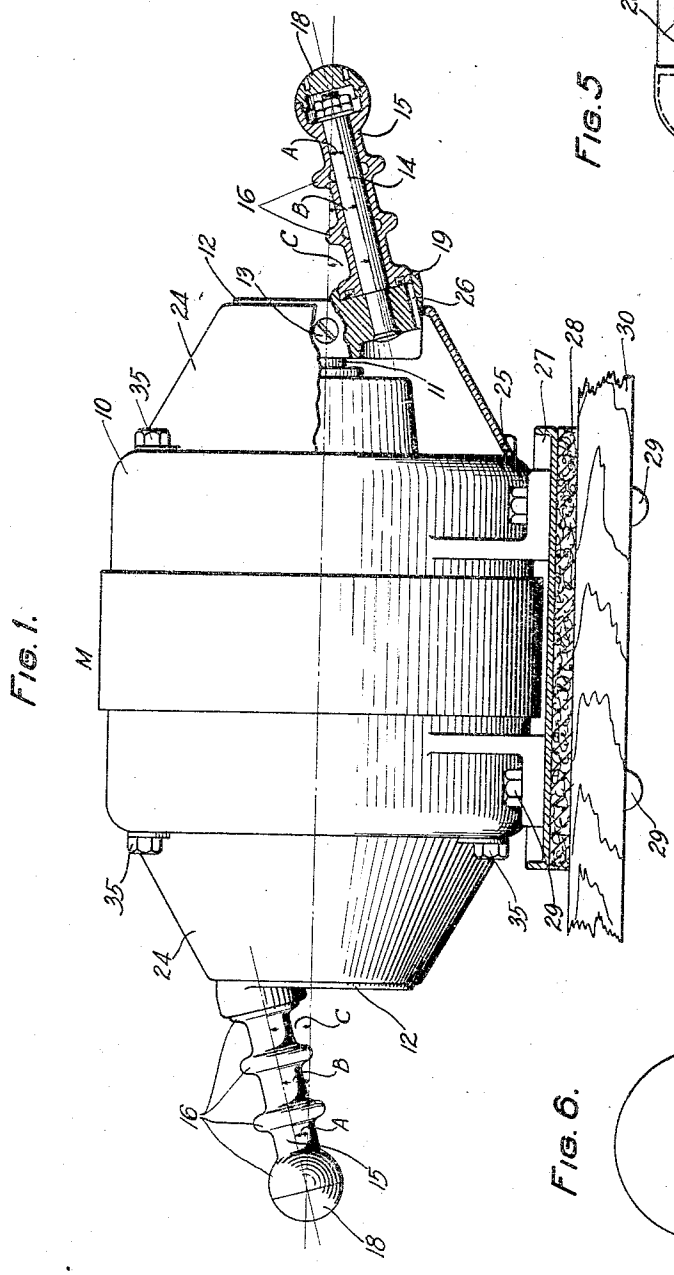
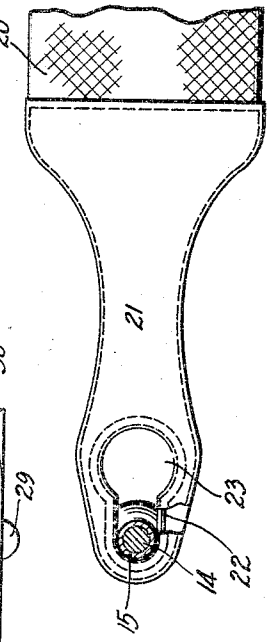
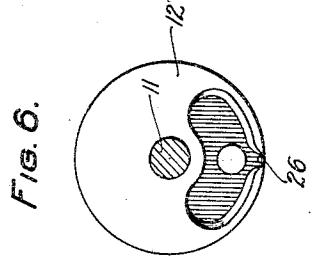
Aug. 26, 1930. C. E. REDDIG 1,774,402

EXERCISING MACHINE

Filed Sept. 20, 1928 2 Sheets-Sheet 1







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EXERCISING MACHINE

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FIG. 2.

