

H. A. W. WOOD.
 STEREOTYPE PRINTING PLATE CASTING APPARATUS.
 APPLICATION FILED OCT. 26, 1905.

1,009,367.

Patented Nov. 21, 1911.

3 SHEETS-SHEET 1.

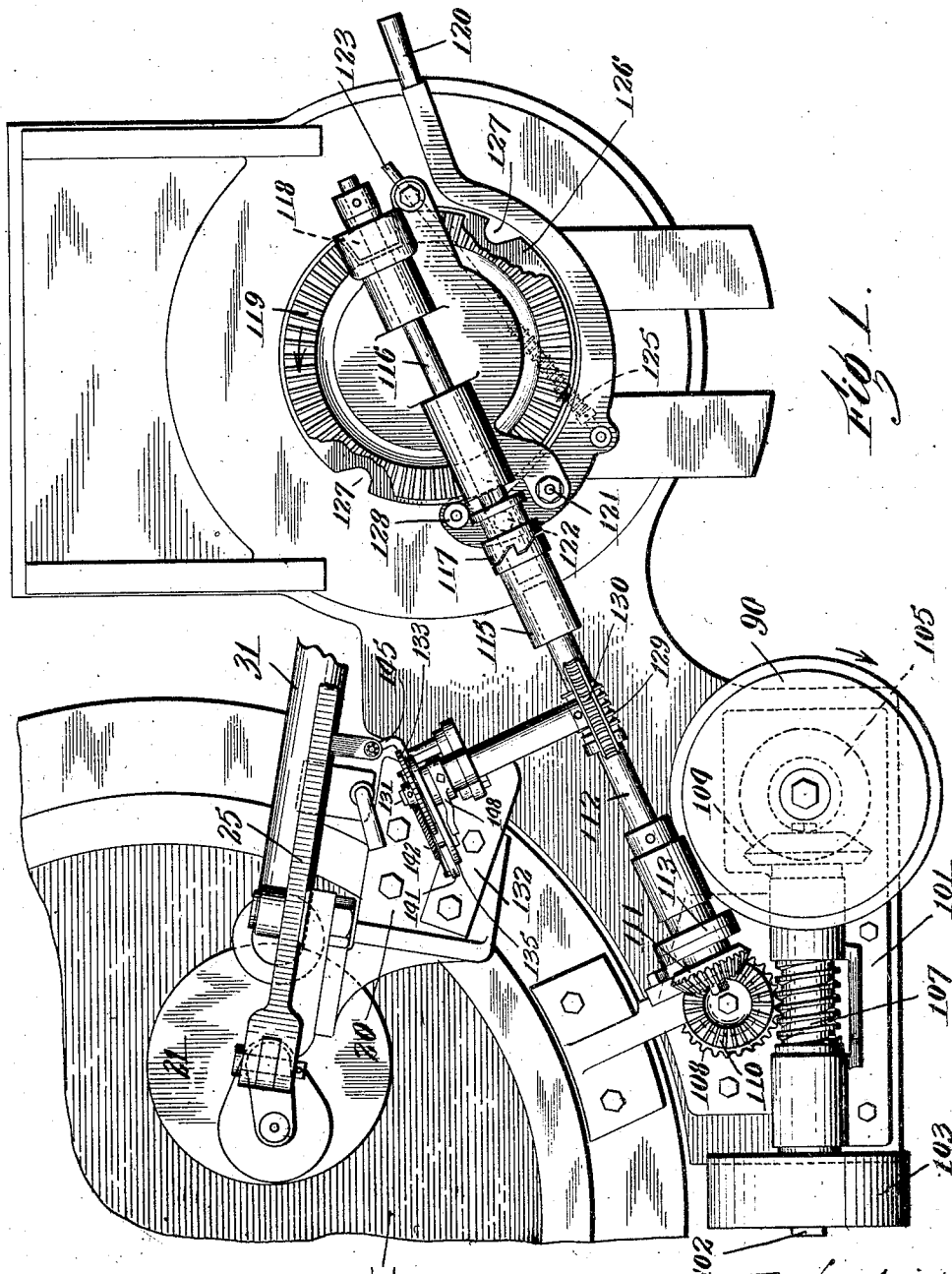


Fig. 1.

