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W. C. GRAY
PAINT STIRRER

2,659,581

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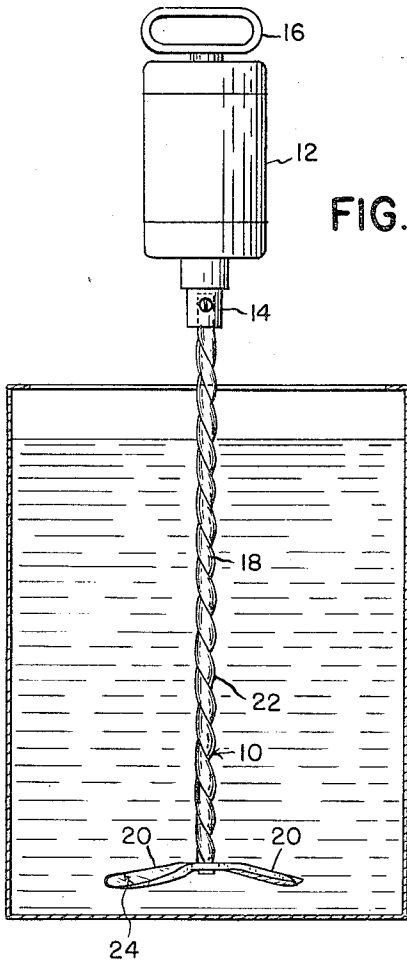


FIG. 1.

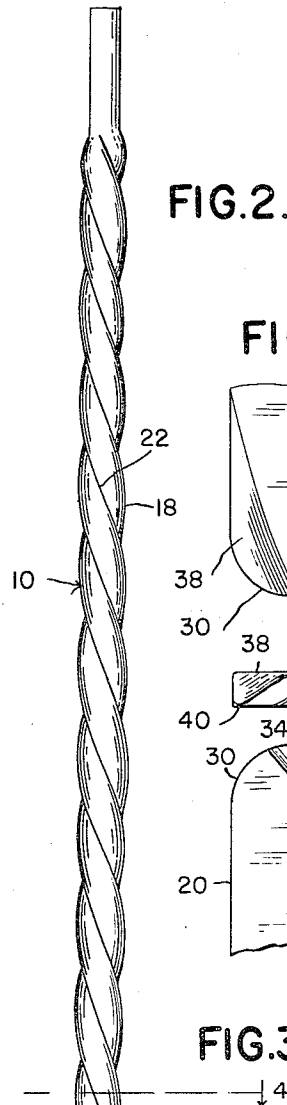


FIG. 2.

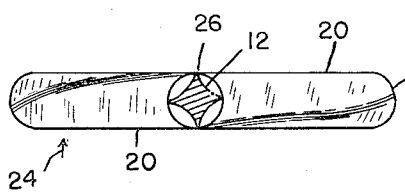


FIG. 4.

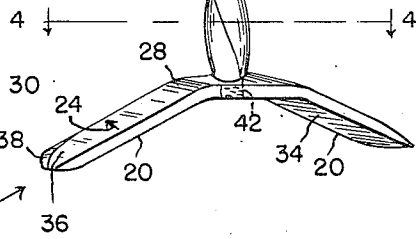


FIG. 3.

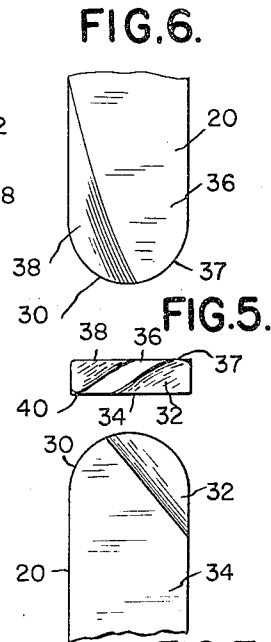


FIG. 5.

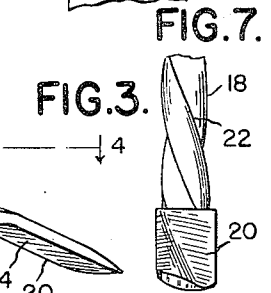
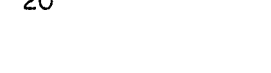


FIG. 6.



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PAINT STIRRER

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1 Claim. (Cl. 259—134)

1

The present invention relates to a paint stirrer. It is an object of the present invention to provide a paint stirrer in the form of a tool suitable for use with a driver for effectively stirring and mixing paint.

It is a further object of the present invention to provide a paint stirrer comprising a shaft having inclined paddles or blades at its lower end.

It is a further object of the present invention to provide a paint stirrer comprising a shaft having paddles at its lower end, including a helical rib formation on the shaft of a hand opposite to the direction of intended rotation of the shaft, the rib formation preferably being provided by twisting a shaft of polygonal cross-section.

