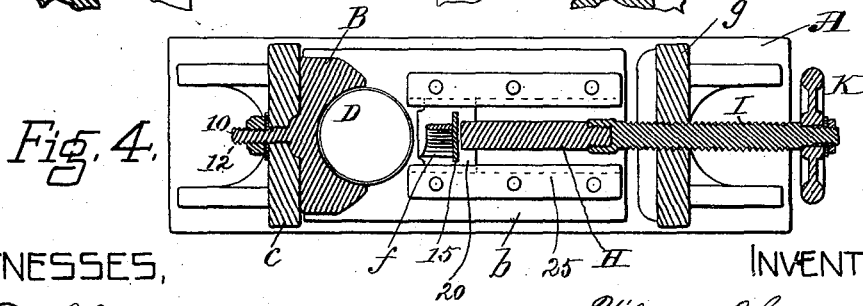
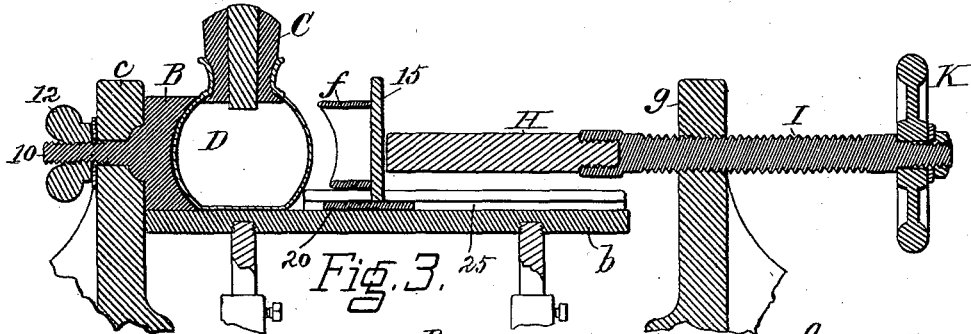
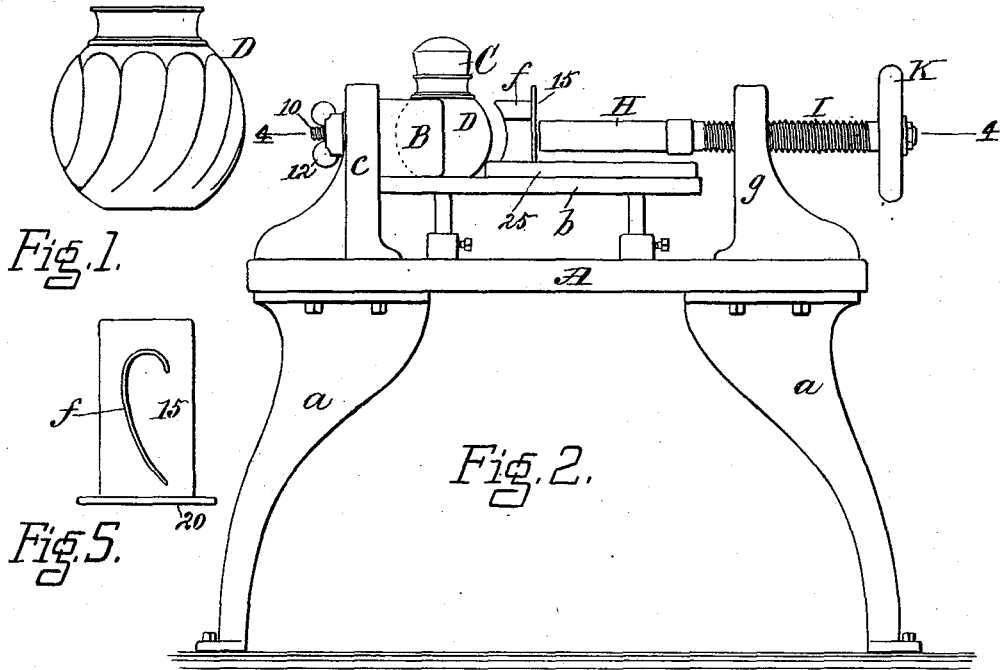


(No Model.)

W. A. CUPPERS, Jr.
APPARATUS FOR ORNAMENTING SOFT METAL HOLLOW WARE.
No. 568,839. Patented Oct. 6, 1896.



WITNESSES,

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UNITED STATES PATENT OFFICE.

