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## (54) Roller massaging apparatus.

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**Description**

TECHNICAL FIELD

The present invention relates to a roller massaging apparatus for massaging by acting pushing pressure on a human body by means of a pushing pressure roller, as defined in the preamble of claim 1.

BACKGROUND ART

For conventional roller massaging, it is already known to use an apparatus as shown in Figure 5, comprising a pushing pressure roller 22 made of rubber and provided with a plurality of small protrusions 23 at its peripheral surface, which is rotatably mounted on the center part of a hollow operating shaft 21.

Massage of an affected part using this kind of roller massaging apparatus is performed in a manner that a third person other than a patient grips the both ends of the operating shaft 21, and brings the pushing pressure roller 22 in contact with the back surface or the like of the patient, and thereafter rolls the pressure roller 22 on the patient's body while acting pushing pressure by means of the pressure roller 22 on the affected part by applying the body weight to both ends of the operating shaft 21. This pressure relaxes the patient's muscles, and stimulates by pushing the "TSUBO" points (points effective for relief) to improve the health.

In this case, when a soft material is used for the pushing pressure roller 22, the pushing pressure in massage operation deforms the pushing pressure roller 22, and therefore smooth rolling of the pushing pressure roller 22 on the operating shaft 21 is obstructed, and the massaging operation might suffer a hindrance. On the other hand, when a hard material is used for the pushing pressure roller 22, the pushing pressure in massaging operating does not deform the pushing pressure roller 22, and the smooth rolling is not obstructed, but a problem exists that due to stiff and cold touch and lack of cushion of the pushing pressure roller 22, comfortable feeling in use is deteriorated.

A roller massaging apparatus of the kind defined in the preamble of claim 1 is known from EP-A-0 116 113. Owing to the provision of roller bearings between the pressure roller and the operating shaft, hindrance of the rolling operation of the pressure roller is reduced. However, in this known apparatus, the rubber roller is mounted on a rigid tube, with the result that the roller as a whole is rather stiff.

A further roller massaging apparatus is known from US-A-1 882 490 in which the pressure roller is mounted on a flexible operating shaft by means of sleeve-like bushings.

The present invention proposes to provide a novel roller massaging apparatus wherein, even if the pushing pressure roller is deformed by pushing pressure, smooth rolling operation is not obstructed, and comfortable feeling in use is realized by good touch and moderate cushion.

DISCLOSURE OF THE INVENTION

A roller massaging apparatus of the present invention is characterized by the characterizing features of claim 1.

In accordance with the present invention, the pushing pressure roller is supported on the operating shaft through the bearings, and therefore the rolling action of the pushing pressure roller is smooth, and even if the pushing pressure roller is deformed, this deformation is absorbed by the cavity part, and therefore smooth rolling of the pushing pressure roller is not obstructed, and there is no fear that the massaging operation would suffer a hindrance. Also, since a soft material can be used for the pushing pressure roller, body touch is improved, and since a function of cushion is given to the pushing pressure roller by the presence of the cavity part, a large extent of improvement in the feel in use can be realized.

BRIEF EXPLANATION OF THE DRAWINGS

Fig. 1 is a front view showing a roller massaging apparatus of one embodiment in accordance with the present invention.

Fig. 2 is a longitudinal cross-sectional view of a pushing pressure roller of the embodiment in Fig. 1.

Fig. 3 is a cross-sectional view showing a portion where a bearing is mounted in an enlarged fashion.

Fig. 4 is an explanatory view showing a used state of the roller massaging apparatus.

Fig. 5 is a longitudinal cross-sectional view showing a conventional roller massaging apparatus.

THE BEST FORM FOR EMBODYING THE INVENTION

Fig. 1 and Fig. 2 show a roller massaging apparatus 1 of one embodiment in accordance with the present invention, which is constituted with an operating shaft 2 and a pushing pressure roller 3 made of soft rubber disposed rotatably on the center part of this operating shaft 2.

The above-mentioned operating shaft 2 is constituted with a center metal rod 4 and a pair of metal pipes 5 and 5 each provided with a soft-

rubber grip 6 at one end thereof. The above-mentioned metal rod 4 is formed slightly longer than the length of the pushing pressure roller 3, and the both ends of this metal rod 4 are fitted into inner holes 15 of the metal pipes 5 and 5 respectively by an appropriate length.

