Dec. 3, 1935. A. COHEN 2,022,951

BEVERAGE DISPENSING DEVICE

Filed Sept. 18, 1933 2 Sheets-Sheet 1

Fig. 1.

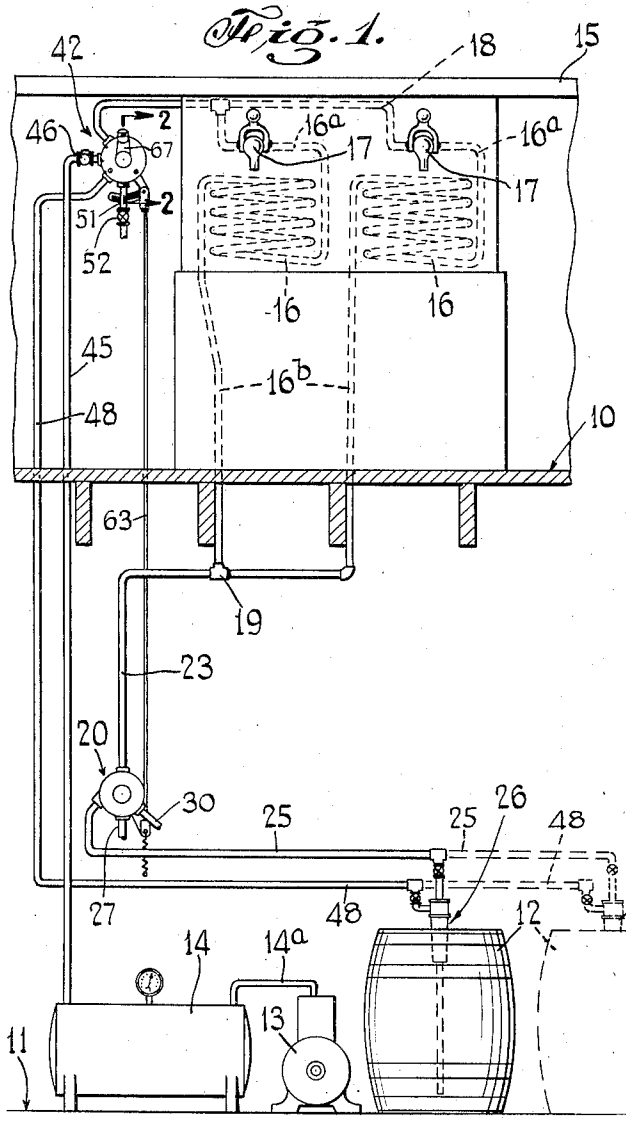
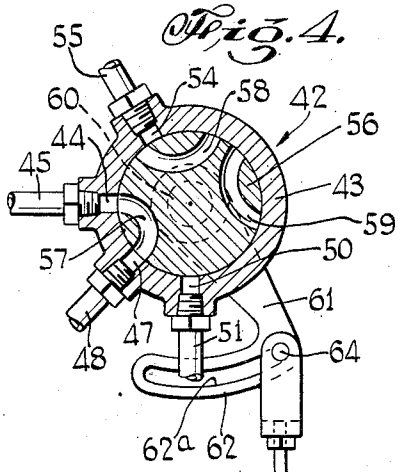


Fig. 4.



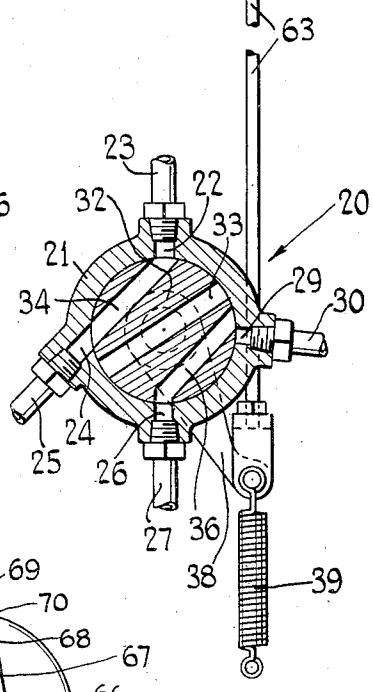


Fig. 2.

