

H. G. HALL.
STEAMING APPARATUS.

No. 506,224.

Patented Oct. 10, 1893.

Fig. 1.

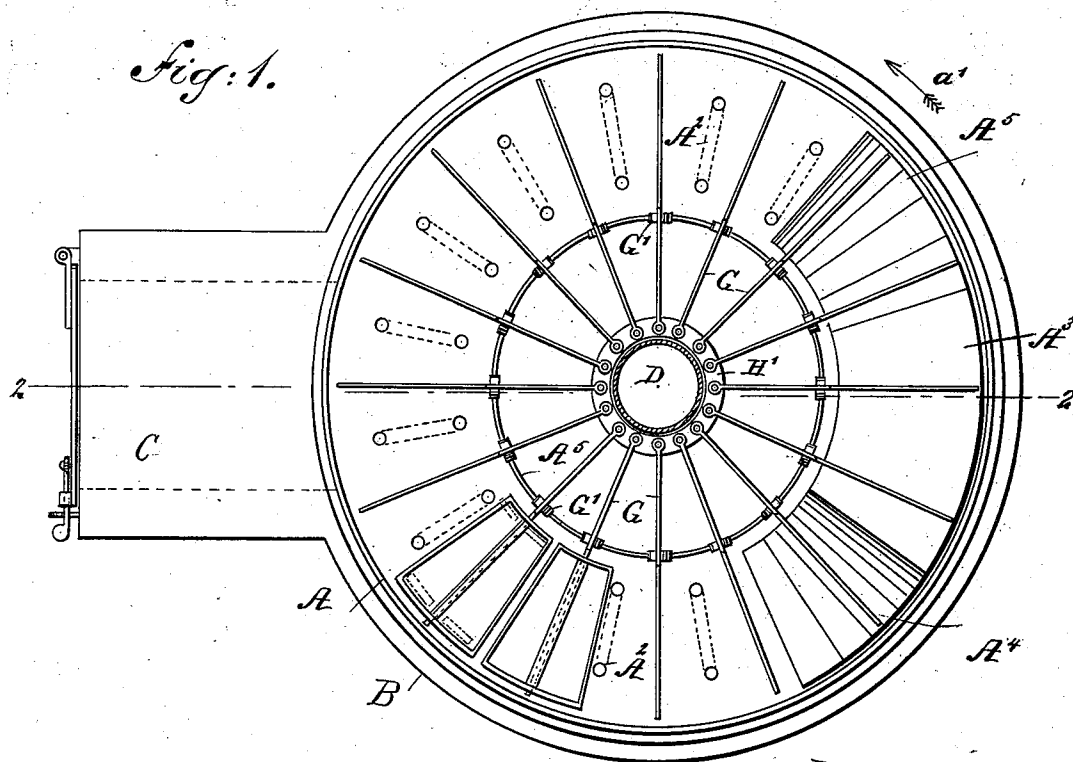
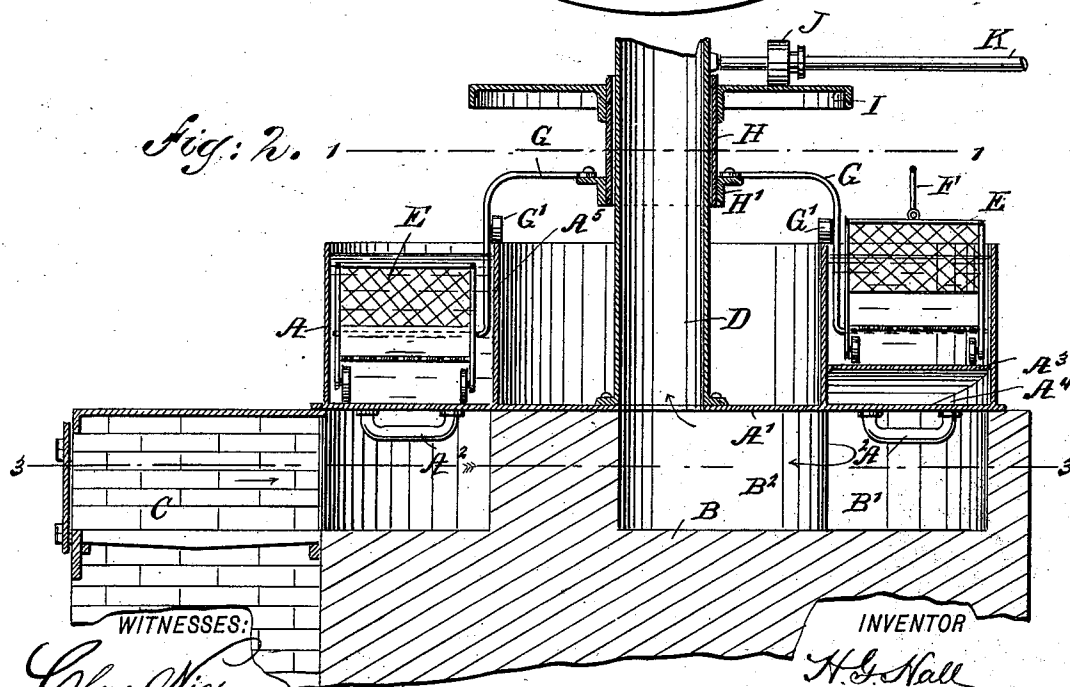


