

(No Model.)

A. BISBEE & J. T. BACON.

MACHINE FOR ROLL FINISHING SEAMLESS BALLS.

No. 322,343.

Patented July 14, 1885.

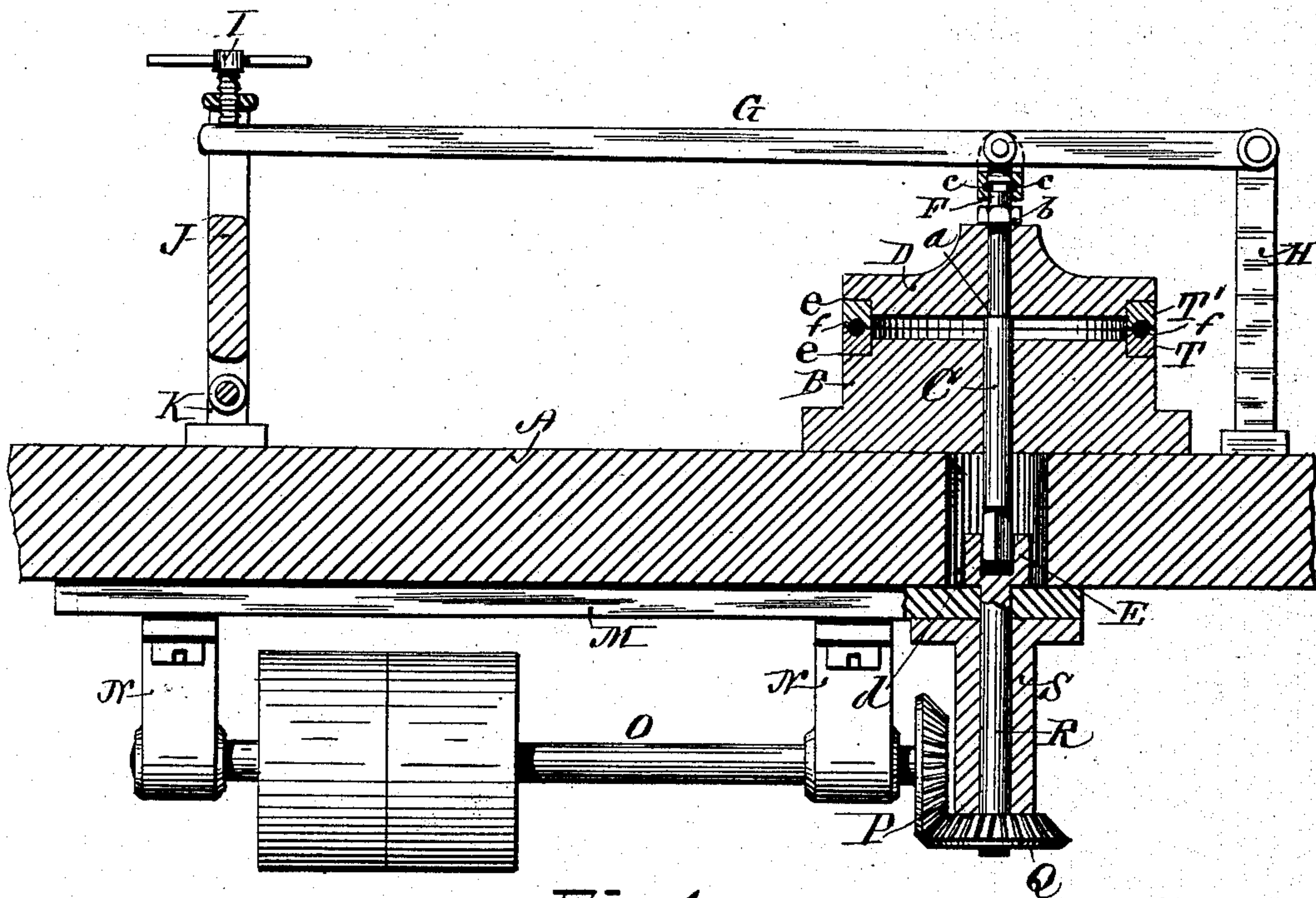


Fig. 1.

