March 28, 1944. S. I. JOHNSON 2,345,479

CUP ADAPTER ARRANGEMENT FOR LIQUID MIXING APPARATUS

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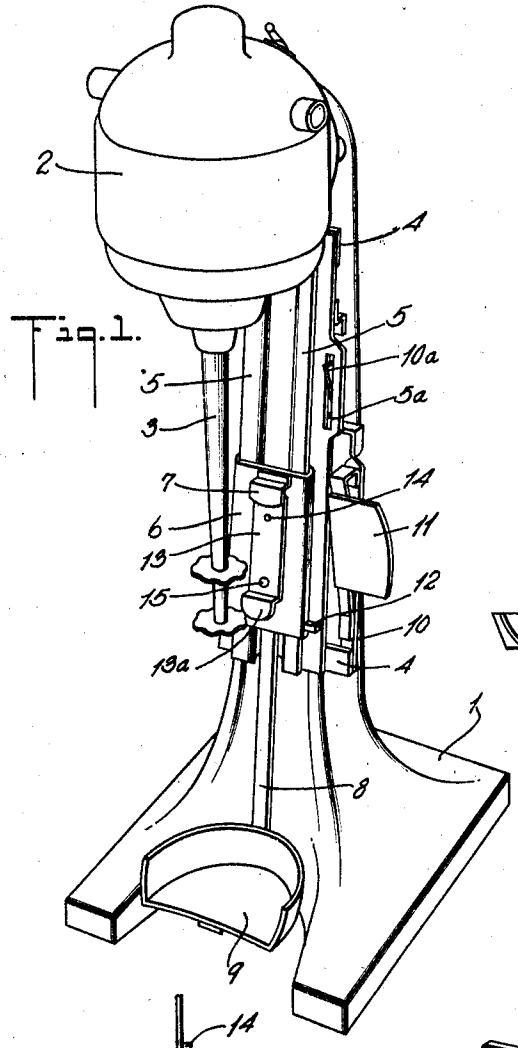


Fig. 1.

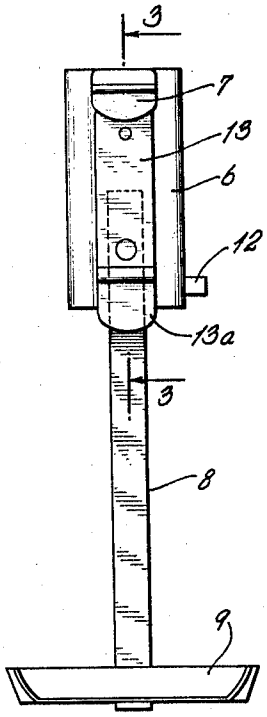


Fig. 2.

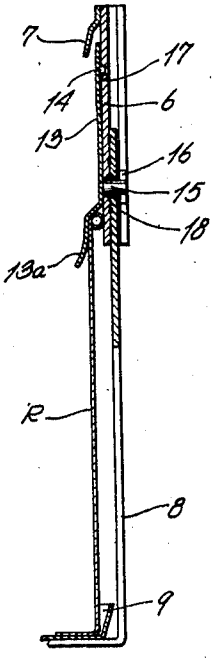


Fig. 3.

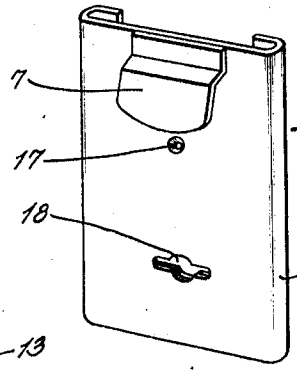


Fig. 4.

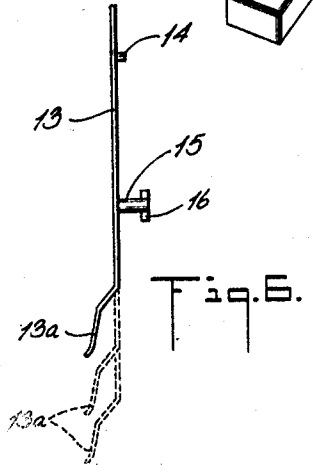


Fig. 6.

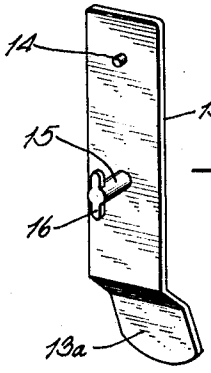


Fig. 5.

