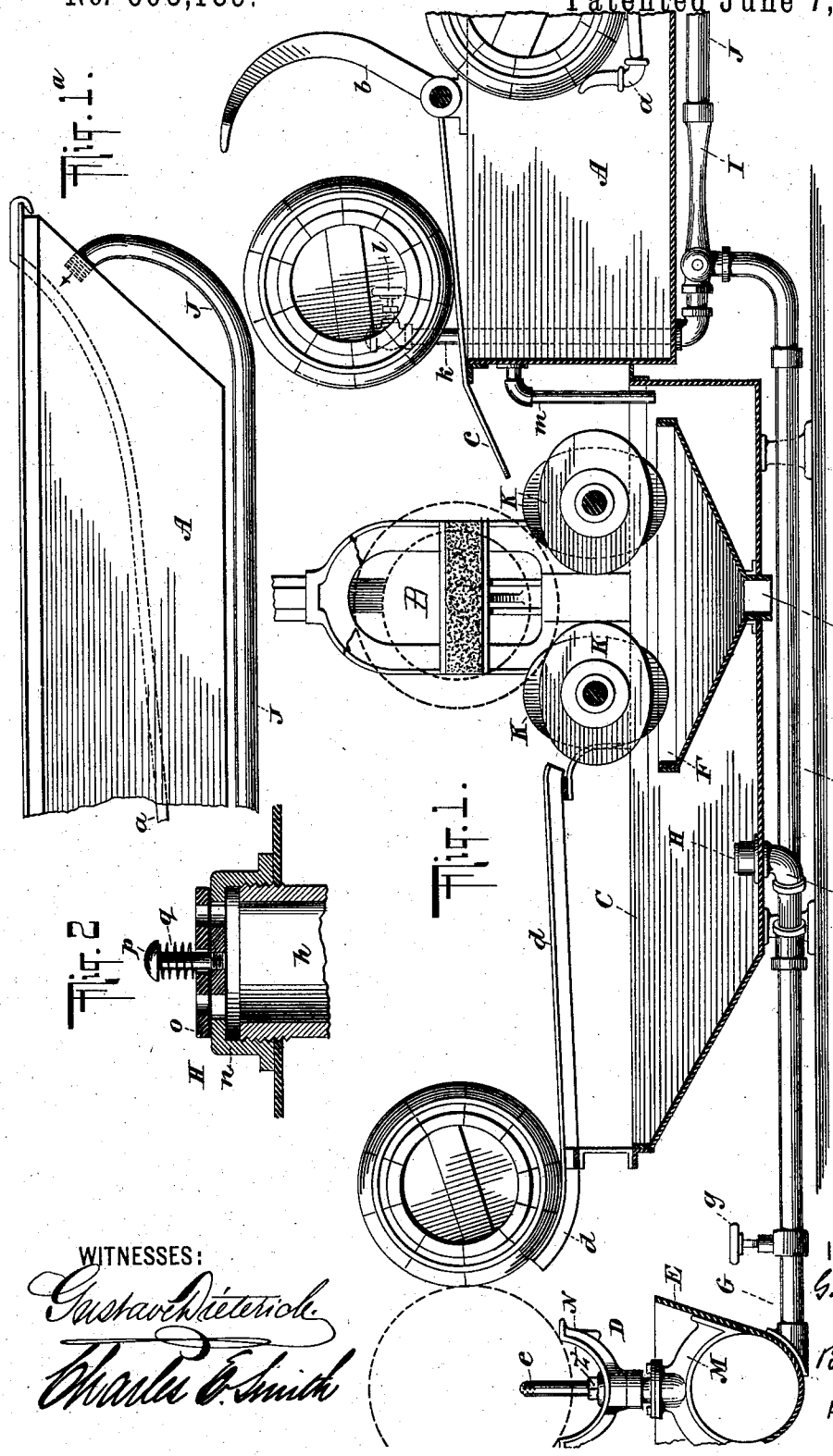
(No Model.) 4 Sheets—Sheet 1.

G. SCHOCK.

BARREL WASHER.

No. 605,139. Patented June 7, 1898.



WITNESSES:

Gustave Dieterich.

Charles E. Smith

INVENTOR

Gustav Schock

by

Briesen & Knauth

ATTORNEYS

(No Model.) 4 Sheets—Sheet 2.

G. SCHOCK.

BARREL WASHER.

