

T. DRAPER.

BALL TURNING LATHE.

No. 363,994.

Patented May 31, 1887.

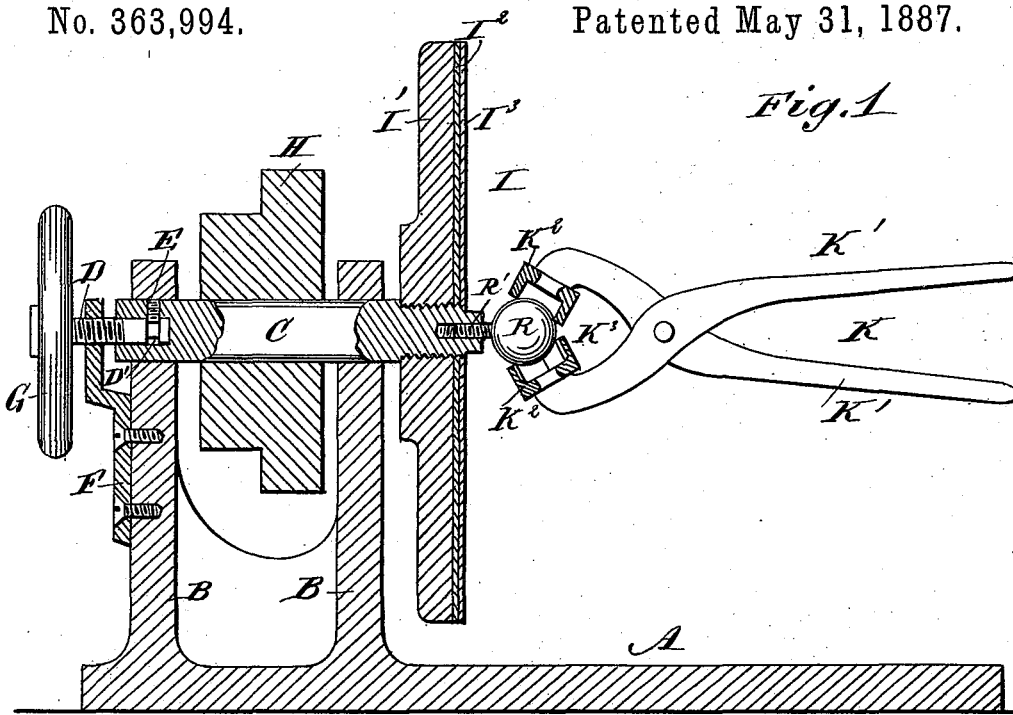


Fig. 1

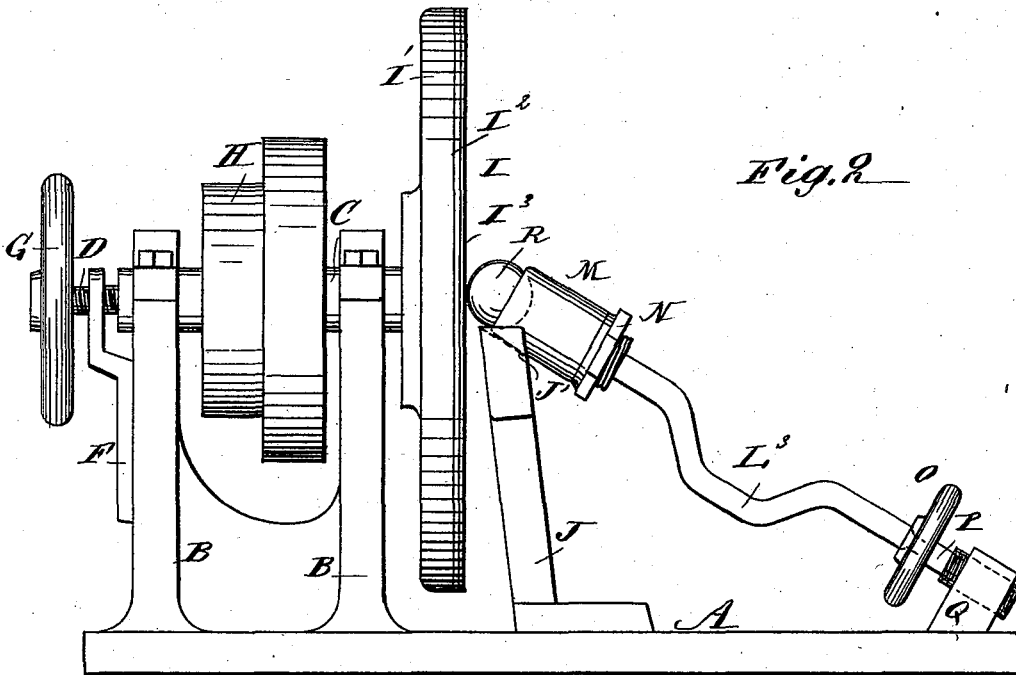


Fig. 2

WITNESSES:

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W. Sedgwick

INVENTOR:

T. Draper

BY *Munn & Co*

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Fig. 3

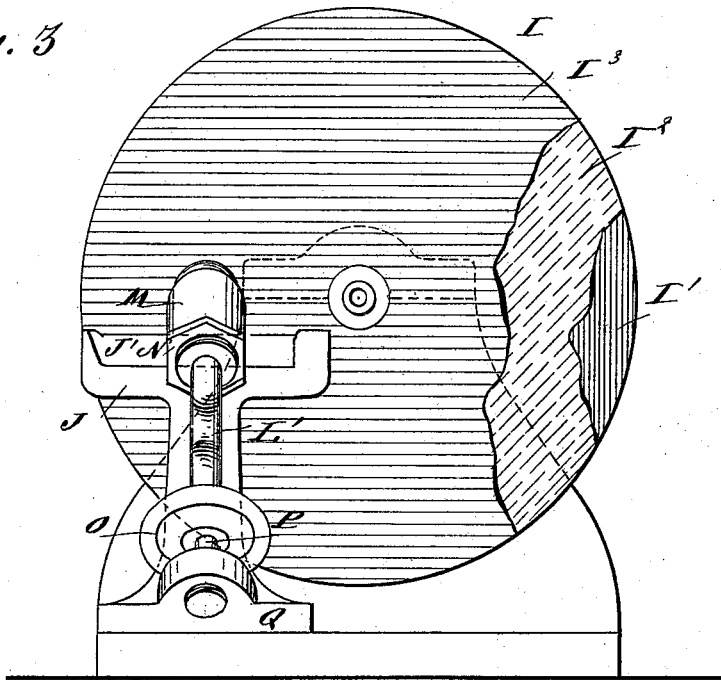


Fig. 4

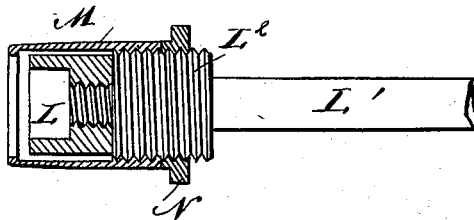


Fig. 5

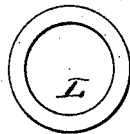
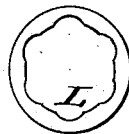


Fig. 6



WITNESSES:

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UNITED STATES PATENT OFFICE.

TRONSON DRAPER, OF PETROLIA, ONTARIO, CANADA.

BALL-TURNING LATHE.

SPECIFICATION forming part of Letters Patent No. 363,994, dated May 31, 1887.

Application filed September 3, 1886. Serial No. 212,630. (No model.)

To all whom it may concern:

Be it known that I, TRONSON DRAPER, of Petrolia, in the Province of Ontario and the Dominion of Canada, have invented a new and Improved Ball-Turning Lathe, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved lathe for turning or rounding balls.

The invention consists of an adjustable face-plate covered with leather and backed by rubber or other elastic material, of a pair of tongs having steel cups, of an adjustable steel cup placed on a holder, of a ball rest, and means for adjusting the steel cup holder.

The invention also consists of various parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional elevation of my improvement, showing a pair of tongs applied. Fig. 2 is a side elevation of the same, showing the device for finishing the ball. Fig. 3 is a face view of the same, parts of the face-plate being broken out. Fig. 4 is a vertical central section of the steel cup and its holder. Fig. 5 is a face view of the steel cup; and Fig. 6 is a face view of a modified form of the steel cup.

On the base-plate A are secured the standards B, in which is mounted to slide and to rotate the spindle C, into the rear end of which projects centrally the screw D, having the annular recess D', into which passes the set-screw E, screwing in the spindle C, and thus attaching the screw D to the spindle C and permitting a rotary motion of both independently of each other. The screw D screws in an arm or bracket, F, secured to the bracket B, and is provided on its outer end with a hand-wheel, G.