WILLIAM A. CUPPERS, JR., OF REVERE, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN SODA-FOUNTAIN COMPANY, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR ORNAMENTING SOFT-METAL HOLLOW WARE.

SPECIFICATION forming part of Letters Patent No. 568,839, dated October 6, 1896.

Application filed January 13, 1896. Serial No. 575,374. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. CUPPERS, Jr., a citizen of the United States, residing at Revere, in the county of Suffolk and State of Massachusetts, have invented an Improved Apparatus for Ornamenting Soft-Metal Hollow Ware Composed of Britannia and other Soft Metals, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of a piece of hollow ware having ornamental fluting produced by my improved apparatus. Fig. 2 is a side elevation of my improved apparatus for fluting hollow ware. Fig. 3 is an enlarged vertical section of the upper portion of the apparatus. Fig. 4 is a horizontal section on the line 4 4 of Fig. 2. Fig. 5 is an edge view of the fluting-die.

To produce the style of ornamentation known as "fluting" in hollow ware, such as pitchers, bowls, vases, &c., composed of britannia and other soft metals, it has usually been customary to fill the vessel with pitch to provide the desired yielding resistance and then indent or drive in the exterior surface along the line of the design with a blunt and smooth edged tool held in the hand and struck with a mallet or hammer, the tool being moved after each blow to follow the design of the fluting. After the completion of the fluting by making the necessary indentations at suitable distances apart entirely around the vessel the pitch is melted out and the article is then plated and finished. This method of fluting is slow and expensive, and when the article is to be afterward burnished the operation must be performed by hand, as the indentations will not permit the use of a lathe for this purpose.

My invention has for its object to greatly facilitate the operation of fluting soft-metal vessels and to enable the work to be done after the article has been plated and burnished; and to this end my invention consists in a novel apparatus for producing fluting on soft-metal hollow ware, as is hereinafter fully described, and specifically claimed.

In carrying my invention into effect I provide an apparatus consisting of a bed A, supported on legs *a* and provided with a vertically-adjustable table *b* for supporting the

article to be fluted. At one end of the bed A is an upright *c*, against which is placed a removable concave rest or "form" B, preferably composed of wood or other suitable material and shaped to nicely fit the pitcher, bowl, or other article of soft-metal hollow ware to be fluted, the said concave rest preferably extending half-way around the article, as shown in Figs. 2 and 4, forming, as it were, a counterpart half-section of the same, whereby it is properly supported or backed when held against said rest. From the back of the rest B projects a screw 10, which passes through a hole in the upright *c* and is provided outside the same with a thumb-nut 12, whereby the rest can be clamped securely in place.

A closely-fitting plug C, of wood or other suitable material, which may be composed of a single piece or made in sections, as shown in Fig. 3, is preferably first placed within the neck or mouth of the article D of hollow ware to be fluted, whereby any change in the shape of the neck or upper portion of the article is prevented while being operated upon by the die to produce the fluting, as hereinafter described. The article so plugged is then placed against the concave rest B, as shown in Figs. 2, 3, and 4, ready to be acted upon by the fluting-die *f*. This die is composed of a piece of sheet-brass or other hard metal having a smooth rounded edge conforming to the line of the flute or indentation to be produced, said die being secured to a plate 15, which is provided with a flat foot-piece 20, fitted to slide horizontally in a guideway 25 on the table *b*. The plate 15, carrying the foot-piece 20 and die *f*, is advanced or pushed forward toward the article to be fluted by a plunger or carrier H, connected with and operated by a screw I, turning within an upright *g*, rising from the bed A, and provided with a hand-wheel K, by means of which the die can be advanced as desired. After the article to be fluted is placed against the rest B the die *f* is brought into contact with its opposite side by means of the hand-wheel K, whereby an indentation of the desired length and depth is produced, the soft metal being depressed or driven in by the die along the line of its edge without distorting or otherwise changing the shape of the article, which is properly

supported and sustained during the operation of the die by the rest B. The plunger or carrier H is now withdrawn by turning the hand-wheel K in the opposite direction to permit the die *f* and plate 15 to be slid back on the table *b*, after which the article being fluted is turned within the rest B about an axis at right angles to the direction of the movement of the die to bring a fresh portion of the surface of the article opposite to said die, which is again advanced to make another indentation similar to the first and at the desired distance therefrom, the operation being repeated at the desired intervals until the fluting has been produced around the entire circumference of the article, which is thus effected without the use of a die and "force" or any resistance other than that afforded by the metal being impressed when firmly held in position against a concave rest, as described.

