

ARTIFICIAL LEG.

975,888.

Patented Nov. 15, 1910.

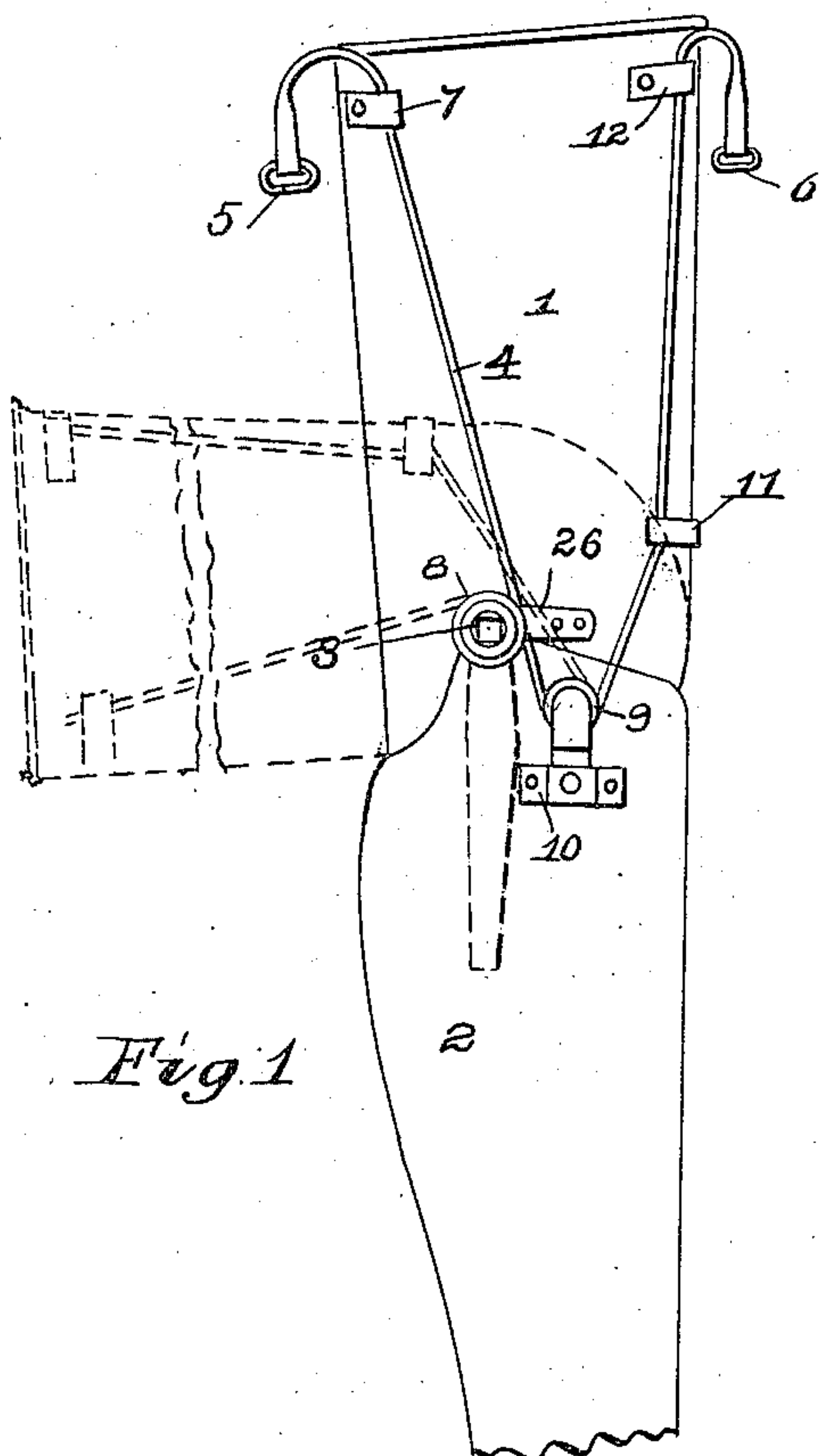


Fig. 1

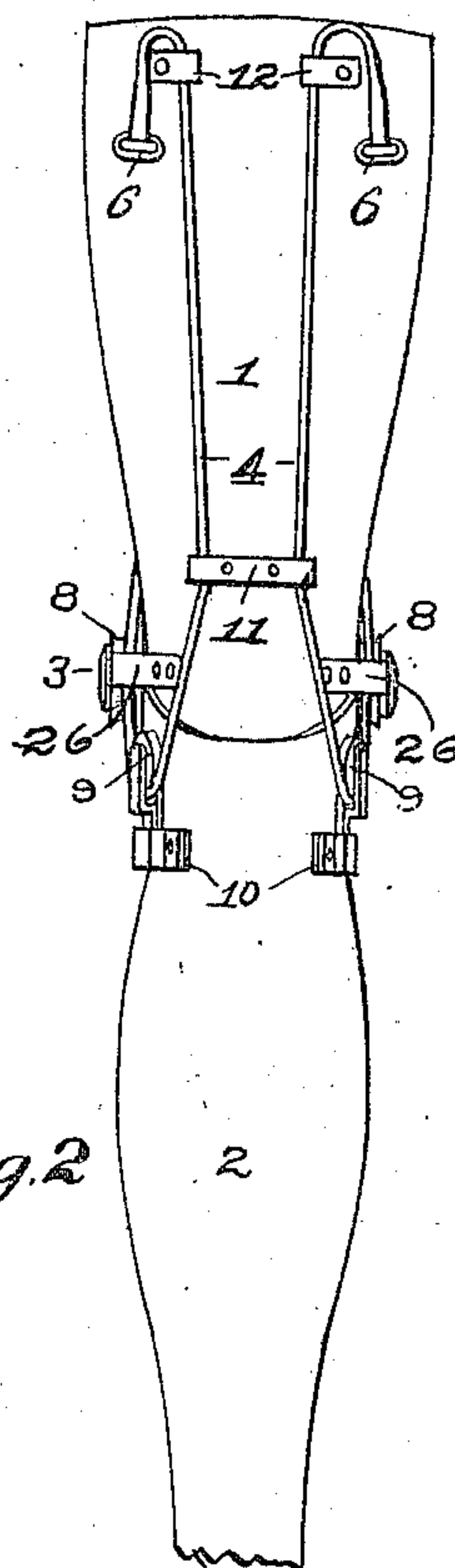


