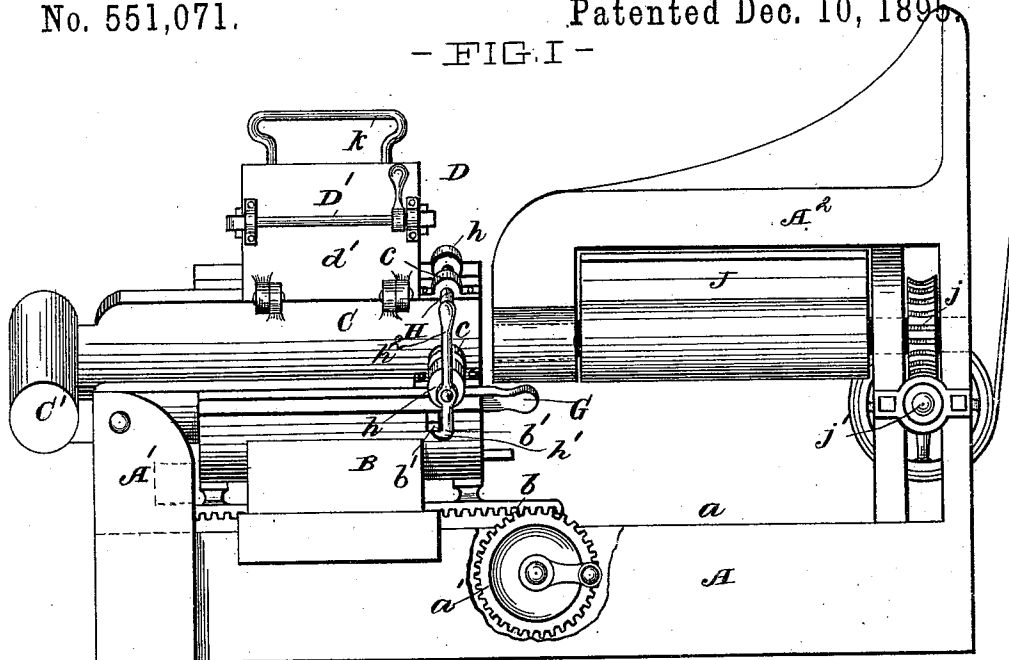


2 Sheets—Sheet 1.

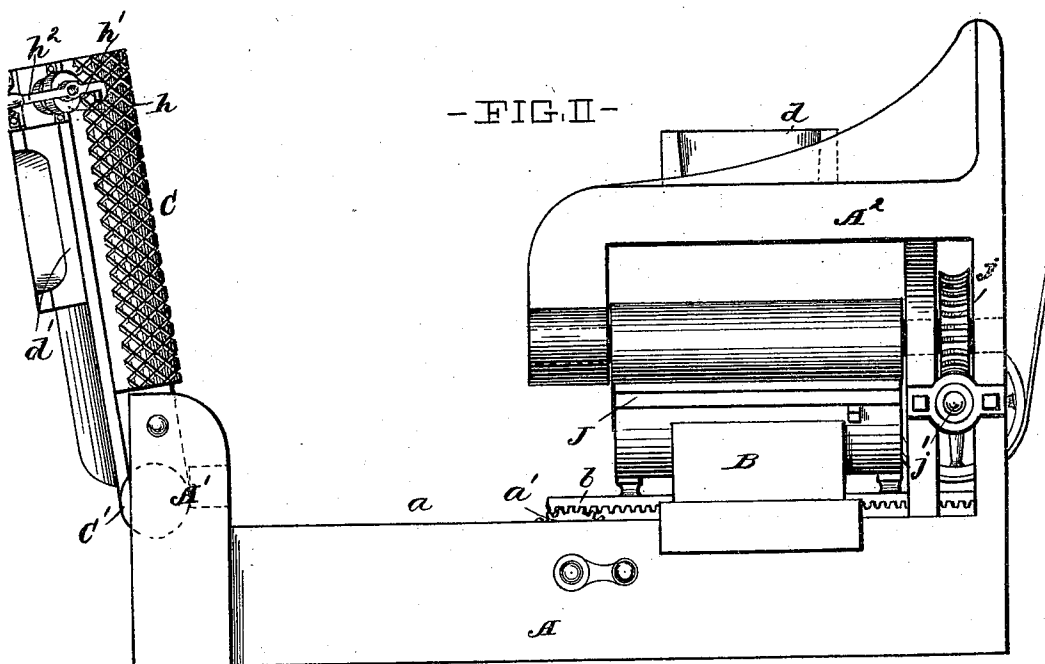
STEREOTYPE CASTING AND SHAVING MACHINE.

Patented Dec. 10, 1895.

- FIG. I -



- FIG. II -



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No. 551,071.

Patented Dec. 10, 1895.

