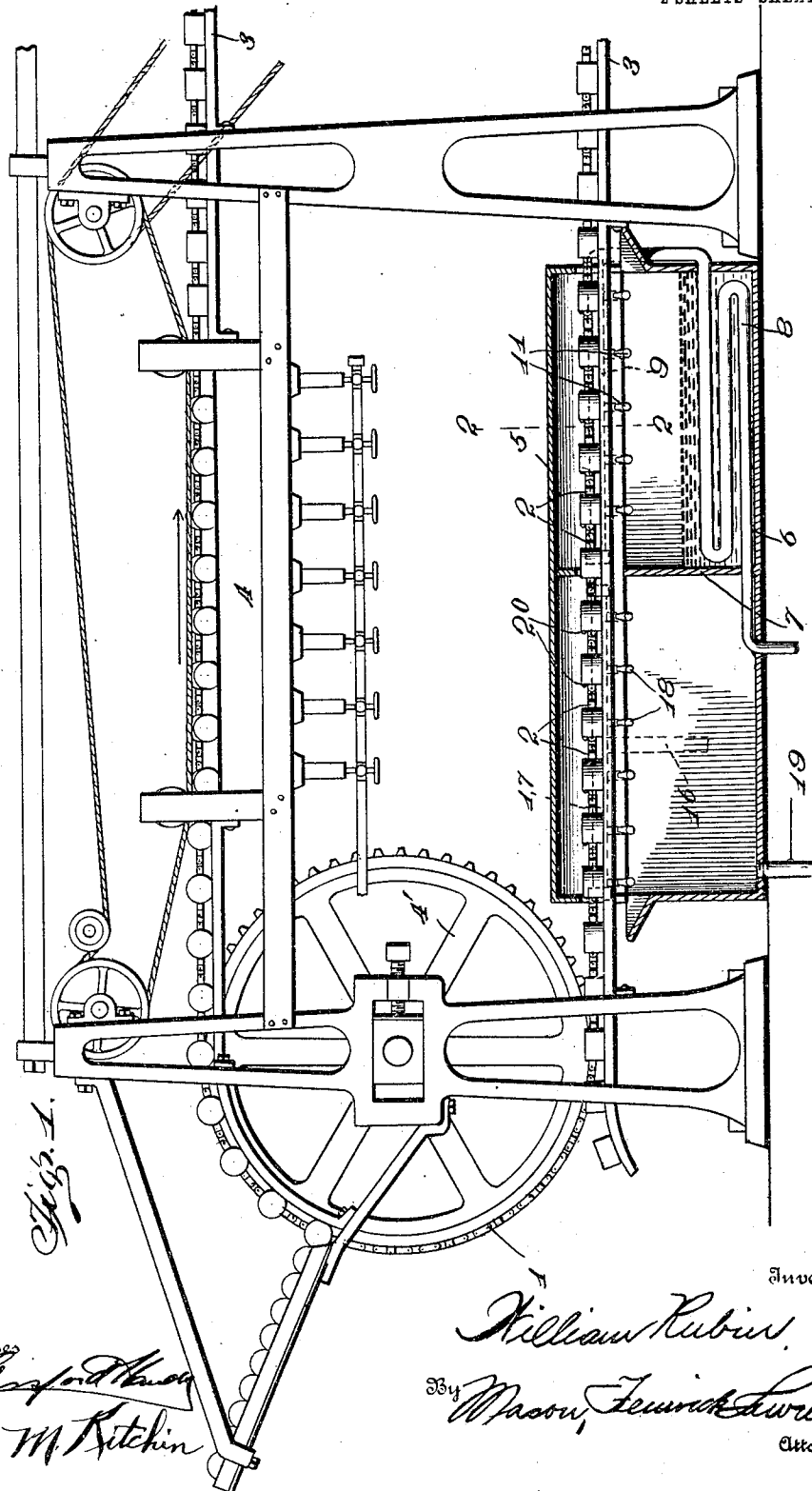


No. 784,504.

PATENTED MAR. 7, 1905.

