

Aug. 19, 1969

G. A. FORTNAM
HAND OPERATED VIBRATOR

3,461,859

Filed May 8, 1967

2 Sheets-Sheet 1

Fig. 1.

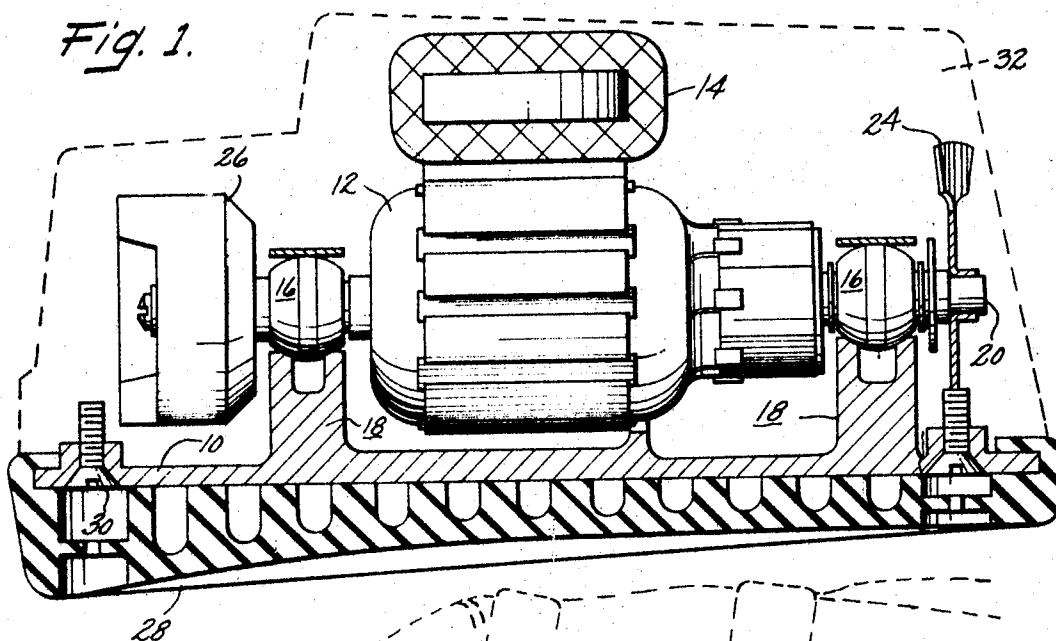


Fig. 2.

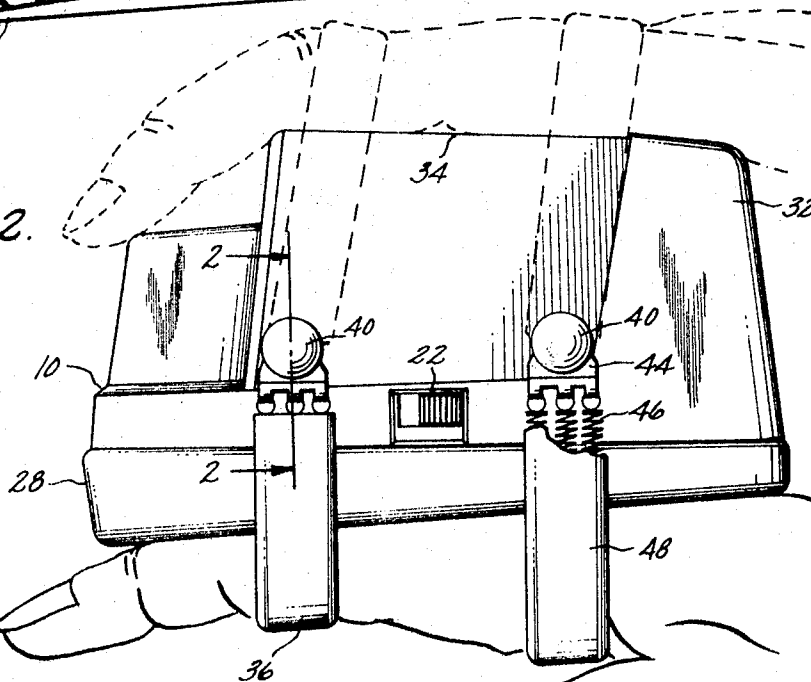
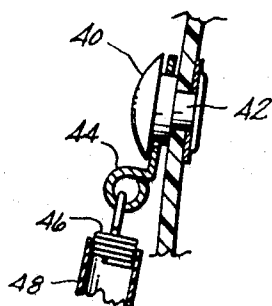


Fig. 3.



