

J. B. PECHT.
 BARREL CLEANING MACHINE.
 APPLICATION FILED MAY 3, 1910.

Patented Sept. 19, 1911.

4 SHEETS—SHEET 1.

1,003,786.

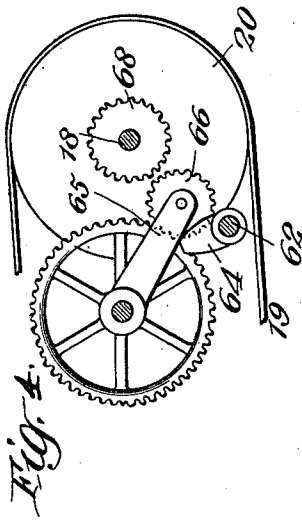
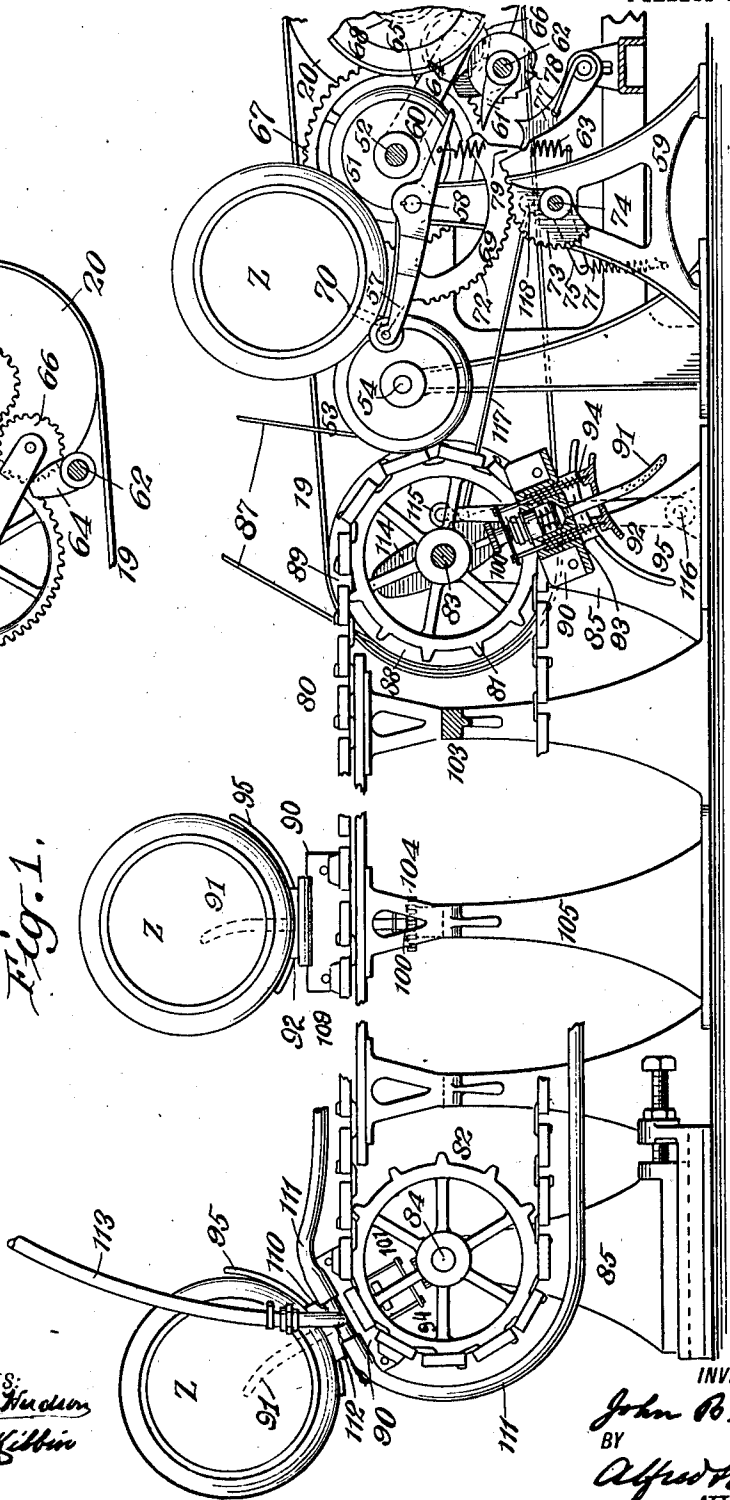


Fig. 1.



