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[54] **MASSAGING MACHINE**

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[52] **U.S. Cl.** ..... **128/44,** 128/52, 128/62 R

[51] **Int. Cl.** **A61h 7/00**

[58] **Field of Search** 128/24, 51–55, 128/44, 48–50, 45–47, 62

[56] **References Cited**

UNITED STATES PATENTS

1,680,989	8/1928	Hibner	128/55
2,826,763	3/1958	Bass	128/55 UX
3,078,843	2/1963	Brisson	128/52

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Attorney, Agent, or Firm—Hill, Sherman, Meroni, Gross & Simpson

[57] **ABSTRACT**

A massage device comprising a plurality of massaging elements, preferably of spherical configuration, each of which is suspended by a non-rigid line from a common supporting structure which is laterally reciprocable, whereby such massaging elements may be drawn back and forth across a surface to be massaged, disposed in the path of such elements.

9 Claims, 3 Drawing Figures

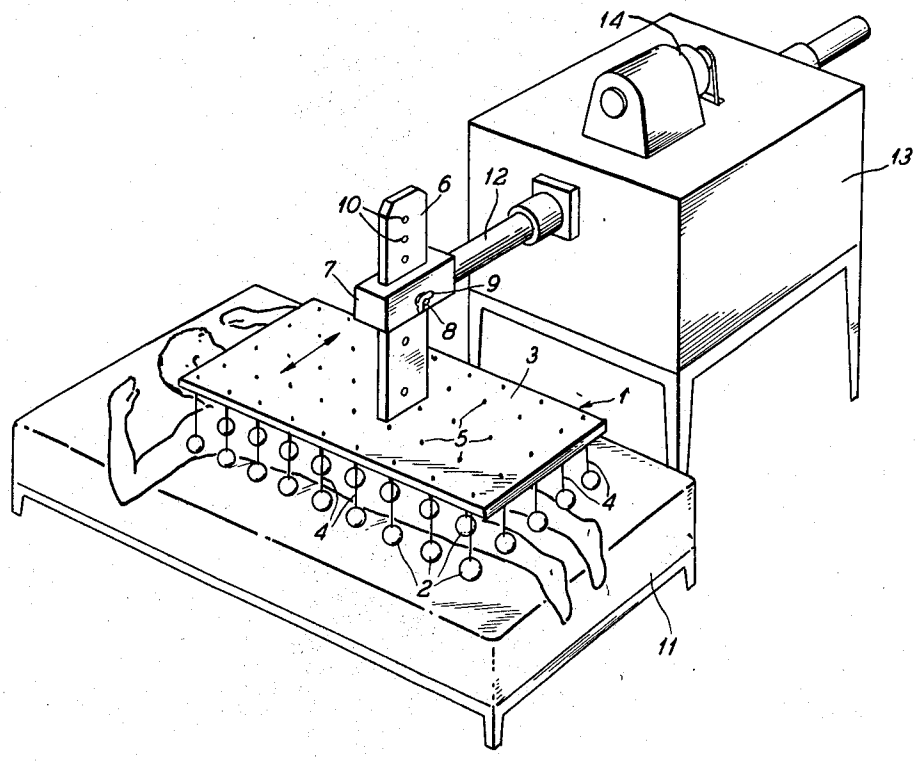


Fig. 1

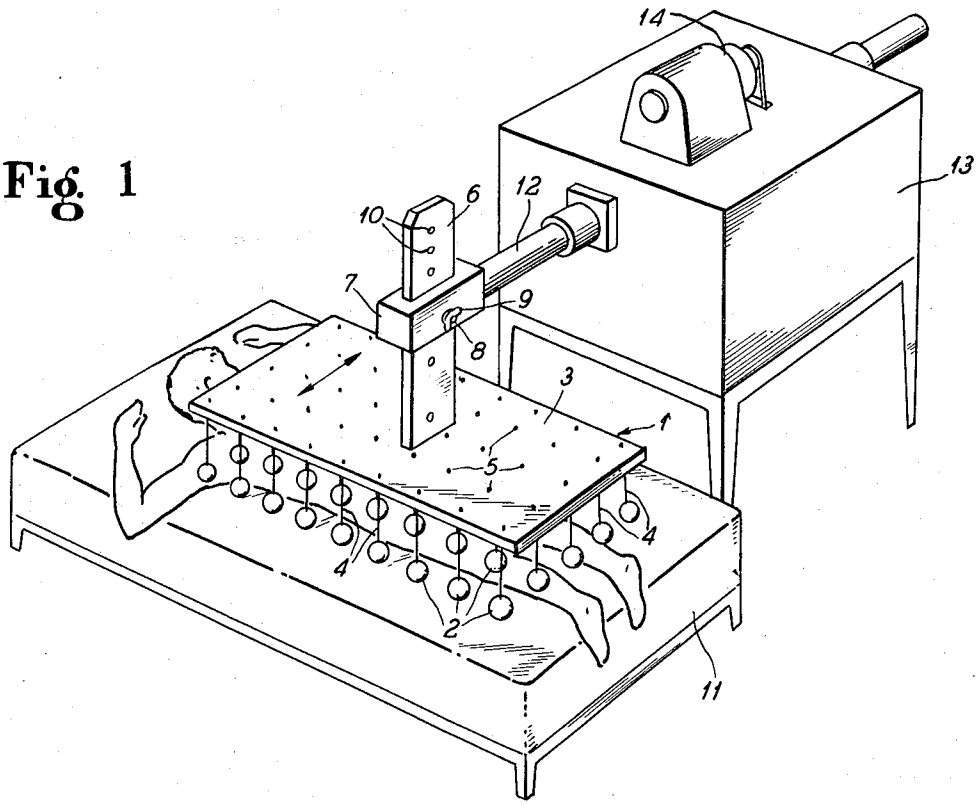


Fig. 2

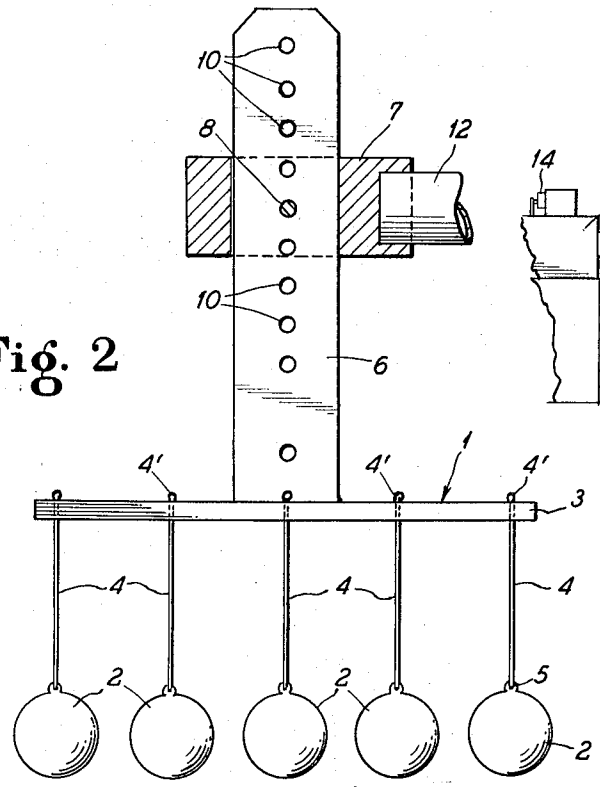
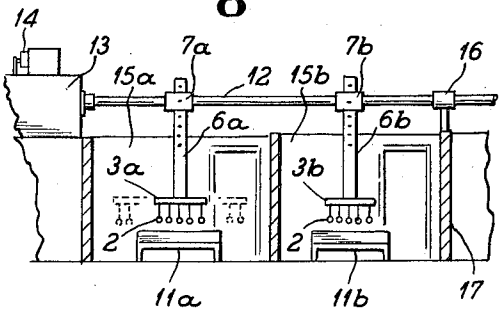


Fig. 3



MASSAGING MACHINE

BACKGROUND OF THE INVENTION

The invention is directed to a power driven massage device utilizing a plurality of massage elements, preferably of sphericalconfiguration, in which the massaging elements are drawn across a body surface to be massaged, the construction readily adapting itself for multiple usage whereby a plurality of persons may be simultaneously individually massaged.

In the past, numerous massage devices have been designed, some of which utilized spherical or similar members, with the messaging elements, either acting directly on the skin surface or through other layers or padding or the like. In most instances such massaging elements are in the form of rollers which are rotatably mounted for rolling action either on the surface to be massaged or on means operative to transmit the massaging motion from the rollers to the surface to be massaged.

U.S. Pats. No. 3,205,887 and No. 3,405,709 illustrate typical examples of massage devices wherein ball-like rollers act upon a padded surface from which the massaging action is transferred to the massaged body. U.S. Pats. No. 2,439,292 and No. 2,976,867 illustrate devices wherein massage rollers are adapted to directly engage the body of the user, the last-mentioned patent also disclosing the use of rollers which are contoured to more or less correspond to an elongated series of ball-like members.

