R. TROEHLER.

KEG SOAKING APPARATUS.

APPLICATION FILED MAY 11, 1911.

1,128,825.

Patented Feb. 16, 1915.

2 SHEETS—SHEET 1.

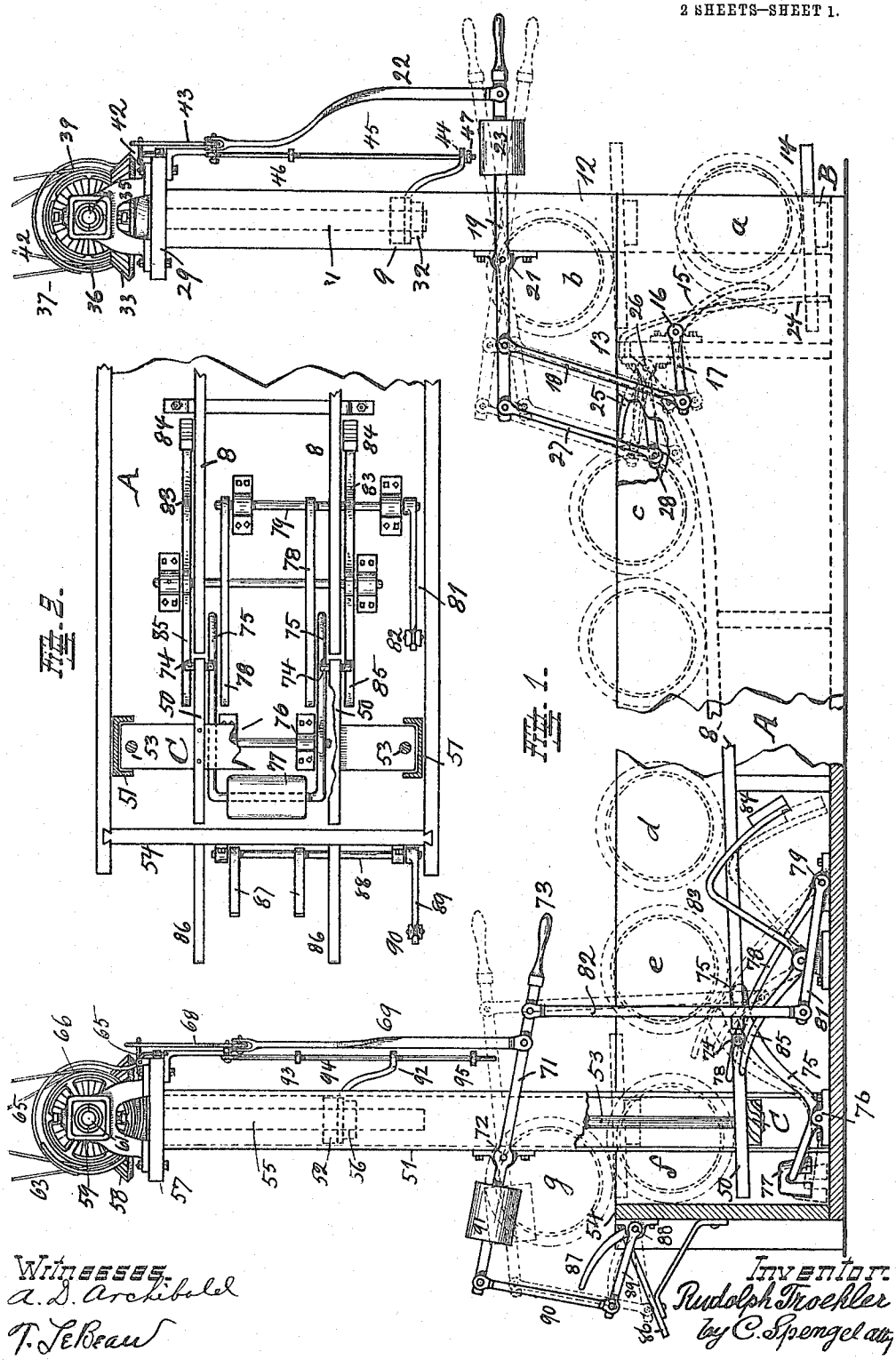

Fig. 2.

Fig. 1.

