Nov. 24, 1942. R. C. FICKE 2,302,756

APPARATUS FOR DISPENSING LIQUID MATERIALS

Filed April 11, 1941 2 Sheets-Sheet 1

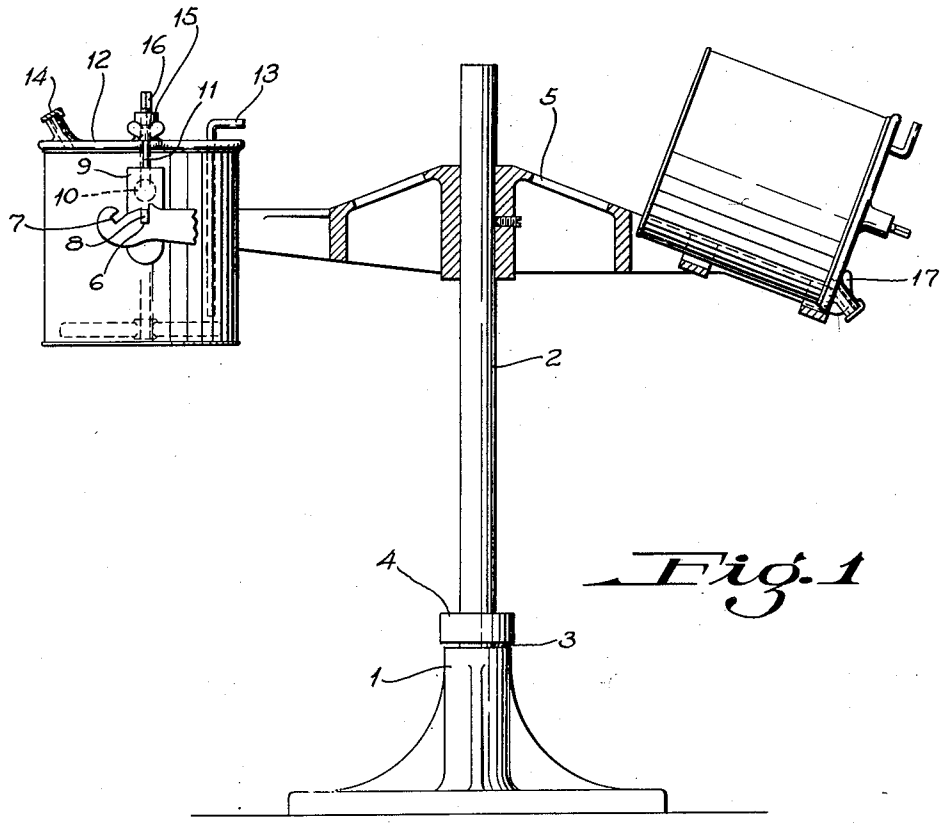


Fig. 1

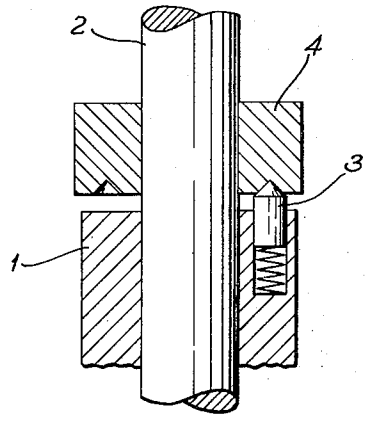


Fig. 3

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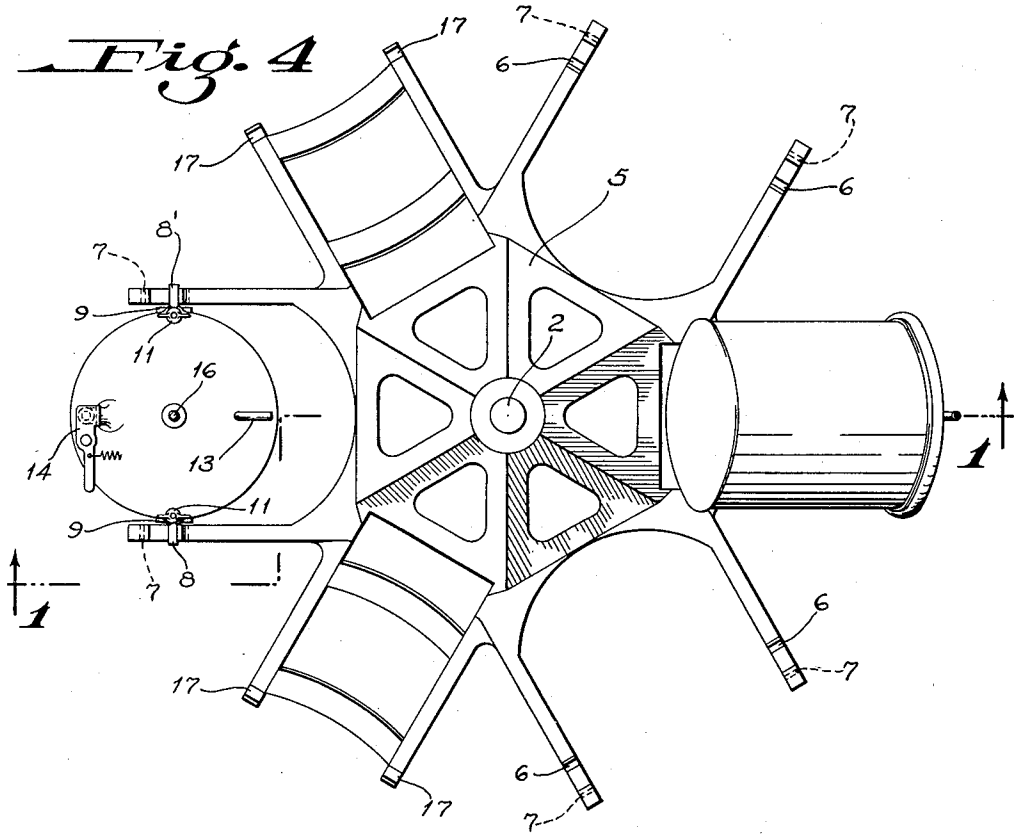
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Fig. 4



