(No Model.)

A. A. WILCOX.

DENTAL ENGINE.

No. 459,429. Patented Sept. 15, 1891.

Fig. 2.

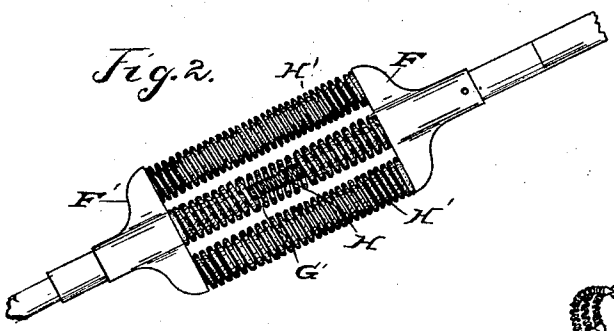


Fig. 1.

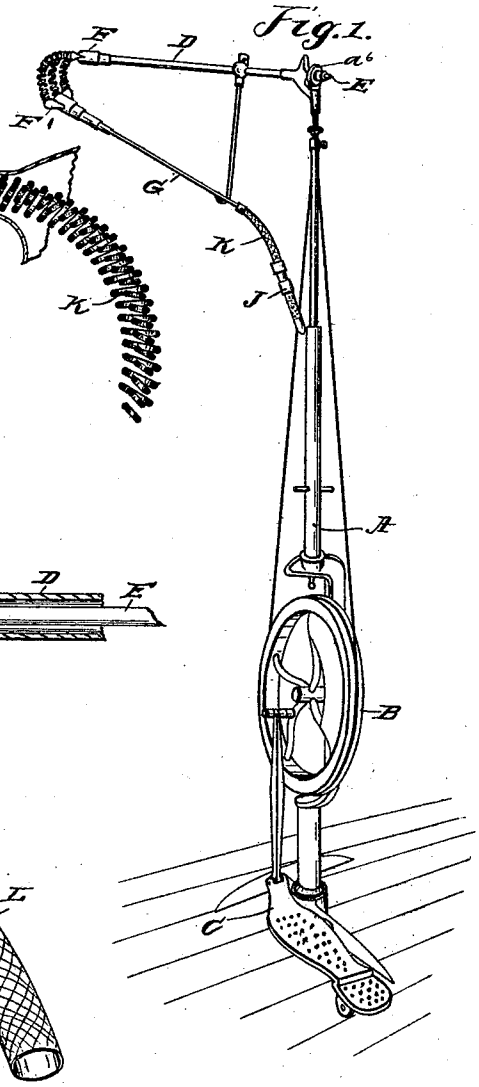


Fig. 3.

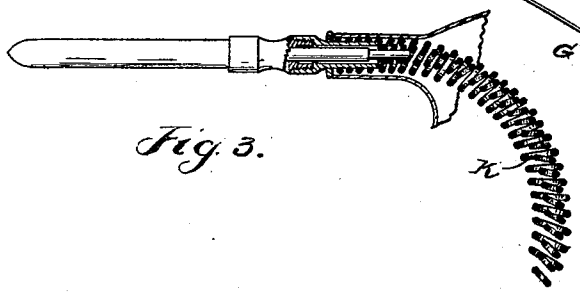


Fig. 4.

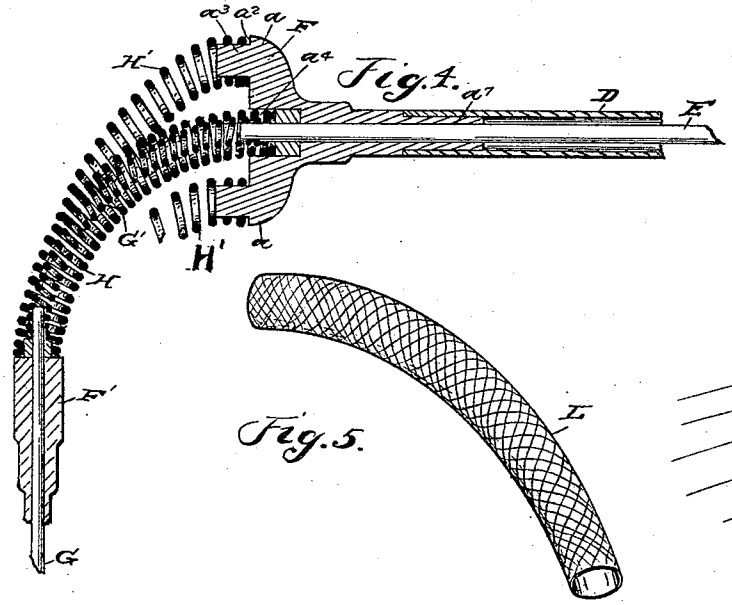


Fig. 5.