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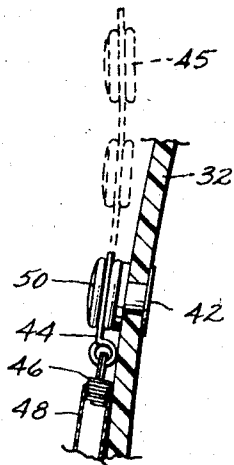
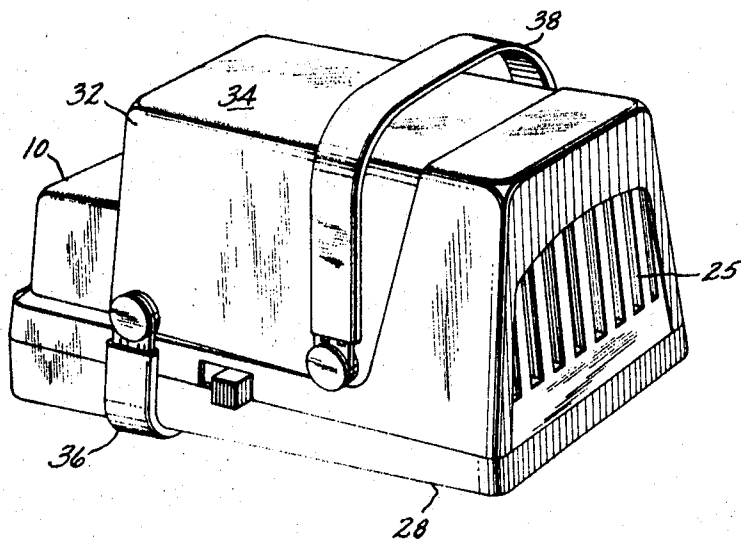
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2 Sheets-Sheet 2



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1

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7 Claims

ABSTRACT OF THE DISCLOSURE

A hand operated vibrator with an improved strap attachment for dual use of the vibrator. A pair of straps are pivotally attached to the vibrator housing so that they may hold the operator's hand to either the top or bottom of the vibrator housing.

BACKGROUND OF THE INVENTION

Field of the invention

The invention herein pertains to a hand operated vibrator and, more particularly, to a novel strap arrangement for easy use of the vibrator in dual positions by merely reversing the straps.

Description of the prior art

Various hand operated vibrators are well-known and many variations have been provided. Many of the vibrators employ an eccentric that is driven by a motor to provide a shaking or vibrating action which is transmitted through a base pad applied to a surface to be massaged. For such application, the vibrator is generally held in the user's hand and applied directly to the area to be vibrated such as a portion of the user's body. Straps are also employed whereby the vibrator may be attached to the back of the hand and the vibrations transmitted through the hand so that the hand acts as the pad to vibrate directly through the fingers. The straps may be resilient springs or non-resilient leather or vinyl-type straps. Additionally, vibrators are known that may be turned over or reversed so that the vibrator is placed between the hand and surface to be vibrated and the vibrator is held on the hand by the same straps with the vibrator reversed. Generally, the straps are of sufficient length to cover the palm and one or more fingers of the user to securely fasten the vibrator on the user's hand.

SUMMARY OF THE INVENTION

Briefly described, the present invention is directed to a hand operated vibrator that has an axially extending base that carries motor means to operate an eccentric or the like to impart vibrations to the base on operation of the motor. The invention is directed to an improvement on this generally known structure by providing a housing to enclose the vibrator, the housing having a hand grip opposite the base and a pair of U-shaped hand straps that are axially spaced along the base. Each of the straps extends transversely across the vibrator. The straps are secured to the vibrator by pivot means on each end of each strap. The pivot means provides rotation of the straps substantially 180° or around the ends of the vibrator housing whereby the straps are operable to engage in two positions; the hand of the user either on the grip portion or on the base for transmission of vibrations through the base. This is accomplished without reversing the positions of the user's hand and without reversing the position of the vibrator. The straps may be of different length, they may be adjustable lengthwise, and they may be detachable on the vibrator by clamp means. Preferably, the straps are formed of a spring means that

2

is covered with a sheath of vinyl or similar material. The preferred length of the straps is such that they may be stretched slightly to pass over the ends of the housing or may be detached when the straps are reversed to operate in an alternate position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a partial cross-sectional elevation view, partly in phantom, of the overall structural arrangement of the vibrator;

FIG. 2 is a view, similar to FIG. 1, showing the assembled vibrator with the hand straps attached with one position dotted;

FIG. 3 is a partial cross-sectional view on the line 2—2 of FIG. 2 showing the pivot structure;

FIG. 4 is a partial cross-sectional view similar to FIG. 3 showing a detachable strap clamp pivot structure with adjustment; and

FIG. 5 is a general perspective view of the assembled vibrator showing alternate positions of the straps.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring first to FIG. 1, there is shown a power-operated hand vibrator having an axially extending base 10 that may be a cast metal or die-cast phenolic resin with suitable formed bosses for support of the internal structure. A motor means 12, having a field coil 14, is supported by suitable bearings 16 on upstanding bosses 18 for rotation of shaft 20 upon application of electric power through suitable switching means 22 as seen in FIG. 2. The motor is cooled by fan 24 on one end of shaft 20 drawing air through a grill opening 25 as seen in FIG. 5. The entire structure is vibrated by an eccentric weight 26 carried on the other end of shaft 20.

In order to transmit vibrations to the user's body, there is provided a soft transmitting pad 28 that may be formed as desired and is secured to base 10 by any suitable means.

