

No. 771,093.

PATENTED SEPT. 27, 1904.

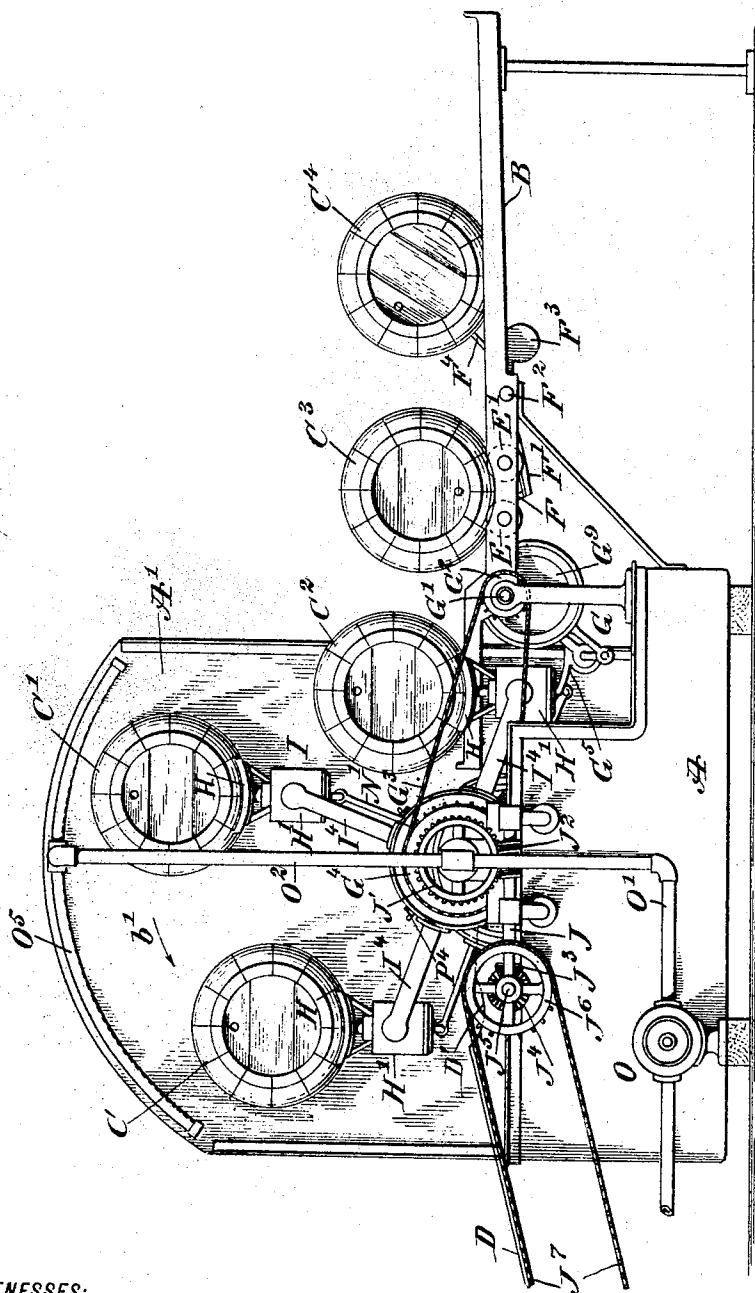
H. REININGER.
BARREL SOAKING AND RINSING MACHINE.

APPLICATION FILED MAY 7, 1904.

NO MODEL.

6 SHEETS—SHEET 1.

FIG. 1



WITNESSES:

