No. 621,160. Patented Mar. 14, 1899.

VAN DELURE SEWELL.

DRIVING MECHANISM.

(Application filed Nov. 9, 1898.)

(No Model.)

FIG. 1.

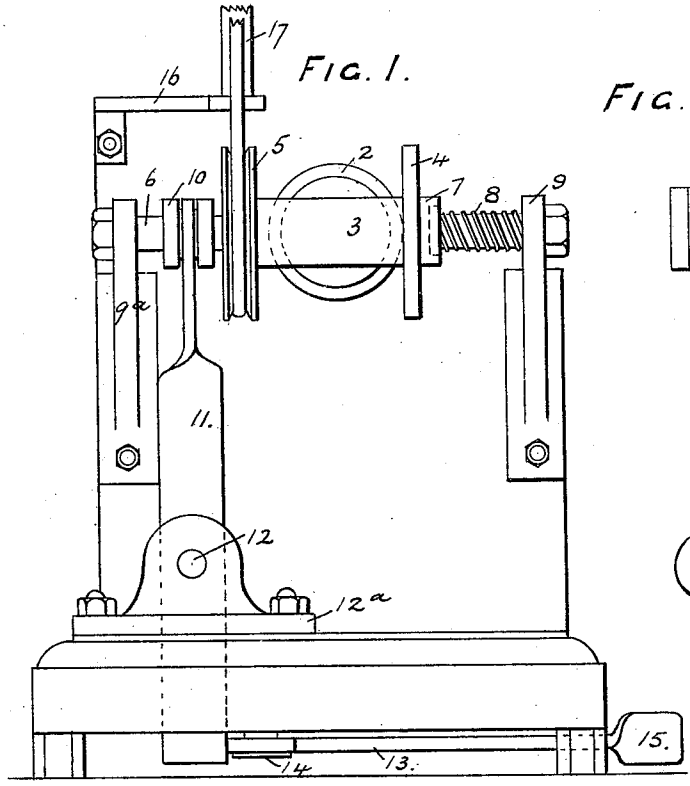
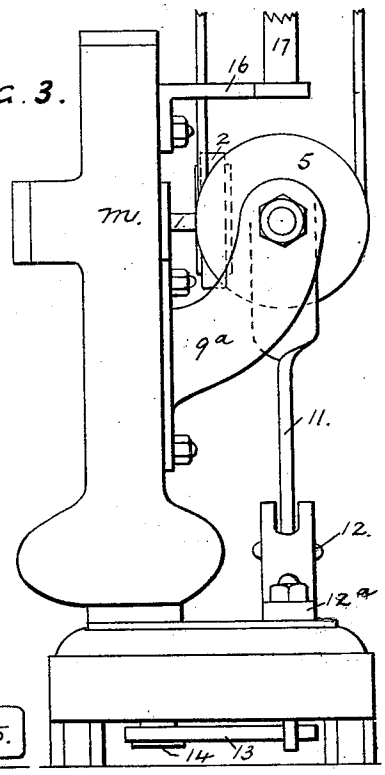


FIG. 3.



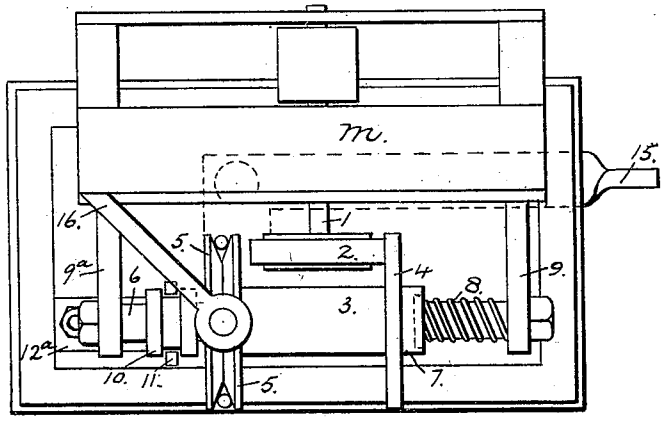


FIG. 2.

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UNITED STATES PATENT OFFICE.

VAN DELURE SEWELL, OF JACKSONVILLE, FLORIDA.

DRIVING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 621,160, dated March 14, 1899.

Application filed November 9, 1898. Serial No. 695,938. (No model.)

