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(54) A liquid stirrer.

(57) For the stirring of liquids such as paints, surface coatings or the like, which have constituents liable to separation when in containers, a stirrer is provided comprising an elongate member (1) whose operative part (2) has a cross section adapted to provide flexibility in the plane of one of its axes and rigidity in the plane of the axis transverse thereto and wherein the member is extended to a formation (3) at its end of shape adapted to be secured in the chuck of a rotary power tool.

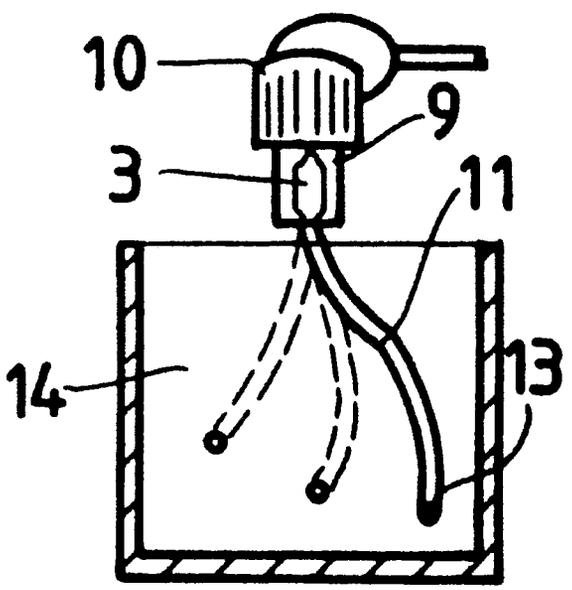

FIG. 5

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A LIQUID STIFFRR

This invention relates to a stirrer which is used for the stirring of liquids, in particular paint, but is not restricted thereto.

Liquids which are used as surface coatings, paints and the like, have constituents which are liable to separate out in the containers in which they are stored. Immediately prior to use it is therefore necessary that the liquids be stirred to ensure that they are applied in an integrally mixed and homogeneous form.

Stirrers have been paddles of rod or other shapes having formations of various configurations at their ends inserted into the containers holding liquids, the other ends being held either manually or in the chucks of drills provided to rotate them.

It is an object of this invention to provide a stirrer which will integrally mix the liquid contents of a container rapidly and uniformly throughout.

According to the invention there is provided a stirrer suitable for use in the stirring of a viscous liquid to effect homogeneity of the constituents comprising an elongate member having an operative part of cross section providing flexibility in the plane of one axis and substantial rigidity in the plane of an axis transverse thereto and extending at one extremity into a formation adapted to be engaged by means for rotating the formation about its axis.

Further features of the invention provide that the member is of mouldable plastics material and the mouldable material is thermoplastic.

Still further, according to the invention, the operative part of the member is a strip of moulded plastic the width of which is large compared to the thickness and preferably having a substantially flat surface.

Still further, according to the invention, the operative part may have a portion of increased cross sectional area near the end thereof remote from the formation.

Still further, according to the invention, the operative part may be moulded into an arcuate configuration and this portion may be an enlarged moulded tip.

Three embodiments of the invention are described below by way of examples only and with reference to the accompanying drawings in which

Figure 1 shows two side views of a first embodiment of a paint stirrer according to the invention;

Figures 2 and 3 show side views of a second and a third embodiment according to the invention; and

Figure 4 is a diagrammatic representation of the stirrer of Figure 1 located centrally in a paint container whilst in use.

Figure 5 is a diagrammatic representation of the stirrer of Figure 3 moved off centre in a paint container whilst in use.

As illustrated in Figure 1 there is provided a paint stirrer for stirring of paint in a container.

The stirrer comprises an elongate member 1 which is integrally moulded from thermoplastic material in two parts, an operative part 2 which, in use, is inserted to the full depth of the container of paint and a connecting part 3.

The operative part 2 is an elongated rectangular flat paddle, of width 4 and thickness 5 and the connecting part 3 is a formation moulded to cooperate with the chuck of a power drill to rotate the stirrer in use.