The above-mentioned pushing pressure roller 3 is formed in a shape that a pair of spherical bodies 3a and 3b are connected integrally, and a plurality of small semi-spherical protrusions 7 are installed integrally in lines on the outer peripheral surface of each of the spherical bodies 3a and 3b. Inside the pushing pressure roller 3, a hollow hole 8 is installed in a penetrated fashion which has an inner diameter large enough for the shaft diameter of the metal rod 4 of the above-mentioned operating shaft 2, and the above-mentioned operating shaft 2 is inserted into this hollow hole 8, and the pushing pressure roller 3 is positioned on the metal rod 4 of this operating shaft 2. Bearings 9 and 9 are tightly fitted into the both end opening parts of the hollow hole 8 of the pushing pressure roller 3, and the pushing pressure roller 3 is supported rotatably on the operating shaft 2 through these bearings 9 and 9. A cavity part 10 is formed by the above-mentioned hollow hole 8 between the inner peripheral surface of this pushing pressure roller 3 and the operating shaft 2, and this cavity part 10 allows the pushing pressure roller 3 to deform.

Fig. 3 shows a fixed state of the bearing 9 in this embodiment in an enlarged fashion.

In this case of this embodiment, each bearing 9 is disposed at the position of connection of the above-mentioned metal rod 4 and the metal pipe 5, and the outside of each bearing 9 is engaged with an end surface 11 of the metal pipe 5, and the inside of the bearing 9 is fixed by an annular metal fitting 12 fitted to the metal rod 4 and a stepped part 13 installed on the inner surface of the hollow hole 8 of the pushing pressure roller 3. In addition, the above-mentioned annular metal fitting 12 is fitted into a peripheral groove 14 installed in the metal rod 4.

## UTILIZABILITY IN INDUSTRIES

To apply massaging cure to a patient using this roller massaging apparatus, as shown in Fig. 4, first a patient P is laid on his face, and a massagist Q grasps the grips 6 and 6 of the operating shaft 2, and brings the pushing pressure roller 3 in contact with the back surface or the like of the patient P. At this time, the small-diameter portion at the center of the pushing pressure roller 3 is positioned just on the backbone, and in this state, the massagist Q rolls the pushing pressure roller 3 along the backbone while applying his body weight to the operating shaft 2 so that the pushing pressure produced by the pushing pressure roller 3 acts on the patient. This pushing pressure relaxes the muscles along the backbone, and effective massage can be performed, and further the small protrusions 7 on the pushing pressure roller 3 push-stimulate the "TSUBO" points (points effective for relief), and improves the health.

In such a massaging operation, the pushing pressure roller 3 is supported on the operating shaft 2 through the bearings 9 and 9, and therefore the rolling operation of the pushing pressure roller 3 is performed smoothly. Also, even if the pushing pressure roller 3 is deformed elastically, this deformation is absorbed by the inner cavity part 10, and therefore smooth rolling of the pushing pressure roller 3 is not obstructed, and the massaging operation is not hindered. Then, in this case, soft rubber of soft touch is used for the pushing pressure roller 3, and therefore it gives a comfortable touch with the patient's body, and the pushing pressure roller 3 is given a function of cushion by the cavity 10, a comfortable feeling in use is obtainable.

In addition, the pushing pressure is transmitted also to the operating shaft 2 through the pushing pressure roller 3, but the center part of the metal rod 4, and therefore the shaft 2 endures this pushing pressure and there is no fear of deformation. Also, each bearing 9 is not only fitted tightly into the hollow hole 8 of the pushing pressure roller 3, but also held between the end surface 11 of the metal pipe 5 and the annular metal fitting 12, and therefore there is no fear of positional deviation or disassembling, and thus this apparatus excels in durability.

## Claims

1. A roller massaging apparatus comprising:
   - an operating shaft (2) having grips (6) at both ends thereof;
   - a pressure roller (3) having a hole (8) therein and mounted by means of roller bearings (9) at both ends of said hole (8) around a center part (4) of said operating shaft (2);

   said hole (8) of the said pressure roller (3) has an inner diameter large enough to form a cavity (10) around said operating shaft (2); characterized in that, said pressure roller (3) is elastically deformable into said cavity (10), such that even if the Pressure roller (3) is deformed elastically, this deformation is absorbed by the inner cavity (10).

2. A roller massaging apparatus according to claim 1, characterized in that said center part of the operating shaft is a metal rod (4) in-

serted at both ends into inner holes (15) of metal pipes (5) having the grips (6).

A roller massaging apparatus according to claim 1, characterized in that said pressure roller (3) is formed of two spherical bodies (3a, 3b) integrally connected to each other.

