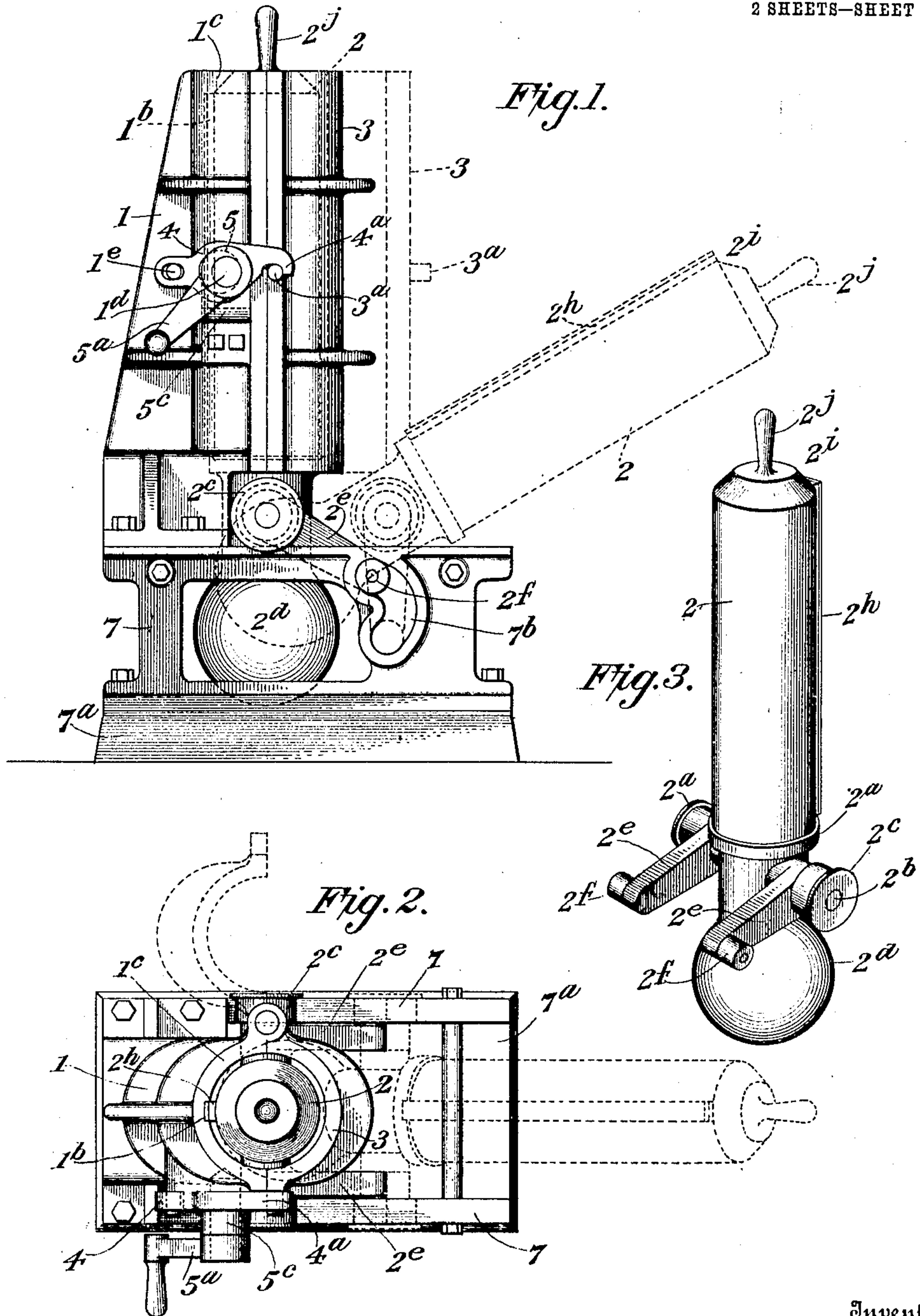


H. F. BECHMAN.  
MACHINE FOR CASTING STEREOTYPE PLATES.  
APPLICATION FILED DEC. 5, 1907.

904,748.

Patented Nov. 24, 1908.

2 SHEETS—SHEET 1.



Inventor:

Henry F. Bechman

Witnesses

*A. E. Fowler*  
*James D. Mansfield*

By *Alexander F. Lowell*  
Attorneys

H. F. BECHMAN.  
MACHINE FOR CASTING STEREOTYPE PLATES.  
APPLICATION FILED DEC. 5, 1907.

904,748.