No. 605,139. Patented June 7, 1898.

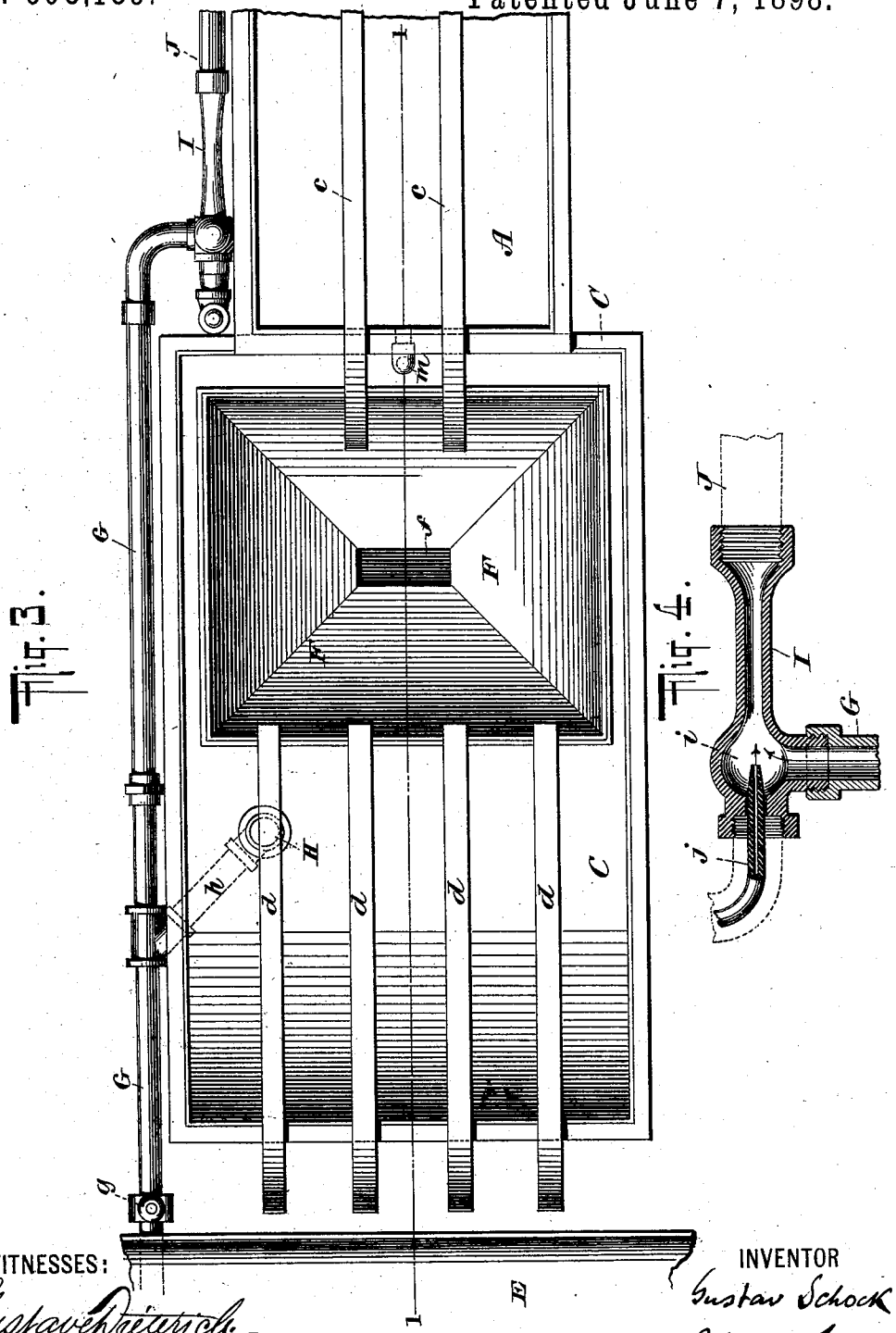


Fig. 3.

Fig. 4.

WITNESSES:

Gustave Peterich

Charles O. Smith

INVENTOR

Gustav Schock

BY Briesen & Knauth

ATTORNEYS

(No Model.)

4 Sheets—Sheet 3.

G. SCHOCK.

BARREL WASHER.

No. 605,139. Patented June 7, 1898.

Fig. 5.

