TO: KSI/Scientific & Technical Information Division
Attn: Miss Winnie M. Morgan

FROM: GP/Office of Assistant General Counsel for Patent Matters

SUBJECT: Announcement of NASA-Owned U.S. Patents in STAR

In accordance with the procedures agreed upon by Code GP and Code KSI, the attached NASA-owned U.S. Patent is being forwarded for abstracting and announcement in NASA STAR.

The following information is provided:

U.S. Patent No. : 3,606,470
Government or Corporate Employee : Nat'l Research Corp.
Supplementary Corporate Source (if applicable) : Cambridge, MA
NASA Patent Case No. : XNP-10007-1

NOTE - If this patent covers an invention made by a corporate employee of a NASA Contractor, the following is applicable:

YES [X] NO [ ]

Pursuant to Section 305(a) of the National Aeronautics and Space Act, the name of the Administrator of NASA appears on the first page of the patent; however, the name of the actual inventor (author) appears at the heading of column No. 1 of the Specification, following the words "...with respect to an invention of ..."

Bonnie L. Woerner
Enclosure

NOTE: TRANS. OF RIGHTS
FIG. 1

FIG. 1A

FIG. 2

FIG. 3

PARTICLE SIZE (IN MICRONS)

% WEIGHT PER CATEGORY

20 74 250

PARTICLE SIZE (IN MICRONS)

% WEIGHT PER CATEGORY

FIG. 1B

INVENTOR,

PHILIP BLUM

BY

Oberon & Held

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ATTORNEYS
ROCK SAMPLING

An apparatus for sampling rock and other brittle materials which shatter during grinding due to a lack of plasticity.

The present invention relates to abrasive sampling of rock and other brittle materials which shatter during grinding due to a lack of plasticity.

There is a need in geological sampling for an apparatus particularly to the sampling of rock specimens with good size control. The invention described herein was made in the performance of work under a NASA contract and is subject to the provisions of the National Aeronautics and Space Act of 1958, Public Law 85-568 (72 Stat. 426; 42 U.S.C. 2451) as amended. A license has been granted to the United States Government for practice of the invention and title to the invention and this patent has been reserved to the assignee, subject to voidability by NASA.

The present invention relates to rock grinding and particularly to the sampling of rock specimens with good size control. The invention described herein was made in the performance of work under a NASA contract and is subject to the provisions of the National Aeronautics and Space Act of 1958, Public Law 85-568 (72 Stat. 426; 42 U.S.C. 2451) as amended. A license has been granted to the United States Government for practice of the invention and title to the invention and this patent has been reserved to the assignee, subject to voidability by NASA.

The present invention relates to abrasive sampling of rock and other brittle materials which shatter during grinding due to a lack of plasticity.

This application is a division of application Ser. No. 611,414, filed Jan. 24, 1967, now abandoned.

The present invention relates to rock grinding and particularly to the sampling of rock specimens with good size control. The invention described herein was made in the performance of work under a NASA contract and is subject to the provisions of the National Aeronautics and Space Act of 1958, Public Law 85-568 (72 Stat. 426; 42 U.S.C. 2451) as amended. A license has been granted to the United States Government for practice of the invention and title to the invention and this patent has been reserved to the assignee, subject to voidability by NASA.

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ridge material. A reduction in the number of fine particles therefore results. Within limits, the thinner are the ridges, the fewer are the number of fines that result. The ridge width is preferably about equal to the desired particle size or in the range of the desired particle size. The ridge height is usually larger than the width and therefore the upper size of the particles is primarily governed by, although not limited to, the height of the ridges.

Several variations can be made from the above-described embodiments. It is therefore intended that the above disclosure shall be read as illustrative and not in a limiting sense.

What is claimed is:
1. An apparatus for geological rock sampling or the like comprising a combination thin wheel grinding means for cutting closely spaced grooves in the surface to create the elevated ridges and a milling cutter means for machining said elevated ridges simultaneously with a common tooth cut of said multiple ridges and means for collecting the loose particles produced by said milling cut, the said grinding means and milling means being supported on a common pendulum mounting structure to sweep along a rock in a common path and common direction and spaced apart from each other on said mounting structure, said collection means being mounted on said mounting structure and constructed and arranged to collect rock particles removed by said milling means.
2. Apparatus for geological rock sampling comprising, a frame means, a pair of spaced parallel rotary shafts mounted on said frame means, a plurality of thin grinding wheels mounted in spaced apart relation on one of said shafts for cutting a plurality of closely spaced grooves in the surface of said rock and for creating elevated ridges between said grooves, a toothed milling cutter mounted on the other of said shafts and arranged to simultaneously reduce said plurality of ridges into a powder specimen, and collection means carried on said frame for collecting said powder from said cutter.
3. The apparatus of claim 2 wherein said grinding and milling means are constructed to sweep along the work in the same path.
4. The apparatus of claim 3 wherein said grinding and milling means sweep along the work in the same direction.

References Cited
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HAROLD D. WHITEHEAD, Primary Examiner
U.S. Cl. X.R.
125—3; 175—58, 308