Patented Nov. 24, 1908.

2 SHEETS—SHEET 2.

Fig. 4.

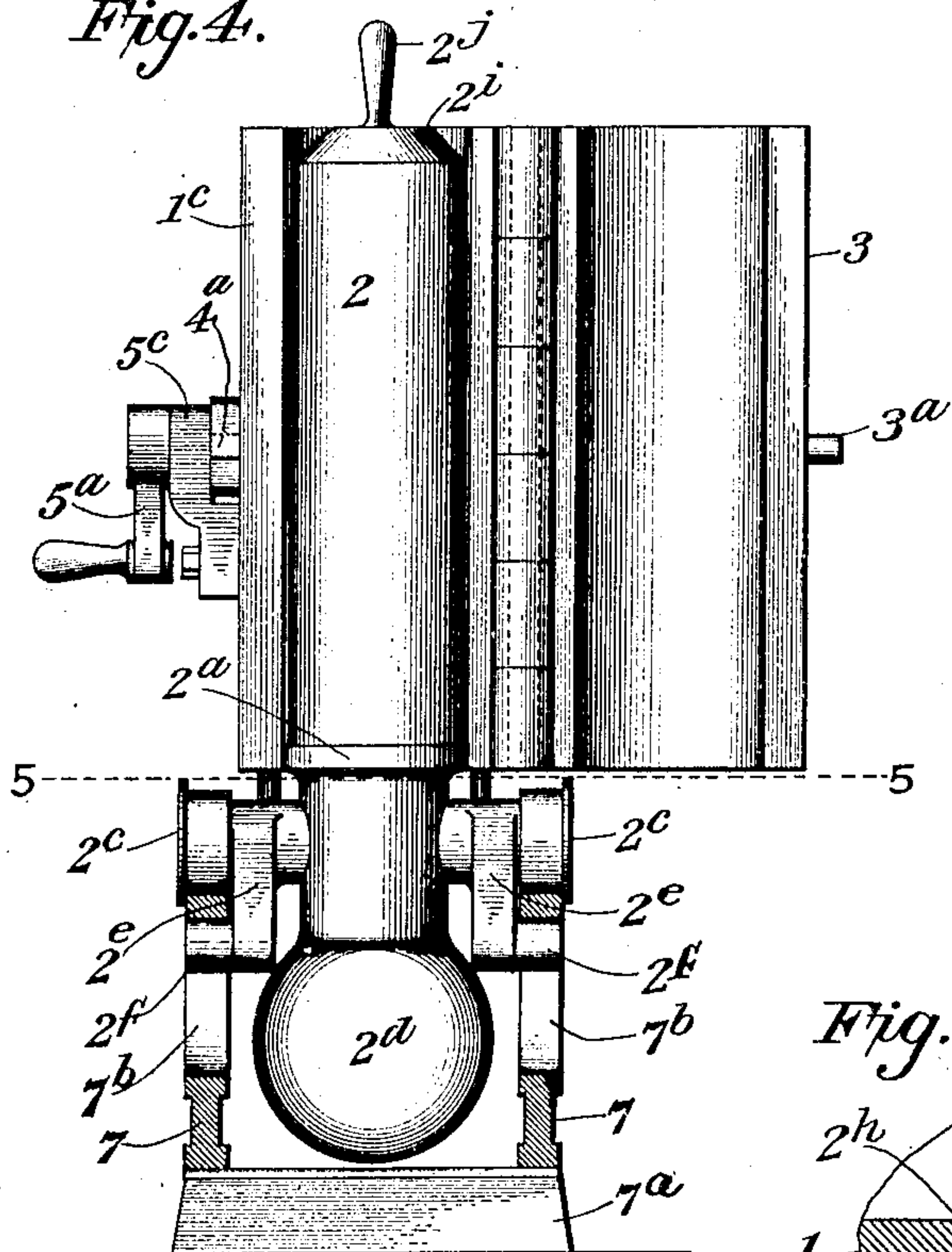


Fig. 7.

