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A. U. PATCHEN.
MASSAGING IMPLEMENT.
APPLICATION FILED APR. 16, 1904.

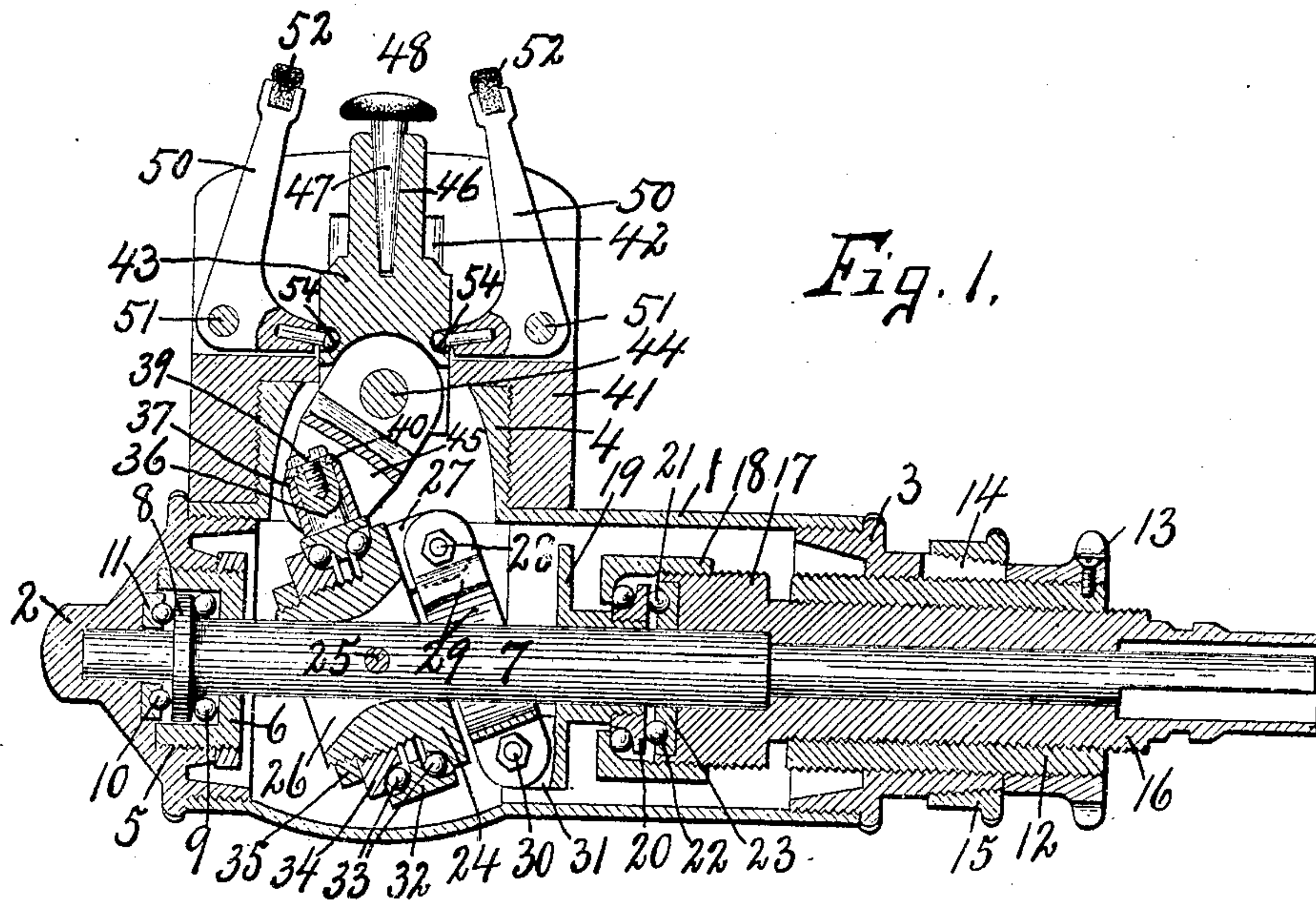


Fig. 1.

