

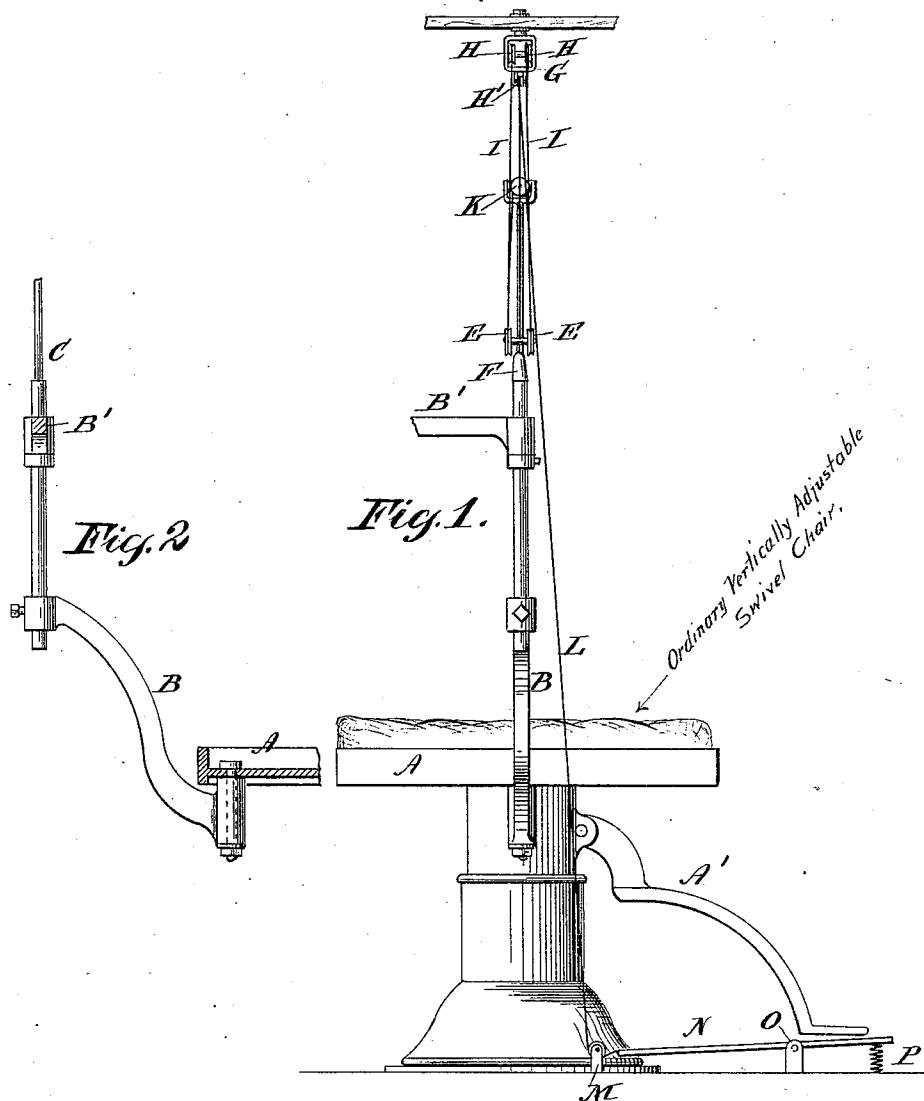
(No Model.)

3 Sheets—Sheet 1.

R. G. STANBROUGH.
DENTAL ENGINE.

No. 520,867.

Patented June 5, 1894.



Witnesses:
D. W. Gardner
E. V. Myers

Inventor:
R. G. Stanbrough
by Ernest A. Clark
his Atty.

