No. 629,617. Patented July 25, 1899.

F. W. SMITH.

ROTARY RETORT.

(Application filed Aug. 18, 1897.)

(No Model.)

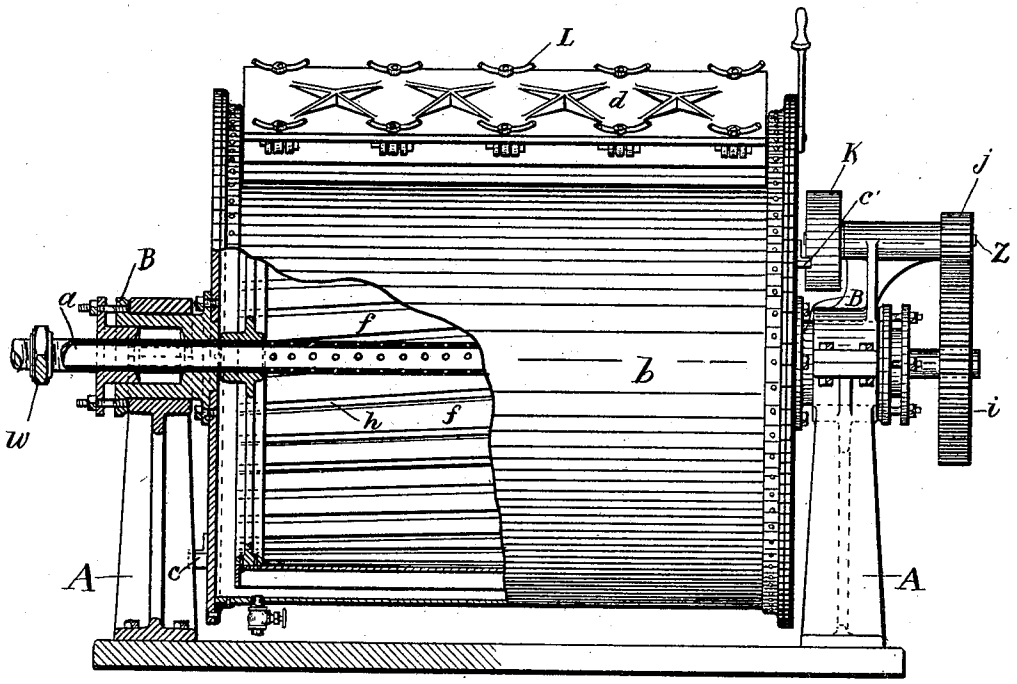


Fig. 1

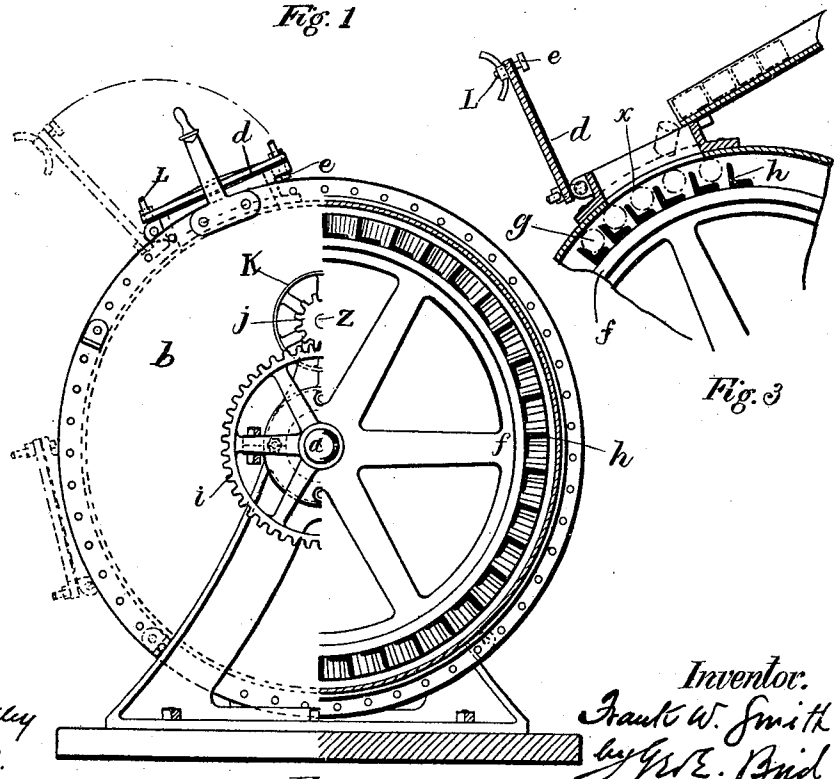


Fig. 2

Fig. 3

Witnesses:
Wm. M. Bradley
A. C. Berry.

