

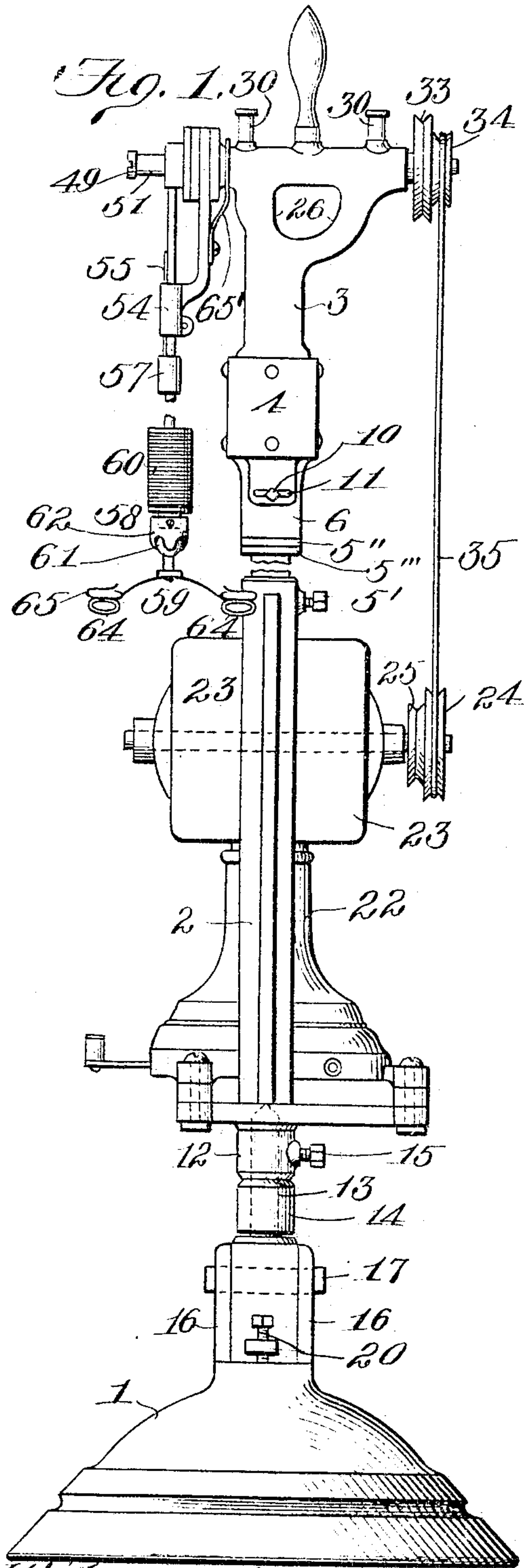
No. 788,038.

PATENTED APR. 25, 1905.