Fig. 2.



WITNESSES:

Chas. Miele.
C. Sedgwick

INVENTOR

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ATTORNEYS.

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Fig. 3.

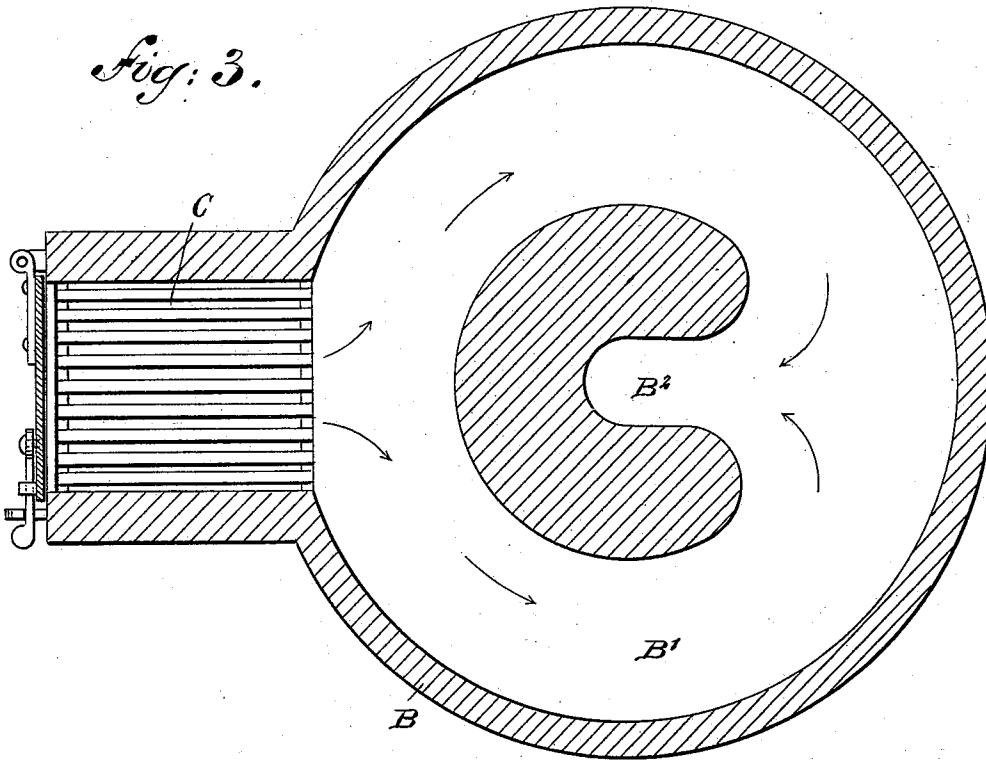
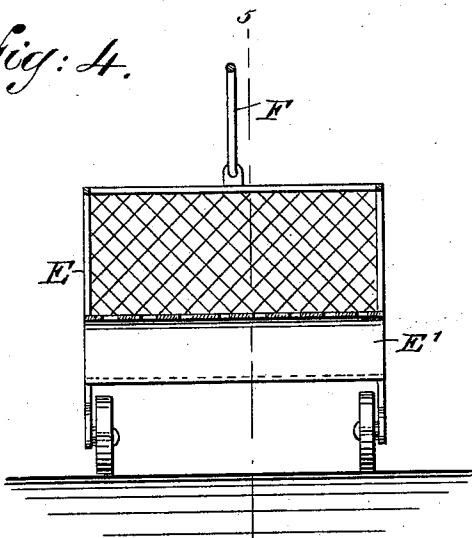