Witnesses:
 C. F. Mason.
 M. E. Regan.

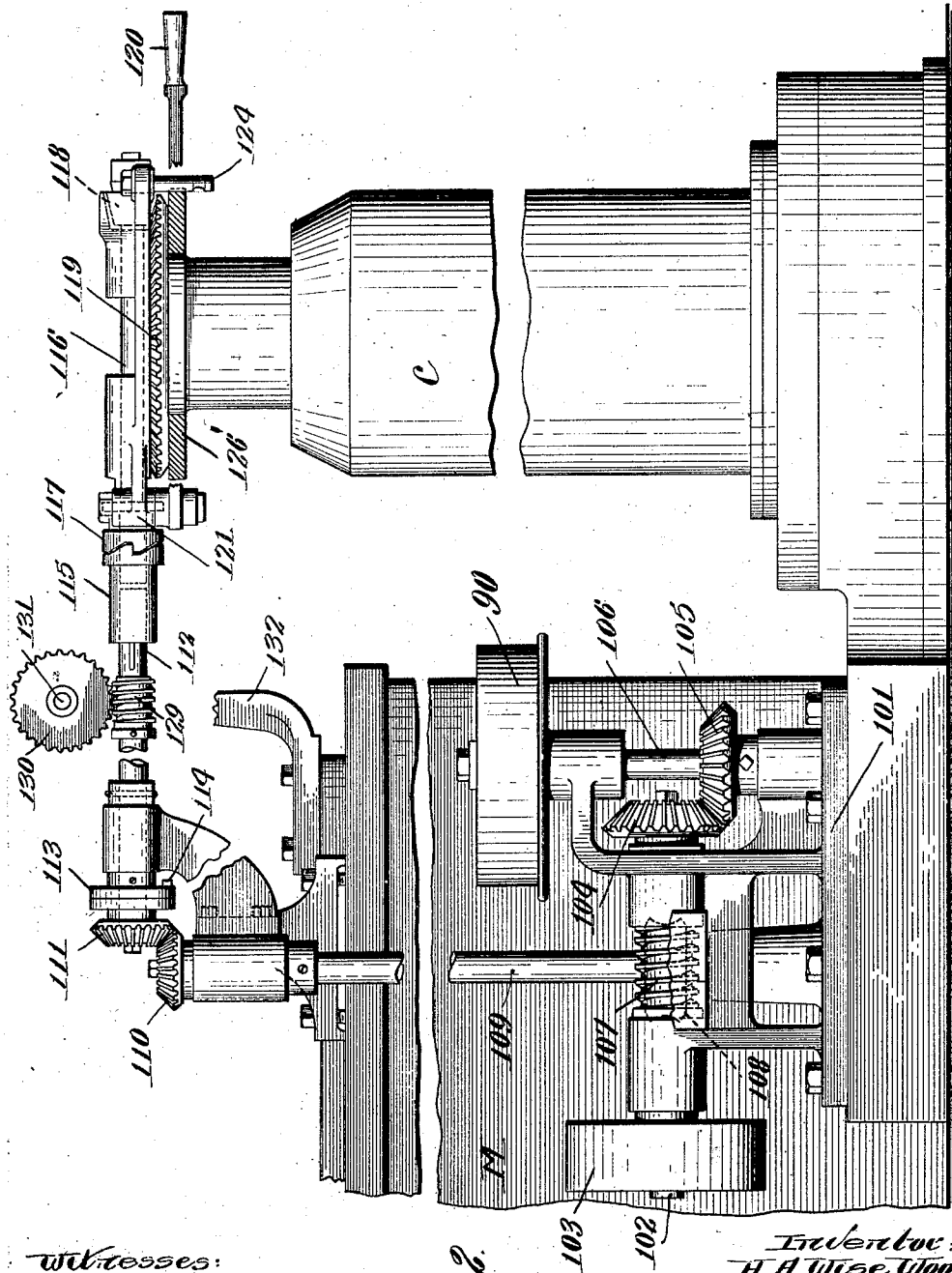
Inventor:
 H. A. Wood
 by Attorneys
 Sutcliffe & Sutcliffe

H. A. W. WOOD.
 STEREOTYPE PRINTING PLATE CASTING APPARATUS.
 APPLICATION FILED OCT. 26, 1905.

1,009,367.

