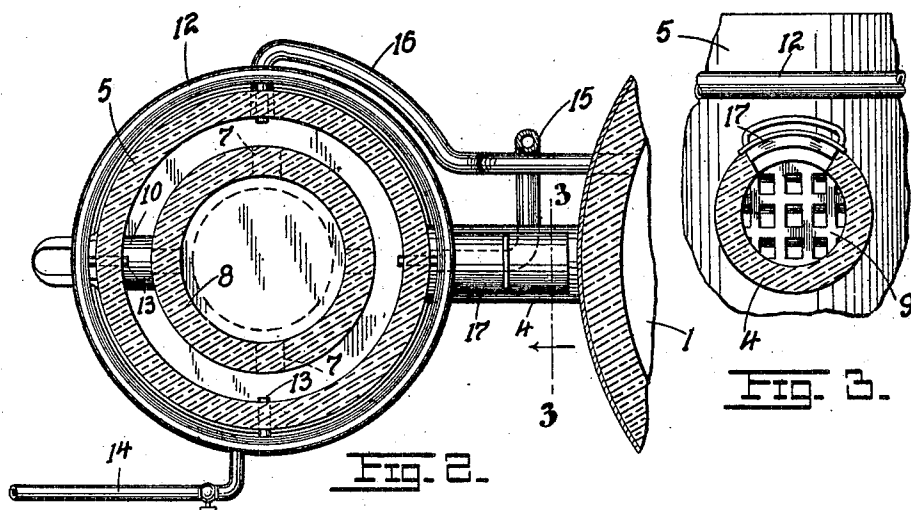
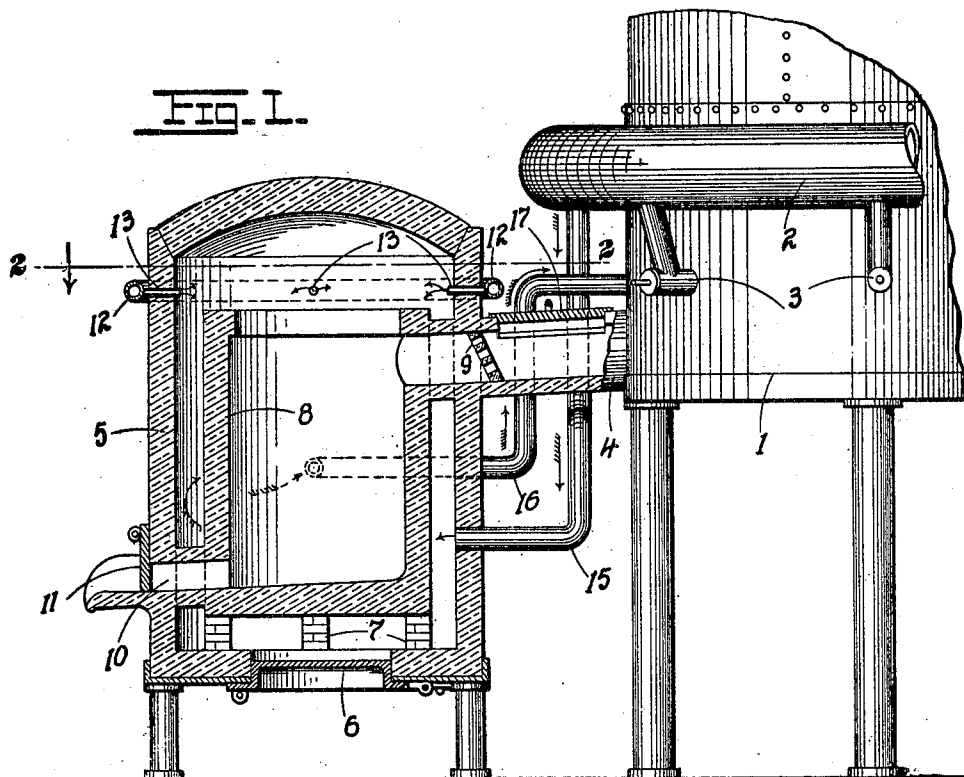


No. 838,306.

PATENTED DEC. 11, 1906.