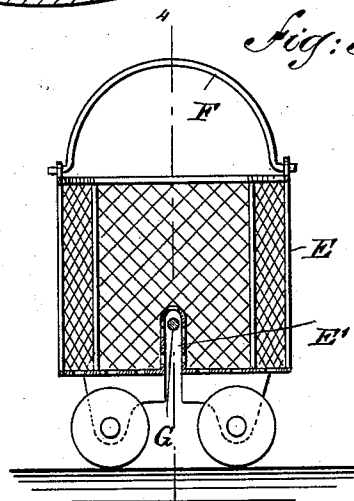
Fig. 4.



WITNESSES:

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Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY G. HALL, OF BLACKSBURG, SOUTH CAROLINA.

STEAMING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 506,224, dated October 10, 1893.

Application filed December 15, 1892. Serial No. 455,315. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. HALL, of Blacksburg, in the county of York and State of South Carolina, have invented a new and Improved Steaming Apparatus, of which the following is a full, clear, and exact description.

The invention relates to apparatus for steaming canned fruits, vegetables, &c., and its object is to provide a new and improved steaming apparatus which is simple and durable in construction, very effective in operation, and arranged to properly time the steaming according to the nature of the goods under treatment.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional plan view of the improvement on the line 1—1 of Fig. 2. Fig. 2 is a sectional side elevation of the same on the line 2—2 of Fig. 1. Fig. 3 is a sectional plan view of the furnace on the line 3—3 of Fig. 2. Fig. 4 is an enlarged transverse section of one of the baskets on the line 4—4 of Fig. 5; and Fig. 5 is a sectional side elevation of the same on the line 5—5 of Fig. 4.

The improved steaming apparatus is provided with a kettle A, preferably made circular, set with its base or bottom plate A' on a furnace B, provided at one side with a suitable firing chamber C, connected with a circular channel B', formed in the furnace B under the base plate A', and leading to a recess B², connecting at its upper end with an outlet flue D, arranged in the center of the base plate A' and leading to the outside to carry off the smoke and gases rising in the furnace.

On the under side of the base plate A' are secured a number of circulating pipes A², connected at their ends with the interior of the kettle, so that the water contained in the latter can circulate through the said pipes and is highly heated by the heat in the cir-

cular channel B' of the furnace. By this arrangement the water can be very highly heated in the kettle, it being understood that the bottom part of the kettle proper is also exposed to the influence of the heat passing through the channel B' to the recess B² and finally to the outlet flue D.

In the circular kettle A is adapted to travel a series of baskets E, containing the filled cans to be steamed, the said baskets being preferably mounted on wheels so as to form basket carriages, the wheels traveling in the bottom of the kettle, the latter forming a track. Each of the baskets E is engaged by an arm G, extending upward and inward to connect at its inner end with an annular flange H' secured on a sleeve H, mounted to turn on the upper part of the flue D, as is plainly shown in Fig. 2. The outer end of each arm G, engaging the respective basket E, fits into a vertical slot E' arranged transversely in the basket, so that the basket can rise and fall, at the same time being pushed forward by the arm G when the sleeve H is revolved. In order to reduce the friction, I provide each of the arms G with a friction roller G', traveling on the top edge of the inner wall A⁵ of the kettle A.

As shown in Figs. 1 and 2, the side of the kettle A opposite the firing chamber C is formed with a platform A³, the ends of which are provided with inclines A⁴ and A⁵ leading back to the bottom of the kettle proper. This arrangement is for the purpose of causing the baskets E to travel up one incline onto the platform A³, so that the baskets are raised out of the water in the kettle to permit of introducing the cans, removing the same from the baskets, and soldering the vent holes, as hereinafter more fully described.

The sleeve H is provided with a disk I, the top face of which is engaged by a friction pulley J, held adjustably on a shaft K, and turning with the same, the said shaft being connected with suitable machinery for imparting a rotary motion to the shaft and its pulley J, so that the latter, by its frictional contact with the disk I, rotates the sleeve H. The shaft K has a uniform motion, but in order to vary the speed of the baskets E ac-

cording to the material under treatment, the pulley J is shifted on the shaft nearer to or farther from the center of the disk so as to increase or decrease the speed of the disk, as is readily understood.

