(No Model.)

F. C. NICODEMUS.

Processing Apparatus.

No. 241,405. Patented May 10, 1881.

Fig. 1.

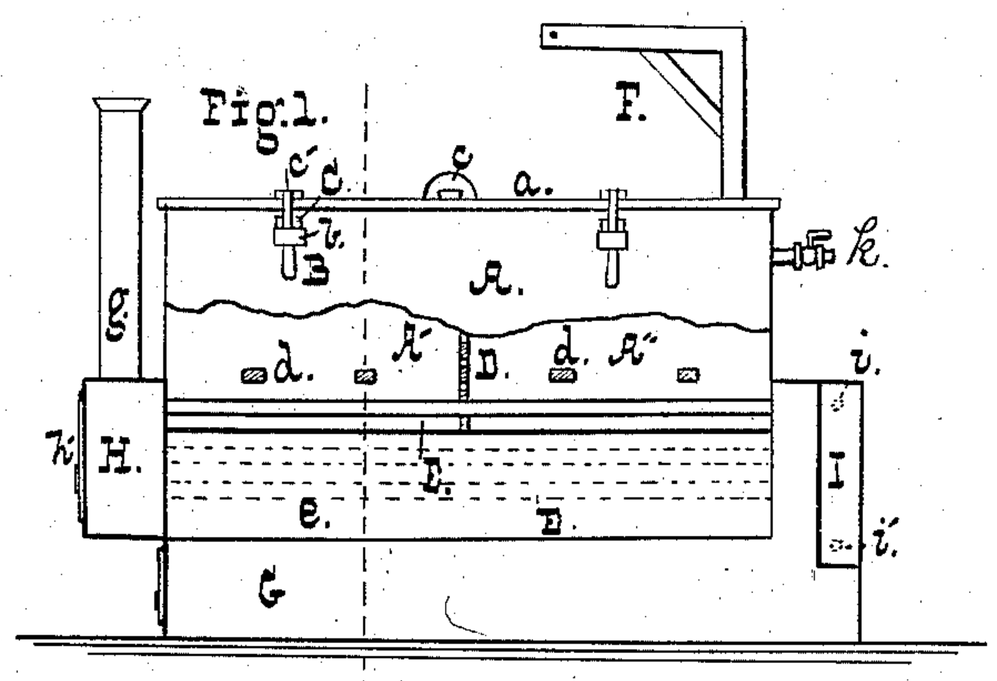


Fig. 2.

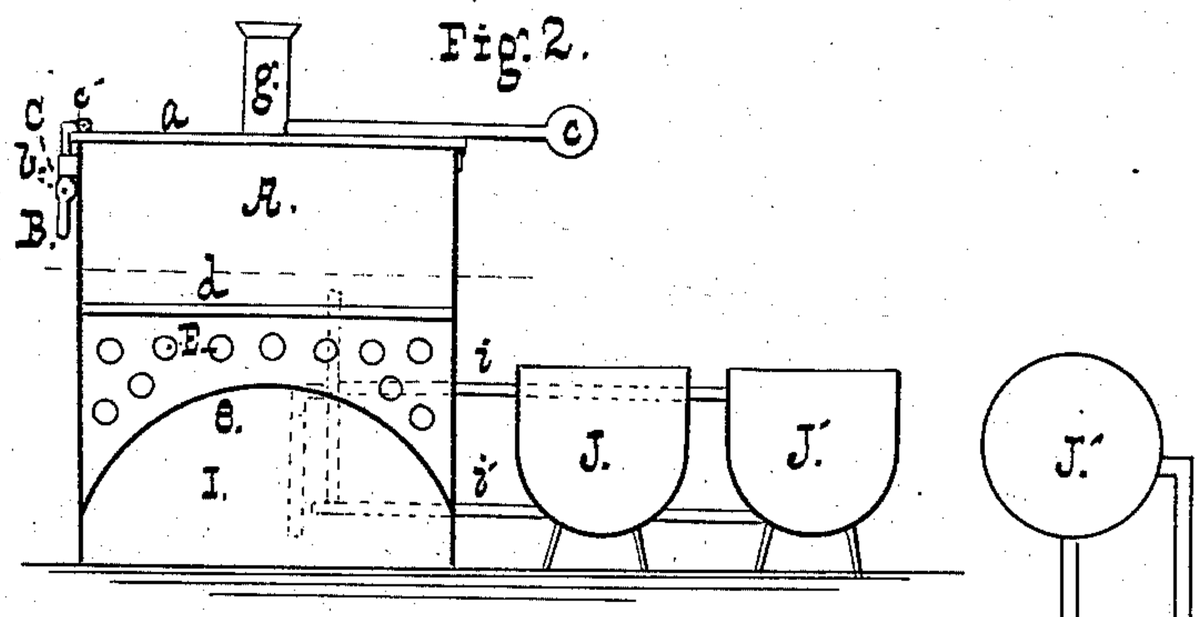
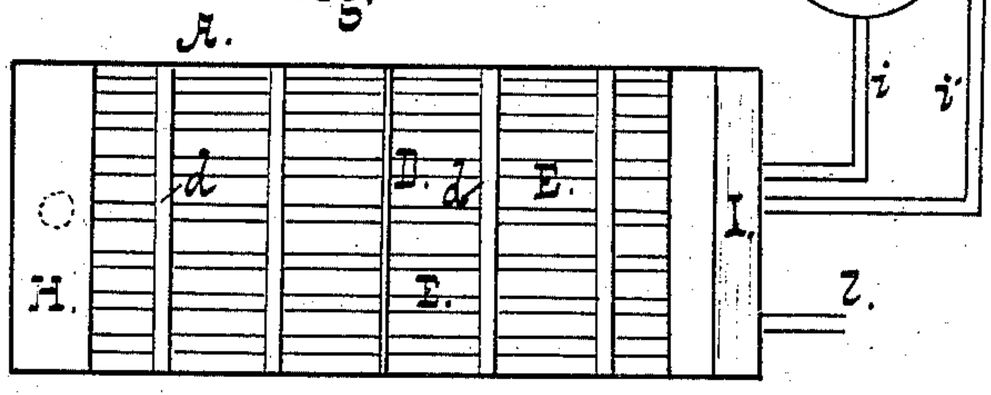


