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2,753,162

PAINT MIXER

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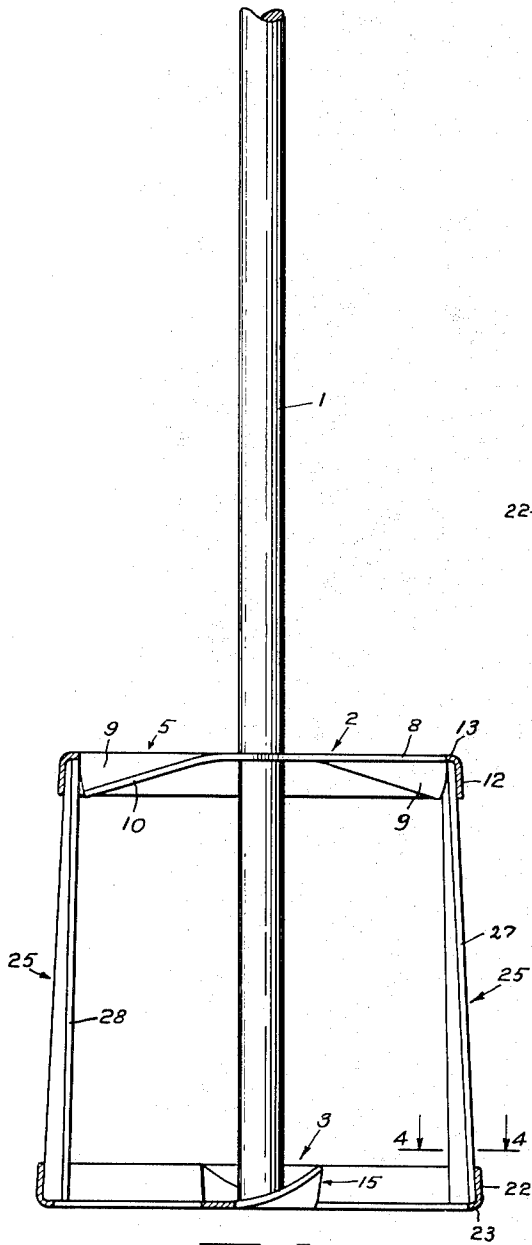


Fig. 1.

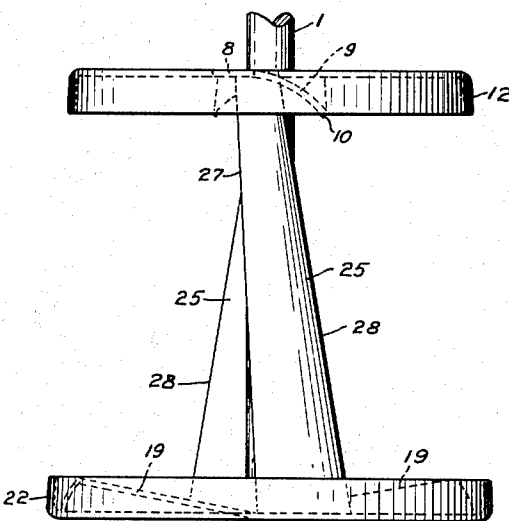


Fig. 2.

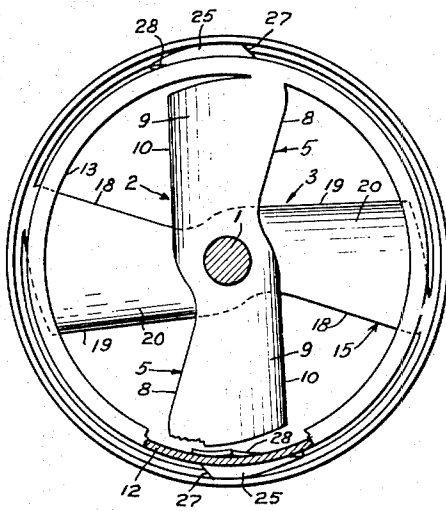


Fig. 3.

