

A. T. JOHNSON.
MECHANICAL MOVEMENT.
APPLICATION FILED MAY 16, 1918.

1,286,015.

Patented Nov. 26, 1918.

Fig. 1.

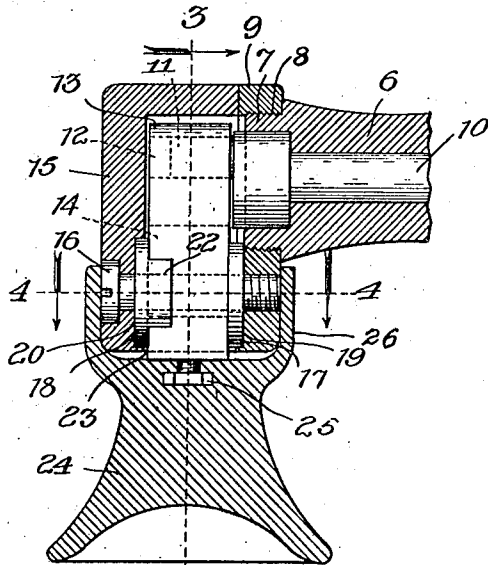


Fig. 3.

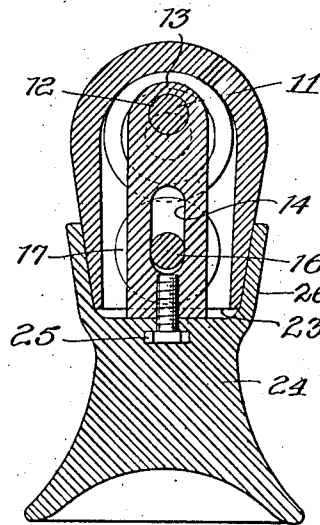


Fig. 2.

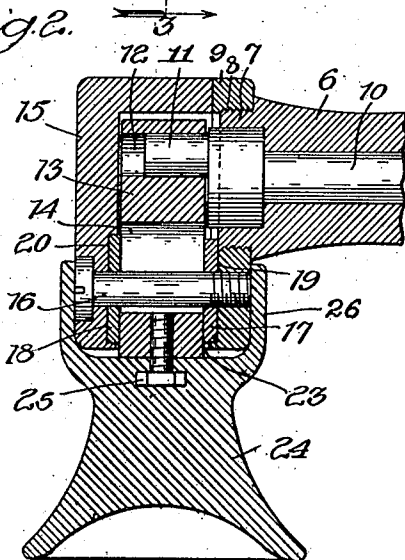


Fig. 4.

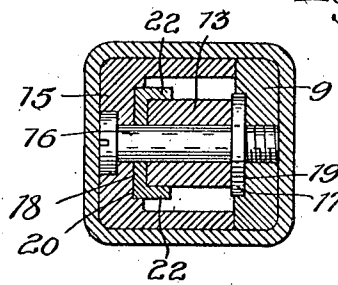
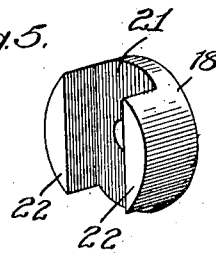


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

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MECHANICAL MOVEMENT.

1,286,015.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AXEL T. JOHNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Mechanical Movements, of which the following is a specification.

My invention relates, more particularly, to a massage implement for use, especially by dentists, in the massaging of the gums in the treatment of pyorrhea and other diseases of the gums, my present invention constituting an improvement upon the implement forming the subject of United States Letters Patent No. 1,255,028, granted to Omer Leonard and myself on Jan. 29, 1918.

It has been found in practice that considerable difficulty is experienced in providing for the necessary closeness of fit between the pivot on which the massage-device-equipped member reciprocates and oscillates, and the walls of the slot in this member through which the pivot extends, it being necessary that these parts fit sufficiently tightly together to avoid lost motion and without binding of the parts.

The object of my invention is to provide for the guiding of the above-mentioned member in its oscillating and reciprocating movements by a novel and simple construction and in a manner to avoid lost motion and without necessitating accurate formation of the slot in this member.

Referring to the accompanying drawings: Figure 1 is a view in longitudinal, sectional elevation of the outer end of my improved massaging implement provided of a form suitable for attachment to the ordinary dental-engine, certain of the parts being shown in elevation. Fig. 2 is a similar view showing more of the parts in section. Fig. 3 is a section taken at the line 3—3 on Fig. 1 and viewed in the direction of the arrows. Fig. 4 is a section taken at the line 4—4 on Fig. 1 and viewed in the direction of the arrows; and Fig. 5, a perspective view of a guide washer employed.

