Nov. 18, 1924. 1,516,344

E. W. KNOWLES

EXERCISER AND REDUCER

Filed March 7, 1924

Fig. 1.

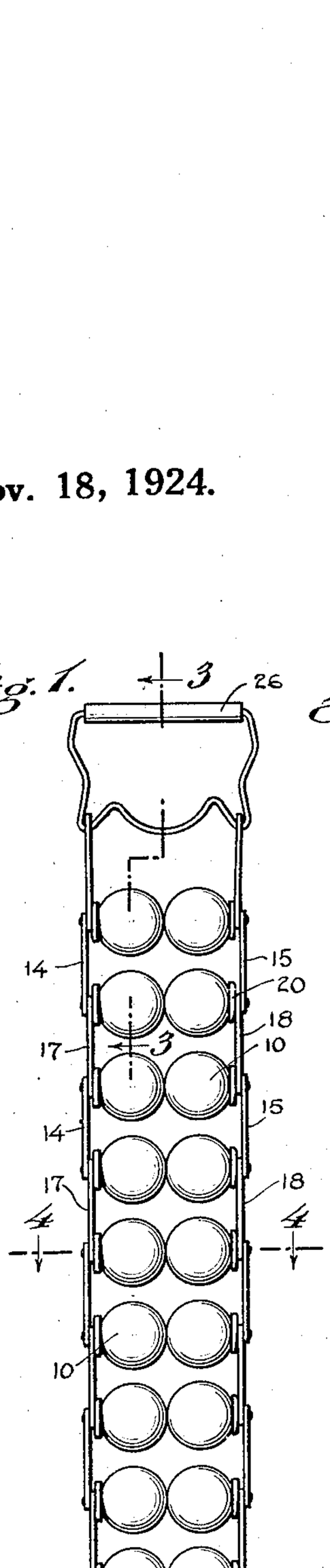


Fig. 2.

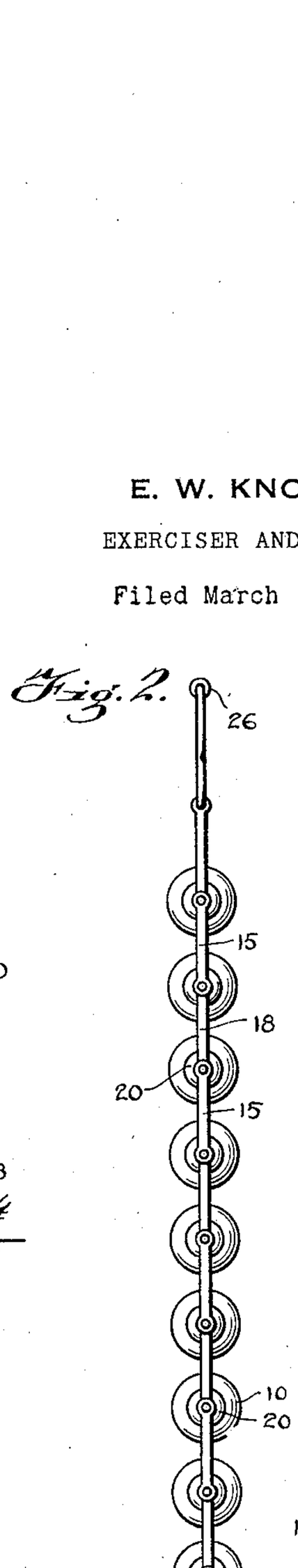


Fig. 3.

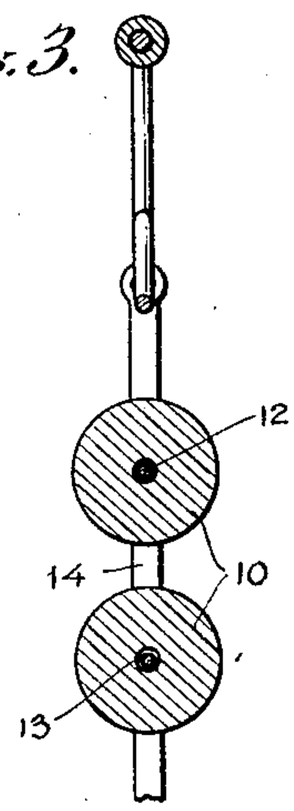


Fig. 4.