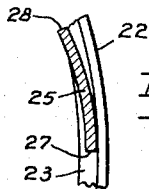


Fig. 4.

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PAINT MIXER

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3 Claims. (Cl. 259—134)

This invention relates to a paint mixer.

The primary object of this invention is to provide an inexpensive, simple, compact and efficient paint mixer device.

Another object of this invention is to provide a paint mixer which is operated by a detachable electric motor or other source of power.

Another object of this invention is to provide a paint mixer which does not need any attachment to the paint container.

Another object of this invention is to provide a paint mixer which draws oils and other liquid substances from the surface and forces the same downwardly, and forces the heavy sediments from the bottom upwardly, and both oils, liquid and sediments are thoroughly intermixed with the middle layer of the paint to be mixed.

Another object of this invention is to provide a mixer which may be used for mixing other substances than paint wherein the same may be used advantageously.

Other objects and advantages will appear as the specification proceeds and the novel features of the device will be particularly pointed out in the claims hereto annexed.

In this specification and the annexed drawing, the invention is illustrated in the form considered to be the best but it is understood, that the invention is not limited to such form; and it is also to be understood that in and by the claims following the description, it is desired to cover the invention in whatsoever form it may be embodied.

In this specification and the appended claims this mixer is described and claimed as a paint mixer. It is understood that this is made only for the purpose of convenience, that this mixer may be used for mixing other substances and that it is desired to protect all the uses to which said mixer is adaptable.

My invention is illustrated in the accompanying drawing in which:

Fig. 1 is a front elevation of the mixer some parts being shown in section.

Fig. 2 is a side elevation of the mixer.

Fig. 3 is a plan view of the Fig. 2, some parts of the mixer being shown in section; and

Fig. 4 is a horizontal cross-section of the vertical blade taken along the line 4—4 of Fig. 1.

In detail, my mixer consists of a comparatively long shaft 1. On the lower end of said shaft are mounted in spaced relation to each other two horizontal impellers 2 and 3. The top impeller 2 consists preferably of a piece of sheet metal through the center of which passes the shaft 1, which defines said impeller into two blades 5. The blades 5 are symmetrical and each has a substantially straight leading edge 8 which is in a plane perpendicular to the shaft 1. Somewhat less than a half of the width of each blade, adjoining the leading edge 8 is level and flat. The trailing part 9 of each blade is curved downwardly and terminates with a trailing edge 10.

The mixer is rotated in a clockwise direction looking

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at Fig. 3 and therefore the rotation of the upper impeller 2 forces the paint downwardly.

A ring 12 having a narrow horizontal margin 13 is secured to the free ends of the impeller 2 by welding or otherwise.

Some distance below the impeller 2 and at the very end of the shaft 1 is secured thereto a bottom impeller 3. The latter also preferably consists of two blades 15 which are joined around the end of said shaft. Both of the latter mentioned blades 15 are symmetrical and have leading edges 18 and trailing edges 19. Somewhat less than a half of the width of each of said blades 15 adjoining the leading edge 18 is level and is in a plane at the right angle to the shaft 1, while the trailing part 20 of said blades 15, adjoining the trailing edge 19, is curved upwardly. A ring 22 having a horizontal margin 23 is secured to the free ends of the bottom impeller 3.

It should be noted that the impeller 3 is slightly larger than the impeller 2, and that the diameter of the ring 22 is larger than that of the ring 12. The flat and level portions of the blades 15 are level with the bottom ring margin 23. Hence, when the mixer is set on the bottom of a paint container, and is rotated, the blades scrape the bottom and send all the sediments thereon upwardly.

A pair of vertical blades 25 is provided between said rings 12 and 22 and are secured to said rings by spot welding or otherwise. The top of the leading edge 27 of the blade 25 is advanced in relation to the bottom end thereof about $\frac{1}{2}$ " in direction of the rotation, and the width of the blade 25 gradually increases from the top to the bottom. The leading edge 27 of each blade 25 abuts the inner side of the rings 12 and 22. The blades 25 are curved inwardly as shown in Fig. 4, so that their trailing edges 28 are about $\frac{1}{16}$ " away from the rings 12 and 22.