4. A roller massaging apparatus according to any one of the preceding claims, characterized in that said pressure roller (3) is made of soft rubber.

5. A roller massaging apparatus according to any one of the preceding claims, characterized in that a plurality of small protrusions (7) are formed integrally on the outer peripheral surface of said pressure roller (3).

**Patentansprüche**

1. Ein Rollenmassagegerät mit:
   - einer Bedienungsachse (2) mit Griffen (6) an ihren beiden Enden;
   - einer Druckrolle (3), in der eine Öffnung (8) vorgesehen ist und die mittels Rollenlagern (9) an beiden Enden der Öffnung (8) um ein Mittelteil (4) der Bedienungsachse (2) herum angebracht ist;

   wobei die Öffnung (8) der Druckrolle (3) einen Innendurchmesser hat, der groß genug ist, um einen Hohlraum (10) um die Bedienungsachse (2) herum zu bilden;
   dadurch **gekennzeichnet,**
   daß die Druckrolle (3) in den Hohlraum (10) hinein elastisch deformierbar ist, so daß selbst dann, wenn die Druckrolle (3) elastisch verformt wird, diese Verformung durch den inneren Hohlraum (10) absorbiert wird.

2. Ein Rollenmassagegerät nach Anspruch 1, dadurch **gekennzeichnet,**
   daß das Mittelteil der Bedienungsachse eine Metallstange (4) ist, die an beiden Enden in Innenöffnungen (15) von Metallrohren (5), die die Griffe (6) haben, eingesetzt ist.

3. Ein Rollenmassagegerät nach Anspruch 1, dadurch **gekennzeichnet,**
   daß die Druckrolle (3) aus zwei sphärischen Körpern (3a, 3b) gebildet ist, die integral miteinander verbunden sind.

4. Ein Rollenmassagegerät nach einem der vorangehenden Ansprüche, dadurch **gekennzeichnet,**
   daß die Druckrolle (3) aus einem weichen Gummi gemacht ist.

5. Ein Rollenmassagegerät nach irgendeinem der vorangehenden Ansprüche, dadurch **gekennzeichnet,**
   daß eine Mehrzahl von schmalen Vorsprüngen (7) integral an der äußeren Umfangsfläche der Druckrolle (3) ausgebildet ist.

**Revendications**

1. Appareil de massage à rouleau comprenant :
   - un arbre de manoeuvre (2) comportant des poignées (6) à ses deux extrémités;
   - un rouleau de pression (3) qui comporte un trou (8) à l'intérieur et qui est monté au moyen de paliers de roulement (9) aux deux extrémités dudit trou (8) autour d'une partie centrale (4) dudit arbre de manoeuvre (2);
   - ledit trou (8) dudit rouleau de pression (3) ayant un diamètre intérieur suffisamment important pour former une cavité (10) autour dudit arbre de manoeuvre (2);

   caractérisé en ce que ledit rouleau (3) est élastiquement déformable à l'intérieur de ladite cavité (10), de telle manière que même si le rouleau de pression (3) est déformé élastiquement, cette déformation est absorbée par la cavité intérieure (10).

2. Appareil de massage à rouleau selon la revendication 1, caractérisé en ce que ladite partie centrale de l'arbre d'actionnement est une barre métallique (4) insérée aux deux extrémités dans des trous intérieurs (15) de tubes métalliques (5) qui comportent les poignées (6).

3. Appareil de massage à rouleau selon la revendication 1, caractérisé en ce que ledit rouleau de pression (3) est formé de deux corps sphériques (3a, 3b) reliés de façon intégrée l'un à l'autre.

4. Appareil de massage à rouleau selon l'une quelconque des revendications précédentes, caractérisé en ce que ledit rouleau de pression (3) est réalisé en caoutchouc souple.

5. Appareil de massage à rouleau selon l'une quelconque des revendications précédentes, caractérisé en ce qu'une pluralité de petites saillies (7) sont formées de manière intégrée sur la surface périphérique extérieure dudit rouleau de pression (3).