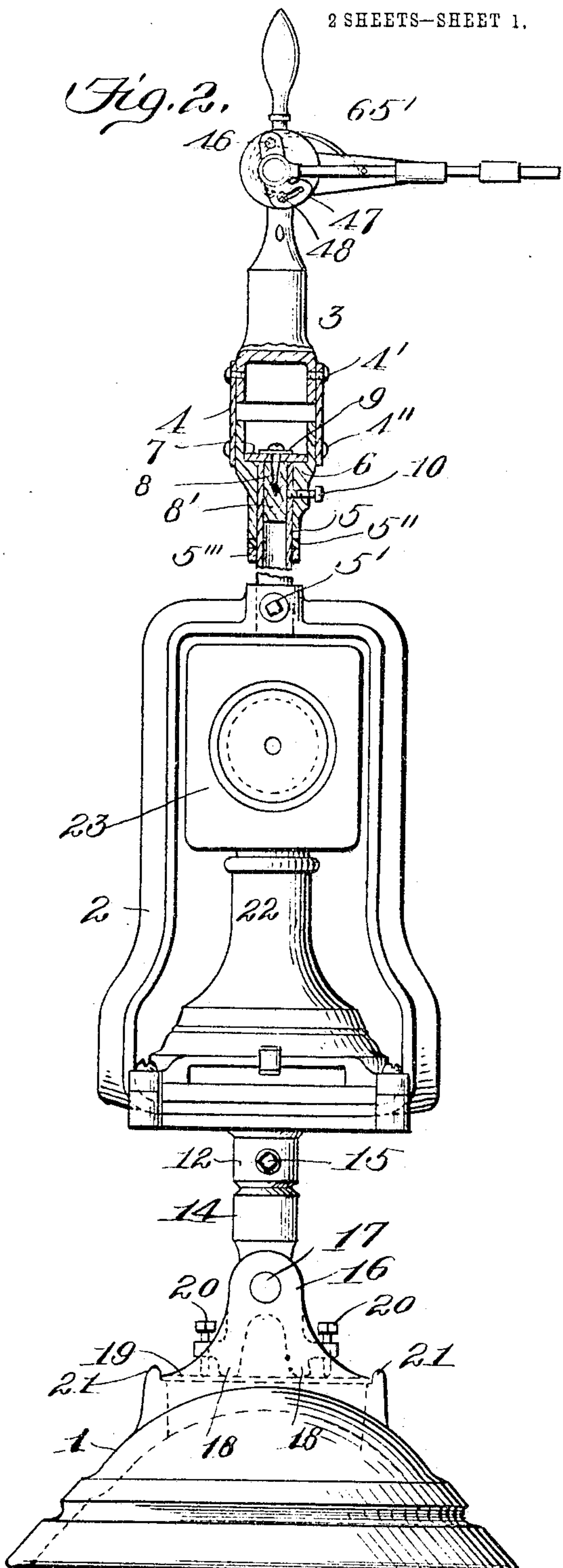
G. B. FRALEY.  
VIBRATORY MASSAGE APPLIANCE.

APPLICATION FILED MAY 21, 1904.

2 SHEETS—SHEET 1.



Witnesses:  
C. H. Foster,  
James L. Norris, Jr.



Inventor  
George B. Fraley  
James L. Norris, Jr.  
Attys.

