

Title (en)

GAP-BALL MILL FOR CONTINUOUSLY GRINDING, ESPECIALLY DISINTEGRATING MICROORGANISMS, AND DISPERSING SOLIDS IN FLUIDS

Publication

EP 0290840 A3 19900110 (DE)

Application

EP 88106483 A 19880422

Priority

DE 3716295 A 19870515

Abstract (en)

[origin: US4824033A] Three mill units are mounted axially in series in a mill housing with a cover. Each mill unit has a rotor disc between two stator discs. The rotor discs are secured to the rotor shaft at their radially interior region. The stator discs are secured to the housing wall at their radially outer region. Individual pulverization gaps are formed between the stator discs, which gaps run around the rotor discs and in longitudinal cross section extend sequentially with a serpentine shape. The outer parts of the pulverization gaps form individual gap loops the inner ends of which are connected or "short-circuited" via ball return channels. During operation, the grinding elements are accelerated outward by centrifugal forces, and are concentrated into the gap loops. The grinding elements in each of the individual stages may be kept separated from the grinding elements in other stages; and they may have different sizes from stage to stage. The individual mill stages can be replaced as units. Alternatively, the rotor discs and stator discs which are rotationally symmetric can be replaced individually. They can have different axial cross sections, containing a single bend or multiple bends. The processing pressure for the material being pulverized which is passed through the serpentine pulverization gap system can be set accurately based on the rotational speed (rpm), so that microorganisms are recovered without the hyaloplasm leaking out or being worked into (i.e. intermixing with or being forced into intercalation with) the other materials.

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CPC (source: EP US)

B01F 27/272 (2022.01 - EP US); **B02C 17/166** (2013.01 - EP US); **B01F 2025/911** (2022.01 - EP US)

Citation (search report)

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