

ABSTRACT

A combustion apparatus for use as a boiler wherein RDF is burned as the fuel, or as an incinerator for burning municipal waste. The apparatus is diminished in the quantities of NO_x produced, permits a dust collector to achieve an improved efficiency in separating off a free-flowing medium and assures a fluidized-bed furnace of effective fluidization of a medium. The apparatus comprises a fluidized-bed furnace (1), a cyclone (2) disposed downstream from the furnace (1) for separating a free-flowing medium and a combustion residue discharged from the furnace (1) from combustion gases and collecting these solids, and a medium-residue return channel (3) provided between the cyclone (2) and the furnace (1) for returning the free-flowing medium and the combustion residue collected by the cyclone (2) to the furnace (1) therethrough. A secondary combustion furnace (31) is disposed downstream from the cyclone (2) for completely burning unburned combustibles in the combustion gases egressing from the cyclone (2) by introducing air into the combustion furnace. A heat recovery unit (12) is provided at an intermediate portion of the return channel (3).