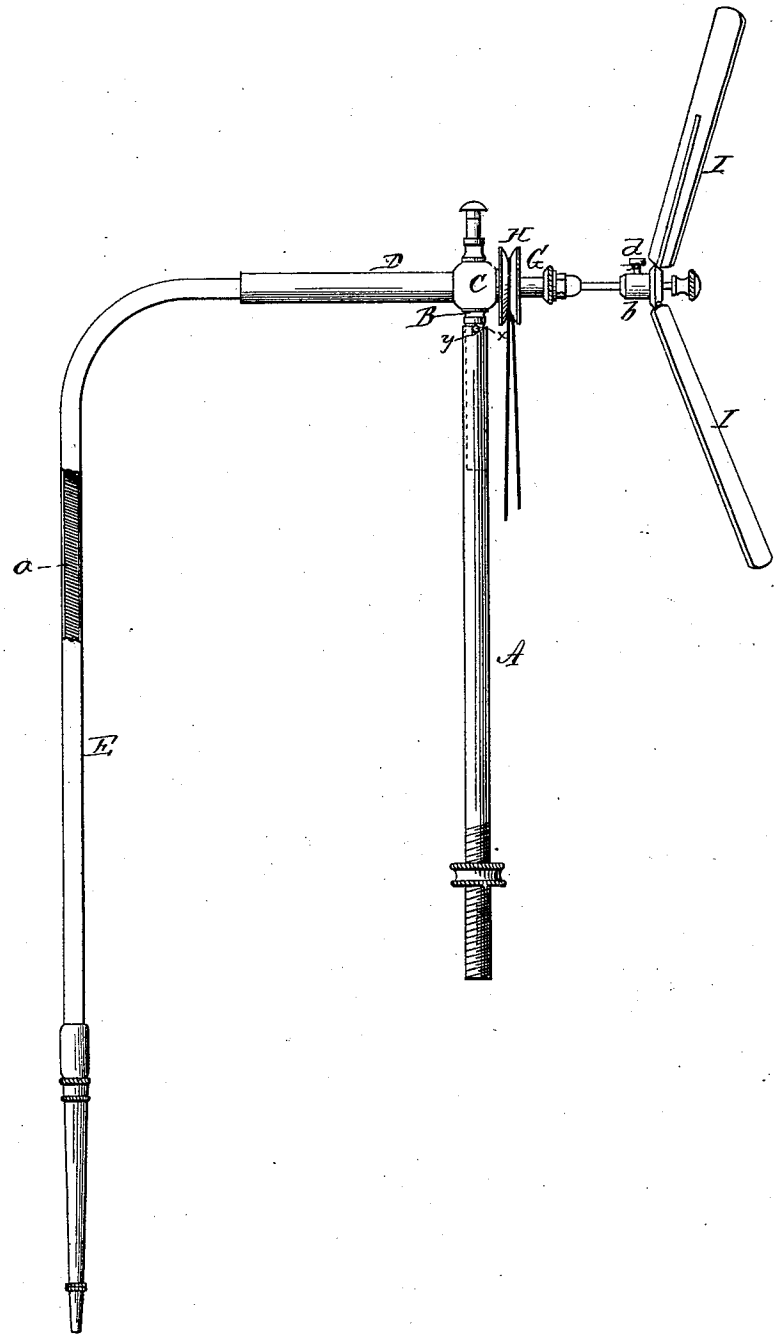
E. E. HOPKINS & G. A. BEIDLER.

Fans for Dental Engines.

No. 168,023. Patented Sept. 21, 1875.



WITNESSES

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ELLWOOD E. HOPKINS AND GEORGE A. BEIDLER, OF PHILADELPHIA, PENNSYLVANIA; SAID BEIDLER ASSIGNOR TO SAID HOPKINS.

IMPROVEMENT IN FANS FOR DENTAL ENGINES.

Specification forming part of Letters Patent No. **168,023**, dated September 21, 1875; application filed June 18, 1875.

To all whom it may concern:

Be it known that we, ELLWOOD E. HOPKINS and GEORGE A. BEIDLER, of Philadelphia, in the county of Philadelphia and in the State of Pennsylvania, have invented certain new and useful Improvements in Fan for Dental Engines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists in the combination of a fan with a dental engine or lathe operated by the same power that runs the engine, and also in a device for preventing the fan from getting out of position, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a side elevation of a part of a dental engine embodying our invention.

A represents the adjustable upright hollow standard of a dental engine, in the upper end of which is inserted a shaft or rod, B, having a hollow head or knob, C, at its upper end. Through this hollow head C is passed a tube, D, of suitable length, to the outer end of which the ordinary flexible tube E is attached, said tube having the hand-piece swiveled thereto at the outer end. Through the tube D passes the shaft G with pulley H thereon, and to said shaft is attached the cable *a*, which runs through the flexible tube E, and has the drill-holder fastened thereto.

These parts are all constructed and arranged in the ordinary manner for dental engines.

The shaft G is extended a suitable distance beyond the pulley H, and on the same is attached a fan consisting of two or more wings, I, set at suitable angles in a central hub, *b*, which is fastened by a set-screw, *d*, or otherwise to the shaft.

It will be seen that the fan is thus operated by the same power and at the same time as the dental drill is operated.

The fan may be arranged in various other ways on or with the engine, so as to be operated with the same power without departing from the spirit of my invention. It may also be arranged in combination with dental lathes or dental chairs, if desired.

By thus arranging a fan in combination with a dental engine several important advantages are gained: Both the patient and dentist are kept cool, the flies are kept at a distance, and it blows away the breath of either party, preventing the other party from inhaling the same.

In connection with this invention we use a ratchet-connection between the hollow standard A and shaft B, which consists simply of a pin, *x*, on the shaft, and two or more inclined notches, *y*, in the upper edge of the standard, to prevent the fan from being turned around, so as not to force the air in the direction desired. The extreme ends of the wings of the fan may be surrounded by a band or wire, so as to form a complete circle for preventing the wings from striking any object that may come too close.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a dental engine or lathe, and a fan connected therewith and operated by the same power that operates the engine or lathe, substantially as and for the purposes herein set forth.

2. In a dental engine having a fan attachment, the combination of the ratchet-connection *x y*, with the hollow standard A, shaft B, and shaft G, substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 7th day of June, 1875.

ELLWOOD E. HOPKINS.
GEO. A. BEIDLER.

Witnesses:
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E. H. BAILEY.