

No. 612,902.

Patented Oct. 25, 1898.

M. H. HOPFER.
DENTAL ENGINE.

(Application filed May 29, 1897.)

(No Model.)

FIG. 7.

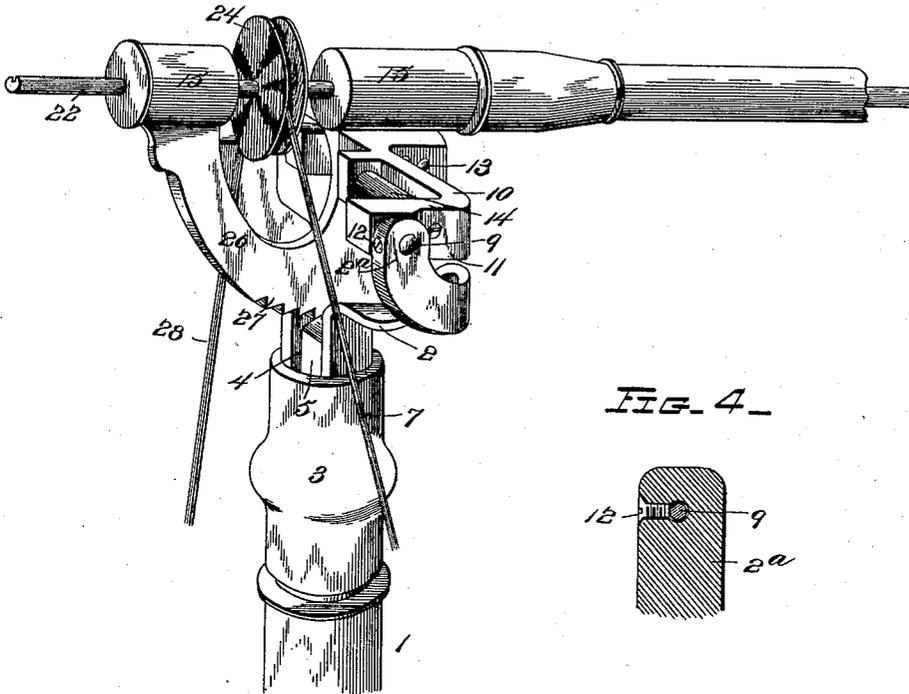


FIG. 4.

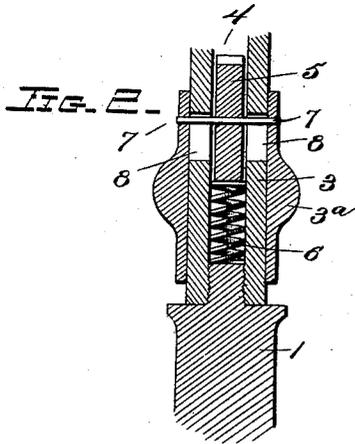
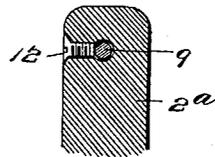
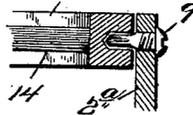


FIG. 3.



Witnesses
F. Kaiser.

Martin H. Hopfer, Inventor,
By his Attorneys,

UNITED STATES PATENT OFFICE.

MARTIN H. HOPFER, OF MINDEN, NEBRASKA.

DENTAL ENGINE.

SPECIFICATION forming part of Letters Patent No. 612,902, dated October 25, 1898.

(Application filed May 29, 1897. Serial No. 638,778. (No model.)

To all whom it may concern:

Be it known that I, MARTIN H. HOPFER, a citizen of the United States, residing at Minden, in the county of Kearney and State of Nebraska, have invented a new and useful Dental Engine, of which the following is a specification.

My invention relates to dental engines, and particularly to an improved construction of head whereby the tool-shaft is supported, said construction being such that the tool-shaft may be allowed to assume a position approximately parallel with the standard or upright of the machine when not in use and may be secured in any desired angular position when in use.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a view of a portion of a dental engine constructed in accordance with my invention. Fig. 2 is a vertical central section of the thimble and contiguous parts. Fig. 3 is a detail sectional view of the joint between the yoke-arms and the bracket. Fig. 4 is a detail section of the same, taken at right angles to the plane of Fig. 3.

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

1 designates a standard or upright, upon the upper end of which is mounted a supporting-yoke having arms 2, which are attached to a sleeve 3, threaded upon a reduced upper extremity of the standard. The lower portions of the yoke-arms are separated to form a parallel-sided guide 4, which is extended to form the sleeve, and mounted in said guide and sleeve is a pawl 5, adapted to slide in a direction parallel with the guide and yieldingly actuated by a coiled spring 6. The movement of said pawl is limited by a stop-pin 7, extending terminally through slots 8 in opposite sides of the sleeve and fixed to a thimble 3^a, which fits to slide on the sleeve and serves as means whereby the pawl may be moved against the tension of its actuating-spring. The yoke-arms are spread or separated above the guide 4 and are carried ver-

55 tically, as shown at 2^a, to support pivot-screws 9, which form the means for mounting a bracket 10, provided with lateral arms 11, arranged interiorly of the yoke-arms and being engaged by the inner extremities of said pivot-screws, suitable set-screws 12 being employed to lock the pivot-screws against accidental displacement. These bracket-arms 11 are preferably constructed separately from the body portion of the bracket and are secured thereto by means of bolts 13, and mounted upon the bracket-arms, upon opposite sides of the plane of the body portion of the bracket, are antifriction-rolls 14, for a purpose hereinafter explained.

60 The body portion of the bracket is provided with alined bearings 15, through which the tool-shaft 22 extends, said shaft carrying a driven pulley 24, which is arranged between the bearings in an intermediate cut-away portion of the bracket.

Depending from the bracket is a ratchet-segment 26, which fits in the guide 4, with its ratchet-teeth 27 in position for engagement by the pawl 5, whereby when the head of the engine is elevated to its operative position it is held against displacement by the engagement of the pawl with the ratchet-teeth. When the head is in the depressed or approximately vertical position to which it moves when the pawl 5 is disengaged from the ratchet-segment, the driving-belt 28 is held from contact with contiguous fixed portions of the engine by means of the antifriction-rolls 14 and is also prevented thereby from being dismounted from the driven pulley 24.

90 From the above description it will be seen that the construction of the head is such as to provide for folding the engine into compact form when not in use and at the same time enable the parts to be properly and effectually secured in their operative positions by the simple elevation of the head to the desired point. Furthermore, it will be seen that the construction of the parts is such that they may be readily disconnected.

100 Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

5 A tool-shaft-supporting head for dental engines, comprising a yoke consisting of a parallel-sided guide, a sleeve connecting the walls of the guide and adapted for attachment to a dental-engine standard, and outwardly-deflected arms having upturned terminal portions, a tool-shaft-supporting bracket
10 having lateral arms pivotally mounted upon the upturned terminal portions of the yoke-arms, spaced tool-shaft bearings carried by the bracket, with sufficient intervening space to receive a driven pulley on a tool-shaft, a

ratchet-segment connecting and depending 15 from said bearings to operate between the walls of said guide, a pawl mounted in the yoke for engaging the teeth of the segment, and a sleeve mounted to slide upon the yoke below its flared arms and connected with said 20 pawl, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MARTIN H. HOPFER.

Witnesses:

J. B. SCOTT,
JOHN R. MAXON.