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Geo. G. Hooper

INVENTOR

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BY

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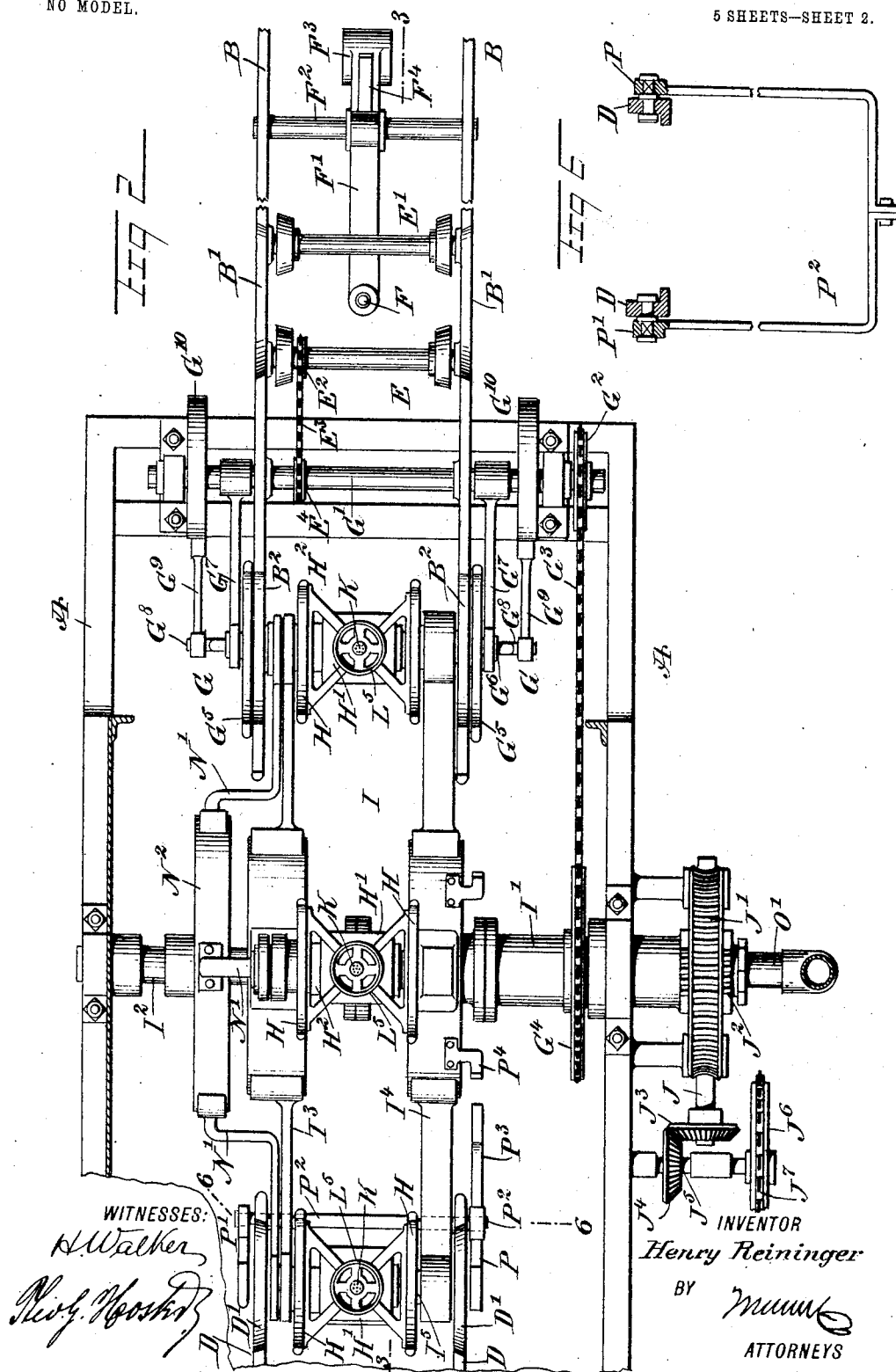
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5 SHEETS—SHEET 2.



