Feb. 13, 1934. W. C. BUTTNER 1,947,329

FAUCET

Filed Oct. 16, 1930 2 Sheets-Sheet 1

Fig. 1.

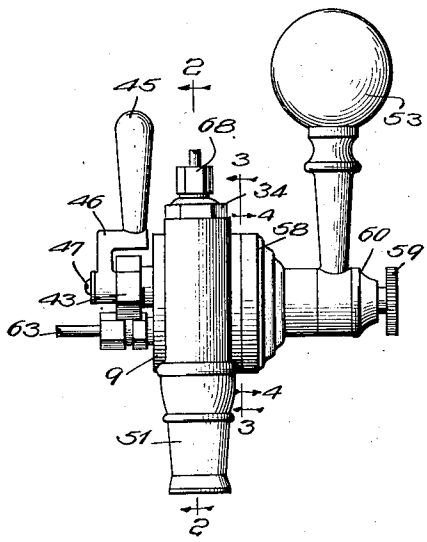


Fig. 2.

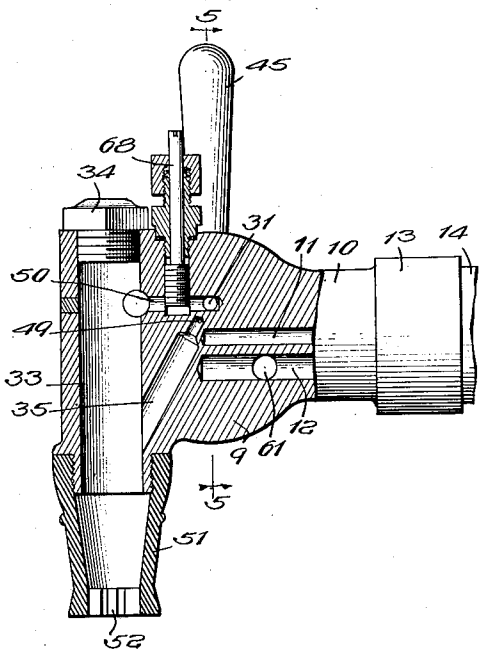


Fig. 3.

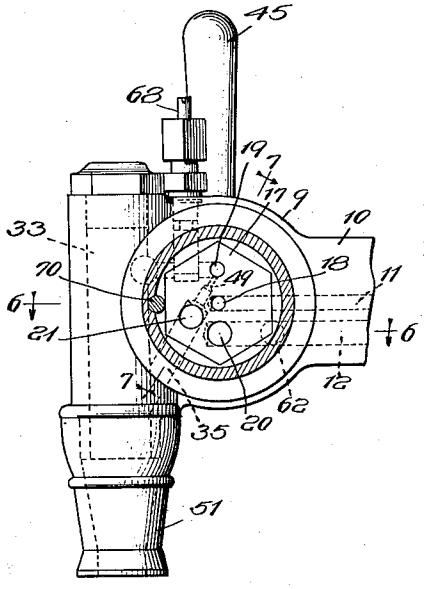
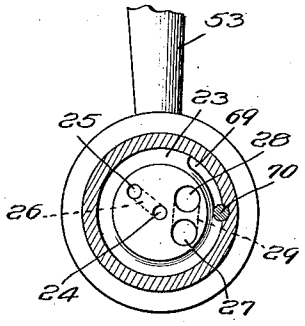


Fig. 4.



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Fig. 5.