Witnesses:
A. D. Archibald
T. LeBeau

Inventor:
Rudolph Troehler
by C. Sprengel atty

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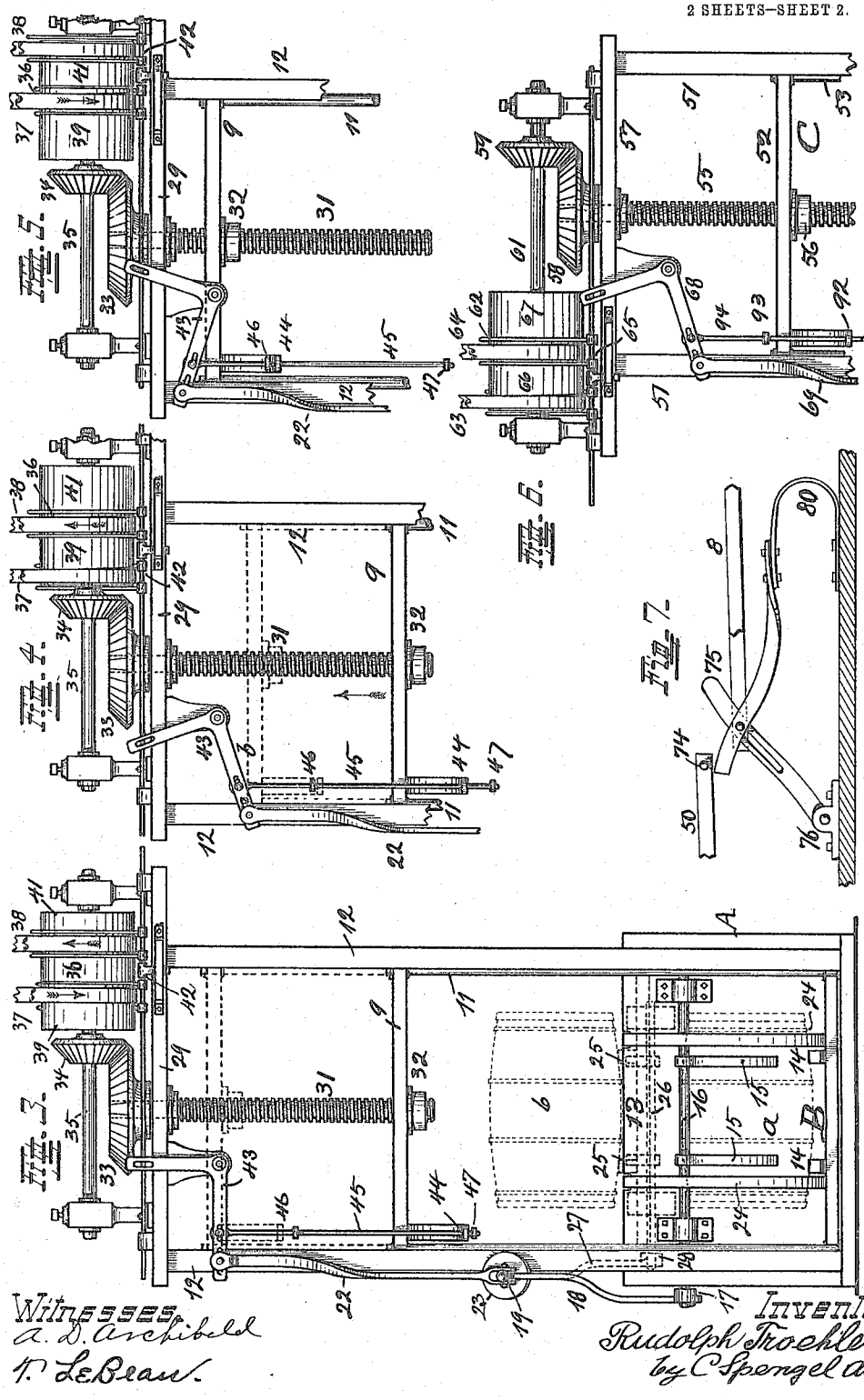

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by C. Spengel atty

UNITED STATES PATENT OFFICE.

RUDOLPH TROEHLER, OF CINCINNATI, OHIO.

KEG-SOAKING APPARATUS.

1,128,825. Specification of Letters Patent. Patented Feb. 16, 1915.

Application filed May 11, 1911. Serial No. 626,556.

To all whom it may concern:

Be it known that I, RUDOLPH TROEHLER, a citizen of the United States, and a resident of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Keg-Soaking Apparatus; and I do declare the following to be a clear, full, and exact description of the invention, attention being called to the two sheets of drawings which accompany this application and form a part thereof.

