2 Sheets—Sheet 1

C. BREITSCHWERTH & J. B. HUGHES.

Machine for Forming Pottery Ware.

No. 201,907. Patented April 2, 1878.

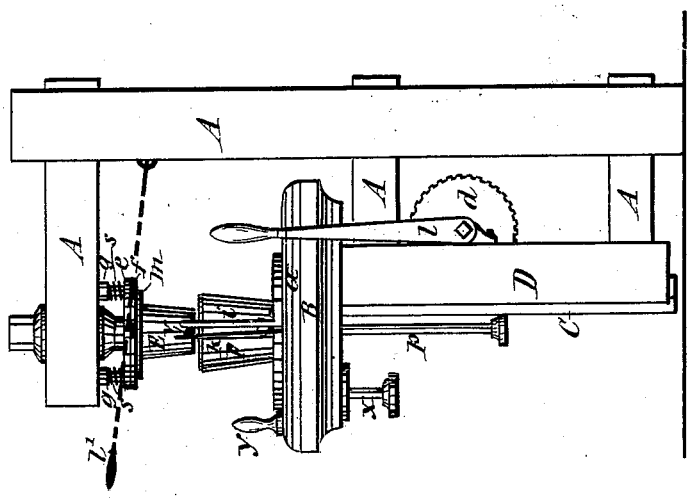

Fig. 1

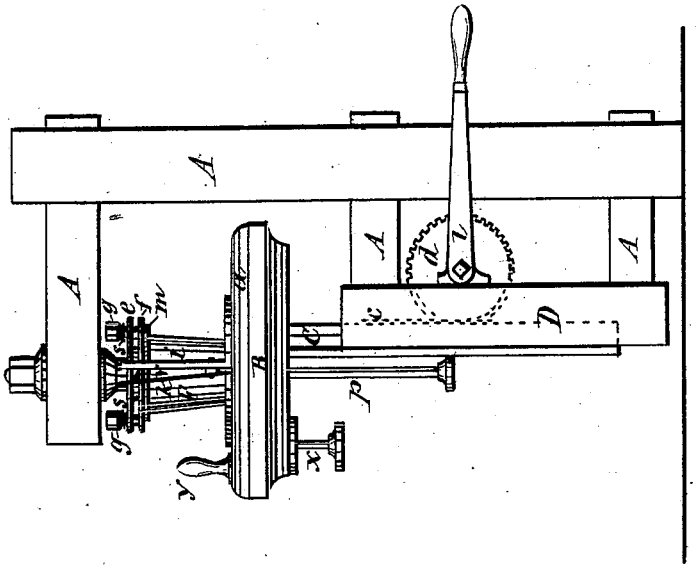

Fig. 2

WITNESSES:

E. Bendixen

H. Hill

INVENTORS:

Conrad Breitschwerth and John B. Hughes by E. Laass their Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

C. BREITSCHWERTH & J. B. HUGHES.

Machine for Forming Pottery-Ware.

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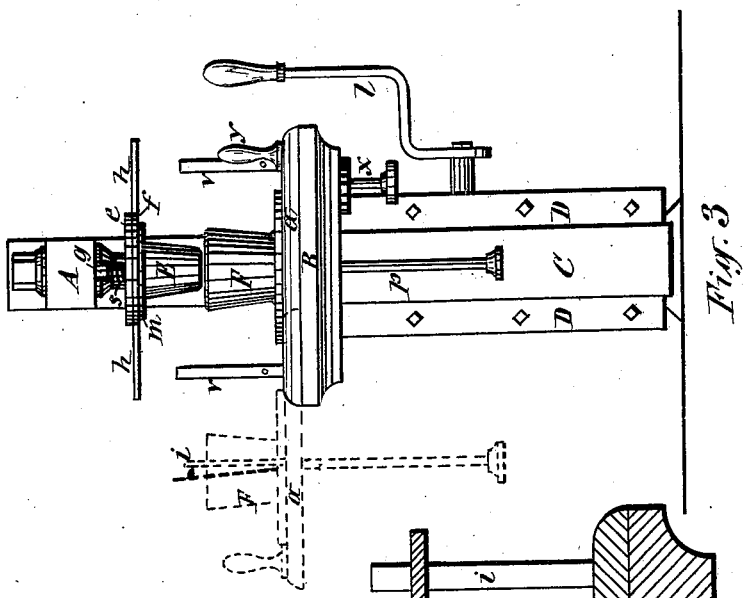

