July 13, 1926. 1,592,550

F. A. WEBB

MIXER

Filed Dec. 6, 1924 2 Sheets-Sheet 1

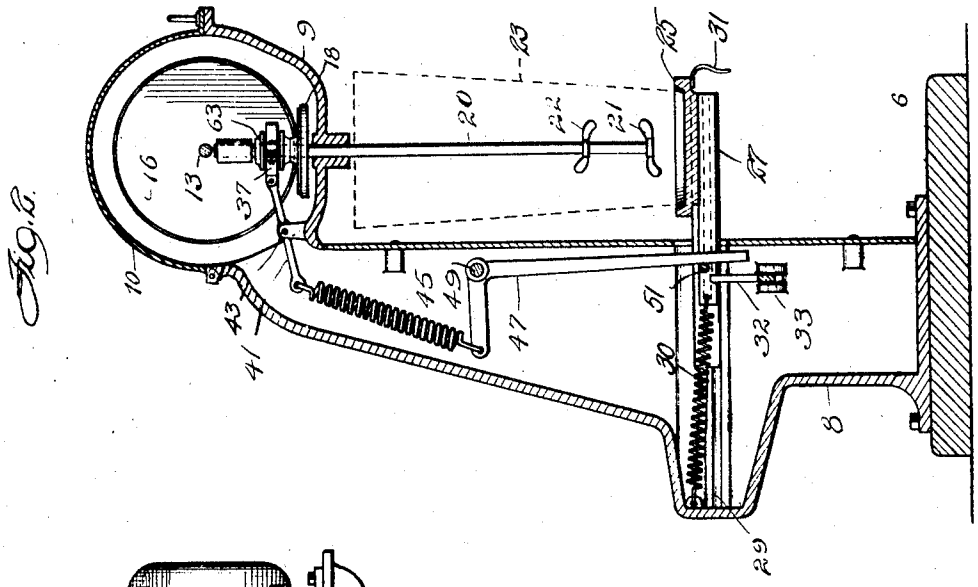


Fig. 2.

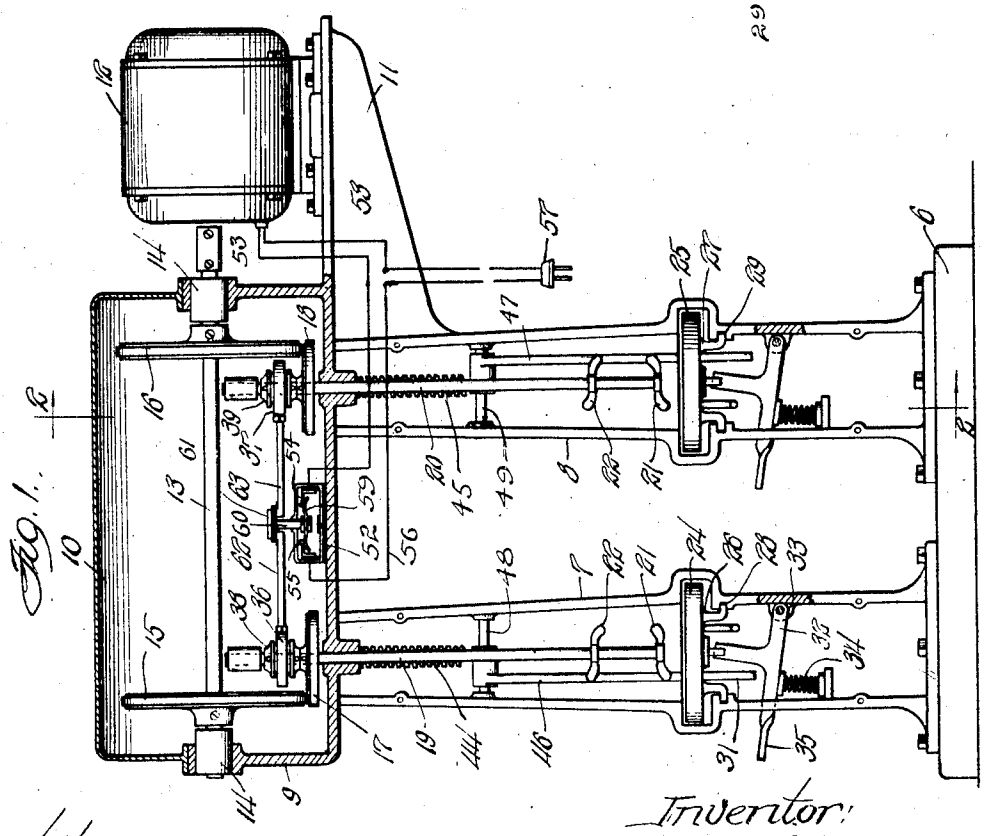


Fig. 1.