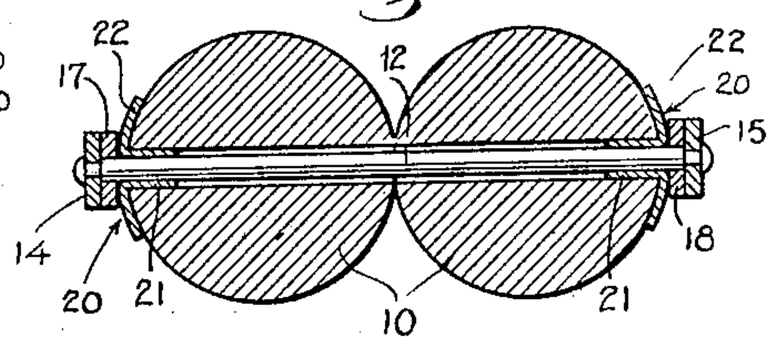
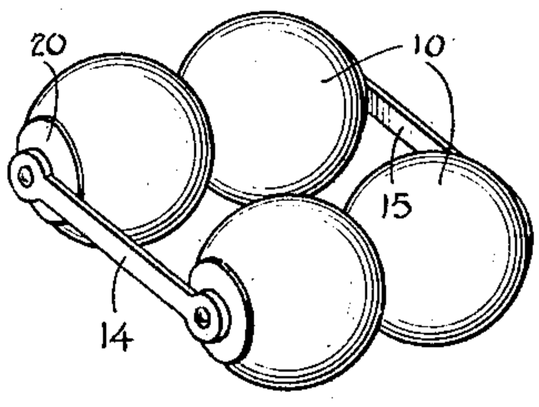


Fig. 5.



INVENTOR

BY Etta W Knowles

William S Gwatkin

ATTORNEY

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UNITED STATES PATENT OFFICE.

ETTA W. KNOWLES, OF NEW YORK, N. Y.

EXERCISER AND REDUCER.

Application filed March 7, 1924. Serial No. 697,452.

To all whom it may concern:

Be it known that ETTA W. KNOWLES, a citizen of the United States, and a resident of New York, county of New York, and State of New York, has invented new and useful Improvements in an Exerciser and Reducer, of which the following is a specification.

My present invention relates generally to an exerciser and reducer and more particularly to an arrangement whereby a group or groups of friction producing elements can be moved in contact with different parts of the body of the user to produce a massaging action.

The object of my invention broadly is to effect a massaging action and more particularly a reduction in weight by applying to any part of the body a rapid intermittent pressure at a plurality of points simultaneously and to cause the points of pressure to shift rapidly.

It is one of the important objects of the present invention to attain this by providing an exerciser and reducer in the form of a massage device in which are embodied a plurality of inelastic unyielding rubbing elements or members so arranged and associated as to provide a plurality of spaced rubbing or massaging surfaces or points and wherein these rubbing elements or members are so associated as to have a maximum of flexibility without at the same time decreasing their massaging action and as to be capable of readily conforming to the contour of the body, or of any portion thereof, and in which the massage elements are moved across the body, or portion thereof, in frictional contact therewith without irritation.

More specifically my invention includes the provision of a plurality of rotatable members, such as balls, mounted preferably in spaced groups for free rotation so that the outermost parts thereof can be positioned in a single plane which may be flat, curved or irregular, as desired, so as to permit of the plane in which all the outermost points are located to coincide or conform to the curves or contour of those parts of the body in contact with which the device is to be manipulated.

One of the further objects of my invention is the provision of an arrangement whereby these rotatable members are of a character which will give the desired intermittent pressure without irritation and which are so supported as to cause them to rotate freely and without appreciable wearing action.

My invention further involves the provision of an arrangement whereby a device of the character set forth can be made efficiently, simply and economically and will serve the desired purposes effectively.

For the attainment of these objects and such other objects as may hereinafter appear or be pointed out, I have illustrated an embodiment of my invention in the drawings wherein—

Fig. 1 is a top elevational view of the illustrated embodiment.

Fig. 2 is a side elevational view thereof.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a section taken on line 4—4 of Fig. 1.

Fig. 5 shows a prospective view of a unit mounting.

