



No. 669,696.

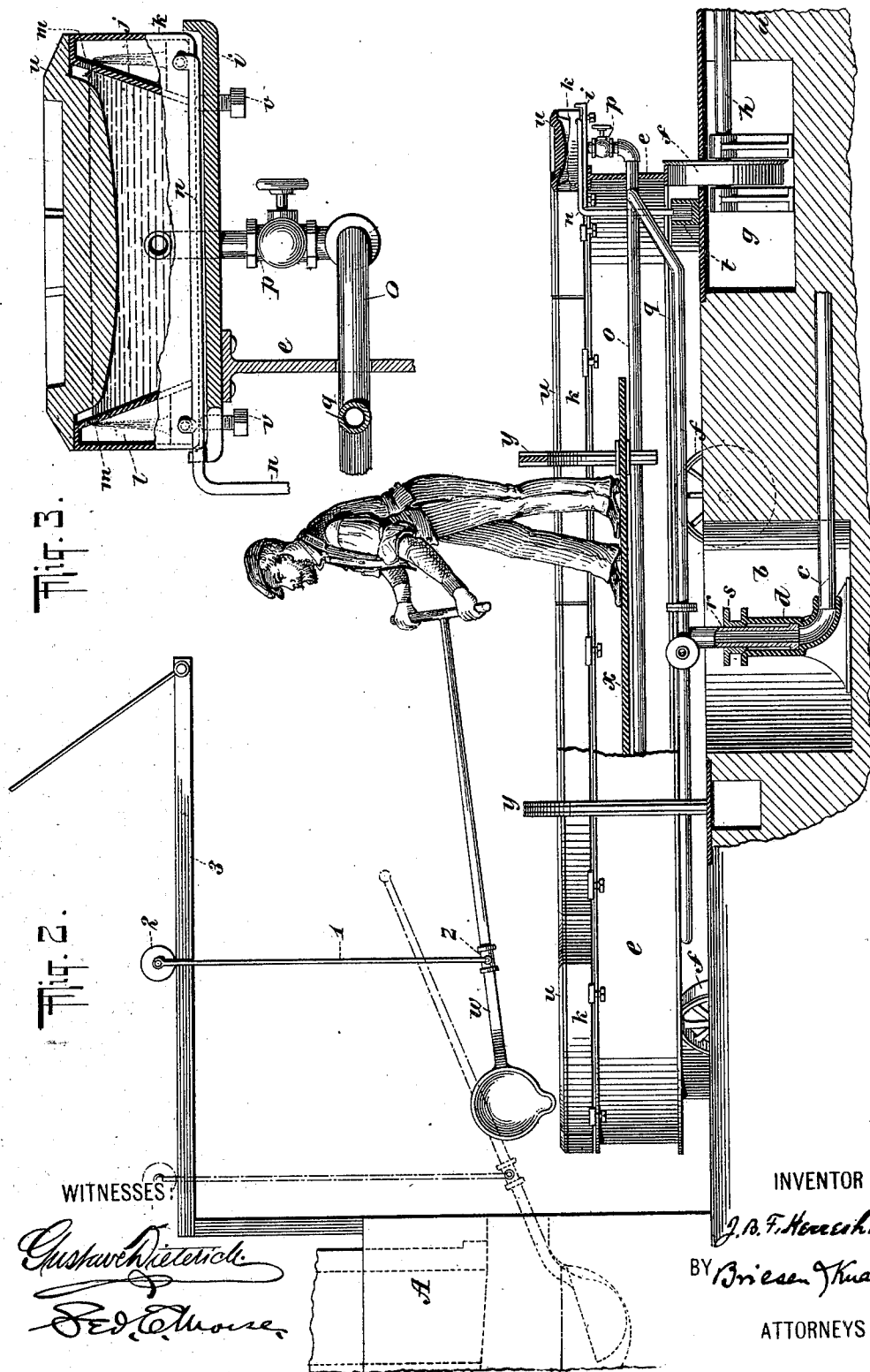
Patented Mar. 12, 1901.

J. B. F. HERRESHOFF.  
APPARATUS FOR CASTING METAL.

(Application filed Apr. 21, 1900.)

3 Sheets—Sheet 2.

(No Model.)