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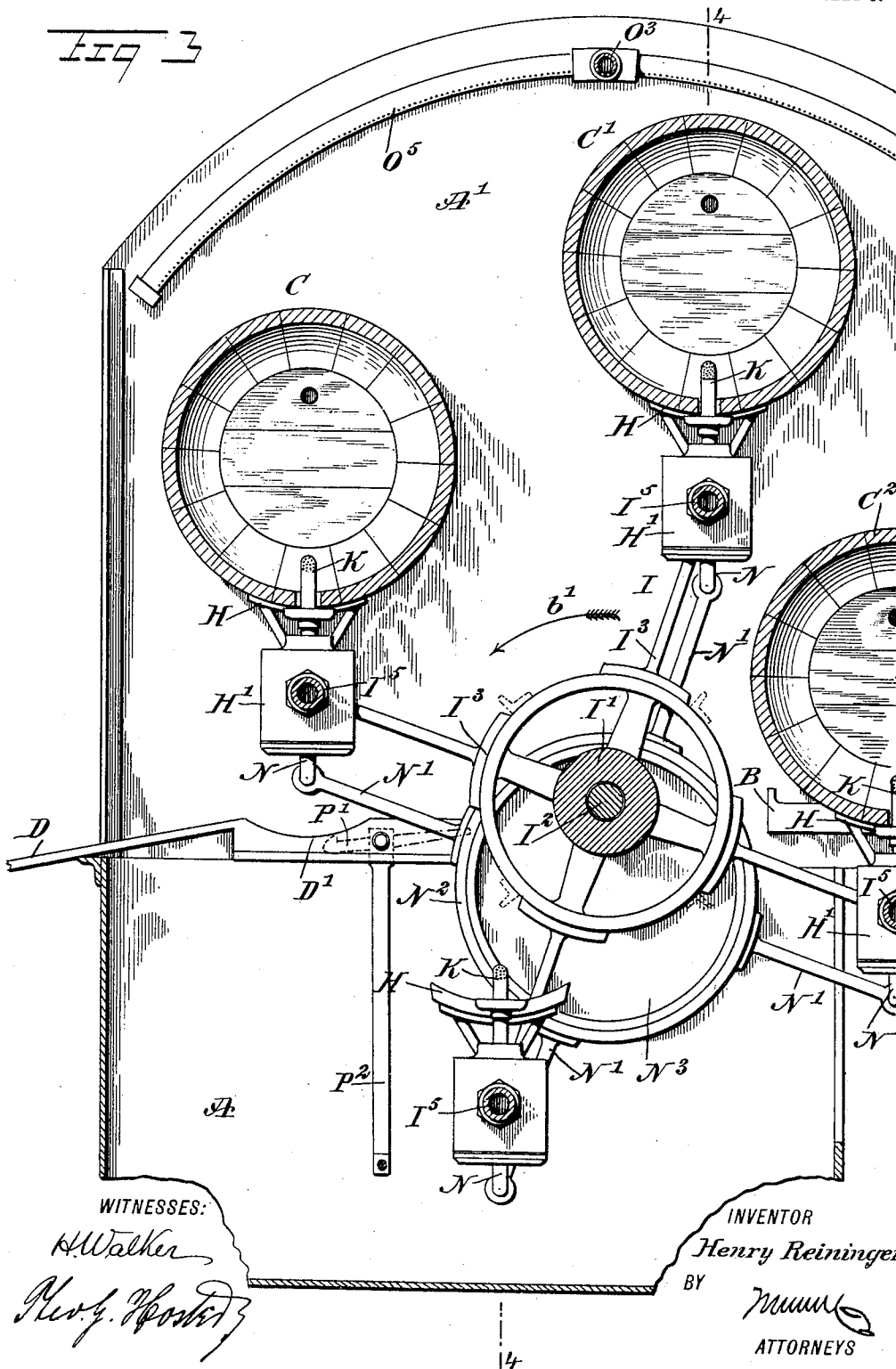
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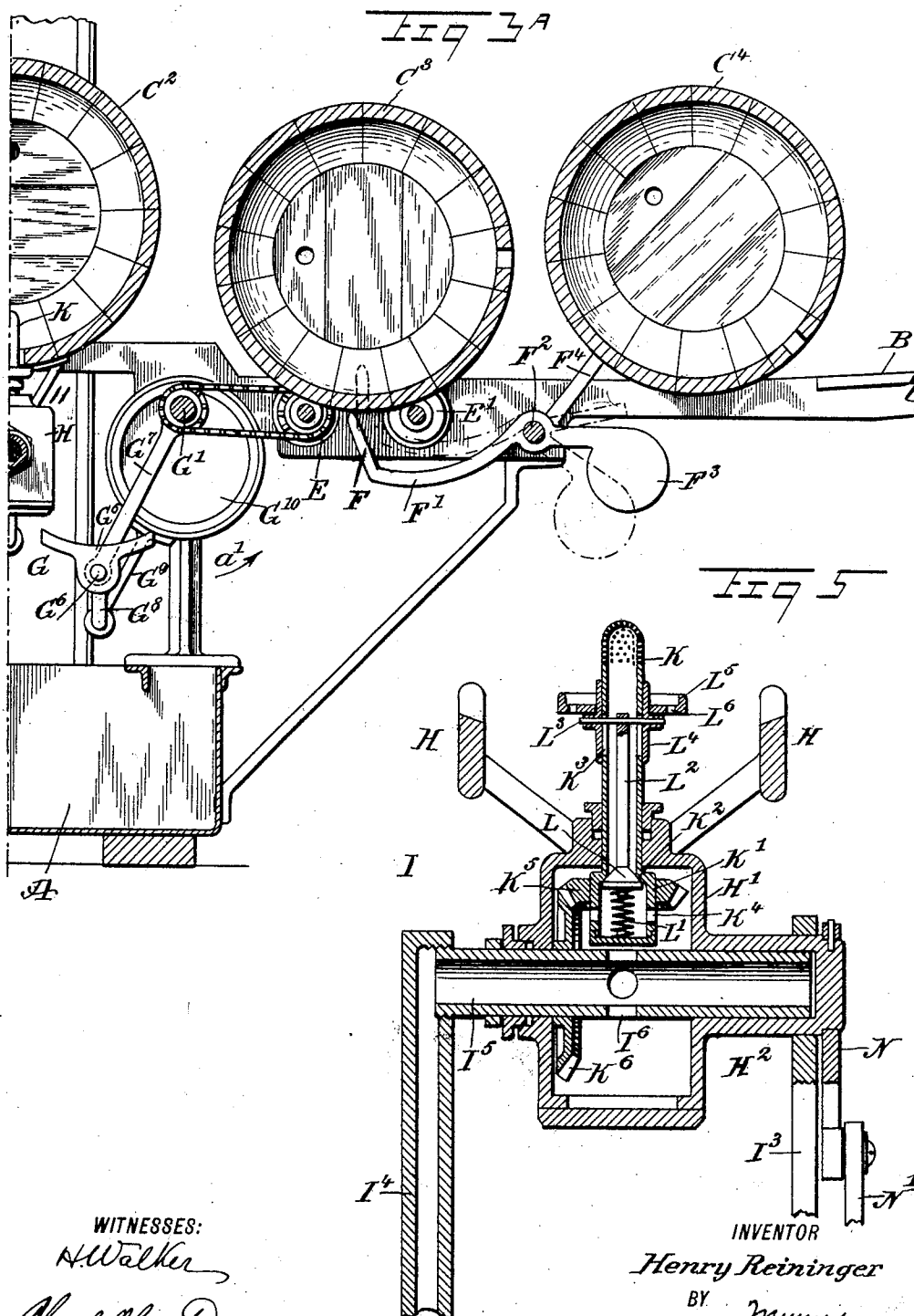
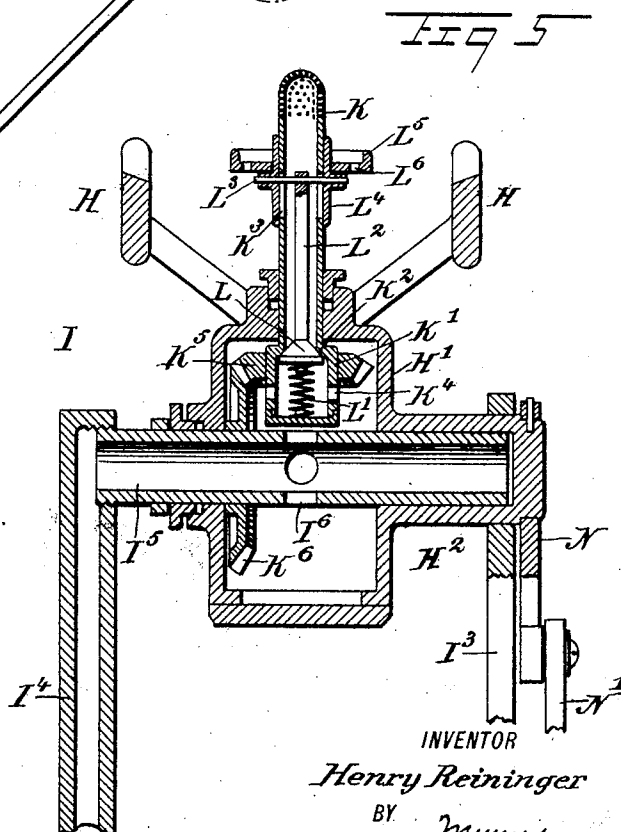
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NO MODEL.