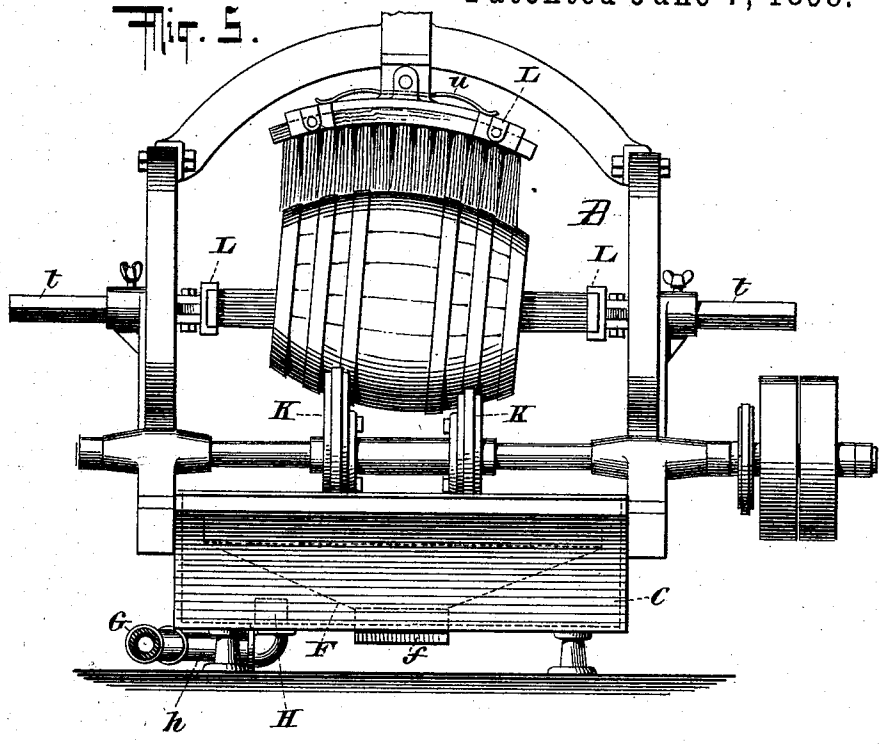


Fig. 6.

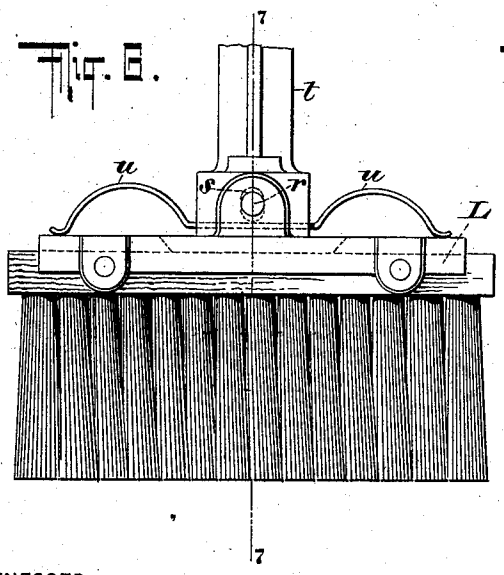
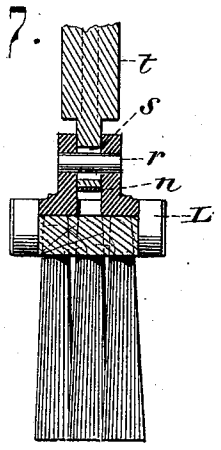


Fig. 7.



WITNESSES:

Gustave Patterson

Wm. E. Smith

INVENTOR

Gustav Schock

BY Briesen & Knauth

ATTORNEYS

(No Model.) 4 Sheets—Sheet 4.

G. SCHOCK.

BARREL WASHER.

No. 605,139. Patented June 7, 1898.

Fig. 8.

