Title (en)

METHOD FOR THE CONTINUOUS SEPARATION OF MAGNETIZABLE PARTICLES, AND DEVICE THEREFOR

Publication

EP 0242773 B1 19900822 (DE)

Application

EP 87105496 A 19870414

Priority

DE 3613393 A 19860421

Abstract (en)

[origin: US4816143A] A method for continuous separation of magnetizable paramagnetic and/or diamagnetic particles from a flowing fluid laden with the particles includes guiding the flow through a separation region, penetrated by a high-gradient magnetic field along a primary flow route. The particle-laden fluid flow of the separation region is supplied in the form of a multiplicity of partial flows, each passing through feed zones supplied from the direction of the outer periphery of the separation region and through feed openings of flow guiding bodies. The feed openings are distributed over the cross section of the separation region in the form of at least one feed hole field. The partial flows are then guided inside the separation region through at least one separation hole field of pole element orifices distributed over the cross section of the separation region and associated wall parts which are penetrated by the primary magnetic flux in the direction of the axes of their orificies. The partial flows are then divided into a first branch flow upon which attractive forces from the gradient field of the pole element are exerted in the direction toward the pole element orifices and a second branch flow upon which repulsive forces are exerted from the gradient field of the pole element in a direction away from the respective pole element orifice. The apparatus includes a hole-plate-type fine structure for a flow guiding matrix of the pole elements and for the guiding hole fields.

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