The instrument as shown, comprises a casing section 6, preferably of steel and corresponding with the portion 11 of the said patent, which is screwed at its reduced end 7 into the threaded portion 8 of a plate 9. A shaft 10 extends through the structure just described and is adapted to be connected with the driving element of the ordinary dental engine, not shown, as in the case of

the construction of the said patent, the driving element of the dental-engine becoming operatively connected with the shaft 10 for driving the latter. The outer end of the shaft 10—which extends beyond the plate 9, carries a crank-pin 11 which has journal fit in an opening 12 in a member 13 containing an elongated slot 14 extending lengthwise thereof and into and through which a pin secured as hereinafter described, extends. A cap-plate 15 forms with the end of the section 6 and the plate 9, a housing for the member 13 and the operating parts hereinafter described, this cap-plate being held in position on the member 9 preferably through the medium of dowels, not shown, which extend into the plate 9, as for example as in the case of the said patented structure, and a screw 16, this screw extending through the cap-plate 15 and screwing into the member 9. Surrounding the pin 16 at opposite sides of the member 13, are washers 17 and 18 which are set into recesses 19 and 20 in the plate 9 and the housing section 15, respectively. The washer 18 is preferably of the construction shown, it being of circular shape in cross-section with a slot 21 of a width substantially equal to the width of the member 13, as shown in Fig. 4, extending through one face thereof to provide the spaced guide-surfaces 22, which partially embrace the sides of the member 13 as shown in this figure. By the construction just described, the washer 18 being adapted to rock on the pin 16, the member 13 is supported pivotally by the washer 18, but in a manner to permit the member 13 to reciprocate in the washer, whereby the end of the member 13 adjacent the open end of the casing and represented at 23, is caused to oscillate and reciprocate when shaft 10 is rotated.

It will be understood from the foregoing that a washer provided with the guide-portions to accurately fit the member 13 and thus avoid lost motion, may be readily and cheaply manufactured and thereby minimize the cost of the structure.

The outer end of the member 13 is equipped with any suitable massaging device such as that represented at 24, this device being constructed of any suitable material, preferably of rubber and held to the member 13 as through the medium of the headed screw 25, which is embedded at its head in the body of the device 24 and screws into the end of the member 13.

Guard-means are also provided for coöperation with the open end of the housing for the member 13 and the operating parts, but as these means form no part of the present invention, it will suffice to say that the guard-means shown is in the form of a continuous flange 26 extending upwardly from the massage device 24 and encircling the lower, open, end of the housing.

It will be understood from the foregoing that in the operation of the device, the member 13 is caused to transmit to the massaging element 24 a compound movement due to the reciprocation and oscillation of the element, which is very desirable in a massaging implement, especially for dental work.

While I have illustrated and described a particular construction in which my invention is embodied, I do not wish to be understood as intending to limit it thereto, as the same may be variously modified and altered without departing from the spirit of my invention, it being my intention to claim my invention as fully and completely as the prior state of the art will permit.

What I claim as new and desire to secure by Letters Patent is—

1. In mechanism of the character set forth, the combination of a rotatable shaft, a shiftable member, an eccentric member on said shaft engaging said shiftable member for reciprocating and oscillating the latter, said shiftable member containing a slot extending therethrough, a relatively stationary member, a pin extending through said slot and into said relatively stationary member, and a rocking member on said pin containing a guide-channel in which said shiftable member is slidable.

2. In mechanism of the character set forth, the combination of a rotatable shaft, a shiftable member, an eccentric member on said shaft engaging said shiftable member for reciprocating and oscillating the latter, said shiftable member containing a slot extending therethrough, a relatively stationary member, a pin extending through said slot and into said relatively stationary member, and a rocking member on the outer portion of said pin and containing a guide-channel in which said shiftable member is slidable.

3. In mechanism of the character set forth, the combination of a rotatable shaft, a shiftable member, an eccentric member on said shaft engaging said shiftable member for reciprocating and oscillating the latter, said shiftable member containing a slot extending therethrough, a relatively stationary member, a pin extending through said slot and into said relatively stationary member, and a washer mounted on said pin to rock thereon and containing a slot extend-

ing across a face thereof and forming a guide-channel in which said shiftable member is slidable.

4. In mechanism of the character set forth, the combination of a relatively stationary member, a rotatable shaft therein, a shiftable member, an eccentric member on said shaft engaging said shiftable member for reciprocating and oscillating the latter, said shiftable member containing a slot extending therethrough, a casing member for covering said shiftable member, a pin securing said casing member to said stationary member and extending through said slot, and a rocking member on said pin containing a guide-channel in which said shiftable member is slidable.

5. In mechanism of the character set forth, the combination of a relatively stationary member, a rotatable shaft therein, a shiftable member, an eccentric member on said shaft engaging said shiftable member for reciprocating and oscillating the latter, said shiftable member containing a slot extending therethrough, a casing member for covering said shiftable member, a pin securing said casing member to said stationary member and extending through said slot, and a rocking member on said pin located adjacent said casing member and containing a guide-channel in which said shiftable member is slidable.

6. In mechanism of the character set forth, the combination of a relatively stationary member, a rotatable shaft therein, a shiftable member, an eccentric member on said shaft engaging said shiftable member for reciprocating and oscillating the latter, said shiftable member containing a slot extending therethrough, a casing member for covering said shiftable member, a pin securing said casing member to said stationary member and extending through said slot, and a washer mounted on said pin to rock thereon and containing a slot extending across a face thereof and forming a guide-channel in which said shiftable member is slidable.

7. In mechanism of the character set forth, the combination of a rotatable shaft, a shiftable member, an eccentric member on said shaft engaging said shiftable member for reciprocating and oscillating the latter, a housing for said shiftable member, a wall of said housing being counter-bored to present a circular socket, a circular guide-member in which said shiftable member reciprocates, said guide-member extending into said counter-bored portion of the wall of said housing and supported therein to rock in the movements of said shiftable member.

AXEL T. JOHNSON.