5 SHEETS—SHEET 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY REININGER, OF NEW ORLEANS, LOUISIANA.

BARREL SOAKING AND RINSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 771,093, dated September 27, 1904.

Application filed May 7, 1904. Serial No. 206,874. (No model.)

To all whom it may concern:

Be it known that I, HENRY REININGER, a citizen of the United States, and a resident of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and Improved Barrel Soaking and Rinsing Machine, of which the following is a full, clear, and exact description.

The invention relates to washing apparatus; and its object is to provide a new and improved barrel soaking and rinsing machine arranged to subject the exterior and the interior of a barrel or like package to the action of hot or cold water for soaking the package and thoroughly cleansing and rinsing the same in a comparatively short time and without the aid of skilled labor.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement. Fig. 2 is an enlarged plan view of the same, part of the housing being in section. Figs. 3 and 3^a are enlarged sectional side elevations of the improvement on the line 3 3 of Fig. 2. Fig. 4 is a transverse section of the same on the line 4 4 of Fig. 3. Fig. 5 is an enlarged cross-section of one of the rinsing devices, and Fig. 6 is a section on the line 6 6 of Fig. 2.

From one side of a tank A extends a delivery-skid B for barrels or other packages C, C', C², C³, and C⁴ to successively roll toward the apparatus, and from the opposite side of the said tank A extends a discharging-skid D for the barrels to successively leave the apparatus, as hereinafter more fully described. In the delivery-skid B are journaled rollers E and E' for receiving a barrel, (as shown in Fig. 1, the barrel C³) and turning it around to bring the bung-hole of this barrel into a lowermost position to allow a pin F on the free end of a pivoted arm F' to pass into the said bung-hole, and thereby hold the

barrel against turning. The arm F' is fulcrumed at F² on the skid B and has a counterweight F³ and a projection F⁴ extending into the path of the next following barrel C⁴ to hold the latter on the skid B until the barrel C³ is lifted off the rollers E E'. For this purpose a transferring device G is employed arranged to lift the barrel off the rollers E E' and to deliver the barrel to one of the saddles H of a revoluble carrier I, mounted to turn on the tank A and serving to deliver the cleansed and soaked barrels successively to the discharge-skid D, used for discharging the barrels from the apparatus. When the barrel C³ is lifted off the rollers E E', then the pin F passes out of the bung-hole of this barrel, and as the barrel rises the counterweight F³ imparts an upward swinging motion to the forward end of the arm F, so that the projection F⁴ swings downward to release the barrel C⁴, which now rolls down the skid B to finally pass onto the rollers E E', of which the roller E is driven to rotate this barrel C⁴ until the pin F passes into the bung-hole at the time the bung-hole of the barrel C⁴ passes into a lowermost position. The roller E is driven from the shaft G' of the transferring device G, and for this purpose the shaft of the roller E is provided with a sprocket-wheel E², connected by a sprocket-chain E³ with a sprocket-wheel E⁴ on the said shaft G'. The latter in turn is rotated from the hub I' of the carrier I, the said hub being mounted to turn on a shaft I², fixed to the tank A. For the purpose mentioned the shaft G' is provided with a sprocket-wheel G², connected by a sprocket-chain G³ with a sprocket-wheel G⁴, secured on the said hub I', as plainly illustrated in Fig. 2. The hub I' is in turn rotated from the main shaft J by the use of a worm-wheel J', secured on the hub I' and meshing with a worm J² on the main shaft J. A bevel gear-wheel J³ is secured on the shaft J (see Fig. 2) and is in mesh with a bevel gear-wheel J⁴, fastened on a shaft J⁵, carrying a sprocket-wheel J⁶, connected by a chain J⁷ with a sprocket-wheel driven by other machinery, so that when the apparatus is in use a continuous rotary motion is given to the main shaft J by the gearing described, and the shaft J by the worm J² and worm-wheel