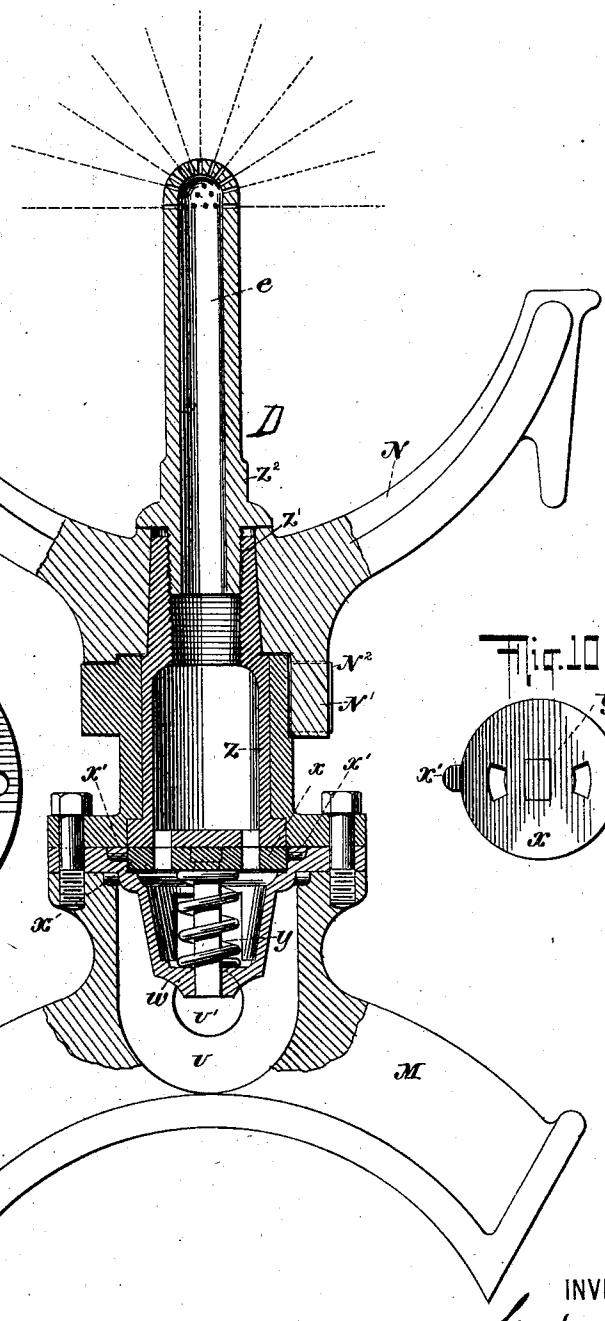


Fig. 9.

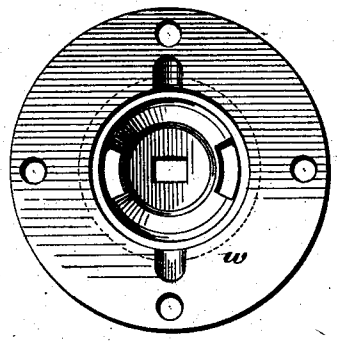
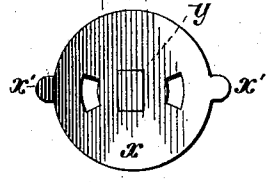


Fig. 10.



WITNESSES:

Gustave Dieterich.

Charles B. Smith

INVENTOR

Gustav Schock

BY Briesen & Knauth

ATTORNEYS

UNITED STATES PATENT OFFICE.

GUSTAV SCHOCK, OF NEW YORK, N. Y.

BARREL-WASHER.

SPECIFICATION forming part of Letters Patent No. 605,139, dated June 7, 1898.

Application filed October 20, 1897. Serial No. 655,784. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV SCHOCK, a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Soaking, Washing, and Scrubbing Barrels, of which the following is a specification.

My invention relates to apparatus for soaking, washing, and scrubbing barrels; and the main object of said invention is to provide an efficient device wherein the water used for cleansing purposes may be economically heated and prevented from undue contamination during the washing and scrubbing process.

There are other objects to be attained by my invention which will hereinafter appear.

The invention consists in the novel arrangement and combination of parts and in the details hereinafter described and claimed.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a longitudinal sectional view, with portions broken away, of an apparatus embodying my invention. Fig. 1ª is a side view of one end of the soaking-tank, which is omitted from the representation disclosed in Fig. 1. Fig. 2 is an enlarged detail sectional view of the means for controlling the outlet from the intermediate tank. Fig. 3 is a plan view of the apparatus with parts omitted for the purpose of clearer illustration. Fig. 4 is an enlarged detail sectional view of the steam-injection nozzle and the pipes coöperating therewith. Fig. 5 is an end view of the scrubber and the tank therefor. Fig. 6 is an enlarged detail side view of one of the side brushes and its connection. Fig. 7 is a transverse sectional view of the same on line 7 7 of Fig. 6. Fig. 8 is a vertical sectional detail of the sprinkling device. Figs. 9 and 10 are detail views in plan of portions of the same.