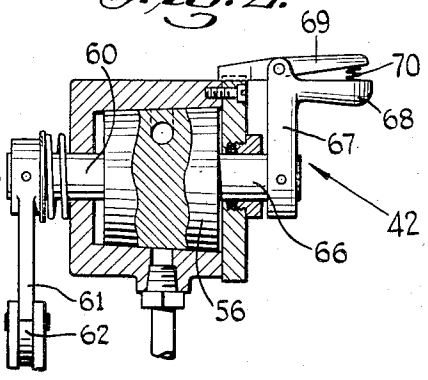
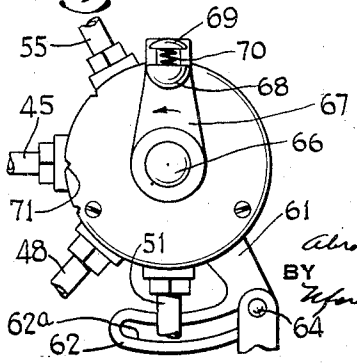


Fig. 3.



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BEVERAGE DISPENSING DEVICE

Filed Sept. 18, 1933 2 Sheets-Sheet 2

Fig. 5.

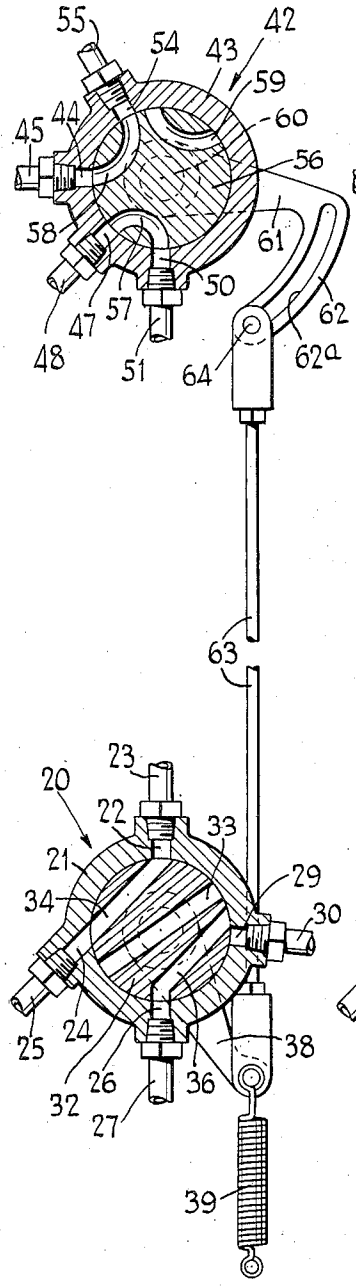


Fig. 6.

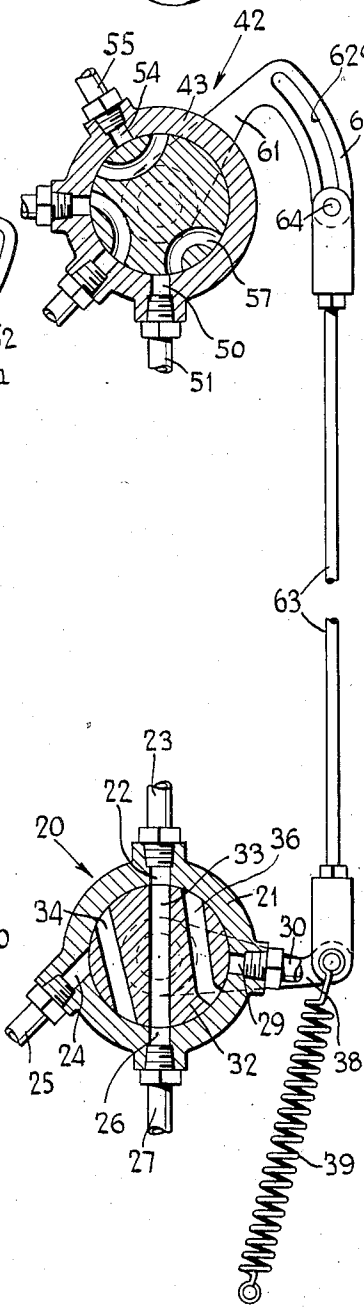
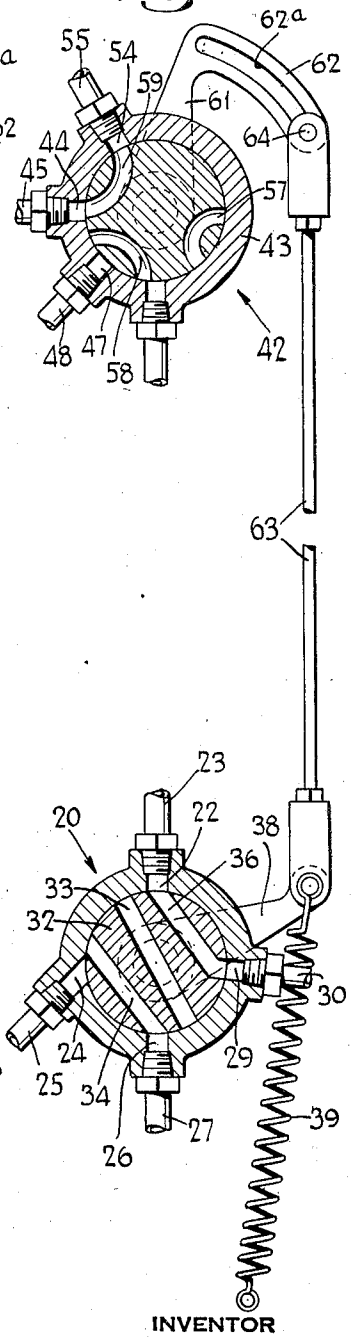


