

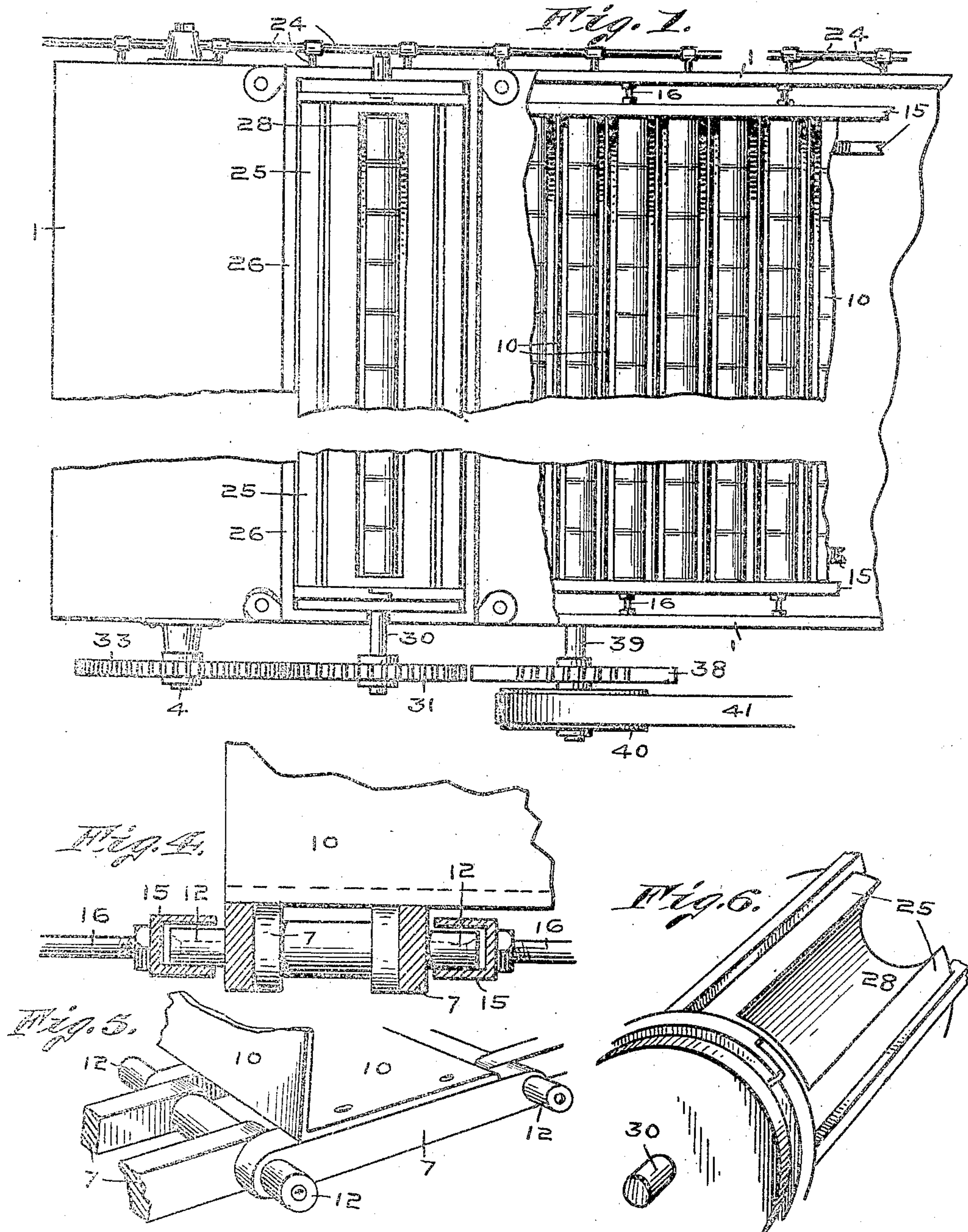
No. 865,645.

PATENTED SEPT. 10, 1907.

J. JENNINGS.
AGITATING COOKER AND PROCESSER.

APPLICATION FILED DEC. 26, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

L. B. Moerner.

J. C. Dyner.

INVENTOR

John Jennings

BY Minton & Moerner

ATT'YS.

