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2,068,646

COLOR MIXING MACHINE

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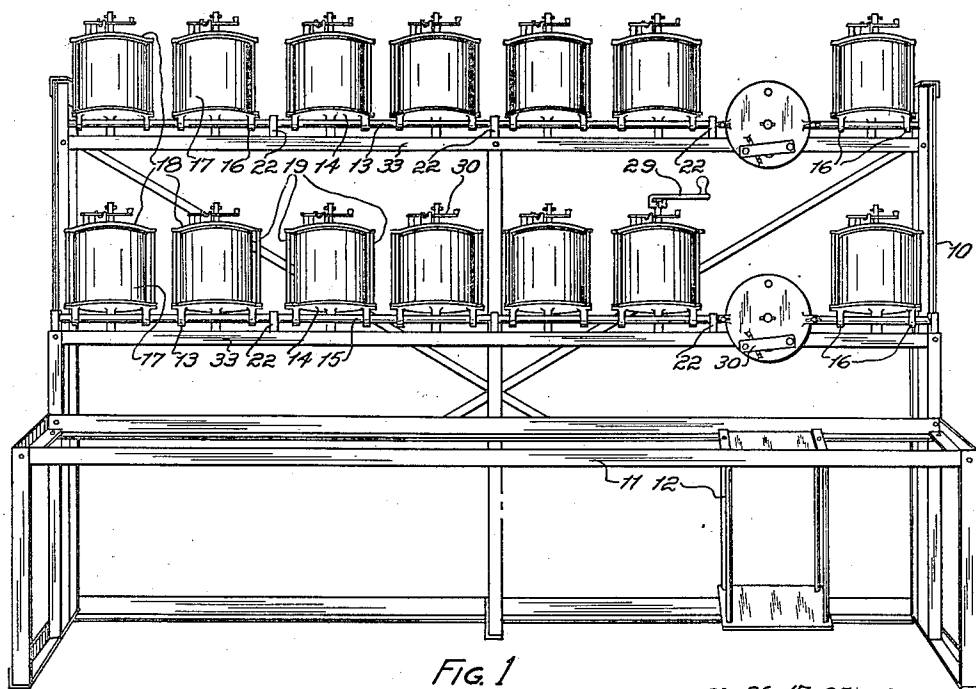


Fig. 1

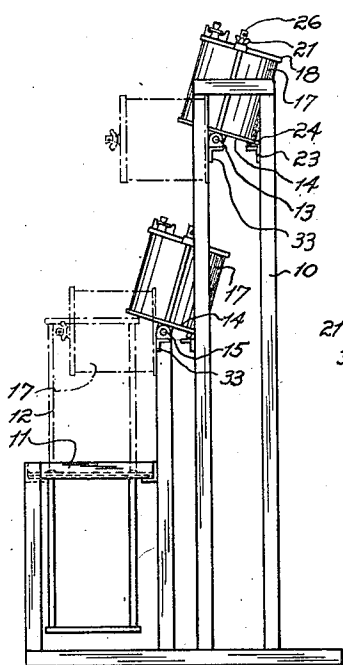


Fig. 2

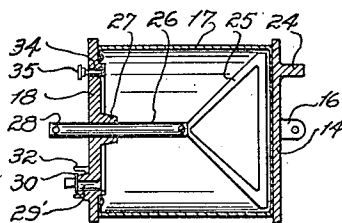


FIG. 4

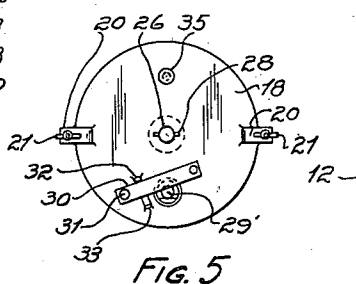


FIG. 5

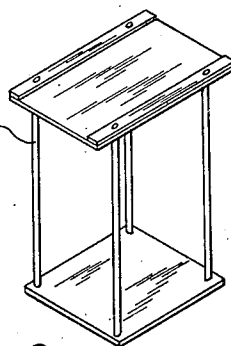


FIG. 3

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COLOR MIXING MACHINE

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5 Claims. (Cl. 226—100)

This invention relates to liquid dispensing apparatus and, more particularly, to apparatus for dispensing paints of different colors for the purpose of making a paint having a desired color or shade.