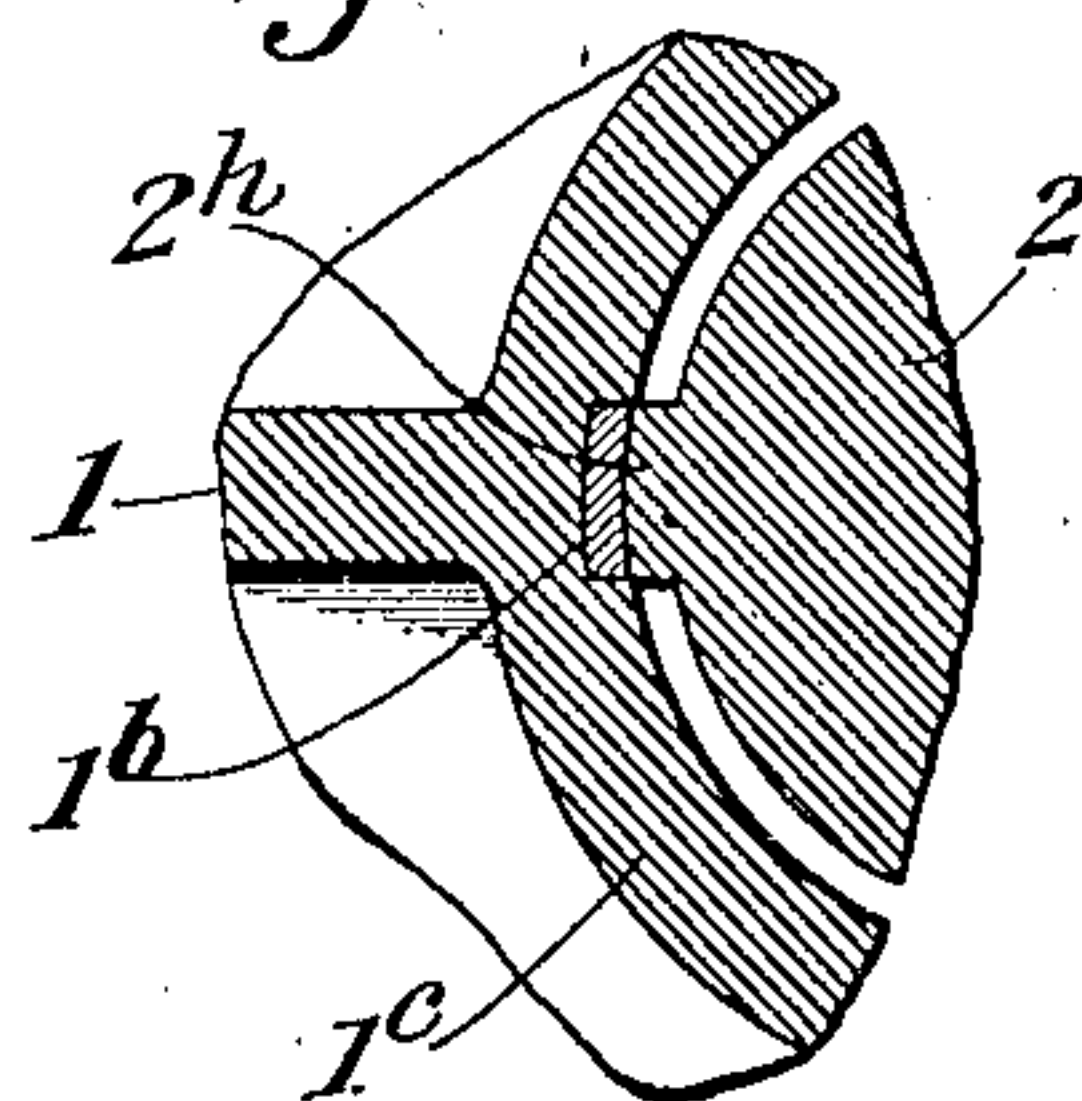


Fig. 6.