WITNESSES:
James A. Hudson
J. B. Giblin

INVENTOR
John B. Pecht
 BY
Alfred H. Lock
 ATTORNEY

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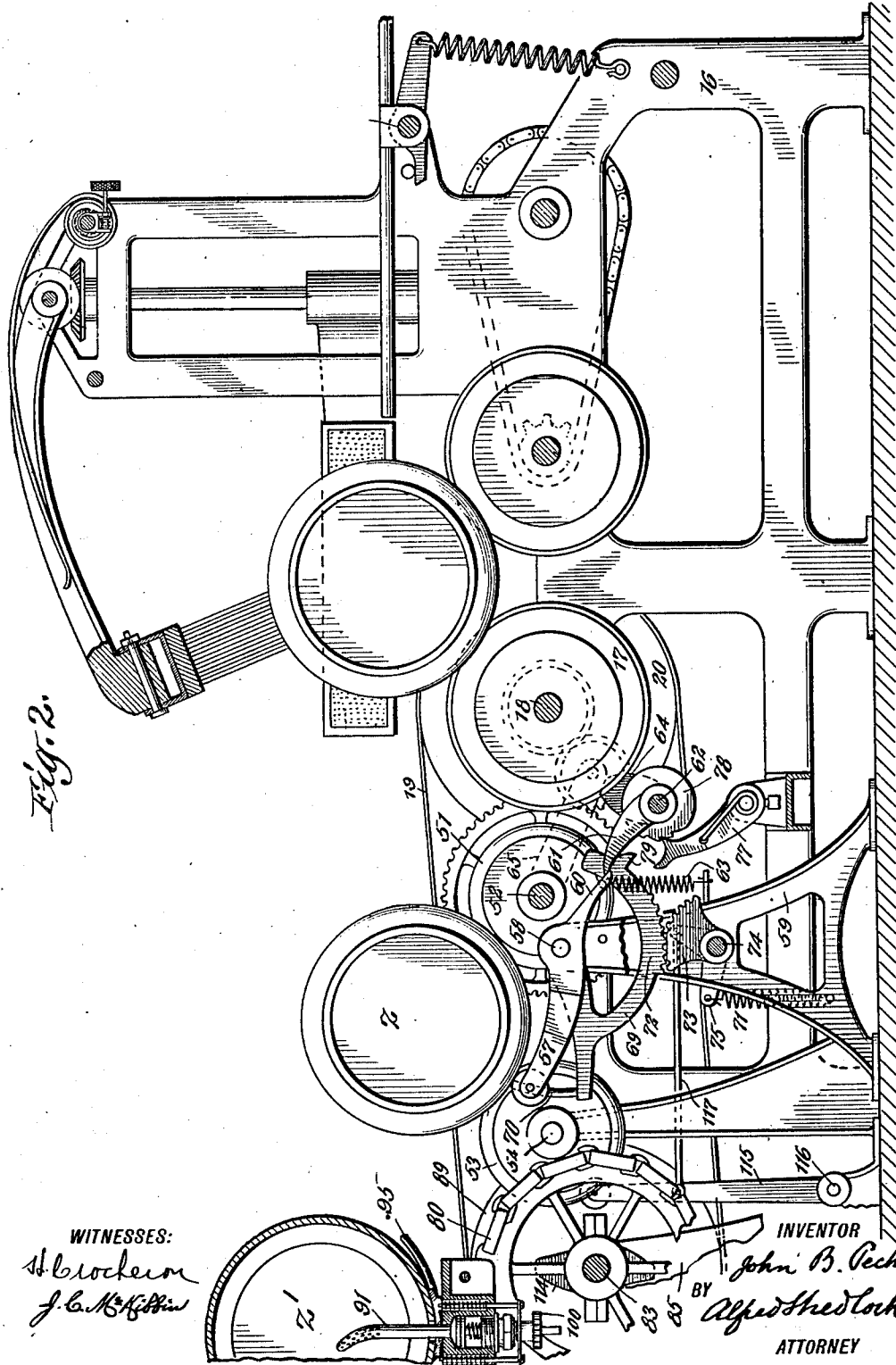


Fig. 2.