Fig. 7.



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UNITED STATES PATENT OFFICE

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BEVERAGE DISPENSING DEVICE

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Application September 18, 1933, Serial No. 689,831

14 Claims. (Cl. 225—12)

This invention relates to beverage dispensing devices and is particularly directed to a system for dispensing beer and cleaning beer pipes.

An object of this invention is to provide a system of the character described having means for returning the beer in the cooling pipes to the beer kegs, and means for flushing the pipes with water, the construction including a highly improved device controlled by movement of a single member at the bar for operating the entire system.

A further object of this invention is to provide a compact system of the character described, comprising comparatively few and simple parts, which shall be relatively inexpensive to manufacture, easy to assemble and install, smooth and positive in operation, and withal practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawings, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is an elevational view of a system embodying the invention;

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a side elevational view of the structure shown in Fig. 2;

Fig. 4 is a side elevational view of the controlling valve mechanism forming part of my improved system and showing the valves in cross-section; and

Figs. 5, 6 and 7 are cross-sectional views of the valves in various positions thereof.

Referring now in detail to the drawings, 10 designates the floor of a bar-room or the like, in which the beer is dispensed, and 11 designates the floor of the cellar beneath. Mounted in the cellar are the beer kegs 12, an air pump 13 to supply air for producing pressure in the beer kegs, and an air tank 14 connected to the pump 13 by piping 14a, for maintaining air under pressure.

Mounted on the floor 10 is a bar 15 containing a usual refrigerating unit for cooling the cooling coils 16. The coils 16 are connected by pipes 16a to faucets 17 which are interconnected by a pipe 18. The cooling coils are likewise connected by pipes 16b, as at 19, to a pipe 23. Mounted on any suitable support within the cellar is a multiple valve 20 comprising an annular valve casing 21 having a passage 22 connected to said pipe 23 leading to the cooling coils 16. The valve casing 21 is also provided with a passage 24 to which there is connected a piping 25 communicating with the usual rods 26 projecting into the beer kegs. Said valve casing 21 is further formed with a passage 26 diametrically disposed with respect to the passage 22 and connected to a pipe 27 to which there is supplied water under pressure from any suitable source. A passage 29 is further provided in said valve casing substantially directly opposite the passage 24 and connected to a drain or outlet pipe 30.

Disposed within the casing 21 is a valve cock 32 having three parallel through passages, to wit, a central passage 33 adapted to interconnect the passages 23 and 27 in one position of said cock, a passage 34 adapted to interconnect the passages 22 and 24 in another position of said cock, and a passage 36 adapted to interconnect the passages 22 and 29 in still another position of said cock. It will be noted that when the passage 34 interconnects the passages 22 and 24 the passages 33 and 36 are closed. When the passage 33 interconnects the passages 22 and 26 the passages 34 and 36 are closed, and when the passage 36 interconnects the passages 22 and 29 the passages 34 and 33 are closed. The valve cock 32 extends beyond the casing 21 and attached thereto is an actuating arm 38 normally maintained in the position shown in Fig. 4 of the drawings with the passage 34 interconnecting the passages 22 and 24, by a coil tension spring 39. The spring 39 may be connected to one end of the arm 38, and fixed at the other end thereof to any suitable support.