For enclosing the operating mechanism as shown in FIG. 2, there is provided a cover means 32 which may be secured to base 10 by screws 30 to form a housing for enclosing the vibrator. Conveniently, one form of securing pad 28 may be by clamping between base 10 and cover 32 as shown. Housing means 32 may also be formed in the stepped arrangement as shown in order to accommodate field coil 14 as seen in FIG. 1. Additionally, this forms a hand grip 34 generally opposite base 10 whereby the entire vibrator may be gripped in the palm of the hand as shown dotted in FIG. 2 to apply vibrations directly through pad 28 to the user's body.

In order to provide a strap arrangement that permits use of the vibrator in at least two positions without having to reverse either the user's hand or the vibrator, there is provided a pair of U-shaped front straps 36 and rear straps 38 that are normally disposed in a hanging or pendulum-like position below the base 10 as shown in FIG. 2. These straps are axially spaced along the base and each strap extends transversely across the vibrator as shown. For dual use of the straps, each end of each strap is attached to the housing by a rotatable pivot 40 that may take any suitable means as shown in FIG. 3. This may be a rivet 42 attached to the housing means 32 at any suitable place. By making the straps pivotable they will be rotatable for a purpose to be described.

Each of the straps are preferably made of different predetermined lengths in order to accommodate different parts of the user's hand as shown in FIG. 2. The shorter front strap 36 is of a suitable length to engage the center fingers and the longer rear strap 38 is intended to engage near the palm of the user's hand. As shown solid in FIG. 2, it can be seen that the vibrator is mount-

ed on the back of the user's hand and the vibrations are transmitted directly through pad 28 which serves the dual purpose of cushioning the vibrations on the hand as well as a transmitter of the vibrations to the user's fingers that are not clamped if the hand is to be used as the massager.

The construction of the individual strap is shown in FIG. 3 and the straps may be fabricated of a terminal portion 44 that is connected to a plurality of individual spring means 46 so that the strap may stretch. Lengthwise adjustment may be provided by a take-up means 45 in the form of a center buckle or snap pivots as shown in FIG. 4 or it may be omitted. In order to protect the hand of the user, a sheath-like covering means 48 of leather or vinyl or the like and of suitable length is carried by the spring means 46.

In order to use the vibrator in the alternate position shown dotted in FIG. 2 where the vibrations are transmitted directly by pad 28 to the surface of the body to be massaged, the straps 36 and 38 are preferably of a length that they may be slightly stretched to pass around the ends of the vibrator housing 32 substantially 180° to the top dotted position shown in FIG. 2 across the grip portion 34. In this position, the palm of the hand grips portion 34 and the vibrator transmits directly. The two positions of the straps are shown in FIG. 5. It will be seen that the vibrator is not reversed nor is the user's hand reversed in order to use the vibrator in its dual positions. Thus, with the pivoting straps, the versatility of the vibrator is increased.

If it is desired to use the vibrator without the straps merely by gripping it with the straps in the dotted position as shown in FIG. 2 for an extended period of time, it is possible to change the pivot structure of the straps and make a suitable detachable clamp structure as shown in FIG. 4. This consists of a detachable rivet head 50 that can be unsnapped from rivet 42 and the strap structure set aside or the straps can be unsnapped and reversed by effectively rotating them about the pivot instead of stretching them around the ends of base 10. Thus, the term "rotatable" is intended to encompass both arrangements.

The vibrator described, with the improved strap structure, provides a more versatile device by permitting the same straps to be used in either position by merely rotating them from one side of the vibrator to the other. This is accomplished with the arrangement shown without reversing the vibrator or the user's hand.

While there have been described preferred forms of the invention, obvious equivalent variations are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described and the claims are intended to cover such equivalent variations.

I claim:

1. In a hand operated vibrator,
an axially extending base,
motor means supported on said base,
means connected for imparting vibrations to said base upon operation of said motor,
the improvement comprising,

housing means enclosing said vibrator and having a portion thereon forming a hand grip opposite said base,

a pair of U-shaped hand straps axially spaced along said base and each strap extending transversely across the vibrator,

pivot means attaching each end of each strap to said vibrator,

said straps being rotatable on said pivots substantially 180° where they are operable to engage the hand of a user in the same position on said grip portion or said base for transmission of vibrations through said base to the vibrated area in both strap positions without reversing said vibrator.

2. Apparatus as described in claim 1 having means for lengthwise strap adjustment.

3. Apparatus as described in claim 1 wherein pad means is connected to said base to engage and cushion the user's hand when said straps cross the base and to directly engage the body to be vibrated when said straps are rotated to cross the grip portion.

4. Apparatus as described in claim 1 wherein said straps are of different lengths,

the longer length engaging across the palm of the user and the shorter length engaging the fingers of the user in both positions of strap operation.

5. Apparatus as described in claim 1 wherein said pivots are detachable clamps.

6. Apparatus as described in claim 1 wherein said straps are formed of a spring means and, covering means over said spring means.

7. Apparatus as described in claim 6 wherein said straps are of predetermined length and pivoted to said housing so that the spring means is stretched to pass over the ends of the housing on reversal of strap position.

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