

Energy carrier flow is entered into cylindrical chamber through tangential nozzles-resonators in external cylinder, forms a vertical flow and generates sound and ultrasonic vibrations that are amplified by specified resonators, Helmholtz resonators with variable frequency and independent sources on upper flat cover of the chamber, through an aperture of which a material to refined is pulled up, which, once in vertical flow, moves near to crossing lines of surfaces of particles' grouping created by cross and radial standing harmonics of the chamber, and is exposed to mutual abrasion and destruction owing to growth of fatigue cracks in a resonant acoustic field and field of turbulent pulsations of pressure, then powder-gas mix is discharged through tangential slots in internal cylinder, and further through a pipe in lower flat cover of the chamber is fed in the system of coal dust supply without separation. The application of the device allows to produce a coal dust with average particle size of 10-20 microns.