J' rotates the hub I' to revolve the carrier I, and the rotary motion of the hub I' is transmitted by the sprocket-wheels G⁴ G² and sprocket-chain G³ to the shaft G' of the transferring device G to actuate the latter, and the rotary motion of the shaft G' is transmitted by the sprocket-wheels E⁴ E² and sprocket-chain E³ to the shaft of the roller E to rotate the barrel for bringing the bung-hole into a lowermost position, as previously described.

The transferring device G consists, essentially, of two saddles G⁵, arranged outside of the side bars of the skid B, as plainly shown in Fig. 2, and each of the saddles G⁵ is secured on a shaft G⁶, journaled in an arm G⁷, secured to the shaft G', and the said shaft G⁶ is provided with a crank-arm G⁸, engaged by the eccentric-rod G⁹ of an eccentric G¹⁰, secured on the shaft G', so that when the latter rotates in the direction of the arrow a' then the arms G⁷ swing in the same direction and carry the shafts G⁶ and saddles G⁵ along; but the latter are held always in a vertical position by the action of the eccentric G¹⁰ on the crank-arms G⁸, formed on the shafts G⁶, carrying the saddles, as previously mentioned. When the arms G⁷ swing around, the saddles G⁵ finally move in engagement with the under side of the barrel C³ to lift the same off the rollers E and E' and out of the seat B', formed in the sides of the skid B. A further swinging of the arms G⁷ causes the saddles to deliver the barrels C³ into seats B², formed in the side bars of the skid B near the terminal thereof, the said seats B² being in register with one of the saddles H of the carrier I, so that the saddle H engages this barrel, so that the revoluble carrier I carries the barrel around in the direction of the arrow b' until the barrel is finally delivered to seats D', formed in the beginning ends of the discharge-skid D, as illustrated in Fig. 2. The barrel while being carried around by the carrier I is subjected to the action of water both externally and internally.

The carrier I is constructed in detail as follows: On the hub I' of the carrier are secured webs or spiders I³ and I⁴, supporting a plurality of saddles H, (four as shown,) and a spraying-nozzle K for each saddle, the said spraying-nozzle being adapted to enter the bung-hole of a barrel at the time the latter has been delivered by the transferring device G to the skid-seat B², and the saddle with its nozzle rises out of the tank, owing to the revolving of the carrier in the direction of the arrow b'. As shown in Figs. 3 and 3', the saddle H has just engaged the barrel C², and the nozzle K for this saddle has entered the bung-hole of said barrel. Each saddle H (see Fig. 5) is provided with a barrel-casing H', having a closed hub H² mounted to turn in suitable bearings arranged in the spider I³, and the said hub H² is mounted to turn on a pipe I⁶,

