

UNITED STATES PATENT OFFICE.

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CORDLESS ANKLE-JOINT.

1,382,855.

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To all whom it may concern:

Be it known that I, MILO E. RICE, a citizen of the United States, and resident of Kansas City, in the county of Jackson and State of Missouri, have invented a certain new and useful Improvement in Cordless Ankle-Joints, of which the following is a complete specification.

The present invention relates to ankle joints of the character used in the construction of artificial limbs, and aims to provide an improved form of connection between the foot and leg portion of artificial legs, one special object of the invention being to provide a practically noiseless joint construction having ample bearing surfaces at the pivotal point of the joint, with suitable provision for preventing any tendency toward relatively lateral shifting movement between the connections.

It is also sought to devise an improved construction in which provision is made for a lubricant chamber within the joint for maintaining a supply of lubricant sufficient for thoroughly oiling the parts.

It is further sought to provide a construction of the character described in which the parts of the joint may be readily and conveniently assembled, or taken apart when necessary, one of the special features of the joint structure being in the use of a pair of co-axial sleeves journaled one inside the other and respectively provided with means for securing the same to the foot and leg portions of the limb.

It is further sought to provide a construction comprising relatively few parts compactly arranged and yet affording all the necessary smoothness and evenness of operation in the movements of the joint, and which will also be comparatively inexpensive to manufacture.

With the foregoing general objects in view, the invention will now be described by reference to the accompanying drawing illustrating one form of embodiment of the improvement, after which the novel features therein will be particularly set forth and claimed.

In the drawing:

Figure 1 is a partly sectional elevation illustrating a joint structure embodying the present invention;

Fig. 2 is a transverse section taken on the line indicated by the broken line 2—2 of Fig. 1; and

Fig. 3 is a plan view showing the connecting members of the joint, removed from the limb members.

Referring to the said drawing in detail, this illustrates the improved joint construction in connection with the foot member 6 and the leg member 7 of an artificial leg, the leg member 7 being designed to be mounted in pivotally connected relation to the foot member 6, as illustrated in Fig. 1, with the end of said leg member 7 abutting against a pair of elastic buffer elements 8 and 9 at opposite sides, respectively, of the pivotal connection between said members 6 and 7, that is, to the front and rear, respectively, of said pivotal connection or joint. In the present construction, the joint connecting the said members 6 and 7 comprises a pair of co-axially arranged sleeves 10 and 11, arranged with the sleeve 11 fitting within the sleeve 10, the ends of the latter sleeve extending flush with the side faces of the foot member 6. The sleeve 10 is provided with a bolt element 12, which may be formed integral with said sleeve or be shrunk thereto, the said bolt element being extended centrally through the leg member 7, which is provided with a bore or passage 14 for accommodating the element 12, the latter being formed with a terminal thread for receiving a pair of jam nuts 15 for fixedly securing the bolt element 14 to the member 7, the said nuts 15 being clamped tight against the bottom of a recess 16 within the leg member 7.

A similar connection is made between the inner sleeve 11 and the foot member 6 of the limb, this connection taking the form of a bolt element 17 which is formed with a circular head portion 18 having an eye or opening 24 of a diameter corresponding to the diameter of the sleeve 11 and encircling the same, the said head portion 18 being accommodated within a transverse recess 19 formed in the midportion of the exterior sleeve 10, as clearly illustrated in Figs. 2 and 3. The bolt element 17 is secured rigidly to the sleeve 11 by means of a key 20 accommodated within a keyway formed in the exterior of the sleeve 11 and sweat into a recess 22 on the interior of the eye or opening 24 of the head portion of the bolt 17, as illustrated in Figs. 1 and 2. The keyway 21 extends longitudinally from one end of the sleeve 11 and slightly more than half the length of the said sleeve, as shown in Fig. 2.

Screw plugs 25 are fitted into the oppo-