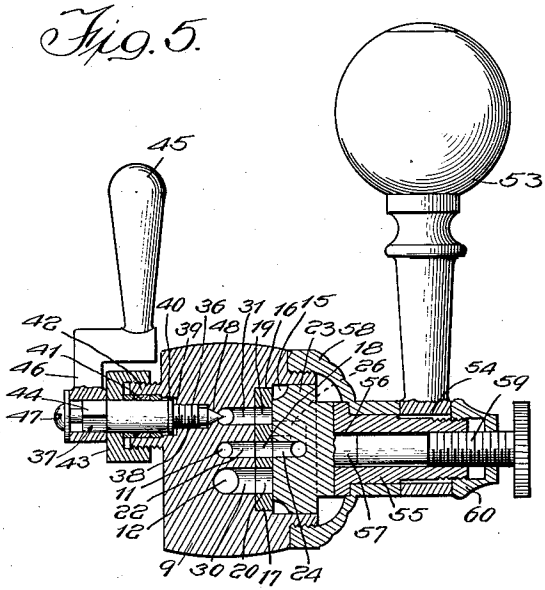


Fig. 6.

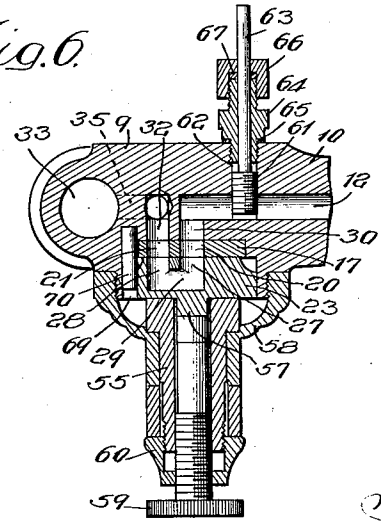


Fig. 7.

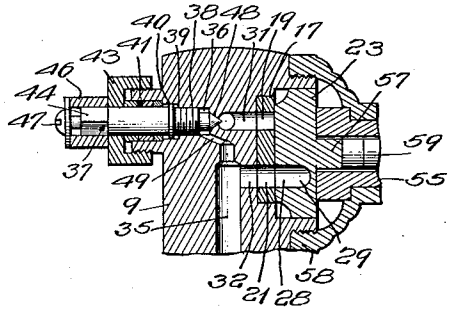
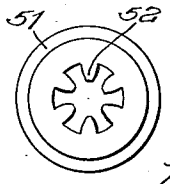


Fig. 8.



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UNITED STATES PATENT OFFICE

1,947,329

FAUCET

William C. Buttner, Chicago, Ill., assignor to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois

Application October 16, 1930. Serial No. 489,083

11 Claims. (Cl. 225—26)

This invention relates to certain novel improvements in faucets of the kind employed in the dispensing of beverages and especially in the dispensing of beverages of which carbonated water is an ingredient. A beverage of the foregoing character may be dispensed either as a solid drink or as a creamy drink or in an intermediate state between the above known as a foamy drink. The water and syrup are mixed prior to discharge from the faucet and the character of the drink is determined by the quantity of carbonated water mixed with the syrup, the manner in which the water and syrup are intermixed and upon the agitation of the syrup by the water during the admixture thereof. Root beer is a typical drink of this character and one of the objects of the invention is to provide a novel faucet for use in the dispensing of root beer although it is to be understood that the invention is not limited to the dispensing of such a beverage, for any analogous beverage may be dispensed therefrom. Other objects of the invention are to provide a novel faucet having but a single operating handle whereby operation thereof is simplified; wherein a manually operable control member is provided which may be disposed in a number of different determined positions to vary the character of the drink dispensed; wherein the water passage through the faucet is regulated by the control member in order that a coarse or fine stream of water may be dispensed from the faucet; and wherein manually adjustable members are provided for regulating the syrup and water passage through the valve.

In the selected embodiment of my invention illustrated in the accompanying drawings

Fig. 1 is a front elevation of a faucet constructed in accordance with my invention;

Fig. 2 is a vertical sectional view taken substantially on the line 2—2 on Fig. 1;

Fig. 3 is a vertical sectional view taken substantially on the line 3—3 on Fig. 1;

Fig. 4 is a sectional view taken substantially on the line 4—4 on Fig. 1;

Fig. 5 is a sectional view taken substantially on the line 5—5 on Fig. 2;

Fig. 6 is a sectional view taken substantially on the line 6—6 on Fig. 3;

Fig. 7 is a sectional view taken substantially on the line 7—7 on Fig. 3; and

Fig. 8 is a plan view of the discharge end of the nozzle of my faucet.