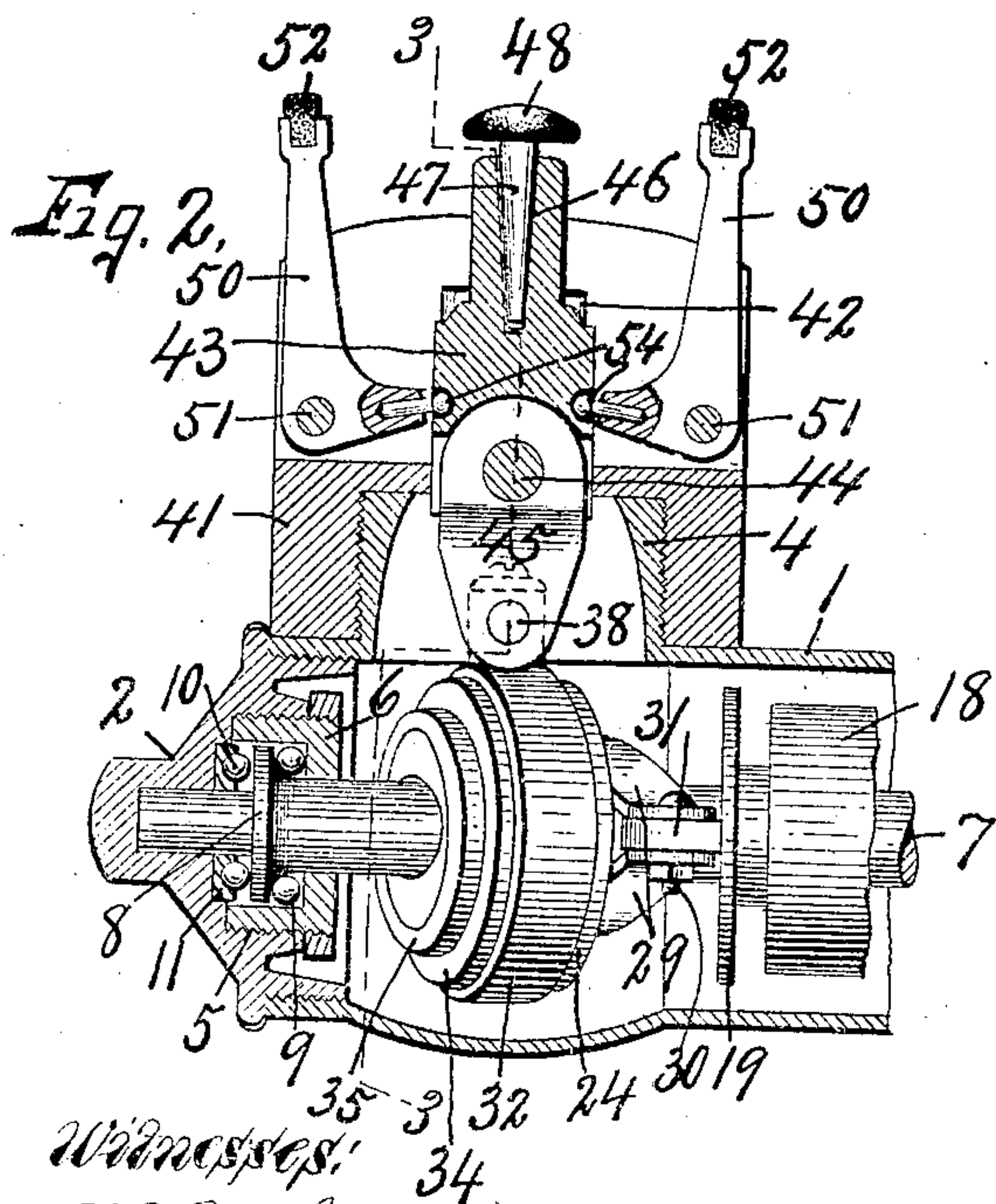


Fig. 2.