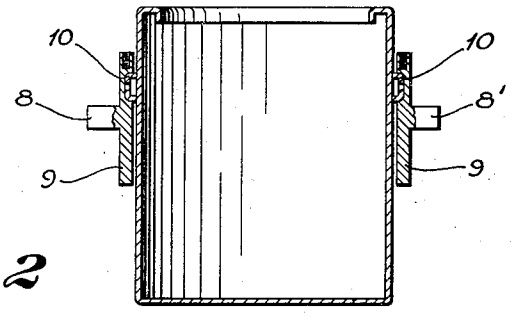


Fig. 2

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2,302,756

APPARATUS FOR DISPENSING LIQUID MATERIALS

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Application April 11, 1941, Serial No. 388,000

3 Claims. (Cl. 248—133)

This invention relates to an apparatus for dispensing liquid materials and more particularly for formulating a colored paint from a plurality of colors.

In the paint trade it is uneconomical for a distributor to carry a large stock of ready mixed colors since the demand for many of them is relatively small. These little used colors often remain on the shelves for several months or even longer. The drying rate and other characteristics of many enamels are adversely affected by long standing and hence it would be very desirable to avoid such standing if possible.

Most tints are prepared by mixing from 2 to 5 standard colors. Occasionally a special tint may require as many as 7 or 8 standard colors. It has been proposed to supply the distributor with the standard colors and when there is a call for a special tint to prepare it by mixing definite amounts of the standard colors according to the manufacturers' specification. Many types of apparatus have been designed to accommodate containers of the standard colors which could be readily mixed and poured into suitable measuring devices. The present invention relates to an improved device of this type which has many advantages over those heretofore used.

It is therefore an object of this invention to provide an apparatus which permits the ready combining of a plurality of differently colored paint or paint-like materials to provide the desired ultimate color. Another object is the provision of an apparatus which provides accurate control of the addition of differently colored finishing materials. Another object is the provision of an apparatus simple in design and operation, of low initial cost and upkeep, which obviates the need of stocking a large supply of ready mixed finishing compositions. A further object is the provision of an apparatus for preparing finishing compositions which eliminates spattering and splashing such as encountered in the conventional practice of manual pouring of tinting solutions in developing a required color. Other objects will appear as the description of the invention proceeds.

These objects are accomplished by means of an apparatus more fully hereinafter described which consists essentially of a vertical standard carrying a rotatable spider assembly positioned in a horizontal plane, said spider consisting of a plurality of members adapted to hold containers in a vertical or pouring position by means of cooperating supports fitted to the can sides.

In the preferred apparatus the standard consists of a heavy metal base plate supporting a rotatable vertical shaft to which is affixed a spider assembly preferably fabricated from aluminum metal. The spider assembly consists of a plurality of bracket members adapted to support containers carrying finishing materials in a fixed vertical position or in a fixed pouring position where the can is tilted at an angle slightly greater than the horizontal. This selective positioning is accomplished by means of slots cut in the bracket arms so as to engage co-operating lugs on a can support. The can support consisting of a metal block is also recessed on the side opposite the lug to engage the can ears and carries a tapped threaded hole at the top to receive a bolt for clamping a removable can cover to the top of the can. The removable can cover is adapted to fit a conventional friction top can and is provided with a suitable vent and a knife type valve outlet. The cover is also designed with an opening at the center to receive the shaft of an agitator mixer to which a handle may be attached to permit agitation of the contents of the can interior.

