N. W. HOLT.

Jewelers' Lathe.

No. 159,180. Patented Jan. 26, 1875.

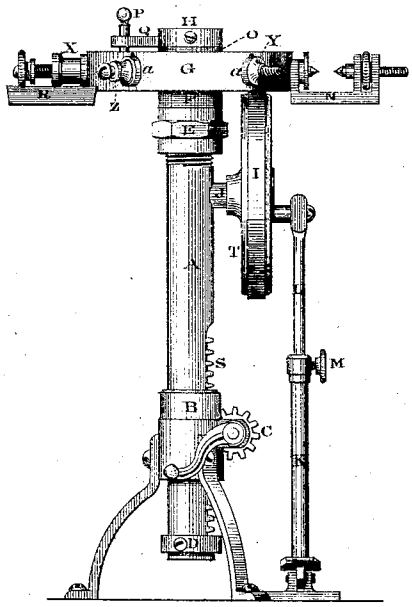

FIG. 2.

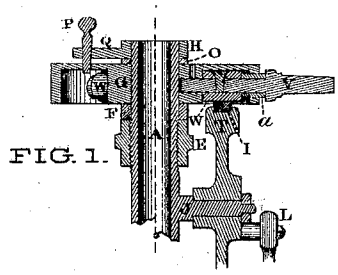

FIG. 1.

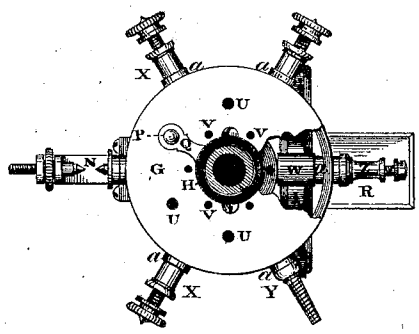

FIG. 3.

WITNESSES,

Chas. W. Benton

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INVENTOR,

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UNITED STATES PATENT OFFICE.

NEWTON W. HOLT, OF BENNINGTON, VERMONT, ASSIGNOR TO OLIN SCOTT, OF SAME PLACE.

IMPROVEMENT IN JEWELERS' LATHES.

Specification forming part of Letters Patent No. 159,180, dated January 26, 1875; application filed September 28, 1874.

To all whom it may concern:

Be it known that I, NEWTON W. HOLT, of Bennington, Vermont, have invented a Lathe, of which the following is a specification:

This invention relates to that class of light portable lathes in common use among dentists, jewelers, and artisans of like character. It can be operated by foot or other power, and embraces in one machine the leading or most important features of several distinct machines.

Figure 1 of the drawings is a vertical section of the supporting-standard, driving-wheel, and rotary head-stock which carries the various cutters, mandrels, or spindles to be operated. Fig. 2 shows a front elevation of the lathe, and Fig. 3 exhibits a plan of the top of the head-stock.

The lathe consists of a tripod, provided at its upper end with a clamp-socket, which receives and supports the standard to which is attached the friction driving-wheel, and upon and about the top end of which revolves the rotary head-stock, with its various attachments.

By reference to Fig. 2 of the drawing, it will be seen that the socket of the tripod or stand B is provided with two jaws, between which revolves the pinion-gear C. The shaft of this gear is made with a shoulder on the crank end, and a nut on the opposite end, and passes through both jaws or cheeks of the clamp B, and is so arranged that the standard A may be raised and depressed by turning the gear C, which works in the rack S upon the standard, till any desired elevation is attained, when, by turning the aforesaid nut on the gear-shaft, the clamp is tightened and the standard firmly held in place. The collar D is applied at lower end of the standard to limit its elevation. Upon the standard A a stud, J, is constructed, upon and about which revolves the driving-wheel T. The periphery of this wheel is grooved to receive a rubber, leather, or other friction-band, by means of which the pulleys upon the several spindles of the head above are driven. This driving-wheel is provided with a crank-pin, by which and the adjustable pitman L M K and treadle or foot-lever the same is driven. The pitman consists of the upper portion or rod L, attached to the crank-pin, and the hollow or tubular portion K, which is attached to the foot-lever, and which receives and retains the part L after adjustment. After adjustment the several parts of the pitman are fastened and firmly held by means of the set-screw M. The rotatable head-stock G is secured to the standard and held in position thereon by means of the nut E, collars F and H, and rubber spring O. The standard, for a short space below the head-stock, is threaded to receive the nut E. Between this nut and the head-stock G is the collar F. Upon the top of the standard the collar H is fastened securely by set-screws or otherwise, and between this collar and the upper surface of the head-stock is placed the rubber spring or cushion O, against which the nut E works to regulate the degree of pressure or friction between the rim I of the driving-wheel T and the pulleys of the several spindles N X Y Z. By running the nut down the pressure is increased, and vice versa. The collar H has a projecting arm, Q, through the extremity of which the pin P passes, and into the holes U U U of the head-stock G. The office of this device is to secure or lock the head-stock when some one of the spindles has been brought into position to be operated by the driving-wheel. The spindles N X Y Z are arranged radially about the center of the head-stock G. The inner bearings of said spindles are located in the hub of the head-stock, and the outer ones are constructed in bushings *a a a*, which are inserted in the periphery of the head-stock. The inner bearings of the spindles are provided with oil-holes V V V for facilitating the lubrication of the same, and the pulleys W thereon revolve in an annular chamber constructed therefor on the under side of the head-stock. These pulleys may be of different diameters, so as to obtain different velocities from the same driving-wheel, as they can readily be brought into contact with the driving-wheel T, and be adjusted by means of the threaded standard A, nut E, spring O, and collars F and H. The periphery of the head-stock is perforated where the spindles pass through, and bushings *a a a* are inserted, which form the outer bearing of the spindle.

This lathe is designed for and adapted to the uses for which jewelers, dentists, and other mechanics require a small portable lathe; and

the advantages claimed for it are that the rotatable head can be provided with as many and as various devices for doing circular work as the diverse natures of the several trades or occupations may require. In the drawing I have shown a face-plate and centers, mandrels, a screw-center, &c. Where it becomes necessary to employ several agencies or tools in making or finishing the same piece of work, as, for instance, a chuck, an emery-wheel, a buffer, a knurl, and a finishing-wheel, these may all be arranged on separate centers or spindles, and may be successively brought into operation without being removed from the spindle or changed, by simply rotating the head-stock, so as to bring into play the required tool.

I claim as of my invention and new—

1. The combination of the tripod B, rack S, and pinion C, threaded standard A, nut E, collars F and H, head-stock G, collar-spring O, locking-device Q P, and holes U U U, spindles N X Y Z, each provided with a pulley actuated by a friction driving-pulley, T, attached to the standard A, and the adjustable pitman K L M, all constructed and arranged as shown in Figs. 1, 2, and 3, and operating substantially as described.

2. The threaded standard A, nut E, rotary head-stock G, collar-spring O, collars F and H, radial spindles N X Y Z, and driving-wheel T, attached to the standard A, as shown and described.

3. The within-described means of regulating the degree of friction necessary to operate and bring into adjustment the several spindles attached to the head G, when the same are provided with pulleys of different diameters to obtain different velocities, and consisting of the threaded standard A, nut E, collar H, spring O, and head-stock G, conjointly operating and constructed as shown.

4. The vertically-adjustable standard A, driving-wheel T, and adjustable socket-pitman K L M, combined and operating as described.

In testimony whereof I have hereunto subscribed my name.

NEWTON W. HOLT.

Witnesses:

CHAS. W. BENTON,

ANDREW M. BATES.