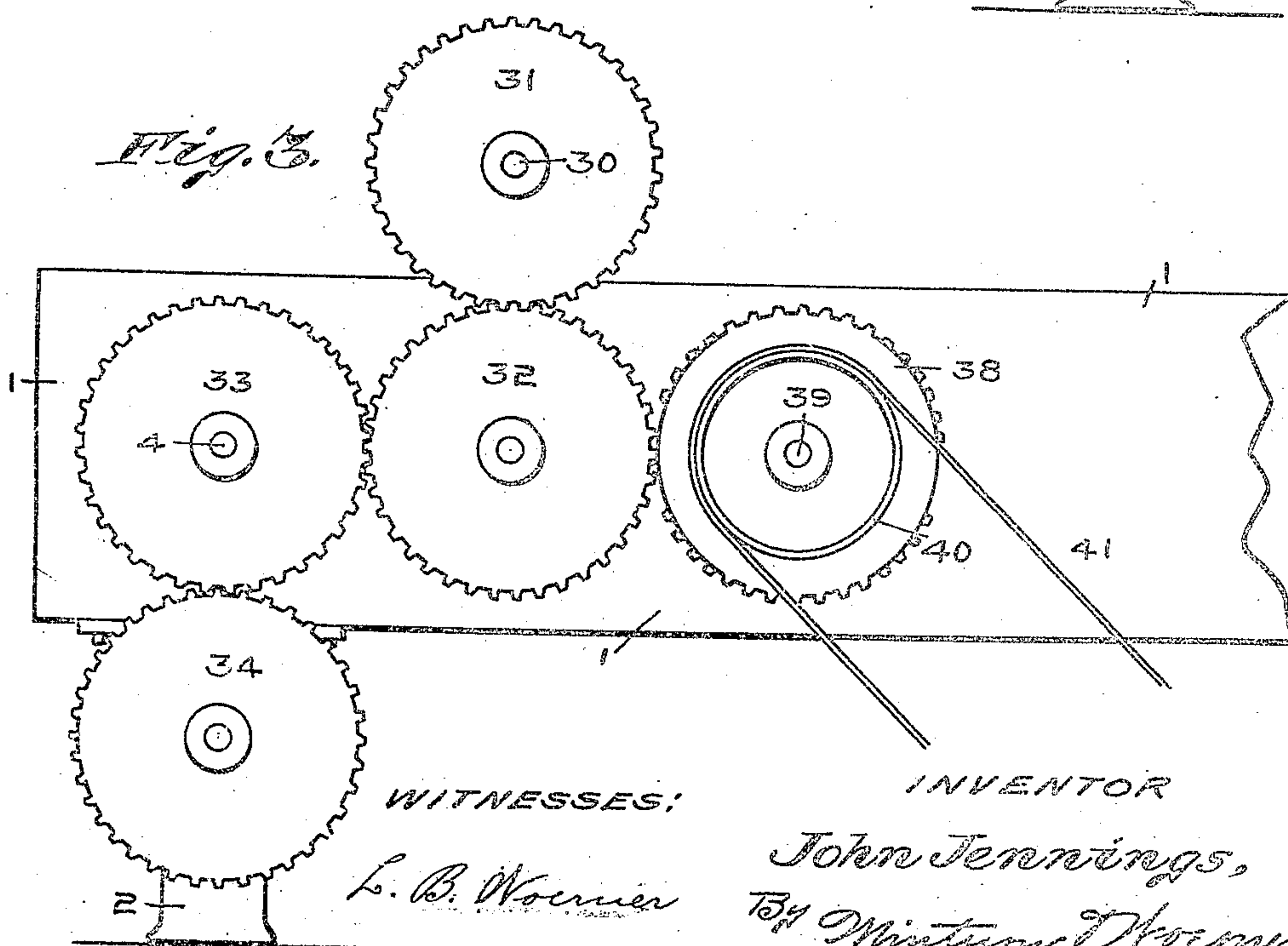
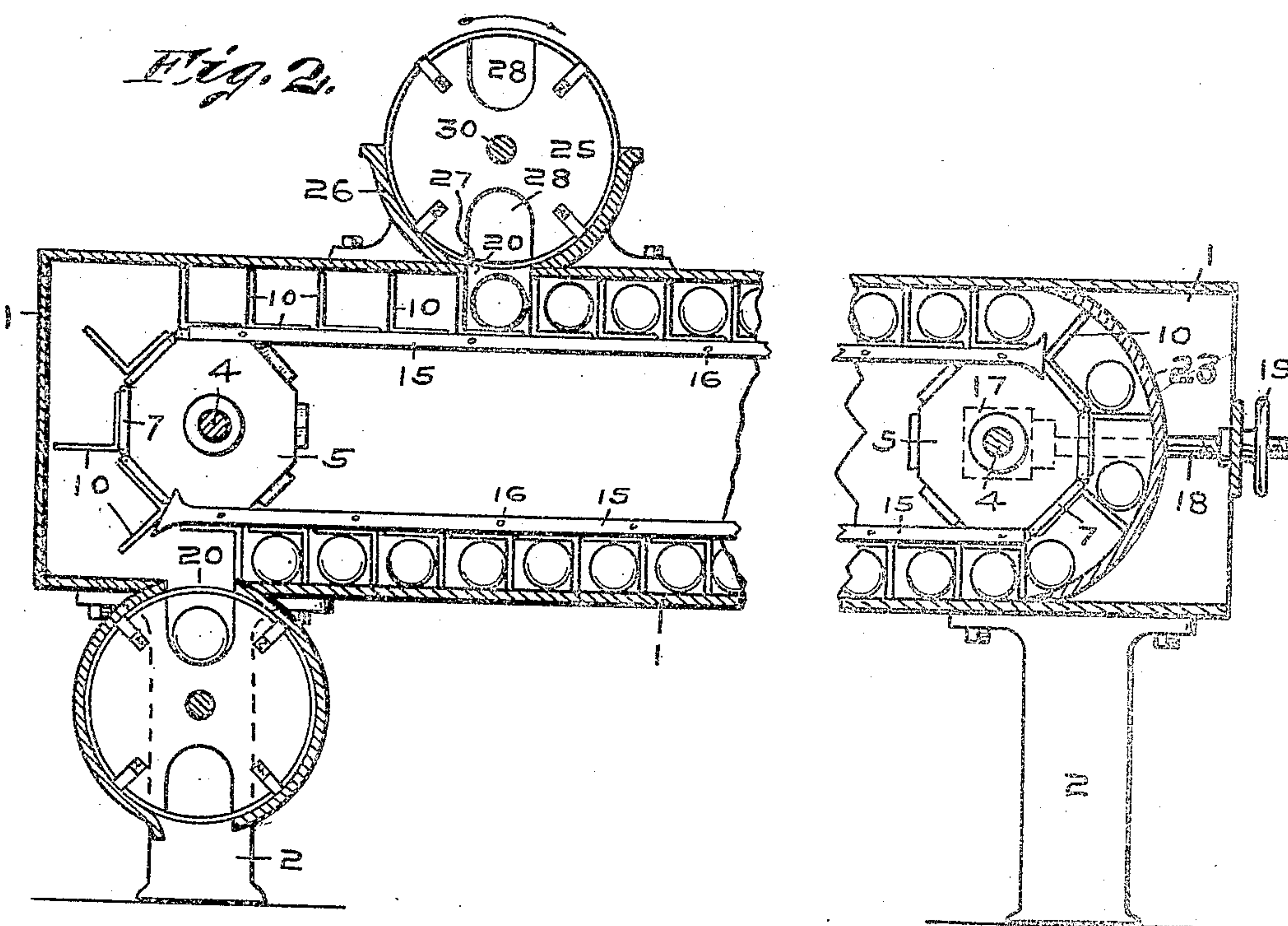
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2 SHEETS—SHEET 2.