W. RUBIN.
CAN CLEANING MACHINE.
APPLICATION FILED NOV. 14, 1903.

2 SHEETS—SHEET 1.



Witnesses

L. Sanford Knapp

Edgar M. Kitchen

Inventor

William Rubin

Mason, Fennick & Loomis

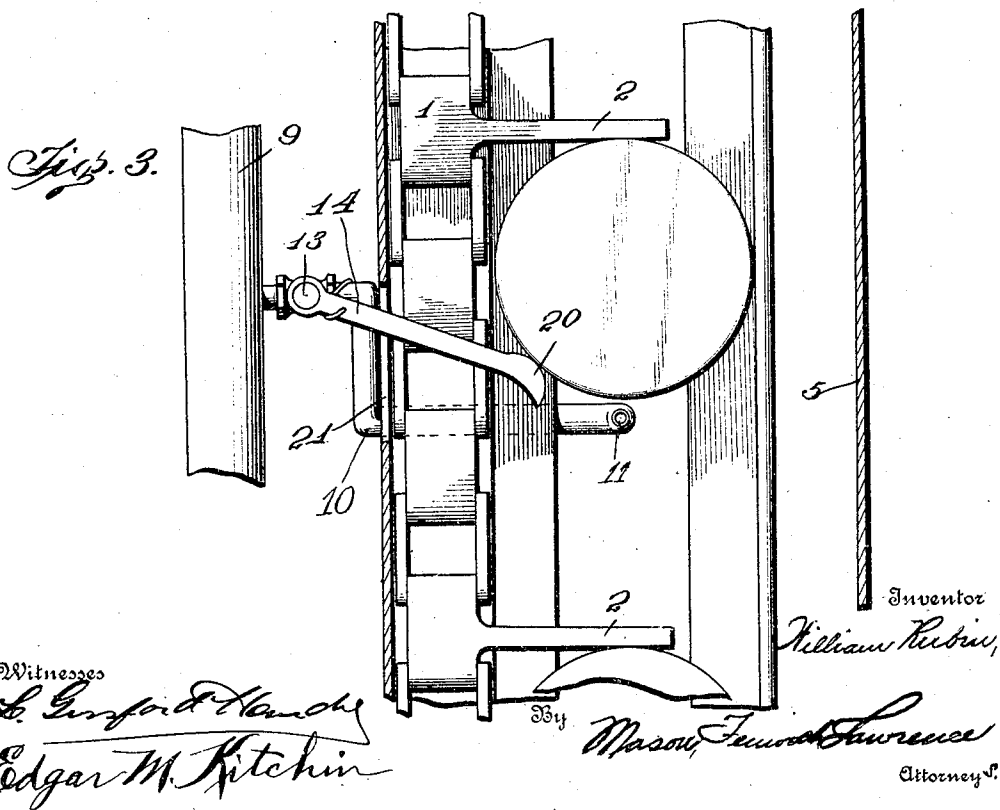
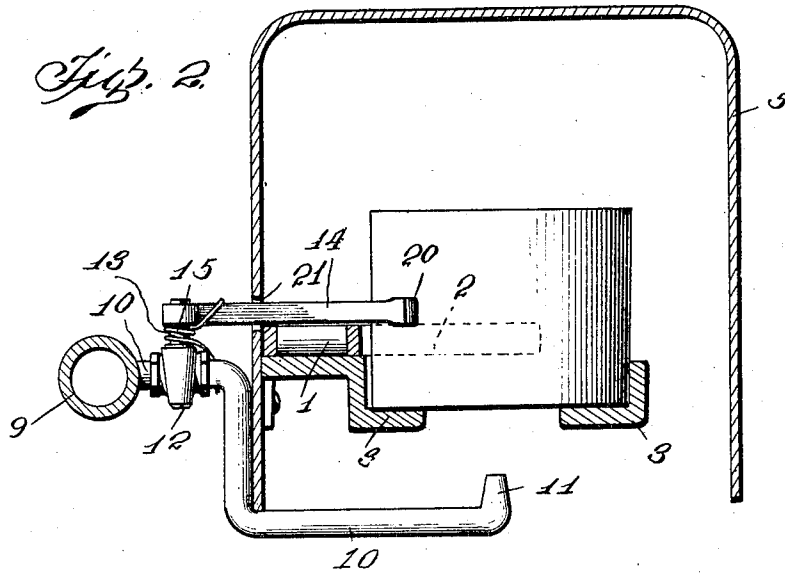
Attorney S.

