Dec. 21, 1965 D. L. HISER 3,224,742

AGITATOR

Filed April 14, 1964

Fig. 1

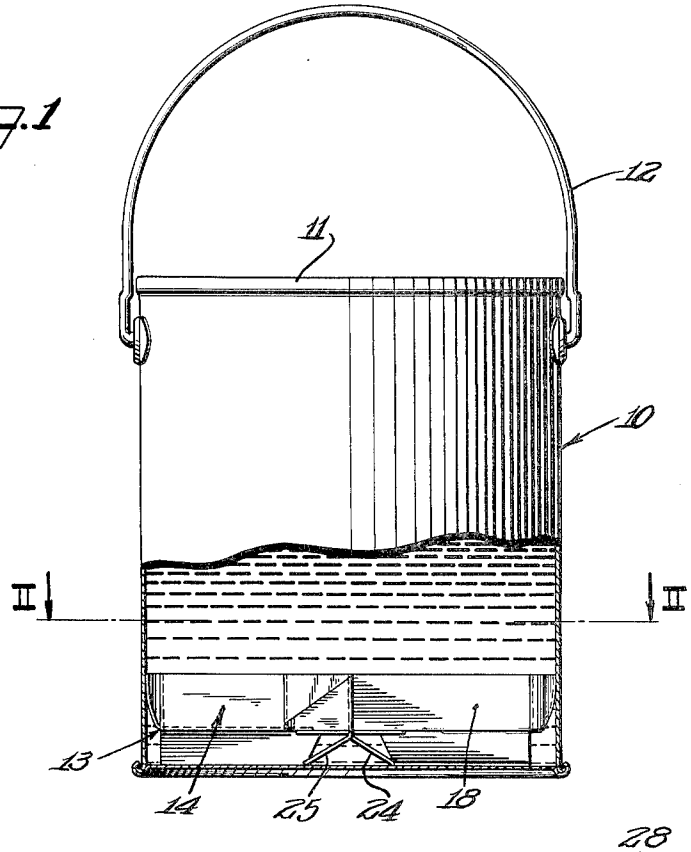


Fig. 2

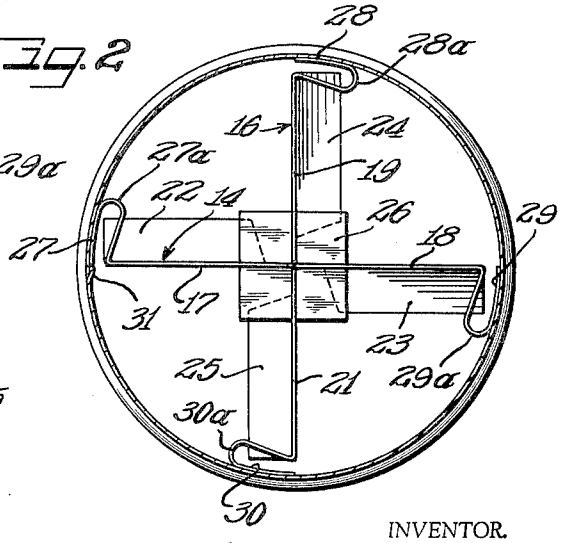
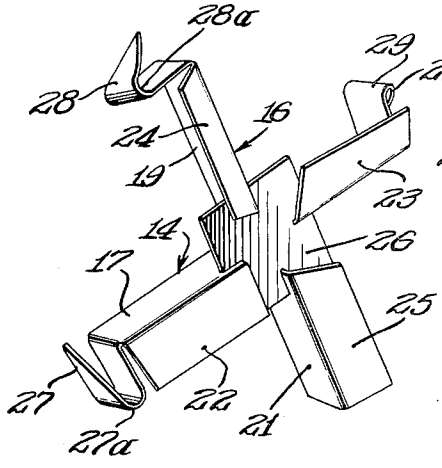


Fig. 3



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AGITATOR

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The present invention relates to an improved agitator assembly which is designed to fit into a cylindrical can or the like to agitate and mix materials, at least one of which consists of a liquid. The agitator of the present invention may be used to mix liquids of similar or varying specific gravities or viscosities and it may be used to mix solid suspensions into liquids, as in the case of mixing the pigments and other solids into a paint vehicle.

The agitator of the present invention is very economical to manufacture and can therefore be included in the original paint can by the manufacturer without significantly increasing the cost of the product. It can, of course, be sold as a separate item in varying sizes to fit various types of cans.

The agitator of the present invention includes a plurality of radially extending arms, a downwardly inclined scraper element extending from each of the arms, and a pointed element at the end of at least one of the arms, the agitator being so proportioned that the pointed element is received snugly against the interior of the can.

An object of the present invention is to provide an efficient but inexpensive agitator adapted for insertion into cylindrical cans.

Still another object of the invention is to provide an improved agitator element particularly suited for mixing solids and liquid, such as in paints.

Another object of the invention is to provide a mechanically rugged efficient agitator having improved positioning and scraping means thereon.

Other objects and features of the present invention will become apparent to those skilled in the art from the following description of the attached sheet of drawings which illustrates the preferred embodiment of the invention.