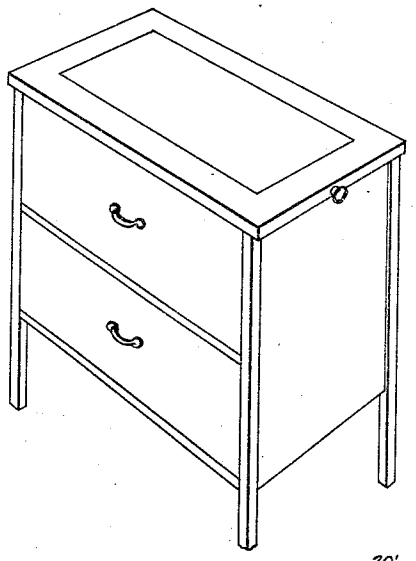


FIG. 3.

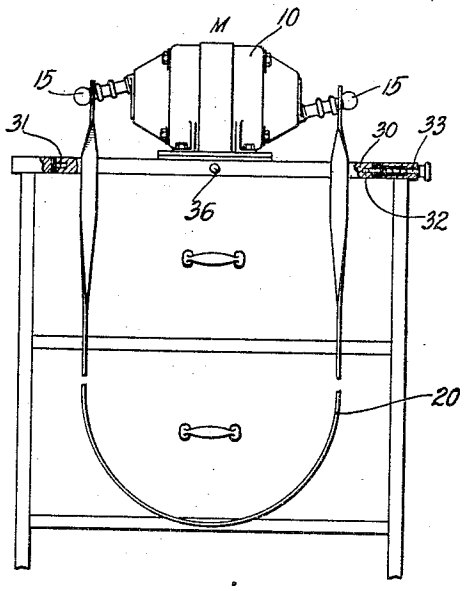


FIG. 4.

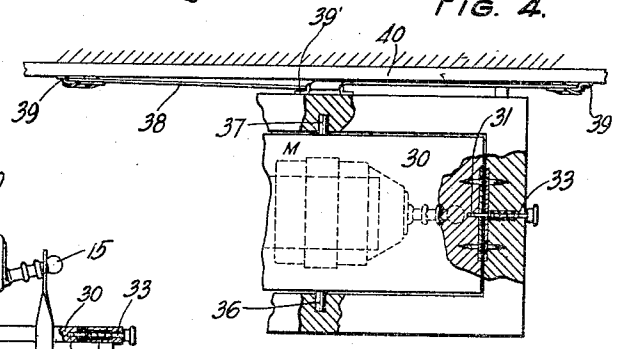
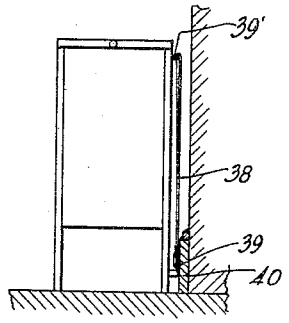


FIG. 7.



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UNITED STATES PATENT OFFICE

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EXERCISING MACHINE

Application filed September 20, 1928. Serial No. 307,086.

This invention relates to exercising machines of a type wherein a mechanism imparts vibrations to a belt or body engaging member.

The object of this invention is to provide an exercising machine of the vibrator type which will be efficient in operation, cheap to manufacture and which embodies a minimum number of operating parts.

The features and advantages of this invention will appear from the following description and by the claims appended thereto, reference being had to the accompanying drawings in which Fig. 1 is a front view of the machine with portions cut away and certain operating parts of the machine in section. Fig. 2 is a perspective view of the cabinet used for supporting and enclosing the machine. Fig. 3 is a view of the cabinet and the machine in elevation showing the belt or body engaging member in adjusted position and portion of the cabinet top in section. Fig. 4 is a detail plan view of the top of the cabinet showing the swinging board and the motor locked in the enclosed positions. Fig. 5 is a partial view of the belt showing the means used for hooking the ends of the belt on the machine, Fig. 6 is a rear view of one of the balanced crank arms used in this machine and Fig. 7 is a side view of the machine in elevation.

