

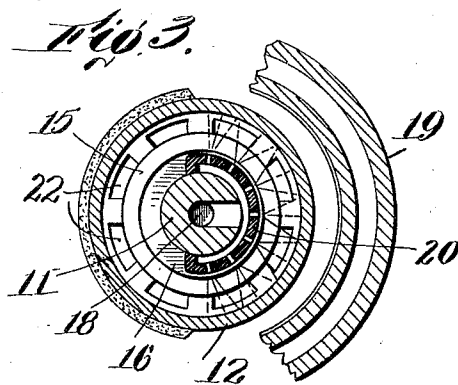
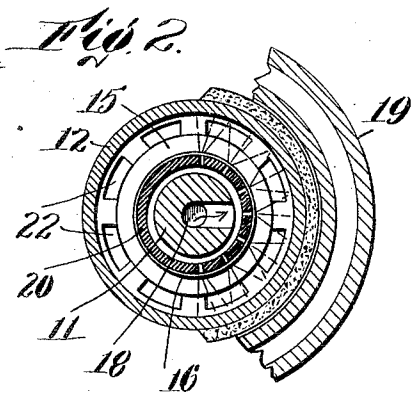
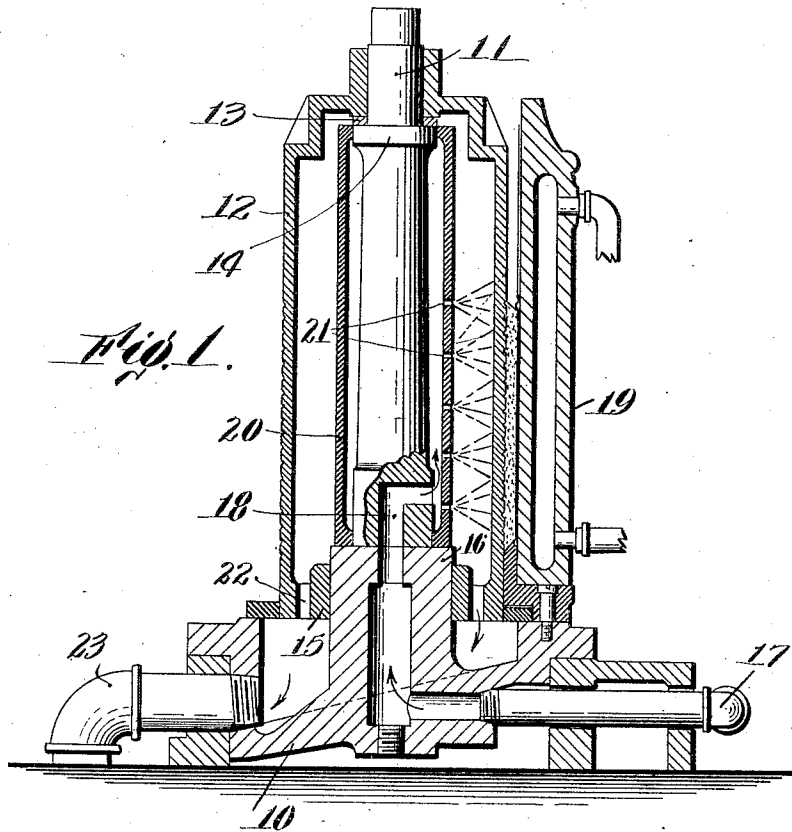
J. S. HEALY.

COOLING DEVICE FOR STEREOTYPE PRINTING PLATE CASTING APPARATUS.

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1,049,477.

Patented Jan. 7, 1913.



Witnesses:

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UNITED STATES PATENT OFFICE.

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COOLING DEVICE FOR STEREOTYPE-PRINTING-PLATE-CASTING APPARATUS.

1,049,477.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed March 30, 1908, Serial No. 424,213. Renewed June 5, 1912. Serial No. 701,910.

To all whom it may concern:

Be it known that I, JOHN S. HEALY, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Cooling Device for Stereotype-Printing-Plate-Casting Apparatus, of which the following is a specification.

This invention relates to an apparatus for casting curved stereotype printing plates, and particularly to that type thereof which is designed to be used in small plants, and in which the parts are operated chiefly by hand, but the principle of the invention is applicable to other types of apparatus for casting stereotype printing plates.

The principal object of the invention is to provide means whereby the casting may be artificially chilled while it is in the mold in the position in which it is cast, and to protect the mold from the chilling action while the cast is being delivered so that the molten metal will not be brought against a chilled surface.