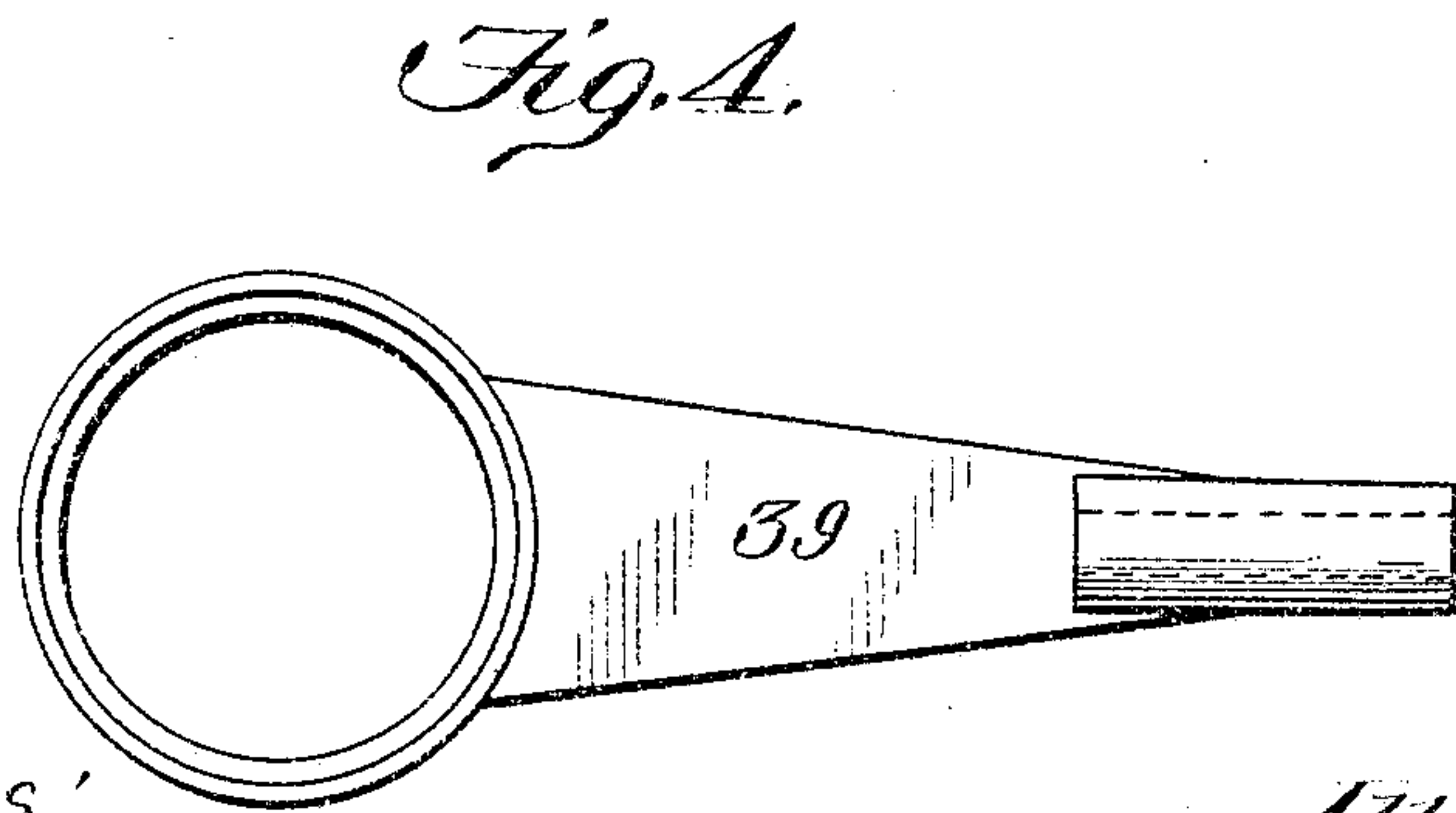
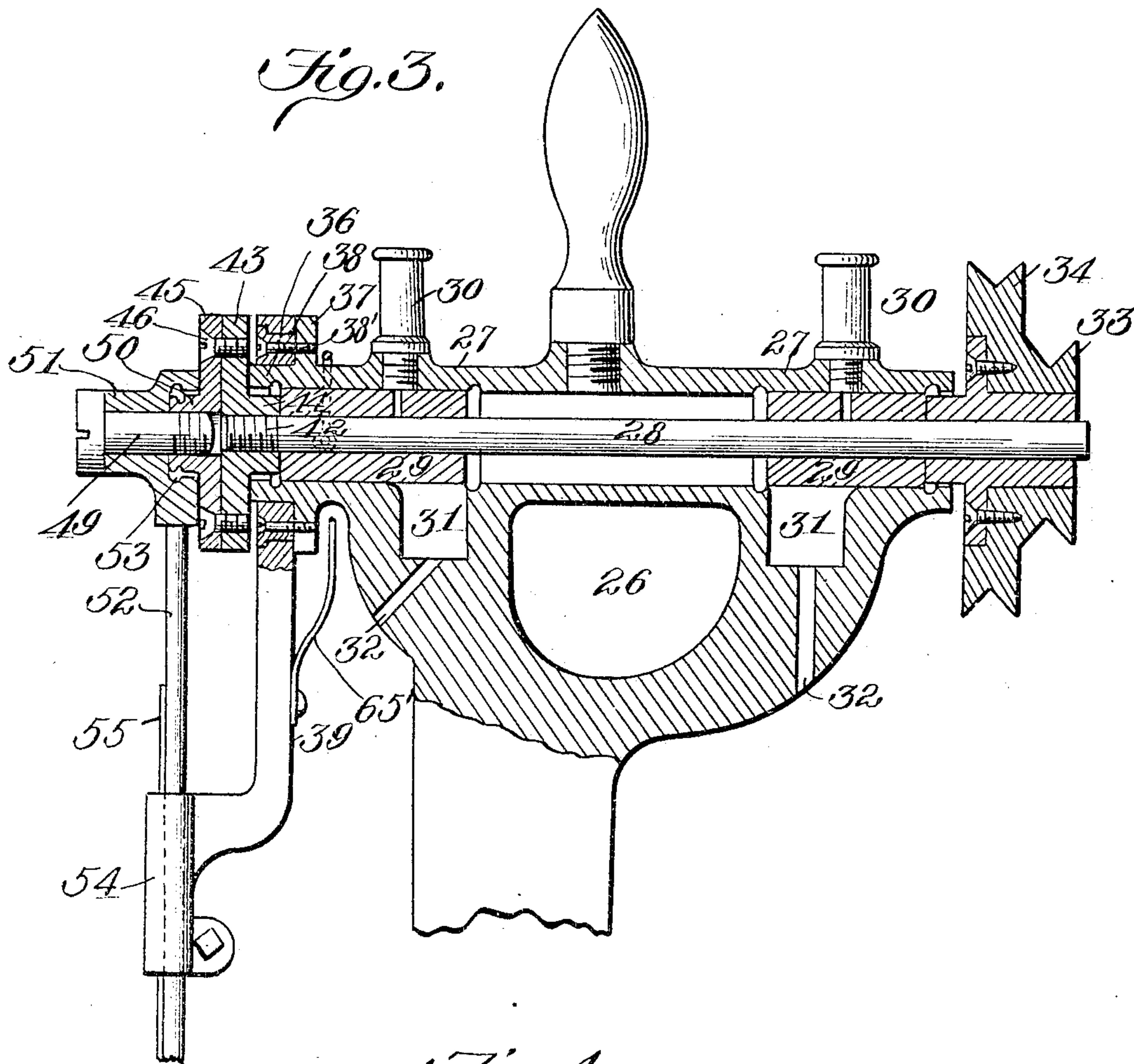
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2 SHEETS—SHEET 2.



