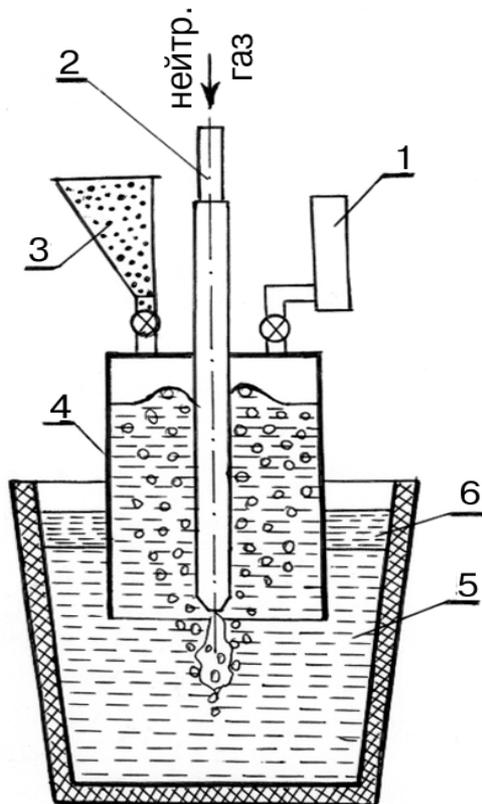


## Combined method of treatment of liquid non-ferrous metals and alloys

This method is used for degasification and removing of non-metallic inclusions and other detrimental impurities from non-ferrous metals and alloys.



Mobile or stationary plant consists of vacuumizator (1), submersible plasmotrone, which can be used as lance for cold gas purging (2), reservoir for fluxes, modifiers or alloys additions (3), vacuum chamber (4), melted metal (5), covering slag on the open surface of metal (6). Plant can be used as for deep as for shallow metal baths (melting aggregates of different constructions, distribution furnaces, mixers and so on).

Expenditure of neutral gas in the process of treatment is  $0.3 \div 0.6 \text{ m}^3$ , that one of electric power is  $10 \div 15 \text{ kWt/hour}$  for one ton of treated metal. Depression in vacuumizator is up to 1000 of lift.

Developed technologies ensure the effective refining of aluminum and copper alloys. So for aluminum alloys the level of elimination of hydrogen constitutes  $40 \div 80\%$  and amount  $0.15 \div 0.1 \text{ m}^3/100\text{g}$  of metal, strength increases in  $1.1 \div 1.3$  times and percent elongation in  $1.6 \div 1.8$  times.

There are some additional advantages in comparison with traditional methods:

- multiversion of schemes of refining of metal without change of plant construction;
- minimum of investments in time of creation and small energy consumption in the operational process
- significant reduction of time of treatment of metal comparatively with vacuum refining;
- the possibility of treatment of metal as in the time of refining as under the high pressure in the time of alloying.