- FIG. III -

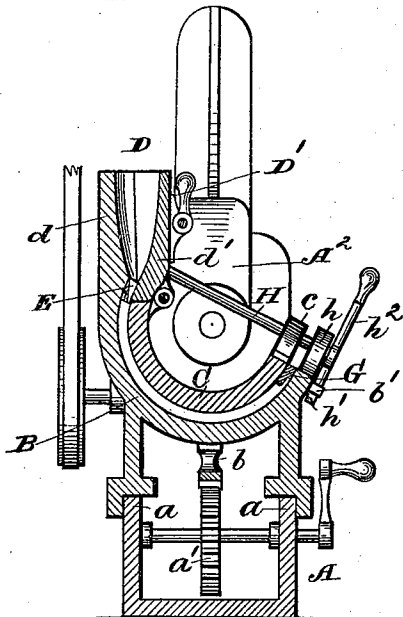
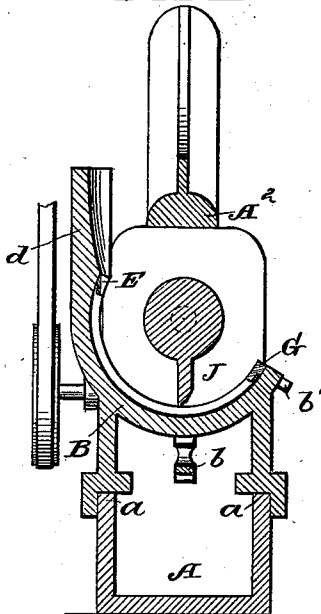
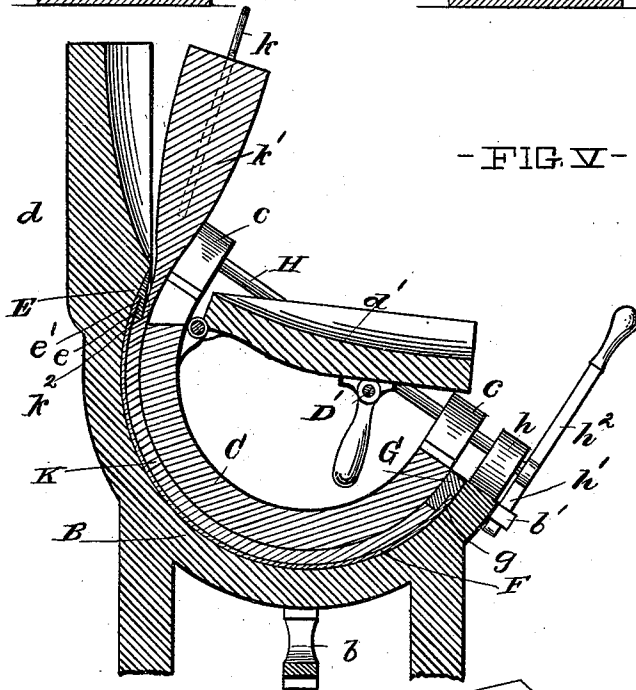


FIG. IV -



- FIG. V -



- FIG. VI -

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UNITED STATES PATENT OFFICE.

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STEREOTYPE CASTING AND SHAVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 551,071, dated December 10, 1895.

Application filed September 10, 1895. Serial No. 562,049. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHARLES BREUER, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Stereotype Casting and Shaving Machines, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a side elevation of my improved stereotype casting and shaving machine in position for casting the turtle; Fig. II, a side elevation of the machine in position for shaving the turtle; Fig. III, a transverse vertical section of the machine, taken through the closed casting-box; Fig. IV, a transverse vertical section of the machine, taken through the shaving-tool and illustrating the drag of the casting-box as moved beneath said tool; Fig. V, a transverse vertical section, on an enlarged scale, of the casting-box, illustrating the hinged portion of the ingate swung down and the sprue started to be broken off; and Fig. VI, a perspective view of the rigid gage at the gate edge of the drag.

The bed A of the machine has longitudinal slideways *a*, upon which the drag B of the casting-box may slide. Said drag has a rack *b* upon its under side, which is engaged by a cog-wheel *a'*, having suitable means for revolving it, or other means may be provided for reciprocating the drag. Pivot-supports A' are provided at one end of the ways, and the cope C of the casting-box is pivoted between said supports to swing down and close the casting-box when the drag is moved toward that end of the ways. The mold-surface of the drag is cylindro-concave and the mold-surface of the cope is cylindro-convex. The cope is balanced by a counterweight C', so that it may swing freely and be raised and lowered without effort. The drag has the stationary

portion *d* of the ingate D projecting at one side edge, and said edge is preferably raised above the other edge. A corresponding hinged portion *d'* of the ingate is hinged upon the side edge of the cope and is provided with a suitable locking mechanism D' for locking the two parts of the ingate together. The inner edge of the hinged portion of the ingate fits into a recessed portion of the edge of the cope, so as to bring that edge opposite a recessed and beveled central portion *e* of a rigid gage-bar E, which closes the higher edge of the mold and is secured at the higher edge of the drag.