This invention concerns an apparatus used in connection with means and devices provided for cleaning barrels and kegs and more particularly in the manner in which this work is carried on in breweries. Washing and rinsing machines have been provided for this purpose which operate upon the kegs after they have been subjected first to a preliminary soaking whereby water is also admitted to them to clean and rinse them interiorly.

This invention relates more particularly to the apparatus which serves to administer this preliminary soaking to the kegs outside and inside, to introduce water into them and to deliver them thereafter to the washing and rinsing devices to be subjected to further treatment by them.

The invention consists more particularly of the construction of such an apparatus, a leading feature of which concerns certain means and mechanism whereby the mere placing of the kegs starts them off and causes them to pass automatically through the apparatus and out of the same to the other cleaning devices referred to to be further acted upon by them.

In the following specification and particularly pointed out in the claims at the end thereof, will be found a full description of my invention, together with its operation, parts and construction, which latter is also illustrated in the accompanying two sheets of drawings, in which:—

Figure 1, shows the apparatus in side-elevation with parts between the ends broken away, kegs passing through it being shown in dotted lines. Fig. 2, is a top-view of a part of the apparatus, more particularly the part of it near the discharge end, this being at the left of Fig. 1. Fig. 3, shows an end-view of the apparatus, it being more particularly the receiving end, or the end at the right side of Fig. 1, the parts being in position ready to receive a keg to be raised into the tank. Fig. 4, shows the upper part of Fig. 3, with parts in operative position and while in action for raising a keg into the tank. Fig. 5, in a similar view shows the same parts in operative position following their operation shown in the preceding figure and while in action to return to normal position. Fig. 6, shows in a view similar to Fig. 3, analogous devices provided and used at the discharge end of the apparatus, said devices being in an intermediate position. Fig. 7, in a view similar to a part of Fig. 1, shows a modified construction of a certain device illustrated there and hereinafter more fully described.

The apparatus consists essentially of an elongated tank A adapted to contain water, preferably hot, customary means being provided to supply the same and to maintain it at a fixed level and to permit draining of the tank whenever necessary. The apparatus consists further of an elevator B whereby the kegs are moved into this tank at one end of the same and delivered upon inclined track-rails 8 therein on which they roll down toward the other end of the tank and upon another elevator C thereat, whereby they are raised out of the tank and discharged therefrom. Both elevators operate automatically after a keg is placed upon them, upon the first one by the operator and upon the second one by the inclined track-rails which lead to it.

The dimensions of all the parts are such as to permit handling of the customary sizes of barrels and kegs used and the length of the tank is sufficient to permit a number of them to be in soak at a time, each keg being required to pass through the entire length of the tank which it does not leave until all kegs introduced before it have passed out. The depth of the water above rails 8 is such as to prevent the kegs from floating, so as to produce sufficient immersion and to cause water to enter them through their open bung-holes.

Each elevator consists substantially of a suitable frame adapted to provide support for a barrel, means for raising and lowering this frame and means for guiding it during this movement.

The frame of the first elevator consists of the platform B proper, and of a cross-beam 9 to which the platform is secured by two rods 11. This frame, at beam 9, is connected to the means whereby the elevator is

raised and lowered. It is fitted to be guided during this movement between two posts 12, elected outside of the receiving end 13 of the tank. A keg to be raised is received upon two sills 14 attached to and forming a part of the elevator platform and extending from it toward the end of the tank and preferably slightly inclined thereto.

15—15 are two arms rigidly connected to a rocker-rod 16 supported on the end 13 of the tank, said arms extending outwardly from said rod and downwardly toward the elevator when the same is in its lowest or receiving position. On one end of rod 16, there is a rigidly connected arm 17 which extends in a direction substantially opposite to that of arms 15 and the end of this arm is connected by means of a link 18 to a lever 19 pivotally supported at 21 and connected at the other side of this pivot by means of a link 22 to the mechanism whereby the elevator is raised and lowered.

