

[54] MECHANICAL MUSCLE MASSAGER

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[22] Filed: **Jan. 17, 1972**

[21] Appl. No.: **218,221**

[52] U.S. Cl. .... **128/57**  
 [51] Int. Cl. .... **A61h 15/00**  
 [58] Field of Search..... 128/57, 67, 24.3, 128/25 B

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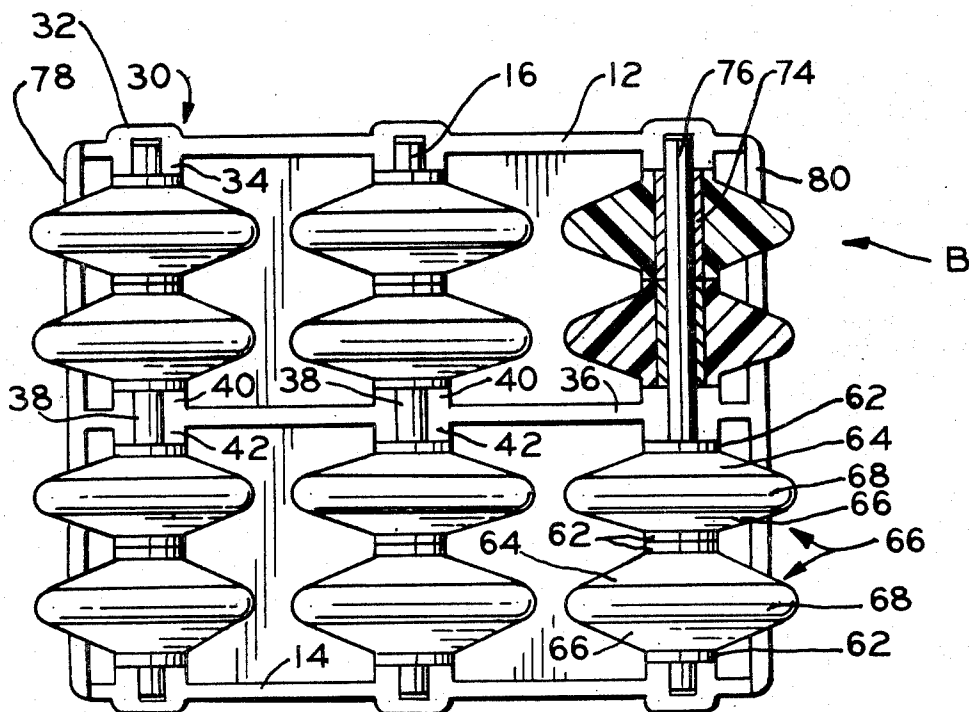
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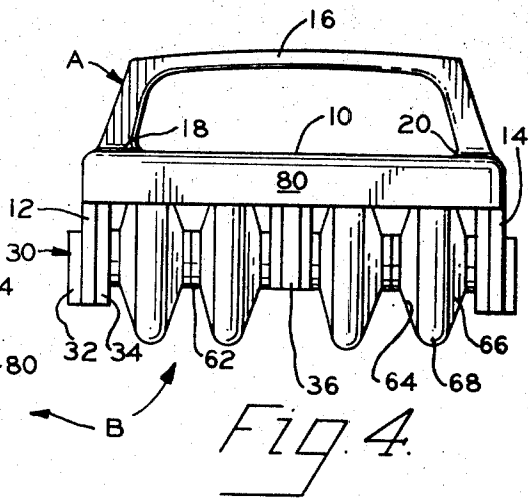
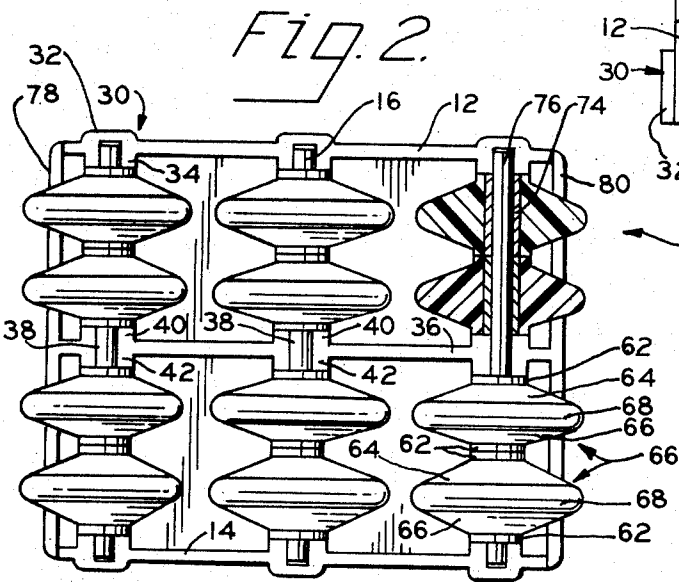
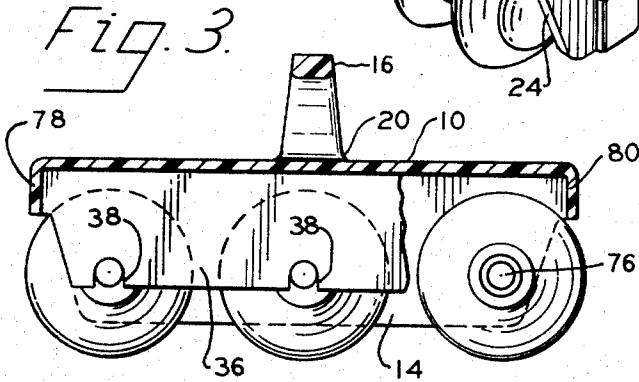
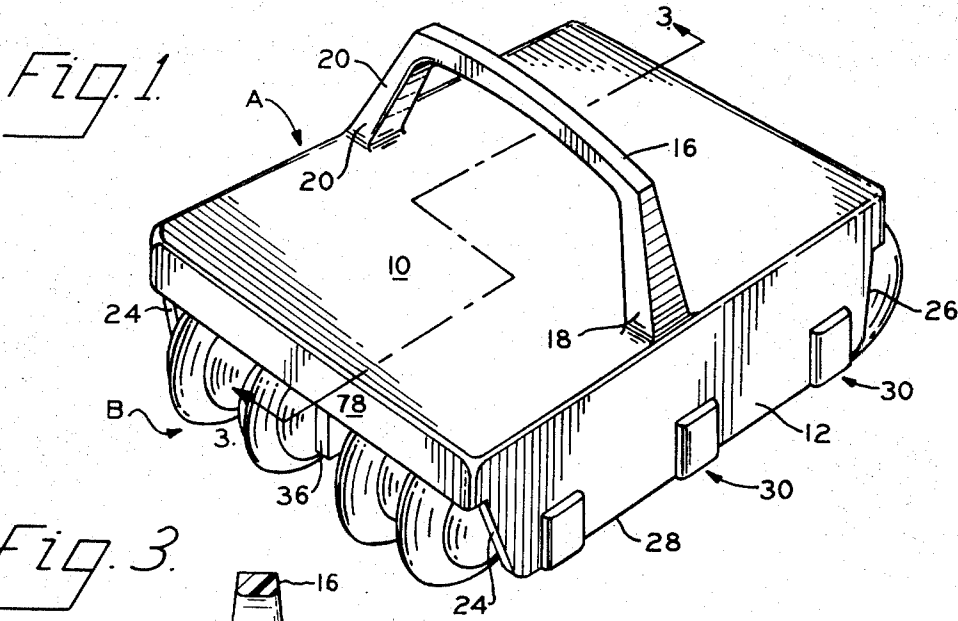
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[57] **ABSTRACT**

A mechanical muscle massager comprising a molded plastic body having a plurality of rows of roller elements disposed therealong and protruding therefrom for engagement with the area of the human anatomy which is to be massaged. The plastic body includes an integrally molded handle, integrally molded roller element axle retaining means and an integrally molded axle supporting gusset therein. The roller elements themselves are constructed from hard rubber and are rotatably received in a side-by-side relationship on axles which are disposed to extend transversely across the body. The roller elements converge inwardly from the hub portion to a rounded circumferential edge surface so as to prevent the body skin from being pinched between adjacent roller elements.