Witness:
W. K. Clark

Inventor:
Forrest A. Webb,
By Glenn S. Noble Atty

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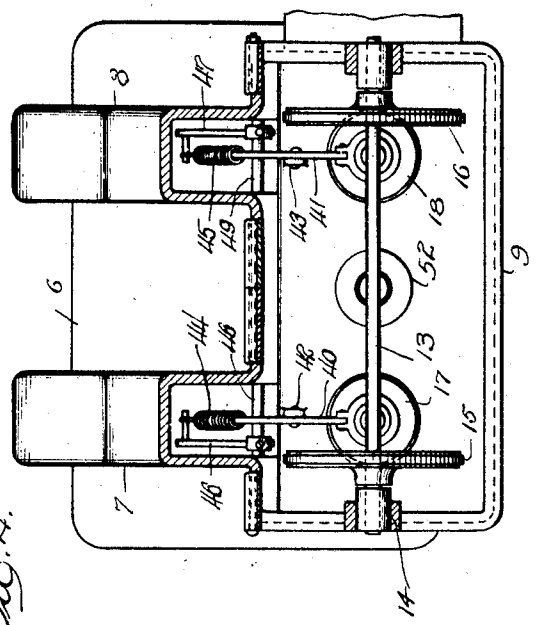


Fig. 4.

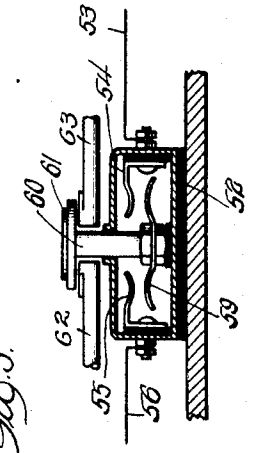


Fig. 5.

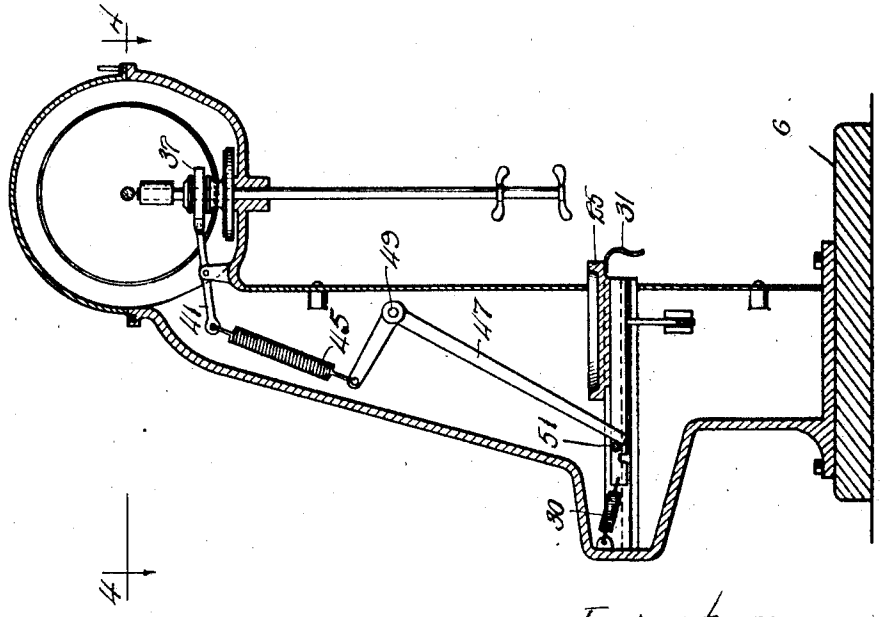


Fig. 3.

Witness:
W. K. Olson

Inventor:
Forrest A. Webb,
By Glenn S. Noble Atty.

Patented July 13, 1926. 1,592,550

UNITED STATES PATENT OFFICE.

FORREST A. WEBB, OF CHICAGO, ILLINOIS.

MIXER.

Application filed December 6, 1924. Serial No. 754,326.

