the needle valve, so that carbonated water of the desired carbonation factor is delivered to the mixer M2.

Upon closing of dispenser valve D2, switch S2 closes back on its upper contact, thereby opening valve 19 and closing valve 43. If there is no demand for water from carbonator 3, motor 7 stops and valve 27 closes. If there is a demand, motor 7 remains in operation and valve 27 remains open until the demand is satisfied, as above described.

When dispensing valve D3 is opened for dispensing a noncarbonated drink of the third flavor into a cup at C, switch S3 is thrown onto its lower contact. As before, this results in deenergization of valve 19 to close it and energization of valve 43 to open it. Assuming switch CS is closed on its upper contact (carbonator 3 full), motor 7 is energized to drive the pump 5 and valve 27 is energized to open. The pump 5 thereupon pumps plain water through line PL to the mixer M3, and this forces the ready-mixed noncarbonated beverage of the third flavor out through line BL3 and valve D3 into the cup until valve D3 is closed. Plain water in amount corresponding to that dispensed into the cup is supplied to mixer M3 to make up for the amount dispensed. Syrup of the third flavor is delivered from syrup tank ST3 into the mixer M3 via line SL3 to mix with incoming plain water from line PL in the mixing zone provided by mixer M3, thereby to replenish the amount of noncarbonated beverage of the third flavor which is dispensed. The syrup is delivered from tank ST3 on account of the drop in pressure in syrup line SL3 which occurs on opening of dispensing valve D3, enabling $CO_2$ pressure in tank ST3 to force syrup out of the tank. Flow control valve 57 in syrup line SL3 provides for flow of the syrup at the appropriate rate for delivering the amount of syrup needed in proportion to the amount of plain water.

Upon closing of dispenser valve D3, switch S3 closes back on its upper contact, thereby opening valve 19 and closing valve 43. There should be no demand at this time for water from carbonator 3, and hence motor 7 stops and valve 27 closes.

It will be understood that the disclosure herein of the system with provision for dispensing of two carbonated beverages and one noncarbonated beverage is by way of example only. It may be adapted for dispensing any number of beverages (within practical limits). For example, it may be augmented to dispense more than two carbonated beverages by the addition of carbonated water lines extending from the manifold 37 to additional mixers of the same type as used at M1, M2 and M3, and with beverage lines extending from the added mixers to additional dispensing valves, and additional syrup tanks. It will also be understood that the system is adapted for use in the coin-operated vending of beverages by providing for electric actuation of the dispensing valves under coin control, and timing the interval of opening each dispensing valve to dispense a cup of the beverage.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A system for mixing water and syrup to constitute a beverage and for dispensing the beverage comprising means for holding a supply of the beverage under pressure, a dispensing valve interconnected with said beverage holding means adapted on opening for dispensing of beverage from said beverage holding means, and means for supplying water and syrup from respective sources thereof under pressure to said beverage holding means comprising a line for delivering water from the source of water under pressure to said beverage holding means on opening said valve, said water delivery line being in constant communication with said beverage holding means and having a flow control therein providing for a substantially constant rate of flow of water to said beverage holding means despite variations in pressure differential across said flow control, and a line for delivering syrup from the source of syrup under pressure to said beverage holding means on opening said valve, said syrup delivery line being in constant communication with said beverage holding means and having a flow control therein providing for a substantially constant rate of flow of syrup to said beverage holding means in a predetermined proportion to the rate of flow of water to said beverage holding means despite variations in pressure differential across said syrup flow control, whereby the beverage in said beverage holding means is constantly pressurized for dispensing thereof on opening said valve and for replenishing said beverage holding means with water and a proportionate amount of syrup with the total amount of water and syrup corresponding to the amount of beverage dispensed, the water and syrup supplied to said beverage holding means on dispensing of the beverage mixing in said beverage holding means to constitute beverage in amount corresponding to that dispensed.

2. A system as set forth in claim 1 wherein said beverage holding means comprises a mixer in which water and syrup may mix to constitute the beverage, said water delivery line and said syrup delivery line being connected to said mixer and in constant communication therewith, and a beverage delivery line extending from said mixer, said dispensing valve being in said beverage delivery line downstream from said mixer, said system including a cooler, and said beverage delivery line between said mixer and said dispensing valve extending through the cooler.

3. A system as set forth in claim 1 having a carbonator, said water delivery line being a carbonated water delivery line interconnected with said carbonator for supplying carbonated water to said beverage holding means for mixing a carbonated beverage.

4. A system as set forth in claim 3 having adjustable means for introducing plain water from a source thereof into the carbonated water delivery line.

5. A system as set forth in claim 4 wherein said adjustable means is connected to deliver plain water into said carbonated water delivery line upstream from the flow control in said water delivery line.

6. A beverage mixing and dispensing system comprising a cooler, a plurality of beverage delivery lines extending through the cooler, a plurality of dispensing valves, one for each of said beverage lines, downstream from the cooler, a plurality of water delivery lines, one for each beverage delivery line, each in constant communication from a source of water under pressure to a respective beverage delivery line upstream from the dispensing valve in the latter and each having a flow control therein providing for a substantially constant rate of flow of water to the respective beverage delivery line despite variations in pressure differential across said flow control, a plurality of sources of syrup under pressure, one for each beverage delivery line, and a plurality of syrup lines interconnecting the respective syrup sources to the respective beverage delivery lines upstream from the dispensing valves, each syrup line being in constant communication with the respective beverage delivery line and having a flow control therein providing for a substantially constant rate of flow of syrup to the respective beverage delivery line in a predetermined proportion to the rate of flow of water to the respective beverage delivery line despite variations in pressure differential across said syrup flow control, at least one of said water delivery lines being a carbonated water line supplied with carbonated water under pressure from a source thereof, at least one of said water delivery lines being a plain