2 Sheets--Sheet 1.

C. W. PRIEST.

Machines for Beading Sheet Metal Vessels.

No. 137,147. Patented March 25, 1873.

Fig. 1.

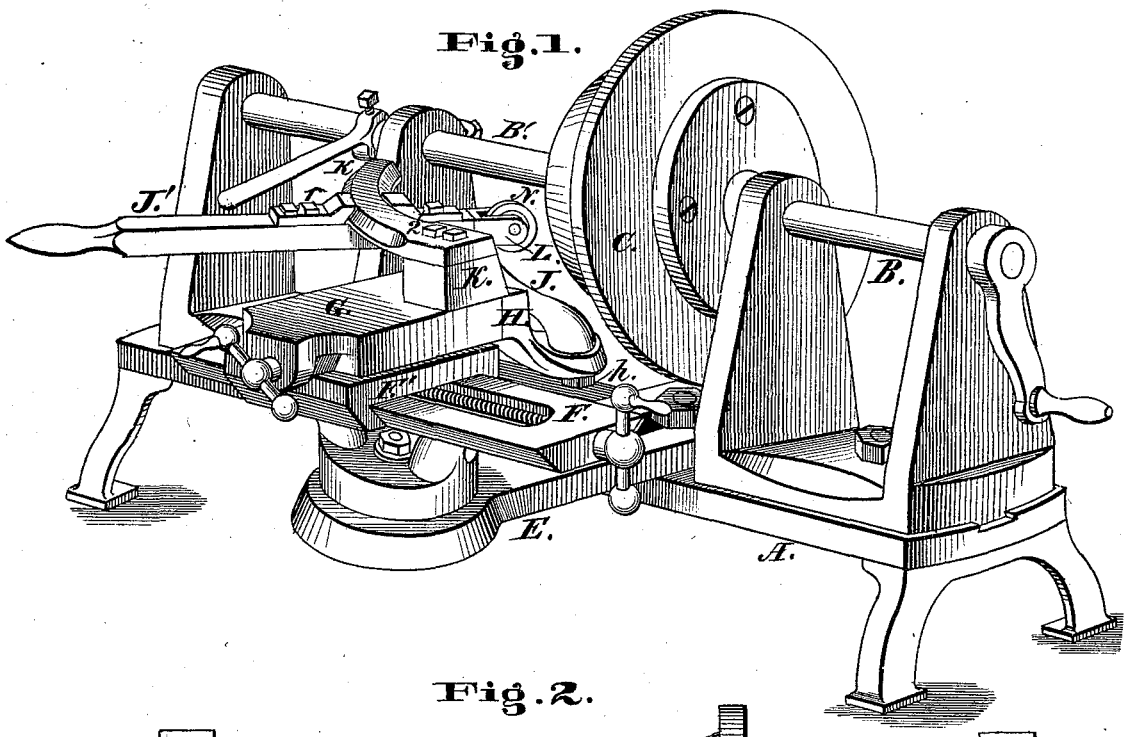
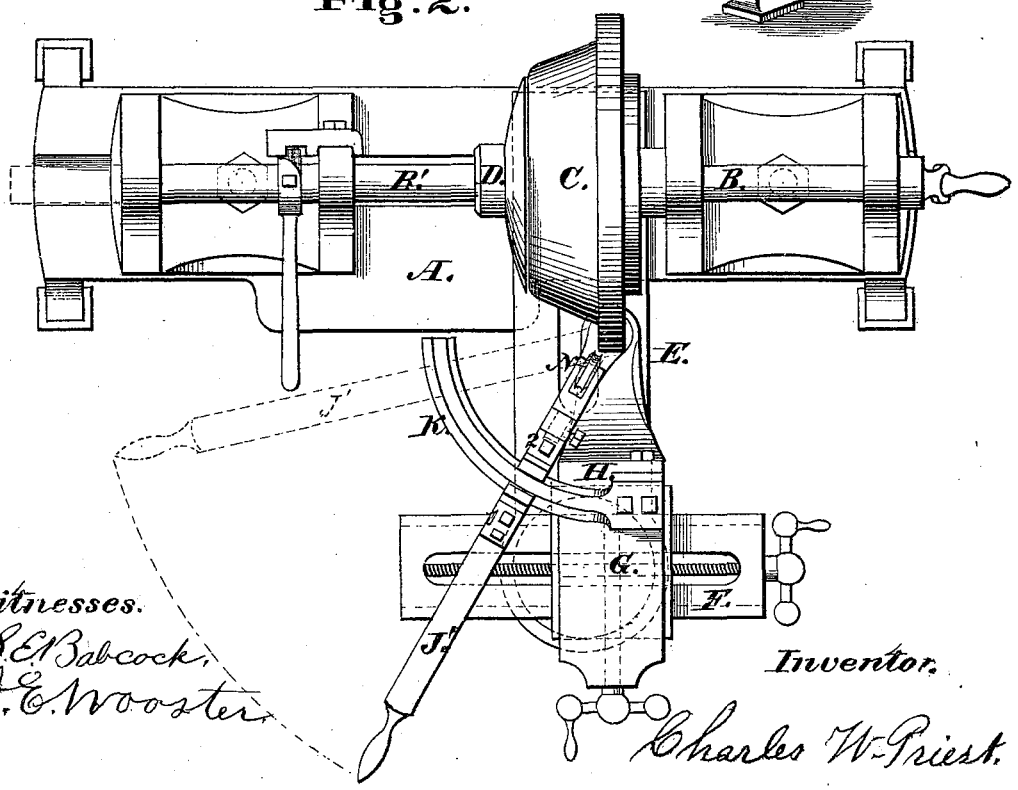