This invention relates to mixers of the character used in connection with soda fountains or drink dispensing establishments for mixing various drinks, such as malted milk, phosphate drinks, and the like. Heretofore, it has been more or less customary with machines of this kind to provide each agitator with a separate motor. As the work to be done is comparatively light, the motors are very small and are more apt to get out of order than the larger and more ruggedly built motors. Furthermore, each mixing apparatus would require separate circuits or connections for its motor. In large establishments where there are numerous machines used at a single counter, this necessitates a considerable amount of wiring, and as there is always more or less water around such apparatus, the persons operating such machines are apt to receive electric shocks due to short circuiting of the apparatus or stray currents from wiring. The present invention comprises, among other things, an improved mixing apparatus whereby one or any desired number of agitators or stirrers may be operated from a single motor. By utilizing a single motor to drive a plurality of agitators it makes it practicable, to utilize larger motors and to mount the motor so that the operators are not apt to come in contact therewith or with the wiring leading thereto. By means of this arrangement, it will be seen that I provide means for overcoming objectional features of the above described common forms of mixers.

Other objects of my invention are to provide an improved mixing apparatus having one or more agitators and means whereby any agitator may be operated independently of the others; to provide a mixing apparatus for mixing drinks, having a plurality of agitators adapted to cooperate with separate containers with all driven from a single motor with means whereby the motor will be started when any one of the containers is placed in operative position; to provide means whereby the placing of a container in operative position will close the circuit to the motor and also put its agitator into a driving relation with the motor; to provide an improved container support and operative mechanism; to provide a novel stirring or agitating device, and in general, to provide such an improved machine and such details of construction as will be described more fully hereinafter.

In the accompanying drawings illustrating this invention, Figure 1 is a front view with parts removed or shown in section to illustrate the interior construction;

Figure 2 is a cross sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2 but with the agitator shown in inoperative position;

Figure 4 is a sectional plan view; and Figure 5 is a detail of the switch and operating mechanism.

It is to be understood that my apparatus contemplates the use of any number of agitators or stirring spindles to be driven from a single motor or shaft, and in large establishments there will usually be a considerable number of such agitators, but for convenience in illustration I have only shown two agitators driven from a single motor. As shown in these drawings the base 6 supports the uprights or columns 7 and 8 which are connected at the top by a casing or housing 9, having a cover 10. The casing 9 has an outwardly projecting bracket 11 upon which is mounted the motor 12. The motor drives the shaft 13 having its bearings 14 in the casing 9. Two driving wheels or disks 15 and 16 are mounted on the shaft 13. These wheels are preferably of the friction type and engaged respectively with driving wheels 17 and 18 on the agitator spindles or rods 19 and 20. Each of these spindles is provided with suitable agitators but preferably with agitators 21 and 22 of the propeller type, the agitators on the respective spindles being reversely pitched in order to give a more thorough mixing action. The lower agitator is preferably pitched so that it tends to raise the liquid in the container 23, while the upper agitator is pitched so that it tends to force the liquid downwardly, thereby overcoming any tendency to throw the liquid out at the top of the container.

The container supports 24 and 25 are carried on slides or carriages 26 and 27, mounted in guideways 28 and 29 in the standards or columns 7 and 8. Each of these slides is provided with a spring 30 for holding it in normal retracted position as shown in Figure 3, and is also provided with a catch or finger piece 31 for drawing it out

to operative or supporting position as shown in Figure 2. The slides are held in forward or operative position by means of catches 32 which are pivoted at 33 to the posts and are pressed upwardly by means of springs 34. Each catch has a projection or thumb piece 35 for pressing it downwardly to release the slide. It will be understood that the springs 30 are comparatively light so that the slides will return to normal position without undue force and without being held by the operator.

The spindles 19 and 20 are provided respectively with collars 36 and 37 which are preferably mountd on ball-bearings 38 and 39 and arranged so that the spindles may be raised, thereby bringing the driving disks into engagement with the friction wheels on the shaft 13. These collars are connected with levers 40 and 41 which are pivoted at 42 and 43 to brackets on the main frame or column and are connected at the other inner ends by means of springs 44 and 45 with bell crank levers 46 and 47 which are mounted on shafts 48 and 49 in the respective columns 7 and 8. The lower ends of the levers 46 and 47 engage with pins or projections 50 and 51 on the slides 24 and 25.

Any suitable switch mechanism may be utilized for closing the circuit to the motor but it is desirable to provide means whereby the motor will be started when any one of the agitators is placed in operative position and will remain in operation as long as any agitator is being used, but will be stopped when none of the agitators is in operation. For this purpose I provide a switch 52 which may be conveniently mounted in the casing 9 and which controls the motor circuit. One wire 53 leads from the motor to the switch terminal 54. The other terminal 55 is connected to the wire 56 which leads from the plug or source of supply as indicated at 57, and the second wire 58 from the source of supply leads directly to the motor. The switch blade 59 is carried by stem 60 having a head or projection 61 at its upper end. This head is adapted to be engaged at times by arms 62 and 63 which are rigidly connected to the respective collars 36 and 37.

