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F. A. ANDERSON

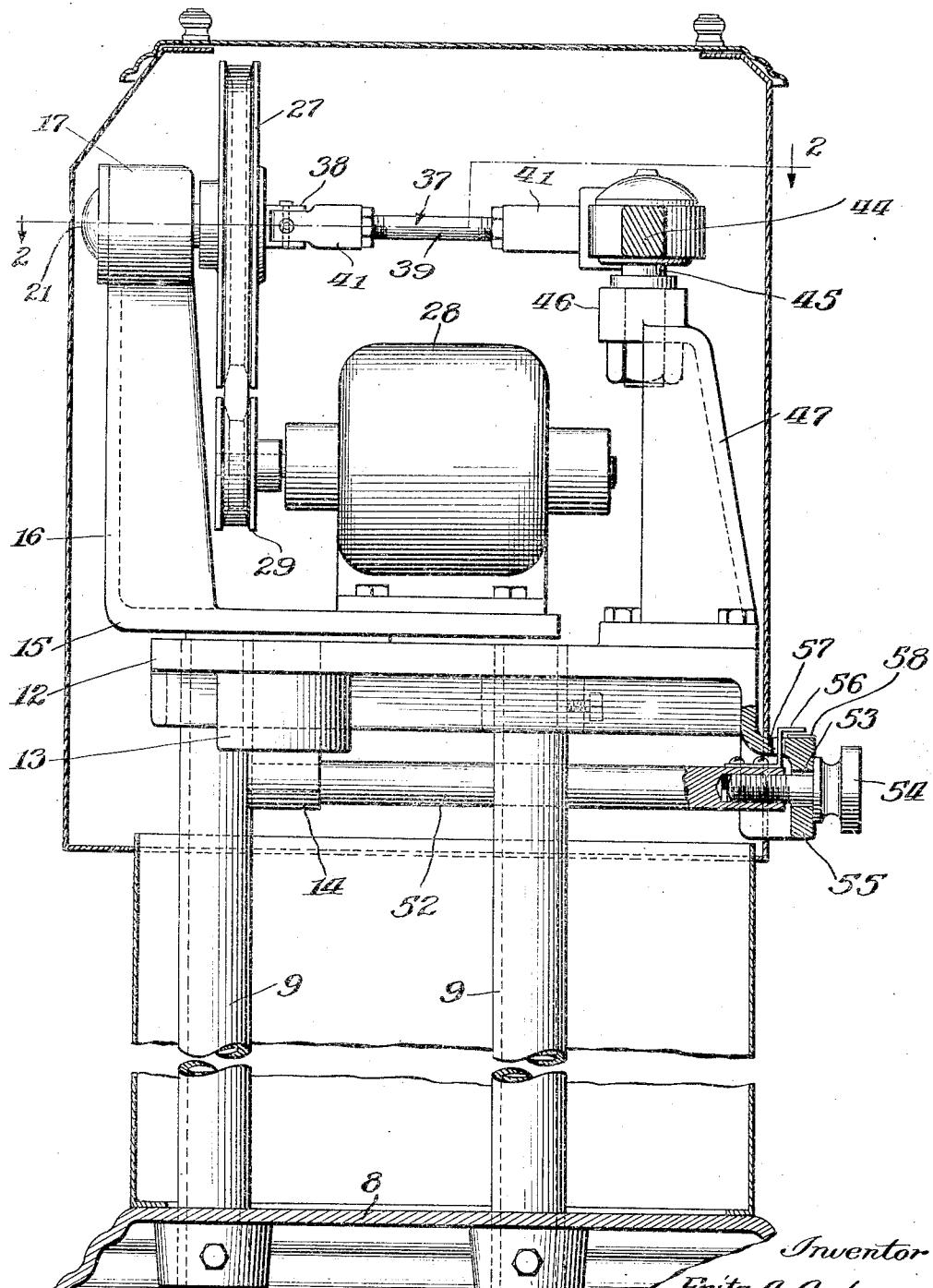
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MASSAGE AND EXERCISE MACHINE

Filed Nov. 20, 1928

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Fig. I.