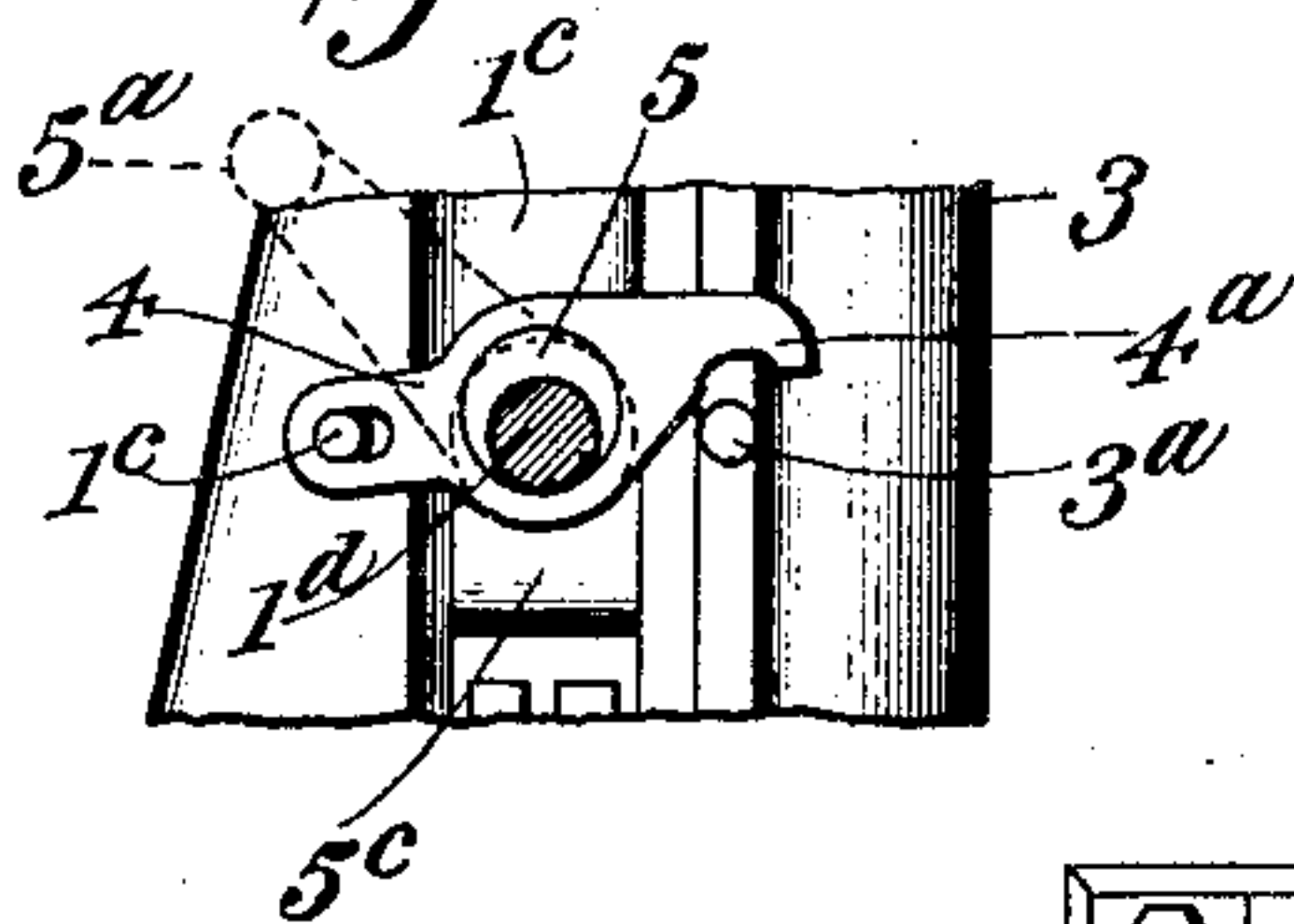
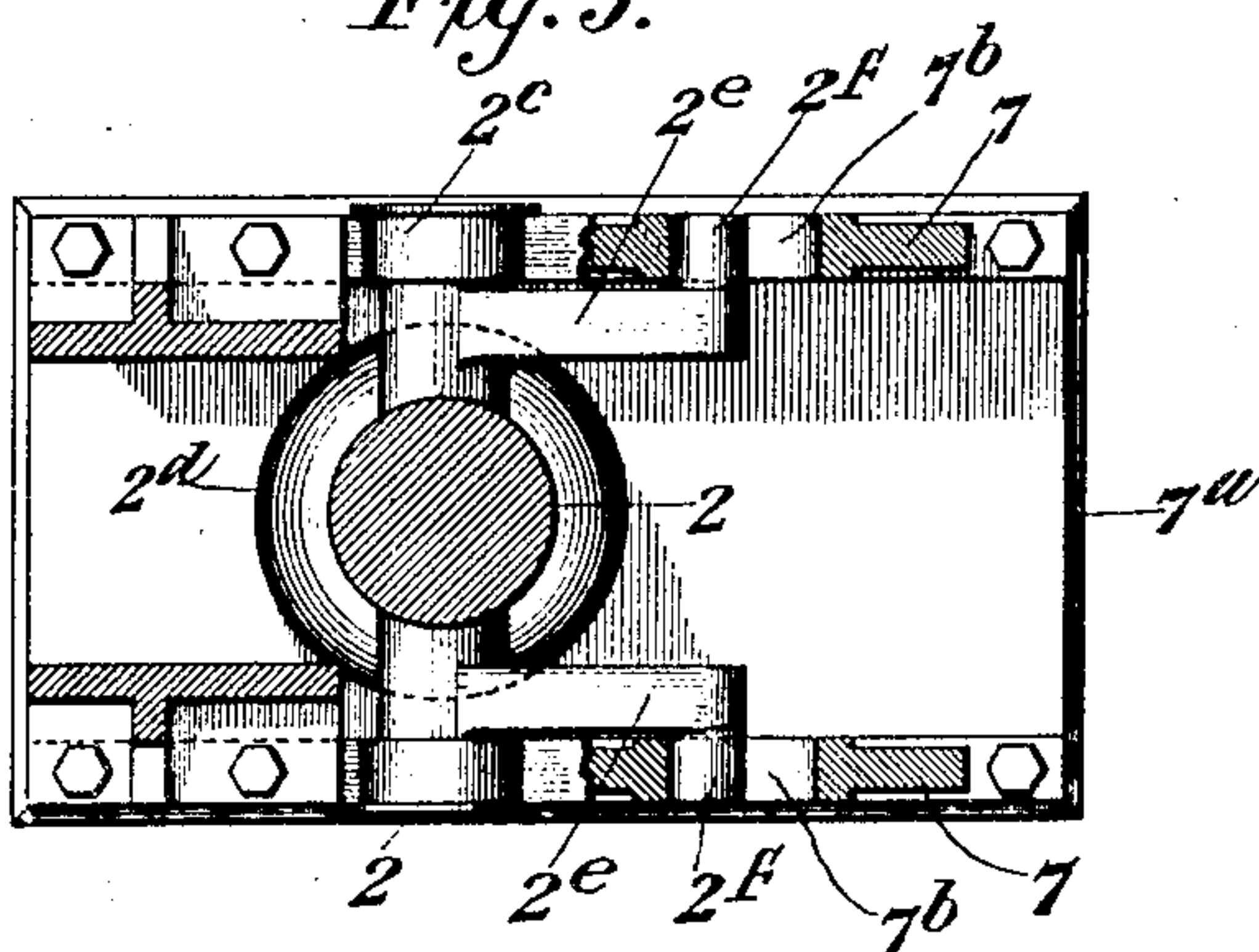