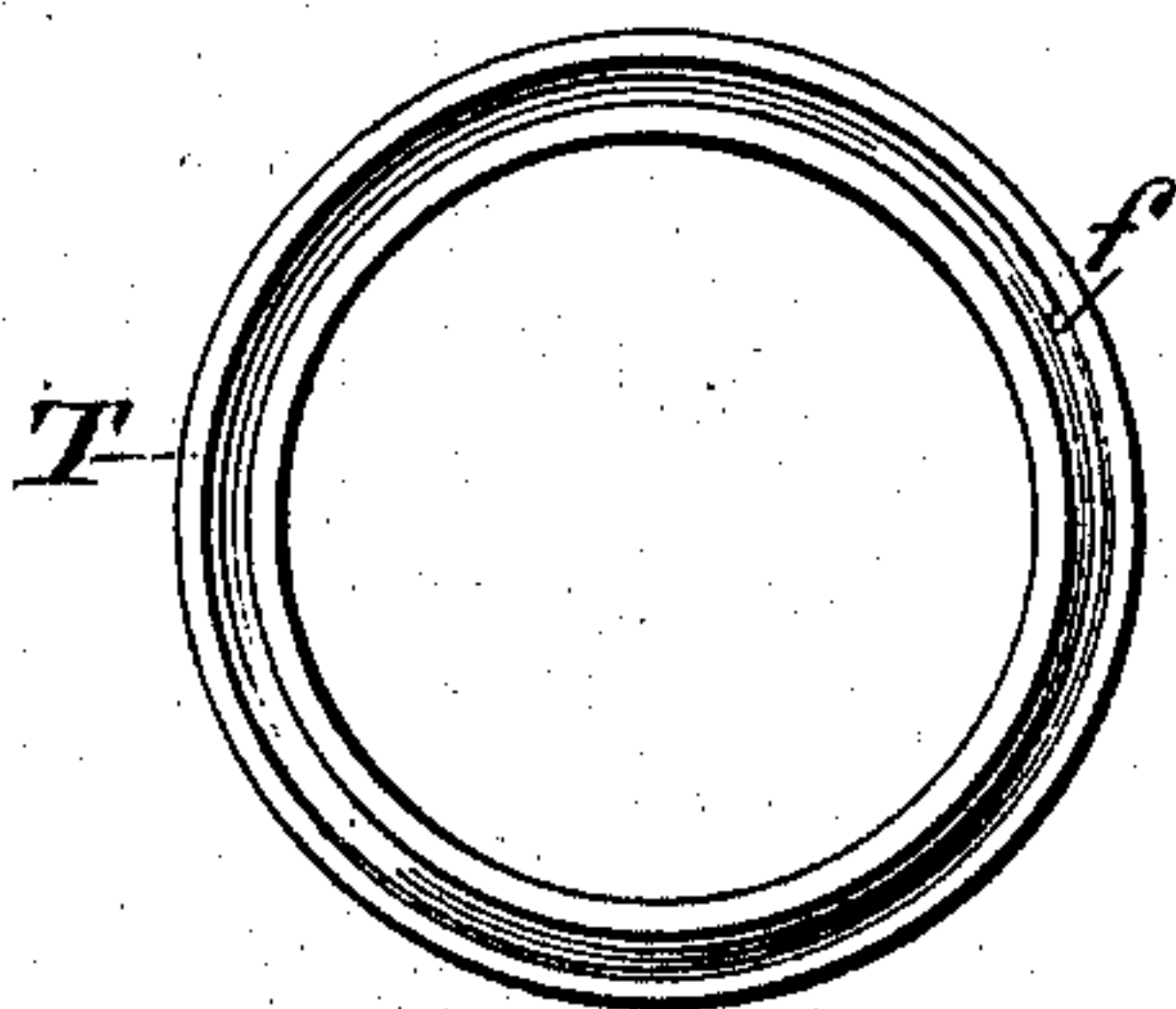


Fig. 2.

WITNESSES:

Chas. F. Schmelz

Richard A. Bright

INVENTOR:

Albert Bisbee

Joseph T. Bacon
per S. Scholfield
attorney.

UNITED STATES PATENT OFFICE.

ALBERT BISBEE AND JOSEPH T. BACON, OF PLAINVILLE, MASSACHUSETTS.

MACHINE FOR ROLL-FINISHING SEAMLESS BALLS.

SPECIFICATION forming part of Letters Patent No. 322,343, dated July 14, 1885.

