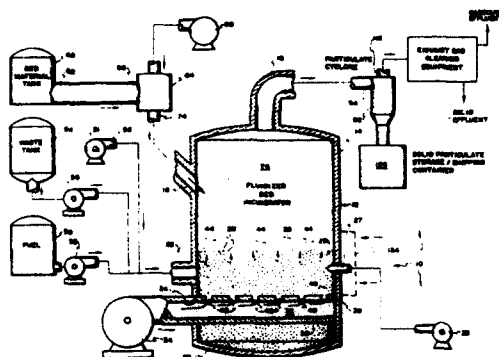


Apparatus for reducing finely divided iron oxide material, comprising a reactor containing a vertical upper reaction chamber connected downwardly to a narrower, vertical reaction chamber. A cyclone separator is connected to the upper reaction chamber for separating solid material and recycling it to the reactor so that a circulating fluidized bed can be maintained in the apparatus. In accordance with the invention, a recycling conduit is connected to the bottom of the lower reaction chamber. A tapping-off shaft for reduced material is also connected to the bottom of the lower reaction chamber. A reducing agent is supplied to the upper reaction chamber, and combustion air is supplied to the bottom of the upper reaction chamber. The apparatus also comprises means for preheating the iron oxide material with the exhaust gas from the reactor and for passing said preheated iron oxide into the lower reaction chamber. The apparatus also comprises means for stripping the exhaust gas from CO<sub>2</sub> and H<sub>2</sub>O and recycling it to the reactor to be used as fluidizing gas.

4359005

### FLUIDIZED BED INCINERATION OF WASTE

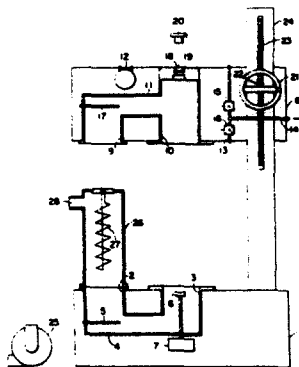
Virgil F Baston assigned to Energy Incorporated



Apparatus and methods for fluidized bed incineration of waste containing phosphorus wherein the bed comprises lime or limestone which negates heretofore existing problems incident to the presence of phosphorus.

4358901

### MULTIPURPOSE BASIC APPARATUS FOR TREATING POWDERS



Hikar Takabatake; Yoshiro Shudo assigned to Yamato Kagaku Kabushiki Kaisha

A multipurpose basic apparatus for treating powders which is applicable to various powder treatments including spray drying, fluidized bed drying and granulation and fluidized bed continuous drying, which apparatus comprises a lower frame provided with a piping having two openings facing upward, an upper frame provided with two openings facing downward which are respectively positioned in coaxially aligned relation to the above men-