Fig. 3

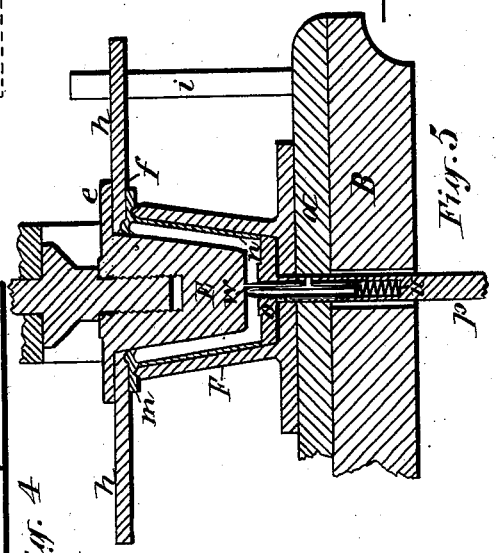

Fig. 5

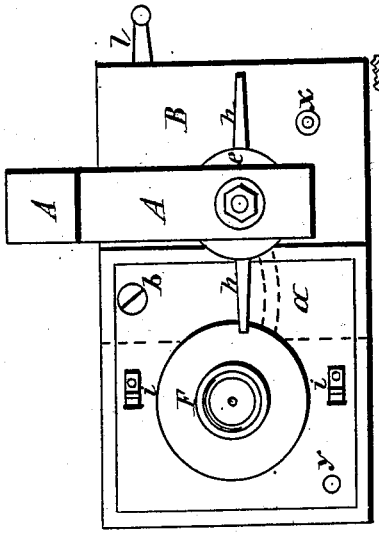

Fig. 4

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UNITED STATES PATENT OFFICE.

CONRAD BREITSCHWERTH, OF SYRACUSE, AND JOHN B. HUGHES, OF AUBURN, NEW YORK.

IMPROVEMENT IN MACHINES FOR FORMING POTTERY-WARE.

Specification forming part of Letters Patent No. **201,907**, dated April 2, 1878; application filed February 19, 1878.

To all whom it may concern:

Be it known that we, CONRAD BREITSCHWERTH, of the city of Syracuse, State of New York, and JOHN B. HUGHES, of the city of Auburn, State aforesaid, have invented new and useful Improvements in Machines for Forming Pottery-Ware, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

This invention has reference to that class of machines which form flower-pots and other similar pottery-ware by a male or core mold entering a female mold containing the tempered clay; and it consists in an improved construction, combination, and arrangement of the integral parts of the machine, whereby its operation is materially facilitated and expedited, and a better quality of ware is produced.

The invention is clearly illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of our improved machine in its dormant position; Fig. 2, the same in its operative position; Fig. 3, a front view; Fig. 4, a plan view; and Fig. 5, an enlarged vertical section of the mold and the devices connected therewith, illustrating more fully the construction and operation of our improvements.

Similar letters of reference indicate corresponding parts.

A is a frame, of wood or iron, and consisting of a post rigidly secured in a perpendicular position, and having extending therefrom horizontal arms, by which it supports the machine. B is a platform or table, mounted on the end of a post, C, arranged to slide vertically in guides D, which are permanently attached to arms extended from the upright post of the frame A. *c* is a rack attached to the rear of the post C, and *d* a pinion meshing in said rack, and mounted on a shaft which is journaled on the guide D, and on its end provided with a lever, *l*, by means of which the pinion is rotated, and thus the platform B elevated and lowered, for the purpose hereinafter specified. To the top of the platform B is fitted the bed-plate *a*, pivoted thereto at one corner, as indicated at *b*, Fig. 4, or at such relative position as to allow the bed-plate to be swung horizontally off the table B, and entirely from under the plunger or core-mold E, as illustrated in Figs. 3 and 4 of the drawing. To the bed-plate *a* is secured the female mold F, and, when brought into its proper position upon the table B, brings with it the said mold directly under the core-mold E, and in a true perpendicular line therewith.

The core-mold is rigidly secured to the upper horizontal arm of the frame A, and at its upper extremity provided with a horizontal circumferential flange, *e*. Underneath this flange is arranged an annular plate, *f*, fitted movably on the core-mold, and supported by studs *g g*, passing through the flange *e* of the core-mold, and having a spiral spring, *s*, interposed between a head on its upper end and the flange *e* aforesaid. The plate *f* is provided with two projections or arms, *h h*, extended radially therefrom in opposite directions. To the bed-plate *a* are attached two vertical limbs, *i i*, arranged with one of their faces, respectively, in a perpendicular line with one edge of the arms *h h*. To the same face of the limbs *i*, near the bottom thereof, are attached springs *k*, extending upward, and provided at their upper end with a hook or catch, *v*, having a beveled top surface, and held yieldingly against the limbs *i*.

