(No Model.)

F. C. NICODEMUS & A. K. WEEKS.

PROCESSING APPARATUS.

No. 251,456. Patented Dec. 27, 1881.

Fig. 1.

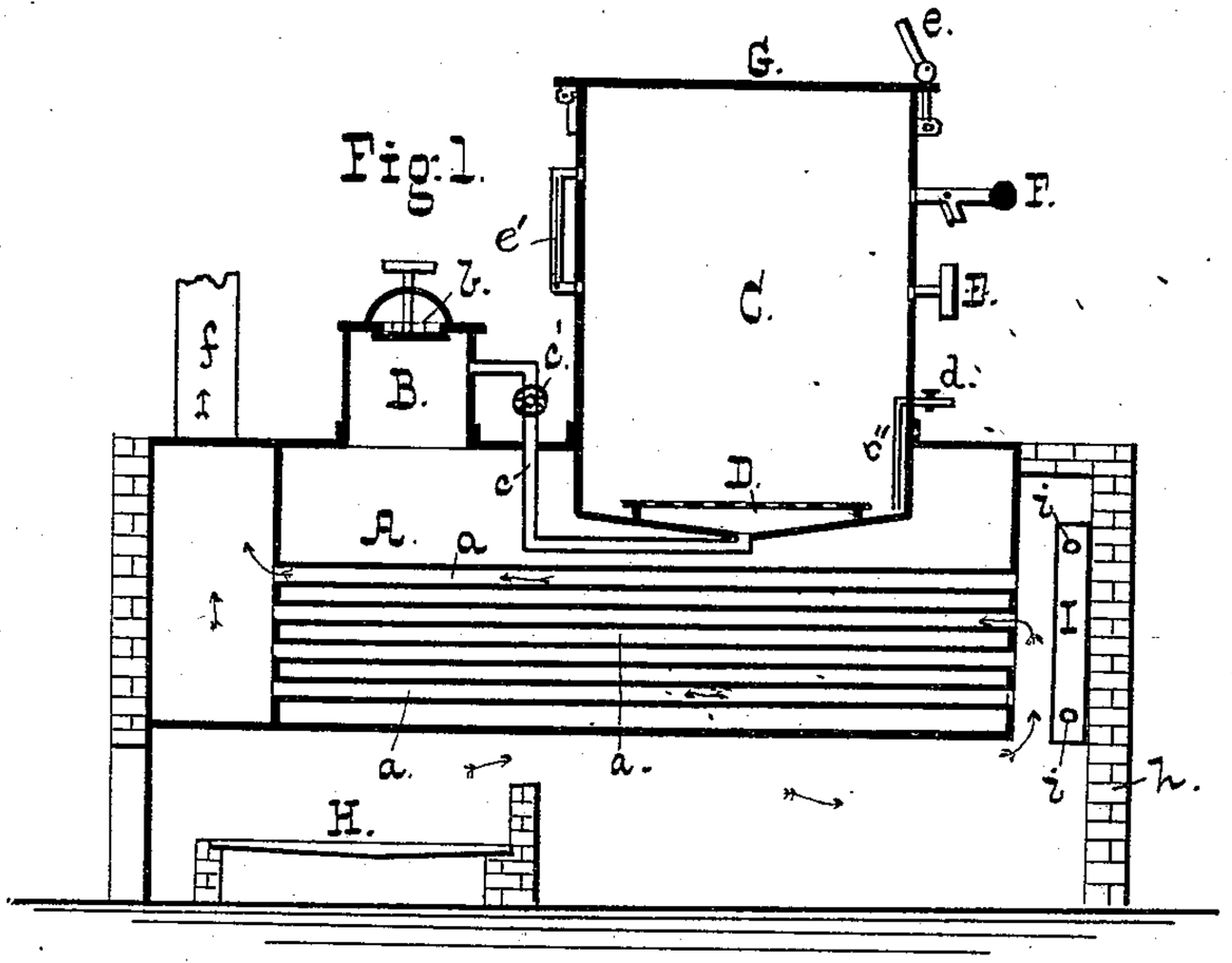
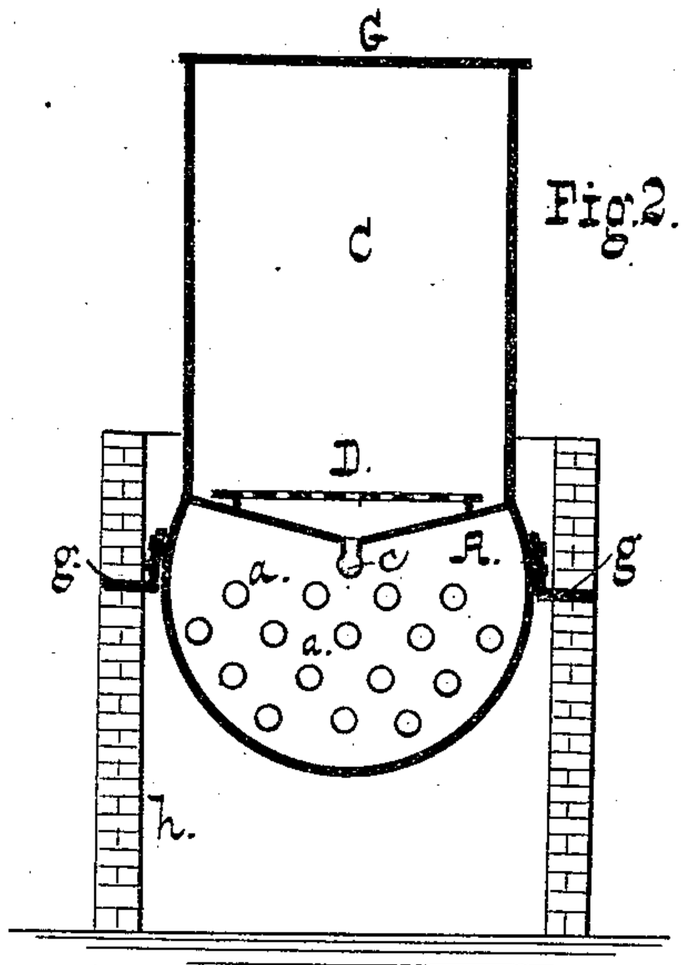