WITNESSES:
 St. Croix
 J. C. McKinnon

INVENTOR
 John B. Pecht
 BY
 Alfred H. Hedlock,
 ATTORNEY

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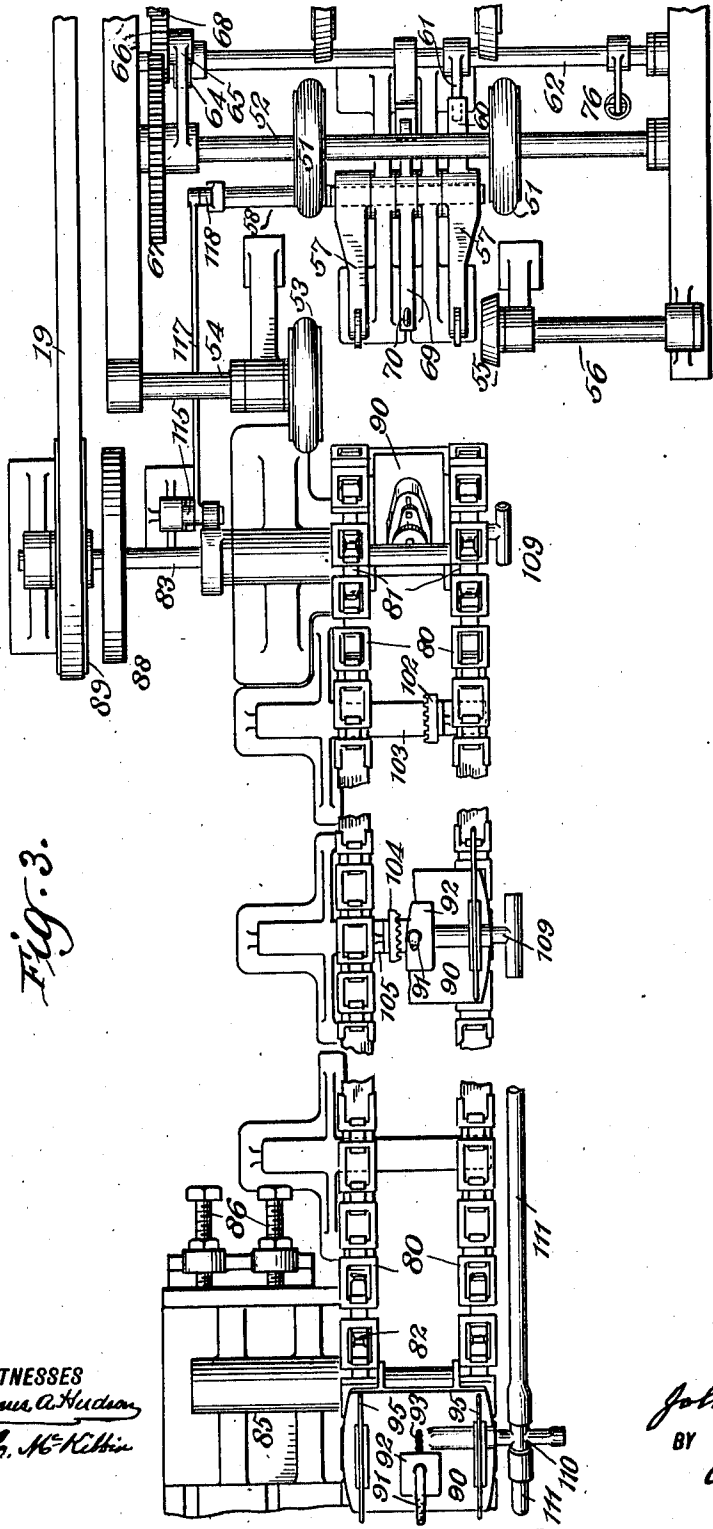


Fig. 3.

WITNESSES
Amos A. Hudson
J. C. McKinn

INVENTOR
John B. Pecht
 BY
Alfred Shetlock
 ATTORNEY

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Fig. 5.

