"Method for Producing Gravitationally - anamalous Materials"

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The method relates to the process by which certain materials are made to lose weight and become anomalously light. Certain susceptible materials, including complex silicates, aluminates and clays, and certain rare-earth (and other) elements, when processed, actually decrease in weight. The result is not only a real loss of weight, such materials suffer a retardation in gravitational acceleration (value of g) to an appreciable extent. This abnormal lightness, in many instances, is not permanent but tends, in time, to disappear, so that the weight returns eventually to normal.

While being processed, as described herein, materials lose weight, rapidly at the start and then more slowly as processing continues, reaching a minimum (asymptotically) depending upon the energy available in processing.

When this point is reached and processing is discontinued, the weight of the processed materials begins immediately to regain weight, rapidly at first and then more and more slowly as time goes on, again reaching normal weight asymptotically.

Heat is given off spontaneously as this recovery takes place, the temperature differential (with the ambient) being greatest at the start of the recovery and then diminishes to zero as the weight of the material approaches normal.

The present commercial use of materials having anomalous weight or lightness would appear to be, in the main, as materials of construction for spacecraft or the like. A further use, resulting from the lowered gravitational acceleration (g) is anticipated in astro-navigational instruments, as gravitic dipoles, in gravity vector sensors and inertial guidance systems for spacecraft.

The exothermal characteristics make the processed materials (as described herein) useful in several additional practical applications and this will be the subject of a further patent application.

The scientific reasons for the loss of weight are not clearly understood at the present time. The phenomenon appears to reside in the outer electronic shells of the excited atoms, not the neuclei. Hence, the inertial mass is probably not affected. If abnormal lightness is the result of an excited state, meaning the addition of energy, then the inertial mass will certainly be increased, but almost infinitesimally. Indeed, this would seem to be anticipated by the equation $E = mc^2$, where E represents the total contained energy and m represents the inertial mass of the material.

In any event, the long-accepted "postulate of equivalence" (inertial mass being equal to gravitational mass) must be abandoned in attempting to explain the phenomenon described here. Apparently this surprising action is a new form of atomic excitation, undiscovered and not even theoretically predicted. The situation is so baffling that no further discussion of theory can be attempted at the present time.

The method of excitation specifically set forth in this disclosure utilizes mechanical friction only. It is termed "tribo-excitation". Other methods of gravitic excitation appear to be possible and, as they are developed, will be the subjects of additional patent applications..

Tribo-excitation for the production of gravitationally-anomalous materials can be accomplished in several different but related ways; such as

1) Vigorous shaking of granular materials - interparticle (Coulomb) friction.

2) Grinding or pulverizing - cleavage and intra-particle friction.

3) Sand blasting - scouring, abraiding, spalling or ablating.

4) Physical deformation - Compressing, tensing, bending - intermolecular friction.

All of the above methods are essentially frictional. The mere "rubbing together" of pieces of susceptible materials, either alike or different, causes "tribo-excitation". Materials which are energetically excited in this way become gravitationally lighter. As stated earlier, this excitation and its resultant lightness is not permanent but eventually disappears. As the excitation decays, the weight increases, returning to normal eventually. During this return, the material is warmer than its environment and the energy of excitation escapes as heat.

Referring to the accompanying drawings, the apparatus to accomplish this frictional method of excitation may take, but is not necessarily limited to, the following forms:

Fig. 1 is a motor-driven mechanically-eccentric shaker.

Fig. 2 illustrates a shaking device driven by an electromagnetic vibrator.

Fig. 3 shows a similar shaking device driven by a magnetostrictive or electrostrictive transducer at ultra-sonic frequency.

Fig. 4 is a motor-driven ball mill or grinder.

Fig. 5 is a sand blasting arrangement.

Fig. 6 is a motor-driven sanding machine.

Referring to these drawings in detail:

Fig. 1 shows the simplist form of shaker. It may be a paint-shaker such as that used in a paint store. Container 1 preferably is made of glass or porcelain (for technical reasons not disclosed). The contents 2 may be aluminum silicate (clays), barium aluminate, ytterbium or other rare earth powders, tantalum powder, loess, monazite sand, bauxite or other ores.

In prototype tests, container 1 is filled with material 2 to be excited. It is hermetically sealed to prevent leakage and is carefully weighed. It is then vibrated 30 to 50 minutes, removed from the shaker and weighed again - container and contents together.

Fig. 2 illustrates a type of electromagnetic vibrator to accomplish the same result as in Fig. 1.

Fig. 3 illustrates a vibrator powered by magnetostrictive or electrostrictive ultrasonic transducers. High frequency AC is supplied by oscillator 3 as shown. The high frequency of vibration, over and beyond that possible in the apparatus of Fig. 1 and 2, provides greater energy of excitation, and thus causes a further loss of weight than that possible with the apparatus having lower frequency of vibration.