W. H. DAILEY.
RECEPTACLE FOR FLUID METAL.
APPLICATION FILED MAR. 3, 1906.



WITNESSES:

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RECEPTACLE FOR FLUID METAL.

No. 838,306.

Specification of Letters Patent.

Patented Dec. 11, 1906.

Application filed March 3, 1906. Serial No. 304,017.

To all whom it may concern:

Be it known that I, WILLIAM H. DAILEY, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Receptacles for Fluid Metal, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to receptacles for molten metal discharged from cupola and other furnaces; and it consists in the novel construction and arrangement of parts more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a middle vertical section of my invention, showing the same connected to the discharge-spout of a cupola-furnace. Fig. 2 is a horizontal section on line 2 2 of Fig. 1, this view also showing the receptacle in section; and Fig. 3 is a vertical section taken through the discharge-spout leading from the furnace to the receptacle on the line 3 3 of Fig. 2.

The object of my invention is to provide a receptacle for receiving the molten metal discharged from a cupola-furnace for foundry purposes, the primary object being to eliminate from the metal all impurities of the nature of slag, dirt, and fuel particles previous to the discharge of the metal into the receptacle.

A further object is to maintain the temperature of the contents of the receptacle sufficiently high to preserve the fluidity of the metal until such time at it may be used for the production of castings or ingots.

In detail the invention may be described as follows:

Referring to the drawings, 1 represents the lower portion of a conventional cupola-furnace, 2 the wind-pipe therefor, and 3 the twyers, all of the usual and prevailing construction. Located adjacent to the cupola and at a level below the discharge-spout 4 thereof is a casing 5, provided with a bottom door 6, through which access may be had thereinto for purposes of cleaning. Mounted on suitable posts or brick supports 7 on the bottom of the casing is an open receptacle 8, whose upper end is in communication with the spout 4 aforesaid, whereby the molten metal from the cupola discharges directly into the receptacle, the spout penetrat-

ing the wall of the casing 5, as shown. Within the spout is located a fire-brick screen or filter 9, disposed at an incline whereby any foreign matters—such as slag, cinders, fuel particles, and lumps of carbon—are intercepted, the pure metal freely passing through the openings of the screen and through the spout into the receptacle. The latter has a discharge pipe or spout 10, which is closed by a gate or valve 11.

Encompassing the casing is a pipe 12, from which lead into the casing a series of nozzles 13 for spraying suitable quantities of oil or hydrocarbon into the casing, the said hydrocarbon being ignited at the high temperature from the fluid metal in the receptacle, the pipe 12 being supplied with oil from a pipe 14, leading to any source of supply. (Not shown.) The air for maintaining the combustion of the hydrocarbon within the casing is supplied by the shunt or branch 15, which leads from the wind-pipe 2, the combustion products being conducted out of the casing through the eduction-pipe 16, whose one end taps the casing approximately ninety degrees from the discharge end of the branch 15 and whose opposite end discharges the combustion products back into the cupola in a plane on a level with the twyers 3. The combustion of the hydrocarbon in the casing around the receptacle maintains the temperature within the casing sufficiently to preserve the fluidity of the metal within the receptacle until occasion demands its withdrawal through the spout 10 for foundry purposes. As cinders, slag, fuel, and other impurities accumulate in the spout 4 they may be removed from time to time upon opening of the lid or door 17, with which the top wall of the spout is provided, any poke-bar accomplishing such removal, as is apparent to any foundryman or the skilled mechanic.

It will be seen that the same source of air-supply which furnishes the blast for the twyers is utilized for supplying oxygen to the interior of the casing for purposes of maintaining the combustion of the hydrocarbon introduced therein. The inclination of the screen 9, while effectively intercepting the light impurities, yet freely permits the molten metal to pass through the openings thereof.

Having described my invention, what I claim is—

In combination with a cupola having a dis-

charge-spout, a wind-pipe and twyers, a receptacle communicating with the spout, a casing surrounding the receptacle, a branch or shunt leading from the wind-pipe to the
5 chamber of the casing, an eduction-pipe leading from the chamber of the casing to the cupola and discharging therein substantially in a plane on a level with the twyers, and

means for supplying a hydrocarbon to the casing, substantially as set forth. 10

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. DAILEY.

Witnesses:

EMIL STAREK,
MARY D. WHITCOMB.