

E. C. Kistel,
Dental Lathe.
No. 110,869. *Patented Jan. 10. 1871.*

Fig. 1

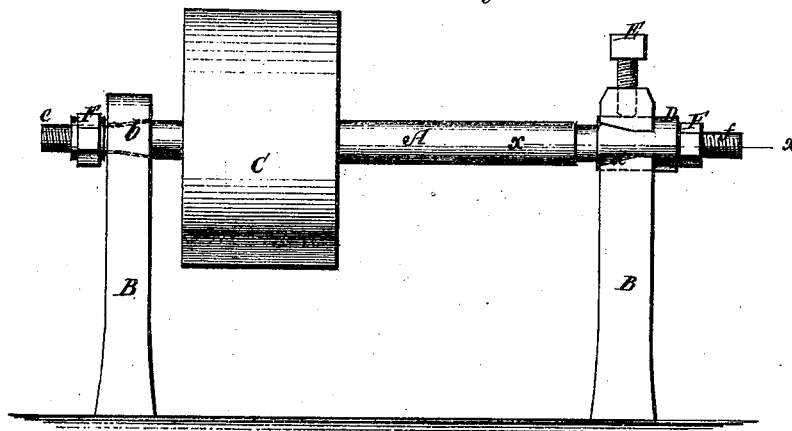


Fig. 3

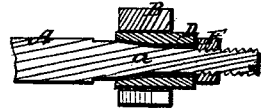
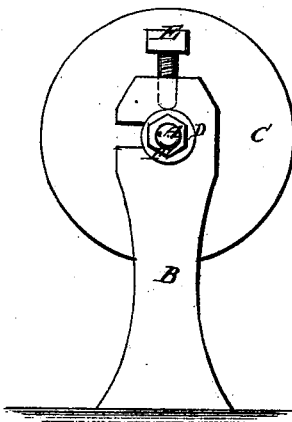


Fig. 2.



Witnesses:
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PER *Mmm*
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United States Patent Office.

ELIAS C. RISHEL, OF WHITE HAVEN, PENNSYLVANIA.

Letters Patent No. 110,869, dated January 10, 1871; antedated December 31, 1870.

IMPROVEMENT IN DENTAL LATHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELIAS C. RISHEL, of White Haven, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Dental Lathes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in dental lathes, and consists in an arrangement of the mandrel and the bearings therefor, to admit of readily removing the mandrel from the supports, as is often required for shifting or changing the wheels on the mandrel.

Figure 1 is a side elevation of a part of a dental lathe;

Figure 2 is an end view of the same; and

Figure 3 is a section on the line *x x* of fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the mandrel;

B, the supports for the bearings; and

C, the driving-pulley.

For dental purposes it is often necessary to place grinding or other disks, or wheels, on the mandrel against the side of the pulley C, or in other places between the bearings, and to change them from time to time.

I therefore propose to fit the mandrel with journals, tapered in part, as shown at *a*, and make a correspondingly-shaped bearing in one support, as shown at *b*, and provide an opening, *d*, through the other bearing support, so that by first passing the end *e* of the mandrel through the hole at *b*, from the direction of the other bearing, the journal at the end *f* may be passed sidewise through the opening *d* into the hole for the journal, which is made larger than the said journal, for the reception of a bush, D, having a hole corresponding to the shape of the journal, and shoved endwise into the hole for it, and along the journal, to bear against the tapered part and force the tapered part, at the other end, against its bearings, to hold the mandrel against end movement, the bush being held in position by a set-screw, E.

After the mandrel is put in position the nuts F

are screwed onto the ends of the mandrel; they are chiefly used in connection with other nuts to be screwed on for clamping disks or other things on the screwed ends.

To take the mandrel out, the bush D is first moved out of the bearing support, (the nuts F being taken off,) the end in the notched bearing is moved out through the notch, and the end, at *b*, is drawn out the way it was put in.

I may arrange both the bearing supports with notches *d* and bushes D, so as to take both journals without moving the mandrel endwise.

The tapered bearing and journal at *b* admit of moving the other end of the mandrel laterally after being first moved endwise slightly, when the bush D is removed. This could not be done if this bearing and journal were cylindrical.

This sleeve, with the tapered hole, and the set-screw for holding it, may be used in connection with the tapered journal of any mandrel, whether arranged in these notched bearings or not, for taking up the slack caused by wear, and I propose to make such use of it.

The nuts are also intended to act as shoulders against the bushes in cases when great end pressure occurs, so as to prevent the wedging of the tapered bearing with the sleeve when exposed to the end pressure, another nut being put on and screwed against the one bearing on the end of the bush, to prevent its being turned by the friction thereat.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The mandrel A, provided with tapering and threaded journals and nuts, as described, in combination with the tapered bearing *b* and sleeve D, the latter arranged in a bearing support, having a notch, *d*, and set-screw E, as specified.

2. The combination, with the bearing support and the mandrel, of the adjustable bush D and the set-screw E, substantially as specified.

The above specification of my invention signed by me this 27th day of April, 1870.

ELIAS C. RISHEL.

Witnesses:

GEO. W. MABEE,

L. S. MABEE.