

S. W. MORAN.
DISPENSING APPARATUS FOR LIQUIDS.

APPLICATION FILED FEB. 12, 1903.

2 SHEETS—SHEET 1.

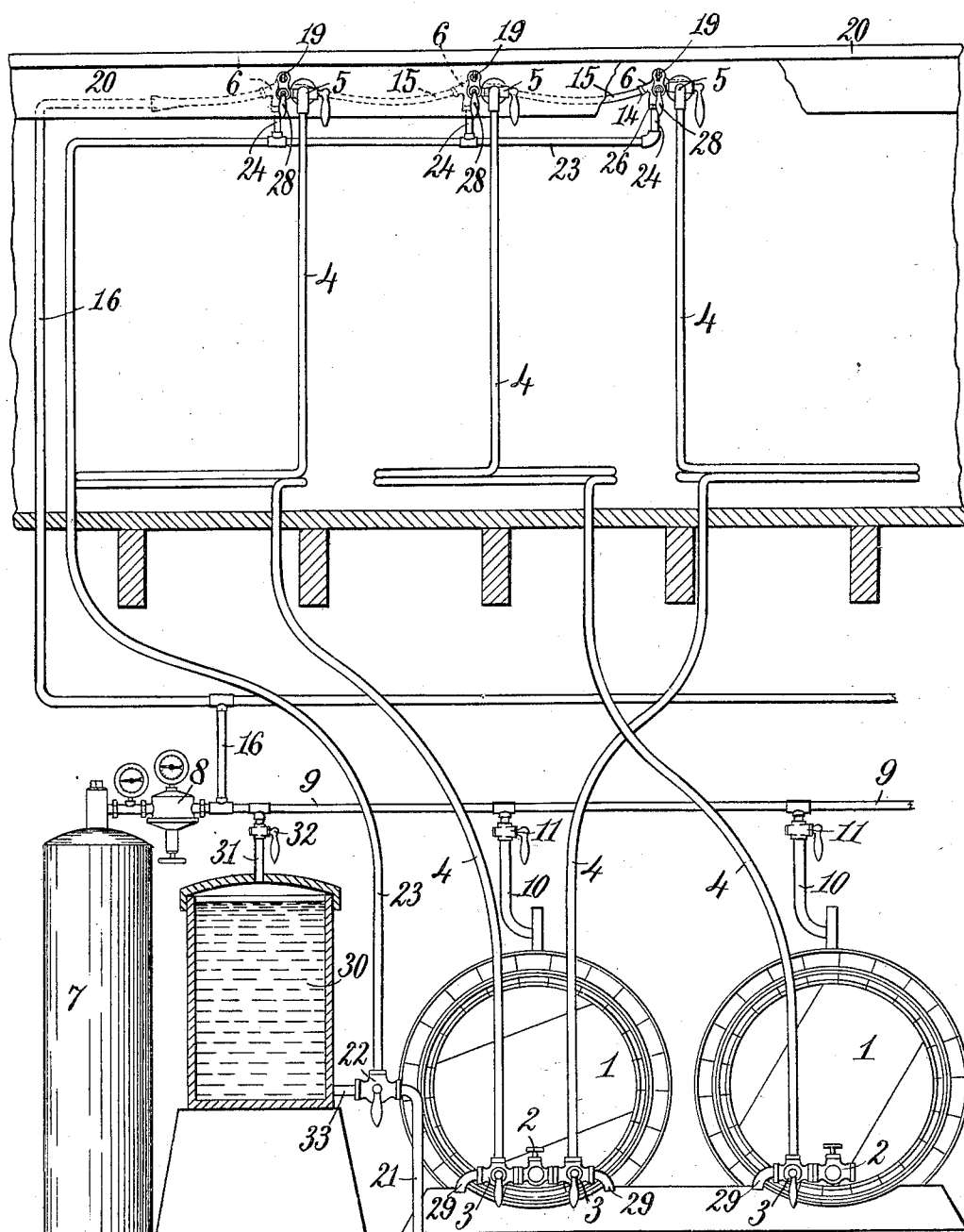


Fig. 1.