To all whom it may concern:

Be it known that I, VAN DELURE SEWELL, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Driving Mechanism for Electric Dental Machines, of which the following is a specification.

My invention relates to improvements in machinery for drilling teeth in dentistry in which electricity is utilized as the motive power; and the objects of my improvement are, first, to provide a continuous and self-regulating action of the machine, and, second, to obtain an instantaneous reverse motion thereof without interfering with the ordinary direction of the motive power. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the entire machine; Fig. 2, a top view, and Fig. 3 a side elevation.

Similar letters and figures refer to similar parts throughout the several views.

M is the naked outline of an ordinary electric motor, which forms no part of my invention, but which I utilize as my motive power.

1, Figs. 2 and 3, is an elongation or extension of the center spindle of the armature of an ordinary electric motor, on the end of which I fasten a friction-pulley 2, composed of an india-rubber contact for transmitting the power of the motor to the machine.

3, Figs. 1 and 2, is a hollow shaft or sleeve with a friction-disk 4 at one end and a friction-disk 5 at the other end, made in one piece, which revolves loosely and with lateral movements on a fixed round bar 6. The friction-disk 5 has a V-shaped groove in its outer circumference, converting it also into a pulley to receive a band—in other words, is a combination band-pulley and friction-disk.

7 is a loose collar made hollow at one end, encircling the fixed round bar 6 and in frictional contact with the disk 4, but not fastened to either.

8 is a helical spring entwining the fixed round bar 6 and with one end controlled by the hollow space in the collar 7, and though not fastened to anything reacts between the collar 6 and the bracket 9. This helical spring exercises a self-regulating action of the entire machine in its ordinary direction of movement, holding the friction-disk 4 in contact with the friction-pulley 2 without personal control or attention, giving the operator the entire use of all his faculties at the point of the drill.

10 is a grooved collar encircling the fixed round bar 6, but not fastened thereto, having lateral movements in both directions. 11 is a forked lever clasping the collar 10 in the groove and whose lateral movements it controls in the following manner: This lever 11 works on a fulcrum 12 in the journal-block 12^a, and is in its turn operated by a bent lever 13 under the platform of the machine, working on a fulcrum 14. The bent lever 13 projects outside the platform at one end and has a pedal 15 fixed vertically at its extremity. This pedal 15 is operated by the side of a man's foot, and on being pressed to the left the intermediate action of the two levers 13 and 11 presses the grooved collar to the right and against the friction-disk 5, causing that disk to move into contact with the friction-pulley 2. This movement instantaneously reverses the motion of the machine and at the same time of the instrument or drill in use. On removing the foot from the pedal the helical spring 8 reasserts itself, presses the disk 4 back again to the friction-pulley 2, and instantaneously restores the machine to its ordinary direction of motion.

9 and 9^a are brackets bolted to the frame of the electric motor for supporting the fixed round bar 6.

16 is a bracket also bolted to the frame of the electric motor for the purpose of supporting a rigid upright standard which carries the upper pulley to which the band from the friction-disk 5 carries the motion, and also for supporting the ordinary upper works of the dental drilling-tool.

I am aware that prior to my invention electricity has been utilized as the motive power to work dental drills. I therefore do not claim such a combination broadly; but,

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. A friction-pulley 2 fastened on the end of an elongation or extension of the center spindle of the armature of an electric motor and revolving between two friction-disks 4

and 5; a movable sleeve 3 with said friction-disk 4 and pulley-disk 5 fast at its ends all in one piece revolving loosely and having lateral movements on a fixed shaft 6; a collar 7 made hollow in one end and encircling loosely the fixed shaft 6 and in frictional contact with the disk 4, and a helical spring 8 entwining the fixed shaft 6 and reacting between the collar 7 and the bracket 9, all said parts combined substantially as set forth.

2. A friction-pulley 2; a movable sleeve 3 with friction-disk 4 and pulley-disk 5 fast at its ends; a fixed shaft 6; a collar 7; a helical spring 8; a grooved collar 10 encircling the fixed shaft 6 and in frictional contact with disk 5; a forked lever 11 working in groove of collar 10 on a fulcrum 12; a bent lever 13 on a fulcrum 14 with a foot-plate 15 all substantially as described.

VAN DELURE SEWELL.

Witnesses:
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