Witnesses:  
C. D. Kessler  
James L. Norris, Jr.

Inventor  
George B. Fraley  
By  
James L. Norris  
Attys.



# UNITED STATES PATENT OFFICE.

GEORGE B. FRALEY, OF PHILADELPHIA, PENNSYLVANIA.

## VIBRATORY MASSAGE APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 788,038, dated April 25, 1905.

Application filed May 21, 1904. Serial No. 209,086.

*To all whom it may concern:*

Be it known that I, GEORGE B. FRALEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Vibratory Massage Appliances, of which the following is a specification.

This invention relates to massage-machines.

The objects of the invention are, without rattle or noise of the machine, to impart a vibratory motion of any desired force to the hand of the operator; to vary the reciprocations of the massage-rod, and thus the rapidity of vibrations and the force of the impact of the terminal or hand attachment; to permit ready change in the position of the terminal or hand attachment to meet the various requirements of the operator; to effect positive and direct operation of the massage-rod, and thus the proper contact of the terminal with the body of the user; to permit bodily angular movements of the machine-standard to facilitate the use of the machine; to effect in a ready and positive manner the absorption of all jars and vibrations arising from the rotation of the motor that operates the terminal, and generally to improve machines of this character.

With the above and other objects in view, which will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a massage-machine, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit of the invention.

In the drawings, Figure 1 is a view in side elevation showing the hand attachment or

terminal connected up with the machine. Fig. 2 is a view in front elevation and partly in section. Fig. 3 is a sectional elevation, on an enlarged scale, of the head portion of the standard. Fig. 4 is a detail view of a guide or carrier for the massage-rod.

The supporting frame or standard of the machine embodies a base 1, a motor-carrying frame 2, supported upon the base, and a head (designated generally 3) connected, through interposed mechanism presently to be described, with the motor-frame, said head serving to support the operative parts of the device.

As above stated, it is a desideratum in the present invention to absorb all jars or vibrations arising from the use of the machine and also to permit of its being moved angularly to meet the requirements of the user.