In the drawings M indicates an electric motor having an armature shaft 11 which has its ends protruding a suitable distance from each end of the motor casing 10. On each end of this shaft is mounted a crank arm in the form of a balanced fly wheel 12 shown in Figs. 1 and 6.

Each of these wheels is securely held on the motor armature shaft by a set screw such as 13. On each fly wheel 12 there is securely mounted a spindle 14 disposed 180° apart with respect to each other and each extends from its respective fly wheel in an oblique direction to a point intersecting a line passing through the longitudinal axis of the shaft 11. On each spindle 14 there is loosely mounted a sleeve 15 having a number of ridges 16 which cooperate to form pairs of eccentric steps A—A, B—B, and C—C of different amplitude. The outwardly extending end of each sleeve is provided with a cap 18, which cooperates with the ridge end portion of its respective sleeve to form a sphere, the center of revolution of which coincides with the longitudinal axis of shaft 11 and friction washers 19 shown in Fig. 1 are each inserted in their respective circular groove at the ends of the sleeves 15 adjacent the inclined surfaces of fly wheels 12.

The fly wheels 12 are each provided with an aperture 26 adapted for guiding the lubricating oil from its respective sleeve 15 into a protective casing or guard 24 and thus preventing any leakage of oil from the crank arm and sleeve bearing surfaces.

Oil guards 24 are rigidly secured to motor casing 10 by bolts 35 and each extends therefrom in a tapered form to a point adjacent the outer disposed face of its respective fly wheel 12. These guards are each provided with a hole 25 through which the oil may fall in a pan 27. This pan is disposed between the motor and a felt base 28 which serves as a cushion for the motor, the whole being fastened by a number of bolts 29 to a swinging board 30 shown in Figs. 2, 3 and 4 provided for a purpose that will be hereinafter described.

A fabric belt 20, shown in Figs. 3 and 5, has at each end a leather tank 21 sewed thereon and at the end of each tank there is sewed or otherwise secured a reinforcing wire 22 provided for maintaining the accurate shape of apertures 23 in the tank which permits the easy removal or hooking the belt in adjusted position on the sleeves 15, as shown in Fig. 3.

The oil guards 24 being outwardly tapered further serve to prevent the belt from being accidentally wound around these guards upon its release by the operator while the motor is in operation and thus providing a maximum margin of safety to the user of the machine.

The swinging board 30 on which the motor is secured is preferably rectangular in shape and fits a similar shaped opening in the table top of an ordinary cabinet shown in Figs. 2, 3 and 4. This board is supported by piv-

ots 36 and 37 which extend in bearings in the table top, and a spring pressed plunger 33 which engages apertures 31 and 32 at the ends of the swinging board is provided for holding the motor in the covered or uncovered position, as shown in Figs. 2 and 3, respectively. The cabinet may be held securely in position on the room floor by a belt 38 which has its ends attached to cleats 39 secured to the wooden base molding 40. This belt passes in a cleat 39′ secured to the rear wall of the cabinet as shown in Figs. 4 and 7 and rubber pads which may be secured to the base molding extend against the legs of the cabinet for damping the vibrations imparted thereto by the motor when in operation.

What is claimed is:

1. In a vibrator device adapted to be used for massaging and the like, a motor having a rotatable shaft, a pair of eccentrically mounted spindles carried by said shaft, said spindles being disposed in oblique relation with respect to the longitudinal axis of said shaft, and belt means associated with the spindles adapted to transmit a vibratory motion set up by the movement of the spindles to the point of application of the massage.

2. In a vibrator device adapted to be used for massaging and the like, a motor, a pair of spindles carried by the shaft of said motor, said spindles being mounted in oblique relation with respect to the longitudinal axis of said shaft, a sleeve mounted on each of said spindles, and means carried by said sleeve defining eccentric steps of different amplitude, whereby vibratory motion set up by the movement of the spindles varies in amplitude according to the eccentric step used to effect said motion.

