

ABSTRACT

AN UNDERDRIVEN SIZE REDUCTION MACHINE

A size reduction machine for use in process industries to continuously and precisely reduce the size of particles, while controlling fines, comprises an impeller mounted on a rotatable shaft, a drive operably connected to the shaft for effecting rotation of the shaft. The shaft and impeller are vertically mounted within a vertically extending channel having an input and output. A screen has a tapered apertured wall formed in a frusto-conical shape. The screen is rigidly mounted with the channel so that any particles passing from the input to the output pass through the screen. The impeller is shaped and mounted so that a gap between an edge of the impeller and an interior of the screen remains substantially constant as the impeller rotates relative to the screen. The drive is operably connected to the shaft at a point under where the impeller is mounted onto the shaft.

Figure 6