S. J. ALBERT.

MECHANOTHERAPEUTIC APPARATUS

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1,166,304. Patented Dec. 28, 1915.

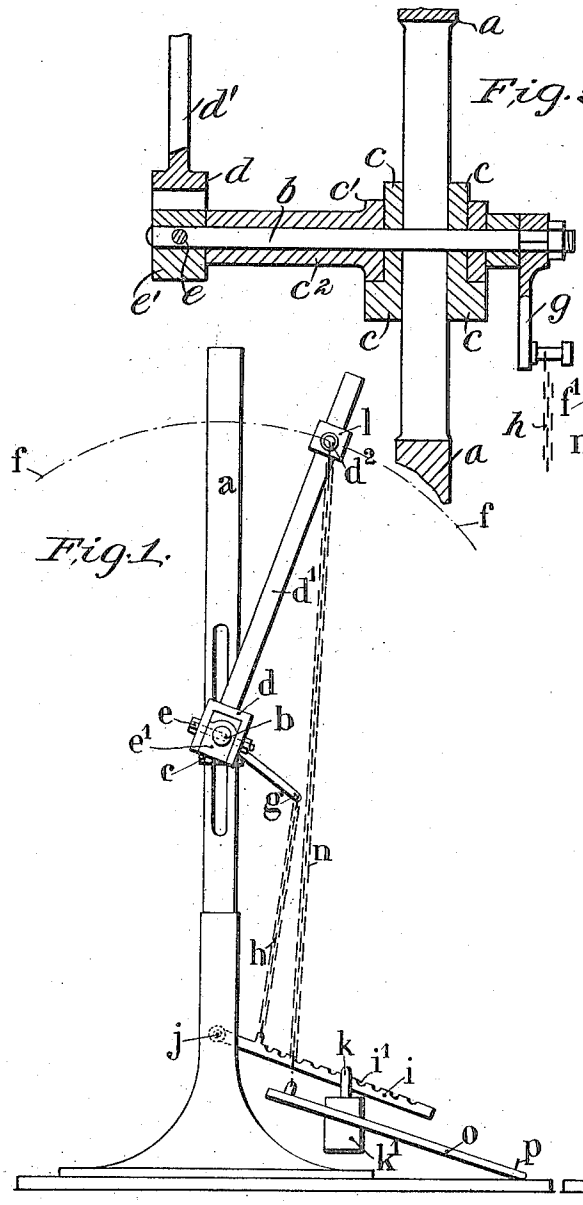


Fig. 3.

Fig. 1.

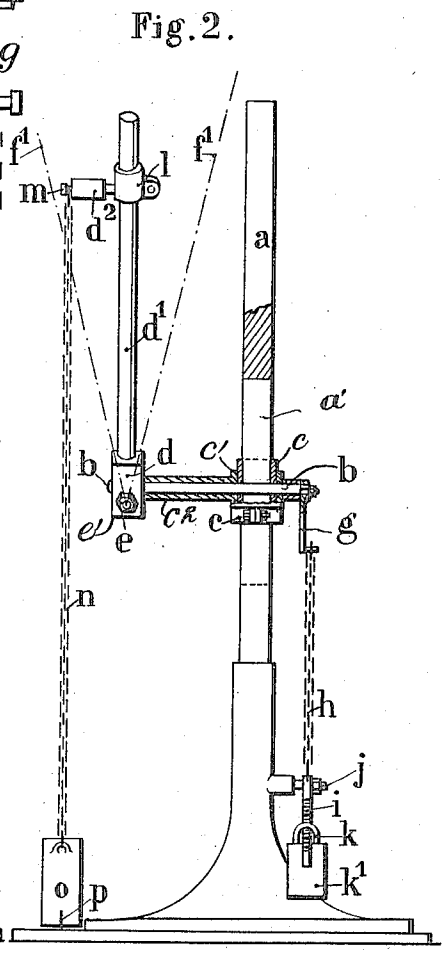


Fig. 2.

WITNESSES

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MECHANOTHERAPEUTIC APPARATUS.

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To all whom it may concern:

Be it known that I, SYLVAIN JOSEPH ALBERT, of 20 avenue Secrétan, in the city of Paris, Republic of France, shampooer, have invented a Mechanotherapeutic Apparatus, of which the following is a full, clear, and exact description.

