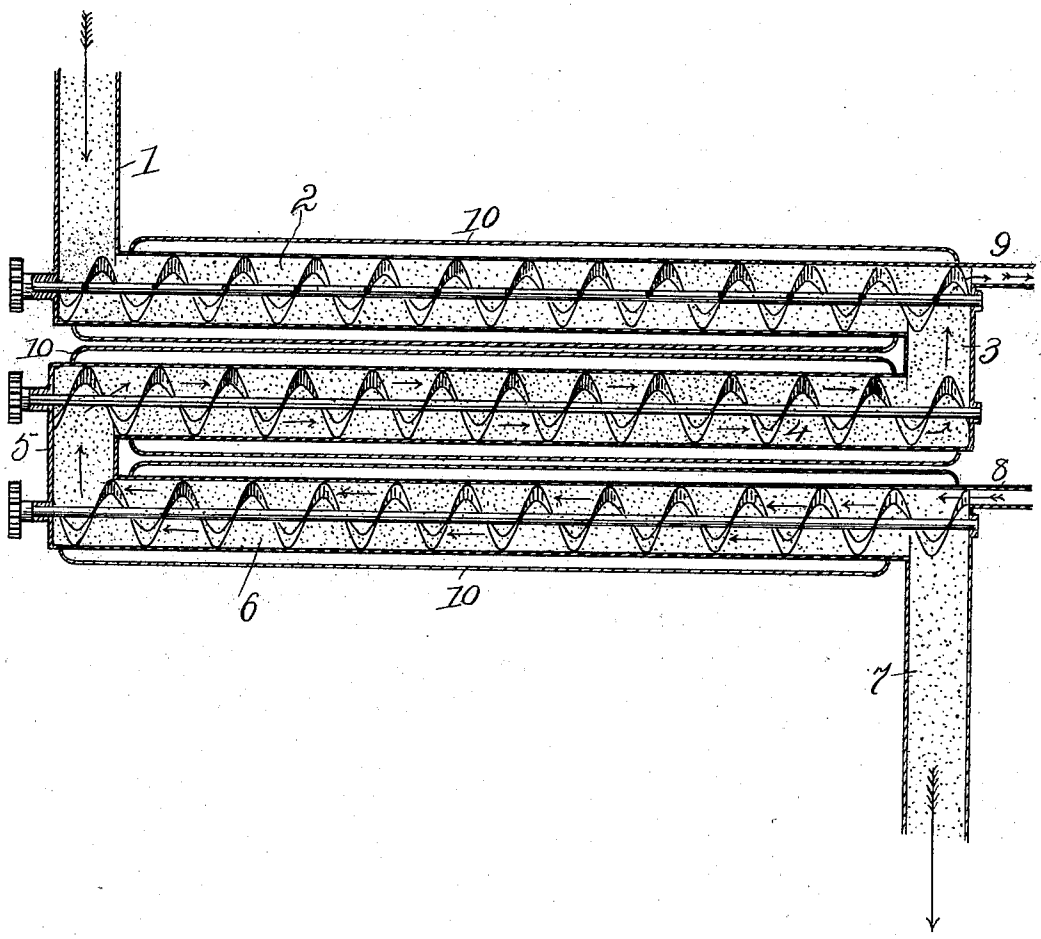
No. 705,787. Patented July 29, 1902.

F. M. PRATT.

PROCESS OF DEODORIZING.

(Application filed Dec. 26, 1901.)

(No Model.)



Witnesses.

Ina C. Graham.

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UNITED STATES PATENT OFFICE.

FRANK M. PRATT, OF DECATUR, ILLINOIS.

PROCESS OF DEODORIZING.

SPECIFICATION forming part of Letters Patent No. 705,787, dated July 29, 1902.

Application filed December 26, 1901. Serial No. 87,338. (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, of which the following is a specification.

This invention is particularly applicable to deodorizing cornmeal, cotton-seed meal, and the like from which the oil has been extracted by means of a hydrocarbon solvent; and it is intended to provide a deodorizing process that may be continuously maintained.

It is understood that live steam will remove the odor of a hydrocarbon when applied under favorable conditions; and it is the object of my invention to produce conditions favorable to the effective application of steam and to maintain them during a continuous operation. If the substance to be treated contains enough water to become moist or pasty, the action of the steam is ineffective, and if the substance becomes moistened by water of condensation during the application of the steam the result is also unsatisfactory. To get the best results, the substance to be deodorized should contain little or no water when the steam is applied, and condensation of the steam to any considerable extent must be avoided. To attain the desired result, I heat the meal or other substance while moving it through a chamber or part of a chamber and maintain the heat and motion of the meal during the subsequent action of the live steam. The preliminary heating expels moisture that would interfere with the deodorizing process and prevents the condensation that would result from contact of live steam with cold meal. The subsequent heating and moving of the meal precludes condensation of the steam and enables the steam to come in contact with the particles of the meal on all sides. The preliminary heating and subsequent deodorizing are consecutive steps in a continuous operation during which the agitation of the material is maintained.

In the drawing forming part of this specification an apparatus capable of performing my process is shown in vertical section.

A vertical supply-pipe for the substance to be treated is shown at 1. At 2 is shown a preliminary-heating chamber, which is in this instance a horizontal hollow cylinder, and at 4 and 6 are hollow cylinders in which the meal is submitted to the deodorizing action of live steam. The cylinders 2, 4, and 6 are placed one above another in the order named. A pipe 3 connects cylinder 2 with cylinder 4. A pipe 5 connects cylinder 6 with cylinder 4, and pipe 7 constitutes an outlet for cylinder 6. The cylinders and pipes form a tortuous or zigzag passage-way for the meal. The cylinders are supplied with conveyers that move the meal lengthwise of the cylinders while thoroughly agitating it, and gravity carries the meal through the pipes. The cylinders are steam-jacketed, as shown at 10, so that they may be suitably heated. A pipe 8 supplies live steam to the lower cylinder at or near the discharge end thereof, and a pipe 9 provides an outlet for the live steam. In this instance the live-steam outlet is located in the discharge end of cylinder 2; but it may be nearer to or farther from the supply-pipe 1, according to the demand for preliminary heating of the meal. The steam circulates upward, as indicated by the short arrows, while the meal travels downward from one chamber to another. The meal is heated while passing through cylinder 2, the speed of the conveyer being proportioned to the heat in the cylinder, so as to get the desired action on the meal, and when the meal reaches pipe 3 it encounters the escaping current of live steam. While traveling through cylinders 4 and 6 the contact of the meal with the live steam is maintained, and such contact may be extended, if desired, by using additional cylinders with agitating-conveyers therein, or the speed of rotation and shape of the conveyers may be varied to hasten or retard the travel of the meal through the cylinders.

I claim—

1. The method of deodorizing by use of live steam, which consists in moving the substance to be deodorized part way through a heated passage-way out of contact with the steam and then continuing the movement of the substance through the heated passage-way in contact with live steam.

2. The method of deodorizing by use of live steam, which consists in moving the substance to be deodorized part way through a heated passage-way, in an agitated condition, out of contact with the steam and then continuing

the movement and agitation of the substance through the heated passage-way in contact with live steam.

3. The method of deodorizing by use of live steam, which consists in moving a stream of the substance to be treated through a heated passage-way in one direction, and passing a current of live steam part way through the heated passage-way in the contrary direction; the steam being permitted to escape before reaching the supply-inlet for the substance to be deodorized.

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

FRANK M. PRATT.

Witnesses:

CLARENCE A. VANCE,

SEYMOUR CAMPBELL.