

No. 798,244.

PATENTED AUG. 29, 1905.

J. T. WILMORE.
CANNING APPARATUS.
APPLICATION FILED DEC. 7, 1903.

2 SHEETS—SHEET 1.

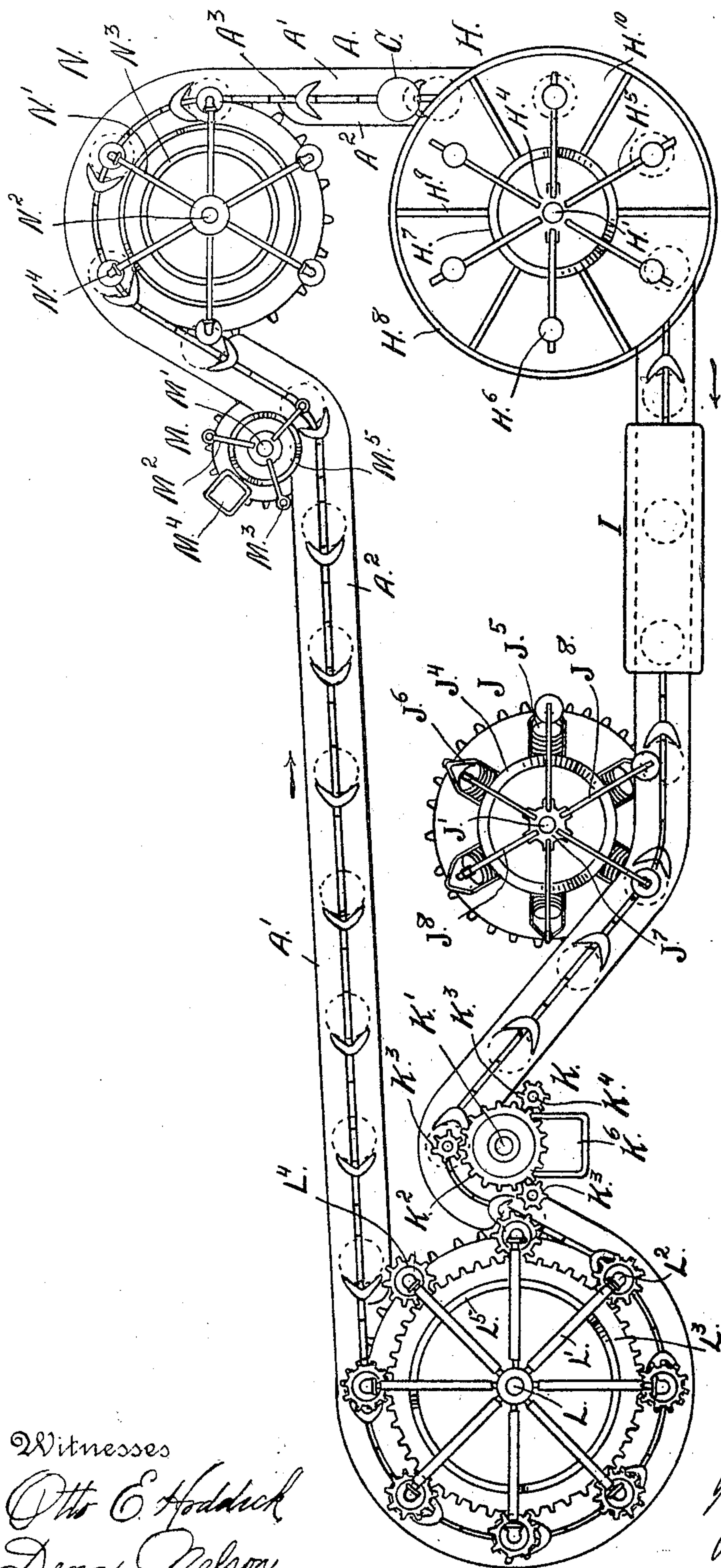


Fig. 1.