The operation is as follows: The cans are filled into the baskets E when the latter are on the platform A³, and then a rotary motion is given to the sleeve H, as above described, so that the arm G connected with the respective basket E moves the latter forward in the direction of the arrow a' and down the incline A⁴ onto the bottom of the kettle, so that the cans are immersed in the highly heated water. When a basket has made a revolution it comes back to the platform A³ and the operator then solders the vent holes in the cans in that particular basket while in motion, after which this basket is again passed once more through the water in the kettle, and when it finally arrives the second time on the platform A³, the cans are removed and new ones are placed in the basket.

Each of the baskets E is preferably provided with a bail F, for conveniently lifting the basket into or out of the kettle for filling or emptying the basket, or for other purposes.

It will be seen that by this apparatus the water can be readily heated to a temperature say of about 275°, which is sufficient to steam all fruits, vegetables and the like, to the proper degree. It will further be seen that the wheeled baskets can be conveniently wheeled to and from the packing room in case the baskets are to be filled and emptied there.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A steaming apparatus comprising a furnace having an annular flue provided with a central outlet, an annular open top kettle over said flue with its central opening registering with said outlet, and a series of U-shaped pipes on the under side of the kettle within the flue, substantially as set forth.

2. A steaming apparatus comprising an open top circular kettle provided with a platform having tapering ends and a series of separate and independent removable baskets traveling around the kettle and adapted to be removed and inserted at said platform, substantially as set forth.

3. The combination with the open top kettle and a horizontal rotary basket-operator provided with a circular series of arms traveling around the kettle, of the baskets separate and independent of each other and carried around by the arms, substantially as set forth.

4. The combination with the open top kettle and the rotary circular series of arms entering the kettle, of the separate and independent baskets carried around within the kettle by said arms and means for successively raising and lowering the baskets at one

side of the kettle during their rotation, substantially as set forth.

5. The combination with the kettle of a rotary series of arms extending down into the kettle and bent outward or radially at their lower ends within the kettle, of baskets traveling on the bottom of the kettle and each having a vertically extending slot to receive one of said arms, substantially as set forth.

6. A steaming apparatus, provided with a circular kettle having a platform, and inclines leading from the ends of the platform to the bottom of the kettle, a series of wheeled baskets mounted to travel in the said kettle, arms engaging the said baskets, and a revoluble sleeve carrying the said arms, for moving the said baskets in the said kettle up and down the inclines and along the platform, substantially as shown and described.

7. A steaming apparatus, provided with a circular kettle having a platform, and inclines leading from the ends of the platform to the bottom of the kettle, a series of wheeled baskets mounted to travel in the said kettle, arms engaging the said baskets, a revoluble sleeve carrying the said arms, for moving the said baskets in the said kettle, up and down the inclines and along the platform, a disk secured on the said sleeve, and a revoluble shaft carrying a pulley engaging the said disk, substantially as shown and described.

8. A steaming apparatus, provided with a circular kettle having a platform, and inclines leading from the ends of the platform to the bottom of the kettle, a series of wheeled baskets mounted to travel in the said kettle, arms engaging the said baskets, a revoluble sleeve carrying the said arms, for moving the said baskets in the said kettle, up and down the inclines and along the platform, a disk secured on the said sleeve, and a revoluble shaft carrying a pulley engaging the said disk, the said pulley being held adjustably on the said shaft to increase or decrease the speed of the said disk and that of the baskets, substantially as shown and described.

9. A steaming apparatus comprising the furnace having an annular flue B' provided with a central outlet B² the annular kettle over the flue and having a central smoke pipe registering with said outlet, and a platform provided with inclined ends, a rotary sleeve on the said pipe and having a series of radial arms extending down into said annular kettle, gearing for rotating the sleeve and a series of basket-carriages removably engaging said arms, substantially as set forth.

10. In a steaming apparatus the basket-carriage E provided with wheels and having a vertical transverse slot E' extending into it from below, substantially as set forth.

HENRY G. HALL.

Witnesses:

D. D. GASTON,
J. B. JONES.