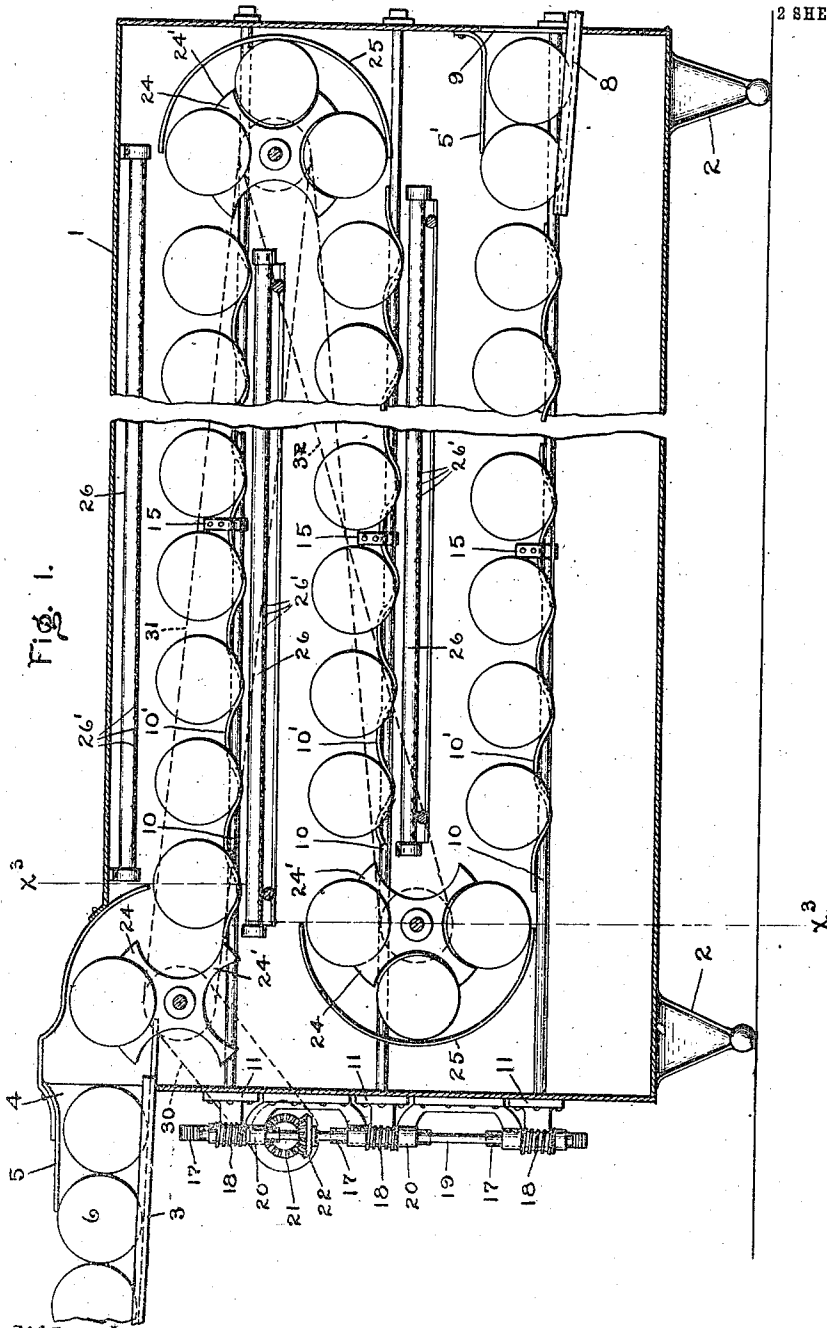


1,044,822.

Patented Nov. 19, 1912.

2 SHEETS—SHEET 1.



Witnesses:
Hester H. Palmer.
Louis W. Gray.