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Fig. 2.

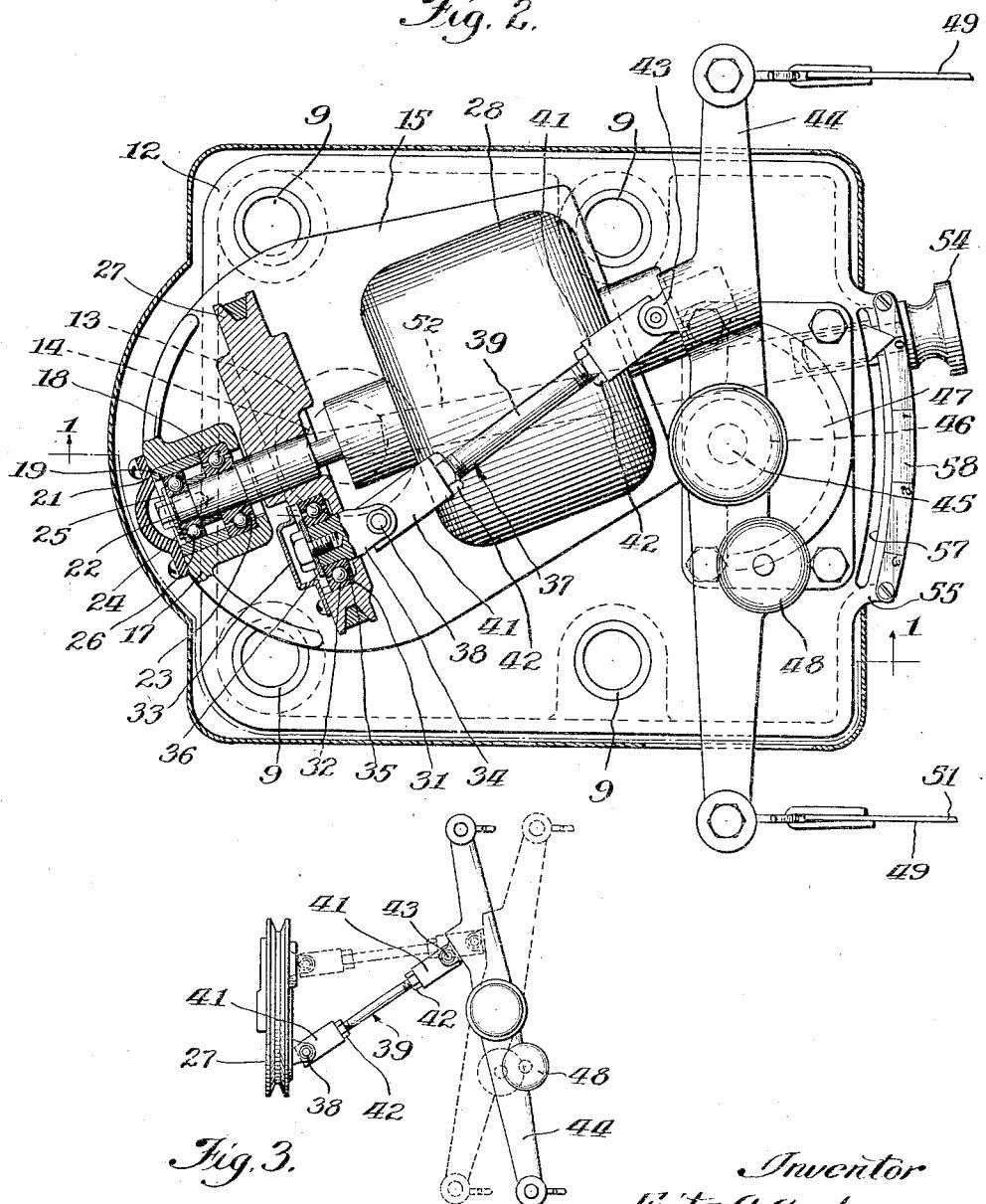


Fig. 3.

