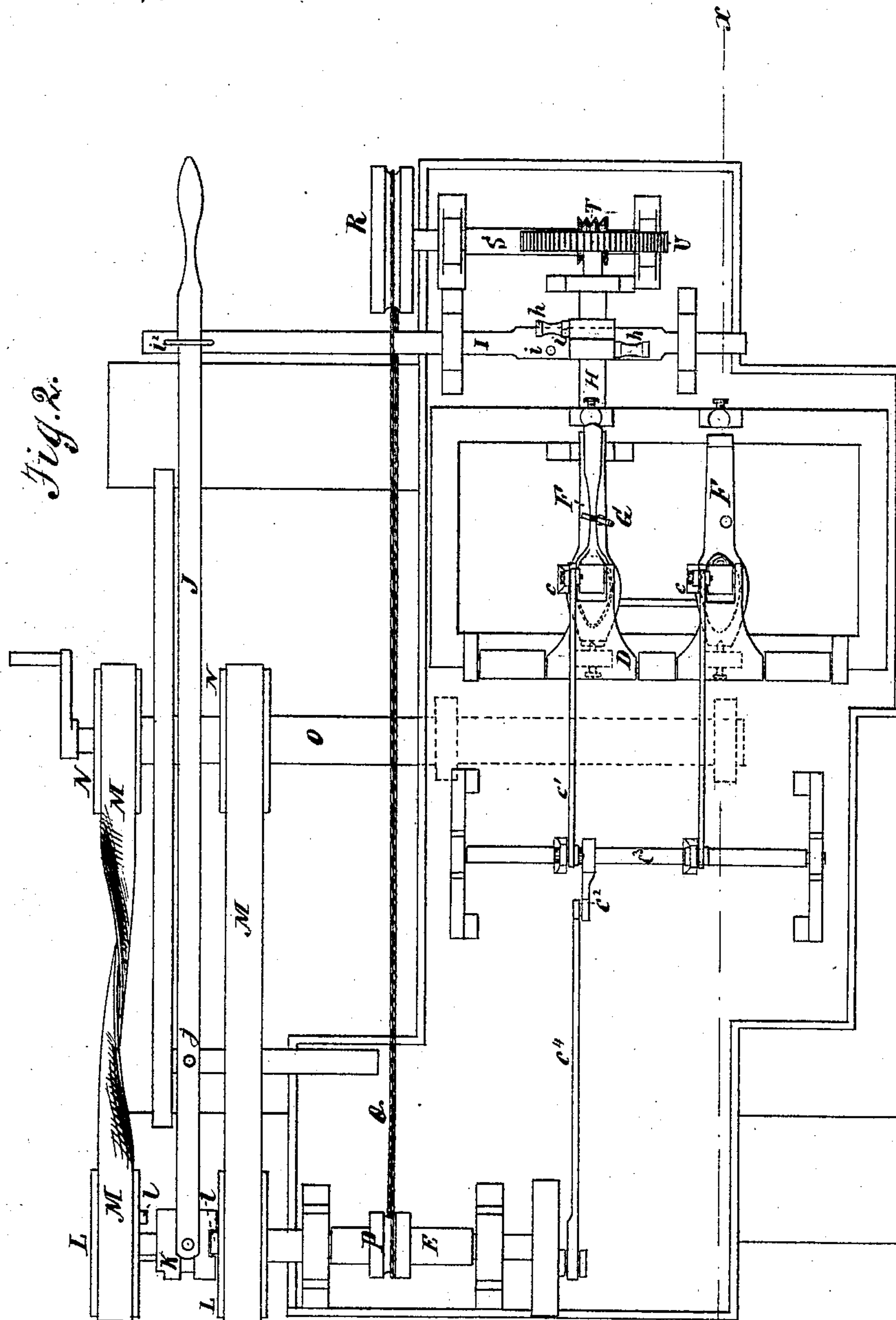


E. TOLMAN.

Machines for Burnishing-Spoons.

No. 146,961.

Patented Jan. 27, 1874.