Mounted in any suitable manner on the bar 15 and preferably in a position easily accessible to an operator at the bar, is a valve 42 comprising an annular valve casing 43. The casing 43 is provided with a passage 44 interconnected by a pipe 45 to the air tank 14. Interposed in the pipe 45 and adjacent the valve casing 42 is a one-way air valve 46 permitting air to flow from the tank 14 to the passage 44 but preventing return of air to the air tank. Said valve casing 43 is further formed with a passage 47 connected by pipe 48 to the rods 26 inserted in the beer tanks.

It will be understood that the rods 26 are of the usual type and are constructed for permitting air to enter the beer kegs and force the beer under pressure upwardly into the beer pipes. The cas-

ing 43 may be further formed with a passage 50 connected to an air exhaust pipe 51 provided with an air exhaust valve 52. Said passage 47 is preferably mid-way between the passages 44 and 50. The valve casing 43 is further formed with a passage 54 to which there is attached piping 55 connected to the faucets 17.

Rotatably mounted within the casing 43 is a valve cock 56 having a curved passage 57 adapted in the position shown in Fig. 4, to interconnect the passages 44 and 47. Said cock 56 is formed with a second curved passage 58 closed in the position shown in Fig. 4 and adapted to interconnect the passages 44 and 54 upon rotating the valve cock through a predetermined angle. When the cock is turned to bring the passage 58 in position for interconnecting said passages 44 and 54, the passage 57 will interconnect the passages 47 and 50. Said passage 58 is further adapted to interconnect the passages 44 and 47 upon rotating the valve cock through another predetermined angle. In said last position, the passage 57 is closed. Said valve cock is formed with a third curved passage 59 closed in the position of Fig. 4 and in said last two positions of the valve cock, and adapted to interconnect the passages 44 and 54 upon rotating the valve cock through still another predetermined angle. In said last position of said valve cock the passages 57 and 58 are closed.

Attached to the cock 56 and extending from one side thereof is an axial shaft 60 projecting from the valve casing, and attached to said shaft 60 is an arm 61 provided with a curved portion 62 having a curved slot 62*a* concentric with respect to said valve casing. Interconnecting the arm 38 of the lower valve 20 with the slotted member 62 is a connecting rod or link 63. The upper end of the link is provided with a pin 64 projecting through the slot 62*a* in said slotted arm. Extending from the valve cock 56 in a direction opposite to the shaft 60 is an axial shaft 66 to which there is attached a handle 67. The handle 67 is provided with a hand grip 68 to which there is pivoted a lever 69 pressed by a spring 70 against a peripheral portion of the valve casing. Said valve casing may be provided with a plurality of spaced notches 71 receiving an edge of the lever for retaining the valve cock in the several positions to which the same may be turned, as will appear hereinafter.

The operation of my device will now be described. Beginning with the parts in the position shown in the drawings, the air tank is connected through the passage 57 in the valve 42 to to the beer kegs and supplies sufficient pressure to said kegs to permit flow of beer through the pipe 25 through the valve passage 34 and pipe 23 into the coils 16. Upon opening the faucets 17, beer may be dispensed in the usual manner.

Should beer be left remaining in the pipes and coils 16 overnight or for long periods, the beer in said pipe would become stale so that several glasses of beer must be tapped off to get rid of the stale beer. To obviate such loss of the beer, the beer within the coils may be pumped back to the beer kegs or barrels. To this end the handle grip 68 is grasped and the valve cock 56 turned in a counterclockwise direction, looking at Fig. 4, to bring the passage 57 to a position where the same interconnects the passages 47 and 50. The passage 58 will in this position interconnect the passages 44 and 54 and the pin 64 will contact the left or outer end of the slot 62*a*. The valve 20, however, will not be turned due to the lost motion or pin and slot connection between the link 63 and the arm 62. With the valve in such position, the pressure within the beer kegs will be reduced due to flow of air through the pipe 48 to the passage 57 in the valve 42 and through the exhaust air valve 52.

