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B. STREZOFF

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MASSAGING VIBRATOR

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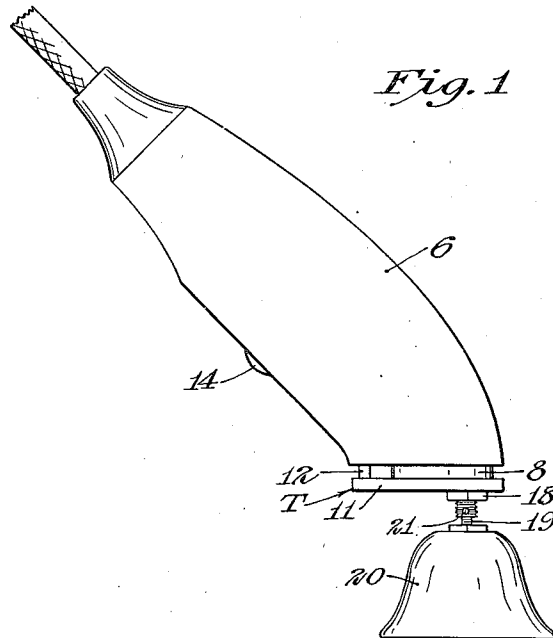


Fig. 1

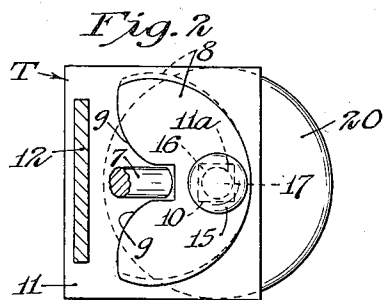


Fig. 2

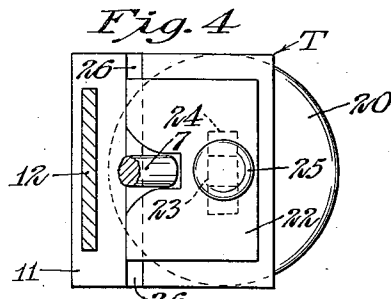


Fig. 4

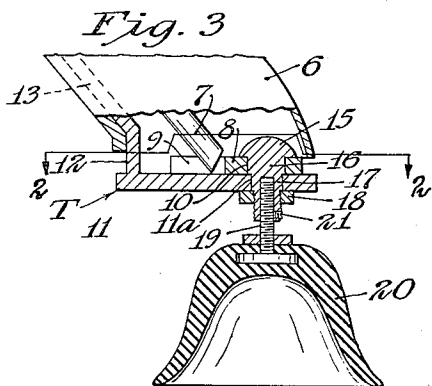


Fig. 3

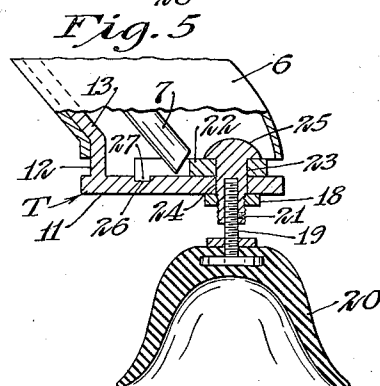


Fig. 5

Inventor
Bogolia Strezoff
By Williamson & Williamson
Attorneys

UNITED STATES PATENT OFFICE

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MASSAGING VIBRATOR

Bogoia Strezoff, Minneapolis, Minn.

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9 Claims. (Cl. 128—49)

This invention relates to massaging vibrators of that general type which customarily utilizes a portable electric vibrating motor with a massaging cup operatively secured thereto.

It is an object of my invention to provide a massaging device whose action may be oscillatory along a curved line or longitudinal reciprocation in a straight line.

It is a further object of my invention to provide quickly interchangeable means for producing either oscillation or reciprocation in connection with the same vibratory motor.

It is a still further object of my invention to provide a massaging vibrator which is capable of using a conventional motor used for electric hair clippers by barbers.

These and other objects and advantages will become apparent from the following description made in connection with the accompanying drawing, wherein like reference characters refer to similar parts throughout the several views, and, in which:—

Fig. 1 is a side elevation of the assembled device;

Fig. 2 is a section taken on the line 2—2 of Fig. 3;

Fig. 3 is a vertical section through the lower part of the vibrator with part of the motor casing broken away;

Fig. 4 is a modification of the structure shown in Fig. 2; and

Fig. 5 is a vertical section of the modified form taken similarly to the view in Fig. 3.