screwed or otherwise secured to the other spider I⁴, so that the casing H' is free to revolve on the said pipe I⁶ and in its bearings on the spider I³. The pipe I⁶ opens at one end into the hollow spider I⁴, and the said pipe is provided with ports I⁶, leading to the interior of the casing H', into which projects the lower end or head K' of the nozzle K, mounted to turn in suitable bearings arranged in the casing H'. The upper outer end of the nozzle K is provided with suitable apertures, through which passes the water in small jets to the interior of the barrel to rinse the same. The lower end of the nozzle K, adjacent to the head K', is provided with a valve-seat K², normally closed by a valve L, pressed on by a spring L', arranged in the head K' of the nozzle. The valve-stem L³ of the valve L extends upward in the nozzle K and is connected by a pin L³ with a sleeve L⁴, mounted to slide near the upper end of the nozzle K. The pin L³ extends through elongated slots K³ in the nozzle K, which slots are closed by the sleeve L⁴, as will be readily understood by reference to Fig. 5, to prevent water from passing out of the nozzle at this point. On the sleeve L⁴ is mounted to turn loosely a disk or cup L⁵, having drain-apertures L⁶ in its bottom, the said disk or cup being engaged by the bottom of the barrel at the time the latter is seated in the saddle H and after the barrel has been delivered to the saddle by the transferring device G, as previously explained. When the saddle H rises, the barrel presses the cup L⁵ downward, so that the sleeve L⁴ is moved in a like direction, and consequently the pin L³ moves the stem L³ and the valve L downward, so that the valve L opens the nozzle K to allow water to flow from the casing H' through openings K⁴ in the head K' and through the nozzle K to pass through the apertures thereof in fine jets or sprays into the interior of the barrel. During the time the carrier revolves the nozzle K is rotated, and for this purpose the head K' within the casing H' is provided with a bevel-pinion K⁵ in mesh with a bevel gear-wheel K⁶, secured on the stationary pipe I⁶. In order to hold the saddle H and the nozzle K in a vertical position during the time the carrier I rotates, the following device is provided: On the outer end of the hub H² is secured a crank-arm N, pivotally connected with the eccentric-rod N' of an eccentric-strap N², having its eccentric-disk N³ secured to the stationary shaft I², as plainly shown in Fig. 4, and consequently when the carrier I rotates in the direction of the arrow b' then the hub H² of the saddle-casing H' is turned by the crank-arm N, connected with the eccentric-strap N' of an eccentric having its disk N³ held stationary. It is understood that the several eccentric-rods N' are secured to a single strap N² to insure uniform movement of the saddle-casings H' to hold the saddles H and their nozzles K always in a vertical position.

The hollow spider I^4 connects with an annular chamber I^7 , formed in the hub I^1 , and this chamber I^7 is connected by ports I^8 with the hollow portion I^9 of the fixed shaft I^2 , and the outer end of this hollow portion I^9 connects with the discharge-pipe O' of a pump O of any approved construction, having its inlet connected with the tank A . When the pump is in operation, the water is drawn from the tank A and forced through the pipe O' into the hollow portion I^9 , from which water passes through the ports I^8 into the annular chamber I^7 , the water then passing through the hollow spider I^4 into the pipe I^5 and by way of the ports I^6 into the casing H' , from which the water passes to the nozzle K and into the barrel, as previously explained. After a barrel is delivered onto the seat D^2 of the skid D then the valve L immediately closes by the action of its spring L' , as the disk L^5 is now relieved of its weight, and the valve L slides upward, and with it the sleeve L^4 and the disk L^5 . It is understood that when the carrier I rotates and the casing H' is caused to turn on the pipe I^5 then the bevel-pinion K^5 rolls off on the bevel gear-wheel K^6 , so that the nozzle K is turned to insure a proper spraying of all the parts of the interior of the barrel during the time the valve L is open—that is, during the time the barrel is seated on the saddle H for this particular nozzle. The discharge-pipe O' is connected by a branch pipe O^2 with a number of perforated pipes O^3 , O^4 , and O^5 (see Figs. 1 and 4) and arranged in a super-structure A' , supported from the tank A . The pipes O^3 , O^4 , and O^5 have their perforations arranged in such a manner that the water forced through the perforations sprays the barrels on the exterior surface thereof to properly soak and cleanse the same on the outside at the same time that the interior is cleansed and rinsed, as previously explained. The rinsed and cleansed barrel delivered to the seat D' in the discharge-skid D is automatically lifted out of the seat after the saddle H and its nozzle K for this barrel have left the same, and for this purpose lifting-arms P and P' are provided, arranged on the outside of the sides of the side bars of the skid D , (see Fig. 2,) the arms being secured on a transverse cranked shaft P^2 , journaled in suitable bearings in the said side bars of the skid D , as indicated in Fig. 6. On the shaft P^2 is secured a rearwardly-extending arm P^3 , adapted to be engaged by projections P^4 , secured on the spider I^1 and arranged in such a manner relative to the saddles H and their nozzles that after a saddle has disengaged a barrel at the skid D and the barrel is seated in the seat D' then the corresponding projection P^4 engages the arm P^3 to impart a rocking motion to the shaft P^2 , which by the lifting-arms $P P'$ lifts the barrel out of the seat D' and causes it to roll down the skid D to be discharged to one side of the machine.