My improved faucet includes a main body 9 having a neck 10 projecting from the rear end thereof and extending axially through the neck 10 into the body 9 are passages 11 and 12. A coupling 13 is provided for connecting a conduit 14 to the free end of the neck 10, and in this conduit 14 the water and syrup supply pipes are disposed to be concealed thereby, and the conduit 14 is either connected to the member containing the ingredients to be dispensed or to a suitable standard of a fountain or the like. The water supply pipe communicates with the passage 11 and the syrup supply pipe communicates with the passage 12.

As best illustrated in Fig. 5, one of the flat side faces of the body 9 is recessed, as indicated at 15, and inwardly of the recess 15 is a polygonal recess 16 in which a similarly shaped valve facing 17 is disposed. The valve facing 17 is made from a wear-resistant material and, as best illustrated in Fig. 3, this valve facing has a port 18 at the center thereof, and disposed above this port in vertical alignment therewith is a port 19, the ports 18 and 19 being of substantially the same size. Disposed below the port 18 and in vertical alignment therewith is a port 20, and disposed to one side of this port is a port 21, ports 20 and 21 being of substantially the same size and preferably larger than the ports 18 and 19. A passage 22 (Fig. 5) interconnects the passage 11 and the port 18, and thus water passing into the faucet flows through the passage 22 to the port 18. Disposed in the recess 15, with the flat face thereof in abutment with the valve facing 17, is a valve member 23. A port 24 is provided in the valve member 23 at the center thereof, and this port communicates with the port 18 when the valve member 23 is arranged in operating position. Another port 25 is provided in the valve member 23, and this port is spaced from the port 24 in an amount equal to the spacing between the ports 18 and 19, and a passage 26 in the valve member 23 interconnects the ports 24 and 25. Two ports 27 and 28 are provided in the valve member 23, and these ports are interconnected by a passage 29. The ports 27 and 28 are spaced apart as much as, and are disposed similarly to, the ports 20 and 21 and are to cooperate therewith, as will be brought forth presently. A passage 30 interconnects the passage 12 and the port 20, and thus syrup supplied through the passage 12 is directed through the passage 30 to the port 20. The valve member 23 is forced into engagement with the valve facing 17 in a manner to be described hereinafter, and is held tightly thereagainst, and therefore water directed to the port 18 flows through the

port 24 into the passage 26 to the port 25, and when the valve is in closed position this port is closed by the valve facing 17. The face of the valve member 23 closes the port 20 when the valve member is arranged in closing position, and thus the flow of syrup through the port 20 is prevented. However, by turning the valve member 23 into open position, in a manner to be set forth, the port 25 is moved into alignment with the port 19, and therefore water passes through the ports 25 and 19 into the passage 31, and the discharge of the water from the faucet is controlled by mechanisms to be described which are arranged in passages communicating with the passage 31. When the valve is moved to open position the port 27 registers with the port 20 and the port 28 registers with the port 21, and therefore syrup flows through the port 20 into the port 27 through the passage 29 and out through the ports 28 and 21 into the passage 32 (Fig. 6). At the forward end of the main body 9 is a vertically extending passage 33, the upper end of which is closed by a cap nut 34. A passage 35 extends angularly through the main body 9 from the inner end of the passage 32 to a point adjacent the lower end of the passage 33, as best shown in Figs. 2 and 6. Thus, syrup admitted into the passage 32 flows through the passage 35 into the discharge passage 33 which also serves as a mixing chamber, as will be described presently. In axial alignment with the passage 31 and extending inwardly from one of the flat side faces of the body 9 is a passage 36. A valve member, generally indicated by 37, includes a screw-threaded portion 38, that is screw threadedly mounted in the passage 36, said passage 36 including an enlarged portion 39 at the outer end thereof in which a shoulder 40 on the valve member is disposed. Packing washers 41 are disposed around the stem portion of the valve member 37 interiorly of a boss 42 on the adjacent face of the main body 9, and a cap nut 43 having a central opening therein, through which the valve member 37 extends, holds the packing washers 41 in position and engages the threaded periphery of the boss 42, this arrangement preventing leakage past the valve member 37.