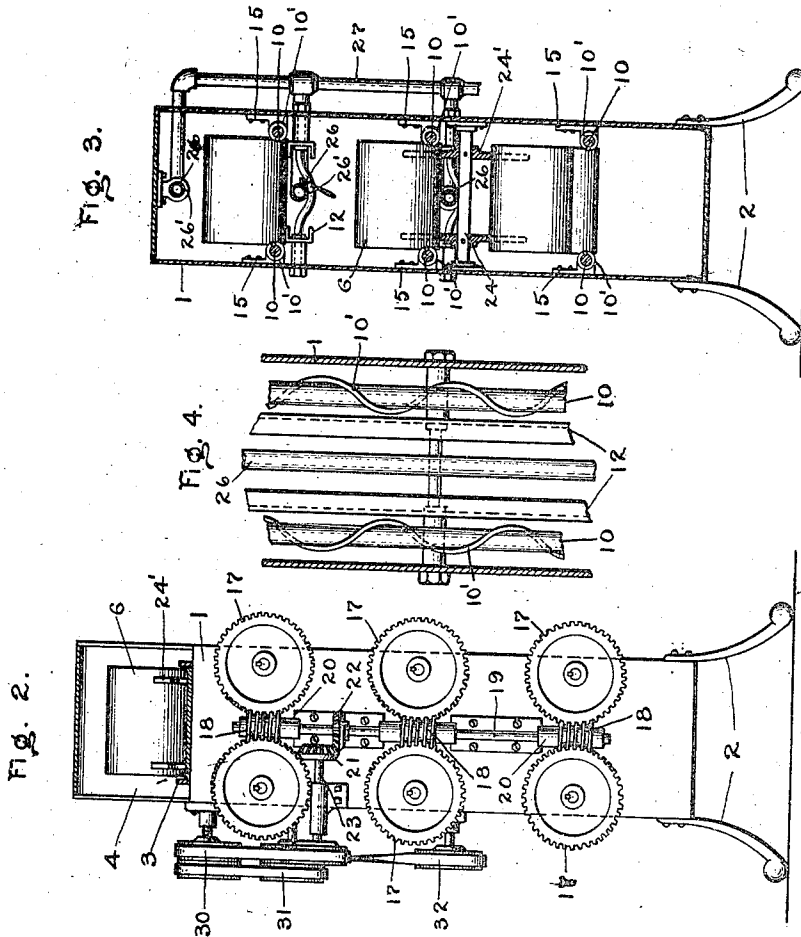
Inventor:
William J. Schaefer.
By Townsend Lyon Haerley,
His Atty.

W. J. SCHAEFER.
AGITATING COOKER.
APPLICATION FILED APR. 4, 1910.

1,044,822.

Patented Nov. 19, 1912

2 SHEETS—SHEET 2.



Witnesses:
Lester H. Palmer,
Louis W. Gray.

Inventor:
William J. Schaefer.
By Townsend Lyon & Mackay,
His Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM J. SCHAEFER, OF ONTARIO, CALIFORNIA.

AGITATING-COOKER.

1,044,822.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed April 4, 1910. Serial No. 553,417.

To all whom it may concern:

Be it known that I, WILLIAM J. SCHAEFER, a citizen of the United States, residing at Ontario, in the county of San Bernardino and State of California, have invented a new and useful Agitating-Cooker, of which the following is a specification.

This invention relates particularly to apparatus for cooking canned goods in the can, and the main object of the invention is to provide an apparatus for this purpose which will reduce the time required for the cooking operation and the amount of labor involved therein.

Another object of the invention is to dispense with the chains and trays generally used in this class of devices.

A further object of the invention is to provide for continuous conveyance and agitation of the cans while passing through the cooker.

Another object of the invention is to minimize the amount of floor space and the amount of power, water and steam required in such a cooker.

Another object of the invention is to provide a cooker for use in the canning operation which will operate in accordance with the "single line" continuous operation of the rest of the process. In most of the operations involved in canning fruit, etc., the can passes successively from one operation to another in a single line, but when the cooking operation is reached it has been generally necessary to break up this line in that the cans are removed from the line and placed in trays in sets, which are then carried by suitable mechanism into the hot water tanks for the cooking operation. This breaking up of the single line operation involves loss of time and of efficiency in the process, and an important feature of the present invention is that the continuous single line feature is maintained in the cooking operation as well as in those precedent and subsequent thereto.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate the invention, and referring thereto: Figure 1 is a longitudinal section of the cooker. Fig. 2 is a front end elevation thereof. Fig. 3 is a transverse section on the line x^2-x^3 in Fig. 1. Fig. 4 is a plan of the can conveyers.

The apparatus comprises a case 1, mounted for example on legs 2, and pro-

vided with means for feeding cans at one end thereof, means for delivery of the cans at the other end thereof, means for heating the interior of the casing, and means on which the cans are rolled and means by which the cans are conveyed through the casing from the intake to the delivery means.

The intake or feed means may consist of a chute 3 extending adjacent to an intake opening 4 at one end of the casing 1, said intake opening being, for example, near the top of the case. Leather flaps indicated at 5 may be provided for maintaining more or less perfectly the condition of closure at the intake opening 4, said flaps being adapted to engage with the can indicated at 6 as it passes through the intake opening to substantially close the space between the can and the walls of the casing. The outlet or discharge means may consist of a chute 8 at the delivery opening 9 at the opposite end of the case and at the lower portion thereof, and similarly provided with closure flaps 5'.

