(No Model.)

W. CARROLL & J. MEEKISON.

SHOULDER BRACE.

No. 330,094. Patented Nov. 10, 1885.

Fig. 1.

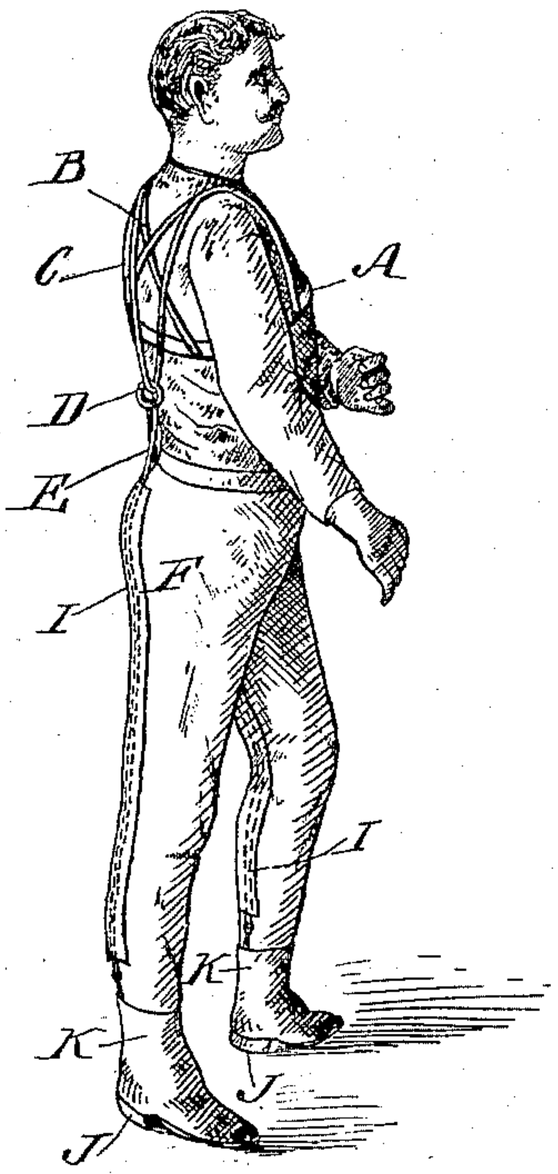

Fig. 4.

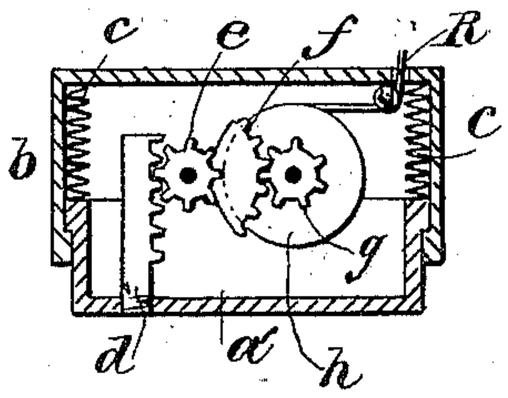

Fig. 3

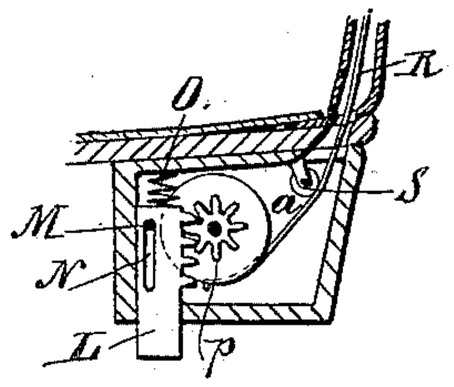

Fig. 2.

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WILLIAM CARROLL AND JOHN MEEKISON, OF COLUMBUS, OHIO.

SHOULDER-BRACE.

SPECIFICATION forming part of Letters Patent No. 330,094, dated November 10, 1885.

Application filed August 3, 1885. Serial No. 173,403. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM CARROLL and JOHN MEEKISON, both of Columbus, in the county of Franklin and State of Ohio, have invented a new and Improved Automatic Body-Supporter, of which the following is a full, clear, and exact description.