On the outer end of the valve member 37 is a polygonal portion 44. A regulating handle 45 is provided which includes an offset portion 46 whereby the handle 45 is disposed substantially parallel with the boss 42, and the offset portion thereof has a polygonal opening therein in which the polygonal portion 44 is disposed and the washer and screw arrangement 47 prevent displacement thereof from the end of the valve 37. Thus, by moving the handle 45 the position of the valve member 37 in the passage 36 may be regulated. The passage 36 communicates with the passage 31 through the valve seat 48. When the valve member 37 is retracted from the valve seat 48, water flows from the passage 31 past the valve seat 48 into the passage 36 and through the restricted passage 49 that extends between the inner end of the passage 35 and the passage 36. Thus, when the valve member 37 is unseated, water flows into the passage 35 at a time syrup is flowing therethrough, and by reason of the restricted passage 49 a fine stream having a relatively high head is discharged into the passage 35, and this fine stream of water tends to break up the syrup and thoroughly mix therewith for a purpose to be set forth presently. A passage 50 extends between the passage 33 and the inner end of the passage 31 and is in constant communication therewith. Therefore, as soon as water is admitted into the passage 31 water flows through the passage 50 into the discharge passage 33. Therefore, if the valve member 37 is seated on the valve seat 48 water nevertheless is supplied and mixed with the syrup which is discharged simultaneously with the water when the valve member 23 is moved to open position. Thus, the water and syrup are intermixed in the discharge passage 33 which serves as a mixing chamber. At the lower and of the discharge passage 33 is a discharge nozzle 51 which may be of any approved type. I have, however, shown a discharge nozzle having at the lower end thereof a plurality of inwardly extending prongs 52 which tend to break up and cause admixture of the water and syrup as it passes therefrom to bring about thorough co-mingling thereof. But, as pointed out above, such a special nozzle need not be provided as a nozzle having an ordinary discharge opening will serve satisfactorily. In order to operate the valve member 23 I provide the control handle 53 having at the lower end thereof a polygonal opening 54, which embraces a polygonal portion on the connecting member 55. At the inner end of the connecting member 55 there is a diametrical slot 56 receiving a diametrical boss 57 on the valve member 23. A retaining cap 58 has the inner end thereof screw-threadedly mounted on a threaded boss provided on the main body 9 about the recess 15, and includes a stem portion surrounding the connecting member 55, said retaining cap having a shoulder embracing the enlarged head portion on the connecting member 55 to retain said member in position. Extending through an axial bore in the connecting member is a screw 59, the inner end of which engages the face of the diametrical boss 57 and acts on the valve member to hold the same in tight engagement with the valve facing 17. A nut 60 has an opening therein, through which the screw 59 extends, and is mounted on the outer end of the connecting member and serves to retain the handle 53 in position. In order to regulate the amount of syrup discharged I provide a valve 61 (Fig. 6), which extends through a bore 62 in the main body 9 and which is screw-threadedly mounted therein and which extends across the passage 12 to partially restrict syrup passage through said passage 12, the amount of restriction depending upon the disposition of the valve. The valve includes a stem 63 which extends through an axial bore in the retaining nut 64, said retaining nut engaging a washer 65 to prevent leakage past the screw threads of the valve member 61. A cap nut 66 mounted at the outer end of the retaining nut 64 has an axial opening through which the stem 63 extends and forces the packing 67 into engagement with the stem to prevent leakage past said stem. A valve 68, similar to the valve just described, extends into the passage 50 and regulates water discharge therethrough so that the quantity of water introduced into the discharge passage 33 may be regulated. In order that the valve member 23 may be readily positioned in on or off position, I provide a groove 69 in the periphery thereof and I mount a pin 70 in the main body 9 and by engaging opposite ends of the slot 69 with the pin 70 the valve may be arranged in on or off position.