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UNITED STATES PATENT OFFICE

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MASSAGE AND EXERCISE MACHINE

Application filed November 20, 1928. Serial No. 320,665.

My invention relates to an exercising and massaging machine.

It will be described with particular reference to a machine for applying mechanical vibrations and movements to the members of the body for massaging and flexing the muscles.

In using a machine of this type it is desirable to begin with light movements since the blood is circulating slowly and all of the muscles and organs of the body are functioning in a manner suited to a state of comparative inactivity when the exercises are first begun. After the muscles have been massaged for a time, the circulation of blood is increased and other organic functions are stimulated, and a more energetic application of the mechanical gymnastics may be administered. In order to obtain the best results the intensity of the mechanical movements of the exercising machine should be gradually varied beginning with a light movement until the desired intensity of movement is attained.

An object of the present invention is to provide an improved exercising and massaging machine.

A further object is to provide a machine which may be adjusted by a patient while in operation.

A further object is to provide an exercising machine which may be gradually adjusted by the patient without interrupting the exercise.

Other objects and advantages will herein-after appear.

In the drawings

Fig. 1 is a side elevation of the exercising machine embodying the invention with the cabinet and other parts broken away to show the mechanism;

Fig. 2 is a plan view partly in section taken on the lines 2—2 of Fig. 1, and

Fig. 3 is a diagrammatic plan view illustrating the movement of the rocker arm.

The apparatus is shown mounted on a base 8 from which four standards 9 extend upwardly and carry a support 12. Support 12 is provided with a bearing 13 in which the shaft 14, which carries a base 15, is pivotal-

ly mounted. Base 15 is provided with an upwardly extending arcuate arm 16 which supports a horizontal bearing housing 17. A pair of ball races 18 and 19 are retained in the bearing housing by a cap 21, and a shaft 22 carries a pair of similar ball races 23 and 24, which are retained on the shaft by a cap 25. A plurality of ball bearings 26 are placed in the recess and serve to rotatably mount the shaft in the bearing and prevent longitudinal movement thereof.

Mounted upon shaft 22 is a wheel 27 provided with a V shaped groove at its periphery. Wheel 27 may be rotated by a motor 28 carrying a pulley 29 having a similar V shaped groove from which a belt passes over the wheel 27. A bearing housing 31 is eccentrically located in the face of wheel 27 and is provided with a ball race 32 which is retained therein by a cap 33. A stud shaft 34 having a similar ball race 35 retained thereon by a cap 36 is rotatably mounted therein in such a manner as to prevent longitudinal movement of the shaft.

A link or connecting rod 37 is connected to stud 34 by means of a universal joint 38. Link 37 comprises a central rod 39 having a socket 41 at each end to which the rod is threaded, for the purpose of adjusting the length of the arm. A pair of lock nuts 42 is provided on rod 39 to prevent the arm from getting out of adjustment while the machine is in operation. Arm 37 is connected by means of a universal joint 43 to a rocker arm 44 which is adapted to oscillate on shaft 45. Shaft 45 is secured in a boss 46 which is carried by an arcuate arm 47 attached to stationary support 12. The rocker arm is provided with a counterweight 48 which serves to distribute the inertia of arm 44 equally about its pivot point. An applicator 49 which consists of a belt 51 is attached to the ends of arm 44 and forms a loop which is adapted to extend about the person exercising with the machine.