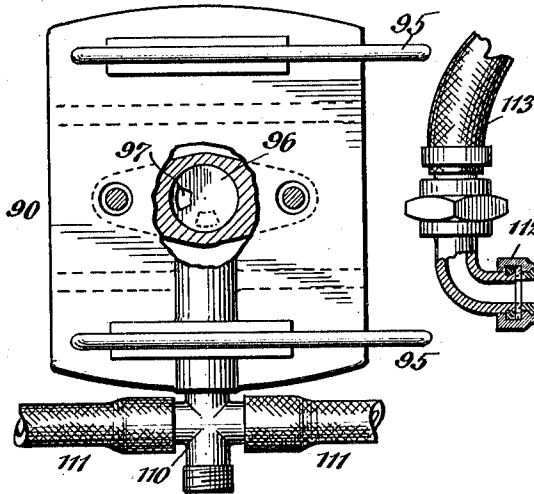


Fig. 6.

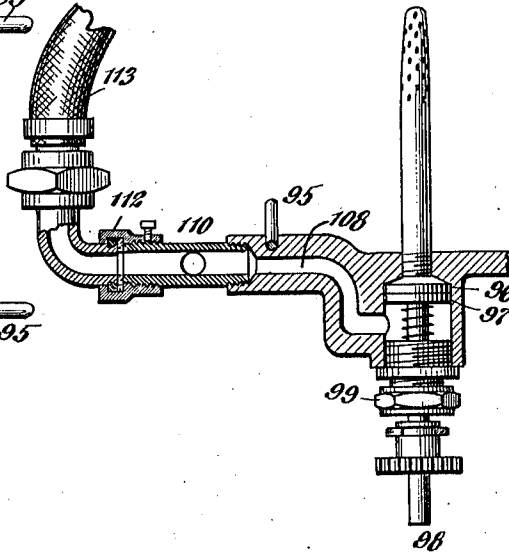


Fig. 7.

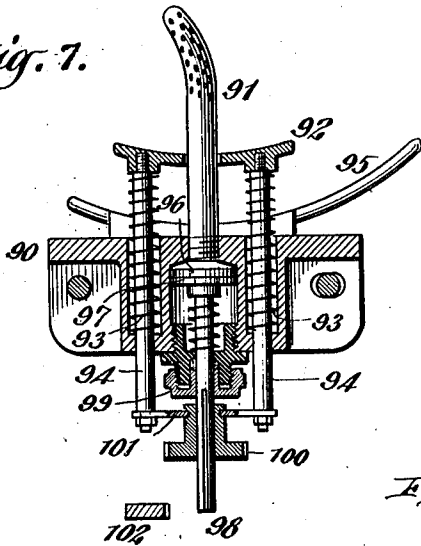


Fig. 8.

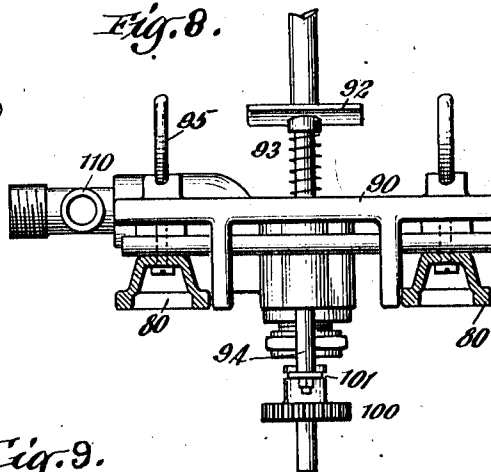


Fig. 9.



WITNESSES:

H. Brachman
J. C. McKibbin

INVENTOR

John B. Pecht.
 BY *Alfred Hedlock.*
 ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN B. PECHT, OF NEW YORK, N. Y.

BARREL-CLEANING MACHINE.

1,003,786.

Specification of Letters Patent.

Patented Sept. 19, 1911.

Application filed May 3, 1910. Serial No. 559,082.

To all whom it may concern:

Be it known that I, JOHN B. PECHT, a citizen of the United States, and a resident of New York, county and State of New York, have invented new and useful Improvements in Barrel-Cleaning Machines, of which the following is a specification.

The barrel cleaning machine forming the subject of this invention comprises an internal rinsing device having a series of spraying nozzles carried by an endless conveyer, preferably consisting of chains carried by suitable sprocket wheels, a continuous water supply pipe connected to all of the nozzles, valve mechanism for each nozzle, means for operating the valves to cause water to flow to them during a portion of their transit and when barrels are seated over the nozzles, and means for automatically setting barrels by finding and locating their bung-holes, so that each nozzle as it passes around one end of the continuously moving endless conveyer will enter the bung-hole of a barrel and lift it from the bung-hole finder on to the conveyer. Each barrel suitably seated on the conveyer sets, by its weight, the valve mechanism of the valve of the nozzle extending in its interior, and said valve is then opened, admitting water to the barrel during a portion of its transit, sufficiently long for the thorough rinsing of the same; the valve is then closed and the barrel is carried farther by the conveyer until it is properly drained before being discharged from the other end of the conveyer.

