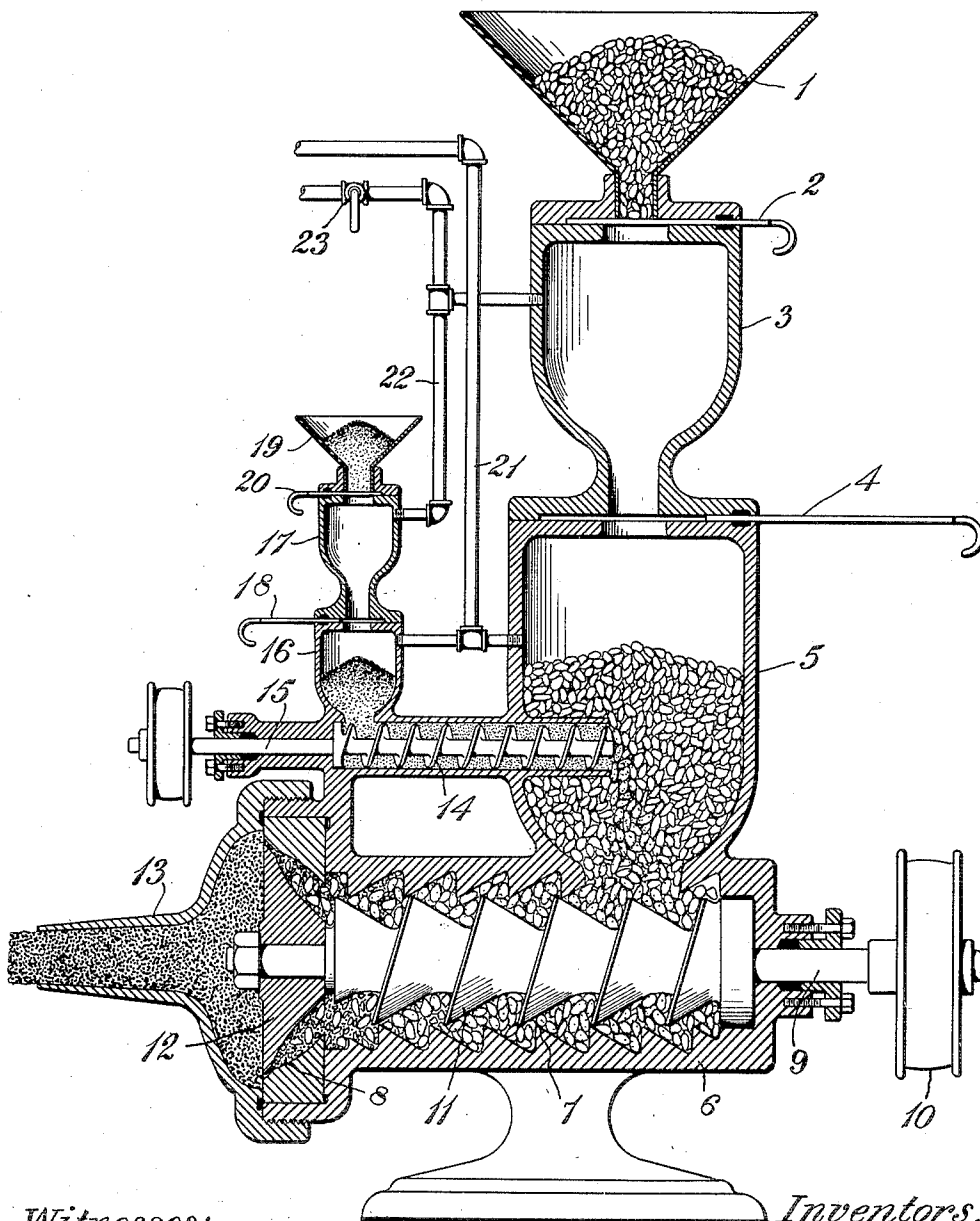


1,099,557.



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UNITED STATES PATENT OFFICE.

WILLIAM A. LORENZ AND JOSEPH MERRITT, OF HARTFORD, CONNECTICUT.

ART OF PREPARING DISINTEGRATED MATERIALS FOR PACKING.

1,099,557.

Specification of Letters Patent.

Patented June 9, 1914.

Application filed July 10, 1913. Serial No. 778,310.

To all whom it may concern:

Be it known that we, WILLIAM A. LORENZ and JOSEPH MERRITT, citizens of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in the Art of Preparing Disintegrated Materials for Packing, of which the following is a specification.

10 This invention relates to a method of manipulating materials which are dispensed in a disintegrated or ground state in closed receptacles, such materials, for instance, as cereals and analogous seeds, and more especially those oleaginous and farinaceous food
15 seeds which due to the contained oil or water are more or less plastic or pasty when ground.

Many kinds of seeds, cereals and other
20 materials are ground or disintegrated and packed into receptacles which are subsequently sealed. When handled by the methods in common use more or less air remains in the interstices between the particles and occupies space in and detracts
25 from the appearance and quality of the product in the receptacle into which it is packed. If the material is powdered or granular, a quantity, which apparently filled a receptacle, would subsequently settle and give
30 the appearance of short measure. If the material is pasty the air often takes the form of gas bubbles, which are particularly unsightly if the product is packed in glass
35 jars. Such air in the receptacles is also undesirable on account of its effect on the product, and its interference with adequate hermetical sealing. It is a troublesome operation and an item of expense to extract
40 the air after the product has been placed in the receptacle, and before it is sealed.