Figure 2 illustrates a second embodiment of the paint stirrer which is similar to the first embodiment excepting that the operative part 6 is moulded in an arcuate configuration 7 and Figure 3 illustrates a third embodiment of a paint stirrer similar to the second embodiment excepting that the operative part 6 has a tip formation 8a integrally moulded at its lower end in use.

Tn use, as illustrated in Figure 4, the chuck 9 of a portable power drill 10 is connected to the connecting part 3 of the stirrer and the operative part 11, which is of sufficient length therefor, is inserted into a paint container 12 to the full depth thereof. Power is switched on and the stirrer is rotated within the paint 14. Being flexible in one plane, the tip 13 of the stirrer tends to move away from the transverse axis about which it is rotated and with increase in the speed of rotation, the angle which the tip subtends with the axis of rotation, increases due to the increase in centrifugal force induced at the tip and the flexibility of the stirrer. This flexibility also allows the stirrer, whilst in operation, to be moved away from the centre towards the sides of the container, in which position it will be allowed to deflect off the sides of the container without damaging the stirrer or the container. This is illustrated in Figure 5. Thus, by varying the speed and location of the stirrer in the container, uniformity of mixing of the paint is obtained throughout.

It must be noted that since the flat paddle type configuration of the stirrer presents only a thin surface of resistance to the dragging effect of the paint in the container, twisting forces created within the paint and acting on the walls are minimised, resulting in a more stable unit.

Other embodiments are envisaged within the scope of the invention, including other shapes and configurations thereof for use with different liquids and containers.

Claims

1. A stirrer suitable for use in the stirring of a viscous liquid whereby homegeneity of the constituents is effected comprises an elongate member extending at one extremity into a formation adapted to be engaged by means for rotating the formation about its axis, characterised by an operative part of cross section providing flexibility in the plane of one of its axes and substantial rigidity in the plane of an axis transverse thereto.
2. The stirrer as claimed in claim 1 wherein the member is of mouldable plastics material.
3. The stirrer as claimed in claim 2 wherein the mouldable material is thermoplastic.
4 The stirrer as claimed in any one of claims 1, 2 or 3 wherein the operative part of the member is a strip of moulded plastic the width of which is large compared to the thickness.
5. The stirrer as claimed in claim 4 wherein the operative part of the member has a substantially flat surface.
6. The stirrer as claimed in any one of the preceding claims wherein the operative part has a portion of increased cross sectional area near the end thereof remote from the formation.
7. The stirrer as claimed in claim 6 wherein the portion of the operative part of increased cross sectional area is an enlarged moulded tip.
8. The stirrer as claimed in any one of the preceding claims wherein the operative part of the member is moulded into an arcuate configuration.

