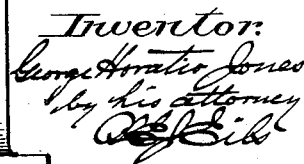


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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN LATHES FOR DENTAL SURGERY.

Specification forming part of Letters Patent No. **220,384**, dated October 7, 1879; application filed July 3, 1879; patented in England, April 18, 1879.

### *To all whom it may concern:*

Be it known that I, GEORGE HORATIO JONES, of 57 Great Russell Street, Bloomsbury, in the county of Middlesex, England, surgeon dentist, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in Lathes Employed in Dental Surgery and for other similar purposes; and I, the said GEORGE HORATIO JONES, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

This invention has for its object improvements in lathes employed in dental surgery and other similar purposes, whereby the small particles of precious metals, such as gold and platinum, which are now usually wasted in the operation of grinding, are preserved, at the same time that a constant and sufficient supply of water is insured on the grinding-stone when the same is in use.

And in order that my said invention may be better understood and readily carried into effect, I will now, with the aid of the accompanying drawing, which shows a view, in front elevation, of a dentist's lathe with my improved mechanical arrangement adapted thereto, proceed more particularly to describe and ascertain the same.

In order to effect the objects above mentioned I affix to one side of the lathe, in any convenient position, a tank, B, of any suitable form and dimensions, the bottom whereof is of an oval or conical shape, and is provided in its center with a convenient orifice, which is closed by means of a screw-nut, D. I then fix a small force-pump, A, on suitable bearings *a*, placed about midway in the frame of the lathe, which pump is actuated by means of a shaft-wheel and eccentric, in connection with the driving-wheel of the lathe, as shown at C in the accompanying drawing. Attached to the base of such force-pump is a suitable supply-pipe, E, which is connected with the tank B, and which supply-pipe serves to feed the force-pump with water from the tank.

In order to conduct such water to the grind-stone a second supply-pipe, F, is attached to

the side of the force-pump, which extends upward and terminates in a curve immediately over the grinding-wheel.

When the driving-wheel of the lathe is set in motion the water is pumped out from the top of the tank through the supply-pipe E, and conducted through the tube F, from the curved extremity of which it drops onto a sponge or other suitable porous material, so arranged as to touch the grinding-wheel, and through which the water passes over the grinding-wheel, and thence falls into the trough G, connected with which is a suitable outlet-pipe, H, passing into the tank B, and extending nearly to the bottom of the same, as shown in the drawing.

As the water so passes into the trough G, and discharges itself through the outlet-pipe H into the tank B, it carries with it all the minute particles of precious metal which become detached in the operation of grinding, and which have hitherto been wasted, and deposits them as a residuum in the bottom of the tank; and when a sufficient accumulation of such particles has taken place the screw-nut D is removed, and they are washed down the conical or oval sides of the base of the tank, and received into any suitable vessel, whence they are removed and submitted to the ordinary process of refining, and otherwise treated, so as to render them fit for reutilization.

I form the base of the tank of an oval or conical shape, in order to insure all the particles of precious metal escaping therefrom when the screw-nut D is removed.

It will be observed that the supply-pipe E extends nearly to the top of the tank, which is kept filled with water to the dotted line I, whereby I insure the water at the bottom of the tank remaining unagitated, and so allowing the minute particles of metal to precipitate themselves to the bottom instead of being held in suspension by the agitation of the water.

It is also obvious that by my improved arrangement of mechanism a constant and sufficient supply of water is insured to the grind-stone.

My improved mechanical arrangement, as hereinbefore described, may be adapted with advantage to jewelers' and other lathes used

for grinding precious metals and materials, as well as to those employed in dental surgery.

Having thus particularly described and ascertained the nature of my said invention and the manner of carrying the same into operation, I would have it understood that what I claim is—

The combination, substantially as before set forth, of the water-supply tank, the pump drawing water from the upper part of said tank and discharging it upon the grinding-

wheel, the trough under the grinding-wheel, and the pipe for discharging the water and grindings from the water-trough into the lower part of the tank.

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