The object of our invention is to provide a new and improved device by means of which the body is supported and held erect by the weight of the said body itself.

The invention consists in the construction and combination of parts and details, as will be fully set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a person provided with our improved body-supporter. Fig. 2 is a side view of the shoe, parts being in section, showing the mechanism in the same. Fig. 3 is a sectional view showing a modification of said mechanism. Fig. 4 shows another construction of the heel.

A belt or band, A, is passed around the body on the chest, and is held in place by straps B, passed over the shoulders. With the belt A a shoulder strap or straps, C, are connected, which are passed through a ring, D, at the small of the back. Through the ring D a wire or strong cord, E, is passed, which is passed through the longitudinal pockets I on the backs of the legs of the drawers F.

The wires E can be connected to the rings D by means of a catch or any other suitable device, to facilitate their attachment and removal.

An anchor-hook, G, or other catch is secured on each end of the wire below the lower end of the corresponding pocket, I. The heel J of the shoe K is made hollow, and in said heel a rack, L, works vertically, which projects through an opening in the bottom of the heel, and is guided by a pin, M, passed through a longitudinal slot, N, in said rack. A spring, O, presses the rack downward. With the rack L a pinion, P, engages, which is pivoted in the heel, and provided with an arm, Q, the end of which is connected with a wire, R, passed over a pulley, S, in the top of the heel, and from the pulley passes up through a pocket, T, on the back of the shoe. The wire has a spring-catch, U, of some suitable construction on its upper end, which catch can engage the double hook G.

In the modification shown in Fig. 3 a grooved pulley, *a*, is mounted on the same shaft with the pinion P, and the wire R is connected with the rim of the said pinion.

In the construction shown in Fig. 4 the heel is composed of a bottom part, *a'*, and an upper part, *b*, which bottom part slides in the upper part, *b*, and is held down by springs *c*. A rack, *d*, projects outward from the movable part *a'* of the heel and engages with a pinion, *e*, made integral with a segmental rack, *f*, engaging with a pinion, *g*, connected with a pulley, *h*, on the rim of which the wire R is secured.

The operation is as follows: When the weight of the body rests upon one foot, the rack L is forced upward, whereby the arm Q is swung down by the action of the rack L on the pinion P, and thereby the wire E is pulled down, and as it acts on the straps B C the body is drawn back at the shoulders. The operation of the devices shown in Figs. 3 and 4 is similar, but with this construction a better purchase is obtained. When both feet are on the ground, the strain is equal on all parts of the wire E. As soon as a foot is raised, the spring O forces the corresponding rack down, and the corresponding end of the wire E is slackened.

There is at all times a strain on the upper part of the body to hold the shoulders back, and the weight of the body is thus utilized in holding the body erect and supporting it.

The wires in the drawers and boots are disconnected when the boots are to be pulled off.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a body brace or belt and wires or cords depending from the same, of mechanism, substantially as described, arranged in the heels of the shoes, and connected to said wires or cords for drawing the same downward, whereby provision is made for supporting and holding the body erect by the weight of the same, as set forth.

2. The combination, with a body-brace, of

wires connected with the same and passed down through pockets on the backs of the legs of the drawers, and of mechanism, substantially as described, in the heels of the shoes with which said wires can be connected, substantially as herein shown and described.

3. The combination, with a body-brace, of a wire connected with the same and extending down through pockets in the backs of the drawer-legs, sliding rack-bars projecting from the bottoms of the heels of the shoes, pinions engaging with the rack-bars, from which pinions the above-mentioned wires are operated by suitable mechanism, substantially as herein shown and described.

4. The combination, with a body brace or belt, of wires secured to the same and passing down through pockets in the back of the legs of the drawers, catches on the ends of said wires, wires in boots, catches on the wires in the boots engaging the catches on the wires depending from the body brace or belt, and a mechanism in the heels of the boots for drawing the said wires downward when the weight of the body rests upon the foot, substantially as herein shown and described.

5. The combination, with a body brace or belt and boot or shoe having a hollow heel, of the slide L, the spring O, the pinion P, the arm Q, and the wires E R, substantially as herein shown and described.

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