Inventor.
Frank W. Smith
by Geo. E. Bridgett
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK W. SMITH, OF PORTLAND, MAINE, ASSIGNOR OF ONE-HALF TO FREDERICK O. CONANT, OF SAME PLACE.

ROTARY RETORT.

SPECIFICATION forming part of Letters Patent No. 629,617, dated July 25, 1899.

Application filed August 18, 1897. Serial No. 648,633. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. SMITH, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Rotary Retorts; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to retorts by which meats, fish, vegetables, and other foods contained in hermetically-sealed vessels or in other packages may be subjected to the action of heat or steam; and it consists in certain mechanism by which the contents of the vessels or packages may be agitated while subjected to the action of the steam or heat.

The mechanism referred to embraces a box or cylinder in which the vessels or packages containing the substances to be treated are packed, a steam or heat supply connecting therewith, and means by which such box or cylinder may be rotated during the process.

In the drawings, Figure 1 is a side elevation with a part of the cylinder broken out. Fig. 2 is an end view with a part of the cylinder broken out. Fig. 3 is a detail of part of the end of the cylinder, showing the mechanism for opening and closing the same and feeding device.

My invention may be embodied in various mechanical devices.

Referring to the drawings, A A are standards, on which are supported the trunnions B B, through the center of which passes the hollow shaft *a*, which within the cylinder, hereinafter described, is perforated, as seen in Fig. 1. Supported by the trunnions B B is the casing *b*, cylindrical in shape and provided at one or both ends with the stops *c c'*, of sufficient length to engage the supports A A. This casing *b* is provided with a narrow opening *x*, preferably extending from end to end, which is closed by means of the door *d*, hinged to the casing, which is secured over the opening *x* by the bolts *e e* and the nuts *v*. Within the casing *b* and supported by and fixed to the hollow shaft *a* is a cylinder *f*, the surface of which is provided with means for securing and holding the vessels or packages to be processed. These means may consist of flutings in the surface of the cylinder *f* or of angle-irons *h*, fixed to the surface, as shown in the drawings. They may extend from end to end of the cylinder in straight lines parallel with the axis, or—a construction which I prefer and which is shown in Fig. 1—be carried spirally around or partially around the cylinder. The shaft *a* is provided at one end with the gear *i*, which matches with the small gear *j* on the shaft *l*, which carries the pulley *k*.

The operation of the device described is as follows: Assume the door *d* to be open and the stop *c* engaging the standard A, as shown in Fig. 1. The cans, vessels, or packages *g g* are placed within the angle-irons *h*, fluting, or other means for receiving the same, and can be reached through the opening. When these are filled, the cylinder *f* is rotated sufficiently to expose through the opening the next adjacent angle-irons, which are then filled, and so on in succession until all have been filled. The opening is now closed by means of the door *d*, which is firmly fixed in place by the bolts *e e* and nuts *v*. Steam or heat is then admitted through the hollow shaft *a*, a stuffing-box *w* being provided at one end for the connection and the other end being closed, and passes through the perforations thereof into the casing *b*. By means of power applied through the pulley *k* the cylinder *f* is rotated for a sufficient length of time to cook the substance being processed to the required degree. When this is accomplished, the heat is shut off, the power withdrawn, and the casing turned so that the stop *c'* encounters the standard A, when the door *d* will be downward, as shown in dotted lines in Fig. 2. The door *d* is now opened and the cylinder *f* slowly rotated, permitting the cans *g* to fall upon the floor, where they can be removed and the machine again charged.

By the use of devices constructed upon the principles before described the contents of the cans or vessels or packages during the cooking or drying process are so agitated and shaken that each portion thereof is exposed

to the same degree of heat and the mass uniformly affected.

What I claim is—

1. In a machine for processing food or other substances contained in cans, other vessels or packages, the combination of a steam-tight hollow cylinder provided with a steam or heat supply, a longitudinal opening and steam-tight door, a cylinder within the first-named cylinder having upon its surface means for holding said vessels or packages in position, together with means for rotating said last-named cylinder, substantially as described.

2. In a machine for processing food and other substances contained in vessels and packages, the combination of a hollow cylinder provided with steam or heat supply and a longitudinal opening with steam-tight door, a cylinder within the first-named cylinder having upon its surface means spirally arranged thereon for holding the vessels and packages in position, the ends of said vessels or packages being alternately tilted, and means for rotating said last-named cylinder, substantially as described.

In testimony that I claim the foregoing as my invention I have hereunto set my hand this 16th day of August, A. D. 1897.

FRANK W. SMITH.

In presence of—

GEO. E. BIRD,

A. C. BERRY.