The means for absorbing the jars and vibrations of the machine include a flexible sleeve, as 4, interposed between the head 3 and the motor-frame 2, and constituting a suitable cushion for the head, and I will now set forth the relation of said flexible sleeve and the parts with which it immediately co-operates. In practice this sleeve is made of leather or other suitable material, and the lower terminal portion of the head 3 fits within the upper side of said sleeve, the two parts being united in any desirable way—say by screws, as 4'. A metallic tube, as 5, is socketed at its lower end in the top of the motor-frame 2, the two parts being connected in any desirable manner—as, for example, by means of a screw 5'. A tube, as 6, surrounds the upper portion of the tube or post 5, and has an enlarged head or cup-shaped portion which fits within the lower portion of the flexible sleeve 4, the two parts being secured together in any convenient way—for example, by means of screws 4". The upper edge of the headed tube 6, it will be perceived, is separated from or free from the lower edge of the head 3, thereby leaving the intermediate portion of the sleeve 4 free, thereby to assure a certain degree of flexibility in the sleeve. The tube 6 rests on a washer, as 5", surrounding the tube or post 5, which in turn is sus-



tained upon a collar 5'', encircling the post and driven thereon or otherwise suitably fixedly held in place.

Seated upon the upper surface of the bottom of the cup-shaped head of the tube 6 is a washer 7, centrally perforated to receive a pivot-screw 8, a metallic washer, as 9, being interposed between the head of said screw and the leather washer 7. Said screw 8 is screwed into a cylindrical plug, as 8', of wood or other suitable material, driven into the top of the tube or hollow post 5. From this it will be evident that the head 3 can have a turning motion about its longitudinal axis as well as a lateral movement. To limit the turning motion of the head, and it will be apparent that as said head turns the tube 6 also turns, I provide a stop device coöperative directly with said tube 6. The stop device is represented as a screw 10, tapped into the relatively fixed tube or post 5 and extending through an elongated slot 11 in the turning tube 6.

The motor-frame 2 is provided at its lower end with a tubular boss 12, in which fits a stud 13, carried by a joint 14, a set-screw 15 serving to hold the stud within the boss. The stud may be held within the upper end of the joint in any suitable manner, as by being cast therein, or may be formed integral therewith. The joint is pivoted between two standards 16, carried by the base 1, the connection between the parts being secured by means of a pin 17. The lower end of the joint is provided with two lugs 18, the lower faces of which bear upon leaf-springs 19, suitably secured to the base 1 and operating normally to hold the frame in vertical position, but yieldable readily when the frame is to be swung laterally under the use of the machine. Should it be desired at any time to prevent vibration of the frame upon the base, this may be effected through the medium of screws 20, which are threaded into projections 21 on the lugs 18 and are adapted to be turned into engagement with the leaf-springs. These screws may also be employed for the purpose of increasing the resistance of the frame to movement, as will be readily understood.

The motor-frame, which may be of any preferred construction, supports a standard 22, upon which is mounted in any preferred manner an ordinary electric motor 23, associated with which is a rheostat serving to control the motor in the usual manner.

Upon the shaft of the motor are mounted two sheaves 24 and 25, the same being of different diameters for the purpose of increasing or decreasing the speed of the object to be driven.

The head 3, which is cushioned in some suitable way, one way of securing which has been hereinbefore set forth, is provided at its

upper end with a yoke 26, formed with bearings 27, in which is journaled a shaft 28, the bearings housing bushings 29, as usual, to reduce friction of the shaft and to prolong its usefulness. Suitable oil-cups 30 are provided for supplying oil to the bushings, and beneath the bushings are oil-wells 31 for catching the waste oil which escapes through ducts 32. Upon the outer end of the shaft 28 are mounted two grooved sheaves 33 and 34 of different diameters and arranged oppositely to the sheaves on the motor-shaft, a belt 35 engaging a sheave on the drive-shaft and a sheave on the motor-shaft serving to transmit motion to the shaft 28. The members of the yoke are disposed at some distance apart in order to give extended bearing to the shaft 28, thus to reduce vibrations, and causing the machine to run smoothly and evenly.

Upon the end of the yoke 26, opposite that near which the sheaves 33 and 34 operate, is a bearing 36, provided with a flange 37, said bearing being surrounded by a washer 38, which fits into a central opening in the head of the guide member 39. The washer 38, which may be made of any desirable material, is provided at its outer side with an annular shoulder countersunk into the opening in the head of the guide, whereby the guide will be secured in place by reason of the fact that the washer 38 is rigidly united with the annular flange 37. Screws, as 38', may be provided to secure such union. It will be apparent that by reason of the relation of the guide 39 with the bearing 36 said guide may swing through a complete circle.