Witnesses

Lairitz & Moller
Mary C. Moller

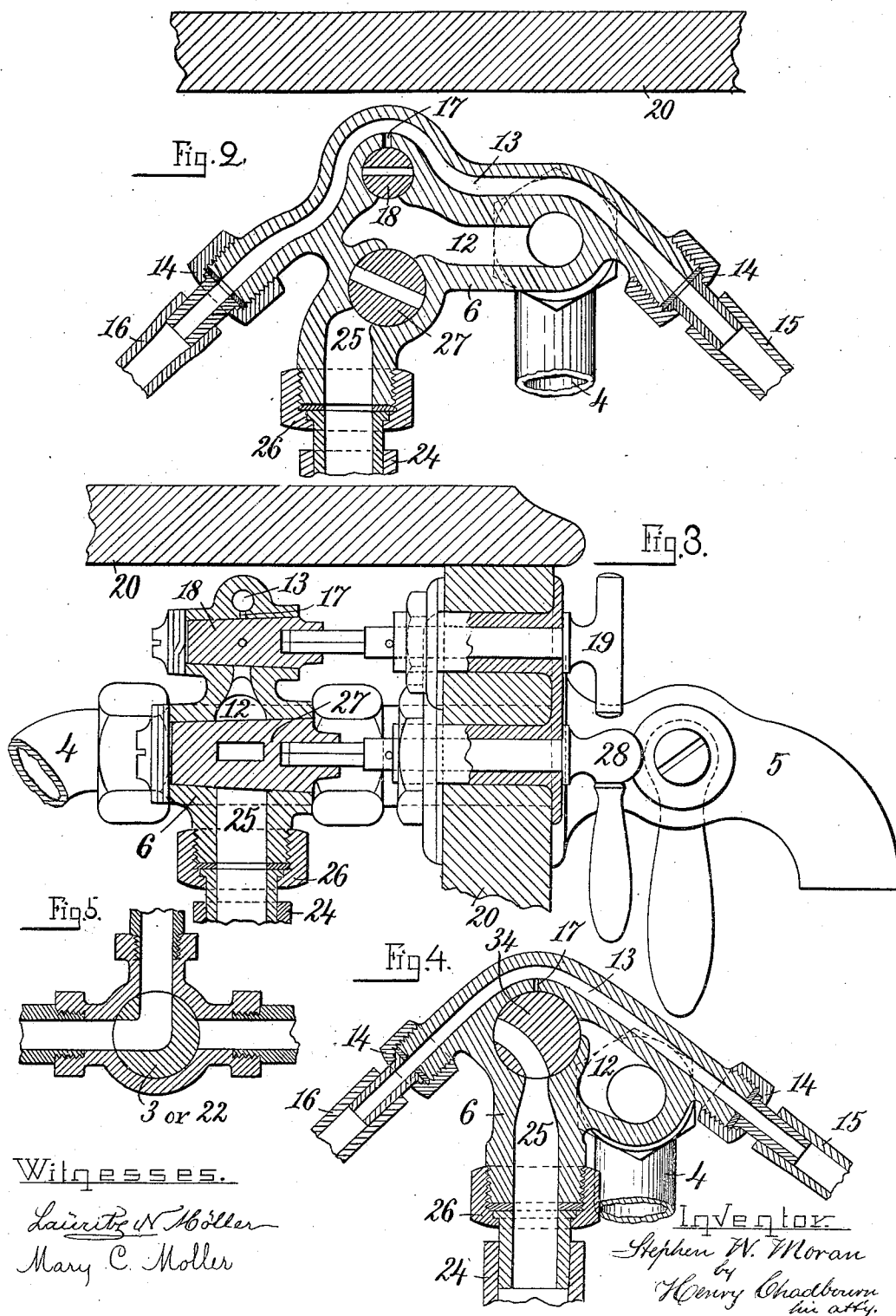
Inventor

Stephen W. Moran
by
Henry Chadbourne
an atty.

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Witnesses.

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UNITED STATES PATENT OFFICE.

STEPHEN W. MORAN, OF BROOKLINE, MASSACHUSETTS, ASSIGNOR
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DISPENSING APPARATUS FOR LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 791,040, dated May 30, 1905.

Application filed February 12, 1903. Serial No. 143,092.

To all whom it may concern:

Be it known that I, STEPHEN W. MORAN, of Brookline, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Dispensing Apparatus for Liquids, of which the following is a specification.

This invention relates to improvements in dispensing apparatus for liquids, such as are used in bar-rooms, and more especially in the apparatus for which Letters Patent of the United States, numbered 710,291 and bearing date September 30, 1902, were issued to me and in which novel means were shown and claimed whereby the liquid could be returned from the delivery-pipe into the barrel or other receptacle in which it was stored without roiling up the contents of the same, and from which the liquid had to be forced by pneumatic pressure applied to the top of the receptacle above the liquid contained therein.

