Dec. 29, 1936. C. L. KEE 2,066,040

SODA FOUNTAIN ATTACHMENT

Filed July 25, 1935 3 Sheets-Sheet 1

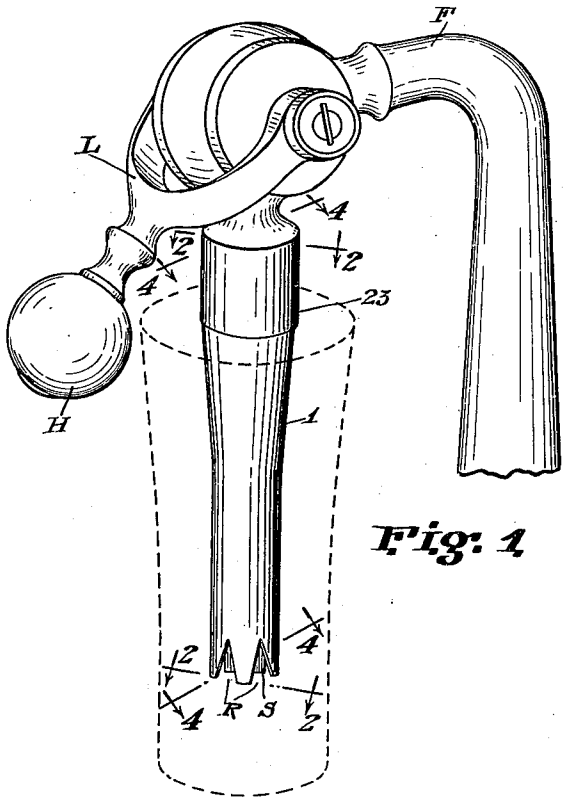


Fig. 1

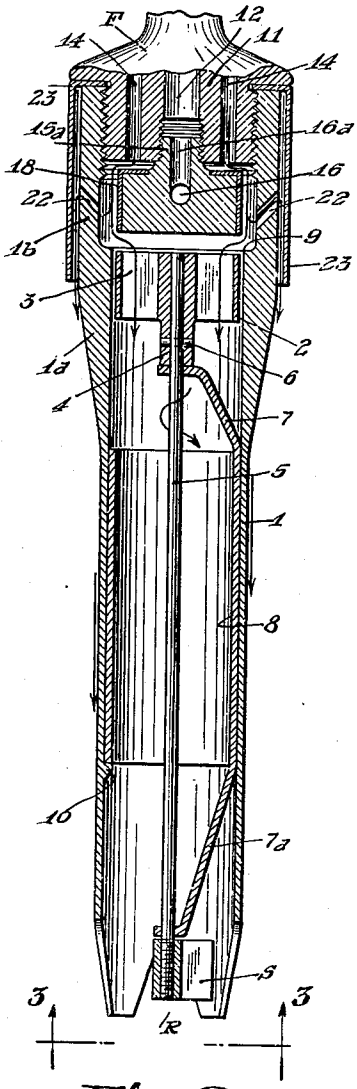


Fig. 2

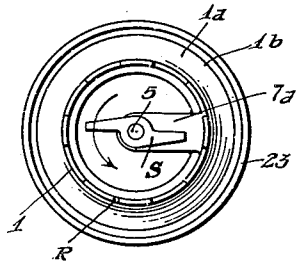


Fig. 3

Charles L. Kee INVENTOR.