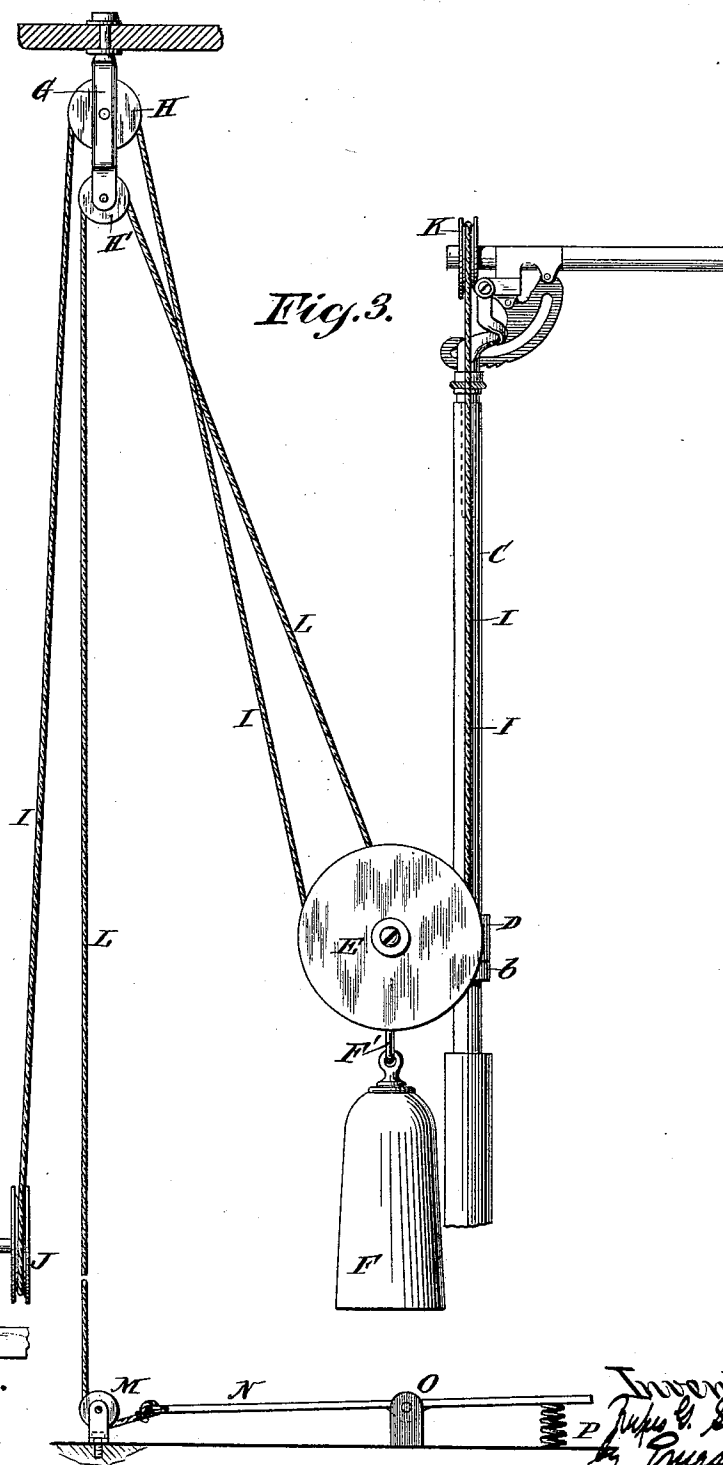
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3 Sheets—Sheet 2.

R. G. STANBROUGH.
DENTAL ENGINE.

No. 520,867.

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D. W. Gardner,
E. V. Myers

Inventor:
R. G. Stanbrough
by *Thurs. C. W. B.*
Att'y.