My present invention has for its object to provide means whereby the pipes may be easily and quickly washed out after the liquid has been returned to the receptacle from the discharge-pipe.

The invention consists of the novel construction, arrangement, and combinations of parts, as will be fully described hereinafter and particularly set forth in the claims, and it is carried out substantially as illustrated on the accompanying drawings, which form an essential part of this specification, and whereon like characters of reference refer to like parts wherever they occur on the different parts of the drawings.

On the drawings, Figure 1 represents diagrammatically my improved dispensing apparatus, showing two receptacles containing liquid to be dispensed, the device to return the liquids to said receptacle from the discharge-pipes, and my improved device for washing out the pipes. Fig. 2 represents a cross-section of the delivery-passage immediately back of the delivery-faucet and showing the means whereby air is admitted to the discharge-passage in order to return the liquid to the barrel or other receptacle and also showing the

means whereby the water or other liquid used in washing out the pipes may be admitted to the discharge-passage. Fig. 3 represents a vertical section through the valves which control the flow of air and the flow of the cleaning liquid to the discharge-passage. Fig. 4 represents a sectional view similar to that shown in Fig. 2, but of a slightly-modified construction of my improved device. Fig. 5 represents a detail sectional view of a three-way cock such as is used in my invention.

The receptacles 11 containing the liquid to be drawn are placed within the cellar or in some other place below the place where it is desired to draw the liquid. A tap 2 is driven into the receptacle near the bottom of the same, and connected to the tap 2 are one or more three-way cocks 3.

A discharge-pipe 4 is connected at one end of the three-way cock 3 and conveys the liquid from the receptacle 1 to the discharge-faucet 5, from which the liquid may be drawn, as usual. Between the upper end of the pipe 4 and the discharge-faucet 5 I introduce a casing 6, through which an open communication is formed between the discharge-pipe and discharge-faucet. It will thus be seen when the tap 2 is open and the passage in the three-way cock forms communication between the tap and the discharge-pipe that there will be a free passage for the liquid in the receptacle 1 to be forced to the discharge-faucet, where it may be drawn off as desired.

In order to force the liquid from the receptacle through the discharge-pipe and to the discharge-faucet, I apply pneumatic pressure to the receptacle above the liquid therein, as usual, and this pneumatic pressure may be obtained by a suitable air-pump or it may be obtained from a reservoir 7 of air, carbonic-acid gas, or other suitable material under high pressure common to all of the receptacles 1, a pressure-regulating valve 8 to reduce said high pressure, a pipe 9 with branches 10 to the top of each receptacle 1, and a valve 11 in each branch pipe. By admitting air or other gas under pressure to the top of the receptacles through the pipe 9 and branches

10 I am able to force the liquid from the receptacle to the discharge-faucet.

The casing 6 is immediately back of the discharge-faucet and, in fact, the discharge-faucet is attached directly to said casing. This casing contains a chamber 12, which is in open communication with the discharge-pipe and preferably extends to one side from said discharge-pipe. Within the casing 6 is a passage 13, which extends from end to end of the casing and preferably at right angles to the flow of the liquid through said casing. This passage 13 is provided at its opposite ends with means, such as the unions 14, whereby a pipe or tube 15 may be attached to said casing in open communication with said passage and form a communication between the passages 13 in two casings attached to discharge-faucets which are alongside of each other, or said union may form means to attach a pipe or tube 16, the opposite end of which is in open communication with the pipe 9 from the air-supply reservoir 7. By this means it will be seen that air or other gas under an equal pressure to that which is admitted to the receptacles to force the liquid to the discharge-faucet is conveyed through the pipe 16 to the passage 13 in the first casing 6 and then through this passage and the pipe 15 to the passage 13 in the next casing 6, where there is a series of faucets used, and so on to the end of the series of casings connected to the said series of faucets.

The chamber 12 preferably extends above the level of the top of the passage through the casing 6, which is connected to the discharge pipe and faucet, and consequently there will always be a slight quantity of air penned up in the upper part of this chamber which will form an air-cushion and prevent the liquid from rising to the top of said chamber for a purpose to be understood by the complete description herein contained and as described in my former patent. The upper part of the chamber 12 is connected to the passage 13 by means of the small passage 17, which is controlled by a valve 18, having a handle 19 or other means of operation which extends through the counter or bar 20 into a convenient place to be operated. As the pressure upon the liquid in this receptacle is equal to the pressure on the air or other gas in the passage 13, it will be understood that when the valve 18 is turned so as to open communication through the passage 17 into the chamber 12 there will be an equal pressure upon the top and the bottom of the liquid contained within the discharge-pipe and this liquid will return to the receptacle by its own weight, the speed at which the liquid will return being controlled by the size of the passage 17 and the consequent speed at which the air will flow through said passage.