Fig. 2

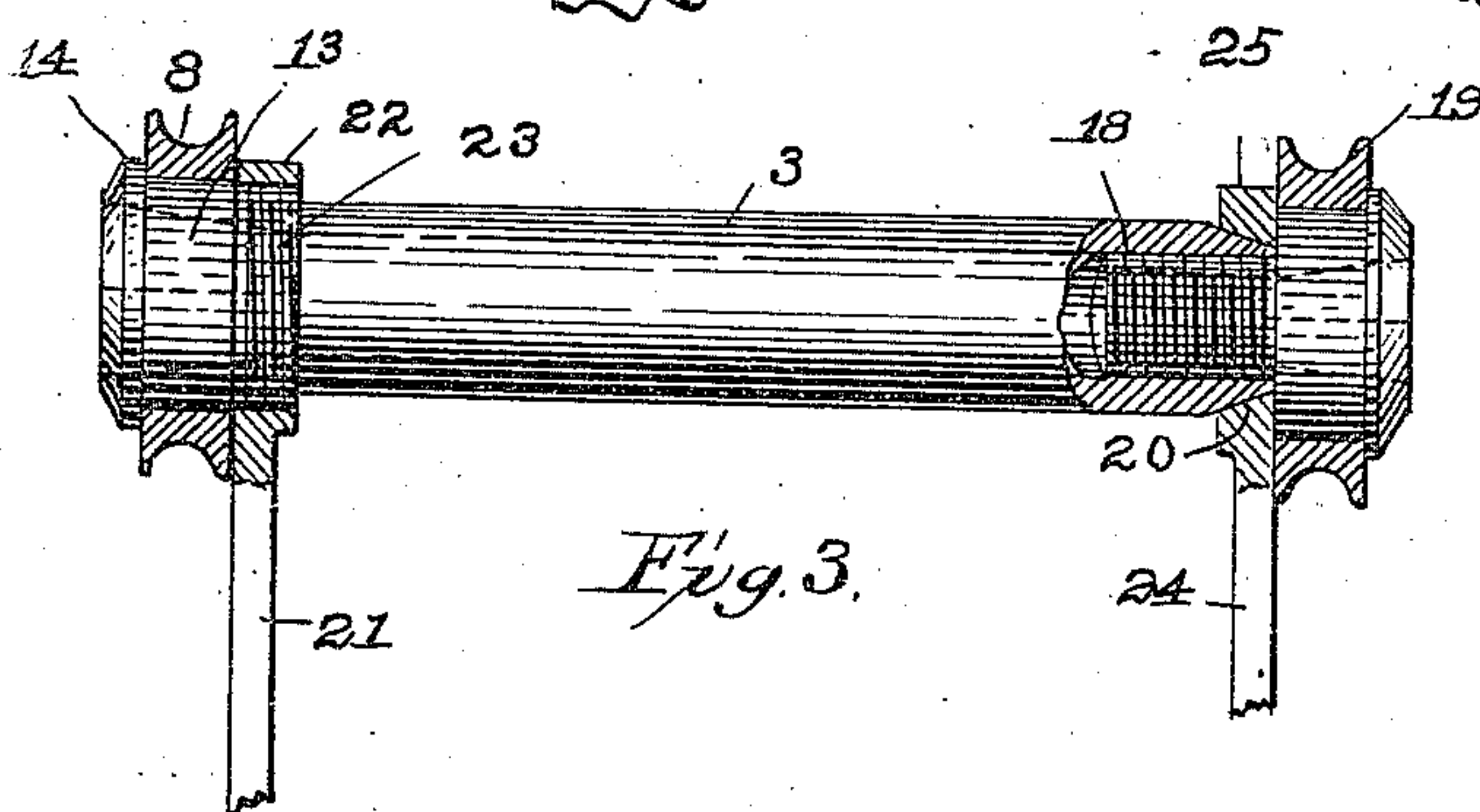


Fig. 3.

