

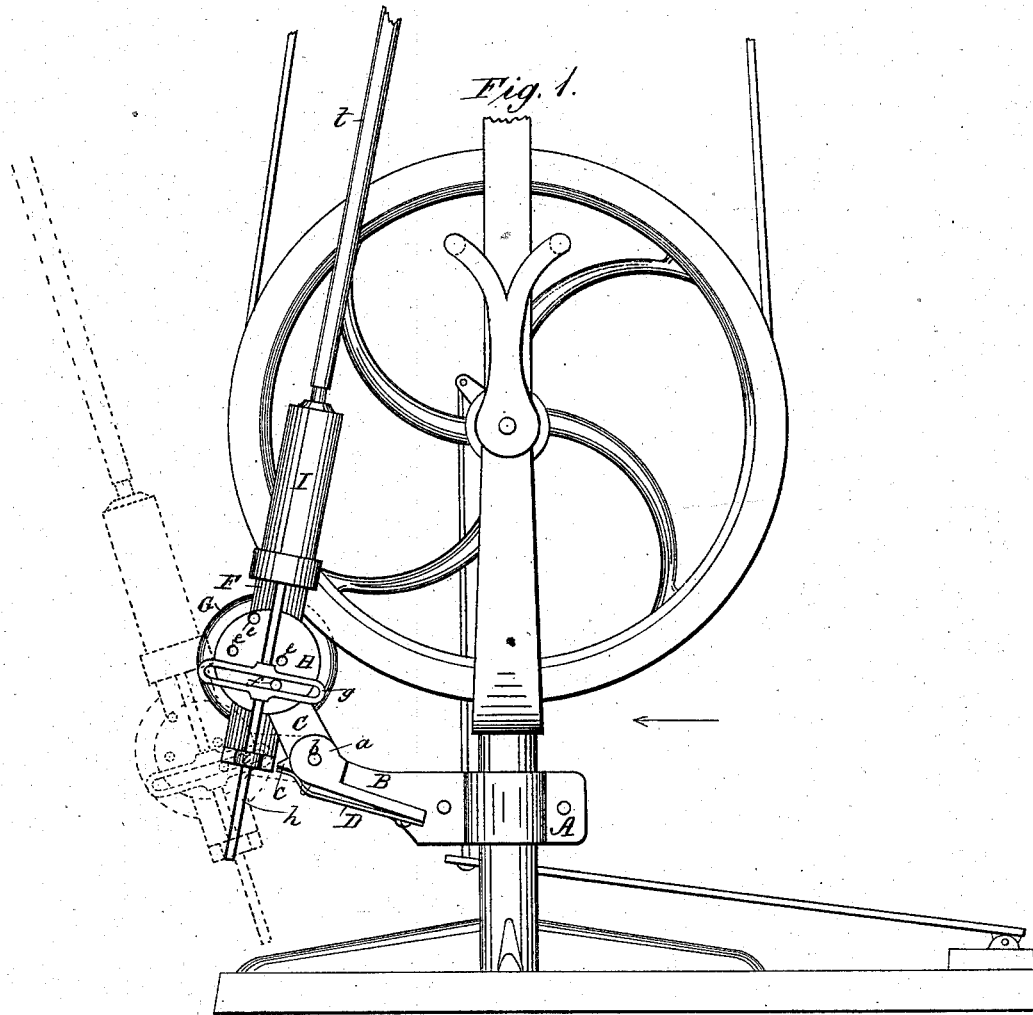
(No Model.)

2 Sheets—Sheet 1.

J. W. NORWOOD.  
DENTAL ENGINE ATTACHMENT.

No. 293,502.

Patented Feb. 12, 1884.



WITNESSES:

*W. W. Hollingsworth*  
*Edw. A. Ryan*

INVENTOR:

*J. W. Norwood J. D. S.*  
BY *Munn & Co*

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

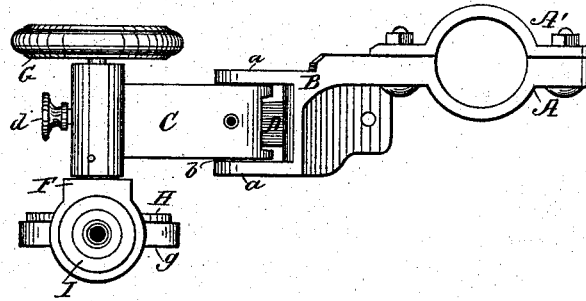
J. W. NORWOOD.

DENTAL ENGINE ATTACHMENT.

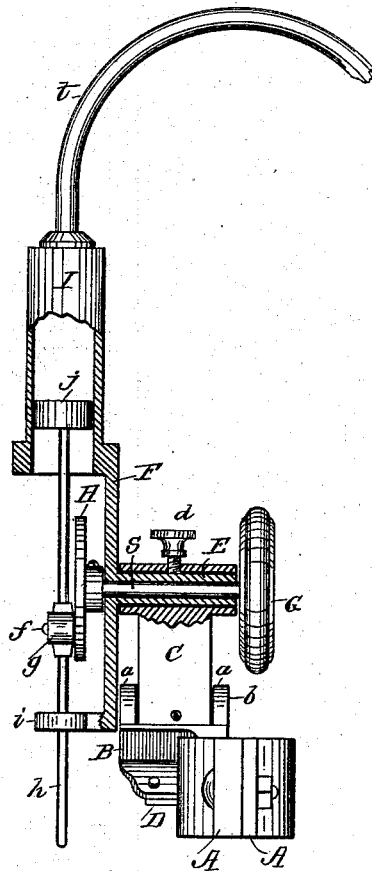
No. 293,502.