The operation is as follows: When the main shaft J is rotated, the carrier I rotates continuously in the direction of the arrow V' , and a continuous rotary motion is given to the shaft G' of the transferring device, and the roller E is continuously driven to revolve the barrel resting on the rollers E and E' at the time, the barrel being revolved until it reaches a water-receiving position—that is, with the bung-hole of the barrel at the bottom. The transferring device G is so arranged that when an empty saddle H rises out of the tank A on the right-hand side thereof then the transferring device G delivers the barrel previously seated on the rollers E and E' to this empty saddle, which by the revolving of the carrier I is now carried around in the direction of the arrow V' . The barrel while being delivered by the transferring device G to the empty saddle H first comes in contact with the disk L^5 to open the valve L , so that water passes through the nozzle K to the interior of the barrel to wash the same, and as soon as the barrel is seated on the saddle H the saddle G^5 of the transferring device leaves the barrel and at the next revolution of the transferring device takes up the following barrel on the rollers $E E'$. During the time the barrel seated on the saddle H is traveling around with the carrier I the nozzle K is revolved, as previously described, so that the barrel is thoroughly washed and rinsed on the inside, and at the same time the exterior surface of the barrel is soaked and washed by the jets of water from the pipes $O^3 O^4 O^5$. When the barrel finally reaches the seat D' of the discharge-skid D , it is seated thereon while its saddle leaves the barrel, and as soon as this takes place the spring L' closes the valve L for the nozzle K of the saddle, and the valve remains closed until another barrel is delivered to the saddle by the transferring device G , as above described. The barrel while in the seat D' readily drains its water into the tank A , as the bung-hole of this barrel is still in a lowermost position, and as soon as the barrel is drained a projection P^4 acts on the arm P^3 to cause the arms $P P'$ to lift the barrel off the seat D' and start it on its downward journey on the skid D .

From the foregoing it will be seen that by the arrangement described the water is used over and over again as the barrels drain back into the tank A and the water is drawn from the latter by the pump O and delivered by the same to the nozzles K , as well as the pipes O^3 , O^4 , and O^5 .

In practice I prefer to employ two rinsing-machines, as described, and spaced apart with a barrel-scrubbing machine interposed between the rinsing-machines. In this case the skid D of the first rinsing-machine delivers the barrels successively to the scrubbing-machine, which in turn delivers the barrels to the upper end of the skid B for the second

rinsing-machine, both rinsing-machines being of the same construction as above described, and shown in the drawings. In the first rinsing-machine I prefer to use hot water, while in the second rinsing-machine clear cold water is used. The cold water from the tank A of the second rinsing-machine is drawn by the pump O through a suitable heater to be then used in a hot condition in the first rinsing-machine. By this arrangement great economy in the use of water is practiced. In the second rinsing-machine the sprinkling-pipes O³ O⁴ O⁵ and the pump O are preferably omitted.

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

1. A washing apparatus provided with a turning device for turning a barrel into the position it must assume to receive water, and means for holding the barrel in the water-receiving position.

2. A washing apparatus provided with a turning device for turning a barrel into the position it must assume to receive water, means for holding the barrel in the water-receiving position, and a transferring device for lifting the barrel off the said turning device.

3. A washing apparatus provided with a turning device for turning a barrel into the position it must assume to receive water, means for holding the barrel in the water-receiving position, a transferring device for lifting the barrel off the said turning device, and a stop controlled by the barrel on the said turning device and arranged to stop and release a succeeding barrel.

4. A washing apparatus provided with a turning device for turning a barrel into the position it must assume to receive water, means for holding the barrel in the water-receiving position, a transferring device for lifting the barrel off the said turning device, and a revolving carrier having a plurality of spaced saddles and operating in unison with the said transferring device, each of the saddles receiving a barrel from the said transferring device.

5. A washing apparatus provided with a turning device for turning a barrel into the position it must assume to receive water, a transferring device, and a revolving carrier having a plurality of spaced saddles and operating in unison with the said transferring device, for the latter to lift the barrel off the turning device and deliver it in water-receiving position to one of the carrier-saddles.

6. A washing apparatus provided with a turning device for turning a barrel into the position it must assume to receive water, a transferring device, a revolving carrier having a plurality of spaced saddles and operating in unison with the said transferring device, for the latter to lift the barrel off the turning device and deliver it in water-receiving position to one of the carrier-saddles, and

a nozzle moving with a saddle on the carrier and engaging the bung-hole of the barrel at the time the barrel is delivered by the transferring device to the said saddle.

7. A washing apparatus having a rinsing device provided with a revoluble carrier, having spaced saddles, each for supporting a barrel, means for holding the saddle in vertical position during the rotation of the carrier, nozzles on the carrier, one for each saddle and connected with a water-supply, a valve for closing the nozzle, and an opening device for the valve, controlled by the barrel on the saddle.

8. A washing apparatus having a rinsing device provided with a revoluble carrier, having spaced saddles, each for supporting a barrel, means for holding the saddle in vertical position during the rotation of the carrier, nozzles in the carrier, one for each saddle and connected with a water-supply, a valve for closing the nozzle, an opening device for the valve, controlled by the barrel on the saddle, and means for revolving the said nozzle on revolving the carrier.

9. A washing apparatus having a revoluble carrier provided with a plurality of saddles, each having a casing connected with a water-supply and journaled on the carrier, a nozzle held on the saddle-casing and in communication with the interior thereof, a spring-pressed valve for closing the nozzle, and a sleeve on the nozzle, adapted to be pressed by the barrel seated in the saddle, for the said sleeve to open the said valve.

10. A washing apparatus having a revoluble carrier provided with a plurality of saddles, each having a casing connected with a water-supply and journaled on the carrier, a nozzle held on the saddle-casing and in communication with the interior thereof, a spring-pressed valve for closing the nozzle, a sleeve mounted to slide on the nozzle and having connection with the said valve, and a disk adapted to be engaged by the barrel and resting loosely on the said sleeve.