Witnesses:

Salon Kemou
Chap. A. Pettit

Inventor:

Elijah Tolman

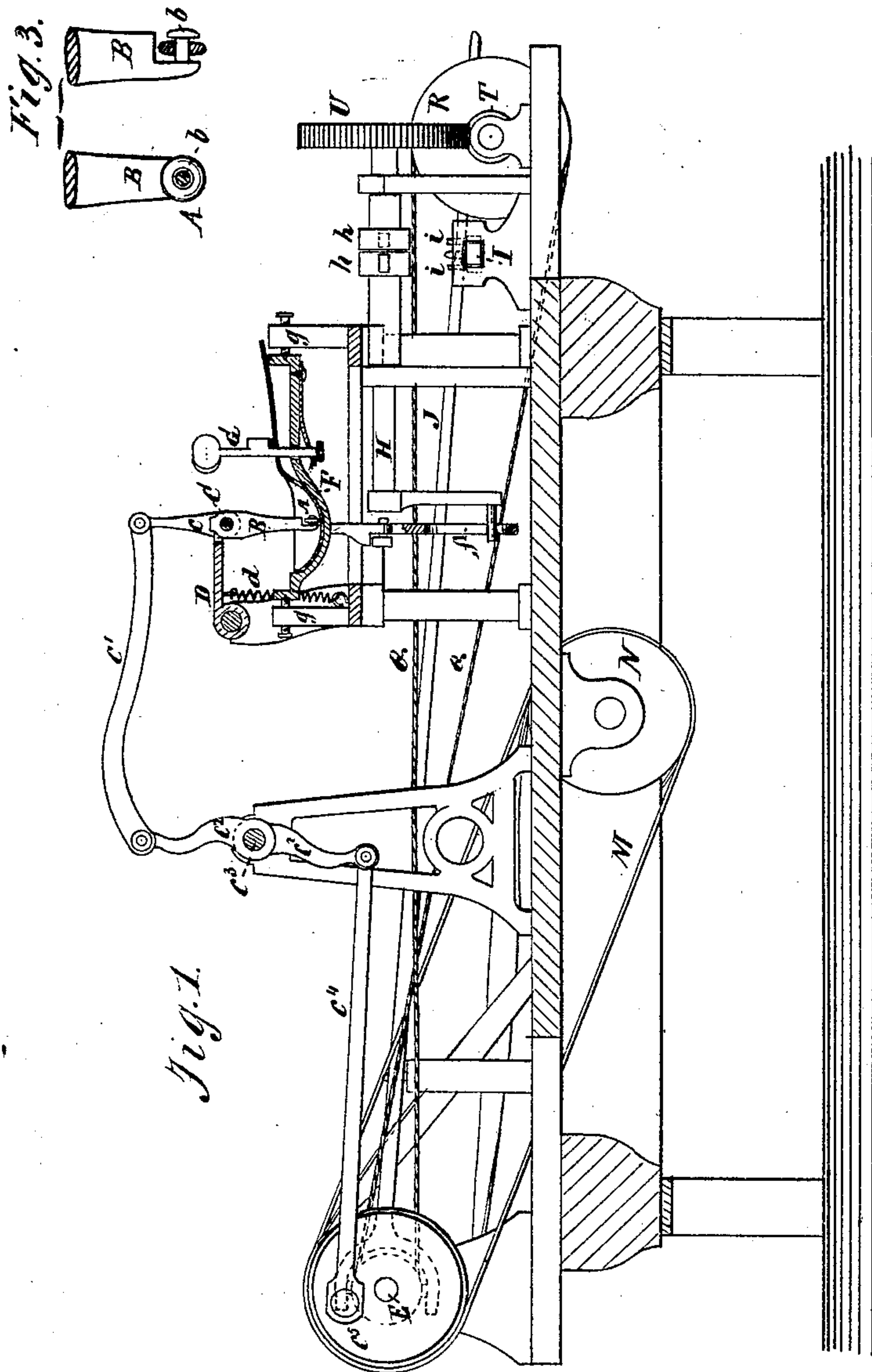
Attorneys.

E. TOLMAN.

Machines for Burnishing-Spoons.

No. 146,961.

Patented Jan. 27, 1874.



Witnesses:
Solon C. Kemmer
Chas. A. Pettit

Inventor:
Elijah Tolman
PER [Signature]
Attorneys.

UNITED STATES PATENT OFFICE.

ELIJAH TOLMAN, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO
REED & BARTON, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR BURNISHING SPOONS.

