

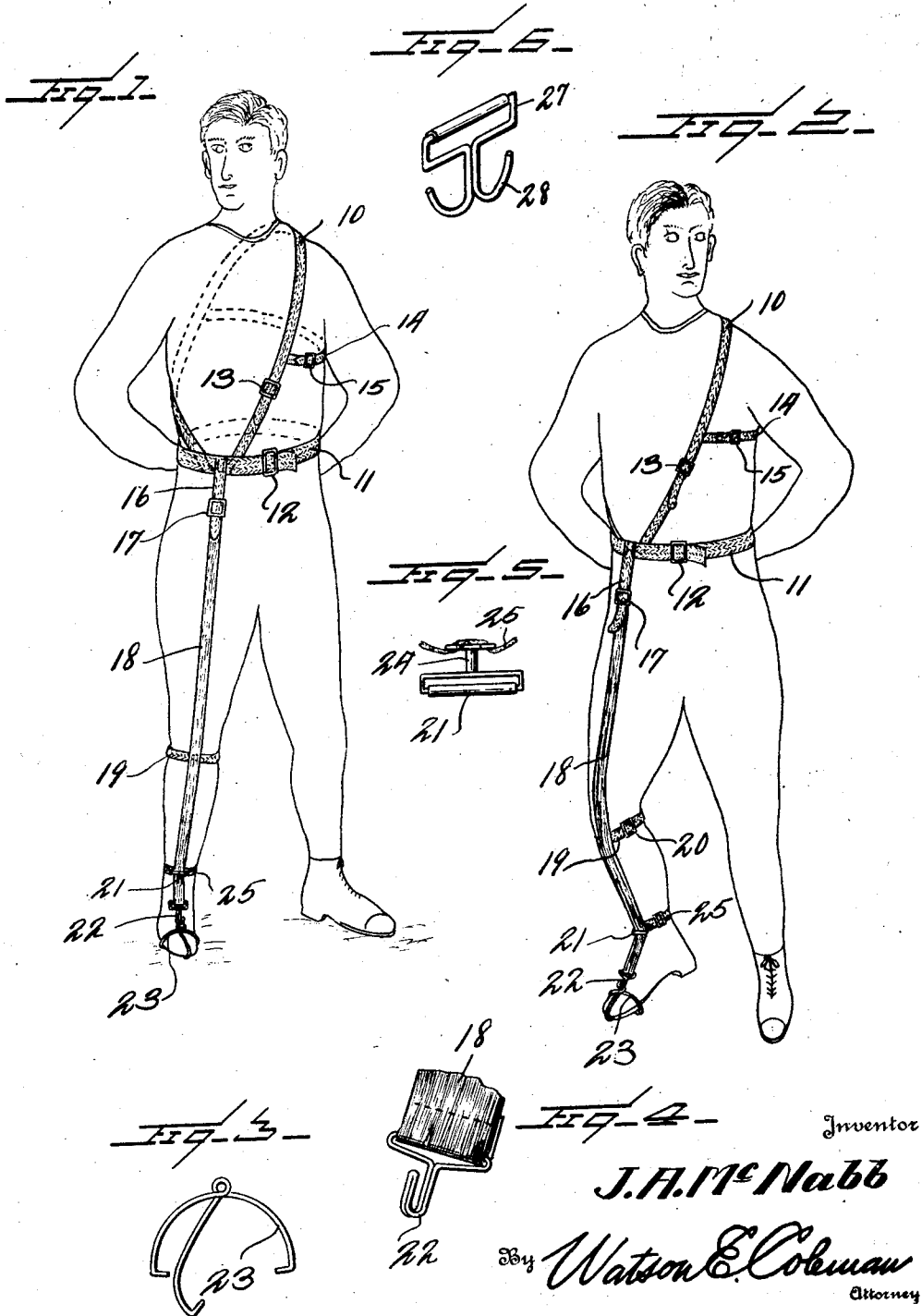
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LEG AND FOOT LIFTING APPLIANCE FOR CRIPPLES

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LEG AND FOOT LIFTING APPLIANCE FOR CRIPPLES.

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This invention relates to devices for assisting in supporting the leg and foot of paralytics or other cripples and assisting them in walking.

5 The general object of the invention is to provide means for elastically raising the leg and swinging the leg forward, which is attachable to the body of the patient, and which will enable patients who have had
10 paralytic strokes, for instance, and are scarcely able to walk, to walk much more perfectly than they otherwise would do and with a great reduction in effort.

A further object is to provide a device
15 of this character which is adapted to be applied either under the garments or exteriorly to the garments and which has elastic means for exerting an upward pull upon the leg and causing the forward movement
20 of the leg and foot, thus doing away with the dragging of the foot and leg so common in paralytics.

Other objects will appear in the course of the following description.