Application filed April 3, 1884. (No model.)

To all whom it may concern:

Be it known that we, ALBERT BISBEE, and JOSEPH T. BACON, of Plainville, in the county of Norfolk and State of Massachusetts, have
5 invented an Improvement in Machines for Roll-Finishing Seamless Balls, of which the following is a specification.

The nature of our invention consists in the improved construction and arrangement of
10 the several parts, whereby the machine is improved in its action and made convenient in operation.

Figure 1 represents a vertical section of the machine. Fig. 2 is a face view of one of the
15 annular grooved dies in which the partially-finished balls are finished by rolling.

In the accompanying drawings, A represents a section of the bench or table to which the machine is attached, and upon the upper side of the table A is secured the circular bed-piece B, which is bored out at its center to receive the upright shaft C, to the upper portion of which is secured the wheel D, held upon the shaft by means of the shoulder *a* and nut *b*,
25 or otherwise. The lower end of the shaft C is made square in its cross-section, in order to fit the driving-socket E, and the upper end of the shaft C is provided with a circular groove adapted to receive the transverse tangential pins *c c*, which serve to prevent the removal of the swivel-cap F from the end of the shaft C, to which it is loosely secured. The swivel-cap F is pivoted to the lever G, which is jointed to the fixed standard H, and
35 when the machine is in operation the outer end of the lever is held under the hand-screw I, passing through the upper end of the slotted bar J, which is pivoted to the stand K, secured to the top of the table or bench A.

To the under side of the table or bench is secured the plate M, to which are attached the hangers N N, for the bearings of the driving-shaft O, upon the end of which is placed the bevel-gear P, which engages with the gear
45 Q, secured to the lower end of the shaft R, which is held in the upright bearing-sleeve S, secured by a flange at its upper end to the plate M. A perforation, *d*, is made through the table to provide room for the enlarged
50 socket-head E of the upright shaft.

The bed-piece B and wheel D are each

provided with a recess, *e*, adapted to receive the annular dies T T', which are provided at their adjacent faces with a groove, *f*, made semi-circular in its cross-section, and the annular
55 dies may be secured to the bed-piece B and wheel D by means of dowel-pins, screws, or otherwise.

In the manufacture of seamless balls from sheet metal, the sheet-metal blank is first
60 struck up into the form of a cylindrical cup with a convex bottom. The cup so formed is then placed in a die, which operates to close the open end of the cup, so as to bring it to a spherical or ball shape, and then a number
65 of the balls so formed are to be placed in the groove *f* between the dies. The die T' is then to be lowered and properly adjusted upon the balls, and a rapid motion given to the wheel D, so that the balls contained in the
70 groove will be rolled and smoothed, and at the same time thoroughly polished.

To remove the balls from the die, the hand-screw I is first drawn back, and the pivoted bar J allowed to drop to the table, and then
75 the wheel D can be raised from the bed B by means of the lever G, and the finished balls be removed from the groove *f*, after which another batch of balls may be inserted into the groove *f* and the bar J again brought to
80 a vertical position, so that the screw L can be made to act upon the end of the lever to cause the required degree of pressure upon the balls held in the groove *f*. Removable dies T T', having grooves of larger or smaller size,
85 may be inserted into the recesses *e*, in order to adapt the machine for finishing and polishing balls of different sizes.

We are aware that it is not new to roll-finish seamless hollow balls between circularly-
90 grooved dies, and therefore make no claim to such grooved dies, but only to the improved construction of the machine in which the grooved dies are employed.

We claim as our invention—

1. The combination of the shaft R, provided at its upper end with a socket, E, with a stationary bed-piece, B, to which is secured a die, T, having an annular groove, *f*, made
100 semicircular in its cross-section, the shaft C, and wheel D, provided with the die T', having an annular groove, *f*, also semicircular in

its cross-section, and means for raising and lowering the wheel D, substantially as and for the purpose specified.

2. In a machine for roll-finishing seamless
5 balls, the combination of the wheel D, provided with the annular die T', and shaft C, with the stationary bed-piece B, provided with the annular die T, and forming a bearing for

the shaft C, and means for raising and lowering the wheel D, substantially as described.

ALBERT BISBEE.
JOSEPH T. BACON.

Witnesses:

SANFORD DAGGETT,
H. M. DAGGETT, Jr.