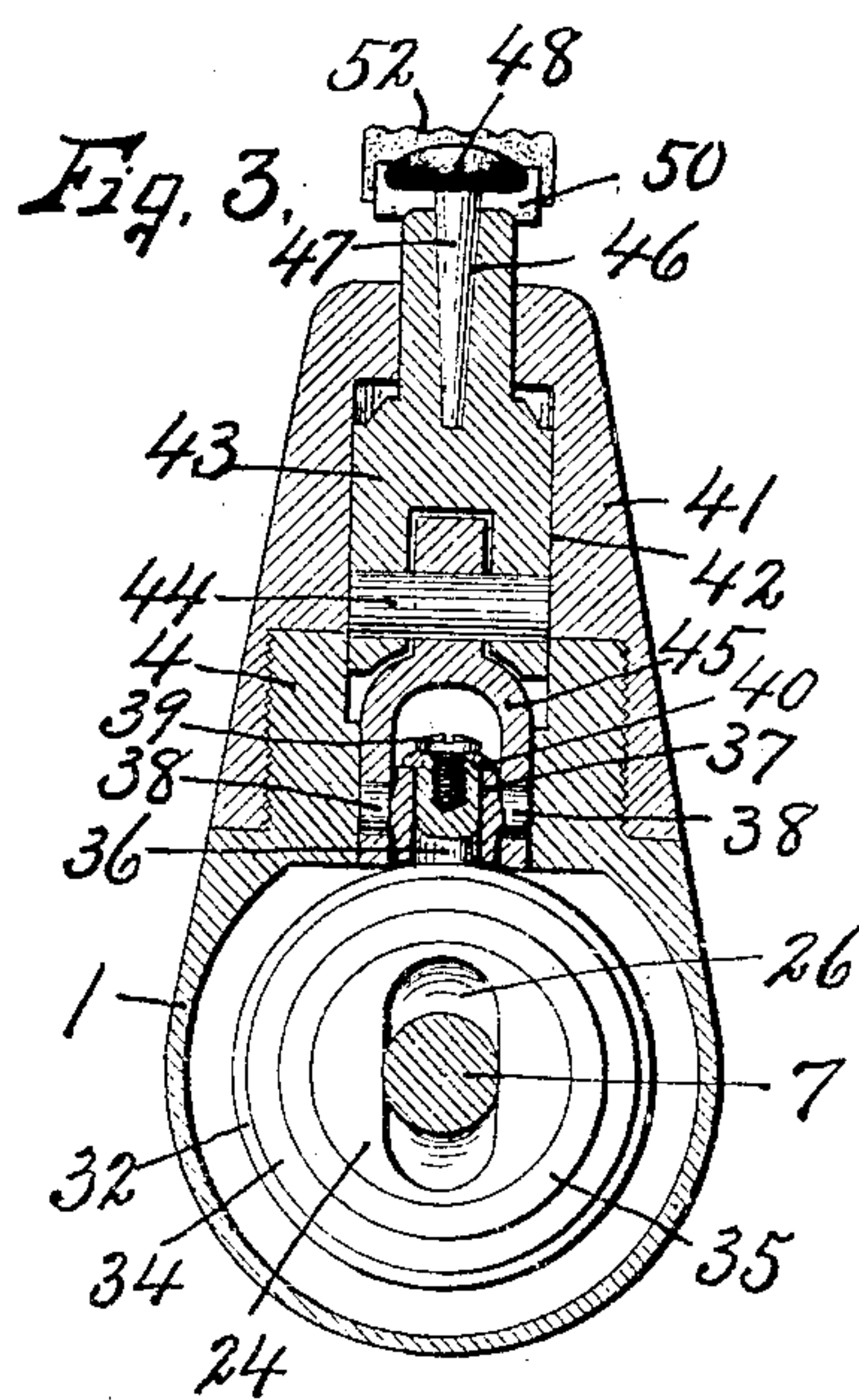


Fig. 3.

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MASSAGING IMPLEMENT.

No. 803,708.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed April 16, 1904. Serial No. 201,877.

To all whom it may concern:

Be it known that I, ALVAH U. PATCHEN, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Massaging Imple-
5 ments, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in
10 massaging implements in which a reciproca-
tory element carrying a contact device or
beater is mounted in a suitable case or head
and is actuated by a tiltable rotary element
to transmit motion to one or more oscillatory
15 contact devices or brushes, which move in a
different direction from that of the recipro-
catory member.

My object is to provide a simple massaging
implement for treating the scalp or other parts
20 of the body under a tapping or beating mo-
tion, as well as an oscillatory or brush mo-
tion, so that the device can be used for sham-
pooing and other effective scalp treatment.

Another object is to enable the operator to
25 regulate the intensity of degree of stroke of
the beater and brushes through the medium
of a single adjusting member while the mov-
able parts, such as the beater and brushes, are
in operation.

