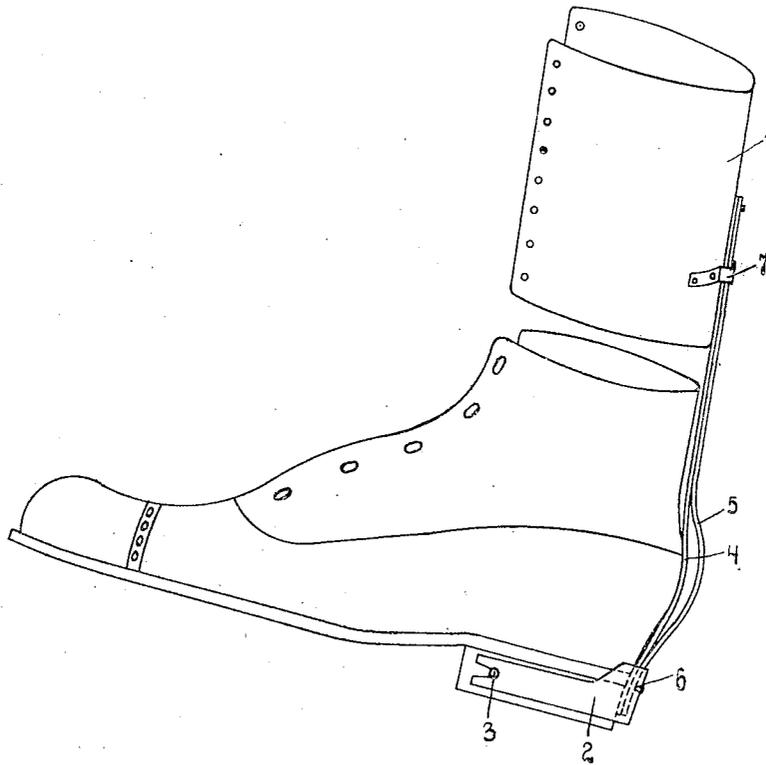


J. F. WELTER.  
WALKING APPARATUS FOR THE LAME.  
APPLICATION FILED APR. 9, 1920.

1,354,427.

Patented Sept. 28, 1920.



Inventor-  
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# UNITED STATES PATENT OFFICE.

JOHANNES FRANCISCUS WELTER, OF UTRECHT, NETHERLANDS.

WALKING APPARATUS FOR THE LAME.

1,354,427.

Specification of Letters Patent. Patented Sept. 28, 1920.

Application filed April 9, 1920. Serial No. 372,488.

*To all whom it may concern:*

Be it known that I, JOHANNES FRANCISCUS WELTER, a subject of the Kingdom of the Netherlands, residing at Utrecht, Schoolstraat 32, Netherlands, have invented a certain new and useful Improvement in Walking Apparatus for the Lame, of which the following is a specification.

My invention relates to and is an improvement of walking devices having a calf-piece and a part which can easily be connected to the heel of a boot.

The general object of the invention is to provide an apparatus with the aid of which persons, having a lame foot or an artificial foot, can more easily walk than with the devices heretofore used. In using the apparatus of the invention the patients more especially do not need to lift the limb as high that the foot is totally lifted from the floor and the lame or artificial foot will move nearly in the same way as in normal walking.

There are already apparatus known consisting of a calf-piece and a part of which can be connected to the heel of the boot both parts being connected to each other by means of a flat plate spring.

Such apparatus do not allow however a sufficiently free movement of the foot and moreover the latter is not, as in the invention, pressed upwardly in forward direction.

According to the apparatus of the invention the calf-piece and the heel-piece are at their backside connected to each other by one or more bent elastic bands each made in one piece, which are thus mounted, that the curve or bend of the bands is situated, above the heel and below the ankle, the bands are adapted to tend to press the foot in the plane of the limb somewhat upwardly in forward direction.

The invention is illustrated in the accompanying drawing which is a side view of a boot provided with an apparatus according to this invention.

1 indicates the calf-piece of thin yielding metal, which is open at the front-side and yieldingly embraces the calf of the wearer. It is provided at the front with eyelet holes through which a lace may be passed. 2 is the heel-piece, consisting of a bent piece of

metal which is also open at the frontside and the ends of which have a rearwardly tapering slot, with the aid of which the bent piece of metal can be connected to the heel of the boot by means of a pin 3 which to this object is driven into the heel. The pins 3 must be thus situated that the heel-piece extends to the rear or backside of the boot to avoid that the good action of the springs to be described further on is not hindered. The calf piece and the heel piece are in the execution form of the drawing connected to each other at their backside by means of two bent springs 4 and 5. The first one serves substantially to form the connection between the two pieces, while the second one 5 more especially serves to influence the movement of the foot. Both the springs are riveted to the calf- and the heel-piece or connected thereto in any other suitable manner. The spring 5 is somewhat longer than the spring 4 and is provided with a more curved or more bent part which lies between the heel and the ankle of the wearer.

The heel-piece extends to the rear at 6, to keep during walking the springs at some distance from the boot. To prevent breaking of the springs, a guide 7 is provided to the calf-piece, which embraces the springs. The spring 5 is so long that in the normal position its curvature extends to the rear of the apparatus.

It will be clear, that instead of two springs, one strong spring or more than two springs may be used. The apparatus can also be thus arranged, that if necessary a further spring may be added. To this effect can be provided to the calf-piece a number of pins which fit in openings of the springs to be mounted.

The other end of the spring is then introduced into the extending part 6 of the heel-piece. It is also possible to use this apparatus for persons having an artificial limb or foot, the use of apparatus of heavy construction being no more necessary.

The calf-piece can of course extend if desirable over the whole length of the calf.

I claim:

Walking apparatus for the lame, comprising a calf-piece, a piece for attachment to the heel of a shoe, a spring bar attached

to said calf-piece and said heel piece, said  
spring bar having a rearwardly offset bent  
portion at a point between the heel of the  
shoe and the ankle of the wearer, and caus-  
5 ing said spring to press the foot constantly  
forward and somewhat upwardly, a second  
spring bar also attached to the calf piece

and heel, arranged on the first named spring  
bar and having a rearwardly offset bent por-  
tion spaced from that of said first named 10  
spring bar.

In testimony whereof, I have signed my  
name to this specification.

JOHANNES FRANCISCUS WELTER.