Jan. 9, 1934. F. W. LUDWIG 1,942,609

SODA FOUNTAIN SIRUP PUMP

Filed Nov. 16, 1932

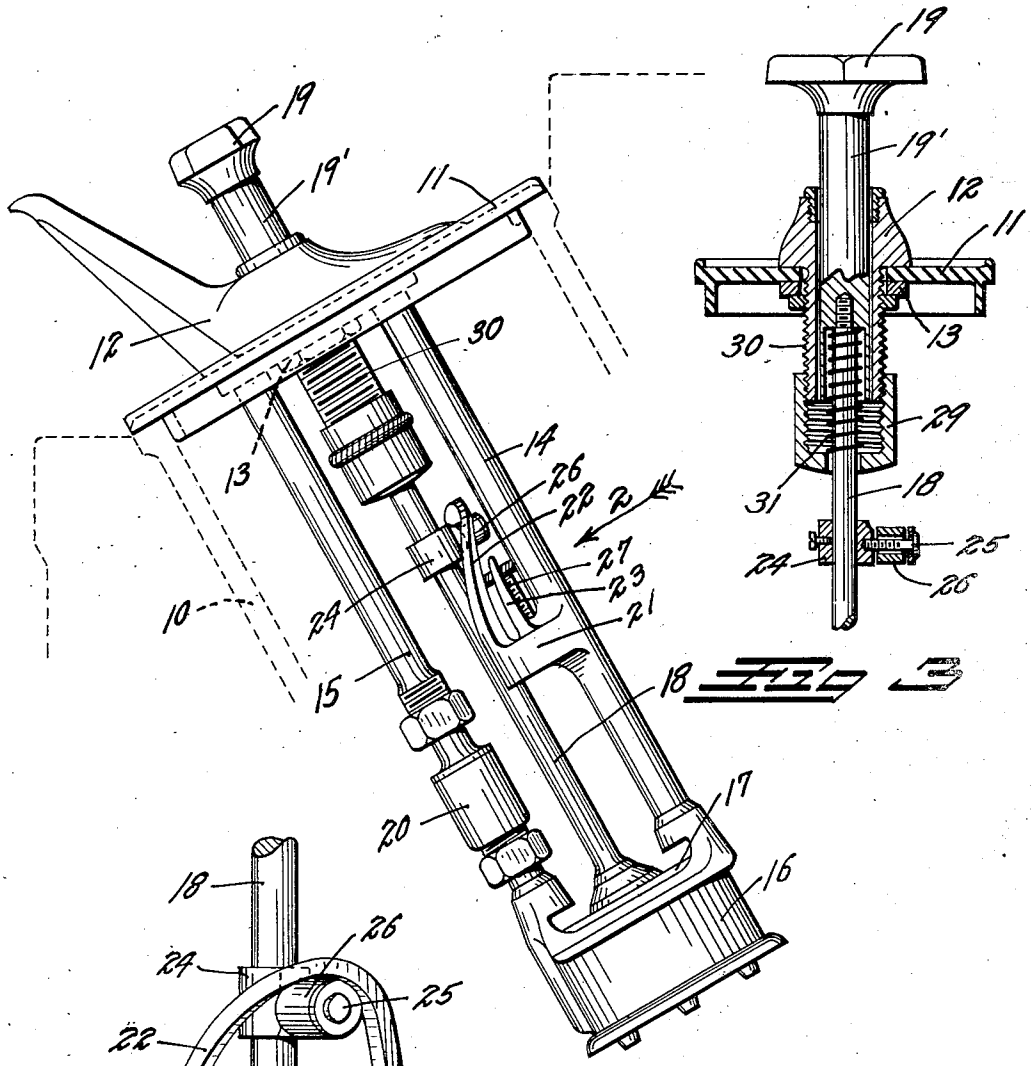



Fig. 1




Fig. 3

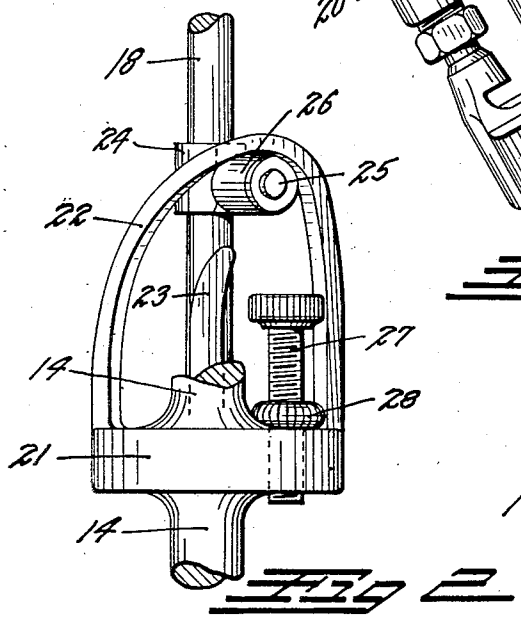



Fig. 2

INVENTOR.
FRANK W. LUDWIG
BY
ATTORNEY.

Patented Jan. 9, 1934 1,942,609

# UNITED STATES PATENT OFFICE

1,942,609

## SODA FOUNTAIN SIRUP PUMP

Frank W. Ludwig, Denver, Colo., assignor to L. Grauman Company, Denver, Colo.

Application November 16, 1932
Serial No. 642,843

6 Claims. (Cl. 225—35)

This invention relates to a sirup pump for soda fountains and has for its principal object the provision of a sirup pump which will deliver either of two varying amounts of sirup at the will of the operator.

It is the custom among the soda fountain trade to order certain sirups mixed in a drink. For instance, some customers will order a plain "Coca Cola," others will order a cherry "Coca Cola" which means they desire cherry sirup added to the drink in addition to the "Coca Cola" sirup. This automatically results in extra sirup in the mixed drink since the dispenser will press the plunger of his "Coca Cola" pump giving the usual amount of "Coca Cola" sirup. He will then add an amount of cherry sirup. This not only results in an excess of sirup in the drink but also in loss to the proprietor.

This invention is designed so that the dispenser upon receiving an order for a plain drink can operate the pump to deliver the full, measured quantity of the principal sirup, and upon receiving an order for a mixed drink can operate the same pump to deliver a definite lesser amount of the principal sirup so that the remaining sirup requirement may be filled with the secondary sirup.

Another use for the invention is in the dispensing of what is known in the soda fountain trade as "long" and "short" drinks. The device can be set so that when desired, it will deliver double the amount of sirup, so that both the "long" and "short" drinks will receive their proper amount of sirup with but a single stroke of the same sirup pump.

Another object of the invention is to so construct the device that either of the two different amounts delivered by the pump can be independently pre-set to any desired amount.