Fig. 4 shows a slightly different form of excitation apparatus - a grinder. The grinder shown is a ball mill. The balls 4 may be steel, porcelain, or tantalum, depending upon the degree of excitation required. Jar 5 should preferably be made of porcelain. The mill is rotated by motor 6.

Fig. 5 shows a still different form of apparatus - a sanding machine. The method here is to grind or abraid the surface of a susceptible solid 7, such as granite, sandstone, porcelain or the like so as to cause it to become excited.

In Fig. 6 the same idea is set forth as in Fig. 5, except that grinding or abrasion is accomplished by sand blasting. Sand is blown by compressed air at high velocity against target (susceptible) material 8 , causing the material to become gravitically excited.

In both Fig. 5 and 6, the ablation fragments and impact ejecta may be gravitically excited after impact, and this material may also be collected and utilized.

While in the foregoing, interparticle friction has usually resulted in loss of weight, it is conceivable that in certain instances, depending upon the materials used (especially light components) a gain in weight may sometimes be observed and possibly utilized. Hence, in the appended claims, any alteration of weight lies within the intended scope of the invention.

I claim:

1) Method for producing gravitationally-anomalous materials consisting in containing a volume of loosely-held particles thereof, vibrating said contained volume and utilizing the resultant interparticle friction to produce gravitationally-anomalous material.

2) Method for producing lighter-than-normal material consisting in loosely holding together a volume of particles thereof, vibrating said volume and utilizing the interparticle friction to produce a loss of weight of said material.

3) Method for inducing a loss of weight in a material consisting in holding the particles thereof in frictional contact, rubbing said particles together by mechanical shaking and utilizing the resultant interparticle friction to cause loss of weight of said material.

4) Method of controlling the effect of gravity upon two or more masses, consisting in placing said masses in physical contact, moving said masses with respect to each other and utilizing the resultant friction to alter the weight of said masses.

5) Method for causing two material bodies to become gravitationally lighter consisting in placing said bodies in physical contact, energetically rubbing said bodies together and utilizing the resultant inter-body friction to cause loss of weight of said bodies.

6) Method for altering the weight of particulate matter consisting in containing the particles thereof, providing interparticle vibration and utilizing the resultant interparticle friction to alter the weight of said matter.

7) Method for reducing the weight of material consisting in subjecting said material to grinding forces so inter-grain cleavage and friction results, continuing said grinding for a period of time and utilizing the cumulative effects of said grinding to reduce the weight of said material.

8) Method of controlling gravitation as it affects matter consisting in energetically crushing said matter, continuing said crushing for a period of time and utilizing the cumulative effects of said crushing to affect the weight of said matter.

9) Method of altering the combined weight of two solids consisting in rubbing one of said solids against the other, continuing said rubbing for a period of time and utilizing the resultant friction to alter the combined weight of said solids.

10) Method of altering the combined weight of two solids consisting in accelerating one of said solids toward and against the other of said solids, causing the impact to produce friction and utilizing said friction to alter the combined weight of said solids.

11) Method of altering the weight of a mass consisting in directing a high velocity molecular jet toward and against said mass, causing the impact to produce impact friction upon the surface of said mass and utilizing said impact friction to alter the weight of said mass.

12) Method according to Claim 1, including means to energetically vibrate said materials over a period of time.

13) Method according to Claim 8 including means such as a ball mill.

14) Method according to Claim 10 including sand blasting means.

15) Method according to Claim 11 including a high velocity jet of gas or liquid.

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Witnesses:

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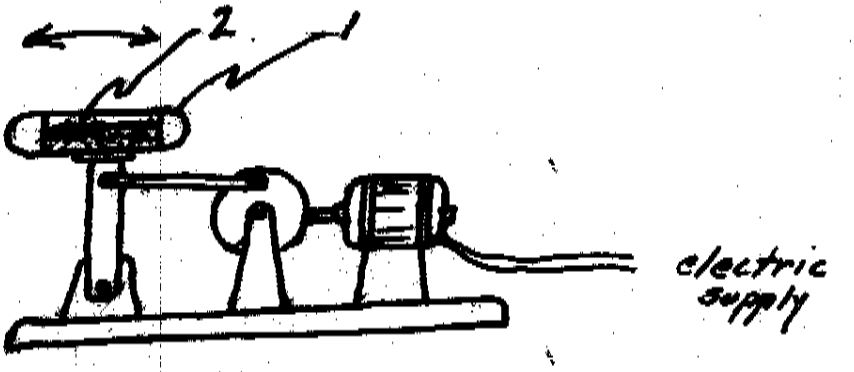


Fig. 1.