In the accompanying drawings, A represents a soaking-tank which is adapted to receive a plurality of barrels, and means, such as the inclined runs *a*, are provided for automatically conveying the barrels in said tank to a point where they can be automatically grasped by suitable transferring mechanism, such as the arms *b*, and placed upon runs *c*, by which they are delivered to the scrubbing device B.

The scrubbing device B is provided with a tank C, which is adapted to receive water which is discharged from the barrel in its passage from the transferring mechanism *b* to the outer ends of the runs *d*, and this tank C, I term an "intermediate" tank.

D indicates a sprinkling device which is adapted to receive a barrel and is provided with a perforated nozzle *e*, capable of passing through the bung of the barrel, so as to convey water to the inside thereof. Beneath the sprinkler D is a tank E, which I term the "sprinkler-tank." The sprinkler may be of any suitable construction, but is preferably constructed in a manner to be hereinafter described.

Beneath the scrubbing device proper and within the tank C is located a mud-hopper F, which is provided with an outlet *f* outside and independent of the tank C and adapted to discharge the contents of the hopper to any suitable point out of the apparatus. A pipe G is connected to the bottom of the sprinkler-tank and is provided with a valve *g* to control the efflux of water therefrom. This pipe G is connected with a branch pipe *h*, which is connected with a controlling mechanism H at the bottom of the tank C, and is likewise connected to a steam-injecting device I, which is indicated in detail in Fig. 4. This injecting device I comprises a chamber *i*, into which is projected a steam-injecting nozzle *j*, connected with a suitable steam-pipe *k*, which is controlled by a valve *l*. The steam-injecting device I connects with a pipe J, which passes to the outer end of the soaking-tank and communicates therewith at or near its upper end. The soaking-tank A is provided with an overflow-outlet pipe *m*, which communicates with the intermediate tank C. By this pipe connection between the soaking, intermediate, and sprinkler tanks complete communication is formed, and when steam is admitted to the steam-injecting nozzle a circulation through the tanks A and C and their pipe connections is maintained, and the steam from the injection-nozzle in contacting with the water heats the same, so that the water in circulating through the pipes is be-

ing constantly heated by the steam from the injecting-nozzle.

It will be observed that the branch pipe *h*, which connects the intermediate tank with the pipe G, is placed at an angle to the said pipe G, so that the tendency of the steam from the injecting-nozzle is to cause an induced current of water to be drawn through the pipes and that the greater portion of such water will be drawn from the sprinkler-tank E. However, as before stated, controlling means are provided for controlling the efflux of water from the intermediate and sprinkler tanks, so that the amount or proportion of water drawn from each of these tanks can be nicely regulated. The regulator H of the intermediate tank consists of an apertured cap *n*, surmounting which is a perforated disk *o*, the perforations in which are adapted to register with the perforations in the cap *n*. This disk is provided with a central aperture, through which passes a central pin or pivot *p*, between the head of which and the disk is confined a coiled spring *u*, which is adapted to maintain the disk in the position in which it is set. It is obvious that by turning the disk the openings through the disk and cap will be opened or closed to a greater or less degree, as desired. By this means any dirt or sediment is prevented from passing through the pipes.

By arranging the discharge of the pipe J at the extreme end and near the upper edge of the soaking-tank A the water which is projected from said pipe will be utilized to force the barrels down the runs *a* to the position where they can be automatically transferred to the scrubber.

The scrubber may be of any suitable construction, but preferably is provided with bearing-rolls K, which are arranged on separate shafts. These rolls are elliptical in form and are mounted, on the transverse axes thereof, on the shafts and are so arranged that the longitudinal axes of the rolls on one side of the scrubber will be at right angles to the longitudinal axes of the rolls on the other side of the scrubber. The object of this arrangement is to give a double oscillation to each end of the barrel for rotation of the shaft, and thereby provide a more violent and thorough agitation of the water within the barrel, at the same time causing the rotation of the barrel. The brushes of the scrubber, which are represented in detail in Figs. 6 and 7, are mounted in the usual or any preferred manner in brush-holders L, which are provided with pivots *r*, that project through elongated recesses *s* in suitable adjustable or stationary supports *l*, and springs *u* are interposed between the brush-holder L and the support *l*. This spring is formed in one piece in the manner indicated in Fig. 6 for the side brushes; but the spring for the top brush is arranged somewhat differently, as will be seen by reference to Fig. 5. The difference in construction of these springs better enables them to meet the requirements incident upon the uses of the apparatus. By interposing the springs between the brushes and their supports in the manner shown I am enabled to cause said brushes to bear upon the barrel in the scrubber and at the same time to allow the brushes to yield when undue pressure is exerted thereon, as when one barrel is conveyed by the transferring mechanism to the scrubber and forcibly displaces the barrel in place therein.