A further object of the invention is to so design the pump that the above operations can be carried out without it being noticeable to the customer.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a side elevation of the improved sirup pump illustrating it in the position it would naturally occupy in the sirup container of a soda fountain.

Fig. 2 is an enlarged detail view of the variable stroke mechanism as it would appear when looking in the direction of the arrow 2, Fig. 1.

Fig. 3 is a detail section through the upper portion of the pump mechanism.

The usual soda fountain sirup container is outlined in broken line at 10, Fig. 1. The improved sirup pump is designed to be carried on the lid 11 for the sirup container 10 as is usual in soda fountain practice.

The pump portion of the device comprises a spout member 12 having a threaded sleeve 30 which passes through the lid 11 to receive a clamp nut 13 by means of which the entire operating mechanism is secured to the lid. A brace rod 14 and a discharge tube 15 extend inwardly from the spout member 12 into the sirup container 10. The brace rod 14 and the discharge tube 15 support a pump chamber 16 at their inner extremities. The pump chamber 16 is provided with the usual intake valve in its bottom and with an open top. A pump piston 17 is actuated in the pump chamber 16 by means of a pump rod 18 which terminates at its upper extremity in the shaft 19' of a hand plunger 19. When the plunger 19 is depressed by the operator, the piston 17 forces sirup from the chamber 16 through a suitable check valve, as indicated at 20, and the discharge tube 15 to the spout member 12.

As thus far described the device is similar to the usual soda fountain sirup pump. The present invention is designed to stop the movement of the piston 17 at either one of two preset limits, so that the pump can be caused to deliver two different accurately measured charges at the will of the operator.

The invention contemplates forming a boss or projecting shelf 21 on the brace rod 14. An eccentric, arcuate, guide track 22 extends upwardly from the shelf 21 about the pump rod 18. A guide tongue 23 extends upwardly within the inverted U of the guide track 22 to form two vertical channels.