**6 Claims, 4 Drawing Figures**





**MECHANICAL MUSCLE MASSAGER**

This application pertains to the art of therapeutic devices and more particularly to muscle treatment devices.

The invention is particularly applicable as a mechanical muscle massager and will be described with particular reference thereto; however, it will be appreciated that the invention has broader applications in the therapeutic art as will become apparent to those skilled in that art.

Mechanical muscle massagers of the general type to which the subject invention is directed have been known and used heretofore. However, these previous therapeutic devices have had several disadvantages. Primarily, the previous devices have been expensive to manufacture and, therefore, expensive to purchase for the user; have been relatively complicated requiring a substantial number of component parts; and, have been discomforting to the user as the massaging elements have had a tendency to "pinch" the human skin as the massaging device was passed in massaging contact thereover. Further, and because of the shape and dimension of the massaging or roller elements, many of the prior devices were not adaptable to simultaneously massaging on both sides of the human spine longitudinally therealong as the devices included no means to permit spanning of the spinal area during the massaging process.

The present invention contemplates a new and improved device which overcomes all of the above referred to problems and others and provides a new mechanical muscle massager which is simple to manufacture, simple to use, is lightweight and provides a massaging action which is both comfortable and therapeutic in nature.

In accordance with the present invention, there is provided a mechanical muscle massaging device which includes a molded plastic body having a top wall and at least a pair of spaced apart, generally parallel, downwardly depending side walls having lowermost edges spaced remote from the top wall. A plurality of rows of roller elements are spaced longitudinally along and generally transversely between the side walls adjacent the lowermost edges so that a portion of the roller elements extend below the edges. The rollers in each of the plurality of rows are disposed on an axle in a side-by-side relationship with the other rollers in the associated row. Each of the roller elements has a generally centrally disposed hub portion and an outer circumferential surface with the side walls of the roller elements being dimensioned so as to converge from the hub portion toward the outer peripheral surface. The device also includes means for retaining the roller elements in the plurality of rows and means for gripping the molded plastic body for manipulating the device against the human anatomy.

In accordance with a limited aspect of the present invention, the retaining means, a roller element support means and the gripping means are all molded integrally with the body.

In accordance with another limited aspect of the present invention, the outer peripheral surface of each roller element is rounded so as to provide additional comfort during the massaging action.

The principal object of the present invention is the provision of a new and improved mechanical muscle massager which is simple to manufacture.

Another object of the present invention is the provision of a new and improved mechanical muscle massager which has a minimum of component parts.

Still another object of the present invention is the provision of a new and improved mechanical muscle massager which is simple and effective in its use.

Another object of the present invention is the provision of a new and improved mechanical muscle massager which may be employed to span the spinal area during the massaging action.

Yet another object of the present invention is the provision of a new and improved mechanical muscle massager in which the human skin will not be pinched during the massaging action.

The invention may take physical form in certain parts and arrangements of parts, a preferred embodiment of which will be described in detail in this specification and illustrated in the accompanying drawings which form a part hereof and wherein:

FIG. 1 is a perspective view of the mechanical muscle massager of the subject invention;

FIG. 2 is a bottom view of the subject massager;

FIG. 3 is a cross sectional view of the massager shown in FIG. 1 taken along lines 3—3; and,

FIG. 4 is an end view of the subject massager.

Referring now to the drawings wherein the showings are for purposes of illustrating the preferred embodiment of the invention only and not for purposes of limiting same, the FIGURES show a muscle massager comprised of a body A having disposed in an operative combination a plurality of roller or massaging elements B.