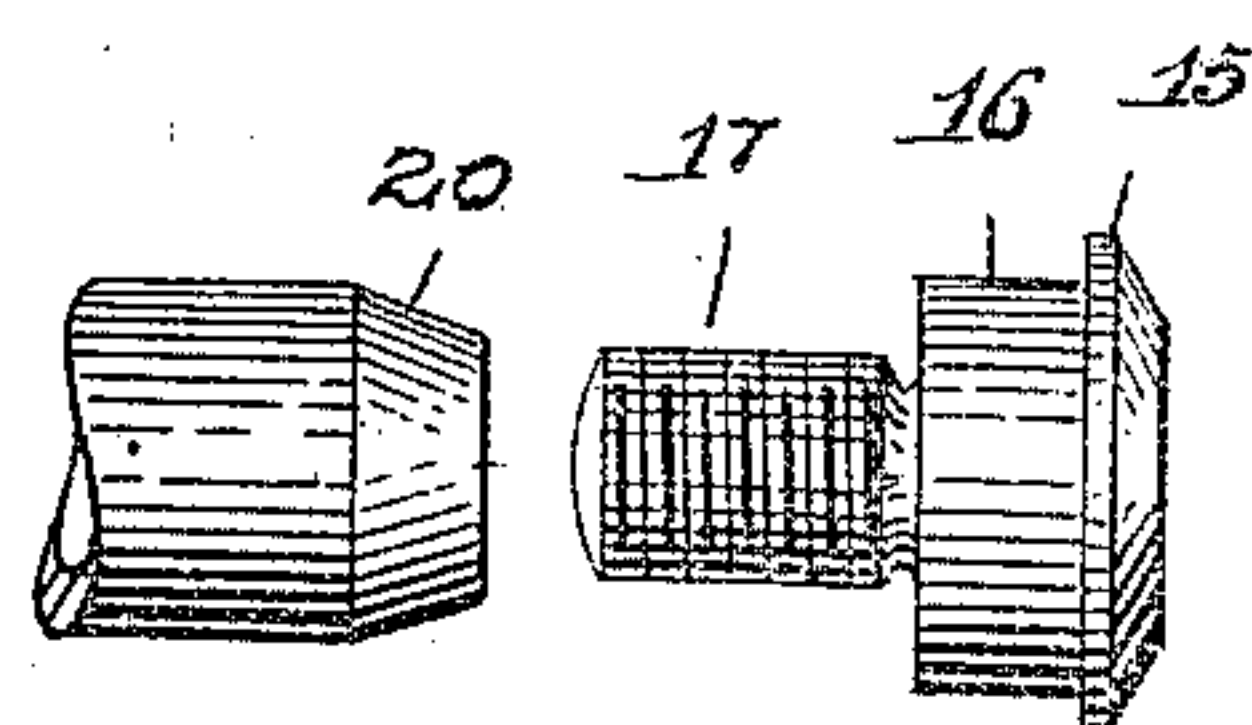


Fig. 4

Witnesses :
G. M. Snidley
A. Rager.

Inventor.
Harry J. Odgers.
By Geo. W. Riehm
Attorney.

UNITED STATES PATENT OFFICE.

HARRY T. ODGERS, OF COLUMBUS, OHIO, ASSIGNOR TO THE COLUMBUS PHARMACAL COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF OHIO.

ARTIFICIAL LEG.

975,888.

Specification of Letters Patent.

Patented Nov. 15, 1910.

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To all whom it may concern:

Be it known that I, HARRY T. ODGERS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Artificial Legs, of which the following is a specification.

My invention relates to improvements in artificial leg constructions and has especial reference to the construction of the pivot between the upper and the lower leg member. Controlling devices are mounted upon the upper and lower leg members in a well known manner and are operatively associated with the pivot or joint between the leg members. Operating means are connected with a suspender or harness fitted upon the shoulders of the wearer, and are adapted to be operated by the movement of the shoulders appropriately, either upwardly, forwardly or rearwardly, or the combination of these movements in a well known manner. The pivot or joint between the leg members is built up in a unique manner to provide for the mounting of a roller thereon with which the leg controlling means is in engagement and by which engagement the control over the lower leg section is made more complete and easy.

The specific features will be hereinafter set out in detail.

In the drawings which accompany this specification and form a part of this application, Figure 1 is an artificial leg construction viewed from the side showing the operating means in position, the dotted lines illustrating the position of the parts when the leg is bent. Fig. 2 is a front view of the leg members showing the operating means in position, there being similar controlling means on each side of the leg; Fig. 3 shows the joint or pivot member for connecting the leg sections, and in Fig. 4 are shown detached the members appearing at the right hand end of Fig. 3.

It is not deemed necessary to show the shoulder harness and for the sake of simplicity I have illustrated the upper leg section, the lower leg section in part, the pivot construction for the two sections, and the operating cord by which the movement of the lower leg section is controlled, the cord being shown in duplicate. The upper leg section is shown at 1, the lower leg section

is shown at 2, the pivot at 3, and the operating cord at 4 provided at its ends with the loops 5 and 6 adapted for engagement with the shoulder harness, not shown. The operating cord passes through the loop or guide 7, over the roller 8 mounted on the pivot member 3 down to a pulley 9 mounted pivotally at 10, and thence upwardly through the guide member 11 on the front part of the upper leg section through the guide member 12 on the upper portion of the upper leg section. The cord 4 is therefore seen to be free to move through the guides over the roller and pulley when force is exerted at either end thereof, and it is clearly seen that such force may be exerted by the wearer on the ends 5 and 6 by lifting the shoulders upwardly and rearwardly and pressing downwardly and backwardly with the stump of the limb.