In the paint trade it has been customary for a dealer to carry a stock of ready-mixed paint of each color and shade that he sold, and this has necessitated a relatively large capital outlay for the necessary inventory, and has also been objectionable, from the standpoint of the dealer, because of the fact that it is impossible to anticipate the demand for the different colors and, as a result, there may be no demand for some of the colors and, on the other hand, the demand for other colors may exceed the supply on hand.

In the automobile re-painting trade, there is a demand for a wide variety of colors and, for the reasons above stated it has been difficult for the paint dealers to promptly supply paints of various colors and shades when demanded.

The principal object of the present invention is to make it possible for paint dealers to carry a relatively small stock of certain standard colors and to make up therefrom a mixture of any particular shade or color that may be called for. This is accomplished by providing the dealer with apparatus embodying the invention herein-after described and claimed, and whereby paint of any desired color may be quickly and conveniently made up.

In the drawing which illustrates what I now consider to be the preferred embodiment of my invention,

Fig. 1 is a perspective view of an apparatus embodying my invention, as seen from the front thereof;

Fig. 2 is an end elevation;

Fig. 3 is a perspective view of an extension shelf that is employed with the apparatus illustrated in Figs. 1 and 2;

Fig. 4 is a section through one of the individual containers forming a part of said apparatus; and

Fig. 5 is a plan view of the cover.

In the drawing, 10 indicates a frame which may be made of angle iron or other suitable structural material and which is provided with a forwardly projecting shelf 11 on which the extension shelf 12, illustrated in Fig. 3, may be supported. Near the top of the frame 10 there is a horizontally extending rod 13 on which a plurality of plates or supports 14 are pivoted. At a convenient distance below the rod 13 and somewhat forward thereof, the frame 10 carries a

similar rod 15 on which a plurality of the supports 14 are pivoted. Each of the supports 14 is provided with a plurality of lugs 16 to receive the rods 13 or 15.

On each of the supports or plates 14 there is arranged a container 17 and the apparatus is preferably so designed that standard gallon paint cans may be used as such containers. The usual covers are removed from the containers 17 and plates 18 are substituted therefor, these plates being adapted to make sealing engagement with the top peripheral edges of the containers 17, as shown in Fig. 4. Bolts 19 are arranged on opposite sides of the containers 17 and extend from the supports 14 through the laterally projecting ears 20 on the covers 18 and, by means of wing nuts 21, on the bolts 19, the covers 18 may be drawn down tightly on the containers 17 and the latter securely clamped between the covers and the supports 14.

As will be noted from Figs. 1 and 2, the containers 17 are arranged in two rows on the frame 10 and, since there will be a substantial load on the rods 13 and 15 they are preferably supported in bearings 22 at several intermediate points. Normally, the containers 17 are arranged in a substantially upright position, as shown in Figs. 1 and 2, and to support them in this position the frame 10 is provided with bars 23 which are engaged by the lugs 24 on the plates 14.

Each of the covers 18 carries a rotatable stirrer 25 which has a shaft 26 extending through a boss 27 in the cover and provided at its outer end with a transverse pin or key 28, with which a crank 29 is adapted to engage for the purpose of rotating the stirrer. The cover 18 is also provided with a discharge orifice 29' with which a blade or bar 30 is adapted to cooperate to control the flow through the orifice. The bar 30 is pivoted at 31 and the cover has lugs 32 and 33 which act as stops for the bar 30 in its fully open and fully closed position. The bar 30 thus acts as a gate valve and when the valve is closed and the container returned to its upright position, all of the liquid in the orifice 29' will drain back into the container and leave the orifice clear. There is a vent opening 34 in the plate 18 and this is normally closed by the plug 35 which is shown in its open position in Fig. 4.

In order to dispense the contents of any of the containers 17 it is swung down from its substantially upright position to the substantially horizontal position shown in broken lines in Fig. 2. The container is held in this horizontal position

by the engagement of the support 14 with one of the bars 33 of the frame 10.

In using the apparatus above described, the containers 17 with the various standard or base colors therein, are placed in position as shown in the drawing. The operator is supplied with a color card showing the various colors and shades that he may be called upon to make up. For convenience, each of the containers may be given a number to identify the color of the paint which it contains, and the operator is supplied with formulas for the composition of each color and shade that he may be called upon to make up. These formulas merely specify the quantity that is required of each of the various constituent colors, and the latter may be identified by the number thereof, as stated above.