Specifically, body A includes a top wall 10 having a pair of spaced apart and generally parallel side walls 12,14 depending downwardly along the side edges therefrom. A gripping handle 16 extends outwardly from top wall 10 in the opposite direction from side walls 12,14 and is attached to the top wall at points 18,20. It is preferred that gripping handle 16 extends transversely across top wall 10 for ease of manipulation as will hereinafter become readily apparent.

Side walls 12,14 each include downwardly extending side edges 24,26 converging from the top wall toward a lowermost edge 28. The reason for this converging configuration will also hereinafter become apparent. Disposed along the lowermost edges 28 of the side walls are a plurality of U-shaped axle retaining channels generally designated 30. These channels are designed to extend from the lowermost edges upwardly and partially toward top wall 10. The retaining channels each include a closed end 32 which extends outwardly from side walls 12,14 and an open end 34 which extends inwardly from side walls 12,14 and toward each other. The width of the channel itself is dimensioned so as to closely embrace a roller element axle which is received therein as will hereinafter be more fully described. It should be noted that each of the axle retaining channels 30 in one of the side walls is generally transversely aligned with a retaining channel in the other side wall. It should also be noted that in the preferred embodiment of the invention shown in the drawings and disclosed herein, there are three of the retaining channels spaced longitudinally along each of side walls 12,14.

Disposed intermediate the side walls and also depending downwardly from top wall 10 is an axle support gusset 36. This gusset acts to support the roller ele-

ment axles as will hereinafter become apparent and to also provide additional spacing between two of the adjacent roller elements in each in order that the spinal area of the human back may be spanned during the massaging action. Spaced along gusset 36 are a plurality of axle receiving channels 38 which have reinforcing areas 40,42 disposed along each side thereof. It should be here noted that gusset 36 does not depend downwardly from the top wall as far as side walls 12,14 and that a channel 38 is provided in transverse alignment with each pair of transversely aligned axle retaining channels 30 in the side walls.

In accordance with the present invention, body A, including top wall 10, side walls 12,14, gripping handle 16, axle retaining channels 30 including portions 32,34, and axle support gusset 36 including axle receiving channels 38 and portions 40,42 are molded integrally in one operation to reduce the number of component required for the device. Preferably, body A is molded from a plastic material such as, and by way of example only, polyethylene which is readily moldable, lightweight, and flexible while still having sufficient strength to hold its shape during normal usage. Other types of plastics could, of course, also be employed without departing from the scope and intent of the subject invention.

Referring now to roller elements B, description will hereinafter be made with reference to one of these elements, it being understood that the others are identical thereto unless otherwise specifically noted. Elements B are comprised of rollers generally designated 60 which have a larger diameter dimension than width dimension and, which, in the preferred embodiment, are constructed from a hard rubber material. Other materials could, of course, be employed but it has been found that the hard rubber rollers are preferred in contact with the anatomy. Each roller 60 includes a hub area 62 and side walls 64,66 converging from the hub area toward a rounded circumferentially extending peripheral surface 68.

Each roller 60 includes a bushing 70 thereon of a type which is known in the art and which may be received in a rotatable relationship over an axle member.

In the subject invention, three axles 76 which may be constructed from cold rolled steel rod or the like are employed to mount the roller elements relative to the body. These axles are of sufficient length to extend between the associated aligned axle retaining channels 30 in side walls 12,14 and are of a diameter such that they will be closely received in at least channels 30 and, if so desired, closely received in channels 38. The close fitting relationship between the axles and channels is, of course, determined prior to the manufacture of the body. By the term "closely received," it is meant that there is a force fit between the axles and channels in order that the axles will be retained in the desired position within body A.