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UNITED STATES PATENT OFFICE.

AMOS A. WILCOX, OF CLEVELAND, ASSIGNOR TO AARON P. GOULD, JOHN C. SKELTON, AND ALBERT HOEFFER, ALL OF CANTON, OHIO.

DENTAL ENGINE.

SPECIFICATION forming part of Letters Patent No. 459,429, dated September 15, 1891.

Application filed February 2, 1891. Serial No. 379,902. (No model.)

To all whom it may concern:

Be it known that I, AMOS A. WILCOX, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented a new and useful Improvement in Dental Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to an improvement in dental engines; and it consists of certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claim.

Figure 1 of the accompanying drawings is a view in perspective of a dental engine illustrating my invention; Fig. 2, a similar view of the flexible connection between the two revolving shaft portions; Fig. 3, a sectional view of the cable connecting the tool-chuck with the outer end of the driving-shaft; Fig. 4, a sectional view of part shown in Fig. 2; Fig. 5, a cover for cable.

Similar letters of reference indicate corresponding parts in all of the figures of the drawings.

The vertical support A, wheel B, and pedal C are of a well-known and approved form, and will need no further explanation for the purposes of this application. At the top portion of the support A is swiveled a horizontal support D, in which is journaled a driving-shaft E. At the outer end portion of the support there is provided a head portion F, having branches *a*, shoulders a^2, and projecting portion a^3, and a central depression a^4, and a journal-box a^5 from the outer end of shaft E, a similar head portion F′ having all of the features shown and described in the head portion designated as F, said head forming a support for the inner end portion of the shaft G. The shafts E and G are connected by a cable portion G′, as shown in Figs. 2 and 4, which is of the usual form of cable made for such service. About said cable is placed a coiled-wire-spring support H, as shown in Figs. 2 and 4, the end portions resting in the depression a^4 of the heads F and F′, thus forming a flexible portion H intermediate the shafts E and G, by which power and rotary movement is transmitted from the shaft E to the shaft G. As a further support for the intermediate cable portion H, there is provided intermediate coiled-wire-spring portions H′, extending from the shoulders a^2 of the head portion F to the head F′, by which means the outer shaft portion G is supported and a strong and durable flexible portion provided by which the shafts G may be rotated and swung in any and all directions about the outer end of the shaft E to accommodate the operator in the movement of the hand-piece or tool-holder J, which may be of any of the well-known and approved kinds, and is secured to the outer end of the shaft G by a cable portion K, covered by a hose portion L. The head F, in which the outer end of the shaft is journaled, is swiveled in the end of the supporting pipe-arm D, as shown at a^7, Fig. 4, by which means the head F may rotate about the shaft to yield to and accommodate the movements of the intermediate yielding connecting portion as the shaft G and tool-holder is moved by the operator.

In operation the pedal is actuated by the foot of the operator in the usual way to rotate the wheel B, which having a belt connection with a pulley a^6, mounted on the inner end of the shaft E, rotary motion is communicated from the wheel B through the shaft D, intermediate flexible cable portion to shaft G, and the tool-holder or chuck.

Having thus fully described the nature and object of my invention, what I claim, and desire to secure by Letters Patent, is—

In a dental engine, the combination of the swiveled horizontal support D, a driving-shaft E, journaled therein, a head F, secured to the outer end of said support and provided with branches *a a*, having reduced projections a^3 to form shoulders a^2, said head formed with a central recess or chamber a^4, through which the said shaft E projects, a cable G′, connected to said shaft E, a coil-spring support H, surrounding said cable and having its inner end seated in said chamber or recess a^4, and coil-springs having their inner ends

placed around said projections a^3 and abutting against the shoulders a^2, a head F′, to which the outer end of the several springs are attached, a shaft G, journaled in said head F′ and secured to the outer end of the cable G′, and a tool-holder secured to said shaft, substantially as set forth.

In testimony whereof I have hereunto set my hand this 19th day of January, A. D. 1891.

AMOS A. WILCOX.

Witnesses:
J. B. FAY,
GEO. A. SNOW.