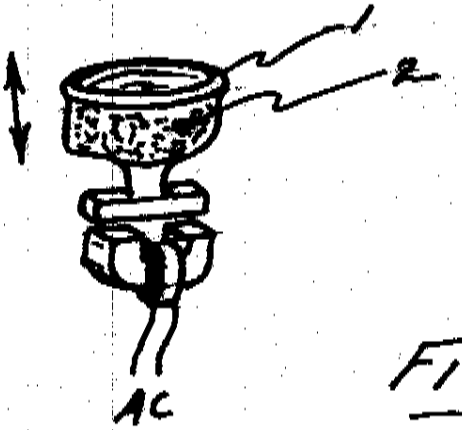
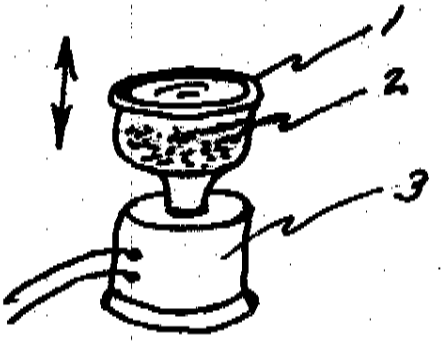


Fig. 2.



High freq. AC

Fig 3

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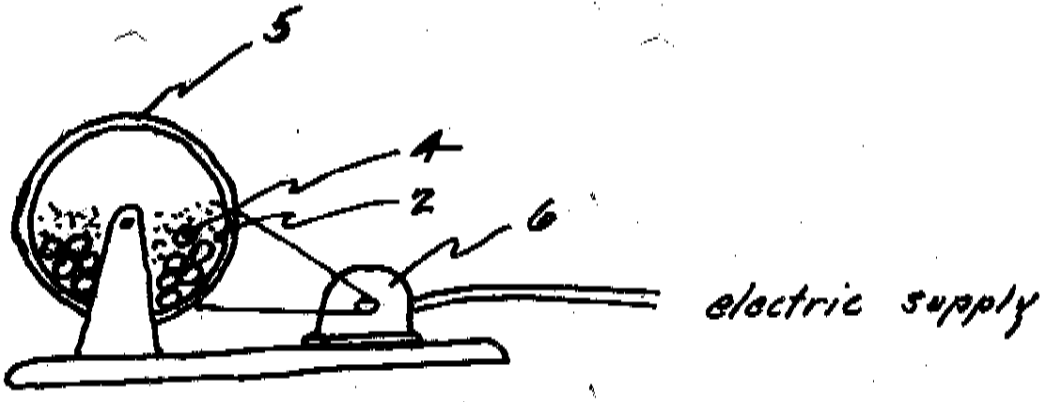

Fig. 4.

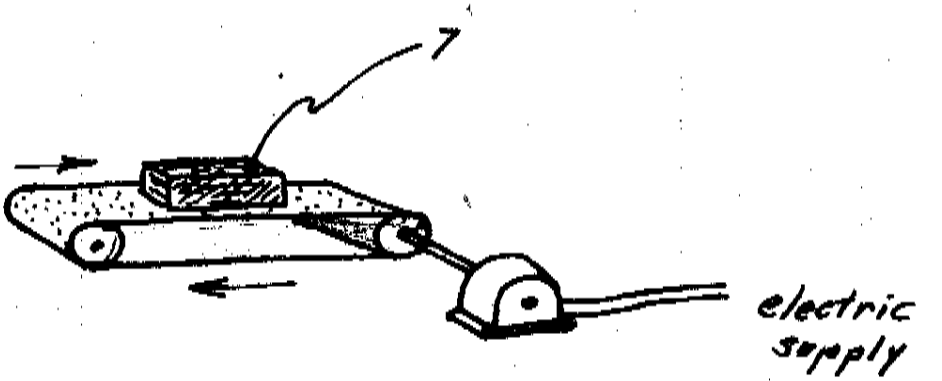

Fig. 5.

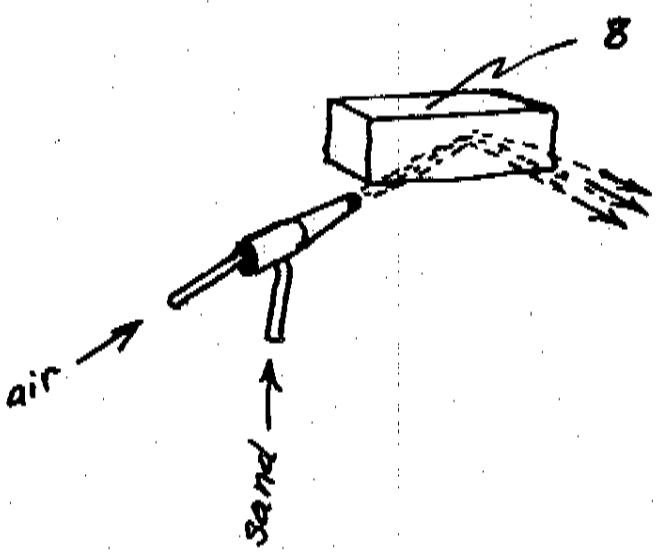

Fig. 6.

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