As can best be seen in FIGS. 2 and 4, in the preferred embodiment of the subject invention there are four rollers 60 in each of the three rows with gusset 36 dividing the rollers in each row into two sections each having two rollers therein. As will also be seen in these FIGURES, hubs 62 of the outermost rollers in these sections engage open ends 34 of the associated channels 30 and the hubs of the adjacent inner rollers and hubs 62 of the inner rollers abutt the adjacent outer rollers and reinforcement areas 40 or 42. However, it

should be noted that there is sufficient clearance in these abutting relationships in order that the rollers may freely turn during the massaging action.

In using the subject device, the person who is to do the massaging may grip the device at handle 16 and place roller elements B against the area of the human anatomy to be massaged. The massaging action is achieved by pushing downwardly so that the roller elements are in firm contact with the anatomy and by simultaneously reciprocating the device over that portion of the anatomy which is to be massaged. The channel like area defined between those roller elements in each row abutting reinforcement areas 40,42 of gusset 36 provide means whereby the spinal area of the anatomy may be spanned in order to simultaneously massage both sides thereof longitudinally therealong. It should also be noted that the convergence of edges 24,26 of side walls 12,14 and side walls 64,66 of rollers 60 prevent the human skin from being scraped by the leading edges of side walls 12,14 or from being pinched between adjacent rollers 60 during massaging. Likewise, rounded peripheral edge surfaces 68 of the rollers prevent cutting or scratching of the skin.

Although body A and roller elements B may be of any desired dimension so as to accommodate the number and size of rollers desired, it has been found, and as shown in the preferred embodiment, that three rows of rollers 60 with each row having four rollers therein proves most satisfactory. Further, it has also been found that it is most desirable to use rollers having a diameter of approximately 1 1/2 inches, although it is not an absolute necessity therefor in order to accomplish the objects and intentions of the subject invention. Likewise, and if desired, downwardly depending end walls 78,80 may also be molded integrally with body A in order to present a neater and more appealing device.

The invention has been described with reference to a preferred embodiment. Obviously, modifications and alterations will occur to others upon the reading and understanding of this specification. It is my intention to include all such modification and alteration insofar as they come within the scope of the appended claims or the equivalents thereof.

Having thus defined my invention, I now claim:

1. A mechanical muscle massaging device comprising:
  - a molded plastic body having a top wall and at least a pair of spaced apart, generally parallel downwardly depending side walls, said side walls having lowermost edges;
  - a plurality of spaced apart rows of roller elements disposed longitudinally along and extending generally transversely between said side walls adjacent said lowermost edges, the roller elements in each of said plurality of rows being disposed in a side-by-side relationship with the other rollers in the associated row with portions thereof extending below said lowermost edges;
  - said roller elements each having a generally centrally disposed hub portion and outer circumferential surface, the side walls of said roller elements each being dimensioned so as to converge from said hub portions toward said outer peripheral surfaces;
  - means for retaining said roller elements in said plurality of rows; and,
  - means for gripping said body for operatively manipulating said device, said means for retaining said

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roller elements in said plurality of rows comprising roller element axles adapted to receive said roller elements thereon, said side walls of said body further including means integral therewith for retainingly receiving said axles in said desired rows, said body further including an axle support gusset depending downwardly from said top wall generally between and parallel to said side walls, said gusset being molded integrally with said body and including means for supporting said axles.

2. The device as defined in claim 1 wherein said receiving means comprise elongated slot-areas in at least said side walls extending generally upwardly from said lowermost edges toward said top wall, said slots being dimensioned to closely embrace said axles in a tight fit-

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ting relationship therewith.  
3. The device as defined in claim 2 wherein the outer circumferential surfaces of said roller elements are transversely radiused.  
4. The device as defined in claim 3 wherein said roller elements are constructed from a hard rubber-like material.  
5. The device as defined in claim 2 wherein said gripping means comprises a handle member extending outwarding from said body in a direction opposite from said side walls.  
6. The device as defined in claim 5 wherein said handle member extends generally transversely across said body and is molded integrally therewith.

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