

May 12, 1953

J. F. NANTZ  
MASSAGING DEVICE

2,638,090

Filed Feb. 5, 1952

2 Sheets-Sheet 1

Fig. 1.

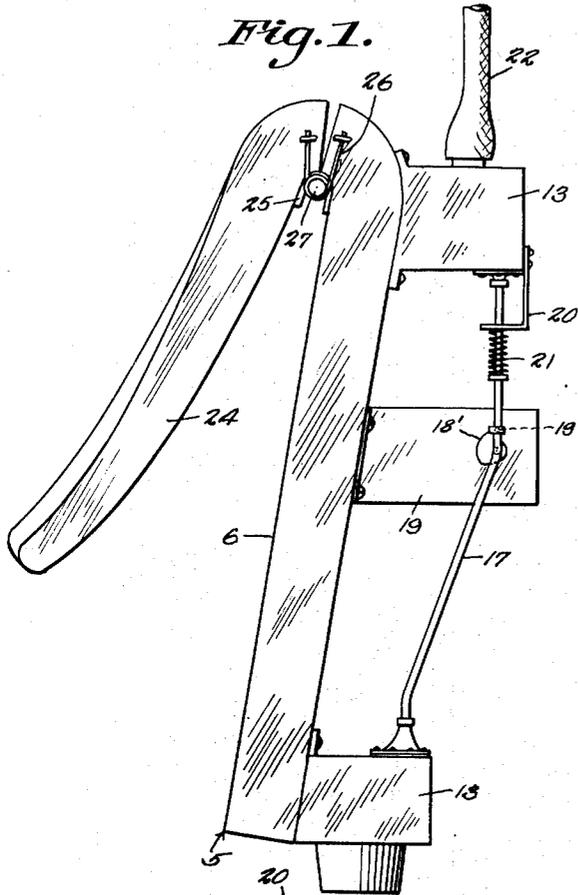


Fig. 2.

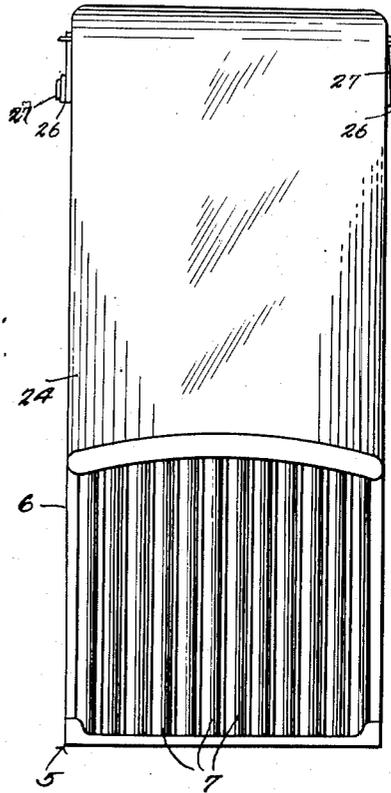
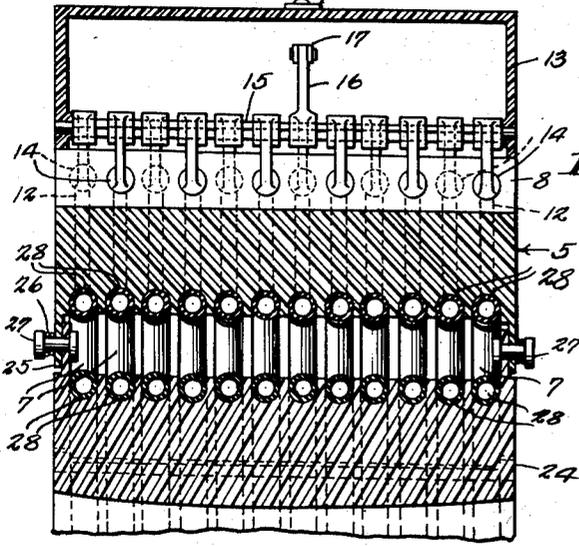


Fig. 4.