When the wearer seats himself the lower leg section 2 remaining upright, the upper leg section assumes an angle therewith, about as happens with the natural leg, as appears in Fig. 1, and this operation the wearer may facilitate by proper movement of the shoulders setting up a stress in the cord 4 through the ends 5 and 6. When desiring to arise, the wearer will lift and throw backwardly his shoulders, which will have the effect of pulling upwardly on the ends 5 and 6 of the cord 4, thereby operating to swing the lower leg section forwardly. In both movements of the lower leg section the operation is aided by the engagement of the cord 4 with the roller 8 mounted on the joint pivot and by this arrangement more leverage is obtained for controlling the lower leg section; it is seen that a stress set up in the cord 4 tends to throw the lower leg forwardly, whereas it has been found that if the cord is not passed over the knee bolt, when the leg is bent, the initial effect of the stress is rather to bend the leg more. Thus far the description has been for the most part of well known devices which I adopt in my present construction.

The novel joint or pivot upon which the leg sections are connected comprises the hollow shaft 3 provided with the enlargement 13 at one end and the stop or cap member 14, preferably formed integral therewith, while at the opposite end the cap member 15 is associated with the shoulder 16 and

these are integrally formed with the threaded member 17, which is adapted to be screwed into the threaded end 18 of the hollow shaft 3. The roller 19 is adapted to be mounted on the shoulder 16 as will be presently described.

In assembling the parts of the leg and the operating devices, the straps 21 and 24 are secured to the lower leg member appropriately and the lower leg member is positioned appropriately with respect to the upper leg member and the bracket 26; the roller 8 is then positioned on the shoulder 13 against the head 14 of the shaft 3, the shaft is then inserted through the opening in the head 22, and as the shaft is turned on the threads, the other end 20 thereof enters the opening in the head 25 of the strap 24, so that when the shaft is turned to the extremity of the threads 23, it is positioned in both strap members 21 and 24. The roller 19 is then placed on the shoulder 16 against the cap 15 on the screw member 17, and the parts thus assembled are screwed into the threaded end 18 of the hollow shaft 3, whereupon the leg portions are assembled completely and when the cord 4 has been appropriately placed in position, the structure is ready for operation.

This joint construction is so made that it can be readily disassembled and the leg sections taken apart whenever it is necessary for repairs or other purposes; the parts are simple in their construction and may be readily replaced.

It will be seen that the shaft or bolt 3 is rigidly carried on the lower leg section, and that during the bending of the leg the upper leg section will rotate on the shaft 3, bearing thereon through the bracket 26.

Variations in the construction may be made and I do not confine myself therefore to the specific details of construction set forth, but desire to have the advantage of

any modifications lying within the scope of the appended claims.

What I claim is:

1. In an artificial leg, an upper leg section, a lower leg section, a pivot bolt engaging said leg section comprising a cap and an enlarged portion at one end thereof, a detachable cap and an enlarged portion at the other end thereof, a roller mounted upon each of said enlarged portions, and an operating cord in engagement with each of said rollers.

2. In an artificial leg, an upper leg section, a lower leg section, a bolt forming a pivotal connection for said leg section comprising a body portion having a cap at one end, an annular shoulder formed thereon adjacent to said cap, a separable cap member adapted to be secured to the opposite end of said bolt, an annular shoulder formed on said detachable member, a roller adapted to be placed on each of said shoulders, guides on said upper leg section, and an operating cord arranged in said guides in engagement with said roller and slidably connected with said lower leg section.

3. An artificial leg comprising an upper leg section, a lower leg section, a bolt pivotally connecting said leg sections internally threaded at one end, a member adapted to be screwed into said internally threaded end, roller members adapted to be mounted upon said bolt, and strap members carried by said bolt and connected to said lower leg section, guides arranged on said upper leg section, and operating cords arranged in said guides engaging with said rollers and slidably connected with said lower leg section.

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

HARRY T. ODGERS.

Witnesses:

JAS. D. WINTERS,

H. B. MULHOLLAND.