The means on which the cans are rolled and the means by which the cans are conveyed from the intake to the delivery opening comprise one or more superposed conveyers, each conveyer consisting of a pair of track rails 12 extending longitudinally in the case and two parallel shafts 10, journaled in bearings 11 on the casing 1, said shafts extending on opposite sides of the track means 12 and being adapted to receive the cans between them and each of said shafts being provided with a spiral or helical rib 10', said ribs extending in sections between the ends of the case with one or more intervening bearing portions to provide the necessary support for the shafts 10, such intermediate bearings being indicated at 15. In order to economize longitudinal space it is preferable to provide a series of these conveying devices located one above another so as to convey the cans forwardly and backwardly through the casing from the intake to the delivery means, three such conveying devices being herein shown, but it will be understood that there may be more or less according to circumstances. All of the conveying devices are operated in unison by means of gearing, comprising, for example, worm wheels 17 on the respective shafts 10 engaged by worms 18 on a vertical shaft 19 journaled in bearings 20, and operated, for example, by beveled gearing 21, 22, from the driving shaft 23.

Transfer mechanism may be provided for transferring the cans from each conveyer to the succeeding conveyer, said transfer mechanism comprising, for example, a star wheel 24 at the initial end of the top conveyer and between each of the conveyers, said star wheels having cradles 24' adapted to receive the cans and to swing them into position on the conveyer from the precedent conveyer or from the feed means 3, as the case may be. Shields or guard strips 25 are provided adjacent to each transfer means to guide the cans in the operation of said transfer means. Said transfer devices may be operated by any suitable means, for example, by belt or other connections indicated at 30, 31, 32 from the shaft 19.

The cooking is preferably done by means of steam admitted to the interior of the casing through pipes 26, having steam supply connections 27, said pipes being perforated as at 26' to discharge steam into the interior of the case, and being located directly above or below the series of cans on the conveyers. Said heating means, except in the case of the uppermost one, extend between the conveyers so that the space which is left between the conveyers for the operation of the transfer devices is utilized for receiving such heating means and the heat is delivered close beneath the cans in the most effective position for delivering the heat to the cans without waste.

The operation is as follows: The cans are fed or supplied in a continuous single line on the chute 3 as indicated at 6, and the gearing being set in motion the first transfer device 24 operates to carry the cans, one at a time, on to the first conveyer constituted by the parallel shafts 10 and said parallel shafts being rotated by the gearing 22, 21, 17 and 18, the helical ribs 10' on said parallel shafts 10 cause the cans to roll forwardly along the track rails to the other end of the casing 1, it being understood that the said cans are deposited by the transfer means 24 into position on the track rails 12 between the pair of shafts 10 so as to run on said track rails and be engaged by the said helical ribs. At the said farther end of the casing the second transfer device 24 operates to carry the cans from the first to the second conveyer, the shield 25 serving to hold or guide the cans in proper position in this transfer operation. The cans then proceed forwardly through the case and are delivered by the third transfer mechanism to the third conveyer, and so

on, the last conveyer delivering the cans to the delivery chute 8. During this operation steam is supplied to the interior of the casing 1 through the pipe connections 26 and 27 and the heat thereby imparted to the cans effectually cooks the contents thereof. In this cooking operation the rolling over and over of the cans by the engagement thereof with of the rotating helical ribs on the conveyer means causes agitation and intermixing of the contents of the cans so as to expedite the cooking. I have found that by using steam heat and agitating or turning over the cans in this manner, the time required for cooking can be reduced fully one-half as compared with the usual hot water process.

What I claim is:

1. The combination of a casing, means for feeding cans into the casing at one end thereof, track means extending within the casing and adapted to receive the cans from the said feeding means, parallel shafts extending within the casing and provided with helical ribs constructed to engage beneath the cans to run the same forward on said track means, and means for rotating said parallel shafts.

2. The combination of a casing, means for feeding cans into the casing at one end thereof, track means extending within the casing and adapted to receive the cans from said feeding means, conveying means for conveying the cans along said track means comprising parallel shafts extending at opposite sides of said track means and adapted to receive the cans between them, said parallel shafts being provided with helical ribs for engaging beneath the cans at opposite ends thereof to run the cans forward on the track means in the rotation of said parallel shafts, and means for rotating said parallel shafts.

3. The combination of a casing, a pair of track rails on which the cans are rolled, a heating pipe between the track rails, parallel shafts between which the track rails are located, having helical ribs adapted to engage beneath and convey the cans on the track rails, and means for rotating the parallel shafts in opposite directions.

In testimony whereof, I have hereunto set my hand at Los Angeles California this 28th day of March 1910.

WILLIAM J. SCHAEFER.

In presence of—
ARTHUR P. KNIGHT,
FRANK L. A. GRAHAM.