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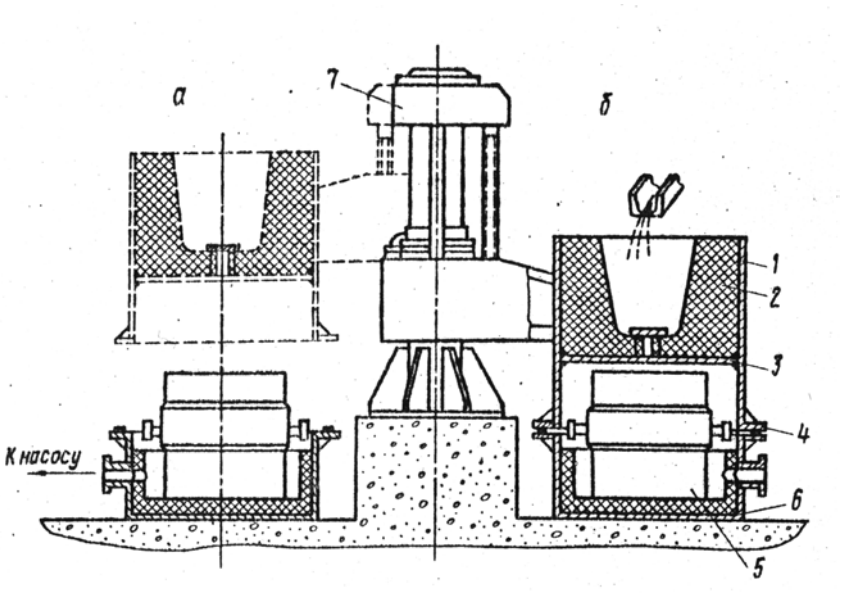
Technology and Equipment of vacuum-stream modifying of cast iron

The combination of treatment of liquid cast iron by magnesium containing alloys with the process of vacuuming if cast iron in optimal time limits permits to decrease the expenditure of alloy in 25-30%, to decrease the quantity of generating slags in 2-3 times, to exclude the bright lightening and discharge of gas and smoke under the interaction of alloy with melt.

Technological process is carried out by such way (see the scheme on the figure). The ladle 5 is placed in chamber 6 and is loaded by alloy. The lid 1with the partition 3 is placed in front of ladle by travel device 7 and is pressed to the compactor on the flange 4. Dosaging aperture for flowing of metal in input funnel 2 is closed by meltable-through plate and air is pumped out from chamber (residual pressure is between 1-5 mm of mercury). Ladle similar to placed in chamber is poured in by metal from furnace. Metal from it is poured to input funnel 2 in the same time when vacuumizing proceeds. When the metal filled the funnel it melts the plate throughout and penetrates to vacuumized volume as jet filling up the ladle with alloy. At the same time the vacuum in chamber is kept. The process of vacuumizing of cast iron in jet combining with its treatment in ladle by alloy lasts about 30 s, until the dosaging aperture is closed by column of melt in funnel. The empty ladle is placed into free chamber and the cycle goes on. Equipment permits to treat up to 10 tons of cast iron per hour.



1 –lid; 2 – input funnel; 3 –partition; 4 –flange; 5 – ladle; 6 –chamber; 7 – travel device

Please forward your proposals and suggestions to:
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