The recess in the gage admits of the molten metal flowing into the mold, and the bevel of said recessed portion forms a rib in the ingate of the mold, which makes a notch in the sprue of the casting in a line with the edge of the latter, along which the sprue may be broken off. The face of the rigid gage, opposed to the concave face of the drag, has a rabbet *e'*, in which the edge of the matrix F may fit when the latter is placed in position in the drag. Suitable end gages are provided in the drag to gage the width of the stereotype-turtle cast in the mold; but such gages are not particularly illustrated in the drawings, as they may be of any character well known in the art and form no part of my invention. A removable gage G, rabbeted at *g*, is provided at the other side edge of the mold. A rock-shaft H is journaled in bearings *c* upon the edges of the cope near the free end of the latter, and said shaft has eccentric-cams *h* upon it, which bear against the edges of the drag, and hooks *h'* at its ends, which engage lugs *b'* upon the sides of the drag and serve to lock the cope upon the latter. The rock-shaft has a lever *h²* for rocking it. The hooks and cams upon the rock-shaft are so relatively arranged that the more eccentric sides of the cams will force against the edges of the drag when the shaft is rocked to disengage the hooks, whereby the cope is started upward from the casting-box when the hooks are disengaged. A bearing-bracket A² overhangs the portion of the ways, to which the drag may be slid when the cope is raised, and a rotary shaving-cutter J is journaled in said bracket, having its axis of revolution concentric with the axis of the casting-box.

A worm-wheel *j* and power-driven worm *j'* serve to revolve the cutter.

In practice the drag is slid to that end of the ways over which the cope swings, where-
 5 upon the matrix is placed in position within the same and the gages adjusted in the usual manner. The cope is then swung down to close the mold and is locked in position and the hinged portion of the ingate is swung up
 10 and locked against the stationary portion. A bail-shaped metal handle *k* is placed with its shanks or ends projecting into the ingate and the molten type-metal is poured into the mold through the ingate until the latter is
 15 filled. As soon as the metal is sufficiently hardened, the hinged portion of the end gate is swung down and the sprue *k'* of the cast stereotype-turtle *K* may be broken off along the groove *k''*, formed by the beveled rib in
 20 the ingate. The handle cast in the sprue admits of the latter being broken off and removed while it yet is hot, and the metal of the sprue may easily be melted away from the handle to admit of the latter being again used.
 25 The cope is now unlocked and raised off from the casting in the position illustrated in Fig. II, and the drag is slid beneath the shaving-tool, as illustrated in said figure and in Fig. IV. When the shaving-tool is rotated, it will
 30 remove all surplus thickness from the concave back of the stereotype-turtle and reduce the latter to an even thickness. The mold-surface of the cope is preferably formed with suitably-arranged grooves, which will form ribs
 35 upon the back of the turtle and thus offer less metal to be removed than if the back was cast plain and solid. After the stereotype-turtle has thus been planed the rough edge portion, where the sprue was broken away,
 40 may be smoothed and the turtle is finished. As the turtle remains in the drag and with its face supported in the matrix while it is shaved, the turtle will not be liable to have its shape disturbed, such as is liable to hap-
 45 pen if it is removed from the mold and placed under the shaving-tool, and the face of the turtle will not be marred or injured, as the soft-paper matrix protects it during the shaving process.

50 Other modes of applying the principle of my invention may be employed for the mode herein explained. Change may therefore be made as regards the mechanism thus dis-

closed, provided the principles of construction set forth respectively in the following 55 claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. In a stereotype casting and shaving machine, the combination of a slide way, a cast- 60 ing box supported to slide upon said way, and a shaving tool arranged over one end of the slide way and constructed to operate upon the casting in the casting box when the latter is slid upon the way beneath said tool, 65 substantially as set forth.

2. In a stereotype casting and shaving machine, the combination of a slide way, a casting box drag supported to slide upon said way and formed with a mold cavity in the 70 shape of a cylinder segment, and a shaving tool journaled above one end of the slide way and having the axis of its movement concentric with the curve of the mold cavity, substantially as set forth. 75

3. In a stereotype casting and shaving machine, the combination of a slide way, a casting box drag supported to slide upon said way and formed with a cylindro-concave mold cavity, a cope pivoted at one end of the slide 80 way to swing down over the mold cavity when the drag is at that end of the way, and a rotary shaving tool journaled with its axis of rotation concentric with the mold cavity and above the portion of the slide way opposite 85 to the pivot support of the cope, substantially as set forth.

4. In a stereotype casting and shaving machine, the combination of a horizontal slide way, a cylindro-concave drag supported to 90 slide upon said way and having the axis of its mold cavity parallel with the way, a cylindro-convex cope pivoted at one end of the slide way to swing into the mold cavity of the drag when the latter is slid to that end of the 95 way, and a rotary shaving cutter journaled over the other end of the way and having its axis of rotation concentric with the mold cavity of the drag, substantially as set forth.

In testimony that I claim the foregoing to 100 be my invention I have hereunto set my hand this 7th day of September, A. D. 1895.

JOHN CHAS. BREUER.

Witnesses:

WM. SECHER,
 DAVID B. DAVIS.