WITNESSES:

L. B. Woerner

J. C. Dynes.

INVENTOR

John Jennings,
By Winton Woerner

ATT'YS.

UNITED STATES PATENT OFFICE.

JOHN JENNINGS, OF ROCHELLE, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO GEORGE E. STOCKING AND PETER HOHENADEL, JR., OF ROCHELLE, ILLINOIS.

AGITATING COOKER AND PROCESSER.

No. 865,645.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed December 26, 1906. Serial No. 349,415.

To all whom it may concern:

Be it known that I, JOHN JENNINGS, a citizen of the United States, residing at Rochelle, in the county of Ogle and State of Illinois, have invented certain new and useful Improvements in Agitating Cookers and Processers, of which the following is a specification.

This invention relates to an agitating cooker for sterilizing canned goods; and the object of the invention is to provide a machine embodying a sterilizing chamber that is capable of receiving and sterilizing a large number of cans, thereby giving the machine a large working capacity, this being of utmost importance, since considerable time is necessary, and is consumed, to properly heat the produce within the cans and bring it to the desired temperature to effect the sterilization necessary to destroy future bacterial development and chemical action that follows.

A further object is to provide a machine of this character having a conveying device for moving the canned goods from the introducing valve to the discharging valve, and having such dimension as to permit sufficient travel for the cans to insure perfect sterilization of the canned product before being discharged from the machine.

A further object is to provide a machine of the above character having a sterilizing chamber which is provided at intervals with communicating pipes which permit jets of steam to be injected therein; these jets being directed so as to play upon the cans while they pass through said chamber.