When motor 28 is set into operation to rotate wheel 27 the end of link 37 which is attached to stud shaft 34, will describe a circle. The movement of the other end of link 37 will depend upon its position relative to the plane

of rotation with wheel 27. When this end of the arm is in longitudinal alignment with the axis of wheel 27, the arm will have no reciprocating movement. When, however, 5 base 15 is pivoted in bearing 13, the plane of rotation of wheel 27 will change relative to the point of attachment of link 37 with rocker arm 34 and an oscillating movement of arm 44 will result. Fig. 3 illustrates wheel 27 10 rotating in such a plane as to cause an oscillation of arm 44. The arc through which arm 44 oscillates may, therefore, be regulated by the position of the base 15 upon which wheel 27 is mounted. In order to position 15 base 15 an arm 52 is attached to shaft 14 which supports base 15. Arm 52 extends through a segment 55 integral with base 12 which is provided with a horizontal slot 53 and the arm is provided at its end with a 20 thumb screw 54 which is threaded into the end of the arm by which the arm may be retained in position.

A pointer 56 is carried by the end of arm 25 52 and extends upwardly through a slot 57 in segment 55. A suitable scale 58 is attached to the segment which may be calibrated in any suitable manner, as for instance to indicate the amplitude of movement of oscillating arm 44.

30 In beginning the exercises the patient first places the pointer on the scale in such a position as to obtain a limited movement of the oscillation of arm 44 and applicator 49. After the exercises have continued for a short 35 time the patient, without stopping the machine or interrupting the exercises, shifts the arm farther along the scale to obtain a more energetic movement of the applicator. The arm is thus gradually shifted from time to 40 time until the desired intensity of movement is obtained.

Having described the nature and embodiment of my invention, what I desire to secure by United States Letters Patent is as follows:

45 1. An exercising machine comprising a rotatably mounted wheel, an arm eccentrically attached to the wheel at one end, an oscillating member attached to the other end of the arm, an applicator for transmitting the 50 movement of the oscillating member to the patient, said applicator attached to the ends of said oscillating member, and means for shifting the plane of rotation of the wheel during the operation to vary the movement 55 of the oscillating member.

2. An exercising machine comprising a rotatably mounted wheel, a bearing eccentrically mounted in the wheel, a stud shaft rotatable in the bearing, an arm, a universal 60 joint connecting the arm to the stud shaft, an oscillating member, a universal joint connecting the oscillating member to the arm, means for rotating the wheel to cause an oscillation of said member, and means for changing the 65 plane of rotation of the wheel to vary the

degree of oscillation of the oscillating member.

3. An exercising machine comprising a pivotally mounted base, an adjusting arm for pivoting the base, means for selectively holding the arm in one of a plurality of positions, a wheel mounted on the base, a rotatable shaft eccentrically mounted on the wheel, an oscillating member, means including a universal connection for connecting the oscillating member to the rotatable shaft, and an applicator operable by said oscillating member, the movement of said applicator being adjustable by the adjusting arm for pivoting the base.

4. An exercising machine comprising a base, a plurality of uprights mounted therein, a support positioned on said uprights, a pivotally mounted standard on said support, an adjusting arm for pivoting said standard, means for selectively holding said arm in one of a plurality of positions, a wheel mounted on said standard, a rotatable shaft eccentrically mounted on the wheel, an oscillating member, means including a universal connection for connecting the oscillating member to the rotatable shaft, and an applicator operable by said oscillating member, the movement of said applicator being adjustable by the adjusting arm for pivoting the standard, and said adjusting arm being positioned for manipulation by a patient standing before the machine.

5. An exercising machine comprising an upright housing, a base, a plurality of uprights secured to said base, a support positioned on said uprights, a pivotally mounted standard on said support, an adjusting arm for pivoting said standard, a rotatably mounted wheel on said standard, a bearing eccentrically mounted in the wheel, a stud shaft rotatable in the bearing, an arm, a universal joint connecting the arm to the stud shaft, an oscillating member, a universal joint connecting the oscillating member to the arm, and means for rotating the wheel to cause an oscillation of said member, said adjusting arm adapted to change the plane of rotation of the wheel to vary the degree of oscillation of the oscillating member.

In witness whereof, I hereunto subscribe my name this 16th day of November, 1928.

FRITZ A. ANDERSON.