Let us assume that the desired color is made up of varying amounts of the different colors in four of the containers 17. The contents of these four containers are first thoroughly stirred by the use of the crank 29 which is preferably provided with a bayonet-type connection so that it may be readily attached to the shaft of the stirrer and any of the containers. These four containers are then swung down to their horizontal position or, if preferred, they may be swung down to the horizontal position before the stirring operation. If the containers 17, from which the material is to be drawn, are in the lower row of containers, the extension shelf 12 is arranged on the shelf 11, as shown in Fig. 1, and a receptacle, such as an ordinary paint can, is placed on the extension shelf 12 beneath one of the containers 17. The valve 30, associated with this container, is then opened and the prescribed amount of material allowed to flow into the receptacle. For the purpose of conveniently measuring the amount of material to be thus discharged into the receptacle, I have invented a gauge for accurately measuring the height of the surface of the liquid above the bottom of the receptacle, and this gauge forms the subject matter of my copending application Serial No. 43,201, filed October 2, 1935. However, any other suitable means may be used for measuring the desired quantity of material that is to be discharged in the receptacle. These operations are repeated until the amount of each of the various colors called for by the formula has been run into the receptacle, when a cover is placed on the receptacle and the contents, thoroughly mixed to provide the necessary blending of the various colors.

If any of the constituent colors, specified in the particular formula being made up, happens to be in a container in the upper row on the frame 10, the extension shelf 12 is inverted from the position shown in Fig. 1, as shown in Fig. 2, and the receptacle into which the colors are to be discharged is placed on the top of the extension shelf where it will be in convenient position to receive material from any of the containers 17 of the upper row.

In the foregoing specification I have used the word "paint" in the broad sense in which it includes such materials as varnishes, lacquers, and enamels, as well as ordinary paints, and, while I have illustrated and described what I now consider to be the preferred form of my invention, it is to be understood that various changes may be made in the details of construction without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. In apparatus of the class described, the com-

bination of a frame, a plurality of supports pivotally mounted on said frame, containers on said supports having open tops, covers tightly fitting the tops of said containers, means for clamping said containers in position between said supports and said covers, means for holding said containers in a substantially upright position or in position to pour out the contents thereof, each of said covers having a valve-controlled discharge orifice, and said frame having means to support another container in position to receive the material discharged from the orifices of any of the first mentioned covers.

2. In apparatus of the class described the combination of a frame, a plurality of supports pivotally mounted on said frame, containers on said supports having open tops, covers tightly fitting the tops of said containers, means for clamping said containers in position between said supports and said covers, means for holding said containers in a substantially upright position or in position to pour out the contents thereof, each of said covers having a valve-controlled discharge orifice and a rotatable stirrer for the contents of the container associated therewith, said stirrers each having a shaft projecting exteriorly of the covers and adapted to receive an operating crank, and said frame having means to support another container in position to receive the material discharged from the orifices of any of said covers.

3. In apparatus of the class described, the combination of a frame, a support pivotally mounted on said frame, a container on said support, a cover plate for said container provided with a discharge orifice, means for detachably securing said plate to said support with said container clamped therebetween, and said cover having a rotatable stirrer mounted thereon and projecting into said container, and a pivotally mounted bar on said plate for controlling the discharge through said orifice.

4. In apparatus of the class described, the combination of a frame, a plate pivotally mounted on said frame, cooperating means on said plate and said frame to hold said plate in different positions, an open-top container on said plate, a cover in sealing engagement with the top of said container and provided with a discharge orifice, a plurality of bolts extending between said plate and said cover and adapted to clamp the container in position, said cover having a rotatable stirrer thereon which extends into said container, and a pivotally mounted bar on the exterior of said cover for controlling the discharge through said orifice.

5. In apparatus of the class described, the combination of a frame, a plurality of rows of container supports pivoted to said frame, said rows being at different elevations on the frame, open-top containers on said supports, cover plates in sealing engagement with the tops of said containers and each having a discharge orifice, means for securing each cover plate to its associated support and for clamping the containers in position, each of said cover plates having a rotatable stirrer mounted thereon and projecting into the container associated therewith, each of said cover plates also having a bar pivoted on the exterior thereof for controlling the discharge through its orifice, and said frame having a shelf in laterally offset relation to said rows to support a receptacle in position to receive liquid discharged from any of said containers.

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