Fig. 5.



Inventor:

Henry F. Bechman

Witnesses

*W. E. Fowler*  
James H. Mansfield.

By

*W. E. Fowler*  
Attorneys



# UNITED STATES PATENT OFFICE.

HENRY F. BECHMAN, OF BATTLE CREEK, MICHIGAN, ASSIGNOR TO DUPLEX PRINTING PRESS COMPANY, A CORPORATION OF MICHIGAN.

## MACHINE FOR CASTING STEREOTYPE-PLATES.

No. 904,748.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed December 5, 1907. Serial No. 405,204.

*To all whom it may concern:*

Be it known that I, HENRY F. BECHMAN, of Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Machines for Casting Stereotype-Plates; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a novel apparatus or machine for casting stereotype plates, and is particularly designed for casting plates which are substantially complete cylinders and adapted to surround the surface of the plate cylinders; and it is especially adapted for casting single-page tubular plates, in which a single page of newspaper size will surround the plate cylinders, such as are used in connection with the rotary printing machine shown in my Patents No. 867,230 and No. 867,231, dated October 1, 1907. The present invention, however, is also adapted for casting tubular plates of larger size, and it may also be used for casting other forms of plates, if desired.

The invention is summarized in the appended claims, and will be clearly understood from the following description of the machine illustrated in the accompanying drawings which show a practical, and at present the preferred, form of the invention.

In the said drawings—Figure 1 is a side elevation of the apparatus showing, in full lines, the parts in closed position ready for casting a plate, and showing the cope and core in open position in dotted lines. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a detail view of the core removed. Fig. 4 is a front elevation of the machine, with the core in position and the cope opened. Fig. 5 is a section on line 5—5, Fig. 4, looking downward. Fig. 6 is an enlarged detail view of the latching device. Fig. 7 is an enlarged detail sectional view showing the matrix-holder in position between the drag and core.

