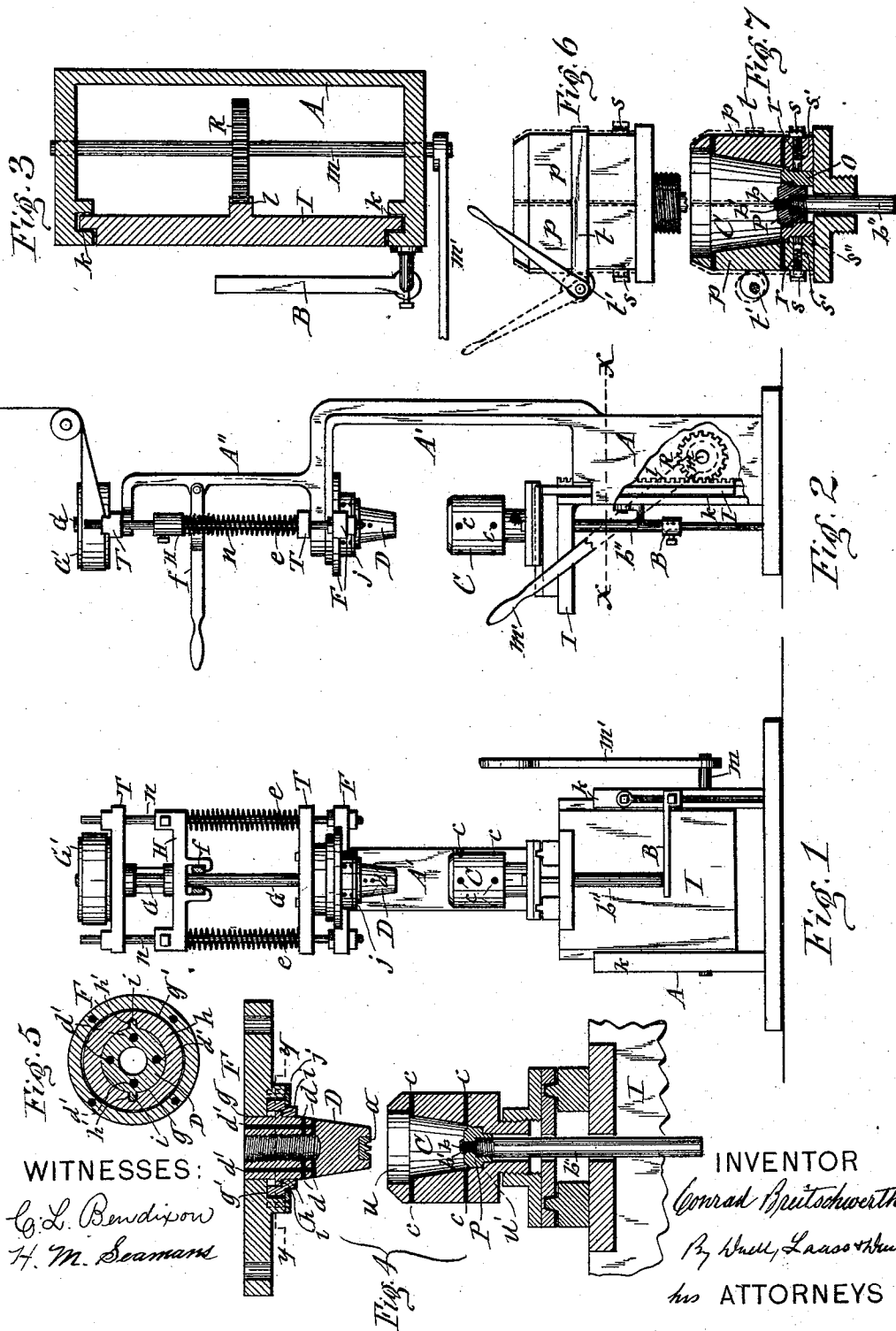


(No Model.)

C. BREITSCHWERTH.
POTTERY MACHINE.

No. 471,807.

Patented Mar. 29, 1892.



UNITED STATES PATENT OFFICE.

CONRAD BREITSCHWERTH, OF SYRACUSE, NEW YORK.

POTTERY-MACHINE.

SPECIFICATION forming part of Letters Patent No. 471,807, dated March 29, 1892.

Application filed April 11, 1891. Serial No. 388,513. (No model.)