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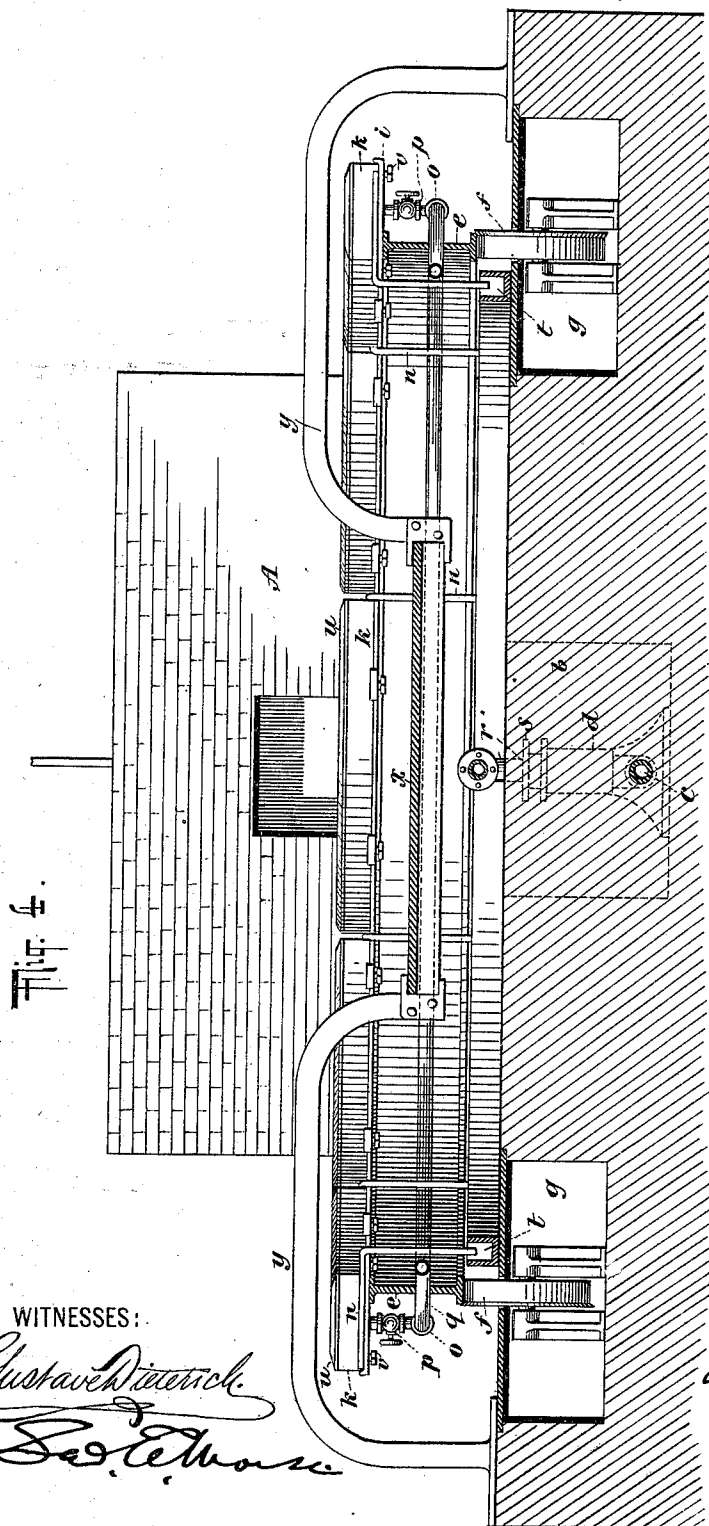
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3 Sheets—Sheet 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR CASTING METAL.

SPECIFICATION forming part of Letters Patent No. 669,696, dated March 12, 1901.

Application filed April 21, 1900. Serial No. 13,695. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BROWN FRANCIS HERRESHOFF, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Metal-Casting Apparatus, of which the following is a specification.

My invention relates to an apparatus to be employed in casting, the said apparatus being especially adapted to cast thin flat bodies, and is of particular use in casting anodes.

One form of apparatus embodying my invention is described herein, and the characteristic features of the invention are pointed out in the claims at the end of this specification, it being understood that while I have shown and described but one form of my apparatus other forms may be employed without departing from the spirit of my invention.