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UNITED STATES PATENT OFFICE

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CUP ADAPTER ARRANGEMENT FOR LIQUID MIXING APPARATUS

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Application June 24, 1942, Serial No. 448,219

1 Claim. (Cl. 259—1)

This invention relates to liquid mixing apparatus and, more particularly, to such apparatus as is used for mixing drinks at soda fountains or the like.

There are many known types of liquid mixing apparatus. These, by a suitable stirring operation, mix the drinks in receptacles or cups all of which, necessarily, have the same height in order that they may be disposed in stirring position. By the invention, one or more adapter plates is or are provided for a liquid mixing apparatus whereby, in a simple manner, modifications of the mixing apparatus may be effected so that at one time receptacles or cups of one height may be used while at another time receptacles or cups of another height may be used.

The invention consists in the novel features, combinations and adapter plate arrangements embodied by way of example in the apparatus hereinafter described as illustrating the preferred form of the invention, and the invention will be more particularly pointed out in the appended claim.

Further objects and advantages of the invention will more fully appear from the following description taken in connection with the accompanying drawing which shows by way of example the preferred embodiment of the invention and in which:

Figure 1 is a perspective view showing a mixing apparatus having a novel adapter plate associated therewith;

Fig. 2 is a front elevational view showing part of the apparatus illustrated in Fig. 1;

Fig. 3 is a vertical sectional view, partly in elevation, taken, on the line 3—3 of Fig. 2 looking in the direction of the arrows;

Fig. 4 is a perspective view showing a carriage plate modified for the attachment thereto of an adapter plate;

Fig. 5 is a perspective view showing the novel adapter plate; and

Fig. 6 is an elevational view showing adapter plates of different effective lengths.

Referring to Fig. 1, a standard 1 is shown as serving as a supporting pedestal, the standard 1 having fixed adjacent its upper end an electrical motor 2 having an armature which supports a depending mixing arm or device 3 adapted to be rotated upon energization of the motor 2. The standard 1 carries upper and lower plates 4, 4 to which are secured a pair of spaced channel members 5, 5 providing a vertical track which supports a carriage plate 6 constructed and arranged to slide vertically on said track, the carriage plate 6 having secured thereto a downwardly extending finger or hook 7. To the rear of the carriage plate 6, there is rigidly secured a depending strut or longitudinal carriage member 8 provided, at its lower end, with a seat portion 9 of suitable character. The lower plate 4 extends to one side of the adjacent track 5 and has rigidly secured thereto the lower end of a spring arm 10 which extends upwardly and forms a latch member 10*a* freely movable in a slot 5*a* formed vertically in said last named track 5. As shown, the spring arm 10 carries a member 11 which forms an actuating finger piece therefor. Projecting from the carriage plate 6 is a lug 12 adapted to coact with the latch member 10*a* in the manner hereinafter described.

In accordance with the invention, the carriage plate 6 carries an adapter plate 13 formed, preferably, of metallic material having some resiliency and being of the general character illustrated in Figs. 2, 3 and 5. This adapter plate 13 is a plane sheet of metallic material or equivalent shaped to form a lower downwardly extending finger or hook 13*a*. On the rear surface thereof, as shown in Fig. 5, the adapter plate 13 carries upper and lower laterally extending pins 14 and 15, the pin 15 terminating in a transverse key member 16 extending parallel with the length of the adapter plate 13. As shown, the pins 14 and 15 are vertically alined midway between the sides of the adapter plate 13.

To the end that the adapter plate 13 may be detachably associated with the carriage plate 6, the latter is provided with a depression 17 and a key slot 18 spaced apart the same distance as the pins 14 and 15, the depression 17 being formed with a sloping or conical wall surface and the key slot 18 extending transversely with respect to the length of said carriage plate 6. Further, as shown, the depression 17 and key slot 18 are vertically alined midway between the vertical sides of the carriage plate 6.