The air from the tank 14, however, will pass through the pipe 45, through passage 58 and into the pipe 55, forcing the beer in the coils 16 back through the pipe 23 and passage 34 to the pipe 25, and hence to the beer kegs.

To clean the beer pipes after the beer has been forced back to the beer kegs, the valve cock 56 is turned further in a counterclockwise position, looking at Fig. 4 of the drawings, to the position where the valve passages 44 and 47 are interconnected through the passage 58. During this movement the arm 62 will lift the connecting rod 63 to cause counterclockwise movement of the valve cock 32 for bringing the passage 33 into communication with the passages 22 and 26. Water from the pipe 27 may then pass through the passage 33 to the pipe 23 and up through the beer coils. Upon opening the faucets the water will be let out, thus thoroughly washing the beer coils. During this operation, air will pass to the beer kegs, since the passage 59 interconnects the pipe 45 with the pipe 48, thus keeping the beer properly charged and preventing the same from becoming flat.

To drain the water from the coils, the valve cock 56 is rotated further in a counterclockwise direction, looking at Fig. 4 of the drawings, to bring the passage 59 in position for interconnecting the passage 44 with the passage 54. In this position the passages 58 and 57 are closed. At the same time the connecting rod or link 63 is further lifted to cause further rotation of the valve cock 32, bringing the passage 36 into position for connecting the passage 29 with the passage 22. The water in the coils may then be drained by gravity, out through the pipe 30.

The pipes, however, are more effectively cleaned by reason of the fact that the pipe 45 leading from the air tank is connected by passage 59 with the pipe 55, and air may pass through the pipe 55 to the coils, thus forcing any drops of water or other material out from the pipe 23 and to the drain pipe 30. The notches 71 are properly located for retaining the lever 69 and handle 67 in the respective angular positions. The lever 69 may then be depressed and the handle rotated back to the original position shown in Fig. 4 of the drawings to again force the beer to the cooling coils 16.

It will be understood that the interconnected valves may be operated by any suitable electromagnetic devices or electric motor, instead of the manual operation illustrated in the drawings.

Instead of using compressed air and an air pump, any other suitable supply of gas under pressure may be substituted, for example, carbon dioxide under pressure. It will therefore be understood that the term "air under pressure" in the specification and claims will be taken to mean any suitable gas under pressure.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment set forth, it is to be understood that all matter herein

set forth or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

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

1. In a system of the character described, in combination, a beer keg, a cooling coil connected to a faucet, a valve casing having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said cooling coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, a valve cock within said valve casing having a passage adapted in one position of said valve cock to interconnect the pipe leading to the beer keg with the pipe leading to the cooling coil, a second passage adapted, in another position of said valve cock, to interconnect the water supply pipe with the pipe leading to the cooling coil, and a third passage adapted, in still another position of said valve cock, to interconnect the pipe leading to the cooling coil with the drain pipe, a second valve casing having a passage connected to an air supply under pressure, a second passage connected by a pipe to the beer keg, a third passage to which there is connected an air exhaust pipe, and a fourth passage connected by a pipe to said faucet, a valve cock within said second valve casing having a passage adapted, in one position of said valve cock to interconnect the passage which leads to the beer keg with the air supply passage, and a second passage adapted in another position of said last mentioned valve cock to interconnect the passage which leads to the air supply with the passage which leads to the faucet, said first passage of said second valve cock being adapted to interconnect said passage which leads to the beer keg with the air exhaust passage in the latter position of said second mentioned valve cock.

2. In a system of the character described, in combination, a beer keg, a cooling coil connected to a faucet, a valve casing having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said cooling coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, a valve cock within said valve casing having a passage adapted in one position of said valve cock to interconnect the pipe leading to the beer keg with the pipe leading the cooling coil, a second passage adapted in another position of said valve cock to interconnect the water supply pipe with the pipe leading to the cooling coil, and a third passage adapted in still another position of said valve cock, to interconnect the pipe leading to the cooling coil with the drain pipe, a second valve casing having a passage connected to an air supply under pressure, a second passage connected by a pipe to the beer keg, a third passage to which there is connected an air exhaust pipe, and a fourth passage connected by a pipe to said faucet, a valve cock within said second valve casing having a passage adapted in one position of said valve cock to interconnect the passage which leads to the air supply to the pipe which leads to the beer keg and a second passage adapted in another position of said last mentioned valve cock to interconnect the passage which leads to the air supply with the passage which leads to the faucet, said first passage of said second valve cock being adapted to interconnect said passage which leads to the beer keg with the air exhaust passage in the latter position of said second mentioned valve cock, and means for simultaneously rotating said valve cocks.