Referring now to the drawings, Figure I represents a sectional side elevation of the apparatus and illustrates the complete assembly in which a paint can is suspended in a fixed vertical position in a spider bracket member which permits an adjustable positioning of the can for pouring purposes. This figure also shows the placement of a can in a spider bracket member which does not permit a change in can position but merely retains the can in a pouring position, an arrangement which forms a part of the actual apparatus in practice. Figure II is a detail drawing of the can design which is applicable for present use. Figure III is a detail view of the positioning pin arrangement for locking the shaft and spider in the desired position. Figure IV is a top view of the apparatus showing the alternate arrangement of spider bracket members for both adjustable and stationary positioning of the cans.

In the drawings, a support comprising a heavy metal base shown as 1 which carries a rotatable vertical shaft 2 capable of being set at desired points by means of pin arrangement 3, consisting of a floating pin set on a small spring so that the pin is forced into notches cut into the shaft collar 4, thus holding the assembly in the desired fixed position. Alternatively, the locking mechanism can be placed at the base of the spider assembly to permit rotation of the spider assembly while maintaining the vertical shaft in a fixed

position. The spider 5 consists of a plurality of bracket members at least some of which are designed to hold the can in a fixed vertical position and alternatively when desired in a fixed pouring position. This is accomplished by means of slots 6 and 7 which engage lugs 8 and 8' (see Figure IV) of the can support 9. The can support 9 is recessed on the opposite sides to receive the can ears 10 and carries a tapped threaded hole at the top to receive the bolt 11 which when tightened fixes the can cover in position and holds the entire can assembly together. The can cover 12 is fitted with a vent 13, a knife valve outlet 14 and is provided at the center with an opening 15 through which an agitator 16 may be inserted for agitating the contents of the can. The top of the agitator shaft is of square design to permit the fastening thereto of a hand crank so that the material in the can may be stirred. The stationary or non-adjustable arrangement of some of the spider members is shown by 17 which consists essentially of a bracket fitted with suitable hooks at the end of the member to hold the can in a pouring position.

In operating the apparatus, round friction top gallon cans of conventional design and containing the most commonly used color, namely white, are fitted with the special can cover 12 co-operating with the can support 9 and the assembly placed in vertical slots 6 of the spider. Other cans containing compositions of other colors as required more generally are previously agitated and placed in the spider assembly in the non-adjustable spider members. After the coating compositions have been thoroughly agitated in the vertical position, the can assembly is lifted from the slot 6 and the can then tilted and slid into slot 7 which fixes the can in a rigid pouring position. A suitable weighing scale carrying a tared empty can is located conveniently beneath the outlet valve 14. This valve is then opened to dispense into the can the required amount of material. The valve is then closed and the spider rotated to bring another composition of different color into proper position above the can on the scale and is locked into position by action of the pin assembly 3. Proper amount of material as provided by the formula is then added by opening the valve in the special can cover. The same procedure is repeated for the other selected colors on the apparatus until the ultimate color is obtained in accordance with the formula instructions.

The new apparatus is useful for dispensing liquid materials and particularly paint lacquer and resinous coating compositions containing coloring material where the demand is greater for a large variety of colors and where the ultimate color is pre-formulated and information thus made available as to what tinting colors and amounts of each are required to provide any ultimate color.

The invention is characterized by several important advantages. Particularly noteworthy is the more accurate control afforded by the new apparatus in adding the required amounts of tinting colors. Greater convenience is afforded and splashing and spattering previously encountered by conventional manual pouring from the can is eliminated. Economy in time and labor costs is provided by the new apparatus. Low initial cost and up-keep expense and simplified construction and operation are further advantages. Of primary importance is the removal of the former requirement that a dealer-distributor maintain large stocks of ready mixed colors to supply the varied demand of the consumer public.

As many widely different variations of the invention may be made without departing from the spirit and scope thereof, it will be understood that the invention is not limited to the specific embodiments herein set forth except as indicated in the appended claims.

I claim:

1. A device for dispensing paint from cans comprising a supported pair of outwardly extending U-shaped arms, each of said arms being provided with two rectangular slots, one of which is vertical and one of which is disposed at an angle thereto, said slots being located adjacent to each other.

2. An apparatus for dispensing paint from cans comprising a support, a plurality of pairs of horizontal outwardly extending U-shaped arms mounted on the said support, each of which is provided near its outer extremity with a vertical rectangular slot and a second rectangular slot disposed adjacent thereto and at an angle thereto, a plurality of brackets also mounted on the said support disposed at an angle such that a can resting thereon will be in a fixed pouring position.

3. An apparatus for dispensing paint from cans having ears attached thereto, comprising a support, a plurality of pairs of outwardly extending U-shaped arms mounted on the said support, each of said arms being provided with two rectangular slots near the outer extremity of the said arms, one of the slots being vertically disposed and the other at an acute angle thereto, and can supporting lugs adapted to fit tightly over the said ears attached to the said can, said lugs being provided with outwardly extending rectangular projections adapted to fit into the said rectangular slots.

ROBERT C. FICKE.