To all whom it may concern:

Be it known that I, CONRAD BREITSCHWERTH, of Syracuse, in the county of Onondaga, in the State of New York, have invented
5 new and useful Improvements in Machines for Forming Pottery-Ware, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 This invention relates to the class of machines which are designed for manufacturing flower-pots and in which a male die enters the mold containing the plastic clay and by pressure on said clay the latter is forced into the
15 space between the die and mold and thereby receives its requisite shape.

The object of my present invention is to provide a machine which shall be capable of forming in an expeditious, convenient, and accurate manner flower-pots of various sizes and
20 with the, at present, desired deep rim around the exterior of its top, and to that end the invention consists in the improved construction and combination of parts hereinafter described, and set forth in the claims.

In the annexed drawings, Figure 1 is a front elevation of a machine embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged horizontal transverse section on line *x x*, Fig. 2. Fig. 4 is an
30 enlarged vertical transverse section of the mold and die. Fig. 5 is a transverse section on line *y y*, Fig. 4. Fig. 6 is a side view of the sectional mold, and Fig. 7 is a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts.

A represents the main supporting-frame of the machine, which frame is formed with vertical guides *k k*, in which slides a bracket I,
40 on which the mold C is mounted and detachably secured, so as to permit molds of different sizes to be interchangeably applied to the machine. To the back of the bracket is attached a rack *l*, with which engages a pinion
45 R, fastened to a horizontal shaft *m*, which is journaled to the sides of the frame A and has a lever *m'* secured to it for turning it. By throwing the free end of said lever rearward
50 the pinion R raises the bracket I by means of the rack *l*, and in this manner the mold C is raised and carried to the die D, which is sus-

tained at a uniform elevation, as hereinafter described.

To form flower-pots with the, at present, desired broad rim around the top thereof, I form the interior of the mold with the circumferential rabbet *u* around the top thereof, as shown in Fig. 4 of the drawings, and in order to prevent the plastic clay from adhering to the
60 mold at the offset between the aforesaid rabbet and main portion of the mold I provide the mold with the vents or perforations *c c* at the aforesaid offset and also provide the mold with similar vents *c c* at the base thereof for
65 the same purpose.

For forming the required perforation in the bottom of the flower-pot I employ the punch P, which is normally seated upon the shoulder
70 *u'* on the bottom of the interior of the mold. Said punch is formed with a central eye *b* and an annular cutter *b'* around the said eye and projecting upward from the punch to make a clean annular cut in the bottom of the molded
75 pot; and in order to allow the punchings of clay to freely escape down through the central eye *b* I undercut the interior thereof. The bottom portion of the punch is provided with a screw-threaded socket in range with the central eye, and into said socket is screwed a tube
80 *b''*, through which tube the aforesaid punchings of clay pass down to the floor. This tube I utilize as a push-bar for pushing up the aforesaid punch, and thereby lifting the molded
85 flower-pot out of the mold C. To effect this automatically, I secure to the frame A a vertically-adjustable stop B, which is sustained stationary in the path of the lower end of the tube *b''* and placed at such an elevation that
90 in lowering the bracket I with the mold C attached thereto to its normal position the tube *b''* becomes arrested in its movement by the stop B and pushes the punch P up to the top of the mold, and thereby lifts the molded
95 flower-pot out of the mold.

In molding large flower-pots the aforesaid operation of lifting the pot out of the mold is liable to cause the flower-pot to sag or lop. To obviate this defect, I employ for manufacturing large flower-pots a sectional mold,
100 which is divided vertically and formed with a separate bottom ring *o*. The body-sections *p p* are provided with screw-threaded transverse channels *r r*, in the outer ends of which

are inserted set-screws *ss*. In the inner ends of the aforesaid channels are inserted followers *s''*, which bear on the sides of the ring *o*, and between the said followers and inner ends of the set-screws are inserted spiral springs *s'*, as shown in Fig. 7 of the drawings, said springs serving to automatically force the body-sections *p p* outward, and thus expand the mold and liberate the pot molded therein. During the process of forming the flower-pot the body-sections of the mold are tied together by means of a suitable clamp, which may consist of a strap *t*, partly embracing the mold and provided with a shaft to which is connected a cam or eccentric *t'*, provided with a handle by which to turn the same, and thereby compress the body-sections *p p*.