3. In a vibrator device adapted to be used for massaging and the like, the combination with a motor, of a rotatable shaft, spindles carried by said shaft in an oblique relation thereto, means on said spindles defining eccentric steps of different amplitude, and a belt having means for engaging said means, whereby vibratory motion set up by the movement of the spindles varies in amplitude according to the step engaged by the belt-engaging means.

4. In a vibrator device adapted to be used for massaging and the like, the combination with a rotatable shaft, crank members actuated by said shaft each having a plurality of substantially corresponding steps, a belt, means carried by said belt for engaging one step on each crank member, and means for rotating said shaft, whereby the belt-engaging means may be engaged with steps for effecting substantially the same relative low amplitude of vibration or may be engaged with corresponding steps to effect the same high amplitude of vibration.

5. In a vibrator device adapted to be used for massaging and the like, a motor, a rotatable shaft, a pair of balanced crank arms mounted on said shaft, each of said arms having an inclined surface with respect to its plane of rotation, a spindle carried by each of said arms and extending perpendicularly to the inclined surfaces of said arms, a sleeve mounted on each spindle, means carried by each sleeve defining eccentric steps of different amplitude, a belt and means carried by said belt for removably engaging said members, whereby vibratory motion set up by the movement of the spindles varies in amplitude according to the step engaged by the belt-engaging means.

6. In a vibrating device adapted to be used for massaging and the like, a rotary shaft, means for effecting a rotary motion of the shaft, a spindle mounted for rotary movement by said shaft, the spindle being arranged in oblique and eccentric relation to the center of its rotation, means adapted to be associated with the spindle for transmitting a vibratory motion effected by the rotary movement of the spindle to a point of application of the massage, and means spaced longitudinally of said spindle adapted to effect the maintenance of the point of connection between the spindle and transmitting means in predetermined position with respect to the spindle base so that the means may effect a transmission of the vibratory motion upon the movement of the spindle with the amplitude of vibration being determined by the selection of the particular spaced means on the spindle which is used to maintain the point of connection between the spindle and transmitting means in the selected position upon the spindle.

7. In a vibrating device adapted to be used for massaging and the like, a rotary shaft, means for effecting a rotary motion of the shaft, a spindle mounted for rotary movement by said shaft, the spindle being arranged in oblique and eccentric relation to the center of its rotation, means adapted to be associated with the spindle for transmitting a vibratory motion effected by the rotary movement of the spindle to a point of application of the massage, and axially spaced projections on said spindle forming grooves adapted to effect the maintenance of the point of connection between the spindle and transmitting means in predetermined position with respect to the spindle base so that the means may effect a transmission of the vibratory motion upon the movement of the spindle with the amplitude of vibration being determined by the selection of the particular groove on the spindle formed by the axially spaced projections which is used to maintain the point of connection between the spindle and transmitting means in the selected position upon the spindle.

8 In a vibrating device adapted to be used for massaging and the like, a motor having

a rotatable shaft, a spindle mounted for rotary movement by said shaft, the spindle being arranged in oblique and eccentric relation to the center of its rotation, a belt having means fitting upon the spindle for causing the same to transmit a vibratory motion effected by the rotary movement of the spindle to a point of application of the massage, and axially spaced rings on said spindle forming spaced grooves adapted to effect the maintenance of the means on the belt in predetermined position with respect to the spindle base, so that the belt may effect a transmission of the vibratory motion upon movement of the spindle with the amplitude of vibration being determined by the selection of the particular groove on the spindle which is used to maintain the means on the belt in selected position upon the spindle.

9. In a vibrating device adapted to be used for massaging and the like, a shaft, means for effecting a rotary motion of the shaft, a spindle mounted for rotary movement by said shaft, the spindle being provided with portions offset from the center of rotation thereof to different degrees, means adapted to be associated with the spindle for transmitting a vibratory motion effected by the movement of the offset portions about the center of rotation to a point of application of the massage, the spindle being constructed to effect a maintenance of the point of connection between the spindle and the transmitting means in predetermined position with respect to the spindle base, so that the means may effect a transmission of the vibratory motion upon the movement of the spindle with the amplitude of vibration being determined by the selection of the particular offset on the spindle which is used.

