MASSAGING VIBRATOR DEVICE

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Application June 22, 1953, Serial No. 363,111

9 Claims. (Cl. 128—35)

1. This invention relates to body-massage apparatus and is particularly directed to improvements in the body-contacting parts of a portable vibrator device.

2. It is an important object of this invention to provide a vibratory massage device having relatively soft body-contacting rollers and which device may be rolled either longitudinally or laterally over any desired portion of a person's body.

3. Another object is to provide an improved mounting for the body-contacting rollers of a massaging vibrator device which mounting enables the rotary axis of the rollers to be oriented as desired, to the end that the device may be rolled longitudinally or laterally or may be restrained from rolling movement.

4. Other and more detailed objects and advantages will appear hereinafter.

In the drawings:

Figure 1 is a perspective view showing a preferred form of the invention.

Figure 2 is an end view partly in section showing the manner of use of a belt or strap in conjunction with our improved vibrator device.

Figure 3 is a sectional view showing details of the mounting of one pair of body-contacting rollers.

Figure 4 is a perspective view of the roller-carrying swivel member.

Figure 5 shows the body-contacting rollers in position for lateral movement of the device.

Figure 6 shows the body-contacting rollers in position for longitudinal movement of the device.

Figure 7 shows the body-contacting rollers oriented in different positions to prevent rolling movement of the device in any direction.

Referring to the drawings:

The massaging vibrator device generally designated 10 includes a case or housing 11 provided with a handle 12 shaped to be grasped conveniently in one hand. An electric motor, not shown, is contained within the housing 11 and drives one or more eccentric weights 13 (Figure 2) located within the housing. For purposes of assembly the housing may be formed of two generally similar halves connected along the transverse joint 14 and held against separation by means of longitudinally extending threaded elements 15. While it is preferable to form the housing 11 by molding it from suitable plastic materials, it is recognized that the housing may be constructed from any desired material.

A plurality of foot pieces 16 are formed integrally with the housing. From each foot piece there extends a longitudinal rib or bar 17. These bars also meet along the joint 14. A longitudinal slot or clearance space 18 is formed between each of the bars 17 and the housing 11 and these slots extend continuously between the foot pieces 16. A strap or belt 19 may pass over the bar 17 through the slots 18 and under the housing 11, as shown in Figure 2. When the strap or belt 19 is tensioned the massaging vibrator device 10 is frictionally clamped for movement with the belt and this enables the user to move the device 10 along portions of the user's body as shown in Figure 1.

In accordance with this invention we have provided body-contacting rollers 20 which permit the device 10 to be rolled either longitudinally or laterally. A roller assembly generally designated 21 is mounted on each of the foot pieces 16 and each of these assemblies 21 includes two rollers 20 mounted to turn freely about a common axis. Each roller 20 is formed of relatively soft rubber-like material and is provided with a cylindrical portion 22, a spherical portion 23 and a flat inner face 24. Each pair of rollers 20 is mounted so that the convex spherical portions 23 project in opposite directions.

A swivel member 25, shown clearly in Figure 4, is provided with oppositely projecting trunnions and an enlarged head 27 is formed on the outer end of each trunnion. Each roller is provided with an axial bore 28 which turns on one of the trunnions and is also provided with a groove 29 to receive the enlarged head 27. Each roller may turn freely on its respective trunnion but is held against separation by means of the head 27 and groove 28. The material of the rollers 20 is sufficiently soft to permit initial installation by forcing the head 27 through the bore 28.

An element 30 'threaded into each of the foot pieces 16 forms an upright post and each of these elements 30 supports one of the swivel members 25. Each swivel member 25 is provided with a central bore 31 and a co-axial counterbore 32. The bore 31 receives the shank portion of the element 30 and the counterbore 32 receives a compression spring 33. The upper end of each spring 33 engages an annular shoulder 34 formed within the swivel member 25 and the lower end of each spring 33 engages the head portion 35 of the post element 30. The upper end of each of the swivel members 25 is formed with a series of 'notches 36 and projections 37 which are adapted to engage similar and complementary projections 38 and notches 39 formed on the
lower end of the foot pieces 16. The surfaces forming the notches and projections are slanted or tilted at an angle so that turning movement of the swivel member relative to the housing 11 is accompanied by longitudinal reciprocating movement of the swivel member 25. Four projections may be provided on each of the swivel members and foot pieces so that the wheel assemblies 21 may be held in position so that the device 10 may be rolled either longitudinally or laterally. The springs 33 hold the swivel members 25 in selected position with respect to the foot pieces. Figure 5 shows the wheel assemblies 21 oriented to provide lateral rolling movement for the device 10, while Figure 6 shows the wheel assemblies 21 oriented to provide longitudinal rolling movement.

In Figure 7 the forward roller assemblies 21 are positioned for longitudinal rolling movement whereas the rearward roller assemblies 24 are oriented for transverse rolling movement. The effect of this arrangement is to prevent rolling movement of the device 10 in any direction.

In operation, the electric motor within the housing 11 is supplied with electric power from the electrical source 38 and turns the shaft carrying the eccentric weight 13 within the casing. A gril 39 at each end of the housing 11 includes openings to permit passage of airc into and out of the casing for the purpose of cooling the motor. The vibration transmitted to the casing through the rotating eccentric weight 13 is communicated to the foot pieces 18 and the roller assemblies 21. The vibration is then transmitted to the body of the user through the soft plastic rollers 28. The rounded portions 23 of the rollers allow the device to be used adjacent various parts of the body without discomfort. The device may be grasped by means of the handle 12 and manipulated as desired, or the belt 19 may be used in the manner shown in Figures 1 and 2 for moving the device over otherwise inaccessible portions of the user's body. The use of pairs or rollers on each swivel assembly not only avoids offcenter loading on the foot pieces 18 but provides additional contact area against the body of the user so that a soft and gentle yet effective massaging action is achieved.

Having fully described our invention, it is to be understood that we do not wish to be limited to the details herein set forth, but our invention is of the full scope of the appended claims.

We claim:
1. In a device of the class described, the combination of: a housing, means within the housing for vibrating the housing, a member mounted on said housing for swiveling movement about a vertical axis, a relatively soft pliant body-contacting roller mounted on said member for turning movement about a horizontal axis, and means for releasably securing said member relative to said housing in any one of a plurality of angular positions relative to the housing.

2. In a device of the class described, the combination of: a housing, means within the housing for vibrating the housing, a member mounted on said housing for swiveling movement about a vertical axis, a pair of relatively soft pliant body-contacting rollers mounted on said member for turning movement about a common horizontal axis, and means for releasably securing said member relative to said housing in any one of a plurality of angular positions relative to the housing.

3. In a device of the class described, the combi-
post acting to move the swivel member axially of the post.

9. A roller assembly for a massaging vibrator device, comprising: a stationary vertical post, a member mounted to swivel on the post and provided with oppositely projecting horizontal trunnions, a body-contacting roller rotatably mounted on each of said trunnions, the swivel member having one end provided with a notched surface, and resilient means within said member and encircling the post acting to move the swivel member axially of the post.