30 In the drawings, Figure 1 is a longitudinal
sectional view through my improved massag-
ing implement, showing the tilting collar in
one of its extreme positions for producing
the maximum movement of the beater and
35 brushes, which are shown in their innermost
positions. Fig. 2 is a sectional view, similar
to Fig. 1, except that the right-hand portion
is broken away and the tilting collar is shown
in elevation and as rotated a quarter-turn to
40 move the beater and brushes to their extreme
outer position. Fig. 3 is a transverse sec-
tional view taken on line 3-3, Fig. 2, except
that the tilting collar and the ring mounted
thereon are shown in an upright position or
45 at substantially right angles to the axis of the
driving-shaft.

Similar reference characters indicate corre-
sponding parts in all the views.

50 In carrying out the objects stated I provide
a hollow metal case 1 with screw-caps 2 and
3 in its opposite ends and also with a hollow
peripheral boss 4 near one end, as the left-
hand end, Fig. 1. The opposite ends of the

case 1 are threaded interiorly, and the caps 2
and 3 are removably screwed into these ends. 55

The cap 2 is provided with an interior-
threaded socket 5, in which is screwed a hol-
low threaded bushing 6, which, together with
the cap 2, forms a suitable bearing for one
end of a shaft 7, and this end of the shaft is 60
provided with an annular flange 8 within the
bushing 6. Suitable ball-bearings 9 are in-
terposed between the flange 8 and the inner
end of the bushing 6, while additional ball-
bearings 10 are interposed between the outer 65
face of the flange 8 and a suitable washer 11,
which is seated in the cap 2, said ball-bearings
serving to resist the endwise movement or
thrust of the shaft 7, which extends through
a central opening in the bushing 6, centrally 70
through the case 1, and beyond its opposite
end.

The cap 3 is provided with a central threaded
opening in which is screwed a threaded sleeve
12, having a hand-wheel 13 on its outer end, 75
whereby the sleeve may be rotated, and thus
moved endwise in one direction or the other,
as may be desired, for the purpose of chang-
ing the tilting angle of the tilting collar pres-
ently described. 80

The outer end of the cap 3 is split at 14
and is threaded exteriorly on a taper to re-
ceive an interiorly-threaded clamping-collar
15, whereby when the sleeve 12 is adjusted to
the desired position the clamping-collar 15 85
is tightened to hold the sleeve in its adjusted
position.

The sleeve 12 is of greater interior diameter
than the inclosed portion of the shaft 7, which
passes through it, and the interior is also 90
threaded, but the threads run opposite to
those on the exterior, so that one is a right-
hand thread and the other a left-hand thread.
The interior thread of this sleeve is engaged
by a non-rotatable lengthwise bushing 16, 95
which is threaded exteriorly to correspond
with the interior threads of the sleeve 12 and
extends beyond the opposite ends of said
sleeve and also encircles the adjacent portion
of the shaft 7. The inner end of the bushing 100
16 is preferably enlarged at 17 and is threaded
exteriorly to receive an interior-threaded cup
18, having a central opening for the shaft 7.
At the inner end of the cup is a rotary disk 105
19, having one end projecting through the
central opening of the cup 18 and provided

with a cone 20. Suitable ball-bearings 21 are interposed between this cone and the inner end of the cup 18, while additional ball-bearings 22 are interposed between the outer end face of the cone and a washer 23, which is seated in the end face of the bushing 16.

A tiltable collar 24 encircles the shaft 7 and is pivoted thereto at 25 between the disk 19 and bushing 6. The opening 26 in the collar 24 is elongated at its ends at right angles to the axis of the pivot to allow for the desired tilting movement upon the pivot 25. This tilting collar is provided with a lug 27 on one end at one side of the shaft 7, to which is connected by a pivot 28 one end of a link 29, the other end of said link being pivoted at 30 to a lug 31 on the disk 19 at the opposite side of the shaft. It is now apparent that the tilting collar 24, link 29, and disk 19 are flexibly connected to each other and rotate with the shaft and that the disk 19 is locked from endwise movement to the inner end of the bushing 16, except as the disk is moved by said bushing.