The invention relates to a mechanotherapeutic apparatus adapted to strengthen the muscles and to destruct the ankylosis of the members. This apparatus comprises a kind of crank provided with a weight and actuated by the person under treatment, either by means of the hand corresponding to the sore arm, or by means of the foot corresponding to the sore leg through the medium of a treadle, so as to cause said sore organs to effect a certain work from which the suitable curative effects will be obtained. The work produced by said apparatus is progressive in proportion as the curative effects are made manifest. For this purpose, the position of the crank handle and the position of the weight may be modified, so as to be able to increase the resistances to the movement as the cure progresses. The movement imparted to the crank by the person under treatment is, most frequently, an oscillating movement, but, in certain cases, said crank may also be caused to describe complete revolutions. Moreover, the present apparatus is so devised as to be able to give simultaneously to the crank and treadle during their operation a certain angular transverse displacement, so as to render the treatment more rational. The said apparatus will be described with reference to the accompanying drawing, in which:

Figure 1 is a front view of the apparatus, Fig. 2 is a side view thereof, and Fig. 3 is a detail sectional view showing the manner of mounting the crank shaft on the support.

Referring to the drawing a is a support provided with a slot a^1, c a shouldered collar or sleeve secured on the support, c^1 a socket resting upon the shoulder of the collar or sleeve and having a tubular projection c^2, and b a shaft extending through the support, collar or sleeve and the socket and its tubular projection. The shaft b is provided, on the front face of the apparatus with a fork d surmounted with a crank arm d^1. The fork d is connected with the shaft b by means of a bolt e and a bearing e^1. The bolt e passes through the branches of the fork, the bearing and the shaft. The fork d and the crank arm which is a part of the same are rigid on the shaft b in the direction of the rotation of the crank, indicated by the dot and dash line f, Fig. 1, but this fork and its crank arm can pivot on the shaft b about the bolt e in the transverse direction, as indicated by the dot and dash lines f^1, in Fig. 2. The rotation and pivotal movement of said crank are simultaneous. On the side opposite to the crank, the shaft b rigidly supports a small lever arm g provided at its free end with a small chain h attached to a lever i pivoting about an axis j integral with the support of the apparatus. This pivoting lever is provided with adjusting notches i^1 in one of which is placed the suspension ring k of the weight k^1. The handle d^2 of the crank is adjustable on the arm d^1, by means of a collar l for instance, and to its axis m is connected a small chain n extending downwardly and connected at its other end to a treadle o capable not only of moving up and down in the vertical plane as an ordinary treadle, but also of pivoting in the horizontal plane about a spindle p. Before putting the apparatus into operation, it is necessary to adjust the position of the handle d^2 on the crank arm d^1 and the position of the weight k^1 on its lever i. The position of the crank handle d^2 and that of the weight k^1 are afterward modified in the direction of their greater resistance in proportion as the curative effects of the treatment are felt. When the treatment requires the use of the treadle, the patient holds the handle d of the crank with the hand corresponding to the sore side and acts upon said treadle with the foot of the sore leg by helping himself a little with his hand. During the vertical displacements of the treadle and of the crank, the latter and the treadle each describe an arc of a circle alternately to the left and to the right. That is to say the crank oscillates in two vertical planes at right angles to each other and such oscillation is obtained by the action of the hand on the crank which pivots about the bolt e moving with it the treadle. The patient can also use only the crank, either by causing it to oscillate to the left and to the right of the vertical or by causing it to describe a complete revolution according to the case.

Claims:

1. A mechanotherapeutic apparatus comprising a shaft carried by a support and provided with a long crank arm and with

another small arm to which a weight is attached, the long crank arm being connected to the shaft by a fork capable of pivoting laterally upon a bolt passing through said fork and shaft.

2. A mechanotherapeutic apparatus comprising a shaft carried by a support and provided with a crank arm and with another arm to which is attached a weight, the handle of the crank being connected by means of a small chain to a treadle capable of pivoting laterally.

3. In a device of the character described, a supporting standard formed with a vertically arranged slot, a rotatably mounted axle arranged in said slot, means for adjustably supporting said axle in said slot, said axle extending beyond said slot on each side of said support, an arm connected with said axle and adapted to rotate the same, said arm being arranged on one side of said support, a crank rigidly secured to said axle on the opposite side of said support to said arm, a hand-grip connected with said arm, and a weight connected with said crank.

4. In an apparatus of the class described, a supporting standard, a rotatable shaft mounted in said standard, a crank arm pivotally connected with said shaft, whereby the shaft may be rotated and the arm swung laterally, a second crank rigidly secured to said shaft, and a weight connected with said second crank.

5. In an apparatus of the class described, a supporting standard, a rotatable shaft, means for adjustably connecting said rotatable shaft with said standard whereby the height of the rotatable shaft may be changed, an arm pivotally connected with said shaft, a flexible member connected with said crank, a bar pivotally connected with said standard, means for connecting said flexible member with said bar, an adjustable weight arranged on said bar, a hand-grip connected with said arm, a treadle arranged at the base of the standard, and a flexible connecting member for connecting said hand-grip with said treadle.

The foregoing specification of my mechanotherapeutic apparatus signed by me this 14th day of February, 1913.

SYLVAIN JOSEPH ALBERT.

Witnesses:
HANSON C. COXE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."