In the accompanying drawings is represented an embodiment of the invention suitable for effectually carrying out the objects of the same, and in which—

Figure 1 is a side elevation of the machine with some of the parts in section, also showing the endless conveyer in sections for illustrative purposes on account of its length. Fig. 2 illustrates on an enlarged scale, partly in longitudinal section, the bung-hole finder and the end of the endless conveyer. Fig. 3 is a plan view of Fig. 1. Fig. 4 shows the drive controlling mechanism of the bung-hole finder. Figs. 5, 6, 7, 8 and 9 are detail views of the rinsing nozzles and the water supply and controlling means.

To supply or feed barrels automatically to

the interior rinsing apparatus it is necessary to locate the bung-holes in the path of travel of the spraying nozzles; this is the function of the bung-hole finder. The barrels may be placed on suitable skids or guide ways of ordinary construction, not shown in the drawings, so as to roll onto the bung-hole finder, which comprises four supporting rolls, two marked 51 secured to a shaft 52, the third one 53 on a shaft 54 and about the same size as the rolls 51 and the other one 55 much smaller and carried by a short shaft 56, the arrangement being such that a space is left between the rolls 53 and 55 for the traveler or barrel carrier and attached parts to properly perform their functions, as hereafter described. The shaft 52 with the barrel supporting rolls 51 is automatically caused to rotate as soon as the barrel gets into proper position, by the barrel pressing the roller provided ends of the frame 57 fitted on the shaft 58 having bearings in the standard frame 59. A tappet extension 60 acts against the end of an arm 61 secured to a shaft 62 when a barrel by its weight depresses the rocker ends of the frame 57 against the action of a spring 63 and so causes a cam 64 on the shaft 62 to raise an arm 65 loosely supported by the shaft 52 and by an idler gear 66 on the arm 65 place the gear 67 secured to the shaft 52 in gear with a pinion 68 secured to the shaft 18, thus causing the barrel to be rotated by the rolls 51, as shown at Fig. 2. On the shaft 58 is also placed a segmental shaped frame 69 which carries a curved bung-hole finding finger 70 arranged to bear against the central part of the barrel, and held there by a spring 71, through the medium of the segmental gear teeth 72 on the frame 69 and the segmental pinion 73 on the shaft 74 in the frame 59 beneath the shaft 58 and the arm 75 also secured to the shaft 74, and to which the spring 71 is attached. When the cam 64 has raised the arm 65 by the action of the tappet 60 on the arm 61 by the weight of the barrel on the frame 57 a spring actuated pawl 77 holds these parts in this position by engaging a tooth of the ratchet disk 78 secured to the shaft 62. With the bung-hole finder in the operative condition described, with the barrel rotating, it will be understood that when the

bung-hole comes over the finding finger 70 said finger is caused to enter the hole by the action of the spring 71 and a projection 79 on the segmental frame 69 strikes the upper end of the pawl 77, causing it to release the ratchet 78, and the idler gear wheel 66 to fall away from the pinion 68 and so cause the rotation of the rolls 51 and the barrel to cease see Figs. 1 and 4 said cam 64 being moved away from the arm 65 by a spring 76, shown at Fig. 3, attached to an arm secured to the shaft 62. Now when a barrel has been removed from the bung-hole finder the frame 57 is raised by its spring 63 and its tappet 60 is caused to snap past the end of the arm 61 and be in position to raise said arm and so start the barrel rotating gear when a succeeding barrel again depresses the frame 57, as shown in Fig. 2. The next operation is the transference of the barrel to the traveler that carries the spraying nozzles which direct the rinsing water to the interior of the barrels, and which will be referred to after the barrel traveler or conveyer and its attached devices have been described. This part of the machine consists of two endless conveying chains 80 carried on sprocket wheels 81 and 82, carried on shafts 83 and 84 respectively, supported in standard bearings 85, the outer one, or the one at the discharge end of the conveyer, being provided with means, as screws 86, for imparting the right tension to the chains. Motion is imparted to the shaft 83 by the belt 87 acting on a pulley 88 secured to it, and this shaft 83 imparts motion to the shaft 18 by the belt 19 passing over the pulley 89 secured to the shaft 83 and the pulley 20 secured to the shaft 18.

