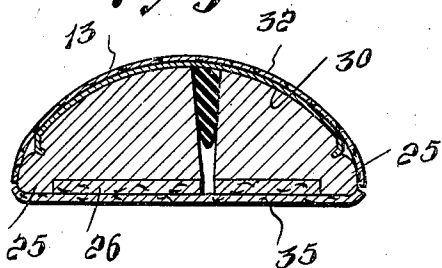


*Fig. 5.*



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## UNITED STATES PATENT OFFICE

2,181,031

## ARTIFICIAL LEG

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Application August 26, 1937, Serial No. 161,123

## 1 Claim. (Cl. 3—6)

My invention relates to an artificial leg and it aims to provide a novel construction enabling the user to walk more naturally with greater ease.

It also aims to provide such a structure as avoids an ankle joint and its incidental constant trouble, to increase the life of the leg and to provide a structure wherein a portion of the leg also constitutes a portion of the foot, wherein the U-bolt employed is not subject to the strain of walking, and wherein the foot has two movements so as to cause a shoe thereon to expand and maintain its natural shape, and a construction in which the foot works from the instep forward and the leg works from the instep backward.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:

Figure 1 is a side elevation of an artificial leg constructed in accordance with the invention;

Figure 2 is a partial central vertical sectional view through the artificial leg;

Figure 3 is a horizontal section taken on the plane of line 3—3 of Figure 2;

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 1;

Figure 5 is a detail section taken on the line 5—5 of Figure 3;

Figure 6 is a detail section taken on the line 6—6 of Figure 3;

Figure 7 is a fragmentary inverted plan view of the foot;

Figure 8 is a detail section taken on the line 8—8 of Figure 7 and

Figure 9 is a detail horizontal section through the connection of the two portions of the foot.

Referring specifically to the drawings 10 designates a leg section made of wood or any other desired material and having an attaching or thigh section 11 pivotally connected thereto as at 12 for flexure in simulation of the knee joint.

A foot section is employed at 13 and is pivotally or flexibly connected at the base of the leg section 10 by a U-member or strap 14 having a lower or bridge portion 15 engaged in a groove 16 in the undersurface of the foot section. The lower extremity of the leg section 10 has a slot 17 into which the rear end of the foot section 13 extends and at 18, an inclined wall in the slot and an inclined wall on the foot section are engaged. Said foot section 13 is overlapped at the upper portion 19 thereof by means of a spring plate 20 fastened as at 21 to the leg

section 10. The aforesaid U-member of strap 14 at its arms or side portions 22 is fastened as at 23 to the leg section.

It will be noted that the leg section as at 24, at the heel or rearwardly of the foot section extends to the ground or walking surface.

Toe sections 25 are flexibly connected together as by interengaged eyelets 26' screwed one to each of them. At the junction line between the toe sections and forward end of the foot, which is diagonal as shown in Figures 3 and 7, there is a flexible plate or sheet 26, for instance of leather, fastened as at 27 and 28, to the toe sections and to the foot section, respectively. Said last mentioned sections adjacent the junction line are recessed so as to house a rubber or other resilient block 29 which is overlapped by a metallic plate 30, preferably resilient, and fastened as at 31 across the top of the toe sections 25. Disposed over the said plate 30 and the junction between the toe and foot sections is a leather or other flexible sheet 32, fastened to the toe sections as at 33 and to the foot section as at 34.

A leather or other flexible sheet 35 may extend across the lower end of the leg section, foot section and toe sections to be nailed or otherwise fastened in place as at 36. Said foot section and toe sections as well as the leg section may advantageously be made of wood.

The lower or heel end of the leg section may be equipped with a wear and reinforcing plate as of metal as at 37.

It will be realized that the present invention avoids the use of an ankle joint and that the foot section 13 works from the instep forwardly and that the leg section works from the instep back, with the lower end of the leg constituting a portion of the foot. The strain is not on the U-member 14, as a result. A shoe is adapted to be worn on the lower end of the leg section over the foot section and toe sections and since the foot section has two movements, it will expand the shoe and keep the same in its natural shape.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:

An artificial leg comprising a rigid leg section having a slot in the forward portion of its lower end, a foot section interengaged in said slot and terminating at a distance from the rear of the leg, said leg section having its lower surface rearward of the foot section in substantially the same plane as the lower surface of the foot sec-

tion, means connecting the foot section and leg section for flexure at the instep comprising a U-shaped strap secured to the sides of the leg section having its bight extending across the lower end of the leg section and crossing said slot, the lower surface of the foot section resting on and fulcrumed on said bight, spring means on one of the sections overlapping the other sec-

tion, toe sections, means flexibly connecting the toe sections together, a resilient element overlapping the junction of the toe sections and foot section, and flexible means extending across said junction and connected to the toe sections and foot section.

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