May 19, 1931. E. BRIGGS 1,805,970

VIBRATOR FOR MOLDS AND DENTAL FLASKS

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Fig. 1.

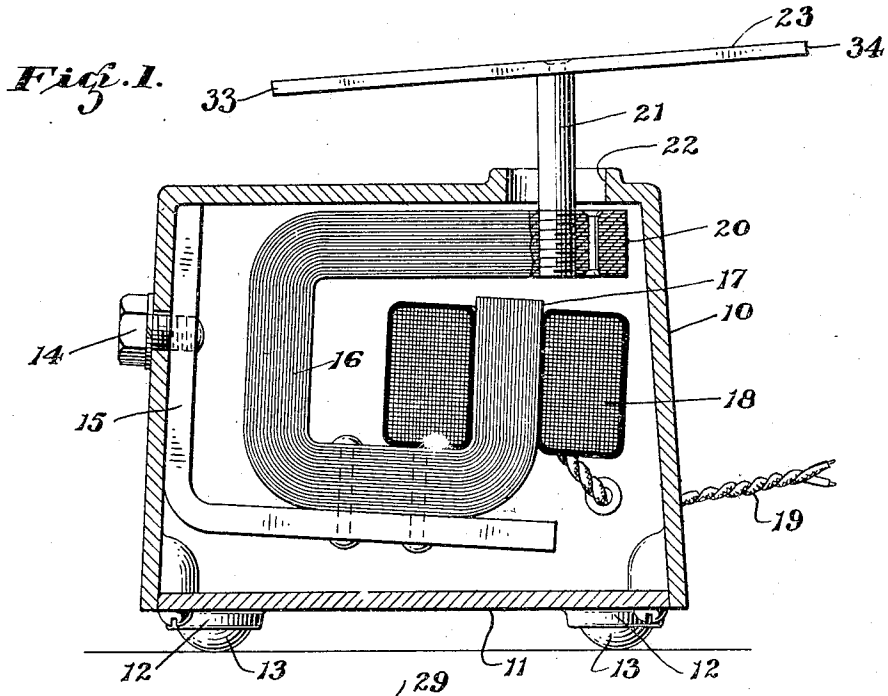
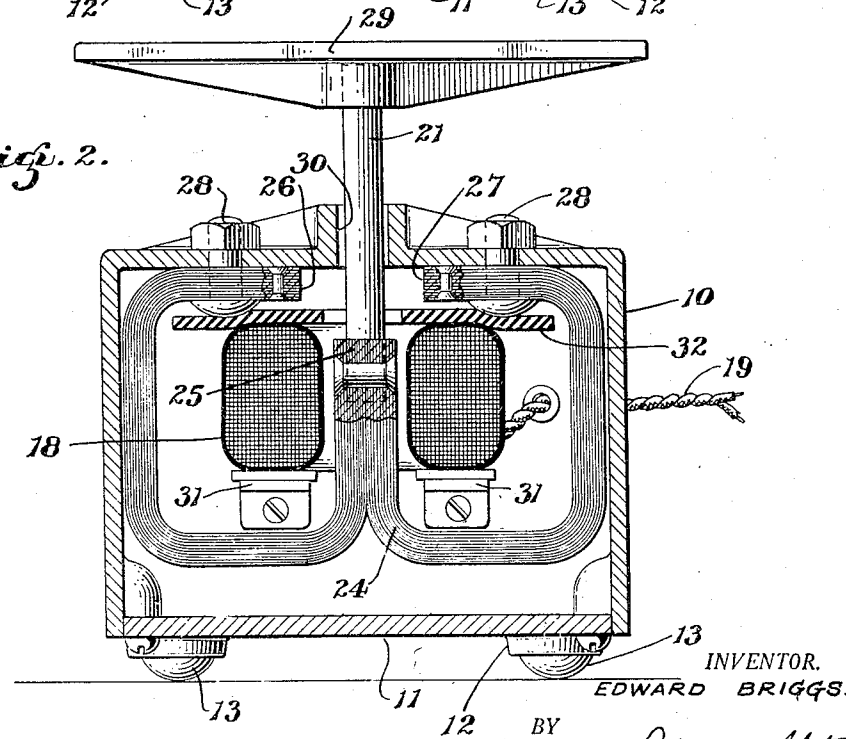


Fig. 2.



