Title (en)

DENSE-PHASE SWIRL PULVERIZED COAL BURNER

Title (de)

KOHLENSTAUBBRENNER MIT WIRBEL FÜR DICHTE PHASEN

Title (fr)

BRÛLEUR À CHARBON PULVÉRISÉ À TOURBILLON À PHASE DENSE

Publication

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Application

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Abstract (en)

A dense phase swirl pulverized coal burner comprises a primary air channel, a direct flow secondary air channel and a outermost swirl secondary air channel; and multiple levels of pulverized coal concentration rings are arranged axially at intervals along the oil gun casing in a straight tube section of the primary air channel, so that pulverized coal air flow is distributed thickly outside and thinly inside the primary air nozzle. In the invention, dense phase pulverized coal outside the primary air nozzle passes through guide vanes, forms disturbed flow, is ejected into a furnace and mixes with high temperature backflow flue gas rapidly and sufficiently at an outlet. Meanwhile, dilute pulverized coal air flow at the center is ejected into the furnace by direct flow, ensuring subsequent mixing and combustion of pulverized coal flow. The primary air nozzle and the secondary air nozzle are provided with cone flaring structures with certain angle to effectively control appropriate mixing of secondary air and pulverized coal. The invention has advantages of strong ignition and combustion stability, good coal adaptability, low nitric oxide emission, simple primary air channel structure and small resistance, which effectively slows wear rate of parts.

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