In the accompanying drawings I have shown, in Figure 1, a plan view of the apparatus, a portion of the apparatus being broken away for the purpose of enabling the apparatus to be shown upon an enlarged scale: Fig. 2 is a sectional elevation of the apparatus. Fig. 3 is an enlarged sectional view of one of the casting devices with an anode-mold; and Fig. 4 is a sectional elevation, the direction of view being at right angles to the direction of view in Fig. 2, the section being taken on the line 4 4 of Fig. 1.

The foundation *a* is provided with a center pit *b*, in which is located a supply-pipe *c*, having the upwardly-turned socket or footstep *d*. An annular framework *e* rests upon wheels *f*, placed in wheel-pits *g*. One or more of the wheels *f* may be driven by a suitable shaft or shafts *h*, and the annular framework *e*, resting upon the said wheels, will be thereby given a rotary movement. This annular framework is provided with suitable platforms or braces *i*, which support the casting devices, which consist of an inner box or mold *j* and an outer box *k*, which are so constructed and arranged as to leave between them a channel *l*, into which cooling liquid may pass from the inner box *j* through apertures *m* therein. The means whereby the cooling liquid circulates around the molds constitutes a

liquid circulation or liquid-circulating system. This water passes off through a series of escape-pipes *n*. The casting device receives water from an annular pipe *o* through a connection *p*, which annular pipe receives water from a series of radiating pipes *q*, which radiate from an upright pipe *r*, which is stepped after the manner of a shaft in the pipe or footstep *d* and is packed therein by a suitable gland *s*, so that the structure constituted by the pipe *r* and the footstep *d* constitutes a pivotal structure upon which the entire movable apparatus pivots. An annular trough *t* is provided, into which the escape-pipes *n* empty. A mold *u* is seated in each casting device and is cooled by the water circulation. It will be observed that these molds are herein shown as anode-molds and are employed for the purpose of casting a flat plate or anode. The leveling of the mold is effected by leveling the casting device by means of leveling-screws *v*. It will be very evident that as the framing and the system of molds are given a rotary movement the metal can be poured into the mold while the same is in motion at such a rate as to effect a thoroughly even casting and a lengthening of the life of the mold.

The casting is effected as follows: In a reverberatory or other suitable furnace *A* a suitable ladle *w* is adapted to be dipped by an operator standing upon a suitable platform *x*, which is supported stationarily in the middle of the annular system of molds by means of suitable supporting-arms *y*, which arch the system of molds, as clearly shown in Fig. 4. The ladle is pivotally supported at *z* by a suitable hanger *1*, which is provided with a trolley-wheel *2*, running upon an arm *3*, whereby the ladle may be suitably operated to dip the molten metal from the furnace and deposit it in the molds.

It will be obvious that by employing the described apparatus in casting a great saving may be effected in time, in the durability of the apparatus, and in the amount of labor involved.

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

1. The combination of a series of molds

each having a liquid-circulating system, with means for causing the said molds to travel in a closed path, a stationary platform supported within the path of travel of the molds, 5 a water-supply pipe forming the pivot of the system of molds, located beneath the platform and in liquid-conducting communication with the liquid-circulating systems of the molds, a furnace or other source of molten- 10 metal supply and a trolley-supported ladle arranged in operative relation with the furnace and the moving molds.

2. The combination of a series of molds, each provided with a liquid-circulating system and with means for supporting the same 15 and causing them to travel in a circular path, a platform located within the circular path of the molds, a water-circulation system, a central supply-pipe therefor, the said central 20 supply-pipe located below the platform constituting the pivot of the rotating series of molds and in liquid-conducting communication with the liquid-conducting systems of the molds.

25 3. In a casting device, the combination of a mold and a water-bath therefor, which con-

sists of an inner and an outer casing, means for supplying water to the inner casing, the said inner casing having liquid-outlet apertures at or near the top thereof, and an out- 30 let-pipe for the outer casing.

4. In a casting apparatus, the combination of an annular framework, a series of casting devices carried thereby and leveling devices for leveling the casting devices independently 35 of the framework.

5. In a casting apparatus, the combination of an annular framework, a series of molds having liquid-circulating systems, means for rotating the framework, a central supply- 40 pipe for supplying a cooling liquid and constituting the pivot of the apparatus, the said water-supply pipe being in liquid-conducting communication with the mold-liquid circulating systems, a stationary platform located 45 within the annular framework above the central supply-pipe and means for pouring the molten metal.

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Witnesses:

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