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VIBRATOR FOR MOLDS AND DENTAL FLASKS

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My present invention relates to a vibrating apparatus and more particularly to a vibrating apparatus of the type used by dentists and jewelers for tamping and packing small molds and flasks.

An object of my invention is to provide a new, useful and efficient type of vibrating apparatus for artisans which is simple, cheap to manufacture and easy to operate.

Other objects and advantages of my invention will be in part evident and in part pointed out as the description thereof proceeds.

For a better understanding of my invention, reference should be had to the accompanying drawings, wherein I have shown by way of illustration and not of limitation, two preferred types of apparatus which embody the invention.

In the drawings—

Fig. 1 is a side elevation, partially in section, showing the internal construction of one type of apparatus, and

Fig. 2 is a view similar to Fig. 1 showing a modified form of the apparatus.

In the figures of the drawings like numerals refer to like parts throughout.

In the drawings 10 designates a suitable housing which in the present instance is provided with an open bottom adapted to be closed by a suitable plate 11. The plate 11 is provided with suitable bosses 12, upon which there may or may not be mounted rubber or other yielding pads 13. In Fig. 1, secured to one side of the housing 10 by means of a screw 14, I show a bracket 15. The bracket 15 is L-shaped and mounted thereupon there is a laminated core structure 16. The core structure 16, it will be understood, is riveted at various points, principally near the ends, for the purpose of maintaining the laminations as a unitary structure. The core member 16 has an upwardly extending pole piece 17, about which there is disposed a suitable energizing coil 18, the coil 18 being supplied with current through a lead 19. The core 16 is so formed that its other end, designated by the numeral 20, overhangs the pole piece 17 in a position slightly displaced therefrom. With this arrangement, it will be understood that when alternating current is impressed upon the coil 18, the pole portion 20 of the core 16 will be caused to vibrate in response to the rise and fall of magnetism induced in the core 16 as the current in the power source alternates. Extending upwardly from the pole piece 20, I provide a suitable support 21 which projects through an opening 22 in the top of the housing 10 and upon the upper end of the support 21 there is disposed a plate or table member 23, upon which the work to be vibrated may be placed. The table 23 is shown as disposed at a slight angle. This disposition of the table 23 is such that when the vibrating apparatus is operating under its normal load, the table will be disposed in an approximately level position. In this embodiment of my invention it will be noted that the table 23 may be said to be hinged at a point to one side of its central portion so that as it vibrates it will move in an arcuate path rather than with a strict reciprocating movement.

The embodiment of my invention illustrated in Fig. 2, while possessing many of the features set forth in connection with the embodiment illustrated in Fig. 1, has certain other differences in construction which make it particularly well suited to work of a heavier nature. In this embodiment of my invention, I show a core portion 24 which is in some respects similar to the standard shell type of transformer core, it being in two halves which are riveted together to form a central pole 25 about which the coil 17 is disposed. The opposite ends of the core 24 are turned about upon each other and are disposed so as to provide oppositely disposed pole pieces 26 and 27. The pole pieces 26 and 27 are, in turn, secured to the casing 10 by means of screws 28, so that they are fixed and the central pole piece 25 of the core 24 is disposed midway between the poles 26 and 27 and slightly therebelow so that when the coil 17 is energized, the pole piece 25 will be drawn upwardly and vibrated, as previously suggested, due to the alternations of energizing current when the coil 17 is connected to a suitable source of alternating current. The support 21 is shown as projecting up-

wardly out of the end of the pole 25 and it, in turn, carries a suitable table or plate member 29. The plate member 29 in this embodiment, it will be understood, will have a strict up and down movement, the support 21 therefor passing through an opening 30 in the top of the housing 10. In order to support the coil 17 within the housing 10 about the pole piece 25, I provide suitable brackets 31 which project from the side walls of the housing 10 and immediately thereabove I wedge in an insulating member 32 which maintains the coils 17 firmly about the central pole piece 25. As the pole piece 25 is vibrated, it will be understood that the core 24, because of its laminated construction, will freely yield intermediate its ends, so as to permit the necessary vibration.