3. In combination, a beer keg, a cooling coil, means for supplying water under pressure, and means for supplying compressed air, valve means for controlling the flow of beer from the beer keg to the cooling coil and the flow of water from the water supply means to said cooling coil, a second valve controlling the flow of air from the air supply means to the beer keg and the flow of air from said air supply means to said cooling coil, and a single control means for actuating both said valves.

4. In combination, a beer keg, a cooling coil, means for supplying water under pressure, means for supplying compressed air, valve means for controlling the flow of beer from the beer keg to the cooling coil and the flow of water from the water supply means to said cooling coil, a second valve controlling the flow of air from the air supply means to the beer keg and the flow of air from said air supply means to said cooling coil, and a single control means for actuating both said valves, said first valve being connected to a water drain and said second valve being connected to an air exhaust pipe.

5. In a system of the character described, in combination, a beer keg, a cooling coil connected to a faucet, a valve having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said cooling coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, means within said valve for interconnecting at one position thereof the pipe leading to the beer keg with the pipe leading to the cooling coil and in another position thereof for interconnecting the water supply pipe with the pipe leading to the cooling coil, and in still another position thereof to interconnect the pipe leading to the cooling coil with the drain pipe, a second valve having a passage connected to an air supply under pressure, a second passage connected by a pipe to the beer keg, a third passage to which there is connected an air exhaust pipe, and a fourth passage connected by a pipe to said faucet, means associated with said second valve adapted in one position thereof to interconnect the passage which leads to the beer keg with the air supply passage and in another position thereof to interconnect the passage which leads to the air supply with the passage which leads to the faucet, said means being adapted in the latter position thereof to interconnect the passage which leads to the beer keg with the air exhaust passage.

6. In a system of the character described, in combination, a beer keg, a cooling coil connected to a faucet, a valve having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said cooling coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, means within said valve for interconnecting at one position thereof the pipe leading to the beer keg with the pipe leading to the cooling coil and in another position thereof for interconnecting the water supply pipe with the pipe leading to the cooling coil, and in still another position thereof to interconnect the pipe leading to the cooling coil with the drain pipe, a second valve having a passage connected to an air supply under pressure, a second passage connected by a pipe to

the beer keg, a third passage to which there is connected an air exhaust pipe, and a fourth passage connected by a pipe to said faucet, means associated with said second valve adapted in one position thereof to interconnect the passage which leads to the beer keg with the air supply passage and in another position thereof to interconnect the passage which leads to the air supply with the passage which leads to the faucet, said means being adapted in the latter position thereof to interconnect the passage which leads to the beer keg with the air exhaust passage, and means for simultaneously actuating both valves.

7. In a system of the character described, in combination, a beer keg, a cooling coil connected to a faucet, a valve having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said cooling coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, means within said valve for interconnecting at one position thereof the pipe leading to the beer keg with the pipe leading to the cooling coil and in another position thereof for interconnecting the water supply pipe with the pipe leading to the cooling coil, and in still another position thereof to interconnect the pipe leading to the cooling coil with the drain pipe, a second valve having a passage connected to an air supply under pressure, a second passage connected by a pipe to the beer keg, a third passage to which there is connected an air exhaust pipe, and a fourth passage connected by a pipe to said faucet, means associated with said second valve adapted in one position thereof to interconnect the passage which leads to the beer keg with the air supply passage and in another position thereof to interconnect the passage which leads to the air supply with the passage which leads to the faucet, said means being adapted in the latter position thereof to interconnect the passage which leads to the beer keg with the air exhaust passage, and means for simultaneously actuating both valves, said last mentioned means being constructed to permit actuation of one of said valves without actuation of said other valve.

