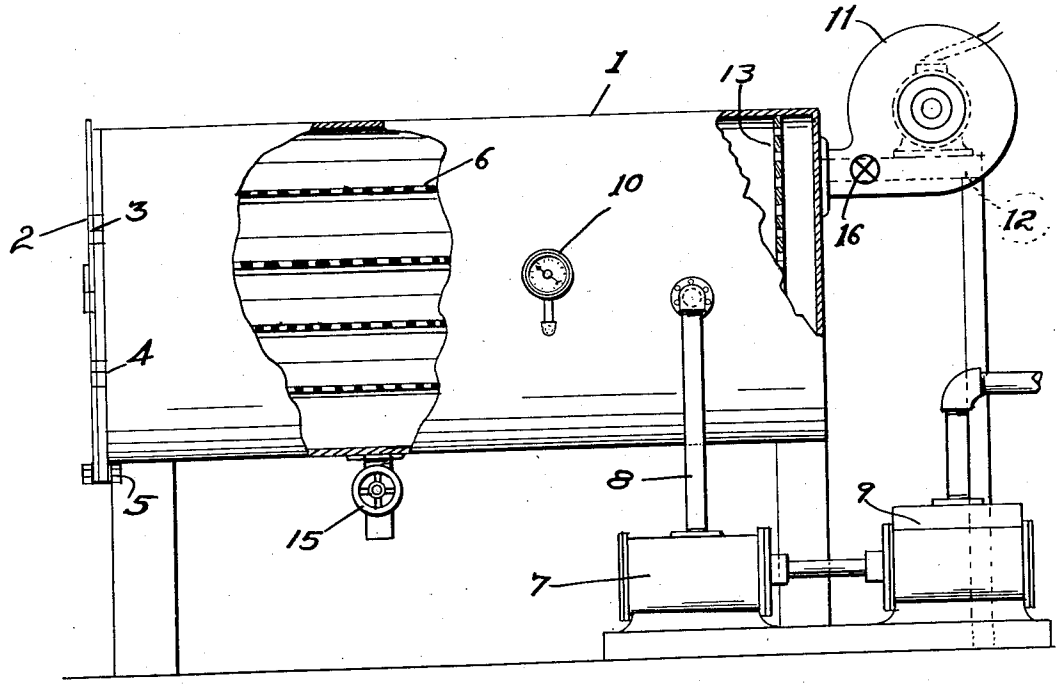
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1,544,796

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PROCESS FOR DRYING MATERIALS

Filed June 24, 1922



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UNITED STATES PATENT OFFICE.

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PROCESS FOR DRYING MATERIALS.

Application filed June 24, 1922. Serial No. 570,574.

To all whom it may concern:

Be it known that we, HERBERT D. BEAN and ARCHIE S. GLEN, citizens of the United States and Great Britain, respectively, residing at Oakland, in the county of Alameda, State of California, have invented a new and useful Process for Drying Materials, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a process of drying materials, and its object is to quickly reduce the water content of fruits, vegetables, and other water-carrying materials of that character sufficiently to preserve them, or in the case of lumber being treated to make it suitable for other operations.

The drawing illustrates a form of apparatus capable of carrying out the process. The numeral 1 indicates a suitable receptacle capable of withstanding a pressure of 200 lbs. per square inch or more and having a removable end door 2. This door is supported on hinges 3 and 4 in order to swing it around out of place when the door is not secured to the end flanges of the receptacle by the series of bolts indicated by 5.

A plurality of trays 6 are slipped into the receiver and they carry the materials to be treated, or in the case of lumber, the lumber might be piled into the receptacle without the use of trays, if desired.

An air compressor 7 is connected to the receiver by means of the pipe 8, and it is operated by the engine 9. A gauge 10, on the side of the receiver, indicates to the operator when the pressure has been raised sufficiently high.

At the back end of the receiver there is a fan 11, supported on a platform 12, for discharging air through the receiver, and a perforated baffle-plate 13 is arranged within the receiver to evenly distribute the air over all of the trays.

In carrying out the process, the fruit, nuts, or whatever material is to be dried, is placed upon the trays and the air pressure, within the receiver, is increased to about 150 to 200 lbs. per square inch. After from 5 to 15 minutes, the air pressure is reduced, the door 2 is opened and a fan 11 will be operated to blow off all the excessive moisture, which it will do in a short time. Any moisture that may collect, within the receiver 1 at the bottom of the same, is drained off by means of the valve 15 which is opened after each charge of fruit or vegetables.

The process is carried out as follows:

The materials are placed on the trays 6, the valve 15 and door 2 are closed, the valve 16 in the pipe leading from the fan 11 is also closed, thereupon the compressor is operated to increase the air pressure within the receiver to about 150 to 200 lbs. per square inch, the pressure is left on the materials being treated for from five to fifteen or twenty minutes, as may be found necessary. This causes the separation of the water from the materials being treated, some of which runs to the bottom of the receiver, while the rest of it stands out upon the products as though they had been dipped in water, thereupon the pressure within the receiver is blown off by opening the valve 15, and also by opening the valve 16, after which the door 2 is opened. The fan 11 is then operated, for a short time to dry off the materials, when it will be found that the water content has been reduced to the desired percentage.

It will be understood by those skilled in the art that various materials require varying treatments, but ordinarily the treatment, above outlined, is sufficient for treating such materials as cocoa-nut meats or fruits or vegetables. The water content of cocoa-nut meats having been reduced in this way, by 10 minutes treatment in the compressor and 10 minutes blowing from 48% to about 10%.

What we claim is as follows, but various modifications may be made in the above particularly described form of the invention within the purview thereof:

A process of drying materials which consists in subjecting them to air under a pressure of about 100 lbs. to the square inch in a closed container for a short period of time; thereafter removing the air pressure from the materials, subjecting the said materials to a blast of dry air for a short period and then removing the materials to a suitable place of storage.

In testimony whereof we have hereunto set our hands this 16th day of June A. D. 1922.

HERBERT D. BEAN.
ARCHIE S. GLEN.