Patented Nov. 21, 1911.

3 SHEETS—SHEET 2.



Witnesses:
 C. F. Mason
 M. C. Regan

Fig. 2.

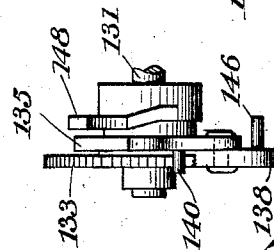
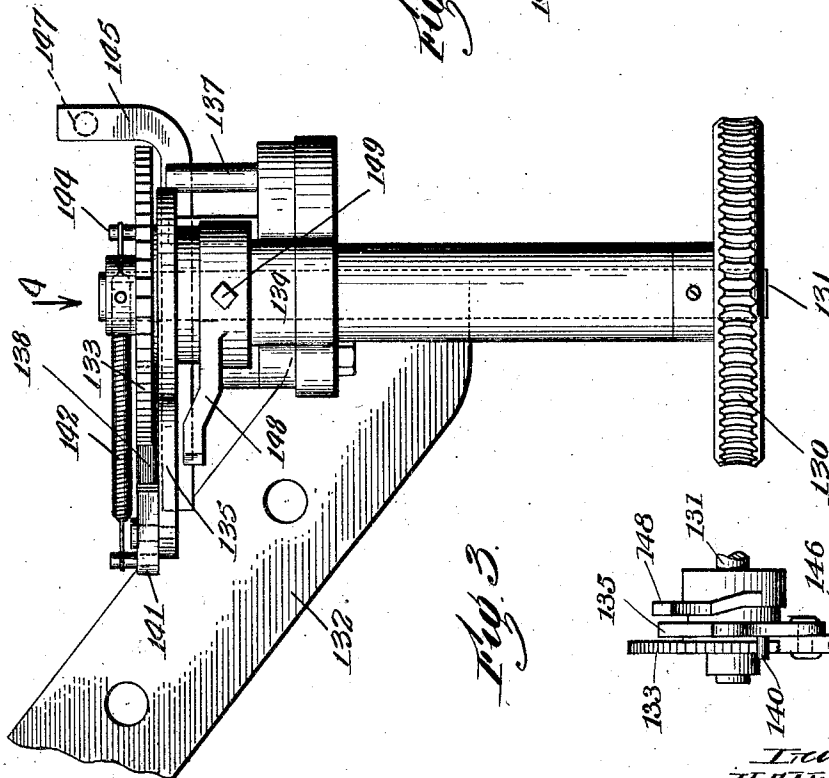
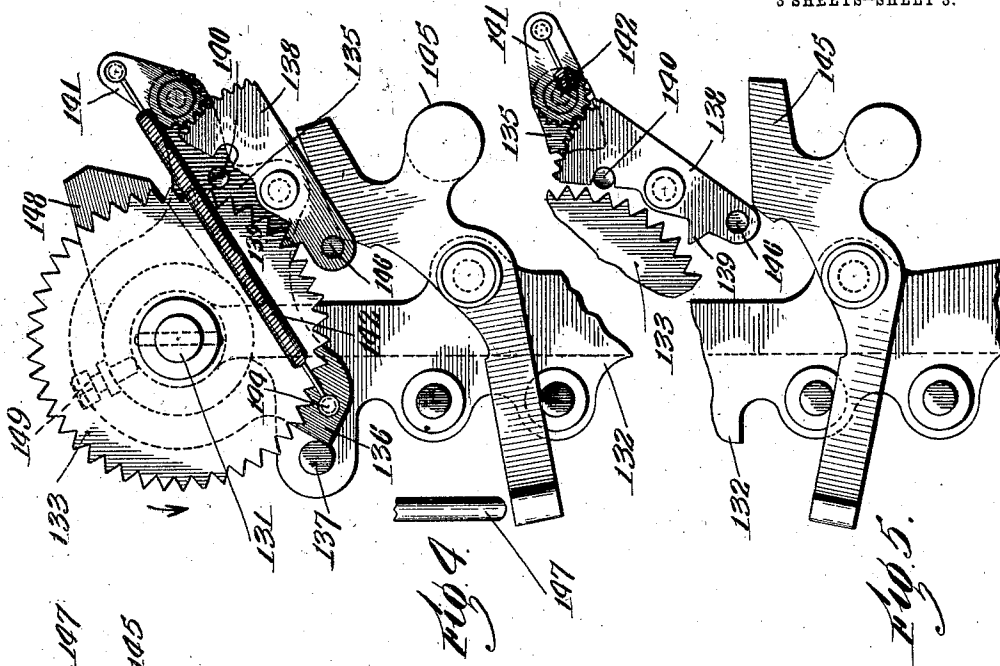
Inventor:
 H. A. Wise Wood.
 by Attorneys.
 Smithgator Smithgator