I accomplish the several objects of my invention by the mechanism illustrated in the accompanying drawings, in which

Figure 1 is a fragmentary detail view of the feed end of a cooker, showing a portion thereof in plan and a portion in section, in order to expose the cans and show the position they occupy while passing through the sterilizing chamber. Fig. 2 is a central vertical sectional view of the cooker in which the central portion thereof is broken away. Fig. 3 is a fragmentary detail view in side elevation of the feed end of the cooker, showing the chain of pinions through which the movable parts are driven. Fig. 4 is a fragmentary detail view, on an enlarged scale, showing the means for supporting the conveyer-chains. Fig. 5 is a fragmentary detail view in perspective showing the construction of the conveyer chains. Fig. 6 is a fragmentary detail perspective view of the device for both introducing and removing the cans from the machine.

In the drawings, 1 is a rectangularly shaped box or frame which forms the main body of the machine. This frame is preferably composed of sheet steel, and forms an inclosure or chamber in which the canned

product is sterilized. This frame is provided with suitable legs 2 for supporting same.

A shaft 4 is mounted in each end of the frame 1, and extends transversely through the sterilizing chamber. Each of these shafts carry a plurality of sprocket-wheels 5, which are keyed thereto and revolve therewith. A sprocket-chain 7 connects a sprocket-wheel 5 on each of the shafts 4, so that when one shaft is operated movement will be imparted to the other. The links forming the sprocket-chains 7 are of a length equaling the diameter of the cans, and the links comprising the oppositely positioned chains are divided in groups of pairs which are tied together by the right-angle plates 10. These plates are rigidly secured at the ends with the links, and the horizontal portions of the plates 10 form the bottoms of the channels on which the cans ride; these channels being defined by the vertical extensions of the plates 10. The vertically extending portions of the angle-plates 10 bear against the internal wall of the body which seals the outer or open portions of the channels formed by said angle-plates 10, so that the cans are prevented from crawling over one another, which would interfere with the operation of the machine. The plates 10 extend transversely and nearly the entire width of the sterilizing chamber, so that each channel is of some length and is capable of carrying a large number of cans to be simultaneously sterilized which, in a measure, illustrates the large working capacity of the machine.

To keep the upper portion of the conveyer-chains in alinement when heavily laden with canned goods, I support said conveyer at each link. These links are provided with the anti-friction rollers 12, which engage the channeled ways 15. See Fig. 4. These ways are supported by the stay-rods 16, and extend to and engage the frame 1.

To maintain a proper tension on the conveyer-chain 7 and take up such lost motion as may result from wear, I mount the shaft 4, in one end of the machine, in a movable journal-box 17, and by means of a screw-shaft 18, which engages said box and the frame 1, and a hand-wheel 19 on said shaft, the journal-box may be moved in a direction to tighten the chains. Both ends of the shaft 4 are similarly mounted so that both ends may correspondingly be moved to keep the shaft in proper alinement. To compensate for the adjustability of the shaft 4, the end-wall 23 of the sterilizing chamber is secured to and moves with the journal-boxes 17, so as to keep the relative positions of the sprocket-wheels 5 and the end-wall 23 the same.

The frame 1, forming the sterilizing chamber, is provided on its upper and lower surface with an inlet and an outlet aperture 20, through which the cans pass into and out of the machine. These apertures

are so located with relation to each other as to afford the cans the greatest amount of travel through the chamber, and thereby insure that the canned product will be thoroughly sterilized before it is discharged from the machine. The canned product is preferably sterilized by subjecting the cans to jets of live steam which play upon the cans while they are passing through the chamber. The steam is fed into the chamber through numerous pipes 24, which are located at convenient points along the side-wall of the sterilizing chamber.

In order to sterilize a large number of cans with regularity and despatch, and to reduce as much as possible the necessity for manual labor, I provide a device at the inlet and outlet apertures of the sterilizing chamber which will introduce and remove cans into and out of the machine. This device consists of a cylindrically shaped drum 25, which is suitably supported in a segmentally formed trough 26. This trough is secured to the frame 1 in any desired manner, and is provided with an aperture 27 in its bottom which corresponds to and registers with the inlet and outlet apertures in the sterilizing chamber.

The drum is provided with longitudinally extending can-holding channels 28 into which the cans are placed, and as the drum is operated the cans are either carried to and fed through the inlet aperture of the chamber or receive the cans from the outlet aperture and carry them away.