Fig. 3.



WITNESSES.

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FRANK C. NICODEMUS, OF BALTIMORE, MARYLAND.

PROCESSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 241,405, dated May 10, 1881.

Application filed March 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. NICODEMUS, of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Processing Apparatus; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, Fig. 2 an end elevation, partly in section, and Fig. 3 a plan, of the apparatus.

My invention relates to apparatus for effecting what is technically termed the "processing" in the hermetic packing of provisions. This step consists in subjecting the sealed cans to the action of heat, in order to cook their contents, and has heretofore generally been done by immersing the cans in a saline bath, a solution of chloride of calcium being usually employed. The temperature of the bath and the duration of the immersion of the cans therein vary according to the nature of the article of food contained in the cans; but in any case the temperature is in excess of 212°, the normal boiling-point of water. As a result, the cans are subjected to an internal or bursting strain in proportion to the temperature of the bath. For processing green corn, for instance, the bath is kept at a temperature of about 240° Fahrenheit, and in consequence the internal pressure upon the cans is about two atmospheres per square inch, resulting in great loss from the bursting of insecurely-soldered cans.

The object of my invention is to provide a processing-vessel adapted to receive the crates of cans and to be closed tightly, so that the cans are subjected to the same pressure from without as within, and to combine with the said vessel a water-back adapted to supply one or more vessels with boiling water, as hereinafter fully set forth.

In the drawings, A is the vessel, having a hinged lid, *a*, counterpoised by means of a weight, *c*, and fitting tightly upon a rubber or equivalent gasket. On the side of the vessel A, opposite the hinges, are lugs C, between which fall the arms *c'*, that are pivoted to the lid, and carry at their lower ends cams *b*, provided with suitable handles, B. The cams being brought under, the lugs C are turned by means of the handles B, drawing the lid tightly down upon the gasket. The vessel is divided internally by a perforated partition, D, into two compartments, A' A'', in each of which are bars *d d*, upon which the can-crates rest.

E E are flues extending throughout the length of the vessel A, after the manner of the flues of a tubular boiler, and opening into the box H beneath the smoke-stack *g*. The box H has a hinged door, *h'*, through which access may be had to the flues in order to clean them.

The bottom of the vessel A consists of a plate, *e*, curved either upward or downward, (by preference upward, as shown,) and located just below the flues.

G is the fire-box, having a suitable door, and *k* is a blow-off cock on the vessel A.

I is a water-back, having an inlet-pipe, *l*, and circulating-pipes *i i'*, leading to the kettles J J'. These latter serve, respectively, as the "capping-tank" and scalding-vessel. Except in putting up tomatoes, when it is used for scalding them to remove the skins, the latter is not used.

In practice, the cans being filled, the caps are laid in place and soldered, and the cans are then immersed nearly to their tops in the capping-vat. As soon as the evolution of steam from the contents of the cans has expelled the air the cans are sealed by a drop of solder applied to the vent, and are carried on crates to the process-vat. Here the crates are lowered, by means of the crane F, upon the bars *d*, and the lid of the vessel is closed tightly. The temperature of the process-vat is ascertained by means of a thermometer and steam-gage attached to the vessel A. When the cooking is complete the blow-off cock *k* is opened, and when the pressure is relieved the cams *b* are released, the lid is raised, and the crates are lifted out by means of the crane, to give place to others. The flames from the fire-box play directly upon the water-back, and thence pass through the flues E to the box H and stack *g*, securing the maximum heating effect. The perforated partition D is securely bolted or riveted to the sides of the vessel A, and prevents them from bulging under the pressure from within.

The water-back, being located opposite the

direct draft, receives the flame before it enters the flues and prevents the burning of the end sheet of the furnace, which would take place were it otherwise located.

What I claim is—

1. In combination with the vessel A, having removable cover and locking devices, and perforated partition D, bolted to the side walls, the bars *d*, the curved bottom *e*, and flues E, as set forth.

2. In combination with the vessel A, having removable lid and heating-flues, the water-back I, located opposite the direct draft and the flues, and communicating with one or more vessels, J, as set forth.

3. In combination with the vessel A, having removable lid *a*, bars *d*, partition D, and flues E, the water-back I and kettles J J′, as set forth.

FRANK C. NICODEMUS.

Witnesses:

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