It is believed that the operation of my improved apparatus will be readily apparent to those skilled in the art; however, in connection with the modification shown in Fig. 1, I desire to point out that, because of the disposition of the plate or table 23 to one side of the hinging portion of the core 16, I have provided a feature which has been found very acceptable in the trade. This feature is in the fact that the table 23, by reason of its disposition, as described, has different ranges of movement at its two extreme edges. In other words, at the edge designated by the numeral 33, the movement will be considerably less than is the case at the point 34. In fact, it may be said that at the point 34, the movement of the table is substantially up and down; whereas, at the point 33, the movement of the table approaches a substantially horizontal movement with a slight vertical component. In taking advantage of this feature, the operator can, where he wishes to violently vibrate a flask, place it on the outer edge 34 of the table 23 and, where he desires a less violent vibration, he may slide the flask or mold toward the edge 33 where, as stated above, the vibration or range of movement is considerably less.

While I have, for the sake of clearness and in order to disclose my invention so that the same can be readily understood, described and illustrated specific devices and arrangements, I desire to have it understood that this invention is not limited to the specific means disclosed but may be embodied in other ways that will suggest themselves, in view of this broad disclosure, to persons skilled in the art. It is believed that this invention is broadly new and it is desired to claim it as such so that all such changes as come within the scope of the appended claims are to be considered as part of this invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A device for vibrating flasks and the like which comprises a yielding magnetic core having its ends disposed adjacent each other, a single winding upon one end of said core, and a table mounted upon the other end of said core whereby when the core is energized with alternating current said table will be vibrated.

2. A device for vibrating flasks and the like which comprises a yielding laminated magnetic core having its ends disposed adjacent each other, a winding upon one end of said laminated core, and a work support mounted upon the other end of said laminated core whereby when the core is energized with alternating current said table will be vibrated.

3. An electric vibrator comprising a relatively flexible laminated core, a support for rigidly holding one end of said core immovable, the other end of said core being free and disposed opposite the immovable end, an energizing winding disposed upon said immovable end of said core, and a work support attached to the free end of said core and adapted to vibrate therewith when said winding is energized by a suitable source of current.

4. An electric vibrator comprising a core having a flexible end, a support for rigidly holding the other end of said core immovable, a single energizing winding disposed upon said immovable end of said core, and a work support attached to the flexible end of said core adapted to vibrate with said end when said winding is energized by a suitable source of current.

5. A vibrator for dental work and the like comprising the combination of a housing, a relatively flexible core disposed within said housing and having one of its ends secured against movement, a single energizing winding disposed about the immovable end of said core, and a work supporting table carried by the other and movable end of said core, said core being so constructed that when said winding is energized by a suitable source of current, said free end of said core and said table will vibrate any work placed upon said table.

6. In a vibrator for dental work and the like, the combination of a relatively flexible core having one of its ends secured against movement, a single energizing winding disposed about the immovable end of said core, and a work supporting table carried by the other and movable end of said core, said core being so constructed that when said winding is energized by a suitable source of current, said free end of said core and said table will vibrate any work placed upon said table.

7. A vibrator comprising a casing, a laminated flexible core within said casing and supported thereby, said core being bent around so that the two ends are adjacent each other, an energizing coil surrounding one

end of said core, and a work support attached to the other end of said core.

8. A vibrator comprising a casing, a laminated flexible core within said casing and supported thereby, said core being bent around so that the two ends are adjacent each other, an energizing coil within said casing and surrounding one end of said core, an opening in said casing, a rod extending through said opening and attached to the other end of said core, and a work supporting table outside of said casing attached to said rod.

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