It is a further object of the present invention to provide a paint stirrer comprising a shaft, blades at the lower end of the shaft, said blades being provided by a flat strip of material secured at its center to the end of the shaft, the blade portions being inclined outwardly away from the shaft and also twisted.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, wherein:

Figure 1 is an elevational view, partly in section, showing the paint stirrer attached to a power drive unit and in use in a can of paint.

Figure 2 is an enlarged elevational view of the paint stirrer.

Figure 3 is a fragmentary side elevation of the lower end of the paint stirrer shown in Figure 2.

Figure 4 is a section on the line 4—4, Figure 2.

Figure 5 is an end view of a blade looking in the direction of the arrow 5, Figure 2.

Figure 6 is a top plan view of the blade portion seen in Figure 5.

Figure 7 is a bottom plan view of the blade portion seen in Figure 5.

As best seen in Figure 1, the invention comprises a paint stirrer indicated generally at 10, which is designed for use with means for rotating the same. In Figure 1 an electric motor 12 is illustrated having a socket 14 for the reception of the upper end of the paint stirrer, the motor being provided with a handle 16. Any suitable means may be provided for rotating the paint stirrer. An electric drill provided with a conventional chuck for releasably holding the stirrer is useful.

The paint stirrer comprises an elongated shaft 18 and a pair of outwardly extending blades 20. The shaft 18 is provided with one or more helically extending ribs 22 and the hand of the rib

2

or ribs is opposite to the direction of rotation. Thus, as seen in Figure 2, the direction of rotation for which the stirrer is intended is indicated by the arrow 24, which is herein considered as a right hand or normal rotation of the device. The helical ribs 22 are left hand.

Conveniently, the ribs 22 may be provided by initially forming the shaft 18 of square or other polygonal cross-section, after which the shaft is twisted so that the corners 26 of the shaft constitute helical ribs.

At the lower end of the shaft the blades 20 are preferably constituted by a single generally flat strip of material secured centrally to the bottom end of the shaft 18. This strip of material is bent and twisted in the zone indicated at 28 so as to provide flat straight blade portions which incline downwardly or away from the shaft 18 and which are also twisted about the longitudinal axis of said straight portions in such direction as to cause the paint to flow downwardly upon rotation of the blades.

The end portion of each blade 20 is rounded as indicated at 30. Moreover, the underside of each blade is provided with a flat surface 32 which is perpendicular to the axis of the shaft 18 and which accordingly is adapted to engage the flat bottom of a paint can. The flat surface 32 intersects the bottom surface 34 of the strip as well as the top surface 36 thereof. It will be appreciated that the arrangement described results in the formation of a sharp knife edge 37 where the flat surface 32 intersects the top surface 36 of the strip.

Also, the leading edge of the blade is provided with an inclined surface 38 which intersects the bottom surface 34 of the blade at 40.

This arrangement permits the tips of the blades to enter the bottom corners of the paint can so as to remove solid material therefrom. Moreover, the arrangement permits the tips of the blade to enter the paint can rotating in a manner to avoid splashing.

Conveniently, the strip of which the blades 20 are parts, may be provided with a threaded central opening at 42 and the extreme lower end of the shaft 18 may be threaded for engagement in the opening 42. Thus the blades may be readily removable from the shaft and if desired the blades may be furnished in sets of different size so that larger blades may be employed for larger cans of paint, while using the same size shaft. Alternatively, the shafts may be provided in sets of different lengths so that a stirrer comprising a shaft of the proper length and blade of the

3

proper size may be readily assembled together.

In use, the blades force the paint downwardly against the bottom of the can whence it is forced to flow upwardly along the sides of the can, and thence downwardly along the shaft to the zone of the blades. The helical rib provided on the shaft operates to facilitate downward flow of paint along the shaft, and in addition operates to throw excess liquid downwards into the can when the stirrer is moved up and down during mixing. Without this the paint tends to fly off by centrifugal action of the high speed rotation of the paint stirrer. This is particularly true when mixing full cans of paint without first decanting the liquid.

In operation the pigment in the paint can is normally concentrated at the bottom and the blades operate in this area. Accordingly, the relatively violent action of the blades loosens the pigment and causes it to flow upwardly along the side of the can, whence it will flow inwardly and be mixed with the vehicle by the more gentle mixing action of the helically twisted shaft.

The drawings and the foregoing specification constitute a description of the improved paint stirrer in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claim.

What I claim as my invention is:

In a paint stirrer for use in connection with an ordinary flat-bottom paint can, a rotatable shaft having helically disposed ribs thereon of a hand opposite to the direction of intended rota-

4

tion of said shaft to force fluid to flow downwardly along said shaft when the latter is thus rotated, and an agitator on said shaft adapted to force fluid to flow downwardly upon rotation of said shaft in the direction aforesaid, said agitator comprising paddles secured to and extending radially outwardly from the lower end of said shaft, each of said paddles being twisted in a zone adjacent to said shaft to be inclined downwardly and rearwardly from the leading edge thereof, and each of said paddles being bent in said zone to extend downwardly from the lower end of said shaft and at a substantial angle thereto.

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