It has been pointed out that one of the objects of the invention is to provide a faucet which may be used in the dispensing of beverages and that this faucet may be operated to bring about

the discharge of either a creamy or a solid drink or, if desired, a drink intermediate these two known as a foamy drink. This is accomplished by positioning the regulating handle 45 in different positions whereby the valve member 37 may be either closed or opened wide, or arranged in a position intermediate these positions. The nature of the drink is determined before the control handle 53 is operated. If a solid drink is to be dispensed the regulating handle 45 is disposed in a position to seat the valve member 37 on the valve seat 48, and therefore water will be discharged only through the passage 50 and water so discharged will co-mingle with the syrup introduced into the discharge passage 33, and a solid drink, that is one without any foam, will be discharged through the nozzle 51. However, if a creamy drink is to be dispensed, the regulating handle 45 will be moved into a position which will retract the valve member 37 from the valve seat 48 in an amount to permit free passage of the water past said valve seat 48. Water will also be discharged through the passage 50, but the water passing the valve seat 48 will pass through the restricted passage 49 and co-mingle with the syrup in the passage 35. By reason of the restricted size of the passage 49 the water will tend to cut and become thoroughly intermixed with the syrup, and this mixture of syrup and water will co-mingle while passing through the discharge passage 30, and in this manner a creamy drink will be dispensed. Should a foamy drink be desired, the handle 45 is disposed in a position to restrict, but not prevent, passage of the water past the valve seat 48. Therefore, but a small quantity of water will be permitted to pass through the passage 49. The difference between a foamy drink and a creamy drink depends upon the quantity of water intermixed with the syrup as well as the head of this water, for these are the things which determine the intermingling of the syrup and water and the more thorough this intermingling, which manifestly depends upon the amount the syrup is cut by the water, the creamier will be the drink. It is therefore manifest that by positioning the handle 45 in different positions, different degrees of foaminess of the drink may be attained.

In the foregoing description I have described a faucet which may be operated by only one hand of the operator. The operator will first determine the nature of the drink to be dispensed and will position the regulating handle 45 in a corresponding position. The operator will then grasp the control handle and movement thereof will position the valve member 23 to register the various ports, as above described, which will permit the discharge of the syrup and water. By providing calibrations, or other marks, on the body, the nature of the drink may be indicated by the relative position of the handle 45 with respect to these calibrations. It is therefore apparent that a faucet having but a single operating handle is provided and that this operating handle need not be arranged in a neutral position as has been customary in the art wherein it has been common to move the handle in one direction to secure a creamy drink and to move the handle in the other direction to secure a solid drink. Furthermore, the faucet is such that drinks of any desired foaminess may be dispensed to suit individual tastes, which could not be obtained by the use of former faucets.

In the foregoing description I have set forth a selected embodiment of my invention, but it is to be understood that this is capable of change and alteration, and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and modifications as fall within the purview of the following claims.

I claim:

1. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a syrup outlet passage and two independent water outlet passages both adapted to receive water from the water supply passage, means for controlling syrup and water flow through said faucet, means for operating the controlling means to effect simultaneous flow of syrup and water through all of the passages therefor, means regulating the volume of flow of syrup, and other means regulating the volume of flow of water through one of the independent water outlet passages.

2. A faucet including a main body having a syrup supply passage and a water supply passage, said body having a discharge passage therein, said body also having a syrup outlet passage leading to said discharge passage and two independent water outlet passages one of which leads directly to said discharge passage and the other of which leads to said syrup outlet passage, means controlling syrup and water flow through the faucet, and valve means for controlling flow of water through the water outlet passage leading to said syrup outlet passage.