Devices also have been designed, for example, for portable use, which involve a hand-held structure employing massaging elements of more or less ball or spherical configuration, examples of such type of device being illustrated in U.S. Pats. No. 2,306,424, No. 2,629,374 and No. 2,895,469.

It will be appreciated that where the massaging action takes place below the supporting surface of the user, the massaging action is in opposition to the weight of the person and positive action is involved, i.e., the massaging elements are positively moved through predetermined motions, whereby there is basically no control over the pressure applied to the body of the user. Where hand held structures are involved the pressure is dependent upon the amount of pressure applied by the operator of the device, and again the motions of the massaging elements may involve a fixed mechanical pattern. Further, it is desirable that the use of individual operating personnel be eliminated, and that the intensity or force applied in connection with the massaging action be independent of the size and weight of the person receiving the same.

SUMMARY OF THE INVENTION

The present invention is directed to a massage device which is adapted to produce a massaging action on a person disposed therebelow, i.e., the massaging action takes place on the uppermost portions of the body, as distinguished from the portion of the body which is supported. In addition, the massaging elements which, for example, may be in the form of ball-like members, are individually supported by flexible lines or cords whereby, during the massaging operation, they are drawn or dragged across the body of the user, so that the massaging force is dependent upon the weight of the massaging elements and the movement imparted thereto during operation of the device, independently of the size or weight of the user. Further, as the massaging elements are unrestricted, other than as to their downward movement, they may readily move in any direction to accommodate to the contour etc. of the user, and as a result of the unconfined suspension of the massaging elements they will not necessarily follow an identical pattern or action during repeated movements over the body of the user, eliminating a monotonous, repetitous type of action.

The device also is so designed that the elevation of the balls may be selectively varied with respect to the surface to be massaged, again providing variations in the massaging action and sensations imparted to the user.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings wherein like reference characters indicate like or corresponding parts;

FIG. **1** is a perspective view of a massaging device embodying the present invention, schematically illustrating its application to the body of a user;

FIG. **2** is a side elevational view of a massaging structure, illustrating the construction of the massaging elemtnts, the supporting structure with the connection thereof to the reciprocating mechanism being illustrated in section; and

FIG. **3** is a schematic view illustrating the application of the present invention to multiple massaging operations, utilizing a single reciprocating mechanism and power source therefore.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and more particularly to FIGS. **1** and **2**, the reference numeral **1** indicates generally a supporting structure for a plurality of massaging elements **2** each illustrating as being of generally spherical configuration. The supporting structure **1**, in the embodiments illustrated, is in the form of a generally planar sheet or board **3** of sufficient rigidity, and suitable size to accommodate sufficient number of massaging elements **2** to effect a desired massaging operation. In the construction illustrated, the board **3** is approximately two feet in width and four feet in length having suspended therefrom five rows of eight balls each. Each massaging element **2** is adapted to be supported in depending relation from the board **3** by a line or cord **4**, secured at its lower end to the element **2**, for example by means of an eye **5** thereon, with the opposite end of the cord passing through a suitable bore in the board and provided with an enlarged end or knob **5** of a size to prevent disengagement of the cord with the board.

The board **3** is rigidly secured to the lower end of a supporting member **6**, illustrated as being of generally rectangular cross-sectional configuration, and adapted to be vertically slidable in the fitting **7** in which it may be rigidly secured, in any one of a plurality of positions, by suitable means as for example a bolt **8** and cooperable wing nut **9** passing through the member **7** and any one of a plurality of holes **10** in the member **6**. Thus by selection of a suitable hole **10**, the massaging elements may be suitably adjusted vertically with respect to the body of the user, who normally will be supported by a suitable couch or cot **11**.

The massaging structure thus far described is adapted to be supported for reciprocation by a suitable mem-

ber, illustrated as being an elongated tubular structure **12** which is reciprocably mounted in a suitable supporting structure **13**, provided with a reciprocating mechanism (not illustrated) powered by a motor **14**, whereby the shaft **12** may be axially reciprocated through a desired stroke. The specific details of the reciprocating mechanism is not illustrated as such types of mechanism are well known for any many purposes involving reciprocating elements, for example eccentric arrangements, helical or screw drive etc. It will be apparent that the drive means for the member **12** may be of relatively low power as the movable elements of the massaging device can be of relatively light construction, merely sufficient to adequately support the massaging elements **2** throughout their travel. Likewise, the reciprocating drive mechanism may be adjustable to provide operating strokes of different lengths. A very simple type of an adjusting mechanism for such purpose is that found on adjustable stroke metal shapers and the like employing reciprocating work heads.