The above description of my device, with the exception of the three-way cock 3, intro-

duced between the tap 2 and the discharge-pipe 4, is substantially that of the device covered in my above-mentioned patent and to which my present improvements are added.

When liquids such as beer, ale, porter, and similar beverages have been drawn through the discharge-pipe and have stood in such discharge-pipe for several days, although they have been returned to their respective receptacles at night, there is liable to be a coating collect upon the interior of the discharge pipe or pipes, and the pipes are therefore liable to become foul and unwholesome. It is the principal object of my present invention to provide novel and convenient means for properly removing this coating and cleansing the pipes, and this I accomplish in substantially the following manner: A pipe 21 is connected to a suitable supply of water under pressure, which is supplied either by means of a suitable pump (not shown on the drawings) or by being connected directly to the street-main, the latter being preferable. This pipe 21 is in open communication with one of the passages of a three-way cock 22, another passage of which cock is in open communication with a pipe 23, the upper end of which preferably extends along the under side of the bar or counter 20 and has a branch 24 extending from said pipe and communicating with a passage 25, leading into the chamber 12 within the casing 6, said branch-pipe being connected to the casing by means of a union 26 or by other means, as desired. The passage 25 is controlled by a suitable valve 27, which is operated by a suitable handle 28 in a manner similar to the valve 18. It will thus be seen that the three-way cock 22 may be turned in such a manner as to connect the pipes 21 and 23, and thereby carry a supply of water to the valves 27 within the casing 6 at each discharge-faucet.

The three-way cock at the lower end of each discharge-pipe has one of its passages provided with a discharge-nozzle 29, which may be a short nozzle, as shown, may lead to a suitable drain or may be connected to the sewer, as is the more convenient, and this valve may be operated so that a free passage will be formed between the discharge-pipe and the discharge-nozzle.

When the liquid from the discharge-pipe 4 has been returned to the receptacle 1 by opening the valve 18 and equalizing the pressure on opposite sides of said liquid and the water has been allowed to flow to the valve 27 by the operation of the three-way cock 22, as hereinabove described, it will be understood that the discharge-pipe may be flushed and cleansed with water from the passage 25 if the three-way cock 3 is operated, so as to connect the discharge-pipe 4 and discharge-nozzle 29, which will also close the passage from the receptacle 1 through said three-way cock, and the valve 27 is opened so as to admit wa-

ter from the passage 25 through the chamber 12, discharge-pipe 4, three-way cock 3, and discharge-nozzle 29. This flow of water through the discharge-pipe will be in a direction opposite to that of the liquid from the receptacle, and consequently any particles which may be caught within said pipe will be more liable to be dislodged and carried out with the water than they would if the flow of water was in the same direction as that of the liquid. By this means the discharge-pipe may be washed with water whenever it is desired, and therefore will be kept clean and in a hygienic condition with but a very slight amount of trouble and without the loss of any of the liquid from the receptacle, as there are no couplings to be connected and disconnected, but the object is accomplished by the operation of valves only.

It has been found when pipes are used to convey beer, ale, and other similar liquids that there is a coating formed on the interior of the pipes which is not easily removed by the use of clear water, but requires a solution of sal-soda or other cleansing chemical or compound. In order to provide means whereby the discharge-pipes of my improved apparatus may be cleansed with a suitable cleansing preparation, I provide the device with a receptacle 30 to contain a quantity of the cleansing preparation, which receptacle is connected to the air-pressure pipe 9 by a pipe 31, controlled by a valve 32 of any suitable form and of which air-pressure may be admitted to receptacle above the liquid contained therein and which will tend to force said liquid from the receptacle. The lower end of the receptacle 30 is connected by the pipe 33 to one of the passages of the three-way cock 22 and may be connected to the pipe 23 by the proper operation of said three-way cock. It will thus be seen when it is desired to cleanse the discharge-pipe 4 with the cleansing preparation contained within the receptacle 30 that it is only necessary to admit air-pressure to the receptacle by the operation of the valve 32 and to open communication between the pipe 33 and the pipe 23 by the operation of the three-way cock 22, when the preparation will flow through said pipes to the valve 27, which controls the passage 25. The discharge-pipe may then be cleansed by said preparation in a manner similar to that when cleansing said discharge-pipe with clear water from the pipe 21.