25 My invention is illustrated in the accompanying drawing, wherein:—

Figures 1 and 2 are elevations of my device in applied position upon a man;

30 Figure 3 is a view of one form of stirrup;

Figure 4 is a perspective of the lower end of the strap showing the hook thereon;

35 Figure 5 is a detail edge view of the knee strap with the roller through which the member 18 passes;

Figure 6 is a perspective view of one form of yoke.

Referring to this drawing, it will be seen that my device comprises a shoulder strap
40 10 designed to be passed diagonally over one shoulder and down to the waist. This shoulder strap is preferably attached at two points to a belt 11 having a buckle 12, and the shoulder strap is provided with a buckle
45 13 whereby the length of the shoulder strap may be reduced. A chest strap 14 is preferably provided attached to the shoulder strap at its front and rear and adapted to extend beneath the arm. This strap 14 is
50 provided with a buckle 15 and the strap 14 acts to hold the shoulder strap in place. The belt 11 and the shoulder strap may be made of any suitable material as, for instance, ordinary webbing.

55 Extending downward from the belt 11, preferably between the points of attachment

of the two ends of the shoulder strap 10, is a tab 16, and connected to this tab 16 by a buckle 17 or other suitable means is a leg member 18 which may be made of
60 rubber or any other elastic material or element. This elastic element 18 has a length approximately that of the leg, and, with the tab 16, extends downward from the waist to the ankle and thence to the toe of the
65 foot. A knee band 19 may be applied to the elastic element 18 at a point just above or below the knee and this knee band is held together preferably by a buckle 20. The foot lift strap 18 carries a roller 21
70 engaged with the ankle and the extremity of the elastic element 18 is provided with a hook 22 to engage a toe stirrup 23. The roller 21 is mounted in a yoke 24 which carries a buckle 25 through which the ankle
75 band passes. Thus it will be seen that the strap 18 can work up and down behind the roller 21 to permit the foot to flex with relation to the ankle and foreleg.

With this device, the foot with which the
80 appliance is engaged is urged upward by the elasticity of the member 18 and when the leg is bent backward, as when a man steps forward, more strain is placed upon the elastic member 18 and thus when the
85 foot is about to swing forward again the elastic member 18 gives the foot a better swing and at the same time assists in holding up the foot so that the foot will swing forward. It will thus be seen that this
90 will prevent any dragging of the foot or leg. It will be seen that the roller 21 holds the lower end of the strap 18 close to the ankle and at the same time allows free movement of the strap 18 past this roller and
95 allows free stretching of the strap 18.

While I have illustrated a simple stirrup to hook over the toe of the shoe, I do not wish to be limited to this as other forms of these stirrups or toe engaging members
100 might be used. Thus the toe engaging member in the form of an aluminum cap might be used and I do not wish to be limited to any particular form for the toe engaging member. The member 18 should be elastic.
105 It might be rubber webbing, rubber inner tubing, or any elastic or coiled metal spring. Other parts of the device, however, might be made of different materials without in any way departing from the spirit of the invention as defined in the appended claims.
110 Thus, for instance, while I have illustrated

the roller 21 as being mounted in a yoke engaging a buckle 25, I do not wish to be limited to this as such a device as this would only be used where low shoes or button shoes are used. Where high shoes are used, I preferably provide the device shown in Figure 6, the roller being mounted upon a yoke 27, the yoke being formed of resilient wire, the two ends of the wire being extended toward each other, then approximately parallel to each other, and then bent outward and toward the yoke to form two resilient hooks 28 which are adapted to engage in the eyelets of the shoe at the bend of the foot. The yokes shown in Figures 5 and 6 are both for the purpose of keeping the leg strap 18 from bulging out of the trousers under which the device is worn.

The appliance is, of course, to be worn over the underclothes and under the outer clothes so that there is nothing seen of the appliance itself except that portion of the strap 18 which extends down the foot. It will be seen the device is very light and that it is practically entirely concealed.

I claim:—

1. A foot and leg lifting device for crimples including an elastic member adapted to extend downward and over the front of the leg from the waist to a point beyond the ankle, means at the lower end of the elastic member whereby it may be connected to the toes of the foot, means for holding said elastic member in engagement with the front of the leg at the ankle joint thereof, means for holding the elastic member to the front of the leg at the knee joint thereof, and torso engaging means with which the upper end of the elastic is connected.

2. A foot and leg lifting device for crimples including an elastic element adapted to be disposed down the leg and having means at its lower end whereby it may be engaged with the foot, body engaging means with which the upper end of said element is connected, and an ankle engaging member having a roller through which the elastic member passes and upon which the elastic member bears to permit free movement of the elastic member past said roller.

In testimony whereof I hereunto affix my signature.

JOHN A. McNABB.