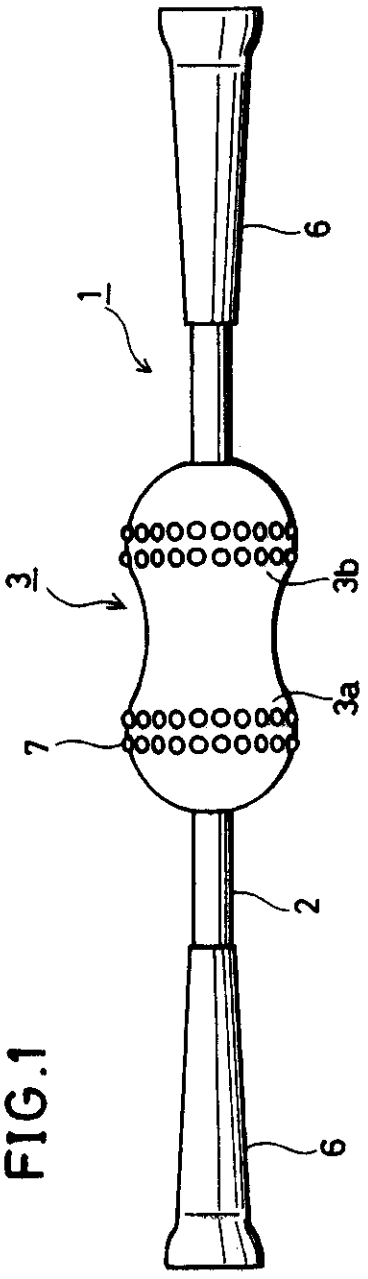



FIG.1

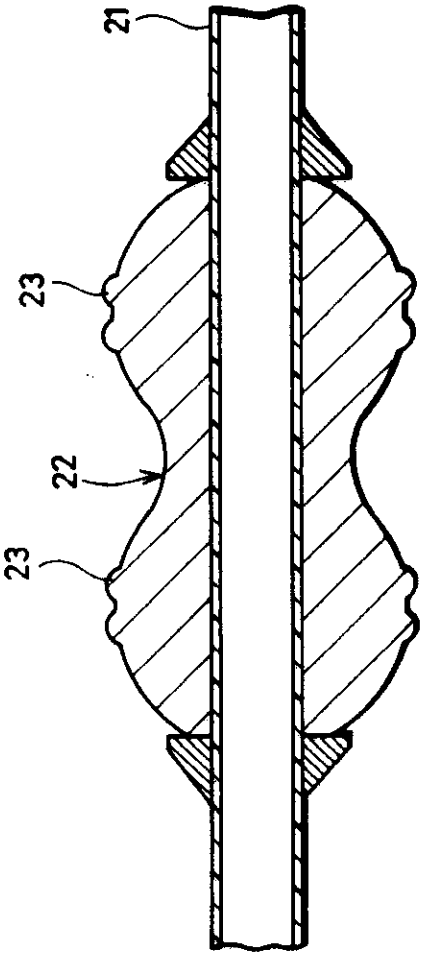



FIG.5

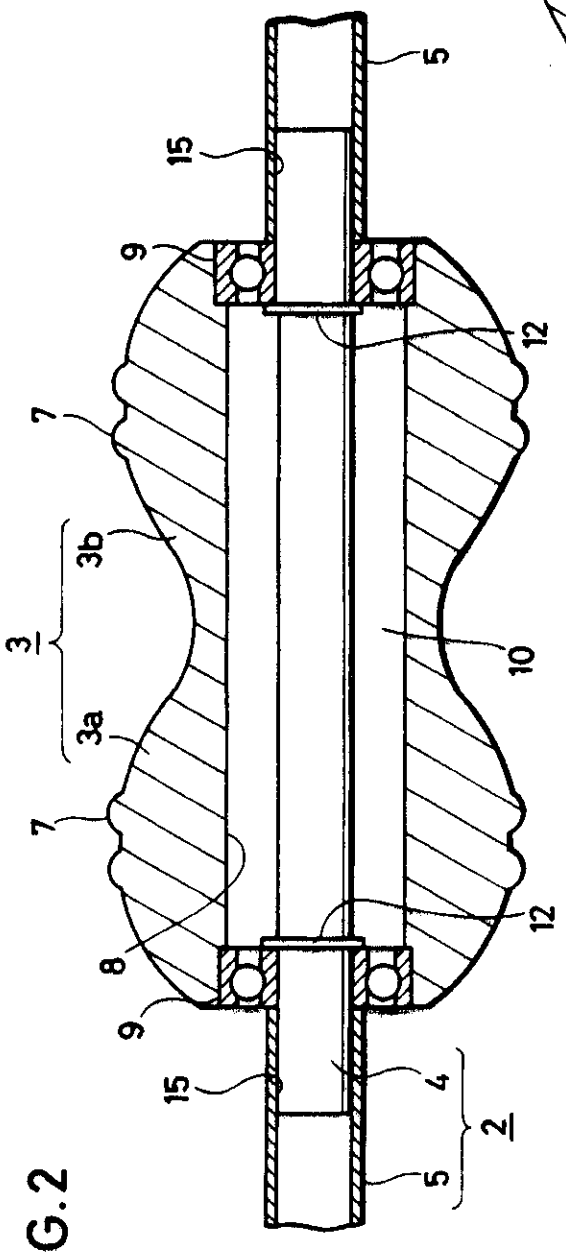



FIG.2

