S. L. PIDOT.

DEVICE FOR FACILITATING THE LOCOMOTION OF PERSONS SUFFERING FROM LOCOMOTOR ATAXIA.

APPLICATION FILED OCT. 20, 1913.

1,096,125. Patented May 12, 1914.

Fig. 1.

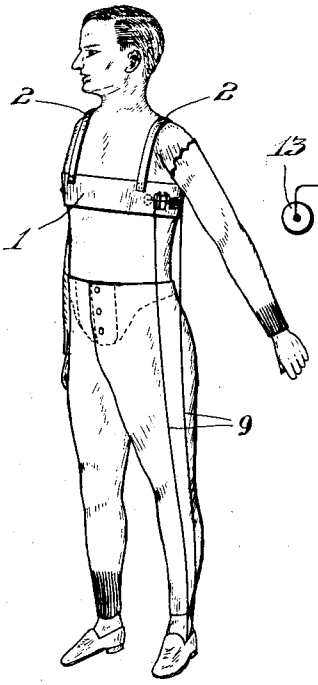


Fig. 2.

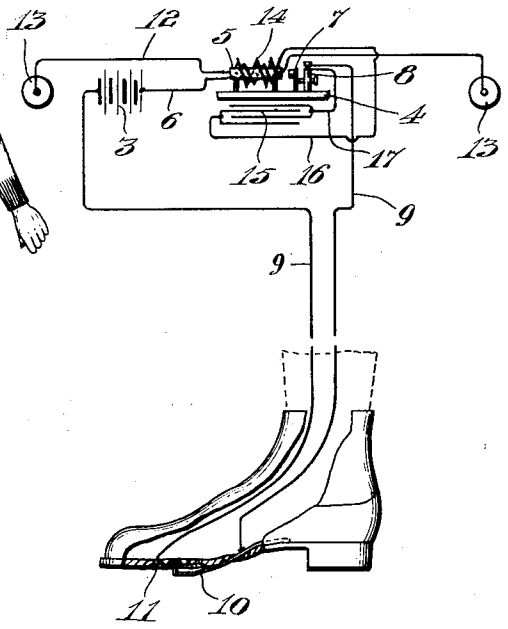


Fig. 3.

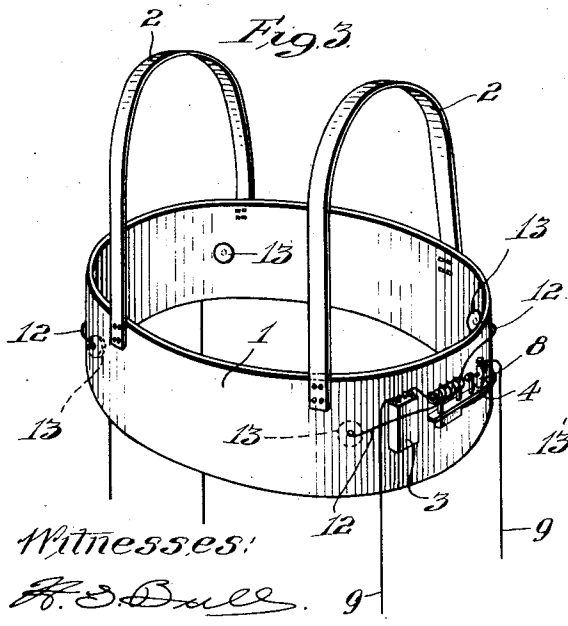
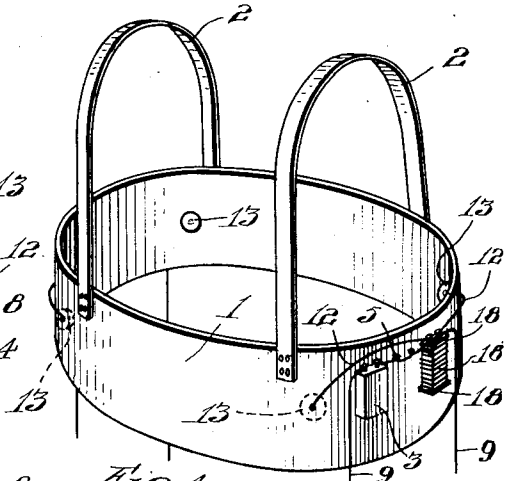


Fig. 4.



Witnesses:

H. B. Bull.

A. A. Olson.

Inventor:

Samuel L. Pidot.

By Joshua R. H. Potts

His Attorney

UNITED STATES PATENT OFFICE.

SAMUEL LOUIS PIDOT, OF ST. JOSEPH, MISSOURI.

DEVICE FOR FACILITATING THE LOCOMOTION OF PERSONS SUFFERING FROM LOCOMOTOR ATAXIA.

1,096,125. Specification of Letters Patent. Patented May 12, 1914.

Application filed October 20, 1913. Serial No. 796,238.

To all whom it may concern:

Be it known that I, SAMUEL LOUIS PIDOT, a citizen of the United States, and a resident of the city of St. Joseph, county of Buchanan, and State of Missouri, have invented a new and Improved Device for Facilitating the Locomotion of Persons Suffering from Locomotor Ataxia, of which the following is a specification.

My invention relates to an electrical device designed to facilitate the locomotion of persons suffering from locomotor ataxia and has for its object the production of a device of this character which will be of simple and economical construction and effectual in operation.

Other objects will appear hereinafter.