The machine embodies a drag 1, which is preferably mounted in vertical position upon a supporting frame, composed of side pieces 7 and base plate 7<sup>a</sup>. This drag has a semi-circular recess in its front face corresponding in contour to one-half of the cylindrical plate to be cast in the machine.

The core 2 is cylindrical in cross-section and corresponds in diameter to that of the

cylinder to which the plates are to be attached. The cylindrical part of this core equals the length of the plates to be cast and has a circumferential flange 2<sup>a</sup> which forms the bottom of the mold during the casting operations.

The core is provided at its lower end with trunnions 2<sup>b</sup>, upon which are mounted rollers 2<sup>c</sup>, that rest upon the upper edges of the side pieces 7; and below these trunnions and in axial alinement with the core 2 and rigidly connected therewith is a weight or counter-balance 2<sup>d</sup>, which is calculated to practically counter-balance the weight of the core upon the trunnions and thus enable the core to be readily swung to either its vertical or inclined position. The core is however prevented from running off the ways on pieces 7, and is guided in its movements to and from the drag, by means of arms 2<sup>e</sup>, which are rigidly fastened to the trunnions 2<sup>b</sup>, or lower part of core, and may be cast therewith, and are provided with pins 2<sup>f</sup>, which may be provided with rollers and engage curved guide slots 7<sup>b</sup> in the side pieces 7, and not only limit the movement of the core, but cause it to swing to an inclined position when it is pulled away from the drag, and to assume a vertical position when it is moved toward the drag.

The cylindrical part of the core is provided opposite the drag with a matrix holder 2<sup>h</sup>, to which the edges of the matrix may be secured while the core is in lowered position, the matrix surrounding the core (and not being shown), and when the core is moved to its upright position, the matrix holder engages a groove 1<sup>b</sup> in the inner face of the drag, (see Figs. 2 and 7.)

Hinged to one side of the drag 1 is a cope 3, which has a semi-circular recess on its inner face corresponding with the exterior surface of core 2 but slightly greater in diameter and adapted, when the core is in position against the drag, to be closed against the drag and surround the core, as indicated in Fig. 2, the space between the cope and drag and the interposed core forming an annular casting chamber into which metal can be poured through a gate 1<sup>c</sup> at the top of the drag. The upper end of the core is preferably beveled as at 2<sup>i</sup> to facilitate pouring of the metal into the mold; and it may be provided with a handle 2<sup>j</sup> to facilitate raising or lowering of the core.



The cope 3 may be fastened when closed by any suitable means. As shown it has a pin 3<sup>a</sup> on its free edge, which is adapted to be engaged by a hook 4<sup>a</sup> on a slide 4, which is supported upon a pin 1<sup>e</sup>, attached to the drag, and upon an eccentric 5 attached to a pin or stub shaft 1<sup>d</sup> having a handle 5<sup>a</sup> as shown. The pin 1<sup>d</sup> may be supported by a bracket 5<sup>c</sup> attached to the drag, said bracket serving as a guide to prevent lateral displacement of the sliding catch.

When the arm 5<sup>a</sup> is thrown in its uppermost position, as shown in Fig. 6, catch 4<sup>a</sup> will be raised clear of pin 3<sup>a</sup> and the cope can be readily opened. When the cope is closed the arm 5<sup>a</sup> is thrown into the position indicated in full lines in Fig. 1, and first brings the catch 4<sup>a</sup> into engagement with pin 3<sup>a</sup> and then draws the catch backward closing the cope securely against the drag.

The operation of the machine is obvious. When a plate is to be cast, the cope is thrown open and the core lowered to the position shown in dotted lines, Fig. 1; then the matrix, not shown, is wrapped around the core and secured by the holder 2<sup>a</sup>. The core is then swung up into the cavity of the drag, and the cope closed around the core and secured to the drag, as described. The flange 2<sup>a</sup> on the bottom of the core makes a tight joint with the opposed surfaces of the drag and core, and closes the bottom of the mold formed by the space between the inner faces of the drag and cope and the external face of the core. The metal is then poured into the mold in the usual manner. Then the cope is opened and the core with the cylindrical plate thereon is removed, the matrix holder unfastened, and the matrix removed; then the plate may be slipped endwise off of the core.