To the chains 80 are connected at regular intervals transverse plates 90 which carry the nozzles 91 and the valve mechanism for supplying them with the rinsing water. Each of the nozzles project upwardly from the transverse plate and has its upper end perforated and curved, as shown at Figs. 1, 2 and 7, and extends through a pusher plate 92, upheld by springs 93 surrounding rods 94 passing down through counterbored holes in the plate 90, and on the plate 90 are secured the barrel guiding and supporting curved bars 95. Below the nozzle 91 in a recess formed at the under side of the plate 90 is fitted a face valve consisting of a fixed seat 96 and a rotating face disk 97 on the end of a stem 98, said face disk 97 being held against the fixed seat 96 by a spring resting on the screwed cover of the recess which is provided with a stuffing box 99 through which the stem 98 passes. The valve disk 97 is suitably rotated by means of a pinion 100 fitted to slide on the stem 98 but rotatably connected therewith by means of a spline, and said pinion is, by a collet 101, secured to the lower ends of the rods 94 and fitted in a groove in the

hub of the pinion, under the influence of the springs 93, being upheld by them and pressed down by a barrel resting on the plate 92. Normally the valve is shut off, as shown at Fig. 5, the opening in the rotating disk 97 being shown by dotted lines away from the opening in the seat 96, and the valve is opened just after a barrel is seated over the nozzle, by the pinion 100 coming in contact with a short rack 102 held by a standard 103. It remains open until the pinion strikes the short rack 104 held by a standard 105, and so located as to act on the side of the pinion opposite to that on which the rack 102 acted, thereby reversely rotating the valve and so closing it. There will be several barrels being rinsed at one time, the number carried by the chain traveler and the duration of interior rinsing being determined by the length of the traveler and the distance between the racks 102 and 104, fixed by the requirements and speed of the other devices of the machine. When no barrel is over a nozzle 91 then the pinion 100 is held by the springs 93 above the racks 102 and 104 so the valve remains unoperated as its pinion 100 passes the racks, see Fig. 6, but is pressed down in the path of the racks when a barrel rests on the plate 92. Fig. 9 diagrammatically illustrates the relation of the pinion 100 to the racks 102 and 104. The rack 102 is also shown in Fig. 6 below the pinion 100. Of course it will be understood that other simple equivalents may be used for the pinion and the two racks for imparting reverse movements to the valve 97 as it is carried forward in one direction. Each plate 90 has a passage 108 connecting the valve chamber to a T connection 109, with the exception of one of them which has a cross connection 110, the side passages of which are by pieces of rubber or flexible hose 111 connected to the side passages of the cross-connections and T connections of adjacent valve devices, forming as a whole a continuous passage for the water, the cross-connection 110 being by a slip-joint 112 connected to a water supply through the flexible pipe 113, which has sufficient slackness to maintain proper connection and keep the continuous passages formed by the parts 109, 110 and 111 supplied with water, which flows to such of the nozzles 91 as are between the racks 102 and 104 and which have barrels over them, as before described. By reason of the necessity of showing the machine in broken or separated parts the water pipe is not fully shown, but it will be readily understood how a continuous water conduit is provided by flexible hose connections between the T connections 109. The chain conveyer has sufficient length beyond the valve closing rack 104 for the barrels carried by it to properly drain before they are dropped from its discharge end.

The barrels are transferred from the bung-hole finder to the rinsing apparatus by the nozzles entering the bung-holes while the barrels are successively held on the supporting rolls 51, 53 and 55. This is accomplished by the fact that the finger 70 holds a barrel in such position that the bung-hole is in the path of travel of a nozzle 91 as it moves around the sprocket wheel 81, and the finger 70 is withdrawn from the bung-hole just before the nozzle reaches it by the action of a cam 114 secured to the shaft 83 and arranged to act on a roller at the end of a vertical lever 115 pivoted at its lower end 116. This lever is by a rod 117 connected to an arm 118 on the shaft 74, (see Fig. 1) so when the lever 115 is moved by the cam 114 the segmental pinion 73 also secured to shaft 74 causes the segmental arm 69 to rock and withdraw the finger 70 from the bung-hole. The nozzle 91, by reason of its curved end, freely enters the bung-hole and with the supporting bars 95 lifts the barrel on to the chain conveyer.