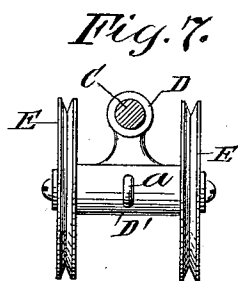
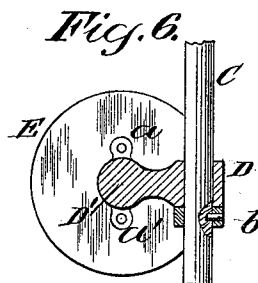
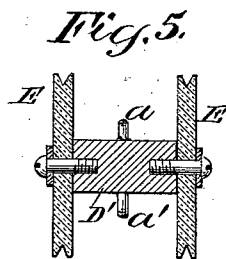
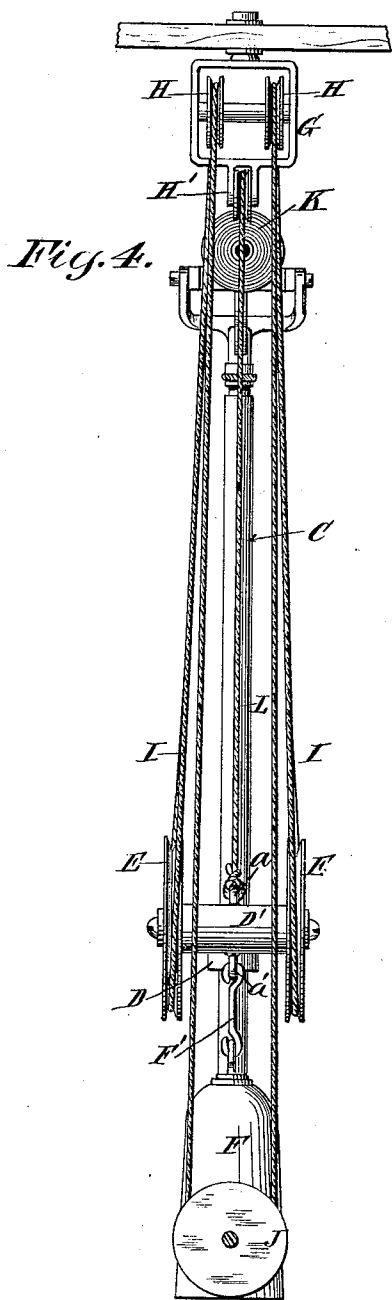
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R. G. STANBROUGH.
DENTAL ENGINE.

3 Sheets—Sheet 3.

No. 520,867.

Patented June 5, 1894.



Witnesses:

D. W. Gardner
E. V. Myers

Inventor:
Rufus G. Stanbrough
by Ernest Currier
his Atty.

UNITED STATES PATENT OFFICE.

RUFUS G. STANBROUGH, OF NEW YORK, N. Y.

DENTAL ENGINE.

SPECIFICATION forming part of Letters Patent No. 520,867, dated June 5, 1894.

Application filed December 2, 1892. Serial No. 453,818. (No model.)

To all whom it may concern:

Be it known that I, RUFUS G. STANBROUGH, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Dental Engines, of which the following is a specification.

The object of this invention is to provide means for securing a constant speed of the tool shaft of a dental engine attached to or carried by a vertically adjustable operating chair, without restricting the latitude of movement of such shaft and chair.

A further object of the invention is to provide means for reducing the speed or stopping the engine at pleasure without diminishing the speed of the motor.

To these ends my said invention consists in a dental engine movably secured to a vertically movable operating chair, a driving belt, the tension upon which is controlled by a weight or analogous device riding thereon, and means for raising said weight away from the belt to reduce the tension, all as hereinafter more particularly described and pointed out in the claims.

In the accompanying drawings illustrating my invention, in the several views of which like parts are similarly designated, Figure 1, is an elevation showing part of the operating chair, and my device in position for use. Fig. 2, is a detail of the pivoted arm to which the engine is secured. Fig. 3, is a side elevation showing the motor, a portion of the dental engine, and the tension device, with their connections. Fig. 4, is a similar front elevation; and Figs. 5, 6, and 7, are details of the pulleys constituting a part of the tension device, and under which the driving belt passes.

A, is the operating chair, capable of vertical movement through the foot-lever A', in the ordinary manner, and having pivoted beneath its seat the usual arm B for the tool box or table, carrying the horizontal arm B', to which said tool-box or table is attached; and carrying also the vertically projecting tubular standard C, within which the tool shaft rests, as shown particularly in Fig. 3. Located beneath said tool shaft, and surrounding the standard C, is the loose collar D, carrying the horizontal hub or shaft D', to the outer ends of which the twin pulleys E, E, are journaled.

Said hub also, has the upper eye or perforated lug *a*, for a purpose to be hereinafter explained, and the lower eye *a'*, to which the weight F, is attached through the link F'.

Secured to the ceiling, or other suitable support, is the swivel yoke G, carrying the twin pulleys H, H, and the lower auxiliary pulley H'.

