F. DE BUIGNE.

DELIVERY PIPE FOR CASTING APPARATUS.

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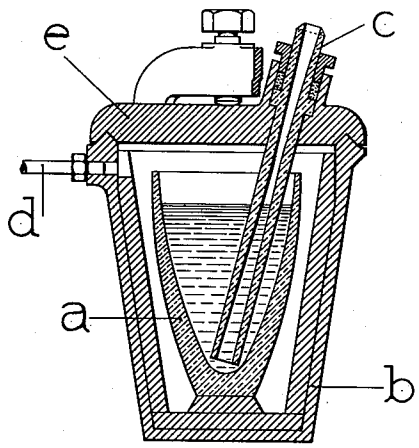
1,024,553. Patented Apr. 30, 1912.



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UNITED STATES PATENT OFFICE.

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DELIVERY-PIPE FOR CASTING APPARATUS.

1,024,553. Specification of Letters Patent. Patented Apr. 30, 1912.

Application filed October 14, 1911. Serial No. 654,782.

To all whom it may concern:

Be it known that I, FRANZ DE BUIGNÉ, a subject of the Austro-Hungarian Emperor, and resident of Magdeburg, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Delivery-Pipes for Casting Apparatus, of which the following is a full, clear, and exact specification.

In various casting apparatus, such as those for casting molten metals, pipes are used for drawing off the molten metal, which have various forms and positions according to the kind of casting apparatus, the metal to be cast and the casting mold and accordingly as pressure is applied or not. Particularly in the case of difficult fusible materials the pipe becomes partially blocked by solidifying metal toward or after the end of the casting operation, so that frequently care has to be exercised to heat the pipe practically to its mouth. The blocking of the pipe occurs the more easily when, as frequently happens, a mold having a lower temperature is pressed against the mouth of the pipe, so that the latter suffers a rapid chilling and the metal solidifies at the moment when, the mold being full, the flow of metal ceases. The separate heating of the delivery end of the pipe is troublesome and makes the construction of the casting apparatus more elaborate than is desirable.

Owing to the heating of its end the highly heated pipe, being more or less softened, especially when used for metals of high melting point, does not withstand the mechanical strain when the mold is pressed against it, so well as a colder, not separately heated pipe.

According to the present invention, the delivery pipe, as far as it is advantageously not heated, is expanded toward the delivery end thereof, said expansion beginning at a point which is still within the zone of heating so that in the event of the solidification of the material particularly at about the delivery end of the said pipe, the solidified plug of increasing diameter thereat can easily be removed from the said pipe, for example as a lug attached to the casting; in this manner blocking of the pipe is thus prevented. The expanded portion internally of the said pipe is preferably conical in form from the said point of where the expanding extend.

In the drawing an example of the invention is shown diagrammatically in section.

a, is a melting vessel, for instance a crucible of refractory material, *b*, is the pressure chamber, *c*, is the delivery pipe expanded internally in preferably conical form from a point situated within the zone of heating, *d*, the pipe for a supply of a gaseous pressure medium for the purpose of forcing the molten metal into the delivery pipe and into the mold (not shown in the drawing), *e* is the cover adapted to form a gas-tight closure of the pressure chamber. Any other form of the casting apparatus and any other form or position of the delivery pipe from that shown may be used.

What I claim is:—

1. The combination, in a casting apparatus, of a crucible mounted in a pressure chamber, a delivery pipe located in said crucible and expanded internally in the direction of the delivery end from a point situated within the zone of heating thereof and a connection with said pressure chamber for forcing the molten metal of the crucible into the delivery pipe, substantially as and for the purposes described.

2. The combination, in a casting apparatus, of a crucible of refractory material mounted in a chamber provided with a cover, so arranged as to form a gas-tight closure therefor, a delivery pipe located in the crucible and internally expanded, in conical form, in the direction of the delivery end from a point situated within the zone of heating and a pipe connection with the pressure chamber for forcing the molten material of the crucible into the delivery pipe, substantially as and for the purposes described.

3. In a casting apparatus, a pipe for delivery of molten metal thereto and expanded

internally from a point situated within the zone of heating, substantially as and for the purposes described.

4. In a casting apparatus, a pipe for delivery of molten metal thereto and expanded internally, in conical form, from a point situated within the zone of heating, substantially as and for the purposes described.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

FRANZ DE BUIGNÉ.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.