The barrel carrying plates 90 are so spaced on the chain conveyer and bear such relation to the cam 114, on the driven shaft 83, that the finger 70 of the bung-hole finder is automatically, by the action of said cam, moved out of the path of the nozzles 91 as each nozzle is about to enter the bung-hole of a barrel, it being understood that another barrel is placed on the bung-hole finder as soon as one has in this manner been removed therefrom, so that its bung-hole will be suitably located for the entrance therein of a succeeding rinsing nozzle. It will be also understood that as the endless conveyer is continuously moving it would not be economically practicable to manually place the barrels over the nozzles, to do so practically the conveyer would have to move at a low rate of speed or be intermittently moved thus greatly limiting the output of the machine.

I claim—

1. In a barrel cleaning machine, a barrel interior rinsing device consisting of an endless conveyer having at spaced intervals projecting spraying or rinsing nozzles, a water supplying device connected to all of the nozzles, a valve for each nozzle, and means adapted to open the valves in one location and close them in another location as they are carried forward by the conveyer.

2. In a barrel cleaning machine, a barrel interior rinsing device consisting of an endless conveyer having at spaced intervals projecting spraying or rinsing nozzles, a water supplying device consisting of an endless pipe connected to all of the nozzles, and a supply pipe connected by a slip joint to the endless pipe, a valve for each nozzle, means normally inactive adapted to open the valves in one location and close them in another

location as they are carried forward by the conveyer, and means controlled by barrels placed over the nozzle to impart activity to the valve controlling means.

3. In a barrel cleaning machine, a barrel interior rinsing device consisting of an endless conveyer having at spaced intervals projecting spraying or rinsing nozzles, a water supplying device connected to all of the nozzles, a valve for each nozzle, and means made active by barrels when the barrels are placed over the nozzles to cause the valves to open when carried by the conveyer to one location and to close when carried to another location.

4. In a barrel cleaning machine, a barrel interior rinsing device consisting of an endless conveyer having at spaced intervals projecting spraying or rinsing nozzles, a water supplying device connected to all of the nozzles, a valve for each nozzle, means normally inactive adapted to open the valve in one location and close it in another location as it is carried forward by the conveyer and a pusher plate surrounding each nozzle adapted to be depressed by a barrel placed over the nozzle to impart activity to the valve controlling means.

5. In a barrel cleaning machine, a barrel interior rinsing device consisting of an endless conveyer having at spaced intervals projecting spraying or rinsing nozzles, a water supplying device consisting of an endless pipe connected to all of the nozzles, a supply pipe connected by a slip joint to the endless pipe, a valve for each nozzle, means normally inactive adapted to open the valve in one location and close it in another location as it is carried forward by the conveyer and a pusher plate surrounding each nozzle adapted to be depressed by a barrel placed over the nozzle to impart activity to the valve controlling means.

6. In a barrel cleaning machine, a barrel interior rinsing device consisting of an endless conveyer having at spaced intervals projecting spraying or rinsing nozzles, water supplying device connected to all of the nozzles, a barrel bung-hole finder located at one end of the conveyer and comprising supporting rollers, means to rotate the rollers, a spring actuated finger held against the barrel and adapted to enter the bung-hole when by the rolling of the barrel it comes over the finger, whereby the bung-hole is held in position for the entrance therein of a nozzle as it passes around the end of the conveyer, and means for withdrawing the finger from the bung-hole just before said nozzle enters the bung-hole to move the barrel on to the conveyer.

7. In a barrel cleaning machine in combination, an endless conveyer provided with spaced spraying nozzles, a bung-hole finder adapted to locate and hold a barrel with its

bung-hole directly in the circular path of the nozzles at one end of the conveyer, whereby the barrel is, by a nozzle entering its bung-hole, moved directly from the bung-hole finder and carried forward by the conveyer, means connecting the conveyer and bung-hole finder to cause them to work in unison and means for directing a stream of

water through the nozzle into the barrel during its transit on the conveyer.

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In testimony whereof, I have hereunto subscribed my name.

JOHN B. PECHT.

Witnesses:

J. C. McKIBBIN,
JAMES A. HUDSON.