H. A. W. WOOD.
STEREOTYPE PRINTING PLATE CASTING APPARATUS.
APPLICATION FILED OCT. 26, 1905.

1,009,367.

Patented Nov. 21, 1911

3 SHEETS—SHEET 3.



Witnesses:
C. F. Wilson
McRigan

Inventor:
H. A. W. Wood.
By Attorneys
Sutcliffe & Sutcliffe

UNITED STATES PATENT OFFICE.

HENRY A. WISE WOOD, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
THE AUTOPLATE COMPANY OF AMERICA, OF JERSEY CITY, NEW JERSEY, A COR-
PORATION OF NEW JERSEY.

STEREOTYPE-PRINTING-PLATE-CASTING APPARATUS.

1,009,367.

Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed October 26, 1905. Serial No. 284,562.

To all whom it may concern:

Be it known that I, HENRY A. WISE WOOD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements Relating to Stereotype-Printing-Plate-Casting Apparatus, of which the following is a specification.

10 The object of this invention is to improve the stereotype printing plate casting apparatus shown, described and claimed in an application for patent filed by me December 5, 1904, Serial No. 235,535.

15 The improvements particularly relate to a mechanism for automatically turning the core or cylinder upon which the plates are cast, and to a timing device by which the operator knows when the plate has been cooled and when he can open the casting box. Only enough of the apparatus is shown in this application for patent to illustrate these improvements.

20 Referring to the accompanying three sheets of drawings forming part of this application for patent, Figure 1 is a plan view of enough of the apparatus to illustrate the present improvements, Fig. 2 is a side elevation thereof, Fig. 3 is a plan on an enlarged scale of the timing mechanism, Figs. 4 and 5 are partial elevations thereof illustrating the operation, and Fig. 6 is a detail hereinafter referred to.

25 Referring to the said drawings and in detail, M designates the melting pot, bolted to which is a bracket 20, which carries or which has formed therewith a pump cylinder 21. The pump is operated by a pivoted operating handle 25. The metal is forced from said pump through a spout 31 into the casting box, the core C of which is journaled in an upright position. The parts previously described are arranged as shown and described at length in said prior application and need not be herein particularized at greater length.

30 The mechanism for automatically turning the core consists of the following parts. Secured to the base of the apparatus is a bracket 101 journaled in bearings formed in which is a shaft 102 upon which is arranged a pulley 103 by which power may be applied to the machine. On the end of said shaft

102 is secured a miter-gear 104 which drives a miter-gear 105 secured on a vertical shaft 106 journaled in bearings formed in said bracket 101. On the top of the vertical shaft 106 is mounted a pulley 90 which corresponds to the pulley 90 of the apparatus shown in said prior application and which is used for the purpose of driving the saws. Secured on the shaft 102 is a worm 107 which meshes with a worm-wheel 108 mounted on a vertical shaft 109. Mounted on the end of the shaft 109 is a miter-gear 110 which drives a miter-gear 111 loosely fitted on the end of a shaft 112 which is journaled in a suitable bearing formed on the top of the apparatus. A flanged plate 113 is keyed to said shaft 112 and is connected to a collar formed on the miter-gear 111 by a breakable pin 114 whereby if an abnormal strain comes upon the apparatus, said pin will be sheared without breaking the gearing. Keyed on the end of the shaft 112 is one section of a clutch 115. Running loosely in the end of said clutch 115 and journaled in suitable bearings formed on the top of the casting box is a shaft 116 arranged in the same line as the shaft 112. Keyed on the end of the shaft 116, so as to turn around and so as to be capable of an axial movement thereon, is the other section 117 of the clutch. Secured on said shaft 116 is a bevel-pinion 118 which meshes with and drives a large bevel-gear 119 secured to the core C. A lever or starting handle 120 is pivoted to the top of the casting apparatus at the point 121 and the same carries a roller 122 which engages a groove in the clutch section 117 so as to throw the same into and out of engagement with the clutch section 115. A rod 123 is pivoted to the operating handle 120 and passes through a pivot 124 arranged on the frame. A spring 125 is arranged on this rod so that the tension of the same tends to push between the pivots and thereby cause the clutch sections normally to disengage. A ring 126 is secured on the core C below the bevel-gear 119 and this ring is provided with two notches 127-127. A roller 128 is arranged upon the starting handle 120 in position to cooperate with these notches. The only time the clutch sections can be disengaged is when one of the notches 127 comes in position to