If a keg is placed upon the elevator as shown in dotted lines at *a* in Figs. 1 and 2, it displaces arms 15, rocks rod 16 and by means of the described intermediate lever elements and structures including links 18 and 22 starts the operation of the raising mechanism. Lever 19 is balanced by means of a weight 23, so that in placing the keg against arms 15 these latter yield freely causing the raising mechanism to respond promptly. The keg while being lifted up, leans against two inclined rails 24 which keep it out of contact with rod 16 and also render the upward movement easy by reducing frictional interference. The act of thus placing a keg upon the elevator and which act has caused actuation of lever 19 as before described, has also affected another lever structure and raised arms 25 forming part of this structure and mounted upon a rocker-rod 26, supported on the inside of tank end 13, the position of these arms being one above the upper end of the track-rails. This is accomplished by means of a link 27, connected to rocker-rod 26, by means of an arm 28 also forming a part of this lever-structure. When now the rising keg rolls off from the elevator which it does as soon as this latter arrives on a level with the upper edge of the tank (see position *b*), there being nothing in the way any more to further restrain it, the keg necessarily drops upon these arms 25 while passing into the tank and rolling upon rails 8 therein (see position *c*, in Fig. 1.) This contact depresses arms 25 and shifts lever 19 and link 22, which actuation causes the elevator-moving mechanism to operate in a manner to lower the elevator to its original position. This elevator-moving mechanism is mounted upon a base 29, supported on posts 12 and connected also to the elevator. This connection may be a rack or a screw to operate in conjunction with a complementary machine-element.

I have shown a screw 31 mounted to rotate in base 29 and in engagement with a nut 32 attached to cross-rail 9. A bevel-gear 33 is attached to the upper end of this screw and in mesh with a pinion 34, mounted upon a shaft 35 and whereby screw 31 is rotated either in one or the other direction and as necessary to either raise or lower the elevator. This change of direction in rotation is accomplished by rotating pulley 36 which drives shaft 35 accordingly and by either one of the two belts 37 and 38, one of which travels in a direction opposite to that of the other, said belts being shifted correspondingly. If driven from one line or countershaft, one of said belts may be crossed to obtain this movement in opposite direction. When the apparatus is at rest, these belts travel on loose pulleys, belt 37 on a pulley 39 and belt 38 on a pulley 41, one of these pulleys being on each side of tight pulley 36, the belts being spaced accordingly. (See Fig. 3). A belt-shifter 42 is in engagement with both belts and serves to adjust both simultaneously.

When the placing of the keg upon the elevator has acted upon arms 15 and shifted the connected lever-structure including lever 19, as before described, link 22 by means of an angle-lever 43, moves the belt-shifter and by it belt 38 upon tight pulley 36, setting screw 31 in motion and lifting the elevator. Belt 37 simply remains upon loose pulley 39, it being moved laterally upon the same, note these positions in Fig. 4. 44 is a shifter which travels with the elevator and is in sliding engagement with a rod 45 connected to angle-lever 43. In due time this shifter comes in contact with a shoulder 46 on said rod, see dotted lines in Fig. 4, and pushing this latter, acts also upon angle-lever 43 and causes the belt-shifter to gradually move belt 38 off from tight pulley 36 and onto loose pulley 41. Thereupon the upward movement of the elevator ceases, belt 37 still remaining upon loose pulley 39, the position of the belts being substantially one as shown in Fig. 3. Shoulder 46 is so located that this occurs at the proper time, that is when the elevator is at the desired height (position *b*) to cause the keg to roll over the end of the tank and into the same (position *c*). In doing so the keg drops onto arms 25 which it depresses by its weight as before described, whereby the belt-shifter receives another actuation, in the same direction in which it was moved by traveling shifter 44, by means of intermediate lever-structures and elements 26, 28, 27, 19, 22 and 43 and whereby belt 37 is now shifted onto tight pulley 36, causing