As before stated, the sprinkler employed may be of any suitable or preferred construction. However, I prefer to employ the sprinkler shown herein, which consists of a support M, which is provided with a chamber *v*, in which is contained a water-inlet *v'*. Upon this support M is secured a perforated valve-plate *x*, which is provided with a stem *y*, squared at the lower end and adapted to be seated in the perforated valve-section *w*, with a spring interposed between said plate and the perforated valve-section to maintain a close contact between the valve-plate *x* and a second coöperating section *z*, which is provided with apertures adapted to register with the apertures in the valve-plate *x*. The valve-plate *x* is likewise provided with lugs *x'*, which are adapted to be seated within corresponding recesses in the valve-casing *w* to better maintain the valve-plate against rotation. The hollow chamber in this valve-section *z* communicates with the perforated nozzle *e* of the sprinkler, which is adapted to be connected therewith by means of the screw-thread connections *z'*, a portion z^2 of this nozzle being rectangular to constitute a means for screwing the nozzle into position. The central aperture of the supporting-arms N is conical in form and is adapted to fit the conical portion of the valve-section *z*. It will be observed that by this means the arms N and the valve-section *z* may be united and caused to rotate together by tightening up the nozzle. Any suitable means may be provided for limiting the movement of the arms N, together with the valve-section *z*, connected therewith. In the present instance I have shown an arm N', depending from the supporting-arms and adapted to bear against a lug N^2 on the outer casing. Several of these depending lugs are provided upon the keg-support, and several lugs N^2 are provided upon the casing to cooperate therewith. By this construction of the sprinkler it will be observed that a quarter-turn of the supporting-arms N in one direction will cause the valve of the sprinkler to be shut off, whereas a quarter-turn of the supporting-arms in the opposite direction will cause the valve of the sprinkler to be opened to allow of the passage of water through the nozzle to the interior of the barrel.

It will be observed that the water which runs into a barrel in the soaking-tank is transferred with the barrel to the scrubber, where it is violently agitated to wash the inside of the barrel while the brushes are scrubbing the

outside. It is at this point, therefore, that the dirtiest water results from the cleansing process, and by my invention this polluted water is carried off and discharged from the mud-hopper and does not again enter the water circulating through the tanks. By this means the water in the circulating system is kept in a clean condition and may be reused from time to time and is maintained in a heated condition at little cost. It will also be seen that by the time the barrel reaches the sprinkler it is practically cleansed, so that the water from the sprinkler which gives the final rinsing to the inside of the barrel is in a clean condition when it runs from the barrel to the sprinkler-tank, from which it is drawn by the induced current caused by the injection of steam from the nozzle in the circulating-pipes, and the water passes in a clean condition to the soaking-tank.

It is thought that the operation of the device embodying my invention will be clearly understood from the foregoing description. However, a brief description of such operation will be given. Assuming the soaking, intermediate, and sprinkler tanks to contain the requisite amount of water to operate the apparatus, the valve of the steam-pipe *k* may be opened and steam injected through the nozzle *j*, so as to maintain a circulation of water through the tanks A and C and their pipe connections and to draw a fresh supply of water from the tank E. Barrels are then placed within the soaking-tank at the outer end and are forced by gravity down the runs *a*, being assisted in their passage by the flow of water through the pipe J. When the barrels reach the lower end of the runs, they are automatically transferred by the arms *b* or any other suitable mechanism to the scrubber B, where the water in the barrel is violently agitated by an agitation of the barrel on the supporting-rolls and is at the same time scrubbed on the outside by the brushes of the scrubbing device. During this operation the dirty water used in scrubbing the barrel is caught within the mud-hopper F and conveyed off to a sewer or other suitable point. (Not shown.) The barrel in the scrubber will be automatically driven out and replaced by the next succeeding barrel, conveyed to position by the transferring mechanism, and the washed barrel will be forced along the runs *d*, from whence it may be placed upon the sprinkler and the supporting-arms N given a quarter-turn to open the sprinkler-valve, and thereby convey water through the nozzle *e* to the interior of the barrel. When the barrel has been sufficiently cleansed by the sprinkler, the arms N are given a quarter-turn to shut off the valve and the barrel may be taken off in a thoroughly-cleansed condition.

