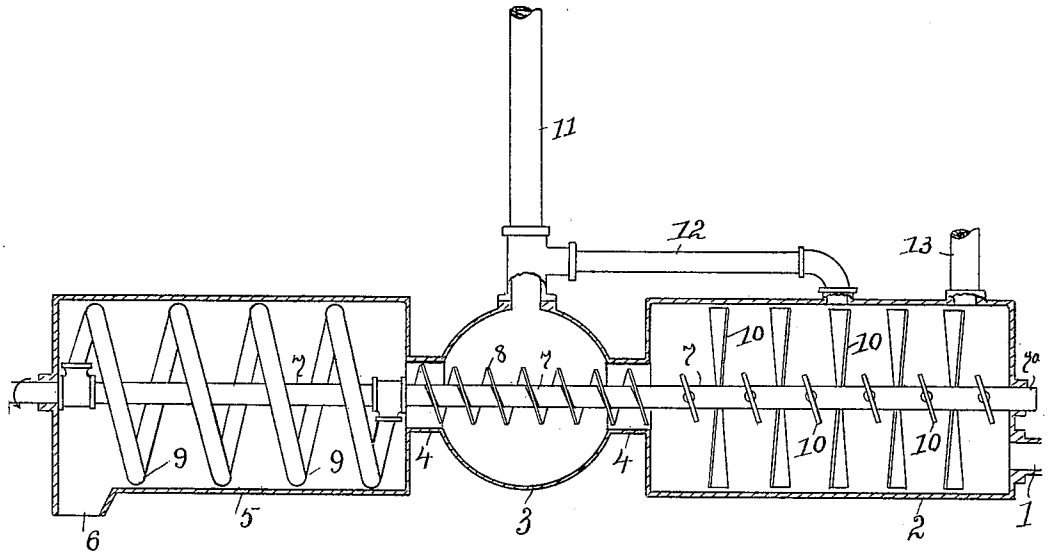
No. 644,682. Patented Mar. 6, 1900.

# F. M. PRATT.

## PROCESS OF DEODORIZING AND DRYING.

(Application filed July 24, 1899.)

(No Model.)




Attest.
Nora Graham
Ira Graham.

Inventor,
Frank M. Pratt,
by L. P. Graham
his attorney

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# UNITED STATES PATENT OFFICE.

FRANK M. PRATT, OF DECATUR, ILLINOIS.

## PROCESS OF DEODORIZING AND DRYING.

SPECIFICATION forming part of Letters Patent No. 644,682, dated March 6, 1900.

Application filed July 24, 1899. Serial No. 724,991. (No specimens.)

*To all whom it may concern:*

Be it known that I, FRANK M. PRATT, of the city of Decatur, county of Macon, and State of Illinois, have invented a certain new and useful Process of Deodorizing and Drying a Residuum from which Oil has been Extracted by Means of a Solvent having an Undesirable Odor, of which the following is a specification.

This invention relates more particularly to the treatment of cereals—as corn or Indian-maize, for instance—and its first or principal procedure consists of bringing live steam into contact with the substance to be treated, thereby transferring the odor of the solvent from the corn to the steam and then forcibly withdrawing the steam from the corn before the steam becomes condensed. A secondary procedure consists of subsequently subjecting the substance to the action of dry heat until the small quantity of steam condensed by direct contact with the particles of corn has been reconverted and of forcibly withdrawing such reconverted steam from the corn. In both stages the operation is facilitated by agitating and separating the particles of corn.

The first stage of the process removes all, or nearly all, of the odor of the solvent, and it is based on the discovery that when an odorous or malodorous residuum from which the oil has been chemically extracted is subjected in a divided state to the action of live steam and the steam and the matter absorbed or held in suspension thereby are forcibly withdrawn before material condensation of the steam has time to occur the substance will be effectively deodorized. The second stage of the process involves the idea of applying dry heat while continuing the agitation and the suction to reconvert into steam the small quantity of steam that may have become condensed by direct contact with the particles of the residuum and to forcibly withdraw it, together with whatever odor may chance to remain. The two stages of the process are continuous, or practically so, and they merge one into the other in the particular that the drying stage includes the production of a small quantity of live steam and the forcible withdrawal thereof.

The live steam is applied to the residuum while the same is unheated, and its action takes place almost entirely before the residuum is subjected to dry heat, the purpose of such mode of procedure being to withdraw the odor from the substance before it becomes more completely impregnated or "set" by the action of dry heat.

The apparatus preferably used in performing the process consists of a two-part receptacle, both compartments of which are connected with a suction-pipe and conjoined so that the residuum may pass from one to the other. The substance to be treated is supplied to one compartment and subjected to suction, agitation, and live steam therein while being passed gradually into the other compartment, where it is subjected to suction, agitation, and dry heat. In the drawing forming part of this specification one compartment is shown at 2 and the other at 5. Between the compartments is a passage-way 3, from which the suction-pipe 11 extends. A pipe 12 connects compartment 2 with the suction-pipe. A live-steam-supply pipe is shown at 13. At 7 is shown a tubular shaft extending through both compartments and through the connecting passage-way formed by globe 3 and necks 4. The hollow shaft is supplied in compartment 2 with a set of agitators, one of which is shown at 10, the purpose of such agitators being to separate the residuum and advance it toward the passage-way between the compartments. In the passage-way the shaft is provided with a screw conveyer, as shown at 8, and in compartment 5 it is provided with hollow conveyer-wings, as shown at 9. The tubular shaft is rotated in the direction indicated by the arrow, the matter to be treated is admitted through tube 1 or forced therethrough by a screw conveyer, live steam is supplied to the interior of compartment 2 by pipe 13, and the suction-pipe 11 draws on compartment 2 indirectly through the connecting passage-way and directly through pipe 12.

Steam is supplied to the hollow conveyer 9 through the tubular shaft 7, heating the same and then exhausting through end $7^a$ of the shaft. The means employed to establish a suction in the pipe 11 may be a suction-pump or other appliance capable of developing and maintaining a steady suction of considerable

force. The degree of the suction depends somewhat on circumstances. It should be strong enough to remove the steam as quickly as may be done without disturbing the matter under treatment.

What I claim is—

1. The process of deodorizing and drying which consists of bringing live steam into contact with the substance to be treated then forcibly withdrawing the steam as nearly as possible before it condenses, then subjecting the substance to dry heat until whatever moisture it may have retained is converted into steam and forcibly withdrawing the steam so produced.

2. The process of deodorizing and drying which consists of agitating the substance to be treated, bringing live steam into contact with the substance, forcibly withdrawing the steam as nearly as possible before it condenses, subjecting the substance to dry heat until whatever moisture it may have retained is converted into steam and forcibly withdrawing the steam so produced.

3. The process of deodorizing and drying which consists of moving the material through a chamber in an agitated condition, supplying live steam to the chamber, forcibly withdrawing the steam and applying dry heat to the material as it passes through the dischage end of the chamber.

4. The process of deodorizing and drying which consists of moving the material in an agitated condition through a chamber having two divisions, applying live steam and suction to the material in the first division of the chamber and applying dry heat and suction to the material in the second division.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

FRANK M. PRATT.

Witnesses:

SEYMOUR CAMPBELL,

CLEM ERISMAN.