The drum 25 is provided with a shaft 30 which carries a pinion 31 and through which it is operated. This pinion meshes with a chain of pinions, one of which constitutes an idler pinion 32 which meshes with a pinion 33, secured to the end of the shaft 4 which drives the conveyer-chains 7. The idler pinion 32 also meshes with the pinion 33 which is secured to the shaft that drives the discharge device, which removes the cans from the sterilizing chamber. This chain of pinions, namely, 31, 32, 33 and 34, together with the mechanism they drive which include the feed and discharge devices, and the conveyer-chains, are given an intermittent movement received through the mutilated pinion 38, which is mounted on the shaft 39. This shaft also carries the pulley 40, and by means of the belt 41 which leads to a suitable power source, the mutilated pinion 38 is given a slow continuous movement, and through its periodical engagement with the idler pinion 32, the movable parts are given an intermittent movement, as above pointed out. Each movement so imparted to the feed and discharge devices is sufficient to give each device enough rotary movement to bring one of the longitudinally extending can-receiving channels 28 therein into registration with the inlet and outlet apertures so that a series of cans will simultaneously be introduced into and removed out of the sterilizing chamber. The movement between the feed and discharge devices and the conveyer is so timed that while the devices are introducing and removing the cans the conveyer will have moved forward a sufficient distance to bring a channel on the conveyer, formed by the vertical extensions of the right-angle plates 10, beneath and above the inlet and outlet apertures 20

in the chamber. The cylindrical drums 25 and the troughs 26 not only introduce and remove the cans from the machine, but they also form valves for closing the inlet and outlet apertures 20 so that the steam, which is employed for sterilizing the canned product and is under pressure within the chamber, cannot escape.

Attention is called to the fact that by substituting a full toothed gear in the place of the mutilated pinion 38, the feed and discharge devices and the conveyer could be given a continuous movement instead of an intermittent movement, as has been pointed out in another part of the specification, but I prefer an intermittent movement especially for the conveyer, for the reason that with an interruption in the movement of the conveyer and then with each pulsation of movement which urges the conveyer forward the contents of the cans will be agitated, or, in other words, shifted about, so that the entire bulk in each can is thoroughly and evenly heated and thus sterilized, which is the end sought.

This machine is also capable of being used as a hot water cooker for cooking tomatoes which are generally cooked under a hot water method. When the machine is so employed the top is removed from the sterilizing chamber, which now becomes nothing more or less than an open tank. The tank is then filled with water until the cans are submerged. The water is kept at a boiling point while the canned product is drawn through it by means of the conveyer in the manner heretofore described.

Having thus fully described my said invention, what I desire to secure by Letters Patent of the United States, is—

1. An agitating cooker for canned goods comprising a hollow steam tight body having one of its ends movably mounted and curved outward, and provided with inlet and outlet openings, a shaft carrying sprocket wheels extending transversely through said body near each end, means for movably mounting the shaft adjacent to the curved end of the body, and means for simultaneously moving the movably mounted shaft and the curved end of the body, to maintain a uniform distance between said shaft and end.

2. An agitating cooker for canned goods comprising a hollow steam tight body having one of its ends movably mounted and curved outward, and provided with inlet and outlet openings, a shaft carrying sprocket wheels extending transversely through said body near each end, conveyer chains movably mounted within said body and adapted to engage the sprocket wheels, plates for securing the conveyer chains together, and means for simultaneously moving the movably mounted shaft and the curved body end, to maintain a uniform distance between said shaft and end.

3. An agitating cooker for canned goods comprising a hollow steam body having one of its ends movably mounted and curved outward, and provided with inlet and outlet openings, a shaft carrying sprocket wheels extending transversely through said body near each end, conveyer chains movably mounted within said body and adapted to engage the sprocket wheels, right-angle bent channel forming plates secured to the conveyer chains and so arranged that the vertically extending portions of said plates will bear against the inner walls of the body, and means for simultaneously moving the movably mounted shaft and curved body end, to maintain a uniform distance between said shaft and end.

4. An agitating cooker for canned goods comprising a

hollow steam tight body having one of its ends movably
mounted and curved outward, and provided with inlet
and outlet openings, a rotary feed and discharge device
provided with pockets mounted above the inlet and below
5 the outlet openings respectively of said body, a shaft
carrying sprocket wheels extending transversely through
said body near each end, conveyer chains movably mounted
within said body and adapted to engage the sprocket
wheels, plates for securing the sprocket and chains to-
10 gether, and means for simultaneously moving the movably

mounted shaft and the curved body end, to maintain a
uniform distance between said shaft and end.

In witness whereof, I, have hereunto set my hand and
seal at Indianapolis, Indiana, this, 17th day of December,
A. D. one thousand nine hundred and six.

JOHN JENNINGS. [L. S.]

Witnesses:

F. W. WOERNER,
L. B. WOERNER.