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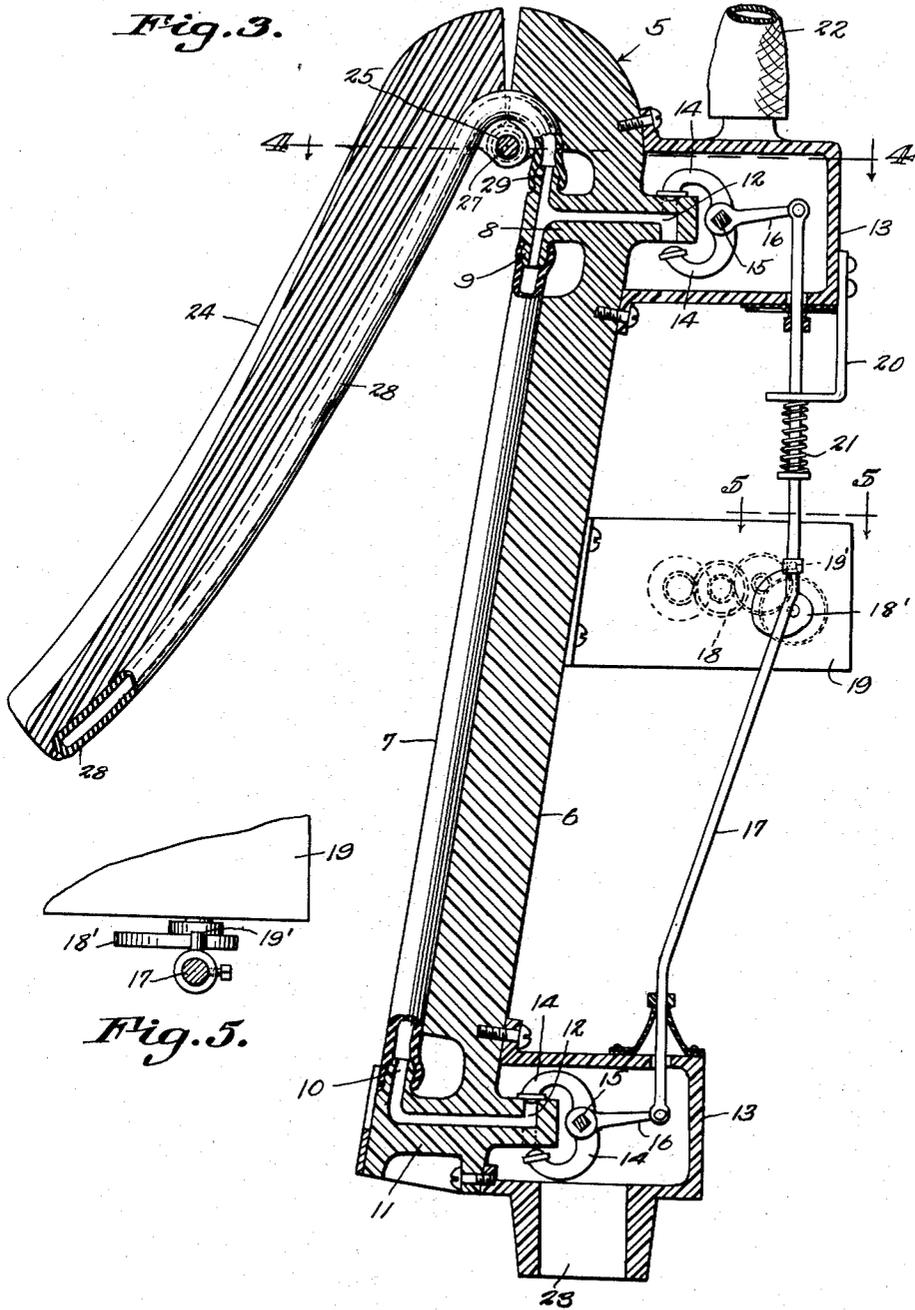
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# UNITED STATES PATENT OFFICE

2,638,090

## MASSAGING DEVICE

John F. Nantz, Washington, D. C.

Application February 5, 1952, Serial No. 270,050

5 Claims. (Cl. 128—60)

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This invention relates to a massaging apparatus designed primarily for foot massaging to exercise and massage the muscles and joints of the feet.

The primary object of the invention is to provide an apparatus of this character which will be automatic in operation, and one wherein the exercising and massaging effect will be accomplished through the medium of water impulses directed to expansible tubes against which the foot is held during the massaging and exercising treatment.

An important object of the invention is to provide a support for the foot during treatments, which support is made up of a series of tubes arranged side by side in close proximity with each other, with means for controlling the intermittent passage of water to the tubes, expanding and contracting the tubes at such intervals as to cause a massaging or exercising effect on the foot under treatment.

Another object of the invention is to provide a support for the foot which embodies a stationary section against which the bottom of the foot rests, and a pivoted section connected thereto adapted to yieldably engage the top or instep portion of the foot.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing:

Figure 1 is a side elevational view of an apparatus, constructed in accordance with the invention.

Fig. 2 is a plan view thereof.

Fig. 3 is a longitudinal sectional view through the apparatus.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a sectional view taken on line 5—5 of Fig. 3.

Referring to the drawings in detail, the apparatus comprises the body portion indicated generally by the reference character 5, the body portion including the stationary section 6 which is formed with a substantially straight foot-engaging surface made up of a plurality of rubber or expansible plastic tubes 7, which tubes extend throughout substantially the entire length of the

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stationary section. These tubes are arranged in parallel relation with respect to each other and in such proximity with respect to each other that a substantially flat surface is provided against which the bottom of the foot rests, during the treatment.

