

1,290,941.

Fig. 1.

Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

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SYRUP-PUMP.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ADOLPH ECKERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Syrup-Pumps, of which the following is a specification.

Syrup pumps of the class to which my invention relates are used more particularly in connection with soda fountains and other means for dispensing beverages in which there is a series of jars containing different flavoring matters from which it is desired to draw the contents in any definite quantities for the purpose of flavoring drinks. My invention relates more particularly to a means by which the stroke of the pump may be so adjusted as to discharge any desired quantity of flavoring liquid at each stroke of the piston.

In the accompanying drawings I have shown and in the following specification described my preferred form of the invention but it will be understood that the specific disclosure is for the purpose of exemplification only and that the scope of the invention is defined in the following claims in which I have endeavored to distinguish it from the prior art, so far as known to me, without, however, relinquishing or abandoning any portion or feature thereof.

Referring to the drawing Figure 1 is an elevation, partly in section and broken away, of a syrup tank having my improved syrup pump applied thereto; Fig. 2 is a central vertical section of the upper end of the same on an enlarged scale, parts being shown in elevation; Fig. 3 is a perspective of a detail; and Fig. 4 a horizontal section on the line 4-4 of Fig. 2, looking in the direction of the arrows.

The tank 5 may be of any usual or preferred form and at its upper end is formed with an upwardly projecting flange 6 about which a cover 7 attached to the pump and formed with a downwardly projecting flange 8 fits. The pump cylinder 9 is attached to and supported from said cover 7 by means of a post 10 secured at its opposite ends to said cover and cylinder, respectively, and a pipe 11 which also forms the outlet or connection from the pump cylinder to the nozzle 12. At its lower end the pipe 11 is soldered or otherwise secured in an offset chamber 13 of the pump cylinder 9 and at

its upper end it may be similarly secured at 14 in an enlarged bore 15 of the nozzle. The latter projects through the cover 7 being formed on the upper side thereof with a flange 16 and screw-threaded at its inner end 17 to receive a nut 18. The precise manner of this connection, however, is immaterial for the present purpose. The plunger or piston 20 fits somewhat loosely within the cylinder 9 and is guided therein but in its normal position is located, as shown in Fig. 1, between upward extensions 21 of the wall of the cylinder leaving apertures 22 between said piston and said wall through which the syrup or flavoring liquid can enter the chamber of the pump. The piston is provided with a piston rod 23 which is tubular in the construction shown and at its upper end is soldered or otherwise secured to a plug 24 within the same which plug carries a head 25 or finger-piece 25 by means of which the piston rod and piston are depressed.

The head is shown as secured to the plug by reducing the upper end of the latter forming a shoulder at 26 against which the head is pressed by a screw 27. The form of the head is immaterial but is shown as comprising a threaded annulus 28 having an inverted flange and screwed at 29 upon the body of the head a celluloid or other plate 30 which may contain the name of the syrup to be dispensed by the pump, being maintained in position on said head by the annulus. In order to limit and adjust the length of stroke of the plunger a sleeve 31 is secured to the cover 7 concentric with and surrounding the plunger rod or tube 23 which, at its upper end, is reduced as at 32 forming a shoulder 33 which abuts against the lower end of the sleeve 31 and limits the upward movement of the plunger. A second sleeve 34, the diameter of which is slightly enlarged at 35, has a sliding fit within sleeve 31 and is adjustably secured to the piston rod with which it reciprocates. At its upper end sleeve 34 is formed with an inwardly-extending flange 36 which closely embraces the plug 24 but is adjustable longitudinally thereof, said plug being flattened on its opposite sides as at 37, 37, Fig. 4, where it is engaged by the flange of the sleeve so that said sleeve is prevented from rotation with reference to said plug. The upper end of the sleeve 34 is slightly enlarged and provided with an exterior screw thread at 38 which is

engaged by an interior thread upon an adjusting nut 39 revolvably mounted upon the plug 24. Obviously the sleeve 34, being movable longitudinally of the plug but held from rotation with respect thereto, by rotating the adjusting nut 39 said sleeve can be raised and lowered or axially adjusted relative to said plug and piston rod. The nut 39 is formed at its upper end with a transverse groove 40 which receives a transverse rib 41 upon the head 25 and a spring 42 is interposed between the upper flange on the sleeve 34 and the bottom of the sleeve 31 upon the cover and normally and yieldingly maintains the piston rod and piston in upper position and the adjusting nut against the under face of the head 25.

When the piston is depressed against the resistance of spring 42 by pressure of the hand upon the head 25 the liquid in the pump cylinder or chamber is ejected until the downward movement of the piston is stopped which occurs when the lower end of the sleeve 34 engages the inturned flange on the lower end of the stationary sleeve 31. By adjusting the sleeve 34 obviously the amount of liquid discharged at each stroke of the piston may be varied. This adjustment is made by turning the adjusting nut 39 thus adjusting the sleeve vertically relative thereto and in practice the revolution of the nut is terminated with the groove in the upper face thereof in register with the rib on the lower face of the head so that the nut is yieldingly held against further rotation. Thus when the stroke of the piston has been suitably adjusted it cannot be accidentally changed.

I claim:

1. In a syrup pump and in combination with the cover, cylinder, spout, piston and piston rod thereof, a sleeve mounted upon the cover and surrounding the piston rod, a second sleeve longitudinally adjustable relative to said piston rod and sliding within the sleeve on the cover, a spring within said sleeves,

means for preventing relative rotation between the sleeve on the piston rod and said piston rod, an adjusting nut revolvably mounted on the piston rod and having a thread engaging a thread upon the adjustable sleeve, and interlocking devices between the piston rod and the adjusting nut to prevent accidental revolution of the latter.

2. In a syrup pump, and in combination with the cylinder, spout, piston and piston-rod thereof, an abutment rigidly connected to the cylinder and surrounding the piston rod, a sleeve of larger diameter than the piston rod and reciprocable relative to the same, a spring within the sleeve and intermediate the same and the abutment, a knob on the end of the piston rod, a thimble 39 rotatably journaled upon the rod directly beneath the knob and having a screw engagement with said sleeve, interlocking surfaces on the knob and thimble, respectively, the construction being such that the pressure of the spring normally holds the thimble against the knob maintaining the interlocking members in engagement and thereby preventing accidental rotation of the thimble.

3. In a device of the class described, and in combination with the cover, cylinder, spout, piston and piston-rod thereof, a depending sleeve mounted on the cover and guiding the piston rod, a sleeve longitudinally movable upon the rod but held from rotation with respect thereto, the lower end of the latter sleeve extending into and being guided by the first-mentioned sleeve, a spring within the sleeves and tending to force them apart, a knob on the rod having a transverse rib on its under surface, a thimble mounted for rotation with respect to the rod having a threaded engagement with the sleeve on said rod, and a transverse groove on its upper surface with which the rib on the knob coacts, the construction being such that the spring holds the thimble in yielding interlocked engagement with the knob.

ADOLPH ECKERT.