In the drawing, I have shown a conventional type of portable vibratory motor casing 6, such as is generally used for enclosing an electric magnetic motor used for operating hair clippers. Since the motor is of standard construction well known to the art, it is not disclosed in this application. Connected to and extending downwardly from the motor, is a power take-off arm 7, which terminates approximately at the open lower portion of the casing 6.

In the form shown in Figs. 2 and 3, there is provided a movable plate 8 provided with a notch 9 in one of its edges. The inner portion of said notch is adapted to receive the end of the power take-off arm 7 and is of a width slightly greater than the thickness of said arm. The outer portion of the notch 9 is flared outwardly to the edge of the plate 8 to provide clearance when the arm and plate are moved relative to each other. An aperture 10 of rectangular shape is formed near the opposite edge of the notched plate.

This plate is supported by the tongue-like member T which includes a horizontal lower portion 11, a short intermediate vertical portion 12 extending upwardly from one side of the horizontal portion and an upper portion 13 extending upwardly in a diagonal direction and adapted to be inserted in or otherwise secured to the motor casing 6. It is suggested that the diagonal upper portion of this tongue-like supporting member may extend into the casing 6 and be secured by any well known type of spring caps which may be releasable by a push-button 14. The particular securing means is immaterial and has not been shown.

The horizontal portion 11 of the tongue-line support T is provided with a circular aperture 11a. A bolt 15 is provided with a head at its top and includes a rectangular section 16 adapted to fit the aperture 10 in the notched plate 8 and below this section the bolt is rounded at 17 to fit the circular aperture 11a in the horizontal support portion 11. This bolt is threaded externally below the rounded section 17 to receive a suitable locking nut 18.

The bolt 15 has an internal threaded bore adapted to receive the threaded pin 19 which may be formed integrally with or suitably secured to the massaging cup 20. I prefer that this cup be made of a soft resilient material such as rubber. A set screw 21 is provided to retain the threaded pin 19 in the internally threaded bolt 15.

Referring to the embodiment in Figs. 4 and 5, the notched plate 22 is provided with a square aperture 23 in place of the circular aperture 10 in the other embodiment and the horizontal portion 11 which supports the plate 22 is provided with an elongated rectangular aperture 24. The bolt 25 is square in cross section down to the point where it emerges from the bottom of the supporting member 11 and below that point is similarly constructed and connected with the massaging cup 20, as disclosed in the first embodiment of the invention.

In said first embodiment, it will be seen that upon lateral reciprocation or vibration of the power take-off arm 7 it will act against the notched plate 8. Since this plate is pivotally secured by the bolt 15 which rotates in circular aperture 11a in the supporting member 11 and since the massaging cup 20 is also secure to the bolt 15, an oscillatory motion will be imparted to the notched plate 8 and transmitted through the bolt 15 to the massaging cup 20. The dotted lines in Fig. 2 suggest one of the

positions to which the plate 8 is moved around the pivot point formed by the bolt 15.

In Figs. 4 and 5, however, the provision of the elongated rectangular slot 24 in the plate-supporting member 11 causes the notched plate 22 to describe a straight line reciprocating motion, imparting this motion to the bolt 25 to the massaging cup. For the purpose of assisting in guiding the notched plate 22 in a straight line path, I provide a groove 26 longitudinally of the supporting member 11 which is adapted to receive a co-operating downwardly projecting rib 27 formed on the under side of the notched plate 22.

From the foregoing description, it will be seen that a pair of ordinary hair clippers may be converted into a massaging vibrator by removing the clipper blades and substituting my improved vibrator structure therefor. Furthermore, I have provided such a device which may be constructed for oscillation of the massaging cup around its center or for rectilinear reciprocation thereof.

When it is desired to remove the vibrator structure and replace it with clipping blades, it is only necessary to release the diagonally extending portion 13 of the tongue-like support T which will then slip out of the casing 6. The intermediate vertical portion 12 of the supporting element is provided to insure clearance of the forward portion of the notched plates and the heads of the bolts 15 and 25 when they are withdrawn past the edge of the casing 6.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of my invention.