BY Mock & Blum

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SODA FOUNTAIN ATTACHMENT

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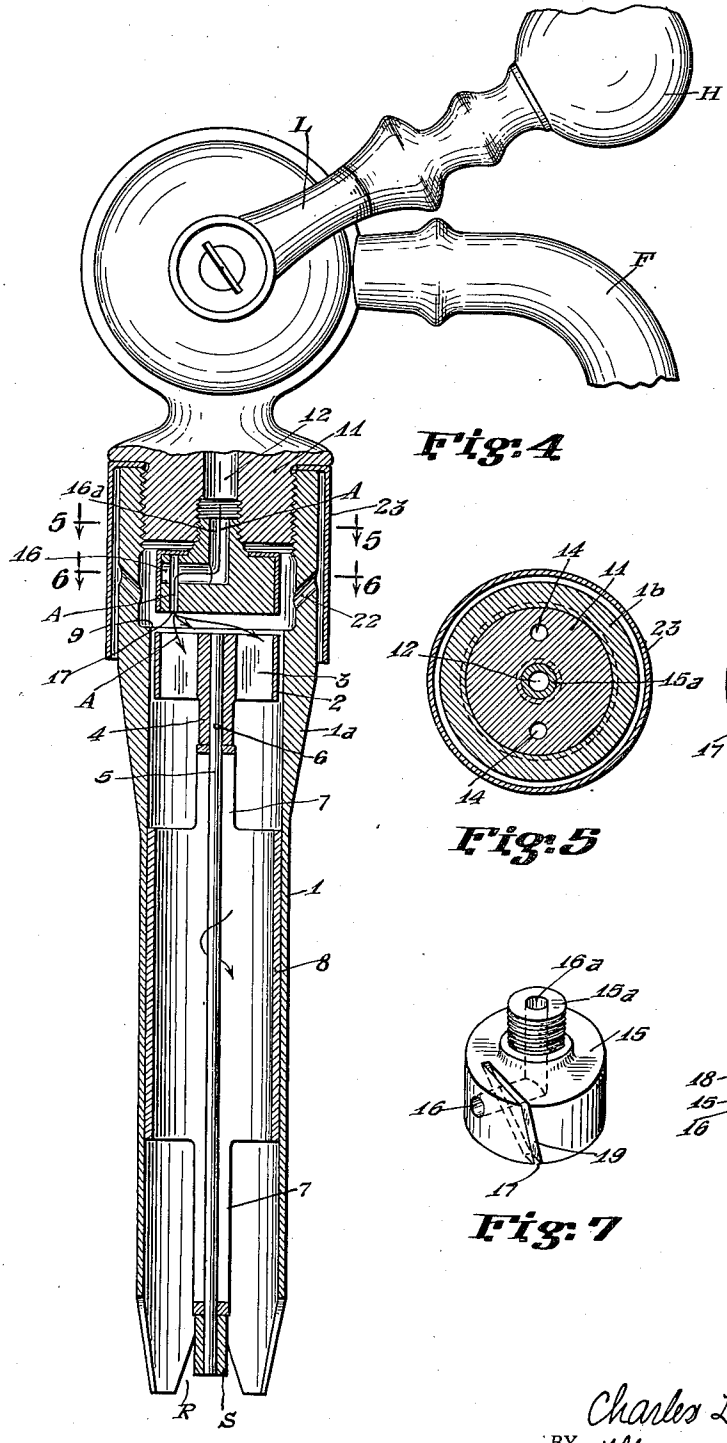


Fig: 4

Fig: 5

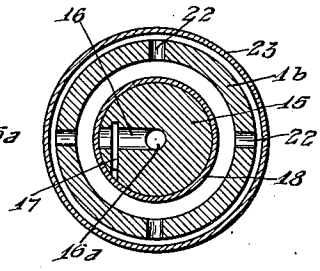


Fig: 6

Fig: 7

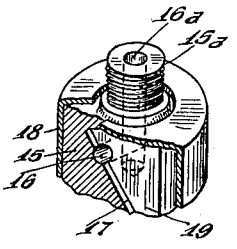


Fig: 8

Charles L. Kee INVENTOR.

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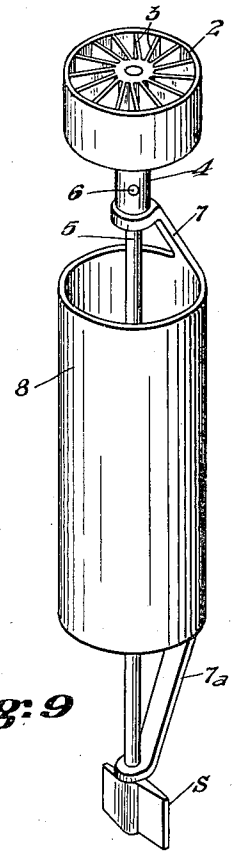