When the operator desires to mix a drink, the ingredients are placed in the container 23 and the container is then placed in position over one of the agitators, for instance, the agitator 19. He then draws out the container support 24, which is held in supporting position and rests the container thereon. The drawing out of the support 24 causes the lever 46 to be swung on its pivot and to pull down on the spring 44. This swings the lever 40 so as to raise the collar 36, which causes the disk 17 to engage with the wheel 15 to drive the spindle or agitator 19. Simultaneously, the arm 62 closes the switch 52 and starts the motor, which will continue to operate until the slide 26 is returned to normal position preparatory to removing the container. When the slide returns to normal position, the lever 46 is drawn backwardly by the spring 45, which spring is of only sufficient length so that it closes after the lever 46 is swung backwardly and then permits the collar 36 and connected parts to move downwardly and release the switch to the motor. When both of the slides are drawn out, and both of the collars released, the switch will be opened as shown in Figure 5, to stop the motor. The provision of the friction gearing between the motor shaft and the spindles or agitators enables the spindles to be driven at a much greater speed than the motor, so that effective work may be done while utilizing a relatively slow speed motor. If more than two agitators are to be driven, their switching apparatus may be arranged so that they will operate in pairs as shown, or each spindle may have a separate switch for opening and closing a circuit to the motor. It will be readily apparent that various changes may be made in the details of construction or arrangement of the parts in order to adapt the apparatus for different conditions or different uses, and therefore I do not wish to be limited to the exact arrangement herein shown and described except as specified in the following claims in which I claim:—

1. An apparatus as the character set forth, comprising a plurality of agitators adapted for mixing drinks, horizontally movable supports for supporting containers in operative relation to the respective agitators, a driving shaft and means controlled by said supports for driving each agitator from the shaft whereby each agitator may be operated independently of the other agitators.

2. A mixing apparatus comprising a motor and shaft driven by said motor, one or more agitators, separate driving mechanism for driving each agitator from the shaft, horizontally slidable container supports and means actuated by said supports for controlling the driving mechanism whereby each agitator may be operated independently of the other agitators.

3. A mixing apparatus comprising a supporting frame, spindles mounted in said frame, mixing devices on said spindles, containers adapted to receive said spindles, means for supporting the containers, a motor, a shaft driven by said motor, friction gearing between the shaft and the spindles and means whereby the movement of the container supports will throw said gearing into and out of operative position.

4. An apparatus as per claim 3 having means whereby the movement of the container supports will open and close the circuit to the motor.

5. A mixing apparatus comprising two or more agitators, horizontally slidable container supports, a motor, separate gearing between the motor and each agitator, means whereby a movement of each container support will put its respective agitator into and out of operation, and means whereby a movement of each container support will also open and close a circuit to the motor.

6. In a mixing apparatus, the combination of a supporting frame, vertical spindles mounted in said frame, mixing devices on said spindles, guideways in said frame, slidable container supports mounted in said guideways, springs tending to hold said supports in normal retracted position, catches for holding the supports in advanced or supporting position, a driving shaft, friction wheels on said shaft, a friction disk on each spindle adapted to engage with the respective wheels on the shaft, means adapted to co-act with the respective supports for throwing the disks into and out of engagement with the wheels, a circuit for said motor and means whereby the movement of the respective disks will also cause the closing and opening of said circuit.

7. In a drink mixer, the combination of a base, a plurality of columns on said base, rotatable spindles mounted in said columns, agitators on said spindles, guideways in said columns, slidable container supports mounted in said guideways, springs tending to hold said supports in retracted position, spring-pressed catches for engagement with the supports for holding them in supporting position, disks secured to the spindles, collars on said spindles for raising and lowering the same, levers secured to said collars, springs connected to said levers, bell cranks connected to said springs and engaging with the container supports, a casing at the top of said columns, a shaft mounted in said casing, friction wheels on said shaft for engagement with the respective disks, a motor for driving said shaft, a circuit for said motor, a switch in said circuit and arms on said collars for actuating the switch.

8. In a mixing apparatus, the combination of a motor, a plurality of agitators, individual means for driving each agitator from the motor, a circuit for said motor horizontally slidable container supports, means for holding said supports in adjusted positions and means actuated by said support whereby the circuit may be opened and closed as each agitator is placed in operative relation to the motor, said means being arranged so that the circuit will be closed as long as any of the agitators are in operative position.

FORREST A. WEBB.