The object of this invention is to provide such a method of treating these materials, especially seeds and cereals, that the product
45 will be delivered in a condensed condition suitable for immediate packing and hermetical sealing in the desired receptacles. In attaining this end the materials to be operated upon, with or without other substances, are fed to a grinding or disintegrating machine from which by suitable
50 means, air is exhausted during the operation of the machine, so that practically all of the free air will be withdrawn from the

interstices between the particles, leaving the
55 product condensed and without air bubbles as it is delivered from the apparatus.

The accompanying drawing shows a central vertical section of a form of machine
60 by which the process may be carried on.

The machine illustrated, which is more particularly designed for grinding seeds, has a hopper 1, the bottom or outlet from which is provided with a gate 2. This
65 hopper is mounted on and its outlet communicates with the transfer chamber 3, the bottom or outlet from which is provided with a gate 4. The transfer chamber is mounted on and communicates with the feed
70 chamber 5 of the grinding machine. The feed chamber opens into the interior of the grinder cylinder 6, which has fixed spiral feeding ribs 7 of common form, and a fixed
75 grinding plate 8 at the discharge end. The spindle 9, which has a driving pulley 10, is suitably packed where it passes through
80 the end of the cylinder. On the spindle, and coöperating with the fixed feeding ribs, is the rotatory feeding screw 11, also the rotatory grinding disk 12, which coöperates
85 with the fixed plate 8 for grinding or disintegrating the material to the desired degree. At the front end of the grinder cylinder is a discharge spout 13 of desired shape.

The machine illustrated is provided with
85 means for supplying to the material to be ground, other substances, such for instance as a condiment. There is a feed screw 14, on a suitably packed pulley spindle 15, which
90 leads from the bottom of a feed box 16 to the interior of the feed chamber 5. Above the feed box is a transfer chamber 17, the opening between these being provided with
95 a gate 18. On the transfer chamber is a hopper 19, the discharge from which is provided with a gate 20. The feed chamber 5 and feed box 16 are connected by a
100 pipe 21 which is intended to be connected with any common type of air exhaust pump; and the transfer chamber 3 and transfer chamber 17 are connected with a pipe 22, that is intended to be connected with the air pump. The pipe 22 is provided with a stop
105 cock 23.

In practising the process with such an
110 apparatus as that illustrated, the feed screws are rotated and air is constantly pumped from the feed chamber and the feed box.

Exhausting the air from the feed chamber 5 causes the air to be pulled out of the grinding cylinder 6 from as far as there are any interstices between the particles being ground, that is, from the locality where the product is so condensed that it contains little or no free air.

The supply of stock for the grinder is replenished so that the operation may be continuous, by, at intervals, closing the lower gates and the air cock, then opening the upper gates and allowing the materials to flow from the hoppers to the transfer chambers, after which the upper gates are closed and the lower gates and cock opened, so the material will be admitted to the feed chamber and the feed box, and air will again be withdrawn from the transfer chambers. In this manner the grinding may be continued without interruption indefinitely and all the product forced out of the spout suitably condensed and without containing any substantial amount of free air, particularly if the product is plastic as a result of constituent water or oil in the material ground or disintegrated. The product which is discharged in this manner is in a very desirable condition to be immediately packed into receptacles, and those receptacles may be covered and hermetically sealed without difficulty.

The invention claimed is:

1. The method of preparing food seeds for market which consists in disintegrating said seeds, withdrawing the free air from the seeds while they are being disintegrated, and feeding the disintegrated product with the free air withdrawn to a packing receptacle.

2. The method of preparing food seeds for market which consists in feeding the seeds to a grinder, withdrawing the free air from the seeds while being thus fed to the grinder, and feeding the disintegrated prod-

uct with the free air withdrawn to a packing receptacle.

3. The method of preparing food seeds for market which consists in feeding the seeds to a grinder, simultaneously withdrawing the free air from the seeds being fed and being ground, and feeding the disintegrated product with the free air withdrawn to a packing receptacle.

4. The method of preparing food seeds for market which consists in feeding the seeds to be ground, feeding thereto another substance, grinding together the mixed seeds and other substance, withdrawing the free air from said mixture while being ground, and feeding the disintegrated product with the free air removed to a packing receptacle.

5. The method of preparing food seeds for market which consists in forcibly feeding the seeds to a disintegrator and reducing the seeds to a plastic mass, simultaneously withdrawing free air from the material being thus operated upon, and feeding the disintegrated product with the free air withdrawn to a packing receptacle.

6. The method of preparing a food for marketing which consists in feeding oleaginous seeds and a condiment to a disintegrator and simultaneously extracting the free air therefrom, thereby producing a condensed substantially air free plastic compound, and feeding the said product to a packing receptacle.

7. The method of preparing oleaginous seeds for market which consists in simultaneously disintegrating said seeds and withdrawing the free air therefrom, and feeding the product to a packing receptacle.

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