Fig. 2.



Witnesses.
S. E. Babcock.
A. E. Wooster.

Inventor.
Charles W. Priest.

2 Sheets--Sheet 2.

C. W. PRIEST.

Machines for Beading Sheet Metal Vessels.

No. 137,147. Patented March 25, 1873.

Fig. 3.

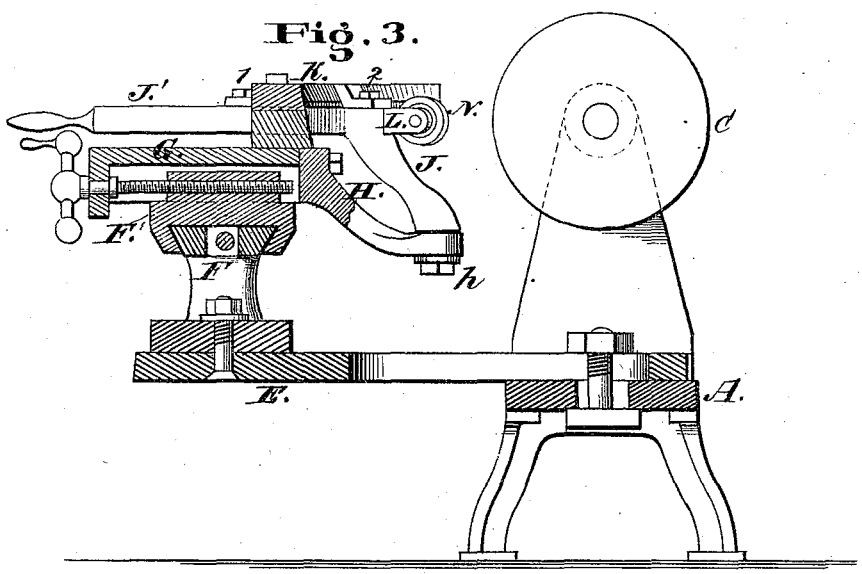


Fig. 4.

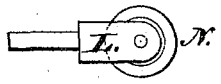
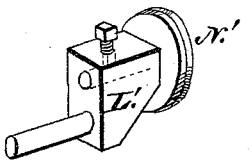


Fig. 5.



Witnesses.
S. E. Babcock,
A. C. Wooster.

Inventor:
Charles W. Priest.

UNITED STATES PATENT OFFICE.

CHARLES W. PRIEST, OF TROY, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO J. WARREN LAMB, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR BEADING SHEET-METAL VESSELS.

Specification forming part of Letters Patent No. **137,147**, dated March 25, 1873.

To all whom it may concern:

Be it known that I, CHARLES W. PRIEST, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain Improvements in Slide-Rests, which I designate as the Quadrant Slide-Rest Attachment, of which the following is a specification:

Nature and Object of the Invention.

My invention relates to a quadrant guiding a swing-lever with stock attachment and knurl or beading-tool, combined with a platform or slide-rest in such a manner that the knurl or beading-tool may be used more effectually and uniformly in connection with the chuck of a turning-lathe in beading the edges of tin or sheet-metal vessels.

Description of the Accompanying Drawing—Sheets I and II.

Sheet I, Figure 1 is a perspective view of my device attached to a slide-rest and lathe as seen from the right side. Fig. 2 is a plan of the same. Sheet II, Fig. 3 is a vertical cross-section of my device and lathe. Fig. 4 is an enlarged view of a beading-wheel for straight-edged vessels. Fig. 5 is the same beading-wheel and stock in perspective, arranged at right angles to the wheel shown in Fig. 4.

General Description.