If it is desired, there may be a quantity of the cleansing preparation left in the discharge-pipe for any desired length of time, so as to allow it to thoroughly dissolve the coating from the discharge-pipes. After the pipe has been cleansed with this cleansing preparation it may be rinsed out by clean water from the pipe 21, as above described, if so desired.

By the use of my improved device it will be understood that the loss of the liquid caused by its remaining within the discharge-pipe for

a number of hours can be prevented and also that I am able to always cleanse the pipes and to keep them sweet and hygienic.

In Figs. 1 and 2 on the drawings I have shown two independent valves 18 and 27 to control, respectively, the admission of air and water to the chamber 12; but it is within my invention to combine these two valves into a single valve 34, as shown in Fig. 4, which will then constitute a three-way cock and control both the air and the water passages. In some respects this latter construction is the preferred construction, as I am able to make the casing 6 more compact and can have the discharge-faucets on a bar or counter closer together than when there are two separate valves used. It will also be seen that when the air and water passages are controlled by the same valve, as shown in Fig. 4, there will be no danger of the water, which is under the superior pressure, ever entering the air-passage by the air-controlling valve being left open when the water-controlling valve is opened.

By the use of my improved device every part is connected and ready for use without having to make connections between the parts other than by operating certain valves. Any sediment or loose particles of grain which may be forced into the discharge-pipe when the latter part of a receptacle containing heavy liquid—such as ale, beer, or other heavy malted liquids—are used may be washed out of the discharge-pipe before another full receptacle is attached or before any of the contents of a new receptacle has been allowed to enter the discharge-pipe.

As the device used in cleansing each discharge-pipe of a series of discharge-pipes is independent of those for the other discharge-pipes, it will be seen that the several discharge-pipes may be cleaned out while liquid is being dispensed from the other discharge-pipes, and consequently they may be cleaned at any time either during business hours or afterward, as is the most convenient.

I wish it to be understood that although I have illustrated the use of a three-way cock independent from the tap said three-way cock may itself form the valve of the tap without departing from my invention and that such a construction would readily suggest itself to any mechanic skilled in the art and would be a mechanical equivalent of the construction shown.

Having thus fully described the nature, construction, and the operation of my invention, I wish to secure by Letters Patent and claim—

1. In a dispensing apparatus for liquids, a receptacle for the liquid, a discharge-pipe from said receptacle, an air-pipe under pressure connected to the top of said receptacle to force the liquid from the receptacle through the discharge-pipe, a discharge-faucet on said discharge-pipe, a three-way cock on the discharge-pipe at its connection to the receptacle

for the liquid having one passage in communication with the receptacle for liquid, another passage in communication with the discharge-pipe, and the remaining passage in communication with a waste, a water-pipe under pressure, a fitting attached directly to the discharge-faucet and the upper end of the discharge-pipe, said fitting having an air-passage communicating with the said air-pipe under pressure, a water-passage communicating with the said water-pipe under pressure, both passages communicating with the discharge-pipe, and a single valve in the fitting controlling both the air and the water passages in the fitting, whereby air may be admitted to the upper end of the discharge-pipe and allow the liquid to return to the receptacle by gravity or water may be admitted to the upper end of the discharge-pipe by the operation of the valve in said fitting and said water be wasted by the manipulation of the three-way cock at the lower end of the discharge-pipe, for the purpose set forth.

2. In a dispensing apparatus for liquids, a receptacle for the liquid, a discharge-pipe from said receptacle, a pipe under pressure connected to the top of said receptacle to force the liquid through the discharge-pipe, a discharge-faucet on said discharge-pipe, a reser-

voir containing a cleansing preparation, connection between said reservoir and said pipe which is under pressure, a pipe containing water under pressure, a three-way cock having one passage in communication with the discharge-pipe near the discharge-faucet thereon, another passage in communication with the lower part of said reservoir, and the other passage in communication with the water-pipe, a three-way cock on the discharge-pipe at its connection to the receptacle for the liquid having one passage in communication with the receptacle for the liquid, another passage in communication with the discharge-pipe and the remaining passage in communication with a waste whereby the entire discharge-pipe may be cleansed with the cleansing preparation from the reservoir and rinsed with water from the water-pipe both flowing in a direction opposite to the liquid from the receptacle for liquid and while there is liquid under pressure remaining in said receptacle.

In testimony whereof I have affixed my signature in presence of two witnesses.

STEPHEN W. MORAN.

Witnesses:

HENRY CHADBURN,
SAMUEL H. HELLEN.