In the drawings:

FIGURE 1 is a view in elevation, partly broken away, illustrating the agitator of the present invention in a paint can;

FIGURE 2 is a cross-sectional view taken substantially along the line II—II of FIGURE 1; and

FIGURE 3 is a view in perspective of the agitator element alone.

As shown in the drawings:

In FIGURE 1 reference numeral **10** indicates generally a cylindrical paint can having a top closure **11** and a bail **12** of the usual type. Disposed at the base of the interior of the can **10** is an agitator element generally indicated at reference numeral **13**. As best seen in FIGURES 2 and 3, the particular agitator element illustrated consists of a pair of strips **14** and **16** which are centrally slotted and interengaged so that the upper and lower surfaces of the strips **14** and **16** are in common planes. The strip **14** is divided into a pair of arms **17** and **18**, while the strip **16** is divided into a pair of radially extending arms **19** and **21**.

Each of the arms **17, 18, 19** and **21** has angularly downwardly extending scraper elements **22, 23, 24** and **25** respectively which act as impellers to agitate the liquid. The arms are held rigidly in interconnected relationship by means of a centrally disposed reinforcing plate **26** which is suitably notched, as illustrated in FIGURE 3 to receive the inner end portions of the scraper blades **22, 23, 24** and **25**.

To prevent relative rotative movement between the agitator assembly and the paint can, the ends of the arms are provided with pointedly tapered end portions **27, 28, 29** and **30** respectively. In order to increase the resilience of the arms, there is provided a bent loop portion **27***a*, **28***a*, **29***a* and **30***a* respectively, between the arms and their pointed ends. Thus, when the agitator is positioned in the paint can as shown in FIGURES 1 and 2, the pointed tips **27** through **30** are resiliently urged against the interior of the paint can. Eventually, the agitator moves into a position where one of the pointed ends, such as the pointed end **27** of FIGURE 2, engages an internal seam **31** of the paint can, thereby locking the two against relative rotative movement.

In operation, the agitator **13** is disposed in the paint can **10**, and the paint can is subjected to oscillatory movement about its vertical axis. As the container is twisted with a back and forth motion, the scrapers or impellers **22, 23, 24** and **25** agitate the liquid. The scrapers thus break up settled pigment and disperse it into the paint vehicle. Eventually, one of the pointed ends of the agitator will engage the internal seam **31** and then the agitator, because of the resilience of the pointed end, will press against the seam **31** and may be held thereagainst. Nevertheless, the scrapers or impellers **22, 23, 24** and **25** still act as mixing vanes which give the pigment and vehicle tortuous paths of flow, thereby providing a highly efficient mixing action.

From the foregoing, it will be seen that the agitator of the present invention is relatively economical to manufacture since it can be manufactured from ordinary sheet metal, with a minimum number of operations. The device is nevertheless very efficient in mixing paints and the like, and accomplishes the result many times faster than the use of paddles, propellers, or other mixing devices in the past. The agitation can be carried out with the lid of the paint can in place, so that there is no spilling of the liquid. Furthermore, the agitator is essentially self-cleaning, since it can be left in the container after the paint solution is used up and then cleaned by pouring in solvent and agitating the can in the same manner as with the paints. The agitator is also located at the bottom of the container where it does not interfere with the paintbrush, and does not spill out when the can is tilted.

It should be evident that various modifications can be made to the described embodiments without departing from the scope of the present invention.

I claim as my invention:

1. An agitator for insertion into a cylindrical can comprising a plurality of radially extending arms, a downwardly inclined scraper element extending from each of said arms, and a pointed element at the end of at least one of said arms, said arm having a U-shaped bent loop portion between the end of said arm and said pointed element, said arms being so proportioned that one leg of said U-shaped loop portion is received snugly against the interior of said can.

2. An agitator for insertion into a cylindrical can comprising a plurality of radially extending arms, a downwardly inclined scraper element extending from each of said arms, and a pointed element at the ends of each of said arms, each of said arms having a U-shaped bent loop portion between the end of said arm and said pointed element, said arms being so proportioned that one leg of each of said U-shaped loop portions is snugly received against the interior of said can.

3. An agitator for insertion into a cylindrical can comprising a plurality of radially extending arms, a downwardly inclined scraper element extending from each of said arms, and a pointedly tapered end portion on each of said arms, each of said arms having a U-shaped bent loop portion between the end of said arm and said pointed element, one leg of each of said U-shaped loop portions

being proportioned to be snugly received against the interior of said can.

4. The agitator of claim 3 in which the scraper elements are downwardly and angularly inclined with respect to the remainders of said arms.

5. An agitator for insertion into a cylindrical can comprising a pair of strips slotted along their longitudinal centerlines and interengaged to provide a plurality of radially extending arms, each of said arms having an angularly downwardly depending scraper portion and a pointedly tapered end portion, each of said arms having a U-shaped bent loop portion between the end of said arm and said pointedly tapered end portion, one leg of each of said U-shaped loop portions being proportioned to be snugly received against the interior of said can.

6. The agitator of claim 5 which also includes a reinforcing plate received within the longitudinally extending slots of said strips to reinforce the same.

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