10. In a vibrating device adapted to be used for massaging and the like, a rotary shaft, means for effecting a rotary motion of the shaft, a spindle mounted for rotary movement by said shaft, the spindle being arranged in oblique and excentric relation to the center of its rotation with the free end thereof directed inwardly toward the center of rotation, means adapted to be associated with the spindle for transmitting a vibratory motion effected by the rotary movement of the spindle to a point of application of the massage, said spindle being provided with means adapted to effect the maintenance of the point of connection between the spindle and transmitting means in predetermined position with respect to the spindle base so that the means may effect a transmission of the vibratory motion upon the movement of the spindle with the amplitude of vibration being determined by the selection of the particular means by which the predetermined position of the point of connection between the spindle and transmitting means is effected, and the amplitude of vibration increasing upon the use of the predetermined positioning means in a direction toward the spindle base.

11. In a vibrating device of the massaging belt type, a motor having a rotatable shaft, spindles mounted upon each end of the shaft in oblique and excentric relation with respect to the axis thereof and substantially parallel with respect to each other, a belt having means adjacent each end for engaging the spindles respectively, said spindles having their free ends directed toward the center of rotation and being provided with means adapted to maintain the engaging means of the belt in corresponding ones of a number of predetermined spaced portions to the respective spindle bases, so that the engaging means may be adjusted along the spindles to corresponding ones of the means for effecting the predetermined spaced position of the engaging means with the amplitude of vibration increasing as the engaging means is adjusted in a direction toward the bases of the respective spindles.

12. In a vibratory device adapted to be used for massaging and the like, an electric motor comprising an armature and shaft therefor, excentrically mounted members directly carried by the armature shaft, said members being disposed in oblique relation with respect to the longitudinal axis of said shaft, and belt means associated with said members adapted to transmit a vibratory motion set up by the movement of the members to the point of application of massage and the like.

13. In a vibratory device adapted to be used for massaging and the like, an electric motor comprising an armature and shaft therefor, said shaft being provided with extensions on each end thereof, an obliquely arranged and excentrically mounted member carried by each extension on the armature shaft, and belt means associated with said members adapted to transmit a vibratory motion set up by the movement of the members to the point of application of massage and the like.

14. In a vibratory device adapted to be used for massaging and the like, an electric motor comprising an armature and a housing open at at least one end, an excentrically mounted member, and means for transmitting motion from the armature to the member, a guard fitting against the housing and mounted over the open side thereof, said guard being provided with an aperture through which the transmitting means extends, and means associated with said member adapted to transmit vibratory motions set up by the movement of the member to the point of massage and the like.

15. In a vibratory device adapted to be used for massaging and the like, an electric motor having a housing open at at least one side, an extension on at least one end of the

armature shaft of the motor formed with an enlarged portion and located in the open side of said motor housing, a guard mounted over the open side of said housing and having an aperture the walls of which closely encircle said enlarged portion of the shaft extension, an excentrically mounted member secured to the enlarged portion, and means associated with said member adapted to transmit vibratory motions set up by movement of the member to the point of application of the massage and the like.

16. In a massage machine of the reciprocating belt type, a rotatable shaft, oppositely disposed crank members upon the ends of said shaft, said members having longitudinally spaced grooves adapted to receive the ends of a massage belt, said grooves defining successive steps having different degrees of eccentricity.

17. In a massage machine of the reciprocating belt type, a rotatable shaft, oppositely disposed crank members upon said shaft, said members comprising spindles obliquely disposed relative to said shaft, casings mounted on said spindles and rotatable relative thereto, longitudinally spaced fins upon said casings providing grooves for the attachment of the ends of a massage belt, said grooves of each member marking a series of steps of progressively varying eccentricity.

In witness whereof, I hereunto subscribe my name this 16th day of September, 1928.

CHARLES E. REDDIG.