Upon viewing the drawings, it will be observed that I here show the device as made up generally of a body portion and of gripping or handle members on opposite ends of the body portion. The body portion is provided with rubbing elements, preferably in the form of rollers or balls 10 made of a wood to which a relatively high polish can be given and which are of a character which will give rise to only such friction as is incident to the rolling association of a ball in contact with the surface and will not give rise to any irritation incident to the engagement of a rough or uneven surface with the body. These balls 10 are preferably perforated and are mounted upon cross pins 12, 13, the illustrated embodiment having two balls arranged on each cross pin. The cross pins are arranged in groups of two 12, 13, the opposite ends of the group of cross pins being fixedly mounted in the opposite ends of the corresponding members 14 and 15, making up a set. In this manner a unit construction of my device will include in the illustrated embodiment the oppositely positioned links 14 and 15 and the cross pins 12 and 13 which serve to connect the links 14 and 15 to make up the unit. This unit will also include the balls mounted upon the aforementioned pins 12 and 13, two balls being shown in the illustrated embodiment. In Fig. 5 of the drawings I show such a unit mounting.

The device as a whole may comprise as

many units illustrated in Fig. 5 as may be desired and as shown in the drawings these units are connected by intermediate oppositely positioned links 17 and 18, each of which has an enlarged head at its opposite end so as to freely receive therethrough the aforementioned pins 12 and 13 forming the part of the individual units. In short, the construction thus far described comprises a series of these units made up as described and connected by the links 17 and 18 so that by means of these links 17 and 18 the units can be moved relatively to each other as desired. The mounting of the balls on the pins 12 and 13 and also of the connecting links 17 and 18 thereon is such that not only is a free movement of balls and of these links 17, 18, on the pins 12 and 13 secured, but a slight universal movement will also be permitted.

In order to minimize the frictional association between the balls and the supporting structure, I, in the first place, make the perforation through the balls much wider than the pins and in addition I associate with the outer ends of the perforations, the metal members or washers 20 of the character clearly shown in Fig. 4. These members 20, as shown, are in the form of tubular sections 21, preferably made of sheet metal, and are each provided with the flange 22 arranged to conform in curvature to the exterior surface of the balls and these members when in position are each positioned so as to have the part 21 serve to line the passage through a ball for part of the length of this passage and to have the flange 22 serve to contact with the outer surface of the ball. It will be observed that the tubular sections 21 act as wear pieces and also as elements for reducing friction as the balls rotate on the pins 12 and 13 and that the flanges 22 serve similar purposes in connection with the coaction of the outer surfaces of the balls 10 and the ends of the links 17 and 18.

From the description thus far given, it will be understood that I have provided an arrangement in which are a plurality of groups of balls, two being illustrated in each group, the balls being mounted for free rotation, and the groups of balls being so connected together and associated that the whole construction can be made to conform to the contour of any portion of the body.

In the practical employment of my apparatus, the user grips the handle members 25 and 26 and brings the intermediate rotating members or elements 10 in contact with that portion of the anatomy which is to be massaged or treated and then by a to and fro motion with both hands simultaneously with the balls 10 in contact with the body, there is produced not only a pressure upon the parts being treated but also a series of intermittent taps and blows which while almost inappreciable in character as blows, are sufficient to produce the aims in view, namely, that of massaging and exercising with a consequent reduction in weight.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. A massage or flesh kneading device comprising handle members at opposite ends thereof and an intermediate body portion therebetween, said intermediate body portion comprising a plurality of sections connected by pairs of oppositely positioned links, each pair of links being freely pivoted to opposite ends of adjacent sections and the sections each comprising spaced pivot pins connected at their opposite ends by links fixedly associated with the pins, and balls mounted for free rotation on the pins, the links connecting the sections being positioned outside of the links fixed to the pins and resting on a shoulder formed on said pins to relieve the links of frictional contact with each other.

2. A massage or flesh kneading device comprising handle members at opposite ends thereof and an intermediate body portion therebetween, said intermediate body portion comprising a plurality of sections connected by pairs of oppositely positioned links, each pair of links being freely pivoted to opposite ends of adjacent sections, the sections each comprising spaced pivot pins connected at their opposite ends by links fixedly associated with the pins, and balls mounted for free rotation on the pins, and friction members carried by the balls, said friction members comprising metal washers having tubular sections received within the passages through the balls and flanges in contact and curved in conformity with the outer surface of the balls.

In testimony whereof I have hereunto signed my name.

ETTA W. KNOWLES.