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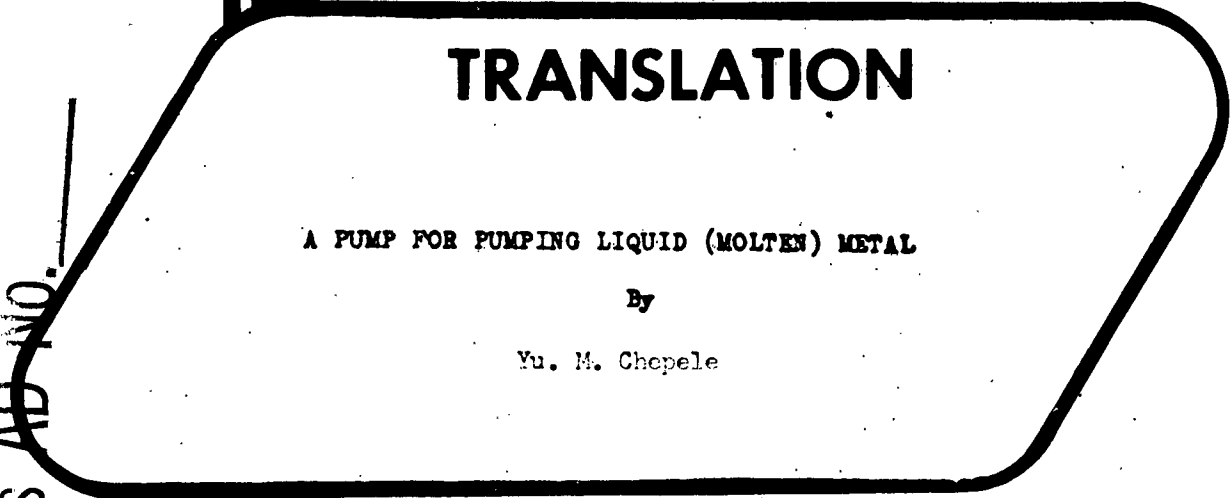
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# TRANSLATION

A PUMP FOR PUMPING LIQUID (MOLTEN) METAL

By

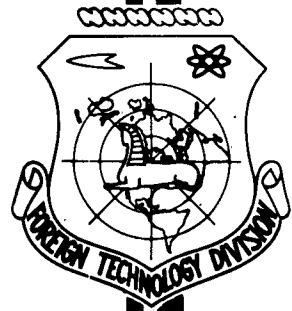
Yu. M. Chepele

## FOREIGN TECHNOLOGY DIVISION

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## UNEDITED ROUGH DRAFT TRANSLATION

A PUMP FOR PUMPING LIQUID (MOLTEN) METAL

BY: Yu. M. Chepele

English Pages: 4

SOURCE: Russian Patent Nr. 143982, (Appl. Nr. 723831/22-2,  
March 30, 1961), pp 1-2

(Ref. In) S/19-62-0-1

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## A PUMP FOR PUMPING LIQUID (MOLTEN) METAL

by

Yu. M. Chepele

Known are pumps for pumping liquid metal under the effect of a running electromagnetic field. They ordinarily consist of a fire resistant pipe, in which the molten metal moves, and a running electromagnetic field inductor situated on the outside of it, and electromagnetic field which penetrates the walls of the fire resistant pipe.

The distinguishing feature of the described pump is that it is made of two concentrically situated pipes, in the annular space between which moves the molten metal, and situated in the interior of also an concentric pipe from magneto conductive material, over which are fitted magneto conductive washers and coils. The pipe with coils and washer attached to it is made movable. The construction of the pump allows to realize metal feeding sideways. Such pump arrangement allows to simplify fastening of the magnetic conductor, and also assures convenience of laying the pipes and reduce the nonsymmetry of the magnetic circuit, and also assures convenience of dismantling the pump, possibility of controlling the delivery and improving the cooling of the internal part of the pump.

In fig.1. is given a principal schematic representation of the pump. In fig.2 - the washer.

The pump consists of a magneto conductive pipe 1, in the interior of which are concentrically situated two lined magneto conductive pipes 2, in the annular space

between which moves the molten metal, and a magneto conductive pipe 3.

On pipe 3 attached in sequential order are magneto conductive washers 4 and coils 5. To connect the coils the washer has cut outs A. Liquid metal is fed through nozzle 6 and is transported under the effect of running magnetic field. Moving pipe 3 with coils and washers in axial direction (by arrows I-II), it is possible to introduce the magnetic field by greater or lower magnitude into the pump, at the same time controlling its delivery. Cooling of pump is realized by forcing air through inner pipe 3 and partially through the outside of it.

The All Union Institute of hydromachine construction remarks, that the described pump construction is workable, it is distinguished by simplicity in assembly and disassembly, simplicity of cooling and controlling.

#### Object of invention

1. Pump for pumping liquid metal of cylindrical construction, with inductor of running electromagnetic field, distinguished by the fact, that for the purpose of simplifying the fastening of the magnetic circuit, to facilitate the laying of wires, reducing the nonsymmetry of the magnetic circuit, and to assure convenience of assembling and disassembling the pump, it is made of two, situated in a cylindrical body, lined, concentrically arranged pipes, in the annular space between which flows the molten metal, and also situated there concentrically a pipe of magneto conductive metal, on which are sequentially arranged magneto conductive washers and coils.

2. Pump according to par 1. distinguished by the fact, that for the purpose of controlling delivery, the inner pipe with coils and washers attached to it is made movable in axial direction.

Pump according to par.2. distinguished by the fact, that for the purpose of improving the cooling of the internal magnetic circuit, the metal is fed sideways, and over the internal part of the pump a stream of cooling air flow.

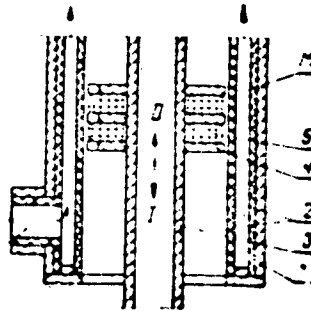


Figure 1.

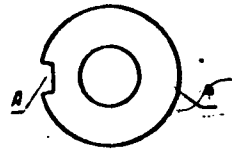


Figure 2.

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