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2 SHEETS—SHEET 2.



Witnesses

L. Sanford Handy
Edgar M. Kitchin

By

William Rubin,
Mason, Fennell & Lawrence
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM RUBIN, OF SOUTH OMAHA, NEBRASKA.

CAN-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 784,504, dated March 7, 1905.

Original application filed January 30, 1902, Serial No. 91,930. Divided and this application filed November 14, 1903. Serial No. 181,209.

To all whom it may concern:

Be it known that I, WILLIAM RUBIN, a citizen of the United States, residing at South Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Can-Cleansing Mechanism; and I do hereby 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.

This invention relates to improvements in can-making machinery, and particularly to a cleaning device adapted especially for use in connection with can-floating machines.

The object in view is the provision of means for cleansing a formed can immediately after completion and prior to storage.

With this and further objects in view the invention consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a longitudinal vertical central section taken through a can-washing mechanism embodying the features of the present invention and illustrated as applied to a can-floating machine, parts of said machine being broken away. Fig. 2 represents an enlarged detail transverse vertical central section taken on the plane of line 2 2 of Fig. 1. Fig. 3 represents a fragmentary top plan view of the same.

As seen in Fig. 1, the present improved structure is especially adapted for use in connection with a can-floating machine provided with an endless carrier-chain 1, having laterally-projecting can-engaging bars or fingers 2, adapted to move the cans operated upon longitudinally of tracks 3 3 through any suitable solder-bath 4 and past any desired mechanism for securing the heads onto the can-bodies. The particular form of can especially designed to be operated upon is that provided with one head formed with a cap-receiving aperture.

The can floating or soldering machine illustrated is similar to that disclosed in my application for United States Letters Patent, filed

on the 30th day of January, 1902, and designated by Serial No. 91,930, of which this application is a division made in accordance with the requirements of the United States Patent Office. The claims in the present application are directed to the can-cleansing feature of the machine illustrated in said prior application.

The carrier-chain 1 is supported and driven by sprockets 4'. At any point along the length of said chain and inclosing the same is arranged a cover or housing 5, beneath which is positioned a receptacle 6, preferably divided by a suitable partition-wall 7. That part of the receptacle 6 in front of the partition 7 is designed to contain water whose temperature is maintained at a comparatively high degree by means of a steam-supply pipe 8, coiled within the front portion of the said receptacle and extending beyond the same and communicating with a tube 9, arranged parallel with the track 3 outside of the same. A series of pipes 10 lead from the tube 9 and extend within the casing 5 beneath the tracks 3. Each pipe 10 at its inner end is provided with a discharge-nozzle 11, arranged centrally between the tracks 3 and in position for directing a jet of steam or other cleansing fluid into a can passing along said tracks. Interposed in the length of each pipe 10 is a valve 12, provided with a stem 13, engaged by an operating-lever 14, said lever being pressed by a suitable spring 15 for normally retaining the valve 12 in a closed position. Each lever 14 projects through a slot 21, formed in the casing 5, and extends into the path of movement of the cans carried by the fingers 2 of chain 1. The inner end of each lever 14 is provided with a suitable curved face 20, adapted to be engaged by the wall of a moving can for being swung to one side for opening the valve 12.

A supply-pipe 16 leads from any suitable source of supply of compressed air or other cleansing and drying medium, and said pipe communicates with a tube 17, arranged outside the casing 5, similarly to the arrangement of tube 9. A series of pipes 18, precisely similar in construction and arrangement to pipes 10, extend from the tube 17 beneath the tracks 3, and each of said pipes is provided with a dis-

charge-nozzle directed between said tracks in a manner exactly like that described with reference to discharge-nozzle 11.