rotation of the same in opposite direction which sends the elevator downwardly, belt 38 remaining on loose pulley 41. Observe Fig. 5. As will be perceived a moment of rest precedes this reversal of motion, due to the action of traveling shifter 44 upon shoulder 46. Observe dotted lines in Fig. 4. In due time this shifter 44 traveling now downwardly with the elevator comes in contact with another shoulder 47, also on rod 45 and causing this latter to act again upon angle-lever 43, so that it pulls the belt-shifter to the left, and moves belt 37 off from the tight pulley and onto loose pulley 39, the other belt remaining on loose pulley 41. This brings the elevator to a stop in its lowest position shown in Figs. 1 and 3, with all these parts ready for operation to hoist another keg into the tank. The keg, (position *c* Fig. 1) has now joined those in the tank and passes down on rails 8 toward the discharge end during which time it is soaked and also partly filled with water. In due time it rolls upon the second elevator which is constructed, supported and operated substantially like elevator B described before, except that it operates inside of the tank, so that two spaced sills 50—50, which form part of it, may be alined opposite the ends of rails 8, said sills being also inclined like these rails. This elevator consists of a frame guided between posts 51 and comprises the elevator platform C proper, a cross-beam 52 and rods 53 whereby both are connected to form the frame. Sills 50—50 are connected to platform C, the location of the parts being such that these sills occupy a position bridging the space between the ends of rails 8 and end 54 of the tank. See Figs. 1 and 2. 55 is the screw which moves this elevator, it being in engagement with the frame of the same by means of a nut 56. The screw is supported for rotation in either direction in a base 57 carried on posts 51. Rotation is effected by a bevel-wheel 58 on the screw, driven by a bevel-pinion 59 on a shaft 61. 62 is a pulley tight on shaft 61 and adapted to be driven by either one of two belts 63 and 64, which belts move in opposite directions and are subject to manipulation by a belt-shifter 65. One of two loose pulleys 66 and 67, one on each side of tight pulley 62, receives that one of the belts which is not driving for the time being, and said belts are spaced so that both may also occupy the loose pulleys at which time this elevator is at rest. This belt-shifter is manipulated by means operating automatically but also capable of being manually operated. These means consist of an angle-lever 68, a link 69 and a lever 71, pivoted at 72. Lever 71 is provided with a handle 73 to permit manipulation of the belt-shifter by hand.

The passing of a keg from position *e* to position *f* indicated in Fig. 1 causes, by means of mechanism presently to be described, a shifting of belt 64 to tight pulley 62 whereby the elevator C is raised and the keg transferred to position *g* indicated in Fig. 1. The keg rolls from the elevator in the last named position and during such movement causes the operation of mechanism to shift belt 63 to fixed pulley 62 whereby the elevator is lowered into the tank to receive another keg. This part of the apparatus is constructed and operates as follows: Sills 50 which at their inner ends are enlarged or provided with lateral projections as shown at 74 have acted, while moving down with the descending elevator, to depress a stop which so far had held back the lowermost keg and prevented the same from rolling off from track-rails 8 while the elevator was not in proper position opposite them to receive it. This stop consists of two stop-bars 75, preferably connected to form a frame-structure so as to move together. This structure is pivoted at 76 to the bottom of the tank and is held in normally elevated position by action of springs or weight. If a weight is used as shown at 77 in Figs. 1 and 2, the structure is in form of an angle-lever (see Fig. 1). If a spring is used as shown at 80 in Fig. 7, projections 74 act upon the free ends of these springs, or upon extension-bars connected thereto, said bars engaging bars 75 by means of a pin and slot-connection. The depression of this stop, whereby it is rendered inoperative to further retard a keg, is about completed by the time the elevator has come to a stand in its lowest position and at which time sills 50 are also opposite to and aline with the ends of rails 8, so that the lowermost keg, now released, may roll from a position at *e* on the track-rails into position *f* upon the elevator. The keg while so rolling over acts upon another lever-structure connected to lever 71 in a manner to cause belt-adjusting actuation of the belt-shifter previously referred to, whereby elevator-raising rotation of screw 55 is effected. This lever-structure consists preferably of two levers 78, mounted upon a rocker-rod 79, supported on the tank-bottom and positioned so that the upper ends of these levers project into the path of the rolling keg and are depressed thereby when the same rolls from the tracks onto the elevator. An arm 81 on this rod is connected to lever 71 by means of a link 82. To prevent other kegs in position *d* from crowding after this released keg, there is a supplementary stop in form of two levers 83, held in normally inoperative position by action of springs or by weights as shown at 84. The last part of the descending movement of the elevator whereby stops 75 were depressed and rendered inoperative, renders this supplementary stop 83

active, this being also effected by sills 50 of elevator C, which by means of projections 74 act upon ends 85 of these stop-levers 83 and lift their other ends above track-rails 8 and between the released keg and the one in position *d* back of it. The upward movement of the elevator affects again both stops. It renders the supplementary stop 83 inactive, releasing the keg restrained by it in position *d* and permits the other stop bars 75 to rise so that they are again in active position to arrest progress of the keg released by the supplementary stop. The keg is now held in position *e*, by this other stop (75) which prevents it from rolling off of the rails and into the gap left by the absent elevator. This latter rises until the keg on it arrives in position *g* in which it is free to roll over the edge of the tank and out of the same upon a guide-way 86 on which it passes to a washing-machine, or to be otherwise disposed of. While so passing out of the tank the keg acts again upon a lever-structure consisting of two levers 87 mounted upon a rod 88 and connected by an arm 89 and a link 90 to lever 71 which actuates the belt-shifter. Lever 71 is closely balanced by a weight 91 so that it is readily affected by these actions of the keg.