Fig: 9

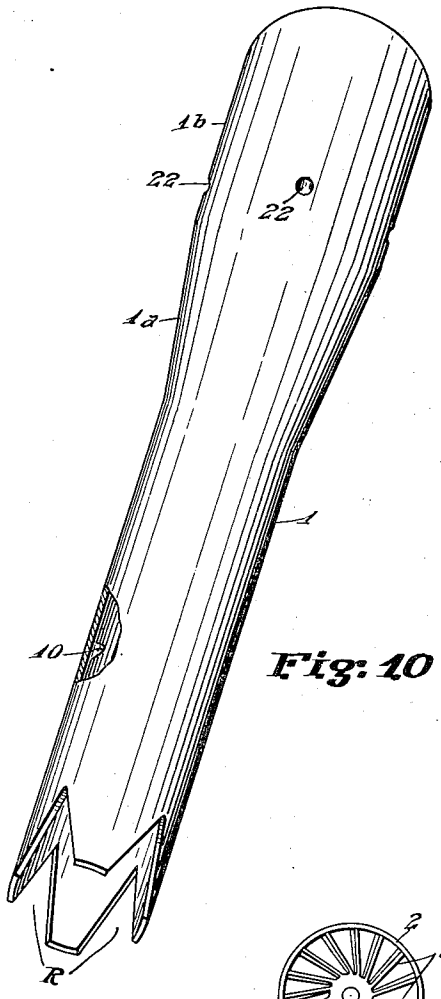


Fig: 10

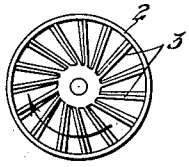


Fig: 11

Charles L. Kee INVENTOR.

BY Mocco Blum

ATTORNEYS

Patented Dec. 29, 1936 2,066,040

UNITED STATES PATENT OFFICE

2,066,040

SODA FOUNTAIN ATTACHMENT

Charles L. Kee, Portsmouth, Va.

Application July 25, 1935, Serial No. 32,979

4 Claims. (Cl. 225—27)

My invention relates to a new and improved soda fountain attachment.

One of the objects of my invention is to provide an attachment to the faucet of a soda fountain, said attachment including a mixer which can be operated automatically by the stream of carbonated water.

Another object of my invention is to provide a device in which the mixer may be caused to operate, or may be caused to remain inoperative, at the will of the operator.

Another object of my invention is to provide an attachment of improved design and having a casing which is provided with notches or recesses or openings at its lower end, so that the casing can be inserted into the liquid which is being mixed, and the glass which contains said liquid can be lowered, without causing any spattering of the liquid.

Another object of my invention is to provide a device in which the casing can be caused to contact with the liquid which is being mixed and dispensed, the outside of the casing being automatically cleaned by the carbonated water.

Other objects of my invention will be set forth in the following description and drawings which illustrate a preferred embodiment thereof, it being understood that the above statement of the objects of my invention is intended to generally explain the same without limiting it in any manner.

Fig. 1 is a perspective view of the device.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a bottom plan view on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

Figs. 5 and 6 are respectively sectional views on the lines 5—5 and 6—6 of Fig. 4.

Fig. 7 is a perspective view showing one of the parts of the attachment.

Fig. 8 is a view similar to Fig. 7, partially in section.

Fig. 9 is a perspective view showing the inner part of the attachment.

Fig. 10 is a perspective view of the casing of the attachment.

Fig. 11 is a top plan view of the rotor.

The device comprises a casing 1 which can be made of any suitable sanitary and rustless metal or other material.

A rotor 2 has a cylindrical casing, in which rotor blades 3 are mounted. Said rotor blades 3 may be integral with the casing 2 and they extend from top to bottom of the casing 2.

The lower end of the casing 2 is provided with a sleeve 4, which may be integral with the central portions of the lower edges of the blades 3.

The member 4 may be a boss or projection which is bored so as to recess the lower end thereof.

The sleeve or boss 4 is removably mounted upon a shaft 5, by means of a pin 6. The shaft 5 is mounted in a bearing 7, which may be integral with the sleeve 8, which fits snugly within the cylindrical portion of the casing 1.

As shown in Fig. 10, said casing 1 has a cylindrical portion which is provided with recesses or notches R at its lower end, and said casing 1 is also provided with a tapered portion 1*a*, and a top cylindrical part 1*b*, said top cylindrical part being internally threaded.

As shown in Fig. 2, the top cylindrical part 1*b* of the casing 1 is provided with an internal shoulder 9, and it has internal threads which are spaced from said shoulder 9.