m is a rubber or other elastic facing secured to the under side of plate *f*, and either provided with concavity in its bottom face, or sufficiently thin to allow it to be pressed into a circumferential cavity in the bottom of plate *f*. The top edge of the female mold F is sharpened sufficiently to allow it to cut the surplus material, after the pot is formed, clean from around its top.

n is a loose sleeve fitted to the interior of the female mold F; *o*, the follower, fitted to the bottom of the aforesaid mold, and attached to the end of the piston *p*, which is extended down through the bottom of the mold F, and through the bed-plate *a* and table B, and provided at its lower extremity with a suitable handle, for forcing the follower upward by hand.

The follower and upper extremity of the piston are provided with a central cavity, *u*,

extending longitudinally into the latter. Into this cavity is fitted the punch *w*, which is caused to project above the top of the follower by a spring of sufficient tension to force it through the clay and form the usual aperture in the bottom of flower-pots. By connecting the punch *w* to the follower and giving it sufficient length to allow it to follow the receding mold a sufficient distance to cause it to project above the bottom of the pot formed, the aperture required in said bottom is invariably and completely made.

We are aware that similar punches have heretofore been connected with the core-mold; but experience has taught us that a punch thus arranged carries with it in its descent more or less clay on its end and presses the same against the follower, and thus either leaves a disk of clay over the hole in the pot or forms the same roughly and very imperfect. It is therefore the combination and arrangement, with the follower, of the punch, in the manner described, which we claim as our improvement.

x represents a catch for retaining the bed-plate in its proper position on the table B, and *y* a handle by which to move the bed-plate.

To demonstrate the object of the peculiar construction and arrangement of the devices described, we will now describe the operation of same: First, the female mold F is brought from under the male mold by swinging the bed-plate *a* upon its pivot *b*, until carried into the position shown in Figs. 3 and 4 of the drawing, thus giving free access to the mold F. The clay, previously tempered and properly prepared, is placed into the female mold, and the bed-plate thence swung onto the table B, to bring the female mold directly under the male or core mold, the catch *x* holding it in that position. By bearing upon the lever *l*, the table, with bed-piece and female mold, is elevated, and the core-mold forced into the clay placed into the female mold sufficiently to press the clay uniformly and compactly into the space between the respective molds. The surplus material which escapes at the top of the mold is cut off by the beveled edge of the female mold. The rubber facing *m* protects the edge of said mold, and prevents undue transverse strain in case the bed-plate should be held out of a true horizontal position; and, furthermore, the said elastic facing, by its circumferential concavity, forms a rounded top edge on the pot pressed.

The greatest difficulties encountered in most of machines consisted in the removal from the mold the pot after it was formed. For the perfect and expeditious accomplishment of this we have devised very simple and efficient means. These consist, essentially, of the plate *f*, supported yieldingly in its elevated position, and allowed to be forced downward synchronously with the receding of the female mold sufficiently to free the formed pot from the core-mold and allow it to drop back into the female mold. The female mold being lowered until the table B is brought to rest on the end of the guide D, the female mold is carried from under the core-mold by swinging the bed-piece off the table, and then, by forcing the piston *p* upward, the follower *o* lifts the formed pot out of the mold. The sleeve *n* is employed principally in the manufacture of large pots, for the purpose of facilitating the removal of same from the machine.

Having thus described our improvements, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the stationary core-mold E, table B, provided with means for elevating and lowering, and the bed-plate *a*, having attached thereto the female mold F, and being pivoted eccentric to the table B, substantially as described and shown, for the purpose set forth.

2. The combination and arrangement of the stationary core-mold E, provided with flange *e*, the annular plate *f*, connected with flange *e* by studs *g* and springs *s*, and projections *h h*, the bed-plate *a*, provided with means for elevating and lowering it, and with vertical limbs *i i*, having springs *k*, with catch *v*, all constructed and arranged to operate substantially in the manner and for the purpose specified.

3. The core-mold E, provided with flange *e*, annular plate *f*, held yieldingly underneath flange *e*, and provided in its under side with a circumferential concave elastic facing, *m*, and the female mold F, having a beveled top edge, all constructed and combined as described and shown, for the purpose set forth.

4. The punch *w*, when connected with the follower, as described, for the purpose specified.

5. In combination with the female mold F, the sleeve *n*, as and for the purpose set forth.

In testimony whereof we have hereunto set our hands this 14th day of February, 1878.

CONRAD BREITSCHWERTH.
JOHN B. HUGHES.

Witnesses:
E. LAASS,
H. HILL.