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Otto E. Haddock
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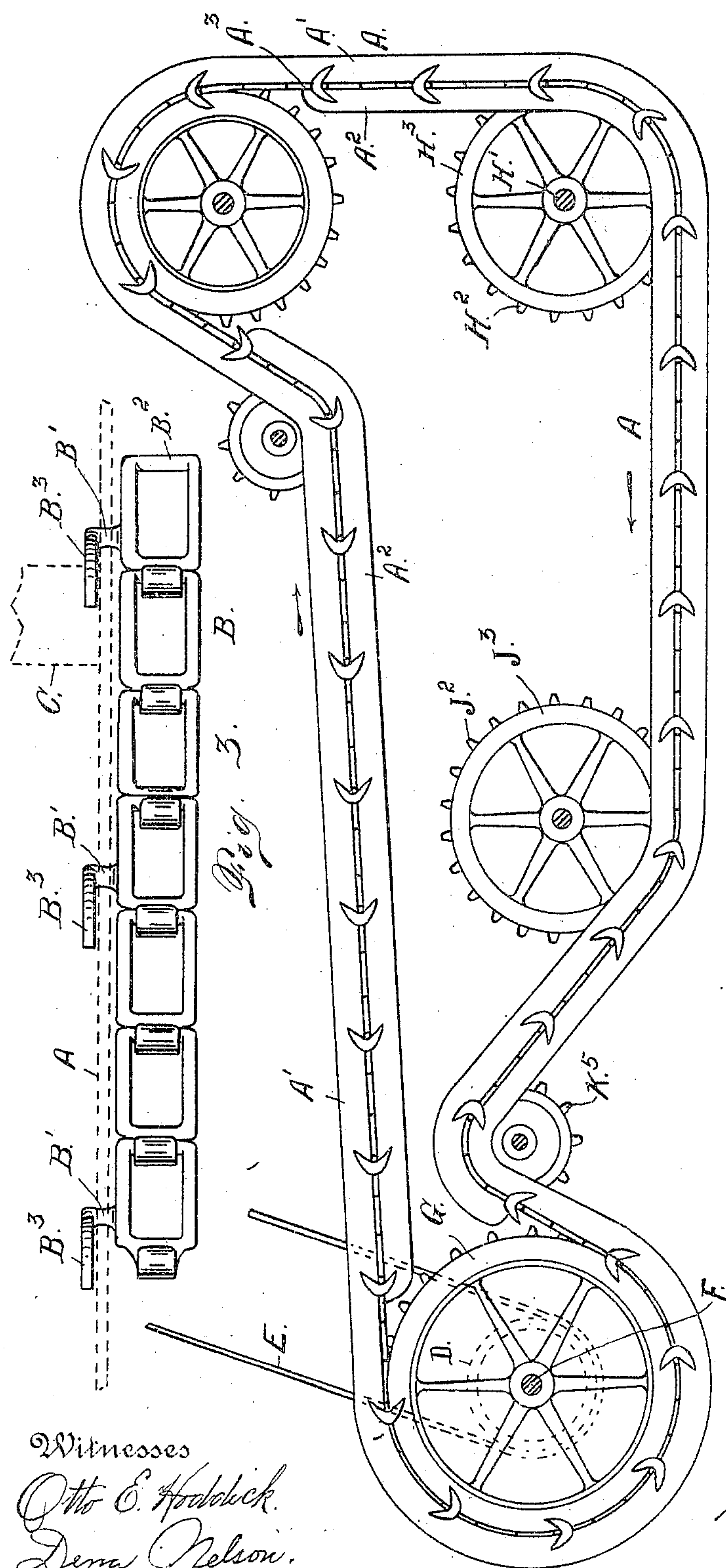
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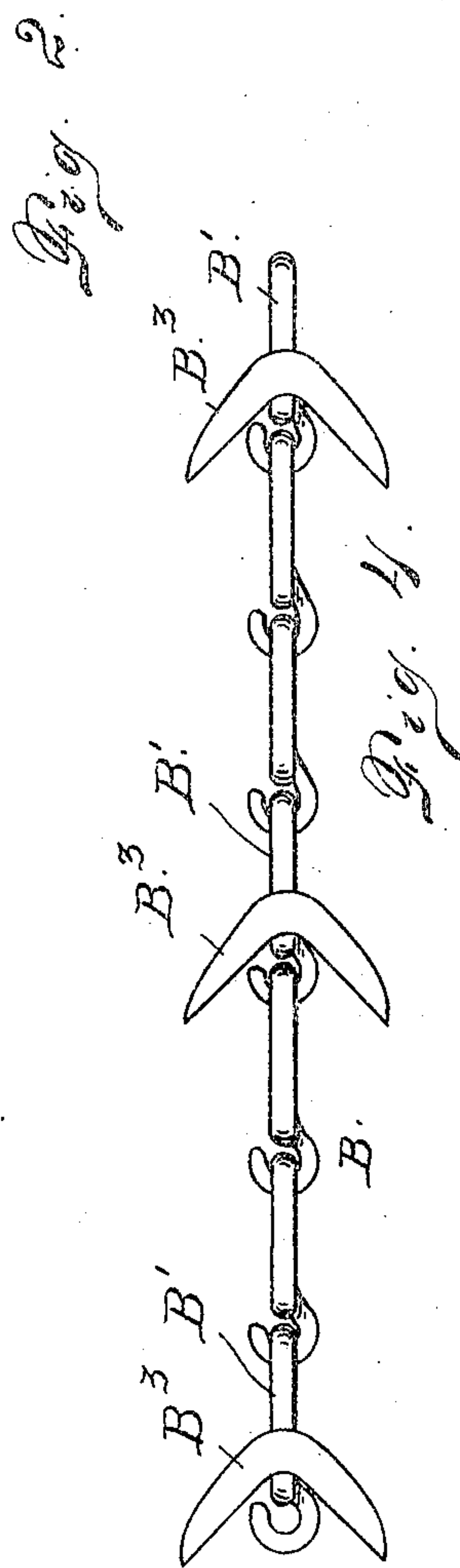
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UNITED STATES PATENT OFFICE.