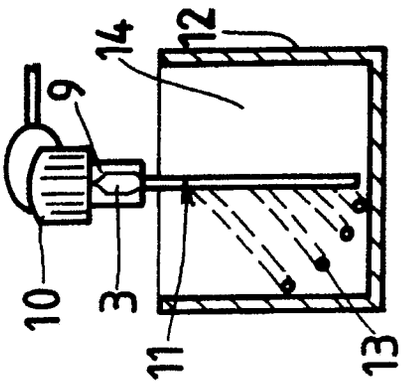

FIG. 4

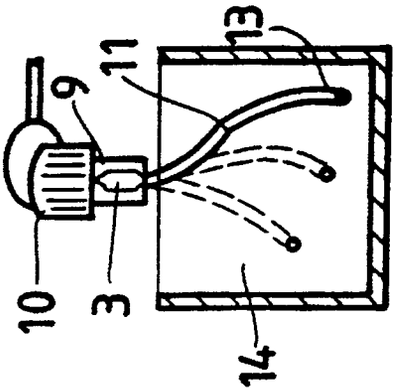

FIG. 5

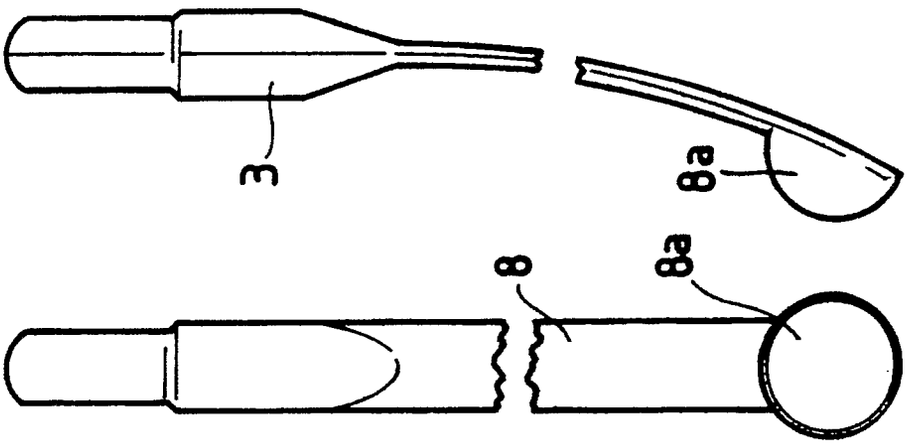

FIG. 3

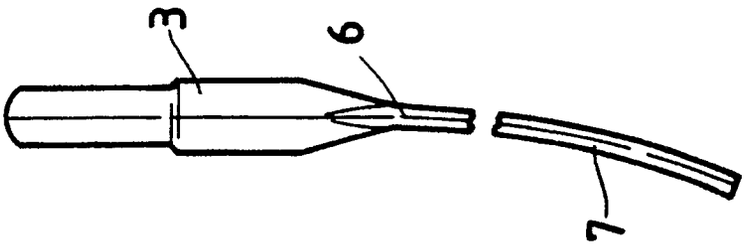

FIG. 2

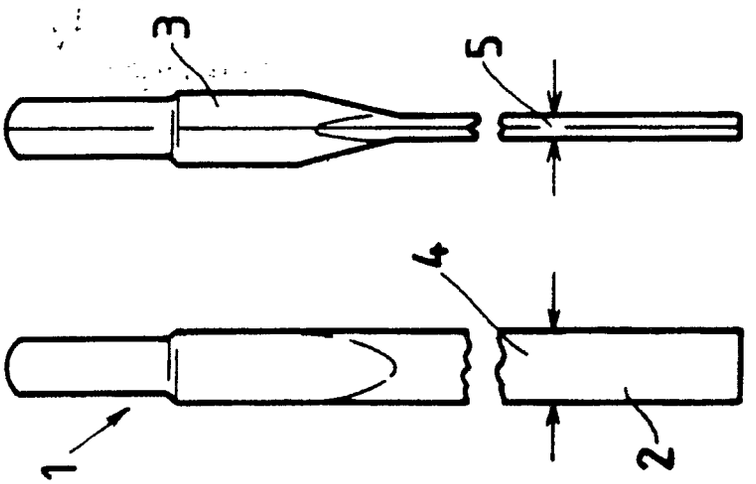

FIG. 1

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 31 2401

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-1 898 094 (NIES) * Page 1, line 71 - page 2, line 5; page 2, lines 86-96; figures 1-5 *	1-8	B 01 F 15/00
A	CA-A-1 188 090 (CHAMBERLAND) * Page 5, line 26 - page 6, line 9; figures 6,7 *	1-8	
A	PATENT ABSTRACTS OF JAPAN, vol. 4, no. 155 (C-29)[637], 29th October 1980; & JP-A-55 99 328 (INOUE JAPAX KENKYUSHO K.K.) 29-07-1980		
A	US-A-4 530 606 (HOPKINS)		
A	US-A-3 972 512 (GRISE)		
A	US-A-4 289 854 (TOLBERT)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B 01 F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18-02-1991	PEETERS S.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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