From the base *A* rises a standard *A'*, the top portion of which is formed with a horizontal extension, and from said extension rises the yoke *A''*, which terminates with a horizontal extension. Both of the aforesaid horizontal extensions are directly over the mold *C*, and in said extensions is journaled a vertical shaft *G*, to the upper end of which is secured a pulley *G'*, by means of which rotary motion is transmitted to said shaft. To the lower end of said shaft is detachably secured the die *D*, which is provided with a screw-threaded socket in its upper end, into which the lower end of the shaft *G* is screwed. The shaft *G*, being maintained at a uniform elevation and the die *D* being firmly attached thereto, causes the said die to rotate uniformly in one and the same plane.

The under side of the die is provided with a suitable cushion *a*, composed of wood or other suitable material, to protect the cutter *b* of the punch *P*. To prevent the molded pot from adhering to the die *D*, I provide the latter with lateral vents *d d* and vertical vents *d' d'*, intersecting said lateral vents, as shown in Fig. 4 of the drawings.

In molding flower-pots the plastic material is placed in the mold *C*. Then by operating the lever *m'* the mold is raised, so as to cause the die *D* to enter the mold and press the clay into the shape of a flower-pot.

To insure the release of the molded flower-pot from the die *D* simultaneously with the withdrawal of the mold from the die, and thus leave the molded pot in the mold, I employ the plate *F*, which loosely embraces the upper end of the die and is yieldingly supported by means of rods *n n*, passing vertically through the ends of the said plate and through cross-bars *T T*, secured, respectively, to the top and bottom of the yoke *A''*. Said rods pass freely through the cross-bars and are provided with nuts underneath the plate *F*. Another yoke *H* is rigidly connected at opposite ends to the two rods *n n*, and coil-springs *e e*, surrounding the rods and resting upon the lower cross-bar *T* and bearing with their upper ends on the under side of the yoke *H*, support the said yoke and with it the plate *F* by means of the rods *n*.

By means of a lever *f*, pivoted to the yoke *A''* and connected with the yoke *H*, the latter can be depressed and with it the plate *F*. Said plate is provided with a central eye *g*, which serves as a journal-bearing for the upper end of the die *D*. The under side of the plate is formed with the annular rabbet *g'*, concentric with the central eye and in said rabbet is seated a ring *h*, which is provided with vertical slots *h' h'*, into which project lugs *i i* on the sides of the die *D*, said slots being of sufficient length to allow vertical play of the lugs in the slots. Said ring is retained in the rabbet by means of an annular plate *j*, secured to the under side of the plate *F*. The aforesaid vertical play of the lugs in the slots is necessary to allow the plate *F* to be depressed while the die *D* is maintained in a uniform plane. Said depression of the plate *F* pushes the molded flower-pot from the die in time to allow it to descend with the mold *C*, from which it is subsequently removed by the tube *b''* coming in contact with the stop *B* during the descent of the mold *C*.

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

1. The combination, with the mold *C*, of the punch *P*, seated on the bottom of said mold and provided with a central aperture *b* and with the annular cutter *b'*, surrounding said eye and projecting upward from the punch, and the die *D*, entering the mold and by contact with the aforesaid cutter forming the aperture in the center of the bottom of the molded pot, substantially as set forth.

2. The combination of the mold *C*, provided with the rabbet *u* to form the external rim on the top of the molded pot and having the vents *c c* extending from the offset of the rabbet, and the die *D*, provided with the lateral vents *d* and vertical vents *d' d'*, intersecting said lateral vents, substantially as described and shown.

3. In combination with the frame, rotary shaft *G*, and die *D*, connected to said shaft, the plate *F*, formed with the eye *g* and annular rabbet *g'*, surrounding said eye, the ring *h*, loosely embracing the die and seated in the aforesaid rabbet and provided with vertical slots *h' h'*, lugs *i i* on the sides of the die, and the annular plate *j*, secured to the plate *F* and confining the ring *h* in the rabbet, substantially as described and shown.

4. In combination with the die, the mold composed of the bottom ring *o*, body-sections *p p*, provided with screw-threaded channels *r r*, set-screws *s s*, springs *s' s'*, and the adjustable clamp *t t'*, substantially as described and shown.

In testimony whereof I have hereunto signed my name this 8th day of April, 1891.

CONRAD BREITSCHWERTH. [L. s.]

Witnesses:

MARK W. DEWEY,
C. L. BENDIXON.