JOHN T. WILMORE, OF DENVER, COLORADO.

CANNING APPARATUS.

No. 798,244.

Specification of Letters Patent.

Patented Aug. 29, 1905.

Application filed December 7, 1903. Serial No. 184,212.

To all whom it may concern:

Be it known that I, JOHN T. WILMORE, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Canning Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in apparatus employed in the canning of goods of various kinds.

In the canning operation it is necessary that the cans should first be filled with the goods; that the tops of these cans should next be brushed off to remove the superfluous portion of the goods remaining around the central opening; third, that the cap shall be placed upon each can to cover the opening therein; fourth, that acid be applied to the rim or outer edge of the cap preparatory to soldering; fifth, that the cap be soldered around its circumference, whereby it is secured in place upon the can; sixth, that acid be applied to a small orifice formed in the center of the cap and left open until after the cap is secured in place, and, finally, that this orifice be closed by a solder applied thereto.

My object is to provide an apparatus whereby all of these steps or functions may be successively and in their proper sequence carried out through the instrumentality of an endless conveyer which carries the cans to the various apparatuses or canning units, the said conveyer coöperating with a suitable track.

Most of the units employed in the carrying out of the aforesaid canning operation consist of rotary devices which are acted on and operated by the conveyer, whereby the various elements employed in the performance of the several functions travel in a circular path and act on the cans as they are carried along on the track by the conveyer. The only exception to this rule is in the case of the brush employed immediately after the cans leave the filling apparatus. This is a simple brush mounted in the path of the tops of the cans and acts to clean their tops pre-

paratory to applying the caps and securing them in place, as heretofore explained.

Having briefly outlined my improved construction, as well as the function it is intended to perform, I will proceed to describe the same in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a top or plan view of the apparatus. Fig. 2 is a horizontal section of the same, taken just above the endless traveling conveyer. Fig. 3 is a side elevation of the conveyer, shown on a larger scale, the track and the can thereon being indicated by dotted lines. Fig. 4 is a top or plan view of the conveyer.

The same reference characters indicate the same parts in all the views.

Let A designate a track composed of two members A' and A². These two members are separated by a central slot A³, through which projects the lug or projection B' of the endless traveling conveyer B. This conveyer is composed of links B², suitably connected. At suitable intervals on this conveyer the links are provided with lugs or projections B', which pass through the slot between the two track members. To the upper extremities of the lugs B' are secured devices B³, suitably shaped to engage cans C. These devices are somewhat curved or V-shaped to hold the cans securely in place on the track as they are actuated by the conveyer. The conveyer is actuated from a pulley D, engaged by a belt E, leading to any suitable source of power. The pulley D is made fast to a shaft F. Upon this shaft is also made fast a sprocket-wheel G, which engages the links of the conveyer and propels the same. In the drawings the conveyer is represented as traveling in the direction indicated by the arrows in Figs. 1 and 2. It will be assumed for the purposes of this specification that the cans are delivered to the conveyer at a point in suitable proximity to the filling device, which in its entirety is designated by the reference character H. This apparatus is provided with a central shaft H', upon which is made fast a sprocket-wheel H², which is actuated on by the conveyer to rotate the shaft. Upon this wheel is also mounted or formed a shoulder H³, which as the cans leave the member A² of the track supports them on one side during the can-filling operation or while the cans are passing the filling device.

Also pivotally connected with a hub H^4 of the shaft H' is a number of arms H^5 , the outer extremities of which are provided with flanges H^6 . The arms H^5 rest upon a circular cam H^7 , whose upper or arm-engaging edge is shaped to cause the flanges to move up and down as may be necessary when carrying out the filling operation. The shaft H' occupies the center of a receptacle H^8 , divided by radial partitions H^9 into a number of distinct compartments H^{10} , each having an opening in the bottom thereof. The cans C as they are carried along on the track by the conveyer are brought successively beneath the openings in the compartments of the said receptacle, the latter containing a suitable quantity of the goods to be canned and mounted to rotate with the shaft. When a can is brought beneath the opening of any compartment, a plunger H^6 moves downwardly and forces a suitable quantity of goods from the receptacle to fill the can, after which the arm containing the plunger rises upwardly by virtue of the action of the cam H^7 , which is stationary with reference to the rotating parts. After any can leaves the filling apparatus it passes to the brush I , which removes any goods that may have been left on the top of the can, after which the can passes to the capping apparatus J , which is provided with a central shaft J' , upon which is mounted a sprocket-wheel J^2 , provided with a shoulder J^3 , which takes the place of the inner track member while the cans are passing the capping apparatus. Surrounding the shaft J' is a stationary cam J^4 , and surrounding this cam are arranged receptacles J^5 , adapted to contain can-caps J^6 . Pivotally connected with a hub J^7 , mounted on the shaft, are radial arms J^8 , the outer extremities of which are provided with magnets adapted to pick up can-caps from their respective receptacles and drop them upon the cans as the latter move along on the track propelled by the conveyer. The arms J^8 rest upon a stationary cam J^9 , whereby they are lowered to dip into the cap-receptacles and subsequently raised to bring them into proper position to drop the caps upon the cans.

