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2,469,649

STIRRING DEVICE

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2 Sheets-Sheet 1

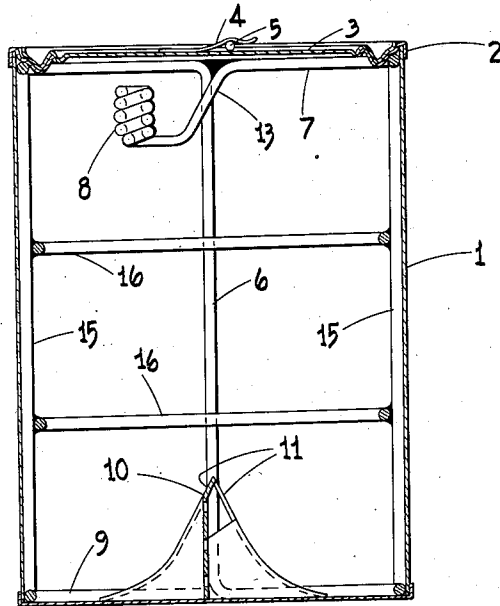


Fig. 1.

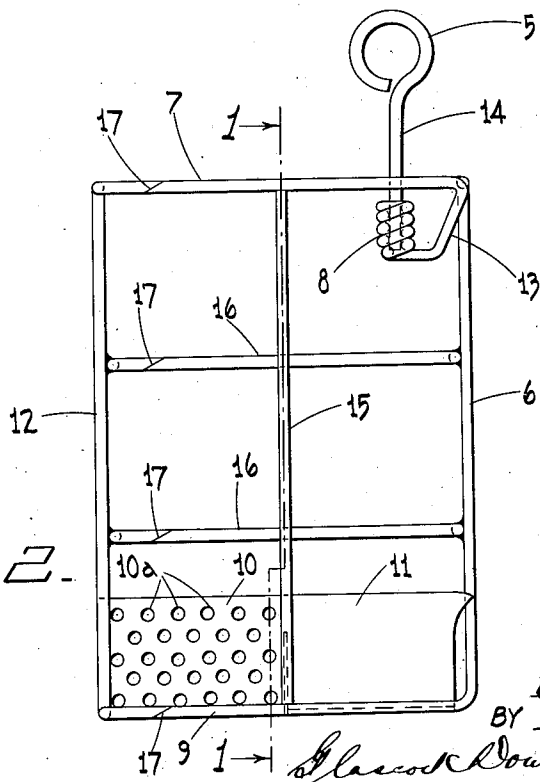


Fig. 2.

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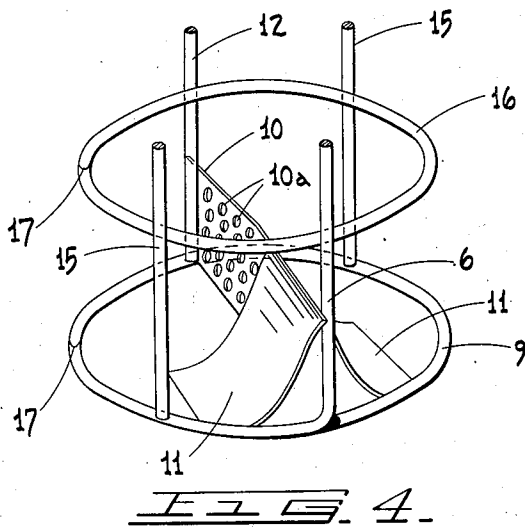
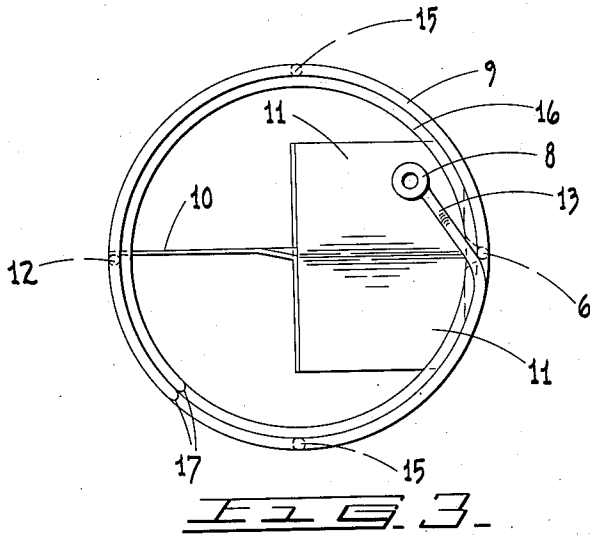
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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STIRRING DEVICE