It is obvious that cylindrical tubular plates of any desired diameter and length may be formed in such machines, and it is also practical, if desired, to cast a plurality of parti-cylindric plates in such a machine by applying more than one matrix holder to the core.

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

1. A machine for casting stereotype plates, comprising a drag, a cope, and a tiltable core adapted to be inclosed between the cope and drag.
2. A stereotype casting machine, comprising a drag, a cope, and a swinging core interposed between the drag and cope.
3. A stereotype casting machine, comprising a drag, a tiltable core, and a cope.
4. In combination, a stationary drag, a cope and a tiltable core.
5. In combination, a stationary drag, a swinging cope and a tilting core.

6. In combination, a drag having a casting recess, a tiltable core movable to and from the drag, and a cope adapted to inclose the exposed part of the core in the drag.

7. In combination, a drag, and a tiltable core, movable to and from the drag, and a hinged cope adapted to inclose the exposed part of the core in the drag.

8. A stereotype casting machine comprising a fixed drag, a tiltable core and a swinging core.

9. A stereotype casting machine, comprising a drag, and a cope hinged thereto having opposed semi-cylindric recesses, and a cylindrical tiltable core interposed between the drag and cope.

10. In combination, a base frame, a drag mounted thereon, a movable tiltable core, a cope hinged to the drag, and means for locking the cope.

11. In combination, a base frame, a drag fixedly mounted thereon, a tiltable core movably mounted upon the base, a cope hinged to the drag, and means for locking the cope.

12. In combination, a drag, a cope, and a movable counter-balanced core.

13. In combination, a base, a drag, a tilting counter-balanced core, and a swinging cope.

14. In combination, a base, a drag, a tilting counter-balanced core mounted on the base, and a swinging cope hinged to the drag.

15. In combination, a drag, a cope, a tiltable hook bar slidably mounted on the drag and adapted to engage the cope, and an eccentric on the drag for operating said hook.

16. In combination, a drag, a cope hinged thereto, a hook bar tiltable and slidably mounted on the drag and adapted to engage the cope, and an eccentric and lever on the drag engaging and operating said hook bar.

17. In a stereotype casting machine, the combination of a drag, a cope, a supporting frame, a movable core mounted on said frame and arms connected with said core engaging guide slots in the frame.

18. In a stereotype casting machine, the combination of a drag, a cope, a supporting frame having guide slots, a tilting core mounted on said frame, and arms connected with said core engaging said guide slots to cause said core to swing from a vertical to a horizontal position as it moves.

19. The combination of a frame having side pieces provided with angular slots, a drag mounted on the frame, a core provided with rollers supported on the side pieces of the frame, and arms connected to the core and engaging said slots to cause the core to tilt as it moves.

20. The combination of a frame having side pieces provided with guide slots, a drag mounted on the frame, a tiltable core supported on the side pieces of the frame, and



arms connected to the core and engaging said guide slots to cause the core to tilt as it moves; with a cope hinged to the drag and adapted to be closed thereagainst to surround the core, and means for locking the drag in closed position.

21. In combination, a frame, a drag, a cope, a core movably mounted upon the frame, arms attached to the core and engaging guide slots in the frame to cause the core to tilt as it moves away from the drag, and a cope adapted to be closed against the drag and inclose the core, and means for locking the cope in closed position.

22. In combination; a frame, a drag mounted thereon, a cope, a core movably mounted upon the frame, means for causing the core to tilt as it moves away from the drag, a cope hinged to the drag and adapted to be closed thereagainst to surround the core when the latter is in casting position, and means for locking the cope in closed position.

23. In combination, a frame, a drag mounted thereon, a cope hinged to the drag, a core movably mounted upon the frame and provided with a counter-balance, arms attached

to the core and engaging slots in the frame causing the core to tilt as it moves away from the drag, a cope hinged to the drag and adapted to be closed thereagainst to surround the core when the latter is in casting position, and means for locking the cope in closed position.

24. An apparatus for casting cylindrical stereotype plates comprising a box, a tiltable cylindrical core removable from the box, and means for securing the core in the box.

25. An apparatus for casting cylindrical tubular plates comprising an openable box having a cylindric bore, and a tiltable cylindric core within the box.

26. A box for casting cylindrical plates comprising a drag, a cope, and a tiltable cylindrical core adapted to be inclosed in the box.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

HENRY F. BECHMAN.

Witnesses:

F. W. DENNING,  
IRVING F. STONE.