The portion of the shaft 28 that extends beyond the flange 37 is threaded at 42, and this threaded portion is engaged by a disk 43, having a reduced seat 44, which enters the bearing 36, as shown in Fig. 3, and operates to hold the bushings at that end of the head in position. Upon the outer face of the disk 43 is mounted a wrist-pin carrier 45 in the nature of a lever, one end of the carrier being secured to the disk by a screw 46, Fig. 2, the opposite end of the carrier being provided with a slotted extension 47, through which passes a screw 48 for holding this portion of the carrier in operative relation with regard to the disk. Projecting from the central portion of the carrier is the wrist-pin 49 in the nature of a screw, the said pin being threaded into the carrier 45, as clearly shown in Fig. 3, and to extend the bearing of the screw 49 the wrist-pin carrier 45 is provided with a threaded lug 50, which is integral with the carrier. Mounted upon the lug 50 and upon the screw 49 and held in place by the latter is a sleeve 51, with which is connected the upper end of the massage-rod 52, there being oil-ducts 53 provided between the sleeve and the lug 50 to effect proper lubrication of the parts.



The wrist-pin carrier, as will be evident from the foregoing description, taken in connection with the accompanying drawings, is pivotally mounted upon and at one side of the center of the disk 43 for swinging movement, said wrist-pin carrier being maintained in its different angular adjusted positions with respect to the disk by the screw 48, passing through a slot in said carrier, as previously described. The wrist-pin carrier is situated between the slotted end of the wrist-pin carrier and the axial end thereof, so that by the adjustment of the carrier the throw of the massage-rod 52 can be regulated in a very simple and practicable manner.

The massage-rod 52 is in the form of a continuous flexible strip, and it may be made from any desirable material—for example, rawhide. The said rod extends through bearing-sleeves, as 54, upon the lateral outer terminal portion of the guide 39. To the said massage-rod 52, between its ends, I connect at one end—say by screws—a spring, as 55, which extends through the bearing-sleeves 54 and which serves to keep the rod 52 straight, as well as reduce wear on the same. The lower end of the massage-rod is threaded to engage with a tubular portion 57 of the hand attachment, (designated generally by 58,) the lower end of the attachment carrying a terminal 59, presently to be described. The connection between the tubular portion or rod 57 and the terminal is effected through the medium of an electromagnet 60 and a ball-and-socket joint 61, the socket 62 being secured to the core of the electromagnet and the ball 63 to the frame of the terminal. The electromagnet may be energized from any suitable source of electric energy in the usual manner, and therefore requires no further description. The terminal 59 may be constructed of any suitable material and carries at each end a tube 64, of soft rubber, felt, or other suitable material, which is adapted to rest against the back of the hand of the operator, the frame being provided with cleats 65 to receive the ordinary fastening-straps to hold the terminal in position.

By the employment of a ball-and-socket joint between the terminal and the actuating mechanism all lost motion, and thus wear of the apparatus, is taken up, inasmuch as when the machine is running the magnet is energized, thereby positively holding the ball in close contact with the walls of the socket, but at the same time permitting free movement of the terminal, as may be required.

By the employment of the guide 39 a direct thrust may be imparted to the massage-rod and through the interposed mechanism described to the terminal, so that the blow will be thoroughly effective for the purpose designed, and no lost motion of the vibrations will ensue. Where the pounding ac-

tion or blow is to be increased, the wrist-pin carrier will be shifted to throw the wrist-pin to as great a degree of eccentricity with relation to the drive-shaft as may be desired, the reverse being observed where the blow is to be light and the vibrations exceedingly rapid.

To prevent the massage-rod 52 and its guide 39 from dropping when released by the user, I show a spring 65' of bowed form, one end of which is connected to the guide at a convenient point, while the other end thereof is connected to the yoke 26. This spring is of such a length as not to interfere with the free swinging motion of the guide and massage-rod.