allow the roller 128 to snap therein. In operation the clutch sections are thereby held in engagement for a half turn of the core.

5 When the operator desires to cause the core to revolve, he pulls the end of the handle or lever 120 away from the core and momentarily holds the same in this position. This will cause the clutch sections to engage
10 and the core to revolve. As the core revolves, the ring will turn so that the notch 127 in which the roller 128 previously reposed, will move away therefrom whereby the handle will be held in the position to
15 which it has been moved by the operator and the clutch sections will be held in engagement until the other notch 127 comes in position to allow the roller 128 to drop therein. Thus the core will be caused auto-
20 matically to make a half turn and the rotation thereof will be automatically stopped when this half turn has been made. Each operation takes place in substantially the same way except, of course, each notch 127
25 in turn will allow the clutch sections to disengage.

In the operation of the apparatus under discussion, it is desirable to provide some timing mechanism so that the operator will
30 know when the cast plate has solidified or cooled sufficiently to allow him to manipulate the casting box and so that too long a period will not be allowed for this purpose, thereby wasting time. The timing apparatus which is used for this purpose is
35 arranged as follows: On the shaft 112 is secured a worm 129 which engages a worm-wheel 130, secured on a shaft 131 journaled in a suitable bracket or bearing 132. A
40 ratchet or notched wheel 133 is pinned to the end of said shaft 131. The end of the bracket 132 is formed in the shape of a hub 134 and loosely fitted on this hub back of the ratchet wheel 133 is a flanged or irregular-
45 shaped plate 135, the weight of which heavily preponderates toward the right, as shown in Fig. 4. This plate is formed with an arm 136 which is arranged to strike
50 against a pin 137 extending out from the upright part of the bracket 132. Pivoted on the plate 135 is a segment 138 which carries a tooth 139 adapted to fit into the
55 ratchet-wheel 133. This action limits the pivoting action of the segment in one direction and a pin 140 in plate 135 is provided to limit the pivoting action thereof in the other direction. Another segment 141 of
60 smaller size than the segment 138 is also pivoted on the plate 135, the teeth of the two segments being in engagement, as shown. A spring 142 is arranged between a pin secured in the small segment 141 and a pin 141 extending from the plate 135.
65 This spring is so arranged that as the segment 138 pivots, it will tend to hold the

tooth 139 in engagement with the ratchet-wheel 133 when the segment 138 is in operative position, as shown in Fig. 4; and will tend to hold the segment in engagement with the pin 140 when it is thrown out
70 of operative position, as shown in Fig. 5, the spring passing over the center of the segment 138 for this purpose. Pivoted to the upright portion of the bracket 132 is a weighted arm 145, the right-hand end of
75 which is arranged in position to engage a pin 146 secured on the segment 138. The end of the weighted arm is carried around and forward, as shown in Fig. 3, in position to come under a rod 147 projecting down
80 from the pump handle 25. Secured on the hub of the bracket 132, behind the segment 138, is a cam stop-plate 148 which may be adjusted and stopped or set by means of a set-screw 149.
85