A collar 24 is secured to the pump rod 18. A roller stud 25 projects from the collar 24 within the outline of the guide track 22. The roller stud 25 carries a suitable roller 26 which rolls around the inner edge of the guide track 22. It will be noted that by rotating the hand plunger 19 slightly to the left or right as it is initially depressed, the roller 26 can be caused to travel

downwardly in either passage at either side of the guide tongue 23.

The movement down one of the passages (or "short" passage) is limited by means of a set screw 27 which is threaded into the shelf 21 and which can be locked at any desired height by means of a lock nut 28. The movement down the other or "long" passage can be limited by means of a set nut 29. The nut 29 is threaded upon the extremity of the threaded sleeve 30 which extends about the shaft 19' of the hand plunger 19. A coil spring 31 surrounds the pump rod 18 within the nut 29 and acts between the nut and the plunger shaft 19' to return the plunger assembly after each stroke.

Let us assume that the operator desires to deliver a "long shot" of sirup. He places the palm of his hand upon the hand plunger 19 and with a slight twist of the wrist rotates the plunger to the right as he depresses it. This causes the roller 26 to descend in the "long" passage between the guide track 22 and the tongue 23, so that the maximum amount of sirup is pumped from the chamber 16. Upon releasing the plunger it returns to the position of Fig. 2.

Let us assume that he desires to deliver a "short" shot. He again depresses the plunger with a slight twist to the left. This causes the roller to descend on the opposite side of the tongue 23 where it will be stopped by the head of the stop screw 27. It will be noted that the guide track 22 is eccentrically curved so that the normal position of the roller 26 is above the stop screw 27 when the device is at rest. Owing to the normal position of the roller 26 it will naturally descend against the head of the screw 27, should the operator neglect to turn it in either direction. Therefore, any oversight on the part of the operator will result in a "short" shot of sirup rather than in loss to the proprietor.

It is desired to call attention to the fact that both the "long" and "short" shots can be accurately preset to any desired amount. For instance the "short shot" can be increased by simply threading the screw 27 further into the shelf 21 and the "long shot" can be increased by simply unscrewing the nut 29 the desired distance.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:—

1. Means for limiting the stroke of a pump rod at either of two desired points comprising: an arcuate track member adjacent to and about said pump rod; a projection on said pump rod; a spring arranged to hold said projection against said track member so that it will be guided by the latter into either of two different paths.

2. Means for limiting the stroke of a pump rod at either of two desired points comprising: an arcuate track member adjacent to and about said pump rod; a projection on said pump rod; a spring arranged to hold said projection against said track member so that it will be guided by the latter; a guide tongue projecting within said track member to form two passages therein for said projection; said pump rod being rotatable so that said projection may be passed into either of said passages; and means for independently pre-setting the distance said projection may pass into either of said passages.

3. Means for limiting the stroke of a pump rod at either of two desired points comprising: an arcuate track member adjacent to and about said pump rod; a projection on said pump rod; a spring arranged to hold said projection against said track member so that it will be guided by the latter into either of two different paths; a stop member in one of said paths arranged to stop the progress of said projection at a predetermined point.

4. Means for limiting the stroke of a pump rod at either of two desired points comprising: an arcuate track member adjacent to and about said pump rod; a projection on said pump rod; a spring arranged to hold said projection against said track member so that it will be guided by the latter into either of two different paths; a stop member in one of said paths arranged to stop the progress of said projection at a predetermined point; said stop member comprising: a screw extending longitudinally of said path so that its length may be shortened to increase the length thereof.

5. Means for limiting the stroke of a pump rod to either of two predetermined distances comprising: a curvated track adjacent said pump rod; a projection on said pump rod adapted to contact said track; a tongue projecting within the interior outline of said track to divide said interior into two channels therein to receive said projection so that when said pump rod is turned to cause said projection to contact one side of said track it will enter one channel and when turned to contact the other side of said track it will enter the other channel; an apex in said curvated track positioned over one of said channels; and a spring adapted to normally hold said projection at said apex so that a straight push on said pump rod will always cause said projection to enter the latter one of said channels.

6. In a sirup pump, means for limiting the maximum stroke of the pump rod comprising: a stationary threaded tube surrounding said rod; a cap threaded on the lower extremity of said tube, said rod passing through said cap; and a handle member secured to said rod within said tube and arranged to contact with said cap to stop the stroke of said rod, the position of said cap being variable in consequence of its threaded connection on said tube.

FRANK W. LUDWIG.