Owing to the fact that there is a vibration-absorber interposed between the head and the motor-frame, all jars and rattlings incident to the rotation of the wrist-pin and reciprocation of the massage-rod are positively taken up, so that the disagreeable noise and vibrations generally attending the use of machines of this character are entirely obviated. Finally, by the employment of the leaf-springs 19 and the joint 14, interposed between the motor-frame and the base, the frame as a whole, with the exception of the base, may be tilted laterally or angularly to accommodate the operator and upon release will immediately resume its normal or upright position, thereby dispensing with the necessity of adjusting the frame for this purpose, such as is necessary in most machines.

Having thus described the invention, what I claim is—

1. In a massage-machine, a terminal, means for vibrating said terminal, an electromagnet, and a jointed connection between the magnet and the terminal adapted to permit angular movement of the terminal relatively to the magnet and the latter when energized serving to maintain the members of the jointed connection in frictional contact.

2. In a massage-machine, a terminal, means for vibrating the same, an electromagnet, and a ball-and-socket joint connecting the terminal and the magnet.

3. In a massage-machine, a massage-rod, and a swivel-guide having a tube through which the rod works.

4. In a massage-machine, a flexible massage-rod, a swivel-guide, having a tube through which the said rod works, and a spring in the tube connected with said rod.

5. In a massage-machine, an operating-shaft, a disk carried by said shaft, a wrist-pin carrier pivoted eccentrically to the disk, means for holding the wrist-pin carrier in different adjusted positions, a wrist-pin on the carrier, and a massage-rod operatively connected with the pin.

6. In a massage-machine, a cushioned head, a shaft journaled therein, driving



mechanism carried by one end of the shaft, an adjustable wrist-pin carried by the opposite end of the shaft, and a massage-rod operatively connected with the pin.

5 7. In a massage-machine, a cushioned head, a shaft journaled therein, driving mechanism carried by one end of the shaft, a disk carried by the opposite end of the shaft, an adjustable lever on the disk, a wrist-pin  
10 carried by the lever, and a massage-rod operatively connected with the pin.

8. In a massage-machine, a head, an operating-shaft journaled therein, a guide supported by the head and having its free end  
15 provided with a bearing, an adjustable wrist-pin operatively connected with the shaft, and a massage-rod connected with the pin and engaging the bearing.

9. In a massage-machine, a frame provided with a motor, a head above said frame, a flexible connection between the head and frame, and massage means associated with  
20 said head and operable by the motor on said frame.

10. In a massage-machine, a supporting-frame, comprising a base, a motor-frame, means interposed between the frame and the base for permitting a yielding movement of  
25 the frame, and for causing its automatic return to normal position, a head supporting the hand-attaching mechanism, and cushioning means between the motor-frame and the head.  
30

11. In a massage-machine, a base, a motor-supporting frame, yielding supports engaging the lower portion of the frame, a head connected with the motor-frame, and means  
35 interposed between the head and the frame for preventing the transmission of the vibration of the frame to the head.  
40

12. In a massage-machine, a motor-sup-

porting frame, a head yieldingly supported thereby and carrying the hand-attaching mechanism, a base carrying springs, and a connection between the motor-frame and the  
45 base and having portions to engage the springs.

13. In a massage-machine, a motor-supporting frame, a head, a flexible sleeve connected with the head, a tube connected with  
50 the motor-supporting frame and also with said sleeve and mounted for turning movement, means for limiting the motion of the sleeve, and massage means associated with said head and operable by the motor on said  
55 frame.

14. In a massage-machine, a head, a shaft, massage means associated with said shaft, a guide for the massage means, supported for swinging movement by the head, and a  
60 spring connected respectively with the guide and head to prevent shock to the guide and massage means when the same are released by the user.

15. In a massage-machine, a motor-supporting frame, and a head above the same provided with hand-attaching mechanism; and a flexible sleeve uniting the head and  
65 frame.

16. In a massage-machine, a motor-supporting frame, and a head above the same provided with hand-attaching mechanism, and a flexible sleeve uniting the head and frame, said sleeve being arranged for turning  
70 motion relative to the frame.  
75

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE B. FRALEY.

Witnesses:

R. S. GALBRAITH,  
S. E. PATTERSON.