Patented Feb. 12, 1884.

*Fig. 2.*



*Fig. 3.*



WITNESSES:

*W. W. Hollingsworth*  
*Edw. U. Byen*

INVENTOR:

*J. W. Norwood D.D.S.*  
BY *Munn & Co.*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JESSE W. NORWOOD, OF GREENVILLE, SOUTH CAROLINA.

## DENTAL-ENGINE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 298,502, dated February 12, 1884.

Application filed December 6, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE W. NORWOOD, a citizen of the United States, residing at Greenville, in the county of Greenville and State of South Carolina, have invented certain new and useful Improvements in Dental-Engine Attachments, of which the following is a description.

Figure 1 represents a side view of my attachment applied to a Johnson engine. Fig. 2 is a plan view of said attachment; and Fig. 3 is a view of my attachment, partly in section, and looking at it in the direction of the arrow in Fig. 1.

My invention relates to dental engines in which pneumatic pluggers are employed, or pluggers in which a hammer-block is moved rapidly back and forth, and is made to deliver its blow upon the plugging-tool by the pulsating influence of a column of air which is alternately compressed and rarefied by the action of a piston in a pump-cylinder.

My device is in the nature of an attachment to any engine or motor having a fly or driving wheel, and is designed as a convenient and practical attachment to all engines now in use, to adapt them to use in connection with the pneumatic plunger.

It consists in the peculiar construction and arrangement of a pneumatic pump and the means for regulating its stroke, as well as means for supporting it and throwing it into and out of gear.

In the drawings, Fig. 1, I have shown my attachment applied to what is known as the "Johnson engine," which consists of an iron supporting-frame bearing a fly-wheel, a treadle, and a belt for rotating the drill-shaft at the top. Two semicircular clamp-pieces, A A', are bolted together around the shank or stem of the engine-frame, and one of these clamp-pieces, A, is formed with an offset, B, having ears *a a*, between which is jointed by bolt *b* a journal-support, C. This journal-support C is formed with a lug or projection, *c*, and the offset B has attached to it a flat spring, D, that is adapted to bear upon either side of the lug or projection *c* and hold the journal-support in either of two positions, one of which is at right angles to the offset and the other in line therewith.

In the outer end of the journal-support is

formed a tubular bearing, in which is contained a sleeve, E, rigidly connected to a frame, F, and having a rotary adjustment in the journal-bearing, which is fixed by a set-screw, *d*. Inside of this sleeve is a freely-revolving shaft, S, having attached to one end of it a grooved wheel, G, with a rubber friction-band around it, and upon the other end a disk, H. This disk has a series of holes, *e*, in its face at different distances from its center, in one of which is fixed a wrist-pin, *f*, that plays in a slotted frame, *g*, placed transversely in the length of a piston-rod, *h*. This piston-rod is guided in an offset, *i*, at one end of the frame F, and at the other end of said frame said piston-rod carries a piston, *j*, that works in a pump barrel or cylinder, I, attached to this end of frame F. This pump-cylinder has a nozzle that connects with a tube, *t*, leading to the pneumatic plunger, and when the piston is reciprocated the varying tension of air in the cylinder is made to operate the pneumatic plunger in a manner already well known.

In making use of my attachment, the clamps A A' are fastened to the shank or stem of the dental engine, and the journal-support is bent at right angles, as shown in Fig. 1, so as to throw the friction-wheel G against the drive-wheel of the engine. Rotary motion being thus imparted to the shaft S, the wrist-pin moving in the slotted frame causes the piston to be rapidly reciprocated to supply the necessary pulsations of air. When the attachment is no longer required, the journal-support is turned on its point of articulation into a straight line with the offset, as shown in dotted lines, in which position the friction-wheel does not touch the driving-wheel of the engine.

To increase or diminish the stroke of the pump-piston, the wrist-pin may be set in the holes *e* in this disk, either closer to or farther from the center, and to change the position of the pump-cylinder the frame F and its attached sleeve are turned in the journal-support and the binding-screw turned down upon said sleeve to hold it fixed to any desired adjustment, the sleeve being necessary, in this connection, to take the strain of the binding-screw off of the revolving shaft.

Having thus described my invention, what I claim as new is—

1. An attachment to a dental engine con-

sisting of a clamp, a journal-support, an air-pump, and a rotary shaft with friction-wheel and gearing connecting it with the pump, the said pumping mechanism being adjustable to  
5 or from the driving-wheel of the engine, as and for the purpose described.

2. The combination of the clamps A A', having offset B and spring D, and the articulated journal-support having lug c, and bearing the  
10 pumping mechanism, substantially as shown and described.

3. The combination, with the frame F, having cylinder at one end and a guide for the piston-rod at the other, of a shaft at right  
15 angles to the cylinder, bearing a disk with wrist-pin, and a piston-rod with piston, having a

slotted frame in its length to receive the wrist-pin, as shown and described.

4. The combination, with the pump-cylinder and its piston and rod, having a slotted frame  
20 in the latter, of a disk having a series of holes at different distances from the center, and a wrist-pin adapted to fit in said holes, as shown and described.

5. The frame F, with sleeve arranged in and  
25 combined with a journal-support, and a set-screw for fixing the position of said frame, substantially as described.

JESSE W. NORWOOD.

Witnesses:

J. A. MCDANIEL,  
ALEX. MCBEE, JR.