The bottom section 6 is formed with the extension 8, which is bored and constructed to provide a plurality of couplings 9 over which one of the respective ends of the tubes 7 are positioned, the couplings 9 being arranged in a line along the extension 8. The lower ends of the tubes 7 are positioned over the couplings 10 of the extension 11, which extension is bored, establishing communication with the couplings 10, as clearly shown by Fig. 3 of the drawings. The extensions 8 and 11 extend beyond the rear surface of the stationary section 6 and are provided with valve seats formed at the ends of the bores 12 of the extensions, the valve seats being arranged in lines along the upper and lower surfaces of the extensions 8 and 11, providing upper and lower rows of valve seats. The ends of the extensions 8 and 11 that extend rearwardly from the stationary section 6, are disposed within the valve housings 13 in which the double valves 14 operate, the double valves being so constructed and arranged within the housings 13 that they will move to close the bores 12 at one side of the extensions, while the bores 12 or valve seats at the opposite sides of the extensions are open. The double valves 14 are mounted on the shafts 15, to move with the shafts 15 as the shafts rotate. Extending from the shafts 15 are arms 16, to which a rod 17 is connected, the rod 17 being moved vertically through the gearing 18 operated by a suitable motor in the gear housing 19. The gearing 18 includes cam 18' that moves in contact with the pin 19' extending from the rod 17 so that with each rotation of the cam 18' the rod 17 will be reciprocated to operate the valves 14 controlling the flow of water to and from the tubes 7 and 28. One end of said rod 17 operates through the bracket 20 that is secured to the housing 13 at one end of the stationary section 6, the rod 17 being biased in one direction by means of the coiled spring 21. The reference character 22 indicates a fluid inlet pipe which maintains a volume of fluid in the housing 13 at one end of the section 6, from which fluid flows through the bores 12 at one end of the section 6, the fluid passing through certain of the tubes 7, the fluid finally exhausting through bores 12 formed in the extensions 11 at the opposite end

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of the stationary section 6, from which the fluid exhausts through the outlet 23.

Forming a part of the apparatus, is the curved instep contacting section 24, which is pivotally connected with the stationary section 6, by means of a hinge 25, there being provided a coiled spring 26 wrapped around the pivot pin 27 forming a part of the hinge 25, with one of its ends secured to the stationary section, while the opposite end is secured to the curved instep contacting section, normally urging the curved instep contacting section inwardly towards the section 6.

The section 24 provides a support for the expansible tubes 28 which connect with the extension 8 through the couplings 29, so that fluid will pass through the tubes 28 to expand them, as the fluid passes into the communicating tubes 7 of the stationary section.

Thus it will be seen that due to the construction shown and described, I have provided an apparatus in which a foot to be treated may be positioned, and whereupon the fluid under pressure is directed to the tubes 7 and 24, alternately expanding and contracting the tubes to provide a massaging and exercising movement for treating the foot.

Having thus described the invention, what is claimed is:

1. A foot massaging device comprising a body including a stationary section and a movable section between which the foot is positioned, means for urging the movable section towards the stationary section clamping the foot therebetween, flexible tubes covering the inner surfaces of the sections contacting with the foot positioned within the body, and means for intermittently admitting and exhausting fluid from the device, expanding said tubes against the foot.

2. A foot massaging device comprising a body including a stationary section and a movable section between which a foot is clamped, a plurality of parallel flexible tubes extending across

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the body against which the foot is held, means for admitting fluid to the tubes, intermittently expanding and contracting adjacent tubes massaging the foot held within the body.

3. In a massaging device comprising a body including a stationary section and a section pivotally connected with the stationary section between which the foot is gripped, a plurality of parallel flexible tubes extending longitudinally of the sections and providing a foot contacting surface, means for admitting fluid under pressure to said tubes intermittently expanding the tubes into contact with the foot, and valves for releasing fluid from the tubes.

4. A foot massaging device comprising a body including a stationary section and a movable section pivotally connected with the stationary section, a plurality of parallel flexible tubes extending longitudinally of the sections providing a foot contacting surface, said tubes being arranged in groups, means for supplying fluid intermittently to the groups of tubes and exhausting fluid from said groups of tubes, massaging the foot held therein.

5. A foot massaging device comprising a body including a stationary section and a section pivotally connected with the stationary section, means for urging the pivoted section towards the stationary section clamping a foot therebetween, extensions formed at the upper and lower ends of the stationary section, flexible tubes connected with the extensions and extending over the inner surfaces of the stationary section and pivoted section, said tubes contacting with the foot held within the body, said extensions having bores through which fluid passes to the tubes, valves controlling the passage of fluid to and from said extensions, and means for intermittently operating the valves effecting intermittent expansion and contraction of the tubes massaging the foot within the body.

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No references cited.