In the apparatus here shown the plunger or carrier H of the press is arranged to operate in a horizontal plane; but it is obvious that it may be arranged to operate vertically, in which case the part *c* would form the bed of the press on which the removable rest B would be placed.

By the employment of the above-described apparatus a great saving of time and labor is effected, as the filling of the article with pitch is dispensed with and each indentation is made of full length at a single operation of an edge-die instead of by following out the design of the flute with a small hand-tool, as hitherto customary. Fluted ware has heretofore been burnished either by hand or by the use of a lathe, but the latter method, which is the cheaper, can only be employed on smooth revolving bodies having no indentations or depressions on their surfaces. Hence as it was not possible to properly produce the fluting by hand after the article was plated, hand burnishing only could be employed; but when my improved apparatus is employed the article can be plated, finished, and burnished in a lathe and the flutes or indentations afterward produced, as above described, without injuring or marring the finish in the slightest degree.

It will also be noticed that the table *b* may be adjusted vertically for articles of different height without changing the relative position of the die, as the die is carried by the table and is not positively connected with the operating-plunger. By slightly retracting the plunger the hollow article resting on the table may be rotated by hand to bring a new surface opposite the die, the opposite side of the article being still supported in the concave rest B.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a suitable frame, a concave rest to support one side of the article, a die-carrier or

platen movable toward and from said rest and provided with a projecting die of any desired contour to indent the exterior of the article of hollow ware on the side opposite to that held against said rest, substantially as described.

2. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a suitable frame, a concave rest to support one side of the hollow article and permit it to be turned from time to time, a die-carrier or platen movable toward and from the concave rest and a die projecting from the carrier or platen toward the concave face of the rest in the form of a rib or flange of any desired configuration to indent the exterior of the hollow article on its side opposite said rest, substantially as described.

3. An apparatus for ornamenting soft-metal hollow ware, comprising a frame, a concave rest to support one side of the article, a table on which the bottom of the article may rest and a die movable toward and from the rest to engage the outer side of the article opposite that held against the rest, substantially as described.

4. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a frame, a concave rest to support one side of the article, a table at right angles to the concave rest to support the article vertically and a die-carrier sliding along the said table toward and from the concave side of the rest and provided with a die to engage that side of the article opposite to the rest, substantially as described.

5. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a frame, a concave rest to support one side of the article, a plunger movable toward and from the concave side of the rest, a vertically-adjustable table on which the bottom of the article may rest, and a die sliding on the said table toward and from the concave rest and adapted to be operated by said plunger; whereby the table may be adjusted for different articles without changing the relative position of the die, substantially as described.

6. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a frame having parallel standards provided with threaded apertures, a concave rest having a screw projecting through one of said apertures from the inner side of the standard and provided with a nut, a screw-plunger extended through the other aperture toward the concave side of the rest, a vertically-adjustable table between and below the concave rest and plunger, a die-carrier sliding on the table and having a plate or platen in the path of the plunger, and a die on the said plate or platen to engage the side of the article opposite to that held in the rest; the base of the article being adapted to be seated on the table, substantially as described.

7. The combination with the frame, the con-

cave rest and the plunger movable toward and from the concave side thereof, of a vertically-adjustable die-carrier having a plate or platen extending in the path of the plunger and provided on its opposite side with a die to engage the side of the article opposite to that held in the concave rest, substantially as described.

8. In a machine for ornamenting hollow ware from the exterior thereof, a die comprising a slide or base, a plate or platen projecting up therefrom and a die proper on one side of the plate or platen in the form of a rib or flange of any desired configuration, substantially as described.

9. An apparatus for ornamenting soft-metal hollow ware, comprising a frame, a concave rest to support one vertically-extending side of the article, a male die movable toward and from the concave side of the said rest to en-

gage the exterior of the hollow article opposite the rest and a plug to removably fit the open upper end or neck of the vessel above where it is acted upon by the die, substantially as described.

10. An apparatus for ornamenting soft-metal hollow ware, comprising a frame, a concave rest to support one vertically-extending side of the hollow article, a male die movable toward and from the concave side of the said rest, to engage the exterior of the said hollow article opposite the rest, and a sectional removable plug for the open upper end or neck of the vessel, substantially as described.

Witness my hand this 30th day of December, A. D. 1895.

WM. A. CUPPERS, JR.

In presence of—

P. E. TESCHEMACHER,
JOHN MACKSEY.