In operation, the operator pulls the pump handle 25 down to fill the mold. This will cause the rod 147 to engage the weighted arm 145 and to bring the same into engagement with the pin 146 on the segment 138,
90 which will cause the tooth 139 to engage the ratchet-wheel 133, which is slowly revolving. By means of the spring arrangement before described, the segment 138 will be locked in engagement with the ratchet-wheel and the right-hand end of the plate
95 135 will be raised until the pin 146 comes in contact with the stop plate or cam 148 as shown in Fig. 6, which will release the tooth 139 from the ratchet-wheel and throw
100 the segment 138 to its other position, which will allow the plate 135 to fall or drop to normal position. As this action takes place, the arm 136 will come with a sharp click against the post 137, which will thus notify
105 the operator that sufficient time has elapsed for the cooling of the plate so that he can begin the manipulating of the casting box. By adjusting the stop-plate 148 to the proper
110 position on the bracket 132, any desired period of time within the limits of the apparatus, can be obtained between the depression of the pump handle to fill the mold and the click which notifies the operator that
115 sufficient time has elapsed for the solidifying of the plate.

Many other devices and arrangements can be worked out for carrying out the purpose of my invention as expressed in the claims, without departing from the scope of my invention.
120

Having thus fully described my invention, what I claim and desire to secure by Letters-Patent of the United States is:—

1. In stereotype apparatus, the combination of a revoluble core, gearing for turning the same, a clutch contained in said gearing, hand control connections for throwing said clutch into operation, and automatically operating connections from said core for
130

disengaging said clutch after a half revolution of the core.

2. In stereotype apparatus, the combination of a revoluble core, gearing for turning the same, a clutch contained in said gearing, a handle for throwing said clutch into engagement, means for normally holding said handle in position to disengage the clutch, and means controlled by the turning of the core for holding said handle in position to keep said clutch in engagement for a half turn of the core.

3. In stereotype apparatus, the combination of a revoluble core, gearing for turning the same, a clutch in this gearing, a handle for throwing the clutch into engagement, a spring arranged to pull the said handle to throw the clutch out of engagement, a ring mounted on the core and having two notches, and a roller or abutment on the handle arranged to engage said notches.

4. The combination with a stereotype plate casting apparatus, of mechanism for operating the same, a timing device driven by a moving part of the mechanism, and connections from the apparatus for starting the device in operation at a predetermined point in the cycle of operation of the mechanism for operating the stereotype plate casting apparatus, the parts being arranged so that the timing device will indicate to the operator when the plate has solidified.

5. The combination with a stereotype plate casting apparatus, of mechanism for operating the same, a timing device which is engaged to work from a moving part of said mechanism, and connections for throwing the timing device into operation at a predetermined point in the cycle of operation of the mechanism for operating the stereotype plate casting apparatus, said timing device being arranged to indicate a lapsed period after the same is started into operation, whereby the operator will know when the plate has solidified.

6. The combination with a stereotype plate casting apparatus, of mechanism for operating the same, a timing device, gearing for driving the same from said mechanism, means for filling the mold, and connections for throwing the timing device into operation from said means.

7. The combination with a stereotype plate

casting apparatus, of mechanism for operating the same, a timing device, gearing from said mechanism for driving the same, means for filling the mold, connections for throwing the timing device into operation from said means, and connections from said mechanism for causing the timing device to cease operating.

8. The combination with a stereotype plate casting apparatus, of mechanism for operating the same, a timing device, gearing from said mechanism for operating the same, a pump for filling the mold, and connections from the pump for throwing the timing device into operation.

9. The combination with a stereotype plate casting apparatus, of mechanism for operating the same, a timing device comprising a notched wheel, gearing from said mechanism for operating the wheel, a plate carrying a tooth for engagement with said wheel, means for throwing the tooth into engagement with the wheel, and means for disconnecting said tooth after a partial revolution of the wheel.

10. The combination with a stereotype plate casting apparatus, of mechanism for operating the same, a timing device comprising a notched wheel, gearing from said mechanism for turning the wheel, a plate carrying a tooth for engagement with said wheel, and adjustable means for disengaging said tooth after a partial revolution of the wheel.

11. The combination with a stereotype plate casting apparatus, of mechanism for operating the same, a timing device comprising a notched wheel, gearing from said mechanism for turning the wheel, a plate, a tooth mounted on the plate for engagement with said wheel, a spring for holding the tooth either in operative or inoperative position, means for causing the tooth to engage the wheel, and means for disengaging the tooth after a partial revolution of the wheel.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

H. A. WISE WOOD.

Witnesses:

ANNIE B. WALTERS,
W. H. STETSON.