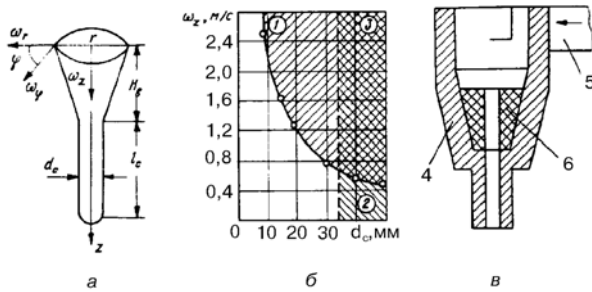


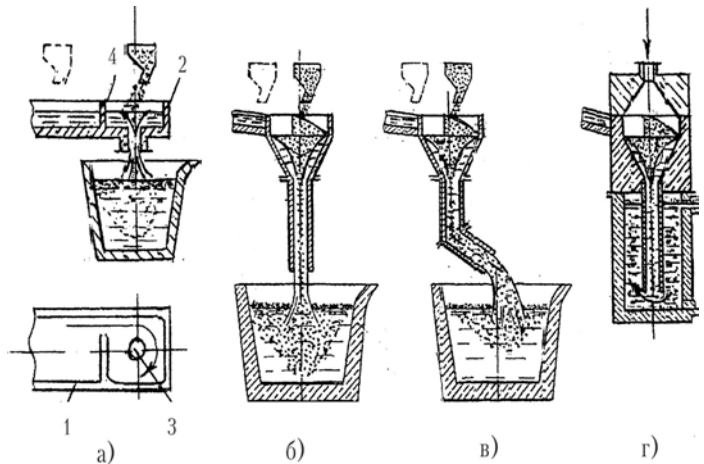
Desulphurization of cast iron in flux using vortical apparatuses



Vortex stream model scheme(a); fields of auto-modeling of fluid's movement(б); constructions of vortex reactor(в); under criterion 1 - $Re = \frac{\omega_r \cdot d_0}{\nu}$; 2 - $We = \frac{2gH_b d_0 \rho}{\sigma}$; 3 - $Fr = \frac{\varphi^2 2H_b}{d_0}$; 4- body of vortex reactor; 5 - chute of furnace; 6 – melting-out block

Construction of devices for treatment of melts by slags and powder additions in vortical stream: а–on chute; б, в – in vortical machine; r – in closed vortical machine input of high-active additions in inert atmosphere. 1 - chute; 2 - end wall of chute; 3 - bottom aperture; 4 - partition.

Condition of reservation of vortex stream - $0,6Q_{max} < Q \leq Q_{max}$



Conditions and results of desulfuration of cast iron in stream under the usage of vortex reactors

| № | Reagent | Expenditure of reagent, % of mass | Mass of metal, T | Melting aggregate | Degree of desulfuration n, % |
|---|---|-----------------------------------|------------------|-------------------|------------------------------|
| 1 | Powder soda | 2 | 0,15 | Induction furnace | 46 |
| 2 | Powder soda and silicon carbide (1:1) | 2 | 0,15 | The same | 55 |
| 3 | Powder sode | 1 | 1,8 | Cupola furnace | 45,2 |
| 4 | Melted sode | 1,37 | 0,7 | “ | 54,4 |
| 5 | Melted soda with blowing by natural gas | 1,35 | 0,7 | “ | 62,1 |
| 6 | Melted soda | 0,5 | 40 | Blast-furnace | 45,6 |
| 7 | Melted soda with lime 15% (of mass) | 0,5 | 40 | “ | 49,1 |

Please forward your proposals and suggestions to:

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