In order to associate the adapter plate 13 with the carriage plate 6, the adapter plate 13 is horizontally disposed (the longer dimension being at right angles to the longer dimension of the carriage plate 6) whereupon the key member 16 and pin 15 are inserted into and through the key slot 18 so that the rear surface of the adapter plate 13 comes to rest upon the front surface of the carriage plate 6. Thereupon, the adapter plate 13 is moved to vertical position in such manner that the finger 13*a* thereof is disposed

downwardly, such movement occurring about the axis of the pin 15. While the adapter plate 13 is thus being moved, the pin 14 carried thereby rides along the upper surface of the carriage plate 6 and, as the adapter plate 13 reaches its vertical position, the pin 14 drops into the depression 17 under the influence of the inherent resiliency of the adapter plate 13. By reason of the turning movement imparted to the adapter plate 13 as just described, the key member 16 assumes a vertical position with respect to the horizontal key slot 18 and, hence, locks the adapter plate 13 to the carriage plate 6.

In this simple manner, the adapter plate 13 is associated with the carriage plate 6. When said adapter plate 13 is to be detached from the carriage plate 6, finger, thumb or other pressure is applied to one upper side edge of the adapter plate 13 to dislodge the pin 14 from the depression 17. Thereupon, the adapter plate 13 is swung to horizontal position on the pin 15 as an axis and then moved from the carriage plate 6 to withdraw the pin 15 and the key member 16 from the key slot 18.

The liquid mixing apparatus of Fig. 1, assuming that the adapter plate 13 is not associated therewith and that the carriage plate 6 thereof is not provided with the depression 17 and the key slot 18, is of the general character disclosed in the pending application of Clifford B. Terry, Serial No. 393,501, filed May 15, 1941. When using such liquid mixing apparatus, the upper rim of a receptacle or cup is engaged with the finger 7 and the base thereof is disposed on the seat portion 9 while the latter is in lower position as shown in Fig. 1. Thereupon, the movable assembly comprising the carriage plate 6, the strut 8, the seat portion 9 and the receptacle or cup carried thereby are elevated to operative position as determined by engagement of the lug 12 with the latch member 10*a*. Inasmuch as the distance between the finger 7 and the seat portion 9 is fixed, all of the receptacles or cups to be associated therewith necessarily have the same height or substantially so.

In accordance with the invention and as hereinbefore described, the arrangement is such that the adapter plate 13 may readily be associated with the carriage plate 6 when it becomes desirable to use the mixing apparatus with receptacles or cups having less height than those which are disposable between the finger 7 and the seat portion 9. Thus, as the apparatus is shown in Figs. 1 and 3, each receptacle or cup R of less height, before being moved upwardly to mixing position, is disposed on the seat portion 9 with the upper rim thereof beneath the depending finger 13*a*. The provision of this simple adapter plate, then, materially enlarges the capacity of the mixing apparatus because rendering it possible to handle two sizes of receptacles or cups rather than one size.

It is a feature of the invention that, preferably, a plurality of the adapter plates 13 are provided for use with a single mixing apparatus. All of these adapter plates are duplicates as regards the pins 14, 15 and the key member 16, the distance between said pins 14 and 15 being the same in all cases. However, as indicated in Fig. 6, the adapter plates 13 are of dissimilar length whereby the respective fingers 13*a* occupy different vertical positions with respect to the seat portion 9 disposed therebelow. Obviously, with a plurality of the adapter plates 13 at hand, there is wide latitude as regards the height of the receptacles or cups which may be used with the mixing apparatus.

It will be understood that the receptacles or cups which are utilized may be formed from any suitable material whether paper, metal or equivalent, or from such combination of materials as may be desirable.

Although the invention has been described in connection with liquid mixing apparatus of a particular type as disclosed in the aforesaid Terry application, it will be understood that the invention is not to be thus restricted since it is applicable to liquid mixing apparatus generally and particularly mixing apparatus of the type where relative movement is required between the receptacle or cup and the mixing device per se before the mixing operation is initiated.

While the invention has been described with respect to a certain particular preferred example which gives satisfactory results, it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended therefore in the appended claim to cover all such changes and modifications.

What is claimed as new and desired to be secured by Letters Patent is:

In liquid mixing apparatus comprising a standard, a motor having a downwardly extending mixing arm, a vertical track, a carriage plate slidable thereon, a finger at the upper end of said carriage plate for cooperation with the rim of a receptacle or cup, and a support for the bottom of the receptacle or cup carried by said carriage plate, the combination with an adapter plate positioned vertically below said finger, a key slot and a depression on said carriage plate, a key member and a pin on said adapter plate, said key member coacting with the wall surface at said key slot and said pin cooperating with said depression to hold the adapter plate in vertical position on said carriage plate, said adapter plate having a second finger positioned vertically below said first named finger for cooperation with the rim of a receptacle or cup having less height than said first named receptacle or cup.

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