Referring to Fig. 9, the shaft 5 is provided with a supplemental bearing 7*a* at the bottom of the casing 8. A stirrer S is removably connected to the lower end of the shaft 5. For example, and as shown in Fig. 2, the lower end of the shaft 5 may be externally threaded, and the stirrer S may be provided with an internally threaded bore.

The external diameter of the casing 8 is somewhat greater than the external diameter of the casing 2.

When the parts are assembled, the casing 8 fits snugly and with a certain frictional fit, within the cylindrical portion of the casing 1.

The exterior casing 1 is provided with a shoulder 10, which acts as a stop when the casing 8 and its assembled parts are inserted.

When the parts are assembled, the rotor casing 2 is slightly spaced from the internal cylindrical bore of the adjacent part of the outer casing 1.

Fig. 1 shows an ordinary nozzle or faucet of the type which is ordinarily used in a soda fountain. This nozzle or faucet has a handle H which is used to manipulate the usual lever L, which controls the flow of carbonated water by means of a suitable valve, which is not shown.

Referring to Fig. 2, the faucet F is provided with the usual central outlet nozzle 11 having a bore 12, and it is also provided with two supplemental outlet bores 14, of the usual type. This faucet is of standard construction and it needs no detailed description.

The nozzle 11 is used for producing the flow of a thin stream of carbonated water, under high pressure. The outlet bores 14 are used for producing a larger flow of carbonated water. Said nozzle 11 and said bores 14 are connected to the same source of carbonated water under pressure. The nipple 15 reduces the effective pressure of the outflowing carbonated water which is supplied through bore 14.

The interior wall of the central nozzle 11 is threaded, and the supplemental nipple 15 is provided with a boss 15a, which is screwed into the lower end of the nozzle or tube 11.

Referring to Figs. 7 and 8, said boss 15a is provided with a central vertical passage 16a, which communicates with a lateral bore 16 and said lateral bore 16 communicates with an inclined bore 17, which extends to the bottom of the nipple 15.

The outer end of the bore 16 is closed by means of a skirt 18, which is forced over the exterior vertical surface of the nipple 15. Said skirt 18 extends completely around the outer cylindrical surface of the nipple 15.

Hence, the stream of carbonated water under high pressure is caused to flow out of the outlet of the passage 17, which is in the bottom of the nipple 15, and in a direction which is inclined about 45° to the vertical axis of the nipple 15.

In order to form the passage 17, the nipple may be cut by means of a suitable tool so as to form the planar opening or cut 19. However, the skirt 18 closes the top branch and the lateral branch of said cut or recess 19, so as to restrict the flow of the carbonated water, as previously described.

The lever L can be manipulated so as to cause the carbonated water to flow either out of the opening 12 or out of the openings 14.

When the carbonated water flows out of the bore or opening 12, the high pressure stream strikes the vanes 3 at an angle, thus causing the rotor and the stirrer S to turn at high velocity, which may be as high as 2000 revolutions per minute.

The path of the water is indicated by the arrow-line A, in Fig. 4.

Fig. 4 shows the position of the handle H and of the lever L, when the central high-pressure stream of carbonated water is used.

When the handle H and the lever L are in the position shown in Fig. 1, the carbonated water, whose pressure is reduced by the nipple 15, flows vertically through bores 14, and it will not actuate the vanes 3. The water which flows vertically out of the bores 14 flows vertically through the annular pocket which is provided between the nipple 15 and the adjacent inner wall of the casing 1, and said carbonated water then flows vertically between the vanes 3. This is indicated by the arrows in Fig. 2.

If desired, the outer casing 1 may be provided with any desired number of lateral and upwardly inclined perforations 22.

The casing 1 is associated with a skirt 23, having an annular top flange which is clamped between the corresponding annular wall of the faucet F, and the top of the casing 1.

The internally threaded top of the casing 1 is screwed on to the correspondingly threaded flange of the faucet F. Some of the water passes upwardly through the openings 22, and this portion of the water fills the pocket between the top of the casing 1, and the inner wall of the skirt 23, and said carbonated water is caused to flow downwardly along the exterior of the casing 1. Hence the inside and outside of the device are thoroughly washed by the water which flows out of the bores 14.