The invention consists in the combination and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which, Figure 1 is a perspective view illustrating my device applied in its manner of use, Fig. 2 is a diagrammatic view of my device, Fig. 3 is a perspective view of the belt or support which is worn by the patient using the device, detached, and Fig. 4 is a view similar to Fig. 3 illustrating a slightly modified form of my device.

The preferred form of construction as illustrated in the drawing comprises a belt 1 designed to be worn about the body of the patient as clearly shown in Fig. 1, the same being supported through the medium of straps 2 which are adapted to be passed over the shoulders.

Mounted upon the belt 1 is an ordinary dry cell 3 which is constructed in any convenient portable form. Also mounted upon the belt 1 adjacent the cell 3 is a device 4 comprising an induction coil 5 which is connected with the cell 3 by means of a wire 6 and arranged for coöperation with said coil is a current interrupter 7 the post 8 of which is connected by means of a wire 9 with the opposite side of the cell 3. The device 4, as is apparent to those skilled in the art, is simply the ordinary Ruhmkorff coil which is preferably used in this connection. Interposed in the wire 9 of the primary circuit is a make and break mechanism located in the shoe at the corresponding side of the patient. This make and break device comprises a spring key 10 and a metallic plate 11 the head of the key 10 being normally in contact with said plate in order to close the circuit. When the foot is in contact with the ground the key 10 is flexed or pressed upwardly so as to break the electrical connection between the same and the plate 11 and thus to open or break the primary circuit.

Coöperating with the induction coil 5 is a secondary circuit the wire 12 of which has its terminals connected with contact plates 13 arranged at the inner side of the belt 1 for contact with the skin of the patient when the device is worn. The wire 12 of the secondary circuit is coiled about the induction coil 5 as shown at 14 so that when said primary circuit is closed as by electrical contact of the key 10 with the plate 11, an induced current or electromotive force will be set up in the secondary circuit which discharges a current through the body of the patient inasmuch as the body of the patient serves as a medium through which the circuit between the two terminals 13 of the secondary circuit is completed. With the construction set forth then it will be seen that in using the device when the foot of the patient is on the ground the primary circuit will be broken and hence no shocks or impulses felt by him. When the foot is raised from the ground the key 10 will move to its normal position to close the primary circuit, the latter in turn through the interrupter included therein setting up an induced electromotive force in the secondary circuit which, as previously stated, discharges a current or shock through the body of the patient, thus apprising him of the fact that his foot has been raised. This impulse or shock through the body of the patient will continue until his foot is again brought in contact with the ground when the primary circuit will be broken through depression of key 10 which effects the discontinuation of the shock or impulse passed through the body thereby apprising the patient of the fact that his foot has been lowered. Hence with this arrangement the patient will at all times be in control of his lower limbs that is the position thereof and thus his locomotion materially facilitated. Both lower limbs of the body are provided with essentially similar apparatus, connection in parallel and supplied from a common electrical source, the

electrodes of the secondary circuit being confined to that side of the body corresponding to the leg whose movement produces a discharge between the secondary electrodes.

If desired a condenser 15 may be employed for coöperation with the current interrupter 7 as clearly shown in Fig. 2, said condenser being connected by wires 16 and 17 with the coil 5 and post 8 or in such a manner as to bridge the gap. This condenser is designed to convert the discharge at the terminals of the secondary circuit into a discharge in one direction namely, the positive direction at the break of the primary current. However if desired this condenser may be omitted.

In Fig. 4 wherein the modified form is shown the induction coil, current interrupter and condenser are dispensed with and in lieu thereof an element 18 known as a self induction coil is employed, which is provided with two posts or electrodes one of which is connected through wire 5 with cell 3 and the other with the wire 9 of the primary circuit as illustrated, said posts being also connected with the wire 12 of the secondary circuit. Said element comprises an inner laminated iron core 18′ about which is wrapped a coil of very fine wire 18″. Said core is adapted when the primary circuit is closed to be magnetized or to accumulate electrical energy so that when the primary circuit is broken by depression of the key 10, said element will discharge through the secondary circuit so as to cause a momentary shock or impulse through the body instead of a continuous shock or impulse such as takes place in the first described form. With the modified form also it will be seen that the impulse or shock which is passed through the body is effected upon the breaking of the primary circuit or when the foot is in contact with the ground whereas in the first described form the impulse or shock is passed through the body occurs when the foot is raised from the ground.

While I have illustrated and described the preferred forms of construction for carrying my invention into effect, these are capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described in combination, means for imparting electric impulses to the body of the patient; and means operable by contact of either foot of the patient with the ground for controlling said impulses, the controlling means coöperating with each foot of the patient being operable independently of the means cooperating with the other foot, substantially as described.

2. In a device of the character described the combination of means for imparting electric impulses to the body of the patient; and circuit making and breaking means operable by contact of either foot of the patient with the ground for controlling said impulses, the controlling means coöperating with each foot of the patient being operable independently of the means coöperating with the other foot, substantially as described.

3. In a device of the character described the combination of means for imparting electric impulses to the body of the patient, said means comprising a primary circuit; a secondary circuit arranged to receive an induced current from said primary circuit when the latter is closed; terminals for said secondary circuit contacting with two points on the body of the patient; and circuit making and breaking means in said primary circuit operable by contact of the foot of the patient with the ground, substantially as described.

4. In a device of the character described the combination of a primary circuit including a source of electrical energy; an induction coil; a circuit making and breaking device controlled by contact of the foot of the patient with the ground; a secondary circuit arranged to receive an induced current from said primary circuit; and terminals for said secondary circuit contacting with two points on the body of the patient, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL LOUIS PIDOT.

Witnesses:
G. A. Dodson,
H. M. Stigall.