What is claimed is:—

1. A massaging vibrator comprising a vibratory motor, a power take-off arm connected to said motor, a plate having a notch in one side thereof and an aperture near its other side, a support for said plate having a circular aperture therethrough in alignment with the aperture in said plate, a massaging element below said support and a bolt extending through said apertures and connecting with said massaging element, the aperture in said notched plate being of such shape as to engage said bolt against relative rotation therewith, and the aperture in said support being shaped to permit rotation of the bolt therein whereby oscillatory motion is imparted to said massaging element.

2. A massaging vibrator comprising a vibratory motor, a power take-off arm connected to said motor, a plate having a notch and a rectangular aperture therein, said power take-off arm being receivable in said notch, and adapted to impart vibration to said plate, a support for said plate having a circular aperture therethrough and aligned with the rectangular aperture in said plate, a massaging element below said support, and a bolt extending through said apertures and operatively connecting said notched plate with said massaging element, said bolt being rectangular in cross section where it lies in said rectangular aperture and being circular in cross section where it lies in said circular aperture, whereby reciprocal vibration of the power take-off arm is transmitted to provide oscillatory vibration in said massaging element.

3. A massaging vibrator comprising a vibratory motor, a power take-off arm connected to said motor, a plate having a notch in one side to receive an end of said power take-off arm and a rectangular aperture near its other side, a sup-

port for said plate having an elongated rectangular opening therein aligned with the aperture in said notched plate, a massaging element below said support, and a bolt extending through said apertures and operatively connecting said notched plate with said massaging element, said bolt being rectangular in cross section where it lies in said apertures whereby actuation of said notched plate will transmit rectilinear reciprocation to said massaging element.

4. A massaging vibrator comprising a vibratory motor, a power take-off arm connected to said motor, a plate having a notch in one side to receive an end of said power take-off arm and said plate having an aperture near its other side, a support for said plate having an aperture in alignment with the aperture in said plate, a massaging element below said support and a bolt extending through said apertures and connected to said massaging element, said apertures being so shaped relative to the cross sectional shape of said bolt that rectilinear vibration will be imparted to said massaging element.

5. A massaging vibrator comprising a casing having an opening therein, a vibratory power device in said casing, a vibratory power transmitting arm connected to said power device and extending downwardly to the bottom of said casing, a plate having a notch in one edge and an aperture near its opposite edge, said notch being adapted to receive the lower end of said power transmitting arm and being of slightly greater width than the thickness of said arm in its inner portion and flaring outwardly toward the edge of said plate, a plate supporting tongue comprising a horizontal portion whose upper face is adapted to support said plate and an angularly disposed portion adapted to be removably inserted in the opening in said casing, a massaging element below said horizontal portion, and a connection between said element and said notched plate.

6. A massaging vibrator comprising a casing having an open bottom portion, a vibratory power device in said casing, a vibratory power transmitting arm connected to said power device and extending downwardly to the bottom of said casing, a plate having a notch in one edge and an aperture near its opposite edge, said notch being slightly wider at its inner portion than the end of said power transmitting arm and adapted to receive said end and flaring outwardly from said inner portion to the edge of said plate, a support for said plate having a horizontal lower portion having an aperture therethrough and positioned adjacent the open bottom of said casing, a short upstanding intermediate portion extending from adjacent an edge of said lower portion and an oblique upper portion extending into said casing and removably held therein, a bolt extending through the apertures in said notched plate and said plate support, and a massaging element secured to said bolt.

7. A massaging vibrator comprising a motor, a power take-off arm connected to and extending from said motor, a plate having means for operatively connecting with said arm, a support for said plate having an aperture therethrough, a massaging element positioned below said support and connected to said plate, said plate being arranged for movement relative to said support, and said plate and support having means for causing relatively horizontal vibratory motion of said massaging element.

8. A massaging vibrator comprising a casing, a vibratory motor within said casing, a movable plate element operatively connected to said motor, a support for said plate comprising a portion
5 substantially flat with respect to said plate and a portion extending at an angle thereto and secured within said casing, and a massaging element connected for movement with said plate and for movement relative to said support,

whereby vibratory motion is transmitted from said motor through said plate to said massaging element.

9. The structure set forth in claim 8, and said support, plate and massaging element being detachably secured to said motor and casing and
5 being removable as a unit.

BOGOIA STREZOFF.