It has been previously stated that the bushing 16 may be adjusted endwise by means of the sleeve 12, which is formed with right and left hand threads, respectively, on its outer and inner surfaces, so that with the same pitch of thread in both instances the rotation of the sleeve 12 produces a quicker action or endwise movement of the bushing 16, and thereby regulates the tilting angle of the collar 24.

A non-rotatable ring 32 encircles the collar 24 and rests upon suitable ball-bearings 33. I preferably provide two series of bearings for the ring 32, one series being interposed between one side of the ring and the adjacent end of the collar 24, and the other series are interposed between the other side of the ring and a suitable cone 34, which is screwed upon the collar 24 and is held in place by a lock-nut 35, also engaged with the end of the collar. The ring 32 is provided with a radial projecting lug 36, upon which is fitted a sleeve 37, having oppositely-projecting trunnions 38, said sleeve being held in place upon the stud 36 by means of a screw 39 and washer 40.

A cap 41 is screwed upon the threaded boss 4 and forms a part of the case 1, but projects laterally from the case at substantially right angles to the shaft 7, so that the boss 4 and cap 41 are directly opposite the tilting collar 24. This cap 41 is provided with a central opening or guide 42 at right angles to the shaft 7, in which is movable a reciprocatory element 43, having its inner end pivotally connected at 44 to one end of the link 45, the other end of said link being bifurcated, and its opposite arms are pivotally mounted upon the trunnions 38. The outer end of the sliding member 43 is provided with a tapering socket 46, in which is snugly fitted a tapering stem 47 of a beater 48. It is now apparent that as

the collar 24 is rotated by the shaft 7 reciprocating motion is imparted to the element 43 and beater 48 through the medium of the ring 32 and link 45 and that the stroke of the beater may be varied by varying the tilting angle of the collar 24, as previously described.

A pair of oscillatory brush-supports 50 are pivotally supported at 51 upon the cap 41 at opposite sides of the sliding member 43 and are provided with brushes 52 at their outer ends. These rocking levers 50 are pivotally connected at 54 to opposite sides of the sliding member 43, so that as this sliding member is reciprocated the levers 50 are rocked upon their pivots 51 to move the brushes 52 in unison with the movement of the beater 47, but in different directions from the movement of said beater.

In the operation of my device the right-hand end of the shaft 7 is connected to any power-transmitting mechanism—such, for instance, as a rotary flexible shaft—for rotating the shaft 7 and actuating the other movable parts connected to said shaft. The device is now taken in hand of the operator, and the parts 48 and 52 are brought into engagement with the parts of the body to be treated, the part 48 acting as a beater, and the parts 52 produce a pinching or wiping effect upon the surface being treated, and these latter devices are particularly useful in shampooing the hair, the object being to produce a movement similar to the movement of the fingers in performing the same operation.

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

1. In a massaging implement, the combination with a rotary shaft, of a collar rotatable with the shaft and tiltable axially, means to tilt the collar, a sliding beater-support connected to and actuated by the collar, and a rocking brush-support connected to and actuated by the beater-support.

2. In a massaging implement, the combination with a rotary shaft, a tiltable collar, rotating with the shaft, a non-rotatable ring on the collar, and a rocking brush-support operatively connected to and actuated by said ring.

3. In a massaging implement, the combination with a rotary shaft, a tiltable collar mounted upon and rotating with the shaft, a non-rotatable element movable axially of and actuated by said collar, and a pair of brush-supports operatively connected to and actuated by said element toward and from each other.

4. In a massaging implement, the combination with a rotary shaft, a tiltable collar mounted on and rotating with the shaft, an axially-movable sleeve on the shaft and connected to the collar to tilt the same, a non-rotatable ring on the collar, a reciprocatory member connected to and actuated by the ring,

a beater on said member, and a brush-support movable in a different direction from that of the beater and actuated by said member.

5 5. In a massaging implement, the combination with a rotary shaft, a tiltable collar mounted on and rotating with the shaft, an axially-movable sleeve on the shaft and connected to the collar to tilt the same, a non-
10 rotatable ring on the collar, a reciprocatory

member connected to and actuated by the ring, a pair of oscillatory brushes moving in unison and operatively connected to and actuated by the collar.

In witness whereof I have hereunto set my 15 hand this 2d day of April, 1904.

ALVAH U. PATCHEN.

Witnesses:

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