Preferably, the stroke could be adjustable from a movement of one or several inches to a travel sufficient to move all of the massaging elements across the body of the user. For average usage, an adequate massaging action may be achieved by a travel of from 12 to 18 inches. This in turn, would depend to some extent on the vertical positioning of the massaging elements with respect to the surface to be massaged.

It will be noted that in all instances the massaging action is derived from the weight and movement of the massaging element as they are drawn across the user's body and thus are independent of the weight of the user as compared with prior devices in which the user is supported on the massaging elements and thus the latter must be capable of supporting the weight of the user as well as imparting the desired movement under such load. It will be apparent that in such case a relatively more powerful motor and drive mechanism would be involved, ascompared with that of the present invention in which the supporting structure for the massaging elements need have sufficient strength merely to carry the weight of such elements and efficiently support them during their travel.

It will be appreciated that the massaging element may be of any suitable construction, for example of molded ruber or other suitable material either rigid or semi-resilient,in dependence upon the particular application and the effect desired. Likewise massaging elements of different weights could be provided to vary the massaging effect.

It will be particularly noted that in addition to the advantages mentioned, the device is relatively noiseless, smooth in operation without jarring effect on the person's body and requires no complicated drive mechanisms or the like, or relatively heavy motors.

Further, as the massaging action takes place above the body it can be visually observed and the desired intensity or effect readily adjusted by varying the vertical positions of the massaging elements, as previously described.

While I have illustrated an embodiment of the invention which is adapted to massage substantially the entire body from head to foot, the device may be proportioned to massage only a desired portion of the body. In this connection, the supporting board **3**, could for example, be divided into two removable sections, whereby either or both section could be employed.

It will be appreciated that the present invention also readily adapts itself to multiple massaging operations, merely by utilizing a reciprocating member **12** of sufficient length to accommodate the desired number of supporting boards and assocaited massaging elements. Such a construction is more or less schematically illustrated in FIG. **3**, which also illustrates in dotted lines a possible travel of the structure to provide maximum action over a relatively long stroke.

Referring to FIG. **3**, it will be noted that the shaft **12** is extended to span several individual massage rooms **15***a* and **15***b*, which are provided with respective couches **11***a* and **11***b*. Mounted on the shaft **12** are respectively fittings **7***a* and **7***b*, each of which is adapted to support a respective member **6***a* and **6***b*, which in turn carry corresponding boards **3** having massaging elements **2** suspended therefrom. The free outer end of shaft **12** may be suitably supported for reciprocating movements in a suitable bearing **16**, supported for example by a partition **17**.

With such type of arrangement a plurality of massaging operations may be simultaneously performed upon respective individuals, each of which is provided with the privacy of an individual room, respective couch and massaging elements. Even with a relatively large number of such massaging stations, the additional power required for operation would be comparatively small.

Having thus described my invention it is obvious that although minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such modifications as reasonably and properly come within the scope of my contribution to the art.

I claim as my invention:

1. A massage device comprising a plurality of massaging elements, a supporting structure for said elements, non-rigid lines depending from said supporting structure and connected at their lower ends to said massaging elements whereby the latter are freely movable upwardly, and laterally within the confines of said lines, means for supporting said supporting structure for lateral movement whereby said massaging elements maybe drawn across a surface to be massaged, disposed in the paths of said elements, and means for effecting such lateral movement of supporting structure and thereby of said massaging elements.

2. A massage device according to claim **1**, wherein said massaging elements are circular in transverse cross section.

3. A massage device according to claim **2**, wherein said massaging elements are spherical.

4. A massage device according to claim **1**, wherein said supporting structure is verticaly adjustable for adjusting the vertical heights of the massaging elements relative to a surfacr to be massaged disposed therebelow.

5. A massage device according to claim **1**, wherein said supporting structure comprises a generally horizontal platform from which said lines depend, said supporting means therefor comprising an elongated member to which said supporting structure is adjustably connected, and said lateral moving means comprises means for longitudinally reciprocating said elongated member.

6. A massage device according to claim **5**, wherein said reciprocable member is of a length to accommo-

date a plurality of said supporting structures and massaging elements, whereby a plurality of massaging operations can be effected on a plurality of different users.

7. A massage device according to claim **6,** wherein said massaging elements are uniformly laterally spaced relative to one another.

8. A massaging device according to claim **7,** wherein

said massaging elements are disposed in a common horizontal plane.

9. A massaging device according to claim **1,** wherein said massaging elements are uniformly spaced relative to one another and are disposed in a common horizontal plane.

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