Fig. 2.



WITNESSES.

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FRANK C. NICODEMUS AND A. KIRKLAND WEEKS, OF BALTIMORE, MD.

PROCESSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 251,456, dated December 27, 1881.

Application filed November 1, 1881. (No model.)

To all whom it may concern:

Be it known that we, FRANK C. NICODEMUS and A. KIRKLAND WEEKS, both of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Processing Apparatus; and we 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 central vertical longitudinal sectional view of the apparatus, and Fig. 2 is a cross-sectional view of the same.

Our invention relates to heating apparatus designed for the treatment of canned provisions in what is technically known as "processing." This step consists in cooking or heating the sealed cans, and has heretofore generally been done by immersing the cans in boiling chloride-of-calcium solution. The temperature of the bath being in excess of 212° Fahrenheit—the normal boiling-point—a considerable bursting effort was exerted upon the walls of the cans, which resulted in the destruction of many cans and the contamination of the bath by their contents. To remedy this various forms of process-kettle were devised, operating upon the principle of subjecting the cans to external pressure to counteract the bursting pressure from within. Our present invention belongs to this latter class, and in some respects is in the nature of an improvement upon that for which Letters Patent were granted to Frank C. Nicodemus, May 10, 1881, No. 241,405; and it has for its object to economize steam, to facilitate the insertion and removal of the crates of cans, and to increase generally the efficiency of the apparatus.

In the drawings, A is a cylindrical boiler, having tubes *a a* and steam-drum B, of the usual form.

H is the grate, and *f* the stack, the flames and products of combustion taking the course indicated by the arrows.

The drum B has a man-hole and plate *b*, whereby access may be had to the interior of the boiler to clean it. A steam-pipe, *c*, leads from the drum B into the chamber C, which is mounted upon and extends down into the boiler, as shown, and is provided with a hinged lid, G, clamp *e*, steam-gage E, thermometer *e'*, and gage-cock F. At its bottom is a casing having a perforated lid, D, under which the steam-pipe *c* opens.

I is a water-back, having pipes *i i* leading to the capping or scalding tanks, as described in the Letters Patent above referred to.

The entire device is mounted in a suitable structure of masonry, *h*, wherein it is supported by lateral lugs *g*.

In operation the lid is raised and the crates of cans are lowered within the chamber C, where they may rest either directly upon the plate D or on suitable lugs bolted to the walls of the chamber. The lid is then lowered and clamped tightly, and the cock *c'* is opened, admitting steam to the chamber C. The gage-cock F is raised to permit of the expulsion of the air, and is closed as soon as steam appears. The cans are left in the vessel for a length of time determined by the temperature of the steam and the nature of the contents of the cans, when the cock *c'* is closed and the gage-cock is opened, allowing the steam to escape gradually, and, after equilibrium of pressure is attained, permitting the ingress of air to compensate for condensation. The lid is finally raised and the crates removed to give place to others, when the operation is repeated.

Instead of a gage-cock, a simple check-valve having means for lifting it from without, or a common faucet, may be used. In any case it should be located near the top of the chamber.

The perforated plate D serves to check the inrush of steam when the cock *c'* is opened.

A pipe, *c''*, for blowing off any condensed water, leads to a point near the bottom of the chamber, and is furnished exteriorly with a cock, *d*.

The device is of such construction as to adapt for its manufacture old locomotive or other tubular boilers, which, while considered no longer safe to carry two hundred pounds of steam, would have ample strength for the purposes of a process-vessel. Should it be desired, a device may be added to cut off the steam from the chamber C when a given pressure is attained therein.

What we claim is—

1. In combination with the boiler A, having flues *a*, steam-drum B, and pipe *c*, having cock

c', the chamber C, mounted upon the boiler and communicating with the drum, and having a hinged or removable lid, as and for the purpose set forth.

2. In combination with the boiler, the chamber C, resting upon and partially within the same, and having hinged or removable lid, cock F, and steam-pipe *c*, as set forth.

3. In combination with the boiler and pipe *c*, the chamber C, having hinged or removable lid, and clamp *e*, escape and air cock F, and pipe *c''*, as set forth.

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