In operation the cans are supplied to the carrier-chain 1 in any suitable manner and are directed past devices for soldering the heads onto the bodies, after which said cans are moved into the casing 5 over receptacle 6, passing first over the section of said receptacle containing the water, the steam from which, striking the cans, tends to cleanse the same. Each can, as it moves into the casing 5 comes in contact with the curved surface 20 of the first lever 14, swinging the same to one side and opening the valve 12 just as the can moves over the nozzle 11, whereupon a jet of steam is directed into the can under considerable head. As the can moves on it strikes the successive valve-operating levers and receives successive charges of steam until passing the partition 7, whereupon it is brought into contact with the first operating-lever of the valve of controlling the first pipe 18, actuation which lever by the movement of the can effects the opening of the valve and permits the discharge of a jet of compressed, preferably heated, air into the cans, which further cleanses and dries the same. The can moves on throughout the length of the casing 5 and strikes the successive operating-levers, receiving, as a result, the successive charges of drying and cleansing medium. In the base of the receptacle 6, preferably at the rear end thereof, I have arranged a suitable drain 19, adapted to carry off the water blown from the cans after passing the partition 7. After a can being operated upon has passed the last jet 18 it is moved out beyond the casing 5 and discharged from the machine. By placing water in one of the compartments of the casing 5 and around the pipe-coil 8 the water will be converted into wet steam, which serves to fill said compartment and to cleanse the outer surfaces of the cans therein during the operation of injecting steam from nozzles 11 into the cans. It will be seen that all of the jets of the cleaning and drying apparatus are arranged within the compartments of casing 5, and therefore the fluids discharged from them are rendered more effective than where the action takes place in an open space. It will be seen that the two compartments in the casing are steam and hot-air chambers, respectively. The cans while in the steam-chambers are thoroughly cleaned inside and outside and while in the air-chamber are thoroughly dried on all surfaces, for the reason that the air discharged through the nozzles 18 is retained to a certain extent around the cans by the walls of the compartment.

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

1. In a can-cleansing mechanism, the combination with a track and a carrier for direct-

ing a can along the track; of a casing surrounding a portion of the carrier, a nozzle in the casing for discharging upwardly from and beneath said track, means for supplying a cleansing fluid through said nozzle and into the casing, and means actuated by the cans moved by said carrier for controlling said supply.

2. In a can-cleansing mechanism, the combination with a track, means for moving a can along the same; of a nozzle arranged beneath said track and directing centrally toward the same, a pipe for supplying a cleansing fluid to said nozzle, a valve interposed in said pipe, a lever connected with said valve and extending into the path of movement of a can upon the track, and a casing inclosing a portion of the track and the nozzle and adapted to receive the can and the material discharged from the nozzle.

3. In a can-cleansing mechanism, the combination with a casing; of a track extending through the casing and partly inclosed thereby, means for moving the can along the track and through the casing, a cleansing-fluid-supply pipe, a nozzle carried thereby and within the casing, said nozzle being directed across the path of movement of said can, and means adapted to be actuated by the can for controlling the supply through said pipe and into the can and casing.

4. In a can-cleansing mechanism, the combination with a casing having closed cleaning and drying compartments therein, the cleaning-compartment forming a liquid-receptacle; of a can-carrier extending through the compartments, nozzles within the cleaning-compartment adapted to direct fluid into the cans and above the carrier, a supply-pipe connected to said nozzles and adapted to extend through the liquid in the cleaning-compartment, nozzles within the drying-compartment adapted to direct a drying agent into the cans and the drying-compartment, and means actuated by the cans for opening the nozzles for successively opening and closing the nozzles.

5. In a can-cleansing mechanism, the combination with a closed casing having a cleaning and drying compartment therein, said cleaning-compartment forming a liquid-receptacle; of means within the cleaning-compartment for converting the liquid into vapor, nozzles arranged in said compartment and connected to said means, nozzles within the drying-compartment, means for supplying a drying agent thereto, a can-carrier extending through the casing and above the nozzles, and means adapted to be actuated by cans on the carrier for successively opening and closing the nozzles.

6. In a can-cleansing mechanism, the combination with a casing having a cleaning and a drying compartment, and means for producing steam within the cleaning-compartment; of nozzles within said compartments,

means for supplying steam to the nozzles in the cleaning-compartment, means for supplying a drying agent to the nozzles in the other compartment, a can-carrier extending through the compartments and above the nozzles, and means adapted to be actuated by cans on the carrier for successively opening the valves.

7. In a can-cleansing mechanism, the combination with a track and a carrier for conveying cans upon the track; of means for auto-

matically subjecting all the surfaces of the cans to the action of steam and a drying agent successively.

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

WILLIAM RUBIN.

Witnesses:

H. M. CHRISTIL,

L. KRATKY.