What I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for handling and cleaning barrels, the combination of a soaking-tank, an intermediate tank having a barrel-scrubbing apparatus, and a sprinkling-tank, having a sprinkling apparatus in operative combination with each other and a circulating system connecting the sprinkling-tank and the soaking-tank, whereby the clean water employed for sprinkling the barrels is drawn off for use in the soaking-tank, substantially as described.

2. In a barrel handling and cleaning apparatus, the combination of a soaking-tank, an intermediate tank containing a barrel-scrubbing device and a sprinkling-tank having a sprinkling apparatus and combined together in operative relation and a water-circulating system connecting the sprinkling-tank with the soaking-tank and the soaking-tank with the intermediate tank.

3. In a barrel handling and cleaning apparatus, the combination of a soaking-tank, an intermediate tank provided with a barrel-scrubbing apparatus, a sprinkling-tank having a sprinkling apparatus, a water-circulating system connecting the sprinkling-tank and the intermediate tank and a steam-injector in the water-circulating system for heating and effecting the circulation of the water, substantially as described.

4. In a barrel-scrubbing apparatus, the combination of a scrubbing device, a tank and a mud-hopper beneath said scrubbing device, the said mud-hopper having an outlet adapted to discharge its contents outside of the tank.

5. In a barrel-scrubbing apparatus, the combination of a scrubbing device, a tank therefor and a mud-hopper contained within said tank and located beneath the scrubbing device, the said mud-hopper having an outlet adapted to discharge its contents outside of the tank.

6. In a barrel-scrubbing apparatus, the combination with a supporting-frame of a plurality of elliptical barrel-supporting rolls mounted in pairs on separate shafts and placed at right angles to each other on said shafts respectively.

7. In a barrel-scrubbing apparatus, the combination with a supporting-frame of a plurality of elliptical barrel-supporting rolls mounted in pairs on separate shafts and placed at right angles to each other on said shafts respectively, in combination with a pivoted self-adjusting top-brush adapted to bear upon the top of the barrel and to adjust itself to the oscillations of the said barrel.

8. In a barrel soaking, washing and scrubbing apparatus, the combination of a soaking-tank, a scrubbing device, an intermediate tank therefor, a mud-hopper beneath said scrubbing device, said mud-hopper having an outlet adapted to discharge its contents outside of the intermediate tank, a sprinkling device, a tank for said sprinkling device and connections between said tanks for conveying water therethrough.

9. In a barrel soaking, washing and scrubbing apparatus, the combination of a soak-

ing-tank, a scrubbing device, an intermediate tank therefor, a mud-hopper beneath said scrubbing device, said mud-hopper having an outlet adapted to discharge its contents outside of the intermediate tank, a sprinkling device, a tank for said sprinkling device, connections between said tanks for conveying water therethrough, the inlet of the soaking-tank being at one end and an outlet in the nature of an overflow at the other end, a steam-injection nozzle in said tank connections for heating the water and maintaining a circulation thereof through and between the tanks and means for controlling the efflux of water from said intermediate and sprinkling tanks.

10. In a sprinkler, the combination of a sprinkler-support, a water-inlet in said support, a valve-section carried by the support, a second coöperating valve-section provided with means for conveying water to the nozzle, barrel-supporting arms separable from but adapted to be supported by said last-named valve-section and a nozzle adapted to be secured to the second-named valve-section and to secure the valve-supporting arms thereto.

11. In a sprinkler, the combination of a sprinkler-support, a water-inlet in said support, a removable valve-section adapted to be secured against movement in the support, a second coöperating valve-section provided with a coned bearing and with means for conveying water therethrough to a nozzle, barrel-supporting arms separable from but adapted to be supported by the cone-bearing of said valve-section and a nozzle adapted to be secured to the second-named valve-section and to secure the barrel-supporting arms upon its cone-bearing.

GUSTAV SCHOCK.

Witnesses:
CHARLES E. SMITH,
RUDOLPH ABERLI.