3. A faucet including a main body having a syrup supply passage and a water supply passage, said body having a common water outlet passage, said body also having a syrup outlet passage and two independent water outlet passages communicating with the common water outlet passage, means controlling syrup and water flow through said faucet, means for operating the controlling means to effect simultaneous flow of syrup and water through all of the passages therefor, and independent valve means between said common water outlet passage and one of said independent water outlet passages for regulating water flow to said one independent water outlet passage.

4. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a syrup outlet passage and two independent water outlet passages, common means for controlling syrup and water passage through said faucet, and independent means for controlling water passage through one of said two water outlet passages whereby water passage through the other of said water outlet passages will be controlled only by said common means while water passage through said one of said water outlet passages will be additionally controlled by said independent means.

5. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a syrup outlet passage and two independent water outlet passages, common means for controlling syrup and water passage through said faucet, a handle for operating said common means, independent means for controlling water passage through one of said two outlet passages, and a handle for operating said independent means and operable prior to operation of the first handle to regulate the admixture of syrup and water discharged from said faucet.

6. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a discharge passage and syrup and water outlet passages communicating with said discharge passage, said body hav-

ing another water outlet passage communicating with the syrup outlet passage, means for controlling syrup and water passage through said faucet and operable to effect simultaneous flow of syrup and water through all of the passages therefor, and independent means for controlling water passage through said passage communicating with said syrup outlet passage.

7. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a discharge passage and a syrup outlet passage and a common water outlet passage having a passage communicating with said discharge passage and having a restricted branch passage communicating with said syrup outlet passage, means for controlling syrup and water passage through said faucet, and means for controlling water passage through said restricted passage.

8. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a discharge passage and syrup and water outlet passages communicating with said discharge passage, said body having a restricted water outlet passage communicating with said syrup outlet passage, means for controlling syrup and water passage through said faucet, means for controlling water passage through said restricted passage whereby when water flows therethrough it will be mixed with syrup prior to passage thereof to said discharge passage, and means for controlling water passage through said first-named water outlet passage.

9. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a discharge passage and a syrup outlet passage, said body having a common water outlet passage communicating with a branch water outlet passage extending to said discharge passage and a restricted branch water outlet passage extending to said syrup outlet passage, a common means for controlling communication between said syrup supply passage and said syrup outlet passage and said water supply passage and said common water outlet passage, independent valve means for controlling water passage through said restricted branch passage, a handle for operating said common valve means, and a handle for operating said independent valve means whereby said independent valve means may be positioned to determine the water passage through said faucet prior to the operation of the handle operating said common valve means.

10. A faucet including a main body having a syrup supply passage and a water supply passage opening into a valve seat, a syrup outlet passage and a common water outlet passage opening into said valve seat, a common valve member engaging said valve seat and having passages therein for establishing communication between said syrup supply passage and said syrup outlet passage and said water supply passage and said common water outlet passage, said body having a discharge passage therein and having said syrup outlet passage extending to said discharge passage, said body having a passage therein extending between said common water outlet passage and said discharge passage, said body having a restricted passage therein extending between said common water outlet passage and said syrup outlet passage, independent valve means for controlling water passage through said restricted passage, a handle for controlling operation of said independent valve means and a handle for controlling operation of said common valve means whereby said common valve means may be operated to open said faucet after said independent valve means has been positioned to determine water passage through said faucet.

11. A faucet including a main body having a syrup supply passage and a water supply passage, said body also having a discharge passage and syrup and water outlet passages communicating with said discharge passage, means for controlling the flow of syrup and water through the passages in said faucet, and a discharge nozzle at the outlet end of said discharge passage and having an outlet passage therein and a part at the outer end of said outlet passage, said part having an opening therein and including fingers projecting into said opening substantially radially thereof and adapted to break up and cause admixture of water and syrup as it passes from the discharge nozzle to bring about thorough comingling of the syrup and water.

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