After the cap-placing operation is completed the cans travel on to the acid device K . This acid device is composed of a shaft K' , upon which is mounted a gear K^2 , which meshes with a number of smaller gears K^3 , each of which is fast on a spindle K^4 , carrying an acid-applying device. The gear K^2 is stationary, while the small gears K^3 rotate in a circular path or orbit therearound to harmonize with the movement of the sprocket K^5 , (see Fig. 2,) which is actuated by the conveyer. The spindles K^4 are actuated from the sprocket-wheel in their orbital travel and by the gear K^2 in their movement upon their axes. Any suitable acid-applying devices may be connected with the spindles for the

purpose of applying the necessary acid to the can-caps as the cans are carried along upon the track. Located adjacent the acid-applying device is a receptacle K^6 , into which the acid-applying devices dip as they travel around in their circular path.

After the acid has been applied to the caps of the cans, as just explained, they are passed to the soldering apparatus, which is provided with a shaft L , radial arms L' , having soldering devices L^2 at their outer extremities. These soldering devices are carried in a circular path around the shaft through the instrumentality of the sprocket-wheel G , actuated from the shaft F , as aforesaid. Suitably mounted also in connection with this apparatus is a stationary gear L^3 , which meshes with a small gear L^4 , connected with each soldering device, whereby the soldering devices are rotated on their individual axes simultaneously with their orbital travel. The soldering devices are raised and lowered in the performance of their function through the instrumentality of a circular cam L^5 . After the cans leave the soldering apparatus the caps are fastened in place and it only remains to close the small opening in the center of each can-cap by the use of solder. These cans are then carried to another acid-applying device (designated by the letter M) and provided with a shaft M' , radial arms M^2 , and acid-applying devices M^3 . A receptacle M^4 is suitably located, into which the acid-applying devices dip as they travel around in a circular path. The raising and lowering of these devices is accomplished through the instrumentality of a cam M^5 , upon which the radial arms rest. As each can passes an acid device places a small quantity of acid at the orifice, after which the cans pass to the soldering device N , which is provided with radial arms N' , rotating around a shaft N^2 and raised and lowered through instrumentality of a cam N^3 . At the outer extremity of each arm is a soldering device N^4 , adapted to solder and close the orifice in the cap, as heretofore explained.

Attention is called to the fact that as nothing is claimed in this application on the specific construction of the various units or devices for carrying out the various steps or performing the various functions in the canning operation the construction of these separate units or devices is not shown in the drawings or set forth in the specification in extreme detail, as this is not thought necessary in this application, wherein the various units are only generically claimed in combination.

Having thus described my invention, what I claim is—

1. In canning apparatus, the combination of an endless traveling, horizontally-arranged conveyer, composed of vertically-disposed links, the conveyer being provided at suitable intervals with upwardly-projecting

parts connected with the links, and a horizontally-disposed part connected with the upper extremities of the upwardly-projecting parts; a track composed of two separated
5 members, between which the said upwardly-projecting parts of the conveyer pass and upon which the cans rest as they are carried along by the conveyer, and a number of rotary canning units, each having an inner
10 track portion which takes the place of one of the members of the track, while the cans are traveling past the said devices, one of the track members being interrupted at each of the said rotary devices.

15 2. In canning apparatus, the combination of an endless horizontally-arranged conveyer composed of links, projections connected with the links at suitable intervals, and can-
20 embracing parts connected with the projections; a track composed of two separated

members cooperating with the conveyer in the canning operation, the links of the conveyer being located below the track, the can-
embracing parts above the track and the pro-
jections occupying the slot between the two 25
track members; and rotary canning units located along the track at suitable intervals and to which the cans are carried on the track by the conveyer, the inner member of
the track being interrupted at each unit, and 30
the said unit being provided with a part taking the place of the inner member of the track.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. WILMORE.

Witnesses:

DENA NELSON,
A. J. O'BRIEN.