Between the two standards B is placed a driving-pulley, H, secured to the spindle C, and on the inner end of the latter is secured the face-plate I, consisting of the disk I', covered on its face with a disk, I'', of rubber or

other elastic material, and of the leather disk I³, secured to the rubber disk I² in any suitable manner. To one side, in front of the face-plate I, is mounted on the base-plate A the ball-rest J, having the inclined upper edge, J'. 55

The tools used in connection with the lathe are a pair of tongs, K, and a steel cup, L. The pair of tongs K is provided with the pivoted prongs K', each of which carries on its outer end a steel cup, K², having the inner cutting-edge, K³. 60

The steel cup L is fastened on the end of the holder L', which is provided on its upper end with the screw-threaded portion L², on which screws the cap or guide M, held at any desired point on the part L² by the jam-nut N, also screwing on the part L². The holder L' is provided with the handle L³, and the lower end of the holder rests, when applied, in a socket formed in the center of the hand-wheel O, attached to the screw P, screwing in the keeper Q, secured to the base-plate A. 70

The cutting-edges of the cups K² and L may be of various shapes, as shown in Figs. 5 and 6. 75

The operation is as follows: The ball R, which is cast with a stem, R', is screwed into or otherwise fastened to the lathe-spindle C, in front of the face-plate I, and is revolved with the said spindle C. The operator then takes hold of the tongs K and presses the steel cups K² over the ball R, as shown in Fig. 1, and then moves the tongs K from side to side, at the same time pressing the prongs K' together, so that the cutting-edges K³ of the cups K² come in contact with the surface of the ball R and thus round the same. The stem R' of the ball R is then carefully cut off by a hand-tool or the usual lathe-tool, so as to complete as nearly as possible the spherical surface of the ball. The latter is then placed on the rest J, while the face-plate I is drawn backward by turning the hand-wheel G until the distance between the face-plate I and the rest J is sufficient to support a ball in position on the rest J. The holder L', with its cup L, is then placed in the position shown in Figs. 2 and 3, so that the lower end of the holder L' rests in the hand-wheel O and the cup L partly encircles the ball R, and the latter is pressed against the cushioned leather disk I³, so that the ball rotates, by the frictional con- 80 85 90 95 100

tact with the revolving face-plate I, in the cup L. The cutting-edge of the latter removes all the inequalities of the ball.

The guide or cap M prevents the ball from falling out of the cup L, and is adjustable on the part L² to suit the respective diameter of the ball, and is held in place by the jam-nut N. The cap M also rests on the inclined edge J' of the rest J.

The ball R is pressed more or less against the leather disk J³ by turning the hand-wheel O, so as to cause the holder L' to slide toward or from the face-plate I. The ball is thus completely rounded and finished.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a ball-turning lathe, the combination of a cushioned leather-covered face-plate with an adjustable spindle, substantially as shown and described.

2. In a ball-turning lathe, the combination of a cushioned leather-covered face-plate with the spindle C, turning and sliding in the standards B, the screw D, having the annular groove D', the set-screw E, and the screw-threaded bracket F, in which screws the screw D, substantially as shown and described.

3. In a ball-turning lathe, the combination of the cushioned leather-covered face-plate I and the spindle C, carrying the said face-plate and the ball to be turned, with a pair of tongs, K, having steel cups K², substantially as shown and described.

4. In a ball-turning lathe, the combination of the adjustable cushioned leather-covered face-plate I and the spindle C, carrying the said face-plate, with the ball-rest J, substantially as shown and described.

5. In a ball-turning lathe, the combination, with the face-plate I, having the rubber backing I² and the leather disk I³, of the cup L, supporting the ball to be turned, substantially as shown and described.

6. In a ball-turning lathe, the combination, with the face-plate I, provided with the disks I² and I³, of the cup L, supporting the ball to be turned, the holder L', and the adjustable cap or guide M, screwing on the said holder L' and held in place by a jam-nut, substantially as shown and described.

7. In a ball-turning lathe, the combination, with the face-plate I, covered with the disks I² and I³, of the rest J, having the inclined edge J', the cup L, supporting the ball to be turned, the holder L', having a screw-threaded portion, L², and the cap or guide M, screwing on the part L² and held in place by the jam-nut N, substantially as shown and described.

8. In a ball-turning lathe, the combination, with the face-plate I, covered with the disks I² and I³, of the rest J, having the inclined edge J', the cup L, supporting the ball to be turned, the holder L', having a screw-threaded portion, L², the cap or guide M, screwing on the said part L² and held in place by the jam-nut N, the hand-wheel O, supporting the lower end of the holder L', the screw P, attached to the said hand-wheel O, and the screw-threaded keeper Q, in which screws the screw P, substantially as shown and described.

TRONSON DRAPER.

Witnesses:

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JOHN A. WEBSTER.