11. A washing apparatus having a revoluble carrier provided with a plurality of saddles, each having a casing connected with a water-supply and journaled on the carrier, a nozzle held on the saddle-casing and in communication with the interior thereof, a spring-pressed valve for closing the nozzle, a sleeve mounted to slide on the nozzle and having connection with the said valve, a disk adapted to be engaged by the barrel and resting loosely on the said sleeve, and means for rotating the said nozzle, valve and sleeve.

12. A washing apparatus having a revoluble carrier provided with a plurality of saddles, each having a casing connected with a water-supply and journaled on the carrier, a nozzle held on the saddle-casing and in communication with the interior thereof, a spring-pressed valve for closing the nozzle, a sleeve on the

nozzle, adapted to be pressed by the barrel seated in the saddle, for the said sleeve to open the said valve, and means for holding the saddle and its casing in a vertical position during the rotation of the carrier.

13. A washing apparatus having a revoluble carrier provided with a plurality of saddles, each having a casing connected with a water-supply and journaled on the carrier, a nozzle held on the saddle-casing and in communication with the interior thereof, a spring-pressed valve for closing the nozzle, a sleeve on the nozzle, adapted to be pressed by the barrel seated in the saddle, for the said sleeve to open the said valve, a crank secured on the casing-shaft, a hollow shaft fixed on the carrier and in communication with the casing and concentric to the shaft thereof, a bevel gear-wheel attached to the said fixed shaft, and a bevel-pinion secured on the nozzle.

14. A washing apparatus provided with a barrel-turning device comprising a receiving-skid for the barrel to roll on, a pair of spaced rollers journaled in the skid, for the barrel to travel on and be rotated by the revolving of the rollers, and a pivoted arm having a pin adapted to engage the bung-hole of the barrel, to hold the barrel against turning on the rollers.

15. A washing apparatus provided with a barrel-turning device comprising a receiving-skid for the barrel to roll on, a pair of spaced rollers journaled in the skid, for the barrel to travel on and be rotated by the revolving of the rollers, and a pivoted arm having a pin adapted to engage the bung-hole of the barrel, to hold the barrel against turning on the rollers and a retaining-pin and releasing projection on the said arm, for engaging and holding the next following barrel on the skid until the barrel on the rollers is removed from the latter.

16. A washing apparatus provided with a delivery-skid, having a seat for receiving a barrel, a revolving carrier delivering a barrel at a time to the said seat, and a mechanism controlled from the said carrier, for moving the barrel out of the seat and starting it down the delivery-skid.

17. A washing apparatus provided with a revoluble carrier comprising a spider mounted to turn and having hollow portions connected with a water-supply, a plurality of saddles, each having a casing mounted to turn on the spider and in communication with the said hollow portion, a nozzle mounted to turn in the casing and projecting on the outside thereof, a spring-pressed valve normally closing the nozzle to the said casing, means for opening the valve by the barrel on the saddle, and

a gearing connecting the nozzle with a fixed part of the said spider.

18. A washing apparatus provided with a revoluble carrier comprising a spider mounted to turn and having hollow portions connected with a water-supply, a plurality of saddles, each having a casing mounted to turn on the spider and in communication with the said hollow portion, a nozzle mounted to turn in the casing and projecting on the outside thereof, a spring-pressed valve normally closing the nozzle to the said casing, means for opening the valve by the barrel on the saddle, and a gearing connecting the nozzle with a fixed part of the said spider, the said gearing being located in the casing and consisting of bevel gear-wheels, of which one is secured to the nozzle and the other to the said fixed part of the spider.

19. A washing apparatus having a revolving carrier for carrying barrels and washing the inside thereof, a discharge-skid having a seat for receiving a barrel at the time from the said carrier, and a device controlled by the carrier for moving the barrel out of the skid-seat and starting it down the skid.

20. A washing apparatus provided with a revoluble carrier comprising a spider mounted to turn and having hollow portions connected with a water-supply, a plurality of saddles, each having a casing mounted to turn on the spider and in communication with the said hollow portion, a nozzle mounted to turn in the casing and projecting on the outside thereof, a spring-pressed valve normally closing the nozzle to the said casing, means for opening the valve by the barrel on the saddle, a gearing connecting the nozzle with a fixed part of the said spider, a crank-arm on the hub of each casing, a fixed eccentric disk, and an eccentric-strap having a plurality of eccentric-rods, each connected with a corresponding crank-arm on the casing-hub.

21. A barrel soaking and rinsing machine, comprising a revoluble carrier for carrying a plurality of barrels, the carrier having nozzle devices connected with a water-supply, to rinse the interior of the barrels, and fixed sprinkling-pipes connected with a water-supply and arranged for soaking the exterior of the barrels as the carrier revolves and carries the barrels along.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY REININGER.

Witnesses:

ANDRÉ DORIOCOURT, Jr.,
KARL MATTERN.