8. In a system of the character described, in combination, a beer keg, a beer coil connected to a faucet, a valve having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, means within said valve for interconnecting in one position thereof, the pipe leading to the beer keg with the pipe leading to the coil, and in another position thereof, for interconnecting the water supply pipe with the pipe leading to the cooling coil, and still in another position thereof, to interconnect the pipe leading to the coil with the drain pipe, a second valve having a passage connected to an air suppy under pressure, a second passage connected by a pipe to the beer keg, and a third passage connected by a pipe to the faucet, means associated with said second valve adapted, in one position thereof, to cut off communication between the passage which leads to the beer keg and the passage which leads to the faucet, and in another position thereof, to interconnect said passages, and means associated with said second valve connecting the passage which leads to the air supply with the passage which leads to the beer keg.

9. In a system of the character described, in combination, a beer keg, a beer coil connected to a faucet, a valve having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, means within said valve for interconnecting in one position thereof, the pipe leading to the beer keg with the pipe leading to the coil, and in another position thereof, for interconnecting the water supply pipe with the pipe leading to the cooling coil, and still in another position thereof, to interconnect the pipe leading to the coil with the drain pipe, a second valve having a passage connected to an air supply under pressure, a second passage connected by a pipe to the beer keg, and a third passage connected by a pipe to the faucet, means associated with said second valve adapted, in one position thereof, to cut off communication between the passage which leads to the beer keg with the passage which leads to the faucet, and in another position thereof, to interconnect said passages, means associated with said second valve connecting the passage which leads to the air supply with the passage which leads to the beer keg, and means for simultaneously actuating both valves.

10. In a system of the character described, in combination, a beer keg, a beer coil connected to a faucet, a valve having a passage connected by a pipe to the beer keg, a second passage connected by a pipe to said coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, means within said valve for interconnecting in one position thereof, the pipe leading to the beer keg with the pipe leading to the coil, and in another position thereof, for interconnecting the water supply pipe with the pipe leading to the cooling coil, and still in another position thereof, to interconnect the pipe leading to the coil with the drain pipe, a second valve having a passage connected to an air supply under pressure, a second passage connected by a pipe to the beer keg, and a third passage connected by a pipe to the faucet, means associated with said second valve adapted, in one position thereof, to cut off communication between the passage which leads to the beer keg with the passage which leads to the faucet, and in another position thereof, to interconnect said passages, means associated with said second valve connecting the passage which leads to the air supply with the passage which leads to the beer keg, and means for simultaneously actuating both valves, said means including a lost motion connection for permitting actuation of said second valve without actuation of said first valve.

11. In a system of the character described, a liquid container, a cooling coil, a valve, a pipe interconnecting said valve with said container, a pipe interconnecting said valve with said cooling coil, a faucet interconnected to said cooling coil, a second valve interconnected by a pipe to said faucet and by another pipe to said container, means for supplying air under pressure connected to said second valve, and means interconnecting said valves for simultaneous operation, said means including a lost motion device to permit actuation of one of said valves without operating the other valve.

12. In combination, a beer keg, a cooling coil, means for supplying water under pressure, and means for supplying compressed air, valve means

for controlling the flow of beer from the beer keg to the cooling coil and the flow of water from the water supply means to said cooling coil, a second valve controlling the flow of air from said air supply means to said cooling coil, and a single control means for actuating both said valves, said control means including a lost motion device to permit actuation of one of said valves without actuating the other of said valves.

13. In a system of the character described, in combination, a beer keg, a beer coil connected to a faucet, a valve having a passage connected by a pipe to said beer keg, a second passage connected by a pipe to said coil, a third passage connected by a pipe to a water supply under pressure, and a fourth passage to which there is attached a drain pipe, said valve having means for interconnecting the pipe leading to the beer keg with the pipe leading to the coil and for interconnecting the water supply pipe with the pipe leading to the coil and for interconnecting the pipe leading to the coil with the drain pipe, a second valve having a passage connected to a gas supply under pressure, a second passage connected by a pipe to the beer keg, and a third passage connected by a pipe to the faucet, said second valve having means to cut off communication between the passage which leads to the beer keg and the passage which leads to the faucet and to interconnect said passages, and means associated with said second valve connecting the passage which leads to the gas supply with the passage which leads to the beer keg.

14. In a system of the character described, a liquid container, a cooling coil, a valve, a pipe interconnecting said valve with said container, a pipe interconnecting said valve with said cooling coil, a faucet interconnected to said cooling coil, a second valve interconnected by a pipe to said faucet, means for supplying air under pressure connected to said second valve, means for supplying air under pressure to said container and means interconnecting said valves for simultaneous operation.

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