In using the device for mixing carbonated water with a syrup, the syrup is first put into the glass, and the glass is raised until the stirrer S contacts with the syrup, either at the top of the body of syrup, or at any desired level. The operator then moves the handle H to the position shown in Fig. 4, so as to release a stream of carbonated water at high pressure.

As this carbonated water enters the glass, the stirrer is operated energetically, thus producing an intimate mixture between the syrup and the carbonated water, while the water is forced into the glass. If the glass contains ice, the syrup and water and ice are also energetically stirred, thus producing an intense cooling effect.

After the glass has been substantially filled, the handle H is moved to the position shown in Fig. 1, thus stopping the operation of the rotor, and producing a stream of carbonated water at lower effective pressure, which enters the glass, some of said carbonated water washing the exterior of the casing.

If desired, the handle H can be moved to the position shown in Fig. 1, while the casing is out of contact with the contents of the glass, thus effectively removing any residue of syrup, from the outside of the casing 1, and from the interior thereof.

The recesses or notches R are preferably of V-shape or tapering shape, and they form an important feature of the invention, if the openings 22 and the skirt 23 are omitted, as they may be.

When the supply of carbonated water is shut off, a vacuum would be formed within the casing 1, if the lower end of said casing were continuous and below the top of the contents of the glass. If the glass were then lowered, the vacuum would be broken when the bottom of the casing lost contact with the liquid in the glass, and this breaking of the vacuum would tend to cause the liquid to spatter. The notches or openings or recesses R break the vacuum effectively so as to eliminate said spattering.

The attachment can also be used for dispensing ice cream sodas and all varieties of mixed beverages.

The rotor blades 3 throw the carbonated water against the wall of the surrounding casing, so that the water flows downwardly in the form of a thin annular sheet, with little or no direct contact with the stirrer S, thus eliminating spattering. This is important if an attendant operates the device without having a glass around the lower end of the device. The stirrer can mix the contents of the glass by means of the notches R. However the casing 1 acts as a shield to prevent any contact between stirrer S and the glass.

I have shown a preferred embodiment of my invention but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

1. A soda fountain attachment comprising a casing connected to the faucet of a soda fountain, a rotor located in said casing and operable by water which passes through said faucet, and a stirrer connected to said rotor, said stirrer being located wholly within the casing and being turnable in unison with the rotor, the bottom

end-portion of the wall of the casing having openings adjacent said rotor, in addition to the opening at the bottom of said casing.

2. A soda fountain attachment comprising a casing connected to the faucet of a soda fountain, a rotor connected to said casing, said rotor having vertical blades, said faucet having centrally located outlet means and also having additional outlet means, a nipple connected to said centrally located outlet means and having a bore which terminates in an outlet port which is above the rotor and which is inclined to the vanes of the rotor, the outer vertical wall of said nipple being spaced from the adjacent vertical wall of the casing, and a stirrer connected to said rotor, said stirrer being located wholly within the casing, the wall of the casing being open adjacent the stirrer.

3. A soda fountain attachment comprising a casing connected to the faucet of a soda fountain, a rotor located within said casing and adapted to be operated by the carbonated water which issues from said faucet, a stirrer connected to said rotor, said stirrer being located within said casing, the wall of the casing being open adjacent said stirrer, said casing having an open part which is located above said stirrer, and a skirt surrounding the upper open part of the casing and downwardly deflecting the water which issues out of said casing, along the outer wall of said casing.

4. In combination, a soda fountain faucet, having a central outlet passage and also having supplemental outlet passages which are laterally spaced from said central outlet passage, a nipple having a boss which is connected to the wall of said central outlet passage, the body of said nipple being below and being aligned with said supplemental outlet passages, said nipple having a bore which communicates with said central outlet passage and with the bottom wall of said nipple, the outlet branch of the bore of the nipple being inclined to the vertical axis of the central outlet passage, a casing having its upper end connected to the outer wall of said faucet, said casing having openings adjacent said nipple, a skirt clamped between the upper end of said casing and the adjacent wall of said faucet, said casing having a sleeve which fits frictionally within a portion of said casing, said sleeve having a rotor connected thereto, said rotor having vertical blades which are located below the outlet branch of the bore of the nipple, a shaft connected to said rotor, a stirrer connected to said shaft, said stirrer being located within and adjacent the lower end of the casing, the casing having openings adjacent said stirrer.

CHARLES L. KEE.