A is the bed-plate of the lathe, with standards having bearings through which pass the right and left hand spindles B and B′. The right-hand spindle is revolved by a cone-pulley and band or other power in the usual manner. On said spindle is the chuck *c*, and on the left-hand spindle the disk D, which are operated in the usual manner for finishing tin-ware. E is the table for slide-rest supporting standards and lower slide-rest F. F′ is the middle platform uniting the compound slide-rest. G is the upper slide-rest. The slide-rests have moving hand-wheels, screw, and nuts, all of which several operating parts are made, constructed, and operated in the usual manner. H is a shouldered shoe or arm bolted to the rear end of the upper slide-rest, and extends obliquely to such a distance that, by moving the slide-rest, it may be brought near to the pan-chuck C. Through the heel *h* of the shoe a pivot-bolt is screwed into the extremity of the bent arm-lever J, which has a horizontal connected swing-lever, J′. At or near bend of the swing-lever are bolted two gibs, 1 and 2, with beveled inner surfaces which correspond with the side surfaces of the quadrant K, which, by its shouldered extremity, is firmly bolted to the upper surface of the slide-rest G at or near the junction of the shoe H, and in such position that the gibs 1 and 2 support and guide the swing-lever when in operation. At the junction of the swing-lever and its bent-arm connection I make a shoulder, as seen at Fig. 3, with an opening therein in which I place the stem of the stock L, Fig. 4. The stock L has a slot in which the knurl N revolves on a suitable pin or axle, or in this same shouldered opening I place the stock L′ with knurl N′, Fig. 5, which revolves at right angles to the stem or shank of the stock on a pin or axle arranged parallel with the shank of the stock. The shank of the stock is held in position by a set-screw, all of which several parts of my device may be seen in position in Figs. 1, 2, 3. The knurl N has a peculiar construction of groove to adapt it to operate with the swinging lever in my device, as seen in Fig. 6, consisting of a sharp or V-shaped edge on the right-hand side when in position. The periphery of this sharp edge is less than that of the rounded or outer edge, which construction is an improved form of groove particularly adapted to the formation of the bead to straight-edge vessels, as hereinafter more particularly mentioned.

Heretofore, in forming the beaded edge on tin or sheet-metal vessels, the edge of the pan on the revolving chuck C has been beaded by the friction and close contact of a knurl held in position by a hand-rest; or a compound slide-rest has been used, having firmly clamped to its upper surface a rigid lever with an ordinary knurl revolving at its inner extremity, which, by contact, partially turned the edge of the pan. Then it was necessary for the workman to move both slide-rests to get the first-used knurl out of the way, and then to move the slide-rests again into another position to bring into operation a second lever placed in position upon the upper platform, which was so moved as to bring the second knurl

in position at right angles to the position in which the first knurl operated; all of which different positions and changes of slide-rests, levers, and knurl required several operations and movements, taking much time, while the varied operations thus performed would not do as accurate work as my device, with its simple and uniform movements hereinafter described.

With my device, in beading straight-edged vessels the same are placed upon the chuck C, corresponding in form to the vessel placed thereon; the disk D is thrown forward closely to the bottom of the vessel and held in rigid position by the stop-lever and cam shown on the left-hand spindle. I then, by moving the screws of the slide-rests, bring the knurl N in position, so that the edge of the pan or vessel is in contact with the center of the groove, while the swing-lever is in its first position, as shown in Fig. 1. Now the motive power is applied to the right-hand spindle by the coned pulley and band, and the pan-edge swiftly moves in contact with the grooved revolving wheel N. The slide-rests are then fixed and the swing-lever J′ is moved along the quadrant by the hand to the left, to a position at nearly right angles to its first position, and the rotary knurl, by contact in its continued revolutions and friction of its groove with the edge of the pan, forms the bead complete. The stop-lever cam on the left spindle is now thrown back, and the pan falls, and another is placed in position on the chuck C; and the disk being brought forward as before, the swing-lever is reversed to its first position and the edge of the pan adjusted in the groove, and the beading continued swiftly, accurately, and uniformly.

With my device, in operating with plain or common edged pans, dippers, &c., a plain chuck conforming to the vessel is placed upon the right-hand or revolving spindle, and the beading is performed by substituting stock L′ and knurl N′, Fig. 5, in place of the stock and knurl shown in Fig. 4. The slide-rest, chuck, and knurl being again adjusted, the operation of the beading is continued, as hereinbefore described.

It is found, in operating with my device, that many more pans or vessels can be beaded in a given time, the work done more accurately and uniformly, and a handsomer bead formed than by the means heretofore employed.

My attachment might be found useful for other purposes that would suggest themselves to manufacturer; but it is claimed to especially adapted to beading seamless sheet-metal vessels.

Claims.

1. In a machine for beading sheet-metal vessels, a swing-lever guided by a quadrant, or its equivalent, in combination with a platform or slide-rest, substantially as shown and described.

2. The shoe H, in combination with the elements of the preceding claim, substantially as shown and as set forth.

3. The knurl N, constructed as described, in combination with the swing-lever J′ and quadrant-guide, as set forth.

4. The swing-lever J, knurl N, quadrant-guide K, and slide-rests, in combination with a lathe, for the purpose set forth.

CHARLES W. PRIEST.

Witnesses:

S. E. BABCOCK,

A. E. WOOSTER.