Specification forming part of Letters Patent No. **146,961**, dated January 27, 1874; application filed
May 9, 1873.

To all whom it may concern:

Be it known that I, ELIJAH TOLMAN, of Taunton, in the county of Bristol and State of Massachusetts, have invented a new and Improved Machine for Burnishing the Inside of the Bowl of a Spoon or analogous article; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a plan view; Fig. 2, a longitudinal sectional elevation; and Fig. 3 is a detail view of the polishing-tool.

The invention relates to means for burnishing the inside of the bowl of a spoon or analogous article; and it consists, first, in the combination, with an oscillating spoon-holder and a vibrating burnishing-tool, of certain means for operating the same; second, in the peculiar device for holding the spoon while it is being burnished; third, in a device for automatically shifting the clutch, so that after the spoon-holder has moved to its limit in one direction it will immediately change and move in the opposite direction, and thus continue to alternately move first in one direction and then in the other, until the machine is stopped; fourth, in an annular burnishing-tool capable of being adjusted so as to bring a new surface into use as often as required.

In the drawing, A represents a polishing-tool, made in the annular form, and applied loosely about the front pin *b* of a tool-stock, B, which is pivoted to a rock-shaft, C, that is journaled in the ears of a hinge, D, that is held down by a spring, *d*, and has a rigid arm, *e*, rocked back and forth by the mechanism *c*¹ *c*² *c*³ *c*⁴ *c*⁵, operated by drive-shaft E. F is the spoon-holder, made of composition, having the bowl lined with gutta-percha, shaped so as to receive the article, which is secured thereto by a spring-clamp, G, and journaled in bearings of the uprights *g g*. This holder has on the bottom a projection, *f*, slotted to receive a crank-pin on the arm of shaft H. *h h* are arms, arranged diametrically opposite to each other on this shaft, and striking alternately

pins *i i* on the sliding bar I. Through a keeper, *i*², of this slide-bar passes the end bifurcated clutch-lever J, fulcrumed at *j*, and embracing the movable clutch-slide K of the shaft E. L L are two loose pulleys, placed on shaft E, and provided with side studs *l l*, that fit into corresponding apertures in the clutch-slide K. M M are the belts, which pass from pulleys L L to the pulleys N N on the hand-crank drive-shaft O. P is a fast pulley on shaft E, connected by a chain or cord, Q, with a pulley, R, on the shaft S. This shaft is provided with a worm, T, that vibrates the worm-wheel U, and with it the shaft H.

The operation is as follows: A spoon being placed in each of the holders, and clamped thereto, the power is applied, when each annular tool moves backward and forward over the inside of spoon, being held to its work by the spring *d*. After one longitudinal strip of surface is polished, the holder F is moved transversely a short distance to bring a new and adjacent strip under the tool. When the whole of one lateral movement has been completed, the holder is automatically made to vibrate back to an equal distance in the opposite direction. This has the effect of polishing the whole inner surface without any manipulation after the spoon is inserted.

By attaching the slotted projection *f* to the bottom of spoon-holder, and connecting it with the drive mechanism H U T S R Q P E, it would be rotated; but by means of the arms *h h*, slide-bar I, having pins *i i*, the lever J, clutch-slide K, and loose pulleys L L, its motion is reversed at the limit of each throw of the projection *f*.

By turning the burnishing-tool upon its axis-pin, a fresh surface can be brought into use whenever required.

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

1. The oscillating spoon-holder F, slotted arm *f*, and crank-shaft H, in combination with the burnishing-tool A, vibrating tool-stock B, rock-shaft C, and hinge D, as and for the purpose specified.

2. The key-shaped clamp G, journaled in the spoon-holder F, and connected at its lower end to one end of a spring, which is connected at its other end to the spoon-holder, as and for the purpose specified.

3. The oscillating spoon-holder F, rock-shaft H, and their connections, arms *h h*, worm-wheel U, worm T, shaft S, and pulley R, in combination with the pulley P, belt Q, and clutch and belt-shifting device I J K, as and for the purpose specified.

4. The burnishing-tool A, of the form of an annulus, and pivoted to the tool-holder B, so that it can be readily adjusted to bring a new surface into use as the old surface becomes worn, as specified.

ELIJAH TOLMAN.

Witnesses:

THEO. P. HALL,

GEORGE E. CHAMBERS.