I, is the driving belt passing under the driving wheel J, on the motor J', thence over twin pulleys H, H, in swivel yoke G, thence under twin pulleys E, E, and thence up over driving wheel K, on the said tool shaft of the dental engine.

The operation of my invention as so far explained, will be apparent from the foregoing. When the operating chair is lowered, it carries downward with it the pivoted arm B, standard C, and the tool shaft; and the collar D, carrying the weight F, and twin pulleys E, E, riding upon the belt I, also drop a corresponding distance, maintaining a constant and even tension upon said belt, and rotating the engine at a uniform speed. When the chair is raised, the pulleys and weight are also raised, and the same results are attained; as they are also upon swinging the chair on its axis, or upon partially rotating the pivoted arm B, and standard C, or upon moving the tool shaft relative to its said standard; the collar D, being sufficiently loose to slide upon the said standard C, and permit the weight to be constantly exerted upon the driving belt.

To diminish or entirely release the tension upon the driving belt, I, and thereby reduce the speed of the engine or stop the same altogether, I attach to the eye *a*, on the hub D', the cord L, and pass the same up over the pulley H' in yoke G, and thence down and under the pulley M, which is preferably pivotally secured to the floor, and attach the other end of said cord to one end of the lever N, which, as shown in Figs. 1 and 3, is fulcrumed at O, and is preferably provided at its free end with the spring P. It will be apparent that when the operator depresses the free end of lever N, against the tension of spring P, he will raise the collar D, on standard C, and with it the weight F, and twin pulleys E, E, away from the driving belt I, thus removing the tension to any desired degree. If preferred, this latter part of my invention may be omit-

ted and the speed of the device regulated and varied by means of a switch, operated either by hand or by foot, in any ordinary and well-known manner.

5 It will be seen that great latitude of movement is acquired by the use of my invention, as the chair may be swung on its axis in either direction; the pivot arm B, and standard C, is capable of movement independent of said
10 chair, and the tool shaft resting in the top of standard C, is also movable with reference to the rest of the device; the driving belt and tension device adapting themselves to the various positions through swivel yoke G, loose
15 collar D, and the swivel pulley M. It will also be obvious that many structural changes and modifications may be made in the device and connections, without departing from the principle of the invention, and involving merely
20 the skill of a mechanic.

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

1. In a dental engine, a tool shaft mounted on a standard adapted to be pivoted to a vertically and pivotally movable operating chair,
25 means for rotating said shaft through a belt, and means for maintaining constant tension upon such belt at the varying heights of the chair, substantially as described.

30 2. In a dental engine, a tool shaft mounted upon a standard which is adapted to be arranged upon a vertically adjustable operating chair, a belt passing about a driven wheel, overhead twin pulleys about which the belt
35 thence passes, twin pulleys arranged below the tool shaft and receiving the belt from the overhead pulleys, a pulley on the tool shaft

about which the belt next passes, and a weight riding upon the belt between the overhead pulleys and the tool shaft, substantially as
40 described.

3. In a dental engine, a tool shaft mounted upon a standard which is adapted to be arranged upon a vertically adjustable operating chair, a belt passing about a driven wheel,
45 overhead twin pulleys about which the belt thence passes, twin pulleys arranged in a loose collar on the standard below the tool shaft and receiving the belt from the overhead pulleys, a pulley on the tool shaft about which
50 the belt next passes, and a weight riding upon the belt between the overhead pulleys and the tool shaft, substantially as described.

4. In a dental engine, a tool shaft mounted upon a standard which is adapted to be arranged upon a vertically adjustable operating chair, a belt passing about a driven wheel,
55 overhead twin pulleys about which the belt thence passes, twin pulleys arranged below the tool shaft and receiving the belt from the overhead pulleys, a pulley on the tool shaft about which the belt next passes, and a weight riding upon the belt between the overhead pulleys and the tool shaft, combined with an independent tension-relieving device applied
60 to the pulleys below the tool shaft, substantially as described.

Signed at New York, in the county of New York and State of New York.

RUFUS G. STANBROUGH.

Witnesses:

FREDERIC CARRAGAN,
EUGENE V. MYERS.