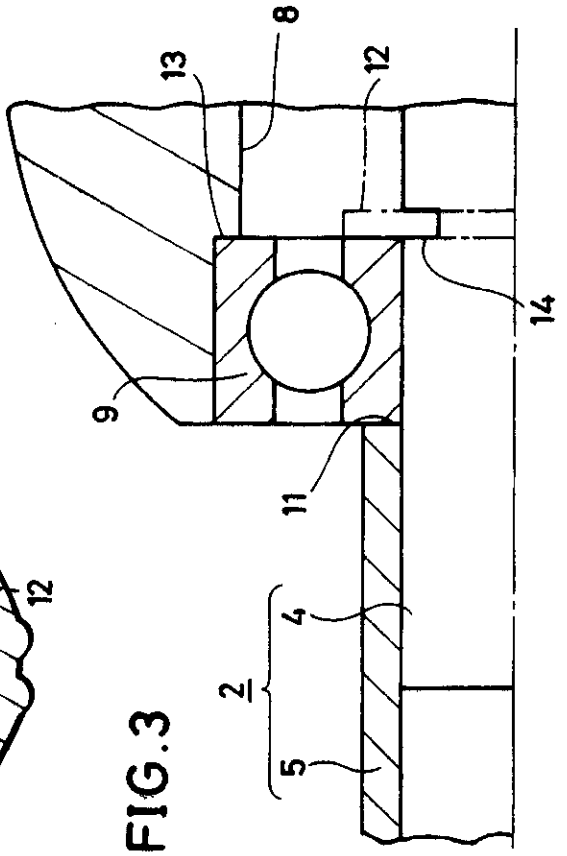
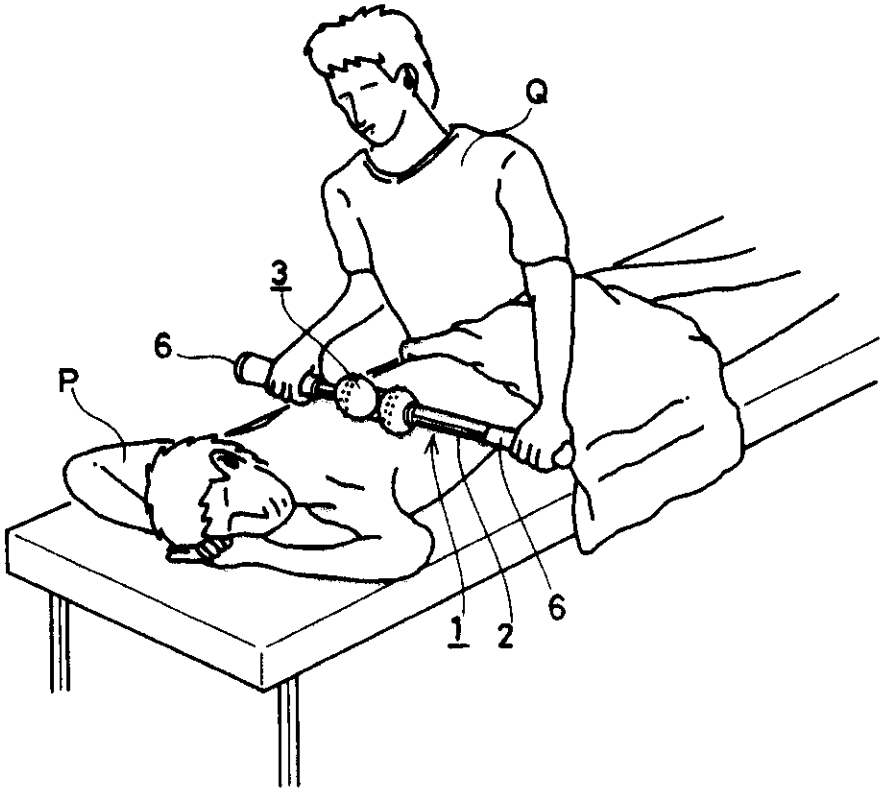



FIG.3

FIG.4



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