In the particular type of casting device which is chosen to illustrate this invention, the chilling of the entire core continuously both during the casting and delivering operations tends to cool it too much, so that when the metal is introduced into the mold it will be brought into contact with a previously chilled surface, which sometimes results in "shrinks" in the casting, but by chilling the core in the manner indicated above, and as will be more particularly described hereinafter, the casting is properly cooled while in the mold, and yet the metallic core on which it is cast takes up some of the heat from the casting during the delivery thereof, and so is again presented in the position for casting in an unchilled condition. Thus the disadvantage of bringing the molten metal into contact with a chilled surface is avoided.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a central vertical sectional view of one form of casting apparatus showing how this invention may be applied thereto. Fig. 2 is a transverse sectional view of the same showing the cast in position in the

mold, and Fig. 3 is a similar view showing the position of the parts when the plate is delivered and when the mold is being brought back into position for producing the next cast showing a slight modification.

The invention is shown as applied to a form of casting apparatus comprising a base-piece 10 fixed on which is an upright or bearing member 11. A cylinder or core 12 is journaled on this upright to turn thereon. It may rotate or oscillate as desired. The upper end of the cylinder is closed and is formed with a hub which engages a bearing-collar 13 supported on a shoulder 14 formed on the upright. The lower end of the cylinder is provided with a head 15 which is fitted on a hub 16 formed on the upper part of the base. The lower outer wall of the base-piece is made inclined as shown, and is cored or bored out so that a water supply pipe 17 can be attached thereto, to direct water into the upright, which is provided with a passage 18 opening on the side of the upright toward the movable segmental back 19 with which the device is provided. The upright is surrounded between the shoulder and hub with a casing 20. This casing may be of cylindrical or other form and is in stationary position on the upright. The space between this casing and the upright receives the water, which is discharged from the casing through perforations 21 therein. These perforations are so arranged as to direct water against the inner wall of the core 12 on that side thereof which is toward the segmental back. As the casing 20 is stationary it will be obvious that the water is always directed in the same way, and that as the core turns to deliver the cast-plate from the mold the part of the core holding the plate will be drawn away from the chilled zone and left in such position that the plate may be cooled naturally, giving up part of its heat to the cylinder itself. On account of this it will be understood that the core will be heated slightly by the cast plate during delivery, and when it is returned to casting position by the rotation or oscillation of the core it will present a surface to the in-coming molten metal which will not be chilled, but may be slightly heated. This prevents the disadvantage of the molten metal coming against the chilled

surface which under certain conditions causes shrinks and irregularities in the casting. In order to accomplish this result the perforations 21 are arranged throughout about half of the casing, and the other half of the casing is made solid, or the casing might be made of a semi-cylindrical shape only as indicated in Fig. 3 having the perforations throughout 180 degrees of its surface. The head 15 of the cylinder is provided with perforations 22 so that the water used for cooling may run down through the same on the inclined lower wall of the base, and be discharged through a waste-pipe 23. It will be seen that by this simple arrangement the core is protected from the cooling spray on one side and prevented from getting so chilled during the delivery of a cast plate that the succeeding casts will be made with shrinks in their inner surfaces.

While I have illustrated and described a preferred form of the invention, I am aware that modifications may be made therein by persons skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to the details of construction shown or to the particular type of casting box indicated in the drawings, but

What I do claim is:—

1. In a stereotype printing plate casting apparatus, the combination of a mold, means for delivering the cast-plate on a part of the mold, and means for artificially and continuously chilling the mold and for protecting said part of the mold on which the plate is delivered from the chilling action during the delivery of the plate.

2. In a stereotype printing plate casting apparatus, the combination of a base hav-

ing a passage therethrough, an upright bearing member mounted on said base and having a passage communicating with the passage therein, a casing surrounding said bearing member and having perforations on one side thereof through which water directed into the base will be discharged from the casing, a hollow core surrounding said casing, and a segmental back adjacent to said core on the side on which said perforations are located.

3. In a stereotype printing plate casting apparatus, the combination of a base, an upright secured to the base, a cylinder journaled on the upright, a segmental back co-operating with the cylinder, means for directing water into the upright, outlets arranged so that the surface of the cylinder opposed to the back will be cooled opposite the flexible matrix and so that the entire inner periphery of the cylinder which is not opposed to the back will not be cooled.

4. In a stereotype printing plate casting apparatus, the combination of a base, an upright secured thereto, a cylinder journaled on the upright, a segmental back co-operating with the cylinder, means for directing water up into the upright, and a cylindrical casing surrounding said upright and having orifices in the side toward the segmental back so as to direct the jets of water only upon the portion of the cylinder which is opposed to the matrix.

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

JOHN S. HEALY.

Witnesses:

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MARY E. McCODDELL.