The shifting of the belts to obtain the reciprocatory movement of the elevator proceeds analogous to the shifting of the belts as explained in connection with the elevator at the receiving end. A traveling shifter 92, moving with the elevator contacts on the upward movement with a shoulder 93, on a rod 94 connected to angle-lever 68 and acts by means of this latter upon the belt-shifter in a manner to unship the belt from tight pulley 62 so as to slow up the motion of the moving parts at the moment when the keg arrives in position *g* and before this motion is reversed by the action of the keg rolling over levers 87, and effecting shifting of the other belt upon the tight pulley. In descending and near the end of this movement of the elevator, shifter 92 contacts again with another shoulder 95 and pulling rod 94 down shifts the driving belt off from the tight pulley to slow down the motion momentarily immediately before another keg, when rolling onto sills 50 (position *f*) reverses the movement again by its contact with levers 78. This elevator operates as long as there is a keg on track-rails 8 and it comes to a stand-still automatically as soon as the last keg is hoisted out of the tank, the belt shifter being in an intermediate position, due to the action of traveling shifter 92 upon shoulder 95 whereby the driving belt is shifted from the tight pulley so that both belts occupy the loose pulleys. Therefore when operations are resumed this elevator must be started by manual actuation which is done by action upon handle 73 of lever 71, as soon as kegs are in the tank. Operation may of course be stopped at any time by manipulation of this lever or of lever 19.

Having described my invention, I claim as new:

1. In a keg-soaking apparatus which comprises an elongated soaking tank provided with a keg-elevator at one of its ends and with a lengthwise arranged track adapted to receive kegs from the elevator and inclined toward the other end, the combination of an elevator at the lower end of this inclined track adapted to receive the kegs therefrom, mechanism to move this elevator, controlling devices in operative connection with this mechanism and located in the path traveled by the kegs after they have left the track and adapted to be acted upon by them to control the action of the elevator-moving mechanism.

2. In a keg-soaking apparatus which comprises an elongated soaking tank provided with a keg-elevator at one of its ends and with a lengthwise arranged track adapted to receive kegs from the elevator and inclined toward the other end, the combination of an elevator at the lower end of this inclined track adapted to receive the kegs therefrom, reversible mechanism to move this elevator in either direction, a controlling device located in the path traveled by the kegs, after they are directed by the track upon the elevator and in operative connection with the reversible elevator-moving mechanism, so that, when said controlling device is acted upon by the keg, it will cause operation of the elevator-moving mechanism to raise the elevator, and an additional controlling device, also in operative connection with the reversible elevator-moving mechanism and located in the path traveled by the kegs after they leave the raised elevator, whereby said device, when acted upon by a keg, will cause operation of the elevator-moving mechanism to lower the elevator into the tank.

3. In a keg-soaking apparatus which comprises an elongated soaking tank provided with a lengthwise arranged track adapted to receive kegs and inclined toward one end of the tank from which end it is spaced, the combination of an elevator comprising a platform, guides for the elevator whereby it is positioned in the space between the end of the tank and the track so as to be adapted to receive kegs from this latter, mechanism whereby this elevator is operated to move between the track and the upper edge of the tank and means controlled as to position by the elevator and adapted to prevent kegs from passing off the track while the elevator is not in position to receive them.

4. In a keg-soaking apparatus which comprises an elongated soaking tank provided

with a lengthwise arranged track adapted to receive kegs and inclined toward one end of the tank from which end it is spaced, the combination of an elevator comprising a platform, guides for the elevator whereby it is positioned in the space between the end of the tank and the track so as to be adapted to receive kegs from this latter, mechanism whereby this elevator is operated to move between the track and the upper edge of the tank, an adjustable stop to prevent kegs from passing upon the elevator when the same is not opposite the track and adapted to be rendered inoperative by the elevator to release a keg when said elevator moves into alinement with the track, and a supplementary stop adapted to be rendered operative by the elevator at the same time to prevent other kegs from following the keg released by the first stop.

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

RUDOLPH TROEHLER.

Witnesses:
C. SPENGEL,
T. LE BEAU.