As the tops of the blades 25 are slightly inclined forwardly and inwardly, they force the paint in direction to the shaft 1 and also somewhat downwardly, thus preventing the splashing of said paint out of the paint container.

The above described mixer is secured to a shaft of an electric motor by some means such as a drill chuck. The mixer is not secured to the paint container, but is held by the operator. The operator submerges the mixer in the paint and turns the switch on. The mixer proceeds to rotate and the operator slowly moves the mixer around the paint container and up and down, if the container is large. The mixer is preferably rotated at the speed of about 600 revolutions per minute.

When the mixer rotates the top impeller 2 sucks in and down the comparatively thin top layer of oil and thin paint always present in a paint container if the same is permitted to stay undisturbed, while the bottom impeller 3 forces the heavier oil and sediments from the bottom upwardly. The vertical blades 25 draw the paint from the middle of the container and force the same somewhat downwardly into the stream of thin paint and oil going from the top downwardly and of the heavy paint and sediments going upwardly from the bottom. All said paint is momentarily and thoroughly mixed within the confines of said mixer. It is advisable to move the mixer in the container to raise all heavy paint and sediments from the bottom. It takes less than one minute to mix a five gallon container of paint, whereas it takes at least several minutes to attach any other mixer to an oil can. As the top impeller 2 forces the paint downwardly and the vertical blades 25 also force paint downwardly to a certain extent, the paint is never splashed out of the container during the process of mixing. The mixer not only thoroughly and uniformly mixes paint, but makes it fluffy and easy to apply on a surface.

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I claim:

1. A paint mixer comprising a shaft, a bottom impeller secured to the end of said shaft and consisting of bottom blades for forcing paint upwardly, said blades having their leading edges in the plane perpendicular to said shaft; a ring connecting the tips of said blades, said ring being level with said leading edges; a top impeller secured to said shaft above said bottom impeller and being of a lesser diameter than that of said bottom impeller, said top impeller consisting of top blades for driving paint downwardly; a ring connecting the tips of said blades; a plurality of vertical blades for forcing paint in direction to the shaft and downwardly, said blades extending from one ring to another and secured thereto; the top of each vertical blade being advanced in relation to its bottom in direction of rotation of said mixer, said top of each blade being narrower than its bottom.

2. A paint mixer comprising a shaft, a bottom impeller secured to the lower end of said shaft and consisting of bottom blades for forcing paint upwardly; a ring connecting the tips of the blades, said blades having their leading edges level with lower edge of the ring for scraping paint off the bottom of a container; a top impeller secured to said shaft above said bottom impeller and being of a lesser diameter than that of said bottom impeller, said top impeller consisting of top blades for forcing paint downwardly, a top ring connecting the tips of said top blades; the leading edge of said top blades being level with the upper edge of the latter ring; a plurality of upright blades for forcing paint in direction to the

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shaft and downwardly, said upright blades extending from one ring to the other and secured thereto, the leading edge of each upright blade being slightly farther from the shaft than the trailing edge and the top of each upright blade being advanced in relation to the bottom in direction of rotation of said mixer and having the top thereof narrower than its bottom.

3. A paint mixer comprising a shaft, a bottom impeller secured to the lower end of said shaft and consisting of bottom blades for forcing paint upwardly, said blades having their leading edges directed downwardly for scraping paint off the bottom of a paint container; a top impeller secured to said shaft above said bottom impeller, said top impeller consisting of top blades for forcing paint downwardly; a plurality of upright blades for forcing paint in direction to the shaft and downwardly, said upright blades having their tops advanced in relation to their bottoms in direction of rotation of said mixer, and having their tops closer to said shaft than their bottoms.

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