William Wood Hunter and Ian McNab, Esquimalt,
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6 Claims. (Cl. 259-108)

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The present invention relates to devices for stirring or agitating mixtures such as paint.

One object of the invention is to provide means whereby the mixing of paint by the purchaser may be facilitated.

Further objects of the invention are the providing of means whereby paint in a container may be stirred at intervals during use and the obviating of the need for wooden paddles or stirrers.

The invention is an agitator adapted to be rotatably mounted within a container and comprising a plurality of perpendicular rods, a plurality of rings, agitating means, and an agitator-impelling means attached to one of said rings.

It is well known that the stirring or mixing of paints in cans is a chance affair frequently attended by mishaps, one of the more serious of which is the overturning of the container with the consequent spilling of the contents. The stirring is usually done by means of a paddle made of a strip of wood or other material and the paddle is often generously oversized in order to prevent its slipping into the can and beneath the surface of the paint. As a result the end of the paddle projects from the top of the can for a considerable distance and is generally in such a position as to act as an incumbrance for the hand or arm when ever the paint-brush is inserted into or removed from the can. Furthermore, when a can of paint is first opened it is found that the heavier ingredients such as the lead have settled to the bottom and formed a semi-solid highly-viscous mass that can be re-incorporated into the less-viscous ingredients only with difficulty.

It was with the above problems in mind that applicants set about the development of a stirring device that would meet all requirements; one that would be simple and economical to manufacture and that would not add appreciably to the cost of the container; one that could be operated with ease and would be efficient in operation. The present invention incorporates all of the above advantages.

The invention will now be described with reference to the accompanying drawings which are presented as examples only and not in any limiting sense.

In the drawings:

Figure 1 is a sectional elevation of the line 1-1 of Figure 2.

Figure 2 is an elevation sidewise of the paddle and vanes showing the key in position, but omitting the can itself,

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Figure 3 is a plan view of Figure 2,

Figure 4 is a fragmentary view of the paddle and vanes in perspective.

Like numerals identify like parts.

5 The container 1 is surmounted by a beaded annular rim 2 and a correspondingly beaded lid 3. The rim and lid are of the conventional type. Fastened to the lid 3 is a spring clip 4 and removably fastened therein is a key 5 which is shown in upright operable position in Figure 2. 10 Perpendicular metal rods 6, 12 and 15 are situated close to the wall of the container 1 and in length are approximately equal to the interior height of the container. The rods 6 and 12 support an upper ring 7 and are attached to a lower ring 9. 15 If desired the rod 6 and the rings 7 and 9 may be made of a single piece of metal suitably bent to form the two rings spaced apart by the rod 6. 20 The rods 12 and 15 may be separate pieces of metal fastened to rings 7 and 9 in any suitable way, for example, by means of welding or soldering. As will be seen in Figure 1 the ring 7 follows the circular contour of the container and is situated within the annular space formed by bead 2. 25 The ring 9 rests on the bottom of the container. Additional rings numbered 16 may be soldered or welded to the rods at spaced intervals between rings 7 and 9.

30 If desired the rings may be split as shown at 17 in Figures 2, 3 and 4 thus rendering it possible for the agitator to be compressed and the circumference of the rings to be reduced in order that the agitator may be inserted into or removed from a can while the annular rim of the can remains in place. As a result of the split-ring 35 feature the agitator may be marketed as a separate unit and used repeatedly by the purchaser.

40 The agitator may be compressed whenever pressure is exerted against the sides thereof. Under the influence of pressure the rings separate at the points at which they are split and each ring slides on itself, one section going below the other. In this way the circumference of the agitator can be reduced appreciably. 45 The agitator returns to its original size and shape when the pressure is released.

50 In Figures 1, 2, and 3 there will be seen a key-engaging means or coil 8 carried by upper ring 7. This coil is the impelling means through which the agitator is moved. An extension of ring 7 is bent as at 13 and the free end twisted into the coil 8, the coil having an internal diameter approximating the diameter of the stem or 55 shank 14 of key 5. The member 8 is situated ad-

jacent to the wall of container 1 but slightly below and clear of the annular rim 2.

Coextending between rods 6 and 12 and fastened thereto are a paddle 10 and divergent vanes 11, the paddle and vanes being attached together at a point midway between the rods, that is to say the individual width of the paddle and vanes is substantially equal to the radius of any one of the rings. One corner of each vane 11 is fastened to ring 9 as shown in Figure 4. The paddle 10 and the vanes 11 engage with the bottom of the container 1 and exert a scraping action thereon. The paddle 10 has a plurality of perforations 10a. The paddle and vanes are preferably cut from one piece of sheet metal following which the vanes are bent to the desired shape. The apex of the vanes is at the same elevation as the upper edge of the paddle 10 while the vanes themselves diverge downwardly to the bottom of the container 1, the lower edge of the ring 9 and the lower extremities of the paddle and vanes being disposed in the same plane.

To operate the agitator and mix the contents of the container it is necessary to remove the lid 2 and to remove the key 5 from the spring clip 4. The key is inserted into the key-engaging means 8 as shown in Figure 2 and the agitator is caused to revolve about the interior of the container in either a clockwise or a counter-clockwise direction. The agitator will move whenever pressure is exerted through the key at right angles to the vertical axis of the member 8. The viscous sedimentary material in the container will be scraped clear of the bottom by means of the paddle 10 and the vanes 11 and will be caused to circulate and mix with the less viscous contents. The agitation is continued until the contents of the container are in a homogeneous state.

In the foregoing description the agitator has been described in conjunction with a container for the sake of clarity and convenience and not in a limiting sense. It should be understood that the use of any number of both rings and rods is contemplated as a part of this invention, the number to depend on the size of the container and the strength of agitator required. While no gauge size has been specified for the rods and rings the gauge sizes of these parts may be varied as required and while no particular heights have been specified for the paddle and vanes these heights will not generally be greater than half the length of the rods. The paddle and vanes of course may be the same height or of unequal heights.

The foregoing description and the accompanying drawings are presented by way of example

only. The invention may be modified to any degree within the scope of the appended claims.

What is claimed is:

1. An agitator adapted to be rotatably mounted within a container and comprising a plurality of perpendicular rods, a plurality of rings, agitating means consisting of a perpendicular paddle in conjunction with a pair of downwardly-diverging vanes, said paddle and vanes being of equal height and each in width being substantially equal to the radius of any one of said plurality of rings, and means secured to the uppermost of said plurality of rings by means of which said agitator may be impelled.

2. An agitator adapted to be rotatably mounted within a container and comprising a plurality of perpendicular rods, a plurality of rings, said rings being attached at regular intervals and at right-angles to said rods, the uppermost and lowermost of said plurality of rings engaging respectively with the upper and lower extremities of said plurality of rods, agitating means consisting of a perpendicular paddle in conjunction with a pair of downwardly-diverging vanes, said paddle and vanes being of equal height and each in width being substantially equal to the radius of any one of said plurality of rings, and means secured to the uppermost of said plurality of rings by means of which said agitator may be impelled.

3. An agitator as claimed in claim 1, the paddle being fixedly attached to one of said rods and the vanes being attached to another and oppositely-spaced rod and to the lowermost of said rings.

4. An agitator as claimed in claim 1, the lower extremities of said paddle and said vanes being disposed in the same plane as the lower edge of the said lowermost ring.

5. An agitator as claimed in claim 1, the paddle being perforated.

6. An agitator as claimed in claim 1, the paddle and vanes attaching together at a point midway between said oppositely-spaced rods.

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